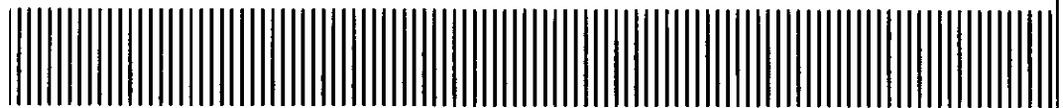


Emerald Coast Utilities Authority

9255 Sturdevant Avenue □ Pensacola, FL 32514

**Consulting Engineering and Bond Feasibility
Report for Water and Wastewater System**

December 2010



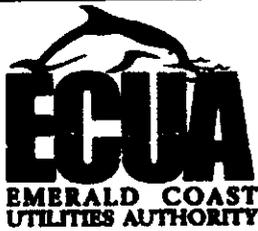
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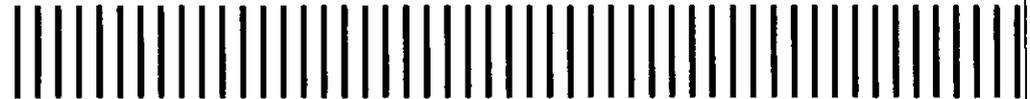
Consulting Engineering and Bond Feasibility Report for Water and Wastewater System

December 2010

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Executive Summary

ES-1. Executive Summary

This Consulting Engineering and Bond Feasibility Report for Water and Wastewater System (Report) was prepared in order to allow Emerald Coast Utilities Authority (ECUA) to establish a bond rating to support the issuance of new bonds to finance ECUA's ongoing capital improvement program. The primary purpose of this Report is to provide an opinion regarding the condition of the System, the organization and management of ECUA, and the planned capital improvements.

Malcolm Pirnie has completed condition assessments of the System through inspections of a representative sampling of the assets. Malcolm Pirnie also evaluated the organization and management of ECUA, ECUA's capital improvement program (CIP) and regulatory compliance situation, and Malcolm Pirnie prepared a financial forecast to support the issuance of new bonds.

Malcolm Pirnie's evaluation of ECUA's organization and management consisted of a review of Utility Operations, Utility Service and Planning, Finance, Human Resources and Administrative Services, Information Technology, Engineering, Field and Customer Services. Upon review, ECUA's organizational structure and staffing levels provide for efficient operation and maintenance of the System. Additionally, ECUA maintains a broad training program to address the full range of training needs of its staff.

The ECUA System consists of a water supply and distribution system, and wastewater collection and treatment system serving the City of Pensacola and several surrounding communities. The System includes water supply wells, water storage tanks, a water distribution system, three wastewater treatment plants, a wastewater collection system, and wastewater pump stations. ECUA's service area covers most of southern Escambia County, which is located in the far northwestern part of Florida.

The condition of the water and wastewater facilities visited varied from new to those requiring significant capital upgrades, with the majority in the adequate to good range. The facilities are producing and delivering potable water and conveying and treating wastewater to a relatively high degree of competency. ECUA's maintenance practices and systems are generally adequate for the proper operation of the System. ECUA emergency planning and response measures have been more than adequate to provide for reasonable operation during catastrophic events. The drinking water system is operating in compliance with drinking water standards. Significant inflow and infiltration (I&I) issues in the wastewater collection system result in sewage overflows during rainfall events. In 2010, ECUA expects to commission the Central Water Reclamation Facility (CWRF) and decommission the Main Street wastewater treatment plant (WWTP) which should improve wastewater system compliance and the reliability.



Upon review of ECUA's CIP, Malcolm Pirnie developed the following conclusion. The planned CIP is generally in alignment with the System needs but does not address all of the System needs and, as such, may require modification from year-to-year to reallocate funds to address the most critical system needs. The water main replacement rate is not unreasonable given the age of the System, but it will need to increase in the future. Presently, specific projects for wastewater pump station improvements do not address all of the identified improvement needs. Once the CIP is implemented as planned, the System should demonstrate improvement in performance, including reductions in wet-weather sewage overflow events. ECUA's approach to developing, budgeting and managing the CIP is reasonable and consistent with typical utility practice.

Malcolm Pirnie has prepared a Water and Wastewater Feasibility Analysis report (see Appendix B) that includes a multi-year financial plan to support ECUA's issuance of bonds and to allow ECUA to generate revenues sufficient to meet annual revenue requirements, fund capital projects, satisfy debt service coverage requirements, generate reserve cash balances, and demonstrate the Authority's ability to issue and service additional increments of debt. Malcolm Pirnie has assumed that ECUA will implement rate increases, as needed and described in the Water and Wastewater Feasibility Analysis report, in order to achieve increases in revenues as presented in the forecast.

Based on our review of the information provided by ECUA in support of the preparation of the Water and Wastewater Feasibility Analysis report, Malcolm Pirnie has concluded the following with regard to the ECUA's FY2010-2014¹ financial forecast presented in the Water and Wastewater Feasibility Analysis report:

1. ECUA's projections of revenue and expenses have been reviewed in comparison with historical data and have been found to be reasonable.
2. ECUA demonstrates that it can fund a modified amount of CIP over the forecast period, maintain debt service coverage equal to or in excess of rate resolution requirements, and produce 60-days worth of operating and maintenance expenses in ending cash balances.

¹ ECUA's fiscal year (FY) begins October 1. Reference to "FY" is to the 12-month period which starts on October 1 and ends on September 30.



1. Introduction

1.1. Background

The Emerald Coast Utilities Authority (ECUA) was created by State Legislation in 1981 to acquire, consolidate, manage, and operate the water and wastewater systems in Escambia County, Florida. ECUA owns and operates a water supply and distribution system and wastewater collection and treatment system (collectively the "System") serving the City of Pensacola and several surrounding communities. In total, ECUA provides water service to over 88,470 customers as of April 2009 and wastewater service to approximately 65,000 customers. ECUA's customer base is primarily a mix of residential and commercial users. The System includes 32 water supply wells, 12 water storage tanks, over 1,700 miles of water distribution system, three wastewater treatment plants, approximately 1,100 miles of wastewater collection system, and 359 wastewater pump stations. ECUA's service area covers most of southern Escambia County, which is located in the far northwestern part of Florida. ECUA remains dedicated to providing the best possible water and wastewater service to Escambia County. ECUA is a three-time award winner of the best tasting water in Northwest Florida. Additionally, with regards to wastewater treatment, the ECUA's Pensacola Beach and Bayou Marcus wastewater treatment plants (WWTPs) have won, between them, 17 Gold or Silver Awards from the National Association of Clean Water Agencies (NACWA) since 1994.

ECUA, like many water and wastewater utilities, is faced with operating and maintaining an aging System, with numerous capital upgrade needs. Many of the System assets are approaching the end of their useful life. In recognition of the aging condition of their sewer system and the demands of development, redevelopment, and expansion, ECUA began a system-wide condition assessment in 2005, to be followed by a programmatic sewer rehabilitation program based on a prioritized, fiscally responsible asset management approach.

Concurrent with these activities, ECUA is replacing its Main Street WWTP. The existing WWTP is located in the floodplain and suffered hurricane damage due to storm surge. These plant conditions, coupled with infiltration and inflow (I&I) leakage in the Main Street WWTP Service Area, led to National Pollutant Discharge Elimination System (NPDES) permit violations in 2004 and 2005. On November 3, 2006, ECUA entered into a Consent Order with the Florida Department of Environmental Protection (FDEP). A portion of the Consent Order stipulated the development of a plan to reduce I&I into the Main Street WWTP by 30%.

The replacement of the Main Street WWTP has resulted in ECUA constructing its largest ever capital project—the Central Water Reclamation Facility (CWRF). The CWRF is a new WWTP located 20 miles inland (out of the floodplain) and will eliminate the current discharge to Pensacola Bay and provide for reuse of the majority of the reclaimed water by power companies



and industries. The CWRP includes a transmission system to convey wastewater to this inland facility.

ECUA operates a sanitation collection utility for residential and commercial garbage. The sanitation collection utility operates with an independent budget from the System and is therefore not further addressed by this report.

1.2. Purpose of this Report

This Consulting Engineering and Bond Feasibility Report for Water and Wastewater System (Report) was prepared in order to allow ECUA to establish a bond rating to support the issuance of new bonds to finance ECUA's ongoing capital improvement program.

Malcolm Pirnie has completed condition assessments of the System through inspections of a representative sampling of the assets. Malcolm Pirnie also evaluated the organization and management of ECUA, ECUA's capital improvement program (CIP) and regulatory compliance situation, and completed a review of the ECUA-prepared financial forecast.

ECUA has prepared a financial forecast covering the five-year fiscal year (FY) period FY2010 to FY2014. This "Forecast" reflects ECUA's assumptions regarding customer growth, revenues and expenses over the Forecast period.

The primary purpose of this Report is to provide an opinion regarding the condition of the System, the organization and management of ECUA, the planned capital improvements, and the reasonableness of the financial Forecast prepared by ECUA.



2. Organization and Management

2.1. ECUA Organizational Structure

ECUA is an independent special district and is governed by a board of five members who are elected from districts located in Escambia County. The five elected members of the Board are charged with formulating and adopting policies, procedures, rules, and regulations, including the setting of consumer rates necessary for the ownership, management, operation, and maintenance of ECUA's utility systems. Each Board member is elected from one of Escambia County's five electoral districts, and each serves a four-year term. The terms are staggered with elections taking place at two-year intervals. Representatives of districts one, three and five are elected in the same cycle while representatives from districts two and four are elected at the same time. ECUA employs an executive director, who is the executive officer of ECUA. Reporting to the executive director are two deputy executive directors and department heads from the following departments:

- Utility Operations
- Utility Services and Planning
- Finance
- Human Resources and Administrative Services
- Information Technology
- Engineering
- Field and Customer Services

2.1.1. Utility Operations

The purpose and function of each department is discussed below. A complete organizational chart is provided in Appendix A. The **Utility Operations** department repairs and maintains all ECUA's water production, and wastewater treatment and reclamation facilities. These dedicated employees have been more aggressive in performing routine maintenance resulting in major equipment running more efficiently and for longer periods of time.

Currently, the Utility Operations Maintenance department has focused the majority of its efforts in two areas:

- Maintaining the Main Street WWTP as economically as possible so that it operates within its NPDES parameters until the new Central Water Reclamation Facility (CWRF) is constructed and in operation
- Maintaining the remainder of the existing water supply and wastewater pumping and treatment infrastructure

The Utilities Operations department includes five areas – Water Reclamation, Water Production and Lift Station Operations, Quality Assurance and Quality Control (QA/QC), Utility Operations Maintenance and Regional Services.

The **Water Reclamation** department is responsible for the operation of the Main Street and Pensacola Beach WWTP, as well as the Bayou Marcus Water Reclamation Facility (WRF). The Pensacola Beach and Bayou Marcus facilities each received (NACWA) Silver Awards which recognizes member agency facilities for excellence in wastewater treatment as measured by their NPDES permit requirements.

The **Water Production and Lift Station Operations** department is responsible for water production and operation of the wastewater pump stations. 70% of ECUA's water operators are certified at the "A" level. The department is also responsible for the inspection and maintenance of 357 sewage lift stations. In 2008, this department staff accomplished the complete overhaul of one lift station and the replacement of 35 existing pumps. Each pump is evaluated individually to determine specific materials and installation details required.

The **Quality Assurance and Quality Control** division conducts routine water quality testing and analysis as required by the FDEP and the Florida Department of Health (FDOH) for the water system and the wastewater facility. Additionally, they assist with the clean-up of sewer spills and conduct follow-up sampling and analysis. In 2008, the department addressed an average of 20 water quality complaints per month by customer contact and, where required, in-home testing.

The **Utility Operations Construction and Maintenance** department is responsible for the maintenance of the Main St. WWTP, Bayou Marcus WRF, Pensacola Beach WWTP, lift stations (mechanical, electrical and communications), elevated and ground storage tanks, water pump/booster stations, and disinfection facilities.

The **Regional Services Division** provides maintenance on any utility lines such as sewer mains or water mains and the buried infrastructure.

2.1.2. Utility Services and Planning

The **Utility Services and Planning** department helps coordinate ECUA's intergovernmental and planning activities, while also providing support to the organization through its Facilities Maintenance Division and Courier functions. The department staff is also supportive of the entire organization through its oversight and maintenance of the ECUA phone system, providing a vital link to the customer base. Recently, the Facilities Maintenance Division:

- Managed and supervised the repairs and replacement of the roof on the Ellyson warehouse hangar at Ellyson Industrial Park, establishing material specifications, coordination of safety issues and property access, and final inspections through a third-party roofing inspector.

- Began the replacement of window air conditioning units at water wells and lift stations with wall hung units that boast a longer service life and easily obtainable repair parts.
- Initiated a pilot program by installing 30 ultraviolet (UV) light units in all the air handlers in the Customer Service Building and the System Support Building, helping ensure facilities on the Ellyson campus provide a safe and healthy environment for customers and employees as ultraviolet light is effective in killing mold spores, bacteria and viruses.
- Fabricated and installed new countertop as part of a remodeling project at the Bayou Marcus WRF laboratory.

2.1.3. Finance

The **Finance** department is responsible for the management of all ECUA's financial matters, including annual budgets, service rates, billing, payments, contract payment distributions, and payrolls. The Finance department also prepares ECUA's Comprehensive Annual Financial Report (CAFR) and maintains historical ECUA information including revenues, expenses, the numbers of customers, volume of water pumped and various other data for the previous decade, and a summary of major organizational accomplishments while identifying future goals. The Finance department received the Certificate of Achievement for Excellence in Financial Reporting from the Government Finance Officers Association (GFOA) for the 20th consecutive year.

2.1.4. Human Resources and Administrative Services

The **Human Resources and Administrative Services** department is responsible for internal communications, press releases, employee meetings, employee relations, benefits administration, recruitment and hiring, web site maintenance, and public relations. Four worksite committees meet regularly to enhance employee relations. This department also led the reorganization of ECUA's Regional Service Department's organizational structure from five to three regions in response to a management audit to allow for more effective customer service and better utilization of resources.

2.1.5. Information Technology

The **Information Technology** department maintains databases related to the System operations and assists with in-house requests for computer automation, timely access to data, and other supporting roles at a time when ECUA is experiencing growing demand for new and improved computer capabilities and communication. The Information Technology department also assists in utility billing, customer service support, and facilitates the generation of work orders. By implementing up-to-date technologies, the department aims to help other ECUA departments

improve productivity while reducing operating costs and improving customer service. Among the improvements implemented by the Information Technology department in 2008 were:

- The replacement of stand-alone servers with blade servers, which require less space and power to cool and operate.
- Beginning a network infrastructure upgrade.
- Assisting the Engineering department in utilizing GIS data for water modeling software.
- Developing training materials and GPS procedures for the location and cataloging of water meter positions.
- Expanding expertise in locating and mapping key ECUA facilities, such as sewer system manholes, allowing for the more efficient inspections.

2.1.6. Engineering

The **Engineering** department is responsible for overseeing design and construction of improvements throughout the System. The replacement of the Main Street WWTP remained the major focus of the Engineering department from 2005 to present, as the department managed and reviewed the work of consultants finalizing the CWRP design and construction. The department was deeply involved in acquiring the necessary permits for the project, and worked with Gulf Power and International Paper to identify reuse alternatives for the reclaimed water from the new plant. The involvement included negotiations with Gulf Power Company to enter into public/private partnership for treating and disposing of more than 20 million gallons per day (MGD) of reclaimed water expected to be discharged from the new CWRP.

The department is also responsible for overseeing ECUA's program of identifying and correcting I&I problems in the sewage collection system. The department manages contracts for the cleaning and inspection by TV camera of existing sewer lines, as well as for trenchless repair methods for any needed rehabilitation work.

2.1.7. Field & Customer Services

The Field Services & Customer Service department is composed of four areas - Risk Management, Environmental Controls, Customer Service and Regional Service Department. In 2008 each of the areas performed solidly. A brief description of each division's responsibilities is listed below:

1. Risk Management

- Reviews and revises the ECUA Emergency Response Plan Manual.
- Participates in training sessions on hurricane preparedness.
- Clears old insurance claims.

- Investigates accidents within 72 hours of the event while focusing on the accident's root cause, contributing factors, and corrective action.

2. Environmental Controls

Fats, Oils and Grease Program (FOG)/Backflow Prevention

- Collects used cooking oil as part of the FOG program.
- Distributes letters and brochures to residential areas where overflows of sewers have been a persistent problem.

Training

- Trains personnel at food service establishments on best management practices for controlling grease.
- Provides follow-up training for managers of cafeterias within the Escambia County School District.
- Makes presentations on the FOG program to Escambia County Health Department inspectors.

Community Involvement

- Participates in the annual Earth Day Celebrations at Bayview Park and St. Mark United Methodist Church, where grease disposal containers are distributed.
- Partners with the Institute for Human and Machine Cognition and Ensley.

3. Customer Service

- Receives billing questions.
- Set up new accounts.
- Monitors delinquent accounts.
- Download and monitor customer calls for training purposes.
- Three customer-service team leaders assist with customer inquiries.

4. Regional Service Department

- Inspects new sewer mains to ensure they meet standards
- Installs new remote read meters
- Installs rain guards in flood prone areas.

2.2. Staffing

As of March 1, 2010, ECUA has a total of 403 fulltime staff dedicated to the operations of the System. Table 2-1 below provides a breakdown by category.

**Table 2-1.
Staff by Department**

Department	Number
Administration	3
Finance	30
Information Technology	11
Human Resources	12
Engineering	25
Field & Customer Services	42
Regional Services	105
Utility Operations	34
Water Production and Lift Stations	67
Water Reclamation	63
Utility Services & Planning	11
TOTAL	403

2.2.1. Unfilled Positions

ECUA has been successful in filling vacant positions with an average length of time positions remain unfilled of approximately 30 days. As of March 1, 2010, ECUA has 13 unfilled positions. Approved vacant positions are posted on the ECUA website for a period of 10 days. Online applications are accepted and are screened by ECUA’s human resources department to identify the top qualified candidates. The top qualified candidate’s applications are submitted to the hiring manager to select candidates for interviews and final selection.

2.3. Training

ECUA maintains a broad training program, which includes technical and safety training along with training in interpersonal skills. The training goals are to improve employees’ skills on the job and to provide them with information to be safe and healthy both on and away from the job. ECUA offers an in-house classroom as well as field practical sessions taught by subject matter experts, designated competent person, and outside vendors. In certain situations, employees attend off-site training.



A listing of some of the topics covered in ECUA's training programs is provided below.

- | | |
|---------------------------------|-------------------------------------|
| Right-to-Know | Chlorine Leak Procedures |
| Chlorine Emergency Response | Toxic Chemical Spill Procedures |
| Confined Space Entry Procedures | Self Contained Breathing Apparatus |
| Confined Space Permit Entry | Toxic Gas Hazards |
| Shoring/Trenching | Work Zone Traffic Control |
| Personal Protection Equipment | Fire Safety |
| Electrical Lockout/Tagout | First Aid |
| CPR | Defensive Driving |
| Fork Lift | Large Equipment Operation |
| ECUA Safety Policies/Procedures | Supervisor Skills |
| ECUA Overview | Commercial Drivers License Training |
| Substance Abuse Awareness | OSHA 10-Hour |

ECUA has reported providing a training average of 6.4 hours/employee in 2007, 6.2 hours/employee in 2008, and 7.2 hours/employee in 2009. Based on a comparison to other utilities in the U.S. and Canada, ECUA's level of training is below average. The benchmarks for training hours per employee are summarized below in Table 2-2.

**Table 2-2.
Training Hours per Employee Utility Benchmarks**

Utility Category	Top Quartile	Median	Bottom Quartile
Serve < 500,000	34.7	22.1	11.8
Combined water & wastewater	34.9	22.5	12.7
South Region	30.7	20.3	11.3
All Utilities	31.7	20.0	11.8

Source: Benchmarking Performance Indicators for Water and Wastewater Utilities: 2007 Annual Survey Data and Analyses Report, American Water Works Association (AWWA).

2.3.1. Staff Certifications

ECUA staff maintain numerous certifications relevant to ECUA operations. As previously mentioned, ECUA had an advancement of water operators to higher certification levels, giving ECUA 70% of its operators certified at the "A" level. Table 2-3 provides a list of all staff certifications.

**Table 2-3.
Staff Certifications**

DESCRIPTION OF CERTIFICATION	Number
Licensed Water Operators	22
Licensed Wastewater Operators	52
Licensed Water Distribution Technicians	77
Commercial Driver's License (CDL) - Class A	150
CDL - Class B	85
Department of Motor Vehicles (DMV) Certified Trainer/Tester for CDL	2
PIT (Powered Industrial Truck) Forklift	65
Red Cross Instructors	4
First Aid/CPR	78
OSHA 10 - Hour	314
OSHA Outreach Trainers	2
Heavy Equipment Operators - Backhoe/Front End Loader	78
Mechanics Automotive Service Excellence (ASE) Certified	15
Maintenance of traffic (MOT) Intermediate Level Backhoe/Front End Loader	62
Refrigerant Recovery Certification	1
Certified Air Conditioning Contractor	1

2.4. Maintenance Practices

2.4.1. Work Orders

ECUA's Supervisory Control and Data Acquisition (SCADA) and Lift Station/Water Production Managers work together to issue work orders for the maintenance crews. The work orders are prioritized by the Lift Stations/Water Production Manager according to the level of urgency. Once a repair has been completed, the work order is given to the SCADA department for updating their records.

For maintenance issues associated with the water and sewer lines, work orders for repair are issued by both the Customer Service Division and the Regional Maintenance Supervisors. As with the lift stations and water wells, the work orders are prioritized according to the level of urgency (i.e. a leaking water or sewer main break would be repaired prior to a leaking water service). Once the work has been completed, a copy of the completed work order is sent back to its originator.

The SCADA division keeps log sheets of work orders placed and actions taken for problems that are initiated because of an alarm. For other maintenance needs, the records are stored in the Lift Stations and Water Production Department. ECUA owns and utilizes a Computerized Maintenance Management System (CMMS).

2.4.2. Preventive Maintenance

ECUA is proactive in their approach to maintenance. ECUA continually monitors pump station run times along with generating a daily run time report which identifies the pumps that run the most. Pump stations are checked on a daily basis. Pump station floats are also checked. Any pump stations which are not functioning correctly are pumped out on a weekly basis. The electrical systems are inspected on an as-needed basis. ECUA crews maintain the sites at each station.

Water storage tanks are periodically inspected and coated in order to preserve these assets. Although some corrosion was evident at certain tanks during inspection, the tanks generally appear to be well maintained.

2.4.3. Procurement of Parts

ECUA's practice is to maintain an adequate stockpile of spare parts (pumps, electrical panels, transfer switches, SCADA panels, antennas, etc.) in order to get equipment operational as soon as possible. Some necessary replacement parts are acquired through the requisition system. This can be challenging due to the cost of some replacement parts and the time required for purchasing items through the requisition system. Requirements to go through a bidding process can hinder receiving replacement parts in a timely manner. However, acquisition of repair parts required for emergency repairs can be sourced directly following ECUA's emergency purchasing guidelines and policies.

2.4.4. Record Drawings for Facilities

When ECUA was established in 1981 to manage and expand the water and wastewater systems of Escambia County and the City of Pensacola, record drawings were not readily available to ECUA from previous owners. However, ECUA has maintained record drawings for construction completed under its ownership since 1981. In addition, as the older facilities previously constructed by the County or the City are being replaced, record drawings are produced and kept for future use.

Similar to record drawings, the availability of Operation and Maintenance (O&M) manuals for pump stations (water and wastewater) that were obtained through the purchase of the County and City facilities is limited. However, O&M manuals for new construction are available either in the Engineering Department or the Lift Stations and Water Production files.

2.5. Emergency Planning and Management

ECUA maintains an Emergency Response Plan document, which was last revised in July 2010. This document includes emergency action plans to address hurricanes and other emergency situations. It also includes a number of checklists specific to the type of emergency situation. ECUA also maintains 26 mobile emergency power generators that can be used to power lift

stations during power outages. A widespread prolonged power outage, however, would necessitate ECUA bringing in outside emergency power generators. ECUA has mutual aid agreements with other agencies in the area to share emergency generators in the event of a hurricane or other disaster that would generate prolonged and widespread power outages.

ECUA maintains a two-tiered drought management plan to be implemented in the event of a drought or other water supply shortage. This plan is designed to protect and conserve water and includes an initial voluntary odd-even watering schedule followed by a mandatory odd-even watering schedule. ECUA has implemented the drought management plan on several occasions with success.

2.6. Conclusions

ECUA's organizational structure and staffing levels provide for efficient operation and maintenance of the System. ECUA maintains a broad training program to address the full range of training needs of its staff. ECUA's maintenance practices and systems are generally adequate for the proper operation of the System. Since 1981, ECUA has maintained detailed record drawings and operation and maintenance manuals of the System. The Bayou Marcus Water Reclamation Facility has recently earned a national award for regulatory compliance. To continue Bayou Marcus' outstanding operation, a larger generator was installed, allowing the entire plant to be run on generator power. ECUA emergency planning and response measures have been more than adequate to provide for reasonable operation during catastrophic events.

3. System Description

3.1. Overview

The ECUA System consists of a water supply and distribution system, and wastewater collection and treatment system serving the City of Pensacola and several surrounding communities. The System includes water supply wells, water storage tanks, a water distribution system, three wastewater treatment plants, a wastewater collection system, and wastewater pump stations. ECUA's service area covers most of southern Escambia County, which is located in the far northwestern part of Florida.

3.2. Administration and Central Offices

ECUA's center of operations is located in the Ellyson Industrial Park, at 9255 Sturdevant Avenue, Pensacola, Florida 32514. This is the headquarters for ECUA with most of the departments having a main office at this location. Several facilities are located at this site, including the administration building that houses the Administration department, Finance department, customer service, and call center. ECUA's billings and collections are performed at this site. On the same campus, in a separate facility, are the Human Resources and Administrative Services department, Water Production and Lift Station Operations Department, and the board room. A third facility includes the Engineering department and the Regional Services department. In addition, the headquarters for one of the three regions is on this site with an associated utility maintenance garage. As part of ECUA's CWRP program, a new laboratory is being constructed at the Ellyson site, and a new emergency operations support building is also planned for construction.

3.3. Water System

ECUA's raw water source is from the Sand-and-Gravel Aquifer which extends from the surface level to a maximum depth of approximately 1600 feet in the southwestern portion of the County and is underlain by thick clay strata. Approximately 410 MGD is the Northwest Florida Water Management District estimate of the daily outflow from the aquifer. ECUA's water system has a pumping capacity of 76.1 MGD. Currently the annual average demand on the water utility system is approximately 35.0 MGD, with a maximum single day demand of 61.0 MGD.

The ECUA water system serves an area of approximately 300 square miles and includes the entire City of Pensacola and parts of unincorporated Escambia County. The distribution system is operated as two pressure zones.

Water is obtained from 32 water supply wells and transmitted through more than 1,700 miles of mains to more than 88,470 customer as of April 2009. The water supply wells are remotely controlled and monitored from ECUA's SCADA center. Each well has a flow meter and ECUA has implemented an annual source meter calibration process. ECUA's water mains are constructed of various materials with a majority of the system being installed over the past 40 years.

The water system also includes 12 water storage tanks with a total storage capacity of approximately 14.0 million gallons. Tank water levels are monitored remotely via ECUA's SCADA center. Pensacola Beach has three storage tanks and a booster station. The booster station is located at a ground-level storage tank. An elevated storage tank, two ground storage tanks, and a pumping station are utilized to boost water pressure for the Perdido Key area.

In 2008 and 2009, in order to increase accuracy of its customer meters, ECUA replaced all customer meters with new remote read meters. These meters will help assure ECUA is accurately measuring the water it sells and accurately calculating its unaccounted for water.

Additional information regarding ECUA's customer base, meters, historical water usage and projected future water demands is provided in the Water and Wastewater Feasibility Analysis report included in Appendix B.

3.4. Wastewater System

As of March 2010, ECUA's existing wastewater system consists of three wastewater treatment plants, approximately 359 lift stations, and approximately 1,100 miles of wastewater lines. The 20 MGD Main Street WWTP, which was placed into service in its current process configuration in February 1980, treats wastewater generated primarily in the downtown service area and much of the surrounding unincorporated area. The Main Street WWTP was designed to meet stringent effluent discharge limitations, but the facility was damaged in 2004 by Hurricane Ivan. The two other wastewater treatment plants within the system have an aggregate capacity of 10.6 MGD, and consist of the Bayou Marcus WRF with 8.2 MGD, and the Pensacola Beach WWTP plant with 2.4 MGD capacities. The current annual average flow received at the Main Street and Bayou Marcus plants is 23.4 MGD, which have a combined capacity of 28.2 MGD. The annual average flow to the Pensacola Beach plant is 0.8 MGD, with a maximum flow of 1.2 MGD.

The wastewater system includes approximately 850 miles of gravity sewer lines and 250 miles of force main. ECUA's gravity sewers are primarily constructed of vitrified clay pipe. The force mains are primarily constructed of polyvinyl chloride and ductile iron and most were constructed in the last 40 years. The wastewater pump stations are remotely monitored by ECUA's SCADA center. The wastewater system serves approximately 65,000 customers as of April 30, 2009.

3.4.1. Main Street WWTP Replacement with the CWRP

A major focus of ECUA's CIP is to address the pending wastewater system issues in an effort to facilitate the retirement of the Main Street WWTP in 2010, corresponding with the commissioning of the CWRP see Figure 3-1. The CWRP will be located 15 miles to the north of the Main Street WWTP and will have the following benefits:

- Elimination of the surface water discharge from the Main Street Plant, which currently goes into Pensacola Bay. The CWRP will have no surface-water discharge.
- Removal of ECUA's primary treatment facility from a storm surge, flood-prone area; thus reducing the threat of future health hazards from the discharge of untreated sewage and loss of WWTP function due to hurricane events.
- Reliable wastewater treatment (CWRP is being constructed to withstand a Category 5 hurricane and will have reject storage with increased treatment reliability).
- Opportunity for reuse of the reclaimed water from the CWRP. ECUA is collaborating with industrial partners, including Gulf Power and International Paper, for reuse of the CWRP's reclaimed water.
- State-of-the-art technology and built-in redundancy.

The CWRP will consist of the following treatment processes designed for an average daily flow of 22.5 MGD:

- Headworks
- Aerobic biological treatment
- Clarification
- Filtration
- Chlorine Disinfection
- Odor Control
- Biosolids processing and drying

The CWRP project also includes the following key components to accommodate the replacement of the facility and transmission of the treated effluent:

- Demolition of the Main Street WWTP
- Land acquisition
- Raw wastewater pumping and transmission (including three new regional lift stations, more than 20 miles of transmission mains, and upgrades and modification to numerous existing lift stations)
- Reclaimed water, transmission and disposal system



Figure 3-1.
New Central Water Reclamation Facility

3.4.2. Bayou Marcus Water Reclamation Facility

The Bayou Marcus WRF is authorized to discharge 8.2 MGD of reclaimed water to a receiving wetland system. The wetland system lies adjacent and discharges to Bayou Marcus, a tributary of Perdido Bay near Pensacola, Florida. Discharge of reclaimed water to the Bayou Marcus wetland began in May of 1998. The wetland is split by Bayou Marcus Creek into the Northern and Southern portions. Currently, discharge is only occurring in the Northern portion, which is approximately 650 acres in size. Also, with FDEP's approval, two surface water monitoring stations located in the Bayou Marcus wetlands were relocated due to hurricane damage.

The discharge of consistently high quality reclaimed water has been key in the restoration of this wetland system, which was previously damaged due to illegal logging.

The Bayou Marcus WRF consists of the following:

- Wastewater Pumps
- Screens
- Biological Treatment Unit
- Clarifiers
- Filtration Unit
- Ultra Violet Disinfection Unit
- Discharge to wetlands

Figure 3-2 below depicts a flow diagram of the Bayou Marcus WRF.

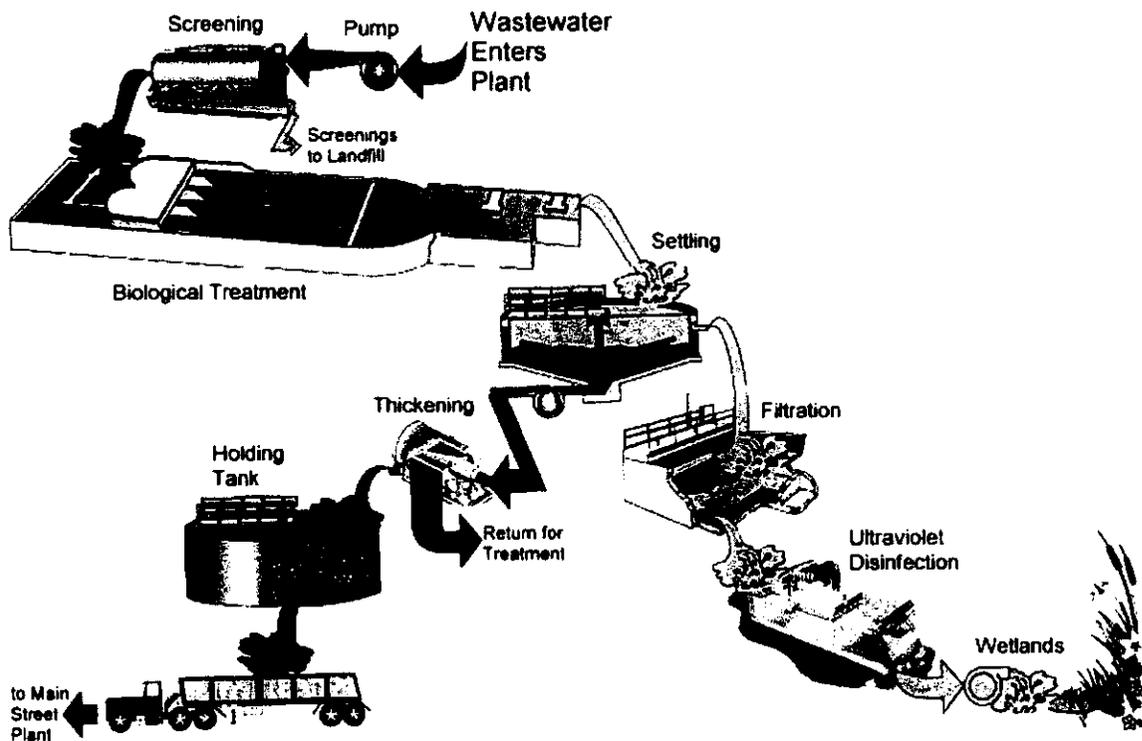


Figure 3-2.
Bayou Marcus WRF Treatment Process Diagram

3.4.3. Pensacola Beach WWTP

The permitted capacity of the Pensacola Beach WWTP is 2.4 MGD on a maximum month basis. The treatment process is made up of two parallel treatment trains each with a design capacity of 1.2 MGD. Incoming flow is screened prior to being split to the two treatment trains, each consisting of the following processes: influent pumping, grit removal, aeration and secondary clarification. Following clarification, the flow from each treatment train comes to individual wet wells from which it is pumped to the denitrification filters and then UV disinfection and flow metering. A 2.4 million gallon holding tank is available for upset storage. The lift station that pumps the flow to the denitrification filters can also pump clarified effluent to the holding tank as needed. The outfall line extends approximately 400 feet into Santa Rosa Sound for effluent disposal.

Residuals treatment consists of sludge wasting, a sludge holding tank for each treatment train with aeration and mixing, and a sludge loading pump station. Concentrated sludge is hauled to the Main Street WWTP by ECUA-owned and operated tanker trucks, where it is thickened, dewatered, and dried. The dried product is sold and the contract is bid or extended yearly.

Wastewater treatment of Pensacola Beach has been provided since 1952. The plant was most recently expanded from 1.2 MGD to 2.4 MGD in the late 1980's. The plant was recently upgraded in 2000–2002, and again in 2006 and currently is being upgraded to high level disinfection for reuse on Pensacola Beach as noted below.

3.4.4. SRIA Reuse Water System

The current wastewater treatment permit includes provisions to construct additional facilities (pumping, chlorination, dechlorination, and monitoring) to provide the Santa Rosa Island Authority (SRIA) with reclaimed water from the Pensacola Beach WWTP. SRIA made this request of ECUA to be able to irrigate public areas with reuse water. SRIA has constructed a 12-inch distribution main on Via DeLuna from Petersee Lane east past Avenida 23. This system is connected to the existing irrigation system west of Petersee Lane on Via DeLuna and Pensacola Beach Road and provides irrigation to the median and grassy areas along the newly expanded four-lane roadway. This irrigation system is currently supplied from the potable water system. The current permitted capacity of the SRIA reuse water system is 60,000 gallons per day (gpd). The modifications at the wastewater treatment plant are currently under construction with planned completion in August 2010.



4. Condition of System

4.1. Introduction

ECUA owns a large variety of assets, including land, buildings, wells, water storage tanks, water pump stations, wastewater treatment facilities and pump stations, outfalls, buried infrastructure, vehicles, and water meters. Malcolm Pirnie has assessed the condition of the ECUA System through an inspection program of major portions of the ECUA System. Inspections were performed between December 2008 and January 2009. The purpose of these inspections was to identify the overall condition of the facilities to determine if they are being operated and maintained in a manner to achieve their operating goals. ECUA's capital improvement program is re-evaluated and re-prioritized each year. These inspections are to help ensure ECUA's capital improvement program is aligned with identified needs.

Table 4-1 presents the categories of ECUA's assets that were inspected as part of the preparation of this report, along with the total quantity of ECUA assets, number of facilities inspected, and percent of total facilities inspected. In total, 210 inspections were performed out of a total of 410 facilities. The wastewater pump station inspections included the top 50 pump stations in terms of pumping capacity and a sampling of the smaller pump stations. Inspections were performed throughout the ECUA service area in order to obtain a representative sampling of the assets. No inspections were performed on ECUA's other assets, such as meters, outfalls, buildings, land, and other ancillary facilities; however, a discussion on buried infrastructure is included in Section 4.7. ECUA has embarked on a progressive program to reduce I&I within their system.

Table 4-1.
Percent of Assets Inspected by Asset Category

Asset Category	Total ECUA Facilities	Inspections Performed	
		Quantity	Percent ⁽¹⁾
Wells ⁽²⁾	32	7	22
Water Pump Stations	3	2	66
Water Storage Tanks ⁽³⁾	11	10	67
Wastewater Treatment Plants	4	3 ⁽⁴⁾	75
Wastewater Pump Stations	359	188	52
Total	409	210	51

(1) Percentages may not add to 100% due to rounding.

(2) ECUA has 10 additional wells indicated as abandoned.

(3) ECUA has one additional tank that is not in service.

(4) Three wastewater treatment plants were inspected which include the Bayou Marcus, Pensacola Beach WWTP and the CWRP plant currently being constructed. The Main Street Plant was not inspected since it is planned to be decommissioned in the fall of 2010.

With the exception of wastewater treatment plants, each asset category was inspected using an inspection form, criteria, and criteria weighting customized to that specific asset category. The evaluation criteria were chosen from the following list for each asset inspection. These criteria are described in more detail in each of the asset class subsections in this Section 4.

- Compliance – degree to which the performance of the asset is in compliance with its permit limits and regulatory requirements.
- Operations / Process Control – degree to which asset condition and features allow it to be operated and controlled to meet its performance objectives.
- Equipment / Maintenance – assessment of the adequacy of the maintenance practices and the condition of the facility.

With the exception of the wastewater treatment plants, none of the inspected facilities are staffed full-time. Staffing and training issues are discussed and evaluated in Section 2.

Within each of the evaluation criteria, the asset inspected was assigned a numerical rating between 0 and 3. An overall facility rating was then determined based on the calculation of a weighted average of the ratings for each criterion. The numerical ratings are described generally below and in more detail in each of the asset class subsections in this Section 4:

<u>Rating</u>	<u>Range</u>
• Good (Most of the criteria are adequately addressed)	2.5 – 3.0
• Adequate (Many of the criteria are adequately addressed)	1.5 – 2.4
• Poor (Many of the criteria are not adequately addressed)	0.5 – 1.4
• Unacceptable (Most of the criteria are not adequately addressed)	0.0 – 0.4

An overview of the approach and results of the inspections for each asset category are discussed separately below. The inspection forms for each inspection are provided in Appendices to this report.

4.2. Wells

ECUA’s water supply is provided solely by groundwater wells which deliver chlorinated water with varying levels of treatment to the distribution system. Each facility was evaluated under the following categories and an overall rating was calculated using the following weighting percentages:

- Compliance 40%
- Operations/Process Control 30 %
- Equipment/Maintenance 30 %

4.2.1. Inspection Results

A total of 7 wells were inspected. Table 4-2 provides a summary of the facility ratings by each of the evaluation criteria, as well as the overall facility rating. Of the 7 wells inspected, good ratings were given to 100% of the inspected wells. ECUA has reported no violations of primary drinking water standards for any of the wells over the past five years. ECUA's 2008 Annual Water Quality Report was reviewed and also indicates no treated water quality compliance violations.

**Table 4-2.
Wells**

Number and Percentage of Ratings by Category

Rating Range	Compliance		Operations/Process Control		Equipment/Maintenance		Overall Rating	
	Number	Percent ⁽¹⁾	Number	Percent ⁽¹⁾	Number	Percent ⁽¹⁾	Number	Percent ⁽¹⁾
Unacceptable (0-0.4)	0	0	0	0	0	0	0	0
Poor (0.5-1.4)	0	0	0	0	0	0	0	0
Adequate (1.5-2.4)	0	0	0	0	2	29	0	0
Good (2.5-3.0)	7	100	7	100	5	71	7	100
Average Rating	3.0		3.0		2.5		2.8	

⁽¹⁾ Percentages may not add to 100% due to rounding.

The primary deficiencies noted in decreasing order of prevalence are:

- Lack of containment around lime storage and processing equipment.
- Unlabeled chemicals found on site.

4.2.2. Ground Water Rule

The purpose of the Ground Water Rule (GWR), published November 8, 2006, EPA, is to provide increased protection against microbial pathogens in public water systems (PWSs) that use ground water sources. All PWSs that use ground water must comply with the rule. The GWR includes the following requirements:

- Sanitary surveys are required for all ground water systems. The initial sanitary survey for each community water system (CWS) must be conducted by December 31, 2012 and for non-community water systems by December 31, 2014. Surveys must be repeated depending on system size and treatment capabilities.

- Triggered Source Water Monitoring is required for systems that have total coliform-positive samples in the distribution system and do not treat to at least 4-log inactivation/removal of viruses prior to the first customer.
- Exceptions to Triggered Source Water Monitoring can be made if it is determined that the routine Total Coliform Rule sample contamination was caused by a deficiency in the distribution system.
- Source Water Assessment Monitoring may be required by the FDEP; samples positive for fecal indicators will require public notification.
- Hydrogeologic Assessments may be conducted by the governing regulatory agency to determine if sources are sensitive to contamination. Systems are required to provide any existing information that may facilitate the FDEP's assessment.
- Corrective Action is required if a system has a significant deficiency, as identified by the FDEP, or detects a fecal indicator in source water samples.

Water systems must report the completion of the corrective action, failure to meet disinfection or treatment performance, and exceptions to Triggered Source Water Monitoring.

Potential Impact on ECUA: The GWR has two primary requirements: completing sanitary surveys and Triggered Source Water Monitoring. Because systems will not be completing their own surveys, ECUA will need to work closely with the FDEP and provide it with all the necessary information to complete the sanitary surveys. The rule also requires Source Water Monitoring. It is important to note that the rule gives FDEP many enforcement options. Hence, ECUA and FDEP can work together to determine how to implement the rule.

4.2.3. Conclusions

The wells are in good condition and are expected to continue to serve their intended function of potable water supply. The deficiencies noted do not threaten ECUA's ability to deliver quality water and do not require major capital investments to address. ECUA has reported no violations of primary drinking water standards over the past five years. The future impact of the GWR on ECUA's water system is unknown at this time, but could require significant capital improvements or closure of certain wells.

4.3. Water Pump Stations

The water pump stations inspected are located at water storage tanks. Each facility was evaluated under the following categories and an overall rating was calculated using the following weighting percentages:

- Operations/Process Control 50%
- Equipment/Maintenance 50%



Because the water pump stations do not treat the water, the compliance category is not significant to the evaluation of water pump stations.

4.3.1. Inspection Results

A total of two water pump stations were inspected. Table 4-3 provides a summary of the facility ratings by each of the evaluation criteria, as well as the overall facility rating. Both water pump stations inspected were given good ratings.

**Table 4-3.
Water Pump Stations**

Number and Percentage of Ratings by Category

Rating Range	Ops/Process Control		Equipment/ Maintenance		Overall Rating	
	Number	Percent ⁽¹⁾	Number	Percent ⁽¹⁾	Number	Percent ⁽¹⁾
Unacceptable (0-0.4)	0	0	0	0	0	0
Poor (0.5-1.4)	0	0	0	0	0	0
Adequate (1.5-2.4)	0	0	0	0	0	0
Good (2.5-3.0)	2	100	2	100	2	100
Average Rating	3.0		2.9		2.9	

⁽¹⁾ Percentages may not add to 100% due to rounding

The following deficiencies were noted at one of the two pump stations:

- Seal water line leaking on one pump.
- Flow meter vault leaking.
- Unlabeled chemical stored on site.
- Generator operation not demonstrated during inspection.

4.3.2. Conclusions

The water pump stations are in good condition and are expected to continue to serve their intended function of delivering drinking water to the distribution system. The deficiencies noted do not pose an immediate threat to the function of the pump stations and can be addressed without the need for major capital improvements.

4.4. Water Storage Tanks

Water storage tanks include elevated tanks and ground-level tanks. Each facility was evaluated under the following categories and an overall rating was calculated using the following weighting percentages:

- Operations/Process Control 50%
- Equipment/Maintenance 50%

Since water storage tanks are not used to treat the water, there are no compliance issues considered in their evaluation.

4.4.1. Inspection Results

A total of 10 water storage tanks were visited, but only nine were inspected since one tank was in the process of being removed from service during the inspection. Table 4-4 provides a summary of the facility ratings by each of the evaluation criteria, as well as the overall facility rating. All of the tanks inspected received an overall good rating.

**Table 4-4.
Water Storage Tanks
Number and Percentage of Ratings by Category**

Rating Range	Ops/Process Control		Equipment/Maintenance		Overall Rating	
	Number	Percent ⁽¹⁾	Number	Percent ⁽¹⁾	Number	Percent ⁽¹⁾
Unacceptable (0-0.4)	0	0	0	0	0	0
Poor (0.5-1.4)	0	0	0	0	0	0
Adequate (1.5-2.4)	1	11	6	67	0	0
Good (2.5-3.0)	8	89	3	33	9	100
Average Rating	2.9		2.6		2.7	

⁽¹⁾ Percentages may not add to 100% due to rounding.

The primary deficiencies noted in decreasing order of prevalence are:

- Minor corrosion on steel tank, ladder access hatch or bolts.
- No exterior lighting.
- Mold/mildew on tank exterior.

- Insufficient security fence (1 foot gap at bottom fence).
- Leaking pressure gauge.

4.4.2. Conclusions

The water storage tanks are in good condition and are expected to continue to serve their intended function of providing potable water storage throughout the distribution systems. None of the noted deficiencies pose an immediate threat to the function of the tank. The primary deficiency noted was some degree of corrosion on the steel storage tanks. ECUA implements periodic tank inspections and maintenance and keeps records of these activities. It is essential that ECUA budget and implement a routine tank inspection and coating program for all steel tanks in order to preserve these assets.

4.5. Wastewater Treatment Plants

4.6. Main Street WWTP

The Main Street WWTP experienced violations of its discharge permit in 2004 and 2005 as a result of damage by Hurricane Ivan in 2004, and infiltration and inflow in its collection system. The deficiencies at this plant are being addressed by the planned closure of this WWTP in late 2010 corresponding with the commissioning of the CWRP. The CWRP will be a new facility located 15 miles to the north of the Main Street WWTP. Because of the planned decommissioning of the Main Street WWTP, the condition and performance of this WWTP was not evaluated in detail.

4.7. CWRP

The CWRP is a new facility under construction and therefore has no operational or performance history to evaluate. The design intent of the CWRP provides for a reliable treatment plant to meet ECUA's wastewater treatment needs.

4.8. Bayou Marcus WRF

The Bayou Marcus WRF is authorized to discharge 8.2 MGD of reclaimed water to the Bayou Marcus receiving wetland system. Bayou Marcus remains in excellent operating condition with improvements such as the filter replacements in 2006 and replacement of four aerators in 2009. These upgrades have improved performance and reduced maintenance requirements at the plant. In general, the equipment at the Bayou Marcus plant has been well maintained and is in good working order. To enhance reliability of this plant, ECUA installed additional generator capacity to allow for operation of the entire plant during power outages.

Planned capital improvements include upgrades to the head works and expansion of the existing effluent wetland system. Bayou Marcus again earned a national award for regulatory

compliance. Since 1994, ECUA's Pensacola Beach and Bayou Marcus WWTP's have won between them 17 Gold or Silver Awards from the National Association of Clean Water Agencies.

4.9. Pensacola Beach WWTP

Wastewater treatment on Pensacola Beach has been provided since 1952. The Pensacola Beach WWTP was most recently expanded from 1.2 MGD to 2.4 MGD in the late 1980's. The plant was recently upgraded in 2000–2002 and again in 2006 with new process tanks. As discussed in Section 3.4, the plant is undergoing upgrades in order to provide SRIA with reclaimed water for irrigation purposes. The Pensacola Beach WWTP is in good operating condition. Due to damage from hurricane Ivan, treatment train No. 2 was replaced. With the use of dry pits, submersible pumps, elevated electrical equipment, and new aeration equipment, this treatment train was designed to reduce potential damage from a Category 5 hurricane.

4.9.1. Conclusions

ECUA's Bayou Marcus WRF and Pensacola Beach WWTP are in good operating condition and are providing adequate service for treatment and disposal of wastewater. The Main Street WWTP has suffered from performance deficiencies in the past, but is scheduled to be closed in late 2010 and is therefore not evaluated in detail. The new CWRF replacing the Main Street WWTP will eliminate the current surface discharge to Pensacola Bay and provide for recycling of the majority of the treated water effluent by power companies and industries. The CWRF includes a transmission system to convey wastewater to this inland facility

4.10. Wastewater Pump Stations

In general, ECUA's pump stations predominantly use wet pit type submersible pumps, although several dry pit pump stations were also inspected. There was a wide range of pumping capability from less than 100 gallons per minute (gpm) to over 4,000 gpm.

Each facility was evaluated under the following categories and an overall rating was calculated using the following weighting percentages:

- Operations/Process Control 50%
- Equipment/Maintenance 50%

Because the wastewater pump stations do not treat the wastewater and there are no effluent standards, the compliance category is not significant to the evaluation of wastewater pump stations.



4.10.1. Inspection Results

A total of 188 wastewater pump stations were inspected. Table 4-5 provides a summary of the facility ratings by each of the evaluation criteria, as well as the overall facility rating. Poor ratings were given to 3% of the inspected wastewater pump stations and the balance of the pump stations were rated as adequate or good. Although only five wastewater pump stations received an overall poor rating, it should be noted that 13% of the wastewater pump stations inspected received an unacceptable or poor rating for the Operations/Process Control Category.

**Table 4-5.
Wastewater Pump Stations
Number and Percentage of Ratings by Category**

Rating Range	Ops/Process Control		Equipment/ Maintenance		Overall Rating	
	Number	Percent ⁽¹⁾	Number	Percent ⁽¹⁾	Number	Percent ⁽¹⁾
Unacceptable (0-0.4)	4	2	0	0	0	0
Poor (0.5-1.4)	20	11	3	2	5	3
Adequate (1.5-2.4)	156	83	44	23	131	70
Good (2.5-3.0)	8	4	141	75	52	28
Average Rating	1.8		2.7		2.2	

⁽¹⁾ Percentages may not add to 100% due to rounding.

The primary deficiencies noted at the pump stations are provided under two groupings below in decreasing order of prevalence. Items in the Major Issues grouping resulted in larger deductions in the scoring for that pump station. Items in the Minor Issues grouping typically resulted in a 0.1 to 0.2 deduction under the respective category. Refer to Appendix F for a complete listing of all deficiencies noted for each pump station.

Major Issues

- No emergency generator located at pump station or function not demonstrated.
- Severe corrosion of concrete wetwell, including exposed aggregate and in some cases active infiltration through wall or around pipe penetrations.
- Documented overflow associated with pump station over the past three years.
- Pump station has only one pump.

Minor Issues

- No wetwell exhaust fan.
- No exterior lighting at pump station.
- Inadequate security fence or locks.
- No emergency phone number posted such that it is visible from outside the station.
- No weather box for backflow preventer on potable water supply or weather box not secured.
- No potable water supply at pump station.
- No backflow preventer on potable water supply.

Although many pump stations do not have backup power generators, ECUA has approximately 26 mobile emergency generators located throughout its service area which it can deploy within a reasonable time frame. However, if a wide-spread power outage were to occur of extended duration, these mobile generators would be insufficient to maintain the operation of the system. In such an emergency situation, ECUA has indicated it would be able to reach out to other communities and agencies to borrow mobile generators.

4.10.2. Conclusions

The wastewater pump stations generally range from adequate to good condition. Remote monitoring of wastewater pump stations through the SCADA system is sufficient to provide prompt notice of problems and reduce the frequency and duration of bypasses. Approximately 13% of the wastewater pump stations reported bypasses or local overflows over the past three years. Wetwells at approximately 15% of the pump stations have significant corrosion of the concrete walls or active infiltration into the wetwell. Repairs or replacement of wetwells at these pump stations is necessary for the continued proper operation of the wastewater collection system. Pump stations are being addressed as a part of the I&I program. Given the relative frequency and duration of power outages reported by ECUA, ECUA's approach to providing backup emergency power to its pump stations is reasonable although less reliable than having dedicated emergency generators located at each pump station.

4.11. Buried Infrastructure

ECUA's buried infrastructure (i.e., water mains and sanitary sewers and force mains) was not physically inspected as part of the preparation of this report. However, a limited assessment of the buried infrastructure is provided below based on certain available system metrics approach and ECUA's approach to managing these assets.

4.11.1. Water Distribution System

ECUA owns over 1,700 miles of water pipelines, which include both transmission and distribution pipes, with sizes ranging from 1-inch to 24-inches. ECUA's water system has an annual budget item in FY2011 through FY 2014 for the "Replacement of Antiquated Water Lines". Water distribution projects are incorporated into the CIP and lines are replaced as funding permits.

During the period of January 2007 through October 2009, based on the 2009 Consumption/Production Billed spreadsheet, 10.5% of the potable water produced and distributed by ECUA was unaccounted for water. Unaccounted for water is calculated as follows:

$$\text{Unaccounted for Water} = \frac{(\text{volume produced} - \text{volume billed} - \text{volume unbilled but authorized})}{\text{volume produced}}$$

Potential sources of unaccounted for water include:

- Theft of water (from hydrants or unauthorized connections to system).
- Metering deficiencies at wells.
- Leakage in water mains.
- Water main breaks.
- Storage tank overflows and leaks.
- Hydrant use for firefighting and other authorized, but unaccounted for uses.

Based on a comparison to other utilities in the U.S. and Canada, ECUA's unaccounted for water is above the median but within the normal range of comparable utilities. In a recent utility survey, the median unaccounted for water for all survey participants was 8.5%². The benchmarking data is broken down and summarized under various different categories of participating utilities. The categories most applicable to ECUA and referenced throughout this report are:

- Utilities serving a population between 100,001 and 500,000.
- Utilities in the South Region.
- Utilities providing both water and wastewater services.
- All Utilities (includes 100% of the survey participants).

² "Benchmarking Performance Indicators for Water and Wastewater Utilities: 2007 Annual Survey Data and Analyses Report, published by the AWWA".

The benchmark results for unaccounted water published in the report are summarized below in Table 4-6:

**Table 4-6.
Unaccounted for Water (%) Utility Benchmarks**

Utility Category	Top Quartile	Median	Bottom Quartile
Serve < 500,000	4.0	7.2	10.2
South Region	3.8	8.9	14.1
Combined W & WW	3.7	8.5	13.0
All Utilities	4.2	8.5	12.5

Source: Benchmarking Performance Indicators for Water and Wastewater Utilities: 2007 Annual Survey Data and Analyses Report, AWWA.

As indicated above, ECUA's unaccounted for water is on the high side of the normal range of unaccounted for water compared to other utilities and ECUA should continue efforts to control unaccounted for water.

Customer Meters: Since 2008, ECUA has replaced all residential customer meters with automated meters. No meter in the entire system is older than two years. The 5/8-inch and 1-inch meters are tested and replaced upon customer request; larger meters are tested annually as a minimum and high-use meters are tested twice annually. Repairs or replacements are made on an as-needed basis.

Pipe Repair and Replacement: Approximately \$5 million(M) has been spent over the last three years replacing approximately 88,000 linear feet of pipe of varying diameters. Based on data from the last three years, ECUA is replacing about 0.3% of their water system each year. At this rate, a complete system renewal would take more than 300 years. The overall goal is to replace 100% while the focus is on the "antiquated" lines where there are pressure or water quality problems, specifically with the old 2-inch and smaller galvanized lines. The budget for the "Replacement of Antiquated Water mains" over the next five years is as follows:

- 2010 - \$1M
- 2011 - \$500K
- 2012 - \$1M
- 2013 - \$1M
- 2014 - \$1M



Given that much of the ECUA distribution system is less than 40 years old, the current rate of water main replacement is not unreasonable. However, as the system ages over time, ECUA may need to increase its rate of water main replacement in the future to maintain unaccounted for water within an acceptable range.

Leak Monitoring and Control: If a leak is reported or identified by field personnel, ECUA repairs it. ECUA previously entered into a leak detection contract with a private company. This contract provided payments based on verifiable leaks found in the system. The company did not find sufficient leaks to make it cost beneficial to continue the contract.

ECUA has reported an average of 3,781 leaks in the water mains and services for which it is responsible per year for fiscal years 2007 through 2009. Using over 1,700 miles of water mains and 587 miles of service lines (assuming 35 feet per service and 88,500 services), this results in an average leak occurrence rate of approximately 162 leaks per 100 miles of water distribution piping per year. As shown in Table 4-7, ECUA's rate of leak occurrence is very high compared to other utilities in the U.S. and Canada. More than 90% of the leaks are associated with the service lines. ECUA is aware of the severity of the service line leaks and has committed CIP funding for service line replacement on an annual basis since FY1995. Ignoring service lines, ECUA's leak occurrence rate over this same time period would be approximately 17 leaks per 100 miles of water mains.

Table 4-7.
Water Distribution System Integrity Utility Benchmarks
(Annual leaks and breaks per 100 miles)

Utility Category	Top Quartile	Median	Bottom Quartile
Serve < 500,000	22.1	35.6	60.0
South Region	28.2	52.8	103.7
Combined W & WW	16.6	41.9	101.2
All Utilities	18.6	37.7	71.0

Source: Benchmarking Performance Indicators for Water and Wastewater Utilities: 2007 Annual Survey Data and Analyses Report, AWWA.

Theft: ECUA has indicated that water theft has not been a significant issue.

4.11.2. Wastewater Collection System

ECUA's wastewater collection system piping consists of gravity collection sewers and force mains. ECUA experiences periodic sewer overflows or spills due to a variety of reasons including force main breaks, grease blockages or excessive flows due to inflow and infiltration during wet weather events. Table 4-8 provides the frequency of overflows and percent caused by force main breaks and grease blockages. Reported overflow rates are based on over 1,100 miles of sewers.

**Table 4-8.
ECUA Sewer Overflow Rate**

Overflow Category	2007	2008	2009
Overflows per 100 miles	6.2	6.9	6.2
% overflows from force main breaks	37%	31%	25%
% overflows from grease blockages	34%	36%	27%

As shown in Table 4-9, ECUA's overflow rate is above the median but within the normal range compared to other utilities in the U.S. and Canada.

**Table 4-9.
Sewer Overflow Rate Utility Benchmarks
(Annual overflows per 100 miles)**

Utility Category	Top Quartile	Median	Bottom Quartile
Serve < 500,000	1.1	2.3	5.4
South Region	1.3	3.2	10.7
Combined W & WW	1.0	2.7	7.6
All Utilities	1.0	2.8	7.1

Source: Benchmarking Performance Indicators for Water and Wastewater Utilities: 2007 Annual Survey Data and Analyses Report, AWWA.

Consent Orders: On November 3, 2006, ECUA entered into a Consent Order with the FDEP resolving domestic wastewater issues relating to the Main Street WWTP. Upon review of monthly Discharge Monitoring Reports (DMRs) for 2004 and 2005, ECUA violated the permit effluent limits for numerous constituents. These violations were associated with high levels of stormwater inflow and infiltration entering the system resulting in increased flows at the treatment plant. Following the Consent Order, ECUA submitted a response plan to FDEP scheduled to reduce inflow and infiltration into the system by 30%. ECUA has been actively implementing its plan for incorporating I&I reduction projects into its CIP plan.

Pipe Maintenance, Repair and Replacement: As indicated above, the two largest causes of these overflows are force main breaks and grease blockages. ECUA recognizes that force main breakage is an issue that needs to be addressed; historically, maintenance of force mains has only been performed when pipe failures occur. ECUA has recently identified some of its force mains that are in the worst condition and have made plans for replacement/rehabilitation. ECUA has no formal program for the replacement of force mains. Replacement or rehabilitation is based on recommendations from regional coordinators and identified problems are incorporated into CIP projects.

ECUA runs a maintenance program for their entire wastewater collection system, with the goal of cleaning and televising their entire system on a regular schedule and frequently cleaning lines that commonly have blockages. Additionally, ECUA is addressing the grease blockage problem through a new fats, oils and grease (FOG) program, with better inspection of commercial users and public education of residential users. Between 2008 and 2009, ECUA has seen a 33% decrease in the number of overflows caused by grease blockages.

In late 2006, ECUA initiated a system wide Sanitary Sewer Evaluation Survey (SSES) consisting of smoke testing, dye testing, night-time flow observations, permanent flow monitoring, and closed circuit televising to identify deteriorated portions of their wastewater collection system. Approximately 20% of the collection system has been targeted out of the SSES for rehabilitation and is expected to be in construction over the next several years. In 2008, contractors cleaned and inspected 137,000 linear feet of sewer pipe (more than 2% of the sewers), repairing 25,000 linear feet using trenchless lining methods. Field investigation has been completed on the Pensacola Beach Sewer Basin, as well as in a major portion of the downtown Pensacola and Cantonment areas. ECUA is budgeting approximately \$6M annually over the FY2010-2014 time period for I&I reduction.

4.11.3. Conclusions

ECUA's unaccounted for water and the frequency of sewer overflows are above the median, but within the normal range when compared to other utilities. Due to the high occurrence of service line leaks, ECUA's water leak occurrence rate is very high when compared to other utilities, indicating an ongoing need for renewal and replacement of water distribution piping. ECUA's customer water meters are new and provide reliable water sales information. The rate of distribution system renewal and replacement is reasonable given the age of the system, but over time will need to increase as the system ages in order to maintain system integrity. ECUA's FOG program is helping to reduce the frequency of sewer overflows caused by grease blockages. Under the FDEP Consent Order, ECUA is implementing sanitary sewer evaluations and repair plans to reduce levels of I&I in its wastewater collection system. Through the implementation of the wastewater collection system improvements included in ECUA's CIP, the frequency of sewer overflows is expected to decrease.

4.12. Summary of Findings and Conclusions

The condition of the facilities visited varied from new to those requiring significant capital upgrades. The wetwells of approximately 15% of the wastewater pump stations require rehabilitation, which will require ECUA to re-evaluate and re-prioritize its CIP in order to address these deficiencies. The drinking water system is operating in compliance with drinking water standards. Facility conditions ranged from poor to good with the majority in the adequate to good range.

The facilities are producing and delivering potable water and conveying and treating wastewater to a relatively high degree of competency. Significant I&I issues in the wastewater collection system result in occasional sewage overflows during rainfall events. In 2010, ECUA expects to commission the CWRF and decommission the Main Street WWTP in order to improve its level of compliance and the reliability of the wastewater treatment system. ECUA is also implementing sewer system investigations and rehabilitation to address the requirements of its FDEP Consent Order and to reduce the amount of I&I and the frequency of sewage overflows. The planned CIP is generally in alignment with the System needs, but will need to be re-evaluated and re-prioritized each year to ensure the system needs are met. Presently, specific projects for wastewater pump station improvements do not address all of the identified improvement needs. Once the CIP is implemented as planned, the System should demonstrate improvement in performance, including reductions in wet-weather sewage overflow events.



5. Capital Improvement Program Evaluation

5.1. Introduction

ECUA'S CIP provides a procedure for identifying and prioritizing major facility needs and for identifying fiscal resources to be used to implement the various capital projects. Upon adoption by the Authority, that CIP becomes a statement of Authority policy regarding the timing, location, character, and funding of future capital projects. The CIP has a five-year planning period and as such, it is understood that the CIP represents the best judgment and current thinking at the time it is adopted and that additional needs and constraints are likely to become apparent before the CIP is completed.

The CIP includes major improvements in water production, water distribution, wastewater treatment, collection system, general projects, and renewal and replacement projects. Major funding for these projects is expected to be provided through bond issues and specific bank loans with additional funding coming from the Authority's Water and Wastewater operating fund, Connection Fee fund, Renewal and Replacement Fund, Construction fund, and Capital Improvement fund.

Major wastewater system projects are scheduled to be completed within the next five years, such as the construction of a new wastewater treatment plant. As stated above, the new wastewater treatment plant will be financed through a combination of Revenue Bonds, Bank Loans, and other utility revenue sources.

The total projected capital expenditures for the Authority are depicted below in Table 5-1 for FY 2010 through FY 2014, the forecast period. FY2010 indicate to expenditures of \$23.3 M while a similar table in the Water and Wastewater Feasibility Analysis includes \$57.0M. The difference represents "projects" for which ECUA has already obtained funding but will be reimbursed via the Board proceeds anticipated for FY2010.

**Table 5-1.
Capital Improvement Program**

Category	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY2010-2014
Water Production	\$ 3,300,000	\$ 8,425,000	\$ 6,425,000	\$ 5,100,000	\$ 4,050,000	\$ 27,300,000
Water Distr. System	\$ 1,930,000	\$ 1,625,000	\$ 4,990,000	\$ 1,825,000	\$ 1,825,000	\$ 12,195,000
Wastewater Reclamation	\$ 600,000	\$ 3,775,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 4,975,000
Wastewater Systems	\$ 15,189,000	\$ 15,100,000	\$ 16,975,000	\$ 21,565,000	\$ 14,275,000	\$ 83,104,000
Utility Relocation	\$ 1,150,000	\$ 100,000	\$ 850,000	\$ 1,450,000	\$ 10,950,000	\$ 14,500,000
Misc. Projects ¹	\$ 1,086,000	\$ 3,691,000	\$ 2,273,000	\$ 2,273,000	\$ 2,273,000	\$ 11,596,000
Total	\$ 23,255,000	\$ 32,716,000	\$ 31,713,000	\$ 32,413,000	\$ 33,573,000	\$ 153,670,000

1. Miscellaneous category includes vehicle repair and replacement, generators, SCADA improvements, security, etc.



5.2. Wastewater System

More than half of ECUA's CIP is dedicated to projects to improve its wastewater collection and treatment system, with the largest emphasis on collection system improvements.

5.2.1. Sanitary Sewers

The largest category of CIP projects is that associated with the repair and replacement of sanitary sewers. Within the Sanitary Sewers category of the CIP, \$31M is dedicated to the implementation of I&I reduction projects to improve the performance of the wastewater collection system and reduce the wastewater flows to its WWTPs. These projects are also intended to allow ECUA to comply with the requirements of its FDEP Consent Order. The Sanitary Sewers category also includes \$15M for sewer expansion and septic tank abatement.

5.2.2. Wastewater Pump Stations

The CIP includes specific projects to upgrade or close 13 wastewater pump stations as well as more than \$6M for a variety of upgrades and ongoing maintenance needs at multiple pump stations. Many of the planned projects are associated with the rerouting of sewage flows to the new CWRF. Many of the pump stations that were observed to be in the poorest condition do not have specific projects included in the CIP.

5.2.3. Wastewater Treatment

The primary focus of this category of the CIP is associated upgrades to the Bayou Marcus WWTP to improve the headworks and clarifiers.

5.3. Water System

Projects associated with improvements to the water production and distribution system account for approximately 20% of the CIP.

5.3.1. Wells and Water Treatment

This category includes expansion and replacement of several water treatment facilities, well maintenance and Granular Activated Carbon (GAC) filter installation and replacement.

5.3.2. Water Distribution System

This category includes replacement and extension of water mains.

5.4. Conclusions

ECUA's CIP addresses a portion of the needs of the System, and as such may require modification from year-to-year to reallocate funds to address the most critical system needs. The CIP includes projects that cover a broad array of current and future needs, as identified by ECUA and as required by the FDEP Consent Order.

ECUA's approach to developing, budgeting and managing the CIP is reasonable and consistent with typical utility practices.

ECUA will need to perform additional assessments and implement additional improvements to improve the condition of certain wastewater pump stations. Review of ECUA's CIP showed that many of the wastewater pump stations that were considered to have the greatest upgrade needs do not have CIP projects identified to either rehabilitate or close the pump station.

The full impact of future regulations on the water treatment and supply system are not known at this time. The future impact of the GWR on ECUA's water system is unknown at this time, but could require significant capital improvements or closure of certain wells. As the impact of future regulations becomes more defined, CIP modifications may be required to adequately accommodate resulting needs.

6. Financial Analysis

6.1. Introduction

Malcolm Pirnie has prepared a Water and Wastewater Feasibility Analysis report (see Appendix B) that includes a multi-year financial plan to support ECUA's issuance of bonds and to allow the Authority to generate revenues sufficient to meet annual revenue requirements, fund capital projects, satisfy debt service coverage requirements, generate cash reserves, and demonstrate the Authority's ability to issue and service additional increments of debt.

Malcolm Pirnie has assumed that ECUA will implement rate increases, as needed and described in the Water and Wastewater Feasibility Analysis report, in order to achieve increases in revenues as presented in the forecast.

6.2. Conclusions on ECUA Financial Forecast

Based on our review of the information provided by ECUA in support of the preparation of the Water and Wastewater Feasibility Analysis report, Malcolm Pirnie has concluded the following with regard to ECUA's FY2010-2014 financial forecast presented in the Water and Wastewater Feasibility Analysis report:

1. ECUA's projections of revenue and expenses have been reviewed in comparison with historical data and have been found to be reasonable.
2. ECUA demonstrates that it can fund the total CIP over the forecast period, maintain debt service coverage equal to or in excess of rate resolution requirements, and produce a year end unrestricted cash revenue equal to 60-days of operating and maintenance expenses.



7. Conclusions/Professional Opinion

7.1. Considerations and Assumptions

In preparation of this report and the conclusions contained herein, Malcolm Pirnie has relied on certain assumptions and information provided by ECUA with respect to the conditions which may exist or events which may occur in the future. Malcolm Pirnie believes the information and assumptions are reasonable but has not independently verified information provided by ECUA and others. To the extent that actual future conditions differ from those assumed herein or provided to us by others, the actual results will vary from those forecast.

In the preparation of this report, Malcolm Pirnie has made a number of principal considerations and assumptions (as provided throughout this report); some of the most notable are as follows:

1. Malcolm Pirnie has made no determination as to the validity and enforceability of any contracts, agreement, existing law, rule, or regulation applicable to ECUA and its operations. However, for purposes of this report, Malcolm Pirnie has assumed that all such contracts, agreements, laws, rules and regulations will be fully enforceable in accordance with their terms.
2. ECUA will generally continue the current policies of: employing qualified and competent personnel, properly operating and maintaining the System in accordance with generally accepted industry practices, and operating the System in a prudent and sound businesslike manner.
3. The proposed CIP reflects the general needs of the System, and the CIP will be largely implemented as planned and reflected in this report. The CIP will be re-evaluated and prioritized annually.
4. ECUA will implement the rate increases described in the Water and Wastewater Feasibility Analysis report in order to achieve increases in revenue as presented in the five-year forecast period. If additional funds are required for the management, operation, and maintenance of the System, ECUA will either seek the necessary rate increases to increase revenue or embark upon cost reduction measures, such as reducing non-essential programs to cover these unforeseen expenses or some combination of the two. Unforeseen expenses that are not currently anticipated may result from a change in law, uninsured catastrophic event, previously unidentified capital improvements, unanticipated increases in utilities and chemicals (or other O&M expenses), deferred capital improvements that must be accelerated or currently undefined or unanticipated additional regulatory enforcement actions.

7.2. Conclusions

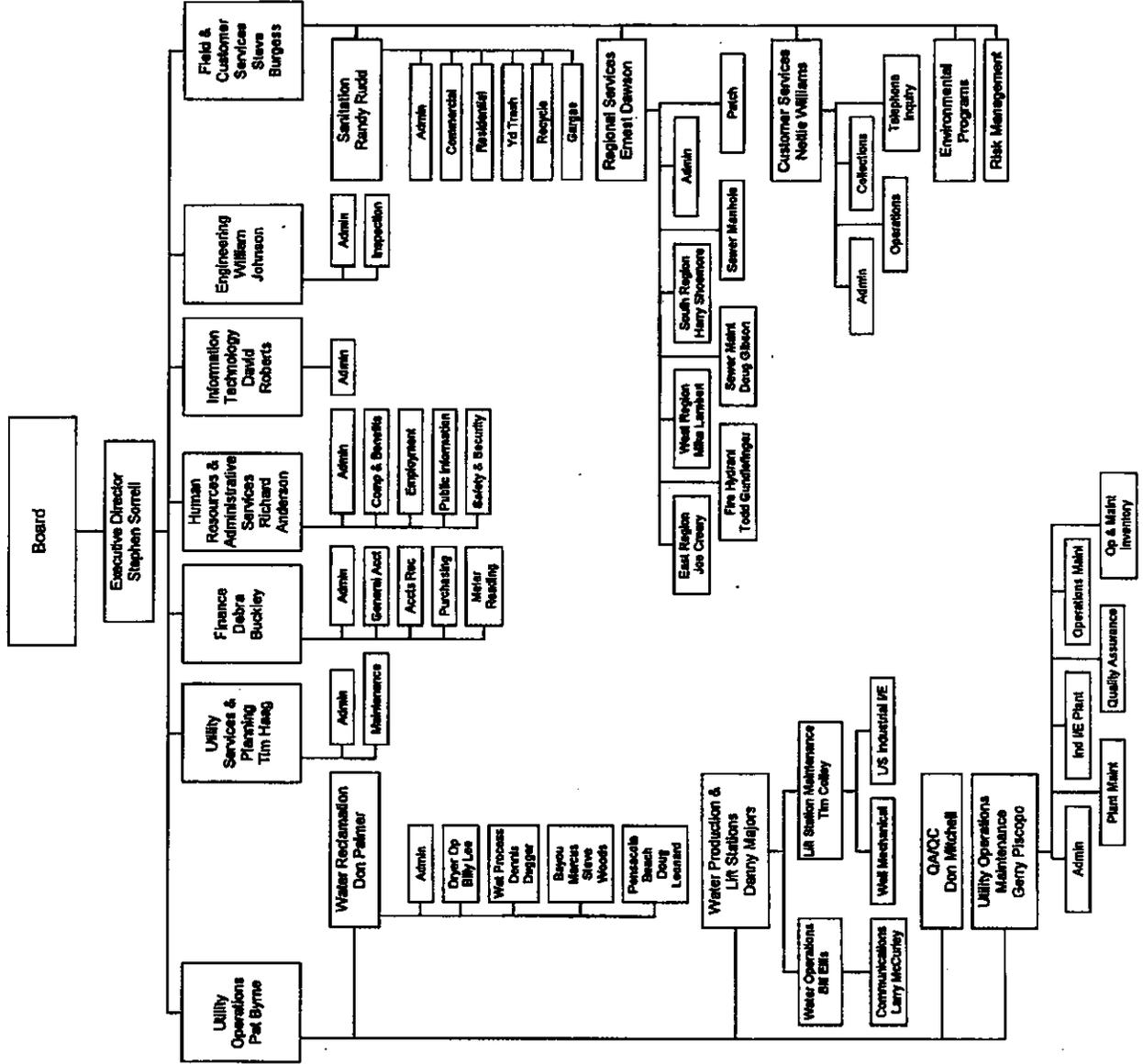
Set forth below are the principal opinions which Malcolm Pirnie has reached regarding the review of the ECUA water and wastewater system and projected financial results. For a complete understanding of the assumptions upon which these opinions are based, this report should be read in its entirety.



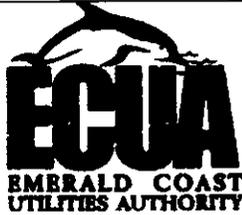
1. ECUA's organizational structure and staffing levels provide for efficient operation and maintenance of the System.
2. ECUA maintains a broad training program to address the full range of training needs of its staff.
3. ECUA's maintenance practices and systems are generally adequate for the proper operation of the System.
4. ECUA emergency planning and response measures have been more than adequate to provide for reasonable operation during catastrophic events.
5. The condition of the water and wastewater facilities visited varied from new to those requiring significant capital upgrades, with the majority in the adequate to good range. The facilities are producing and delivering potable water and conveying and treating wastewater to a relatively high degree of competency.
6. The drinking water system is operating in compliance with drinking water standards.
7. Significant I&I issues in the wastewater collection system result in sewage overflows during rainfall events. In 2010, ECUA expects to commission the CWRP and decommission the Main Street WWTP which should improve wastewater system compliance and the reliability.
8. The planned CIP is generally in alignment with the System needs, but does not address all of the System needs and as such may require modification from year-to-year to reallocate funds to address the most critical system needs. Water main replacement rate is not unreasonable given the age of the system, but will need to increase in the future. Presently specific projects for wastewater pump station improvements do not address all of the identified improvement needs. Once the CIP is implemented as planned, the System should demonstrate improvement in performance, including reductions in wet-weather sewage overflow events. ECUA's approach to developing, budgeting and managing the CIP is reasonable and consistent with typical utility practice.
9. The full impact of future regulations on the water treatment and supply system are not known at this time. The future impact of the GWR on ECUA's water system is unknown at this time, but could require significant capital improvements or closure of certain wells. As the impact of future regulations becomes more defined, CIP modifications may be required to adequately accommodate resulting needs.
10. Based on our review of the information provided by ECUA in support of the preparation of the Water and Wastewater Feasibility Analysis report, Malcolm Pirnie has concluded the following with regard to the FY2010-2014 financial forecast presented in the Water and Wastewater Feasibility Analysis report:
 - ECUA's projections of revenue and expenses have been reviewed in comparison with historical data and have been found to be reasonable.ECUA demonstrates that it can fund the total CIP over the forecast period, maintain debt service coverage equal to or in excess of rate resolution requirements, and achieve unrestricted, year-end cash revenue balances equal to 60-days of operating and maintenance expenses.

Appendix A - ECUA Organizational Chart

EMERALD COAST UTILITIES AUTHORITY



**Appendix B - Water and Wastewater Feasibility
Analysis, December 2010, Prepared for ECUA by
Malcolm Pirnie, Inc.**

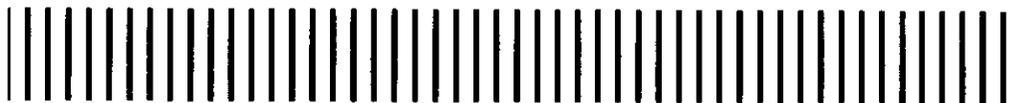


Emerald Coast Utilities Authority

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Water and Wastewater Feasibility Analysis

December 2010



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Purpose

The Emerald Coast Utilities Authority (ECUA) retained Malcolm Pirnie, Inc. (Malcolm Pirnie) to develop a multi-year financial plan that would be included in ECUA's Series 2010 Bond Report and allow ECUA to generate revenues sufficient to meet annual revenue requirements, fund capital projects, satisfy debt service coverage requirements, generate cash reserve balances, and demonstrate ECUA's ability to issue and service additional increments of debt. This report summarizes the Malcolm Pirnie-prepared financial plan assumptions, findings, and conclusions.



1. Introduction

1.1. Background

On August 1, 1981, ECUA was established by an Act of the Florida Legislature to own, manage, finance, promote, improve and expand the water and wastewater systems in Escambia County (the County) and the City of Pensacola (the City). In 2003, the Legislature passed legislation changing the name of ECUA from Escambia County Utilities Authority to the Emerald Coast Utilities Authority (ECUA). Prior to ECUA's creation, the wastewater treatment plants owned and operated by the County were operating at or near full capacity which resulted in restrictions being placed on new customer connections to the County's system. By contrast, the City owned a recently completed wastewater plant, which had design capacity of 20 million gallons per day (MGD) but was only receiving flows of about 10 MGD. To promote the efficient use of the available capacity at the City's wastewater treatment plant and the gradual phasing out of existing County plants, the City and the County agreed to transfer their water and wastewater systems to ECUA for operation as a combined water and wastewater system (the System).

ECUA is a local government body, corporate and publicly, organized and existing under the laws of the State of Florida, particularly the Act. ECUA is empowered to, among other things, issue revenue bonds or other sources of debt obligations to finance the acquisition, construction, and equipping of the water and wastewater systems within the territorial limits of the County and areas adjacent thereto.

The powers of ECUA are exercised by a five-member Board. Each member of the Board is elected from one of the five districts within Escambia County and, as such, serve staggered terms. These districts are the same districts from which County Commissioners are elected. The Board elects its own officers.

In addition to its water and wastewater utility, ECUA also operates a sanitation collection utility for both residential and commercial garbage. Revenues of the Sanitation System do not constitute part of the Pledged Revenues. The Sanitation System does not constitute a part of the System, and is accounted for separately. ECUA has established a policy that the Sanitation System be self-supporting in accordance with sound accounting practices.

1.2. The Water System

ECUA's water system serves approximately 300 square miles, which includes the entire City of Pensacola and parts of the unincorporated County. Water is obtained from 32 wells and transmitted through approximately 1,700 miles of mains to approximately 88,470 customers as of April 2009. Unaccounted water losses have been approximately 10.5% for the water system. The water system has storage capacity of approximately 14.0 million gallons. Table 1-1 reflects the water produced for FY1996 through FY2009.



**Table 1-1.
Historical Water Produced**

Line	Fiscal Year	Water Pumped ⁽¹⁾ (MG)	Water Consumption Billed ⁽¹⁾ (MG)	Unaccounted for Water	
				Amount (MG)	Percent %
1	1996	12,054	10,796	1,258	10.4%
2	1997	12,270	10,736	1,534	12.5%
3	1998	13,906	11,794	2,112	15.2%
4	1999	13,409	11,447	1,962	14.6%
5	2000	14,351	12,795	1,556	10.8%
6	2001	13,266	12,075	1,191	9.0%
7	2002	13,536	12,491	1,045	7.7%
8	2003	12,149	10,995	1,154	9.5%
9	2004	12,585	11,527	1,058	8.4%
10	2005	12,543	10,955	1,588	12.7%
11	2006	13,808	12,660	1,148	8.3%
12	2007	13,357	11,857	1,500	11.2%
13	2008	12,159	11,001	1,158	9.5%
14	2009	11,583	10,504	1,079	9.3%

Note:

1. As provided in ECUA's Comprehensive Financial Report ending September 30, 2009.

The Sand-and-Gravel Aquifer is ECUA's raw water source. It extends from the ground surface to a maximum depth of approximately 1600 feet in the southeastern portion of the County and is underlain by thick clay strata. Ground water provides most of the water supply in northwest Florida. One hundred percent of the area's potable water is derived from ground water. Four major ground water systems can be found in this region: the Surficial Aquifer System (which includes the Sand-and-Gravel Aquifer), the Intermediate System, the Floridian Aquifer System, and the Sub-Floridian System. The Floridian and the Sand-and-Gravel Aquifers supply most of the ground water in northwest Florida.

The Northwest Florida Water Management District estimate of the daily outflow from the aquifer is approximately 410.0 MGD. ECUA's water system has a pumping capacity of 76.1 MGD. Currently, the annual average demand on the water utility system is approximately 35.0 MGD, with a maximum single day demand of 61.0 MGD.

1.3. The Wastewater System

ECUA's wastewater utility system includes the Main Street Wastewater Treatment Plant, a 20.0 MGD wastewater treatment plant which was placed into service in February 1980. The Main Street Plant was designed to meet stringent effluent discharge limitations but the facility was damaged by Hurricane Ivan.

The wastewater utility system also has two additional wastewater treatment plants with an aggregate capacity of 10.6 MGD, including the Bayou Marcus Water Reclamation Facility, with 8.2 MGD, and the Pensacola Beach plant with 2.4 MGD capacities. The current annual average flow received at the Main Street and Bayou Marcus plants is approximately 23.4 MGD; 83% of the total combined capacity of 28.2 MGD. The annual average flow to the Pensacola Beach plant is 0.8 MGD, with a maximum flow of 1.2 MGD.

The wastewater system includes approximately 850 miles of gravity sewer and 250 miles of force main serving approximately 65,000 customers as of April 30, 2009.

To prevent future issues around the efficient functional operations of the wastewater system, ECUA is implementing a System-wide Capital Improvement Program ("CIP") that is valued at about \$186.3 million. The CIP will address the pending wastewater system issues in an effort to facilitate the retirement of the Main Street Plant in the fall of 2010 and the commission of a new wastewater treatment plant.



2. Customer Statistics

2.1. Overview

ECUA has provided Malcolm Pirnie with historical billing information summarized by service type, customer class, and meter size for the period ending April 2009. The billing information provided by ECUA contains information regarding the total number of customers and the annual water usage and wastewater billing units. The historical annual aggregate water and wastewater customer counts and usage were provided by ECUA for the fiscal years (“FY”) 2005 through 2009. ECUA’s fiscal year-end is September 30; FY refers to the 12 months ending September 30.

In order to forecast revenues, Malcolm Pirnie analyzed the historical billing information provided by ECUA to understand the existing water and wastewater usage characteristics or customers served by ECUA. Upon understanding the existing water and wastewater customer usage characteristics, customer growth rates were determined and the typical average usage of customers served in specific customer classes were utilized to forecast the total annual customer counts and water and wastewater usage over the forecast period.

2.2. Historical and Projected Customer Statistics

The total number of historical customers billed and the number of customers projected over the Forecast Period (FY2010 through FY2014) along with the associated billed consumption is provided in Table 2-1.

**Table 2-1.
Historical and Projected Water Customer Statistics**

Line	Fiscal Year	Billed Accounts		Annual Usage	
		Amount	Growth %	Amount (MG)	Change %
Historical:					
1	2005	88,727		10,955	
2	2006	89,692	1.09%	12,660	15.56%
3	2007	90,337	0.72%	11,857	-6.34%
4	2008	89,716	-0.69%	11,001	-7.22%
5	2009	88,470	-1.39%	10,504	-4.52%
Projected:					
6	2010	88,691	0.25%	10,530	0.25%
7	2011	88,913	0.25%	10,557	0.25%
8	2012	89,135	0.25%	10,583	0.25%
9	2013	89,358	0.25%	10,609	0.25%
10	2014	89,581	0.25%	10,636	0.25%

Beginning with FY2007, the customer average consumption has been declining as demonstrated in Table 2-1, due to the annual rainfall total increasing over the summer period. As a result, the forecast of water usage is based on the existing water usage patterns. These considerations, along with the current economic conditions have impacted the demand for utility services such as water service.

Wastewater customers are billed a flat fee for services based on average metered water used over the winter months; on an annual/monthly basis, wastewater billed volumes equate to approximately 88% of metered water use for a typical average residential customer. This approach is used to recognize that not all metered water is returned to the wastewater system; a portion is used for outdoor water usage, generally for lawn irrigation.

2.2.1. Ten Largest Customers

A compilation of ECUA's top ten customers by revenue contributions for the water and wastewater system is shown on Table 2-2 and Table 2-3. For FY2009, the revenue contribution from the top ten water and wastewater customers represents 3.32% and 8.25% of the water and wastewater system total revenue, respectively.

**Table 2-2.
Top Ten Water Customers – FY2009**

Line	Customers	Water Usage MG	Sales Revenue	Percent of Water Revenue %
1	Baptist Hospital	75.8	\$148,428	0.50%
2	Portofino Island Resort	38.4	136,070	0.46%
3	Escambia County Jail	71.5	127,426	0.43%
4	Pensacola Christian College	56.8	106,068	0.36%
5	Escambia Housing	49.5	99,397	0.34%
6	Sacred Heart Hospital	49.6	99,233	0.34%
7	Pall Gelman Sciences	47.1	83,479	0.28%
8	U.S. Navy - Saufley Field	40.2	64,044	0.22%
9	Crown Health Care & Laundry	34.5	60,505	0.21%
10	Perdido Housing	28.5	54,212	0.18%
Total		491.9	\$978,862	3.32%
Total Water System			\$29,463,410	

**Table 2-3.
Top Ten Wastewater Customers – FY2009**

Line	Customers	Sales Revenue	Percent of Wastewater Revenue %
1	NAVFAC SE (Corry Station SW)	\$623,136	1.71%
2	Baptist Hospital	368,094	1.01%
3	Pensacola Christian College	309,455	0.85%
4	Escambia County Jail	272,458	0.75%
5	University of West Florida	305,943	0.84%
6	NAVFAC SE (NA Pensacola)	262,747	0.72%
7	Escambia Housing	251,189	0.69%
8	Sacred Heart Hospital	234,930	0.65%
9	Pall Gelman Sciences	197,848	0.54%
10	Portofina Island Resort	179,508	0.49%
	Total	\$3,005,308	8.25%
	Total Wastewater System	\$36,416,004	

2.2.2. Retail Rates for Utility Service

The retail rates charged for water and wastewater service are approved by the ECUA Board. As described in ECUA's existing Rate Resolution, rates are set to provide revenues in each fiscal year sufficient to pay 100% of all operations and maintenance cost, to maintain a 1.25 times (x) debt service coverage (DSC) ratio (also referred to as 125%) on all Parity and Additional Parity Obligations, and 100% of all other expenditures, such as reserve payments.

ECUA provides water and wastewater services to customers on the mainland and Pensacola Beach. The rates charged for water and wastewater service are based on a minimum monthly charge and a volumetric rate component.

As designated by ECUA, specific residential customers qualify for a minimum monthly water and wastewater lifeline charge which is separate from the typical minimum monthly residential charge for water and wastewater service. The purpose of the lifeline rate is to reduce the cumulative bill impact to certain customers based on conditions established by ECUA, such as fixed income customers and post-retirement customers.

The monthly minimum water service charge for residential customers on the Mainland and Pensacola Beach is \$8.69 and \$18.11, respectively. The monthly minimum wastewater service charge for residential customers on the mainland and Pensacola Beach is \$9.90 and \$25.54, respectively. For other non-residential customers, the minimum monthly charge is based on the size of the water meter designated to serve customers. As illustrated in Table 2-4, non-residential minimum monthly charges increase with the increase in the size of the meter utilized by a customer.

**Table 2-4.
Water and Wastewater Minimum Monthly Charges**

Line	Customer Class	Water Charge		Wastewater Charge	
		Mainland	Pensacola Beach	Mainland	Pensacola Beach
		\$	\$	\$	\$
Single Family:					
1	Lifeline Rate	7.49	17.25	9.65	24.31
Other Single-Family:					
2	Water	8.69	18.11		
3	Wastewater			9.90	25.54
Multi-Family:					
4	1" or Less	10.88			
5	1 1/2"	39.56			
6	2"	59.39			
7	3"	112.18			
8	4"	171.6			
9	6"	336.58			
10	8"	534.63			
11	10"	765.62			
Commercial:					
12	5/8-3/4"	10.88			76.63
13	1"	10.88			153.21
14	1 1/2"	39.56			229.84
15	2"	59.39			306.42
16	3"	112.18			306.42
17	4"	171.6			306.42
18	6"	336.58			306.42
19	8"	534.63			306.42
20	10"	765.62			306.42
21	Hotels & Motels		13.96		19.27

The volumetric rates are based on the amount of water consumed and are measured in thousands of gallons of water usage. Water usage is billed based on the total amount of water as measured at the customer's meter, and wastewater for residential customers are billed based on a winter

average usage of water. Commercial customers are billed based on the metered water consumption. Table 2-5 present the water and wastewater system volumetric rates.

Customers served on the mainland are charged \$1.78 and \$5.39 per 1,000 gallons for all water and wastewater service respectively. On the other hand, the volumetric rates for Pensacola Beach customer varies based on the customer class. Residential/multi-family Pensacola Beach water customers are charged \$2.62 per 1,000 gallons and residential/multi-family wastewater customers are charged \$3.06 per 1,000 gallons up to 10,000 gallons (which includes a 3,000 gallon minimum allowance) and \$2.17 per 1,000 gallons over 10,000 gallons per unit. Commercial Pensacola Beach water and wastewater customers are charged according to a meter size-based usage block schedule.

ECUA applies a sewer improvement fee to all wastewater customers served by ECUA; the fee is fixed based on the amount of wastewater flow a customer is billed for using the three-month winter average of metered water used. The sewer improvement fee is utilized to help fund the debt service related to the Central Water Reclamation Facility.

**Table 2-5.
Water and Wastewater Volumetric Rates**

Line	Customer Class	Gallonge Allowance	Water Charge		Wastewater Charge	
			Mainland	Pensacola Beach	Mainland	Pensacola Beach
		Gals.	\$	\$	\$	\$
Single Family						
Water Charge:						
1	Mainland	per 1,000 Gals.	1.78			
2	Pensacola Beach	per 1,000 Gals.		2.62		
Wastewater Charge:						
3	Mainland				5.39	
Pensacola Beach:						
4	Block 1	10,000 Gals.				3.06
5	Block 2	Over 10,000				2.17
Multi-Family:						
6	Mainland	per 1,000 Gals.	1.78		5.39	
7	Pensacola Beach	per 1,000 Gals.		2.62		5.32
Commercial:						
8	Mainland	per 1,000 Gals.	1.78		5.39	
9	Pensacola Beach	per 1,000 Gals.		2.98		5.32
Hotels & Motels						
10	Mainland	over 4,000 Gals.		2.98		
11	Pensacola Beach	over 3,000 Gals.				3.20

2.2.3. Retail Rate Comparison

Table 2-6 presents a comparison of monthly residential bills based on existing water and wastewater system rates as compiled from neighboring utilities and ECUA. The values in Table 2-6 are based on monthly water use and wastewater flows of 6,000 gallons.

**Table 2-6.
Monthly Neighboring Utility Bill Comparison**

Line	Utility	Water	Wastewater	Combined
1	ECUA - Mainland (Existing)	\$19.37	\$31.46	\$50.83
2	ECUA - Mainland (Proposed)	20.92	33.98	54.90
3	ECUA - PCB (Existing)	23.35	34.72	58.07
4	ECUA - PCB (Proposed)	25.22	37.50	62.72
Neighboring Utilities:				
5	Navarre Beach	40.86	44.81	85.67
6	Okaloosa County	23.28	20.34	43.62
7	City of Crestview	16.65	46.50	63.15
8	Panama City	20.14	42.79	62.93
9	City of Milton	19.22	23.23	42.45
10	City of Chipley	15.94	26.40	42.34
11	City of Gulf Breeze	24.56	33.09	57.65
12	Pace Water System	22.66	34.50	57.16
13	Average w/o ECUA ⁽¹⁾	\$22.91	\$33.96	\$56.87
14	Maximum w/o ECUA ⁽¹⁾	\$40.86	\$46.50	\$85.67
15	Minimum w/o ECUA ⁽¹⁾	\$15.94	\$20.34	\$42.34

Note:

1. The comparison is based on a typical monthly usage of 6,000 gallons. Based on rates in place as of October 2009 for the neighboring utilities and on ECUA's current rates per Tables 5 and 6.

3. Operating & Non-Operating Revenues

Operating and non-operating revenue sources comprise the total revenue base generated by ECUA. Revenues generated by the water and wastewater system are classified as operating revenues, revenues generated from specific fees, interest income, and other miscellaneous revenue sources are classified as non-operating revenues.

Table 3-1 presents the summary of other revenue sources over the forecast period. Operating revenues include a series of rate increases (8% each year for FY2011 through FY2014) as discussed in Section 5; these increases are assumed to become effective October 1 at the start of each fiscal year.

**Table 3-1.
Operating & Non-Operating Revenues**

Line	Description	Fiscal Year				
		2010	2011	2012	2013	2014
Operating Revenues:						
1	Water System ⁽¹⁾	\$30,917,920	\$33,474,832	\$36,243,201	\$39,240,513	\$42,485,704
2	Wastewater System ⁽¹⁾	38,638,880	41,834,316	45,294,014	49,039,829	53,095,422
3	Total ⁽²⁾	69,556,800	75,309,148	81,537,214	88,280,342	95,581,126
Non-Operating Revenues:						
4	Sewer Improvement Fee ^{(1) (3)}	\$6,308,400	\$6,387,413	\$6,467,415	\$6,548,419	\$6,630,438
5	Connection Charges ⁽¹⁾	750,000	759,394	768,905	778,536	788,287
6	Miscellaneous Revenues ⁽¹⁾	1,250,000	1,265,656	1,281,509	1,297,559	1,313,811
7	Interest Income	1,500,000	195,521	218,836	229,346	240,973
8	Total	9,808,400	8,607,983	8,736,665	8,853,861	8,973,510
9	Total Revenues	\$79,365,200	\$83,917,131	\$90,273,879	\$97,134,203	\$104,554,636

Note:

1. An annual aggregate growth rate of 0.25% was utilized to forecast growth over the forecast period.
2. The total Operating Revenues include the proposed Financial Plan rate increases.
3. Represents the revenues associated with a sewer improvement fee that is a component of the bill of all wastewater customers served by ECUA. The sewer improvement fee aggregates to about 7.0% of a customer's monthly water and sewer utility bill.

4. Revenue Requirements

4.1. General

Revenue requirements of the utility system consist of operations and maintenance expense, debt service obligations related to existing and proposed bond issuances, and other expenditures and transfers that consist of routine capital obligations and other specific utility transfers.

Prior to forecasting revenue requirements, certain assumptions were made regarding the escalation of various revenue requirement items over the forecast period. Table 4-1 lists specific escalation factors utilized to forecast revenue requirements.

**Table 4-1.
Escalation Factors**

<u>Line</u>	<u>Category</u>	<u>Escalation Rate</u>
1	General Inflation ⁽¹⁾	2.50%
2	Labor Cost ⁽¹⁾	4.00%
3	Medical Insurance ⁽²⁾	7.00%
4	Property/General Liability Insurance ⁽¹⁾	6.00%
5	Power Cost ⁽³⁾	10.00%

Note:

1. Sourced from the Bureau of labor Statistics (www.bls.gov)
2. Provided by ECUA.
3. Sourced from the Energy Information Administration (www.eia.com)

Based on historical and budget information, conversations with ECUA staff, and specific budgetary adjustment, the Malcolm Pirnie team applied the escalation factors to the FY2010 operating and maintenance budget provided by ECUA in order to project revenue requirements over the forecast period.

ECUA provided the forecast of existing debt service obligations and the Malcolm Pirnie team included this forecast as a part of the revenue requirements forecast. The debt service obligations provided by ECUA includes the entire \$130.0 million bank loan utilized by ECUA. However, upon forecasting all ECUA's revenue requirements and assessing the CIP responsibility of ECUA over the forecast period, a plan was developed to fund the CIP through the issuance of proposed debt service obligations, taking into consideration ECUA's propensity to issue new debt service obligations. The resulting debt service on these future issues was estimated by Malcolm Pirnie.



Table 4-2 provides a summary of ECUA's operating and maintenance expense and existing debt service obligations over the forecast period. Line 12 of Table 4-2 provides a summary of the total existing ECUA's debt service.

**Table 4-2.
Existing Revenue Requirements Obligations**

Line	Description	Fiscal Year:				
		2010	2011	2012	2013	2014
1	Operating & Maintenance	\$48,755,080	\$51,809,030	\$54,806,412	\$58,115,203	\$61,782,644
Existing Debt Service:						
2	Series 1992B	2,086,619	4,299,750	7,139,844	7,160,313	7,162,188
3	Series 1998	6,076,806	3,842,908	1,108,918	1,108,760	1,106,000
4	Series 2001	730,940	715,640	695,090	679,293	663,140
5	Series 2001B	449,613	449,125	452,919	450,805	452,785
6	Series 2003	1,483,416	1,479,760	1,479,711	1,478,556	1,481,031
7	Series 2004	1,133,650	1,130,513	1,134,931	1,127,894	1,134,644
8	Series 2006	1,164,400	1,160,381	1,161,281	1,161,581	1,161,038
9	Series 2006 B	2,605,656	2,557,956	2,508,400	2,456,981	2,405,219
10	SRF Loans	2,108,423	2,108,423	3,397,437	3,397,437	3,397,437
11	Bank Loan	6,498,000	6,577,354	6,537,534	6,584,187	6,633,139
12	Total Existing Debt Service	24,337,523	24,321,809	25,616,065	25,605,806	25,596,620
13	Total Gross Revenue Requirements ⁽¹⁾	\$73,092,603	\$76,130,839	\$80,422,477	\$83,721,009	\$87,379,265

Note:

1. State Revolving Fund (SRF) Loan repayments are not included in the calculation of DSC requirement of 1.25 times

4.1.1. Capital Improvement Program

ECUA's CIP reflects the identification and prioritizing action of major facility needs. Upon adoption by ECUA, that CIP becomes a statement of ECUA's policy regarding the timing, location, character, and funding of future capital projects. The CIP is revised and adopted annually and is a five-year plan. As such, it is understood that the CIP represents the best judgment and current thinking at the time it is adopted and that additional needs and constraints are likely to become apparent before the CIP is completed.

The CIP includes major improvements in water production, water distribution, wastewater treatment, wastewater collection, general projects, and renewal and replacement projects. Major funding for these projects is provided through bond issues and specific bank loans with additional funding coming from ECUA's Water and Wastewater operating fund, Connection Fee fund, Renewal and Replacement, Construction fund, and the Impact Fees and Capital Improvement fund.

Major wastewater system projects scheduled to be completed within the next five-years include the completion of a new wastewater treatment plant. As stated above, the new wastewater

treatment plant was financed through a combination of Federal Emergency Management Agency (FEMA) and State Grants, Revenue Bonds, Bank Loans, and other utility revenue sources.

The total projected capital expenditures for ECUA are depicted below in Table 4-3 for FY2010 through FY2014, the forecast period. Approximately \$45.7M of the planned FY2011 expenditures include projects ECUA has previously completed but now plans on issuing debt to effectively reimburse itself for the cash use for these projects

**Table 4-3.
Capital Improvement Program**

Line	Description	Fiscal Year					Total
		2010	2011	2012	2013	2014	
1	Water Production	\$1,800,000	\$5,725,000	\$6,425,000	\$5,100,000	\$4,050,000	\$23,100,000
2	Water Distribution	780,000	14,280,000	4,990,000	1,825,000	1,825,000	23,700,000
3	Water Reclamation	600,000	15,500,000	200,000	200,000	200,000	16,700,000
4	Wastewater System	2,950,000	42,864,000	16,975,000	21,565,000	14,275,000	98,629,000
5	Utility Relocation	1,150,000	0	850,000	1,450,000	10,950,000	14,400,000
6	General Projects	0	1,886,000	2,273,000	2,273,000	2,273,000	8,705,000
7	Renewal & Replacement	1,086,000	0	0	0	0	1,086,000
8	Total CIP Projects	\$8,366,000	\$80,255,000	\$31,713,000	\$32,413,000	\$33,573,000	\$186,320,000

Table 4-4 illustrates the intended funding sources for the CIP provided by ECUA. The plan described herein anticipates issuance of Series 2011A (funding for the \$45.7M FY2010 projects), Series 2011B (funding for the FY 2011 projects), Series 2012, Series 2013, and Series 2014 revenue bonds over the forecast period. Additionally, a total of \$25.9 million in CIP projects will be funded from cash generated via the operations of ECUA through the forecast period.

Table 4-4 presents the anticipated bonds to be issued to fund the CIP as well as the cash funding, element of the CIP.

**Table 4-4.
Annual CIP Funding Sources and Debt Services**

Line	Description	Fiscal Year					Total
		2010	2011	2012	2013	2014	
1	Series 2011 A		\$45,664,000	\$0	\$0	\$0	\$45,664,000
2	Series 2011 B		32,062,152				32,062,152
3	Series 2012			28,190,446			28,190,446
4	Series 2013				27,494,775		27,494,775
5	Series 2014					27,014,418	27,014,418
6	Cash Funding	8,366,000	2,528,848	3,522,554	4,918,225	6,558,582	25,894,210
7	Total	\$8,366,000	\$80,255,000	\$31,713,000	\$32,413,000	\$33,573,000	\$186,320,000
8	New Annual Debt Service Payment	\$0	\$3,424,696	\$5,829,284	\$7,943,503	\$10,005,548	

5. Projected Operating Results

The principal considerations in developing a sound financial plan over the forecast period is the relationship between potential rate increases faced by customers served by ECUA, meeting the appropriate debt service coverage ratios, and maintaining sufficient ending cash balances.

Table 5-1 is the Malcolm Pirnie prepared financial forecast for the fiscal years FY2010 through FY2014. Line 6 shows the projected revenues increasing from \$79.4 million in FY2010 to \$104.6 million in FY2014. The forecast of revenues include a multi-year rate increase plan based on the 5.9% already implemented in FY2010, and future increases of 8%, 8%, 8% and 8% for the years FY2011 through FY2014. Additionally, the forecast of other annual revenues is anticipated to grow over this same period from \$8.3 million to \$8.7 million.

The total revenue requirement, the costs to be funded from rates, is expected to grow from \$81.5 million in FY2010 to \$103.9 million in FY2014. Total revenue requirements consist of O&M expenses that grow from \$48.8 million in FY2010 to \$61.8 million in FY2014, debt service obligations that grow from \$24.3 million in FY2010 to \$35.6 million in FY2014, and capital projects to be funded by cash that ranges from \$8.4 million in FY2010 to \$6.6 million in FY2014.

The beginning unrestricted cash balance at the start of FY2010 was \$8.9 million and with the addition of the operating balance generated over the forecast period, will allow ECUA to maintain an approximate 60-day O&M cash balance over the forecast period. End-of-year cash balances are forecasted to grow from \$6.8 million in FY2010 to \$10.3 million in FY2014.

Based on ECUA's existing Rate Resolution, ECUA is required to maintain a 1.25 DSC ratio on all debt service obligations. Over the forecast period presented herein, ECUA is expected to maintain debt service coverage ratios at or above the required 1.25 DSC.

Over the next five years, ECUA has proposed a CIP of nearly \$188.0 million. The financial plan detailed herein is expected to adequately fund the CIP and allows ECUA to maintain annual cash balances equivalent to approximately 60-days of O&M expenses.



**Table 5-1.
Financial Forecast**

Line	Description	Fiscal Year				
		2010	2011	2012	2013	2014
Revenues:						
1	Operating Revenues	\$65,452,949	\$69,730,692	\$75,497,421	\$81,741,057	\$88,501,043
2	Rate Increase	5.9%	8.0%	8.0%	8.0%	8.0%
3	Revenue from Rate Increase	4,103,851	5,578,455	6,039,794	6,539,285	7,080,083
4	Other Revenues	8,308,400	8,412,463	8,517,829	8,624,515	8,732,537
5	Interest Income	1,500,000	195,521	218,836	229,346	240,973
6	Total Revenues	79,365,200	83,917,131	90,273,879	97,134,203	104,554,636
Revenue Requirements:						
7	Operating & Maintenance	48,755,080	51,809,030	54,806,412	58,115,203	61,782,644
8	Existing Debt Service Obligations	24,337,523	24,322,591	25,616,065	25,605,806	25,596,620
9	New Debt Service Obligations	0	3,424,696	5,829,284	7,943,503	10,005,548
10	Capital Project Funded from Cash	8,366,000	2,528,848	3,522,554	4,918,225	6,558,582
11	Total Revenue Requirements	81,458,603	82,085,165	89,774,315	96,582,737	103,943,396
12	Operating Balance	(2,093,402)	1,831,966	499,564	551,465	611,240
Cash Balance:						
13	Beginning Balance	\$8,896,275	\$6,802,873	\$8,634,838	\$9,134,402	\$9,685,867
14	Operating Balance	(2,093,402)	1,831,966	499,564	551,465	611,240
15	Ending Balance	\$6,802,873	\$8,634,838	\$9,134,402	\$9,685,867	\$10,297,107
Debt Service Coverage:						
16	Target	1.25	1.25	1.25	1.25	1.25
17	Achieved	1.38	1.26	1.27	1.30	1.33
Cash Reserve Requirement:						
18	Cash Reserve Target - # of Days	60	60	60	60	60
19	Days in Cash Reserves Achieved	51	61	61	61	61

5.1.1. Debt Service Coverage

ECUA is required per its Rate Resolution to maintain a 1.25 times DSC ratio. Table 5-2 illustrates the DSC calculation for each year of the forecast period; ECUA meets or exceeds the Rate Resolution DSC requirement in each year of the study period.

**Table 5-2.
Debt Service Coverage**

Line	Description	2010	2011	2012	2013	2014
Revenues and Expenses						
1	Operating Revenue	\$79,365,200	\$83,917,131	\$90,273,879	\$97,134,203	\$104,554,636
2	Less: Operating and Maintenance Expenses	48,755,080	51,809,030	54,806,412	58,115,203	61,782,644
3	Plus: 16.7% of Average Fund Balance	0	0	0	0	0
4	Net Revenue Available for Debt Service	30,610,120	32,108,101	35,467,467	39,018,999	42,771,992
Debt Service						
5	Debt Service (total)	24,337,523	27,747,287	31,445,349	33,549,309	35,602,169
6	Less: SRF Loan Payments	2,108,423	2,108,423	3,397,437	3,397,437	3,397,437
7	Net Debt Service	22,229,100	25,638,864	28,047,912	30,151,872	32,204,732
8	Achevied Debt Service Coverage	1.38	1.26	1.27	1.30	1.33

5.1.2. Credit Enhancement/Maintenance Initiative

In addition to understanding ECUA's ability to make specific debt service payments, it is important to understand ECUA's ability to procure debt financing and the important factors associated with procuring debt financing. Currently, ECUA does not maintain a credit enhancement policy, but the development of a credit enhancement policy that is aligned with ECUA's existing Strategic policy and considers the factors listed below will be important in maintaining a financially sound utility.

Key Credit Enhancement Factors⁽¹⁾:

1. *Existing Economic Considerations*
2. *Financial Position*
3. *Rate Setting Criteria*
4. *Operational Efficiency*
5. *Stability of Management and*
6. *Legal and Regulatory Consideration*
7. *Local Economic Conditions.*

Note:

1. The credit enhancement criteria were referenced from the Standard & Poor's Ratings Direct publication dated September 15, 2008.

Additionally, ECUA should consider implantation of a multi-year rate plan, i.e., adoption via a single resolution of the proposed rate increases for FY2011 - FY2014. This would provide evidence to the credit markets of the Board's willingness and commitment, to support in the projected financing plan.

Upon developing a credit enhancement policy, ECUA needs to implement a mechanism that will track the financial position of the utility, the operating cost implications to the utility in the near and intermediate term, and the stability of management along with highlighting the cost implications associated with potential legal and regulatory issues. After establishing a criteria and a mechanism to track the performance of the utility, sufficient performance management, benchmarking, and adjustments need to be incorporated into the entire process. The purpose of the process is to determine the financial impact of each credit enhancement factor and quantify this impact on utility rate increases, debt service coverage requirements, and the cash position of the utility. The ability of ECUA to quantify these credit enhancement factors will provide ECUA with the opportunity to develop the necessary risk mitigation plans.

There is not one individual process or mechanism established to understand and track the financial position of a utility, but maintaining the ability to instantaneously understand issues around revenue stability, debt service coverage, the utility's cash position, the cost implications associated with the operational efficiency of the utility, and the potential financial implication of specific regulatory and legal issues will assist ECUA in maintaining a financially sound utility.

6. Key Assumptions

In fulfillment of the scope of work agreed upon between ECUA and Malcolm Pirnie, certain assumptions were made with respect to future conditions. Malcolm Pirnie has relied upon and not verified certain information provided by ECUA to perform the analysis detailed herein. While Malcolm Pirnie believes the assumptions utilized herein to be reasonable, the actual change in future conditions will impact the actual results of the forecast presented herein.

1. The impact of the economic recession has reduced the demand for utility services. ECUA has experienced minimal incremental additions, along with minor decreases, in the number of customers served and for these reasons, Malcolm Pirnie has utilized a customer growth rate over the forecast period of 0.25%.
2. The projected results are based upon a series of rate/operating revenue increases being adopted by the ECUA Board. Absent the implementation of these increases, ECUA will not be able to fund the projected O&M and capital needs, achieve DSC, or maintain appropriate reserve balances.
3. Future operating and maintenance expenses are based on budget information provided by ECUA and the application of specific cost indices or inflation factors over the forecast period.
4. Existing debt service obligations were provided by ECUA.
5. The estimated Series 2011A 2011B, 2012, 2013 and 2014 revenue bond issuances are forecasted at \$45.7, \$32.1, \$28.3, \$27.7 and \$27.3 million, respectively, in aggregate principal with 12 months of capitalized interest, 1.50% in issuance cost, a 5.50% annual bond interest rate, and a 30-year amortization period.



7. Findings

Listed below are the key findings based on the financial plan prepared by Malcolm Pirnie:

1. The forecast of water consumption and wastewater billed volumes are based on the typical average water consumption and wastewater usage respectively. The recent variation in the typical average rainfall has reduced the average water and wastewater usage per customer. Reductions in the average water and wastewater usage per customer influence the forecast of total billed water and wastewater and are material to the forecast of incremental water and wastewater demand over the forecast period. It is important to note that there are two rate components on a water and wastewater bill. One component is a fixed charge and the other component is a variable rate based on a customer's usage – a usage rate. Changes in demand specifically reflect changes in the customer's usage patterns. These changes may result from the amount of rainfall, the continuation of the current economic conditions and a variety of other factors. Any fluctuation in demand, would impact the revenues generated from the usage/rate component of the water and wastewater bill.
2. The finance plan detailed in Table 5-1 funds the ECUA-CIP, maintains debt service coverage equal to or in excess of Rate Resolution requirements, and produces a year-end cash reserve equal to 60-days of annual O&M expenses.
3. ECUA should consider the establishment of an internal debt service coverage ratio of 1.50 times (or 150%) the Rate Resolution requirement in order to provide a buffer that would assist ECUA in mitigating risks associated in the inability to meet debt service obligations. ECUA, in consultation with their Financial Advisor, should evaluate the specific internal debt service coverage ratio that would provide the desired level of financial security.
4. ECUA requires four consecutive utility system rate increases of 8% for FY2011 through FY2014. These rate increases are expected to allow ECUA, absent any extraordinary event, to adequately meet operating, capital, DSC, and reserve requirement obligations over the forecast period.
5. ECUA should establish a credit enhancement policy to track and measure the financial position of the utility, the operating cost implications to the utility in the near and intermediate term, the stability of management, and highlight the potential cost implications associated with potential legal and regulatory issues.

Appendix C - Inspection Forms - Wells

Appendix C - Well Inspection Summary

Facility Name	Equipment and Maintenance Score	Compliance Score	Operations/Process Control Score	Overall Score
Plant #6-125 Desoto St.	2.1	3.0	2.9	2.7
Ellyson-2902 East Johnson Ave.	3.0	3.0	3.0	3.0
HAGLER-4190 Airfield Rd.	2.4	3.0	3.0	2.8
Spanish Trail-Jerry Maygarden Dr.	2.5	3.0	3.0	2.8
MCALLISTER-5810 McAllister Ave.	2.5	3.0	3.0	2.8
WEST PENSACOLA-4091 Lillian Hwy.	2.5	3.0	3.0	2.8
Villa-11 Villa Dr	2.5	3.0	3.0	2.8
Average	2.5	3.0	3.0	2.8



Emerald Coast Utility Authority
Well Review
Elyson-2902 East Johnson Ave.



General Information

Facility Name: Elyson-2902 East Johnson Ave.

Install Date: 11/10/1983

Subbasin: D1A

Tested Flow: 1999

gpm

Test Date: 12/15/1995

Reviewer: EAC/DK

Accompanied by: Kevin Waters

Date of Inspection: 12/17/2008

Position: Industrial Plant Mechanic

Phone: 850-346-0848



Compliance, Operations / Process Control

Compliance

Is the well is under the influence of surface water (GWU)? Yes No NA

Does well casing extend 12" above floor? Yes No NA

Has the well delivered adequate chlorine residual over past 12 months? Yes No NA

Compliance Rating:

Operations / Process Control

Is the control panel adequately labeled? Yes No NA

Is the well remotely monitored? Is it remotely controlled? Yes No NA

Is the facility visited on a regular schedule? Yes No NA

Is the log book up to date? Yes No NA

Are the waste / distribution lines labeled? Yes No NA

Emergency Power

Is the facility equipped with emergency generator? Yes No NA

Emergency power adequate to operate all equipment? Yes No NA

Emergency power exercised under load? Yes No NA

Does auto-transfer switch operate properly? Yes No NA

Does diesel AST have adequate containment and valving? Yes No NA Natural Gas Generator

Security

Is the facility protected by an adequate fence or gate? Yes No NA

Are the building doors and window locks functional? Yes No NA

Is the exterior lighting adequate? Yes No NA

Operations / Process Control Rating:



Emerald Coast Utility Authority
Well Review
Ellyson-2902 East Johnson Ave.



Equipment / Maintenance	
Equipment	
Is there a check valve?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Is there a pressure gauge?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Is there a flow meter?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Are there drain, sample & waste lines?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Is the well cap sealed on casing with screened vent?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Is the chlorine feed system adequate / sufficient?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Is there a sign with contact numbers listed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Is there a safety shower?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Are treatment chemicals contained?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Maintenance	
Well rehabilitation program adequate to maintain capacity and prevent clogging of well screen?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
All equipment in service and functioning properly?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Are there any visible leaks?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Are there any electrical power problems - breaker, wiring, connections?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Are well pump information / maintenance records on-site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Well information available (diameter, material, depth, screen size and depth, original production, pump information, etc.?)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Is the overall facility appearance acceptable?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Equipment / Maintenance Rating:	3.0



Summary

Criteria	Rating	Weight	Weighted Score
Compliance	3.0	40%	1.2
Operations / Process Control	3.0	30%	0.9
Equipment / Maintenance	3.0	30%	0.9
Overall			3.0

General Comments

Compliance

Operations /
Process Control

Equipment /
Maintenance



Emerald Coast Utility Authority
Well Review
HAGLER-4190 Airfield Rd.



General Information

Facility Name: HAGLER-4190 Airfield Rd.

Install Date: 5/12/1958

Subbasin: D4

Tested Flow: 1757

gpm

Test Date: 1/15/1993

Reviewer: EAC/DK

Accompanied by: Kevin Waters

Date of Inspection: 12/17/2009

Position: Industrial Plant Mechanic

Phone: 850-346-0848



Emerald Coast Utility Authority
Well Review
HAGLER-4190 Airfield Rd.



Compliance, Operations / Process Control

Compliance

Is the well is under the influence of surface water (GWU)? Yes No NA

Does well casing extend 12" above floor? Yes No NA

Has the well delivered adequate chlorine residual over past 12 months? Yes No NA

Compliance Rating:

Operations / Process Control

Is the control panel adequately labeled? Yes No NA

Is the well remotely monitored? Is it remotely controlled? Yes No NA

Is the facility visited on a regular schedule? Yes No NA

Is the log book up to date? Yes No NA

Are the waste / distribution lines labeled? Yes No NA

Emergency Power

Is the facility equipped with emergency generator? Yes No NA

Emergency power adequate to operate all equipment? Yes No NA

Emergency power exercised under load? Yes No NA

Does auto-transfer switch operate properly? Yes No NA

Does diesel AST have adequate containment and valving? Yes No NA

Security

Is the facility protected by an adequate fence or gate? Yes No NA

Are the building doors and window locks functional? Yes No NA

Is the exterior lighting adequate? Yes No NA

Operations / Process Control Rating:

GOOD = 2.5 to 3.0

ADEQUATE = 1.5 to 2.4

POOR = 0.5 to 1.4

UNACCEPTABLE = 0 to 0.4



Emerald Coast Utility Authority
Well Review
HAGLER-4190 Airfield Rd.



Equipment / Maintenance	
	Equipment
Is there a check valve?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Is there a pressure gauge?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Is there a flow meter?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Are there drain, sample & waste lines?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Is the well cap sealed on casing with screened vent?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Is the chlorine feed system adequate / sufficient?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Is there a sign with contact numbers listed?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Is there a safety shower?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Are treatment chemicals contained?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Maintenance	
Well rehabilitation program adequate to maintain capacity and prevent clogging of well screen?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
All equipment in service and functioning properly?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Are there any visible leaks?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Are there any electrical power problems - breaker, wiring, connections?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Are well pump information / maintenance records on-site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Well information available (diameter, material, depth, screen size and depth, original production, pump information, etc.?)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Is the overall facility appearance acceptable?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
<p style="text-align: right;">Is the overall facility appearance acceptable? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA <u>Yes, but Sanitary Sewer Lateral Cleanout Cap was Broken</u></p>	
Equipment / Maintenance Rating: 2.4	



Emerald Coast Utility Authority
Well Review
HAGLER-4190 Airfield Rd.



Summary

Criteria	Rating	Weight	Weighted Score
Compliance	3.0	40%	1.2
Operations / Process Control	3.0	30%	0.9
Equipment / Maintenance	2.4	30%	0.7
Overall			2.8

General Comments

Compliance

Operations /
Process Control

Equipment /
Maintenance

GOOD = 2.5 to 3.0

ADEQUATE = 1.5 to 2.4

POOR = 0.5 to 1.4

UNACCEPTABLE = 0 to 0.4





Emerald Coast Utility Authority
Well Review
MCALLISTER-5810 McAllister Ave.



General Information

Facility Name: MCALLISTER-5810 McAllister Ave.

Install Date: 12/10/1999

Subbasin: E5

Tested Flow: 1413

gpm

Test Date: 8/9/1993

Reviewer: EAC/DK

Accompanied by: Kevin Waters

Date of Inspection: 12/17/2008

Position: Industrial Plant Mechanic

Phone: 850-346-0848



Compliance, Operations / Process Control

Compliance

Is the well is under the influence of surface water (GWL)? Yes No NA

Does well casing extend 12" above floor? Yes No NA

Has the well delivered adequate chlorine residual over past 12 months? Yes No NA

Compliance Rating:

Operations / Process Control

Is the control panel adequately labeled? Yes No NA

Is the well remotely monitored? Is it remotely controlled? Yes No NA

Is the facility visited on a regular schedule? Yes No NA

Is the log book up to date? Yes No NA

Are the waste / distribution lines labeled? Yes No NA

Emergency Power

Is the facility equipped with emergency generator? Yes No NA

Emergency power adequate to operate all equipment? Yes No NA

Emergency power exercised under load? Yes No NA

Does auto-transfer switch operate properly? Yes No NA

Does diesel AST have adequate containment and valving? Yes No NA **Natural Gas Generator**

Security

Is the facility protected by an adequate fence or gate? Yes No NA

Are the building doors and window locks functional? Yes No NA

Is the exterior lighting adequate? Yes No NA

Operations / Process Control Rating:





Emerald Coast Utility Authority
Well Review
MCALLISTER-5810 McAllister Ave.



Equipment / Maintenance

Equipment

- Is there a check valve? Yes No NA
 - Is there a pressure gauge? Yes No NA
 - Is there a flow meter? Yes No NA
 - Are there drain, sample & waste lines? Yes No NA
 - Is the well cap sealed on casing with screened vent? Yes No NA
 - Is the chlorine feed system adequate / sufficient? Yes No NA
 - Is there a sign with contact numbers listed? Yes No NA
 - Is there a safety shower? Yes No NA
 - Are treatment chemicals contained? Yes No NA
- All but Lime are Double Contained.

Maintenance

- Well rehabilitation program adequate to maintain capacity and prevent clogging of well screen? Yes No NA
- All equipment in service and functioning properly? Yes No NA
- Are there any visible leaks? Yes No NA
- Are there any electrical power problems - breaker, wiring, connections? Yes No NA
- Are well pump information / maintenance records on-site? Yes No NA
- Well information available (diameter, material, depth, screen size and depth, original production, pump information, etc.?) Yes No NA
- Is the overall facility appearance acceptable? Yes No NA

Equipment / Maintenance Rating: 2.5



Summary

Criteria	Rating	Weight	Weighted Score
Compliance	3.0	40%	1.2
Operations / Process Control	3.0	30%	0.9
Equipment / Maintenance	2.5	30%	0.8
Overall			2.9

General Comments

Compliance	
Operations / Process Control	Calgon Carbon Filters on Site
Equipment / Maintenance	





Emerald Coast Utility Authority
Well Review
Plant #6-125 Desoto St.

MALCOLM
PIRNIE

General Information

Facility Name: Plant #6-125 Desoto St.

Install Date: 5/5/1946

Subbasin: A5

Tested Flow: 1295 gpm

Test Date: 12/6/1999

Reviewer: EAC/DK

Accompanied by: Kevin Waters

Date of Inspection: 12/3/2008

Position: Industrial Plant Mechanic

Phone: 850-346-0848



Emerald Coast Utility Authority
Well Review
Plant #6-125 Desoto St.



Compliance, Operations / Process Control

Compliance

Is the well is under the influence of surface water (GWUJ)? Yes No NA

Does well casing extend 12" above floor? Yes No NA

Has the well delivered adequate chlorine residual over past 12 months? Yes No NA

Compliance Rating: 3.0

Operations / Process Control

Is the control panel adequately labeled? Yes No NA

Is the well remotely monitored? Is it remotely controlled? Yes No NA

Is the facility visited on a regular schedule? Yes No NA

Is the log book up to date? Yes No NA

Are the waste / distribution lines labeled? Yes No NA

Emergency Power

Is the facility equipped with emergency generator? Yes No NA

Emergency power adequate to operate all equipment? Yes No NA

Emergency power exercised under load? Yes No NA

Does auto-transfer switch operate properly? Yes No NA

Does diesel AST have adequate containment and valving? Yes No NA

Security

Is the facility protected by an adequate fence or gate? Yes No NA

Are the building doors and window locks functional? Yes No NA

Is the exterior lighting adequate? Yes No NA

Operations / Process Control Rating: 2.9

GOOD = 2.5 to 3.0

ADEQUATE = 1.5 to 2.4

POOR = 0.5 to 1.4

UNACCEPTABLE = 0 to 0.4



Emerald Coast Utility Authority
Well Review
Plant #6-125 Desoto St.

**MALCOLM
PIRNIE**

Equipment / Maintenance

Equipment

- Is there a check valve? Yes No NA
- Is there a pressure gauge? Yes No NA
- Is there a flow meter? Yes No NA
- Are there drain, sample & waste lines? Yes No NA
- Is the well cap sealed on casing with screened vent? Yes No NA
- Is the chlorine feed system adequate / sufficient? Yes No NA
- Is there a sign with contact numbers listed? Yes No NA
- Is there a safety shower? Yes No NA
- Are treatment chemicals contained? Yes No NA

All but Lime are Double Contained.

Maintenance

- Well rehabilitation program adequate to maintain capacity and prevent clogging of well screen? Yes No NA
- All equipment in service and functioning properly? Yes No NA
- Are there any visible leaks? Yes No NA
- Are there any electrical power problems - breaker, wiring, connections? Yes No NA
- Are well pump information / maintenance records on-site? Yes No NA
- Well information available (diameter, material, depth, screen size and depth, original production, pump information, etc.)? Yes No NA
- Is the overall facility appearance acceptable? Yes No NA

Minor Leakage on Backflow Preventor

Due to Lime Run-off, Concrete is Eroded and Lime is all Over Site on the Ground

Equipment / Maintenance Rating: 2.1



Emerald Coast Utility Authority
Well Review
Plant #6-125 Desoto St.



Summary

Criteria	Rating	Weight	Weighted Score
Compliance	3.0	40%	1.2
Operations / Process Control	2.9	30%	0.9
Equipment / Maintenance	2.1	30%	0.6
Overall			2.7

General Comments

Compliance

Operations /
Process Control

Has GAC Filters on Site for Treatment of VOCs-This is Outsourced.

Equipment /
Maintenance





Emerald Coast Utility Authority
Well Review
Spanish Trail-Jerry Maygarden Dr.



General Information

Facility Name: Spanish Trail-Jerry Maygarden Dr. Install Date: Unknown
Subbasin: D5 Tested Flow: Unknown gpm
Test Date: 11/18/1999

Reviewer: EAC/DK Accompanied by: Kevin Waters
Date of Inspection: 12/17/2008 Position: Industrial Plant Mechanic
Phone: 850-346-0848



Emerald Coast Utility Authority
Well Review
 Spanish Trail-Jerry Maygarden Dr.



Compliance, Operations / Process Control

Compliance

- Is the well is under the influence of surface water (GMUJ)? Yes No NA
- Does well casing extend 12" above floor? Yes No NA
- Has the well delivered adequate chlorine residual over past 12 months? Yes No NA

Compliance Rating: 3.0

Operations / Process Control

- Is the control panel adequately labeled? Yes No NA
- Is the well remotely monitored? Is it remotely controlled? Yes No NA
- Is the facility visited on a regular schedule? Yes No NA
- Is the log book up to date? Yes No NA
- Are the waste / distribution lines labeled? Yes No NA

Emergency Power

- Is the facility equipped with emergency generator? Yes No NA
- Emergency power adequate to operate all equipment? Yes No NA
- Emergency power exercised under load? Yes No NA
- Does auto-transfer switch operate properly? Yes No NA
- Does diesel AST have adequate containment and valving? Yes No NA

Security

- Is the facility protected by an adequate fence or gate? Yes No NA
- Are the building doors and window locks functional? Yes No NA
- Is the exterior lighting adequate? Yes No NA

Operations / Process Control Rating: 3.0



Emerald Coast Utility Authority
Well Review
 Spanish Trail-Jerry Maygarden Dr.



Equipment / Maintenance	
	Equipment
Is there a check valve?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Is there a pressure gauge?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Is there a flow meter?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Are there drain, sample & waste lines?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Is the well cap sealed on casing with screened vent?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Is the chlorine feed system adequate / sufficient?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Is there a sign with contact numbers listed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Is there a safety shower?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Are treatment chemicals contained?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Maintenance	
Well rehabilitation program adequate to maintain capacity and prevent clogging of well screen?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
All equipment in service and functioning properly?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Are there any visible leaks?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Are there any electrical power problems - breaker, wiring, connections?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
Are well pump information / maintenance records on-site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Well information available (diameter, material, depth, screen size and depth, original production, pump information, etc.?)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Is the overall facility appearance acceptable?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
Equipment / Maintenance Rating: 2.5	



Emerald Coast Utility Authority
Well Review
 Spanish Trail-Jerry Maygarden Dr.



Summary

Criteria	Rating	Weight	Weighted Score
Compliance	3.0	40%	1.2
Operations / Process Control	3.0	30%	0.9
Equipment / Maintenance	2.5	30%	0.8
Overall			2.9

General Comments

Compliance

Operations /
Process Control

Equipment /
Maintenance





Emerald Coast Utility Authority
Well Review
Villa-11 Villa Dr



General Information

Facility Name: Villa-11 Villa Dr Install Date: 11/10/1983
Subbasin: G1 Tested Flow: 1999 gpm
Test Date: 12/15/1995

Reviewer: EAC/DK Accompanied by: Kevin Waters
Date of Inspection: 12/17/2008 Position: Industrial Plant Mechanic
Phone: 850-346-0848



Emerald Coast Utility Authority
Well Review
 Villa-11 Villa Dr

**MALCOLM
 PIRNIE**

Compliance, Operations / Process Control

Compliance

Is the well is under the influence of surface water (GWUJ)? Yes No NA

Does well casing extend 12" above floor? Yes No NA

Has the well delivered adequate chlorine residual over past 12 months? Yes No NA

Compliance Rating:

Operations / Process Control

Is the control panel adequately labeled? Yes No NA

Is the well remotely monitored? Is it remotely controlled? Yes No NA

Is the facility visited on a regular schedule? Yes No NA

Is the log book up to date? Yes No NA

Are the waste / distribution lines labeled? Yes No NA

Emergency Power

Is the facility equipped with emergency generator? Yes No NA

Emergency power adequate to operate all equipment? Yes No NA

Emergency power exercised under load? Yes No NA

Does auto-transfer switch operate properly? Yes No NA

Does diesel AST have adequate containment and valving? Yes No NA
 Natural Gas Generator

Security

Is the facility protected by an adequate fence or gate? Yes No NA

Are the building doors and window locks functional? Yes No NA

Is the exterior lighting adequate? Yes No NA

Operations / Process Control Rating:

GOOD = 2.5 to 3.0

ADEQUATE = 1.5 to 2.4

POOR = 0.5 to 1.4

UNACCEPTABLE = 0 to 0.4



Emerald Coast Utility Authority
 Well Review
 Villa-11 Villa Dr



Equipment / Maintenance

Equipment

- Is there a check valve? Yes No NA
 - Is there a pressure gauge? Yes No NA
 - Is there a flow meter? Yes No NA
 - Are there drain, sample & waste lines? Yes No NA
 - Is the well cap sealed on casing with screened vent? Yes No NA
 - Is the chlorine feed system adequate / sufficient? Yes No NA
 - Is there a sign with contact numbers listed? Yes No NA
 - Is there a safety shower? Yes No NA
 - Are treatment chemicals contained? Yes No NA
- All but Lime are Double Contained.

Maintenance

- Well rehabilitation program adequate to maintain capacity and prevent clogging of well screen? Yes No NA
- All equipment in service and functioning properly? Yes No NA
- Are there any visible leaks? Yes No NA
- Are there any electrical power problems - breaker, wiring, connections? Yes No NA
- Are well pump information / maintenance records on-site? Yes No NA
- Well information available (diameter, material, depth, screen size and depth, original production, pump information, etc.)? Yes No NA
- Is the overall facility appearance acceptable? Yes No NA

Equipment / Maintenance Rating: 2.5



Emerald Coast Utility Authority
Well Review
Villa-11 Villa Dr



Summary

Criteria	Rating	Weight	Weighted Score
Compliance	3.0	40%	1.2
Operations / Process Control	3.0	30%	0.9
Equipment / Maintenance	2.5	30%	0.8
Overall			2.9

General Comments

Compliance

Operations /
Process Control

Carbon Filters and Water Tank on Site

Equipment /
Maintenance



Emerald Coast Utility Authority
Well Review
WEST PENSACOLA-4091 Lillian Hwy.



General Information

Facility Name: WEST PENSACOLA-4091 Lillian Hwy.

Install Date: 9/2/1952

Subbasin: F2

Tested Flow: 2109

gpm

Test Date: 3/3/1998

Reviewer: EAC/DK

Accompanied by: Kevin Waters

Date of Inspection: 12/17/2008

Position: Industrial Plant Mechanic

Phone: 850-346-0848



Emerald Coast Utility Authority
Well Review
WEST PENSACOLA-4091 Lillian Hwy.



Compliance, Operations / Process Control

Compliance

- Is the well is under the influence of surface water (GWUJ)? Yes No NA
- Does well casing extend 12" above floor? Yes No NA
- Has the well delivered adequate chlorine residual over past 12 months? Yes No NA

Compliance Rating: 3.0

Operations / Process Control

- Is the control panel adequately labeled? Yes No NA
- Is the well remotely monitored? Is it remotely controlled? Yes No NA
- Is the facility visited on a regular schedule? Yes No NA
- Is the log book up to date? Yes No NA
- Are the waste / distribution lines labeled? Yes No NA

Emergency Power

- Is the facility equipped with emergency generator? Yes No NA
- Emergency power adequate to operate all equipment? Yes No NA
- Emergency power exercised under load? Yes No NA
- Does auto-transfer switch operate properly? Yes No NA
- Does diesel AST have adequate containment and valving? Yes No NA

Security

- Is the facility protected by an adequate fence or gate? Yes No NA
- Are the building doors and window locks functional? Yes No NA
- Is the exterior lighting adequate? Yes No NA

Operations / Process Control Rating: 3.0



Emerald Coast Utility Authority
Well Review
WEST PENSACOLA-4091 Lillian Hwy.



Equipment / Maintenance

Equipment

Is there a check valve? Yes No NA _____

Is there a pressure gauge? Yes No NA _____

Is there a flow meter? Yes No NA _____

Are there drain, sample & waste lines? Yes No NA _____

Is the well cap sealed on casing with screened vent? Yes No NA _____

Is the chlorine feed system adequate / sufficient? Yes No NA _____

Is there a sign with contact numbers listed? Yes No NA _____

Is there a safety shower? Yes No NA _____

Are treatment chemicals contained? Yes No NA _____

All but Lime are Double Contained.

Maintenance

Well rehabilitation program adequate to maintain capacity and prevent clogging of well screen? Yes No NA _____

All equipment in service and functioning properly? Yes No NA _____

Are there any visible leaks? Yes No NA _____

Are there any electrical power problems - breaker, wiring, connections? Yes No NA _____

Are well pump information / maintenance records on-site? Yes No NA _____

Well information available (diameter, material, depth, screen size and depth, original production, pump information, etc.?) Yes No NA _____

Is the overall facility appearance acceptable? Yes No NA _____

Equipment / Maintenance Rating: 2.5



Emerald Coast Utility Authority
Well Review
WEST PENSACOLA-4091 Lillian Hwy.



Summary

Criteria	Rating	Weight	Weighted Score
Compliance	3.0	40%	1.2
Operations / Process Control	3.0	30%	0.9
Equipment / Maintenance	2.5	30%	0.8
Overall			2.9

General Comments

Compliance	
Operations / Process Control	Booster Treatment on Site
Equipment / Maintenance	

Appendix D - Inspection Forms - Tanks

Facility Name	Equipment and Maintenance Score	Operation/Access Control Score	Overall Score
PCC	2.4	2.9	2.6
EAST-Police Station	3.0	2.2	2.6
LIBRARY	2.4	2.9	2.6
POINT LOW GST-13640 Innerarity Point Rd.	2.9	3.0	3.0
SOUTH WEST GST	2.9	3.0	3.0
Key Tank-13862 Simms St.	2.4	3.0	2.7
ISLAND GST#1	2.4	3.0	2.7
ISLAND GST#2	2.4	3.0	2.7
ISLAND GST#3	2.4	3.0	2.7
Average	2.6	2.9	2.7



General Information

Pump Station Name: Pensacola Beach PS

Number of Pumps 3

Subbasin: M2

Reviewer: EAC/DK/AD

Accompanied by: Glenn Morris

Date of Inspection: 12/3/2008

Position: Utility Equipment Supervisor

Phone: 850-476-5110 ext 2247



Emerald Coast Utility Authority
Water Pump Station Review
Pensacola Beach PS



Operations / Process Control

Operations / Process Control

- Is there lead/lag or rotating operation of pumps? Yes No NA
- Is there any remote monitoring of facilities (i.e. level, pressure)? Yes No NA
- Is the station overall status regularly reported to supervising facility? Yes No NA
- Is the log book up to date? Yes No NA

Emergency Power

- Is the facility equipped with an emergency generator? Yes No NA
- Is the generator tested regularly? Yes No NA 4 hours a Month
- Is emergency power adequate to operate pump station? Yes No NA
- Was the generator operation demonstrated? Yes No NA Crew did not Demonstrate
- Was the auto-transfer switch function demonstrated? Yes No NA Crew did not Demonstrate
- Does the diesel tank have adequate containment, volume and valving? Yes No NA

Pump Station Equipment

- Are there pressure gauges on suction and discharge? Yes No NA
- Is there a flow meter? Yes No NA
- Are the control & power panels in good condition? Yes No NA
- Is interior lighting adequate? Yes No NA
- Are there pump elapsed time meters? Yes No NA

Security

- Is the facility protected by an adequate fence or gate? Yes No NA
- Are the building doors and window locks functional? Yes No NA
- Is the exterior lighting adequate? Yes No NA

Operations / Process Control Rating: 2.9

GOOD = 2.5 to 3.0

ADEQUATE = 1.5 to 2.4

POOR = 0.5 to 1.4

UNACCEPTABLE = 0 to 0.4



Emerald Coast Utility Authority
Water Pump Station Review
Pensacola Beach PS

**MALCOLM
PIRNIE**

Equipment / Maintenance

Equipment

- Are all pumps in service and available? Yes No NA
- Is there cavitation or vibration? Yes No NA
- Is the generator in service / good repair? Yes No NA
- Are there crane rails and cranes in place? Yes No NA
- Is the pump equipped with a backflow preventor/ check valve? Yes No NA
- Is there a discharge pressure relief system? Yes No NA
- Are treatment chemicals contained? Yes No NA
- Is there a safety shower? Yes No NA
- Are the isolation valves on suction and discharge? Yes No NA
- Are there any visible leaks? Yes No NA

Chemical was Unmarked and Unknown

Seal Water Line on One Pump is Leaking and Flowmeter Box Wall has Groundwater Leakage

Equipment / Maintenance Rating: 2.7

GOOD = 2.5 to 3.0

ADEQUATE = 1.5 to 2.4

POOR = 0.5 to 1.4

UNACCEPTABLE = 0 to 0.4



Emerald Coast Utility Authority
Water Pump Station Review
Pensacola Beach PS



Summary

Criteria	Rating	Weight	Weighted Score
Operations / Process Control	2.9	50%	1.5
Equipment / Maintenance	2.7	50%	1.4
Overall			2.8

General Comments

Operations /
Process Control

[Empty box for Operations / Process Control comments]

Equipment /
Maintenance

Flowmeter Box Wall has Groundwater Leakage and Noted Corrosion and an Unknown Chemical was on Site.

GOOD = 2.5 to 3.0

ADEQUATE = 1.5 to 2.4

POOR = 0.5 to 1.4

UNACCEPTABLE = 0 to 0.4



Emerald Coast Utility Authority
Water Pump Station Review
Southwest PS

**MALCOLM
PIRNIE**

General Information

Pump Station Name: Southwest PS

Number of Pumps 4

Subbasin: H1

Reviewer: EAC/DK

Accompanied by: Kevin Waters

Date of Inspection: 12/12/2008

Position: Industrial Plant Mechanic

Phone: 850-346-0848

Operations / Process Control

Operations / Process Control

- Is there lead/lag or rotating operation of pumps? Yes No NA
- Is there any remote monitoring of facilities (i.e. level, pressure)? Yes No NA
- Is the station overall status regularly reported to supervising facility? Yes No NA
- Is the log book up to date? Yes No NA

Emergency Power

- Is the facility equipped with an emergency generator? Yes No NA
- Is the generator tested regularly? Yes No NA 4 hours a Month
- Is emergency power adequate to operate pump station? Yes No NA
- Was the generator operation demonstrated? Yes No NA
- Was the auto-transfer switch function demonstrated? Yes No NA
- Does the diesel tank have adequate containment, volume and valving? Yes No NA

Pump Station Equipment

- Are there pressure gauges on suction and discharge? Yes No NA
- Is there a flow meter? Yes No NA
- Are the control & power panels in good condition? Yes No NA
- Is interior lighting adequate? Yes No NA
- Are there pump elapsed time meters? Yes No NA

Security

- Is the facility protected by an adequate fence or gate? Yes No NA
- Are the building doors and window locks functional? Yes No NA
- Is the exterior lighting adequate? Yes No NA

Operations / Process Control Rating: 3.0



Emerald Coast Utility Authority
Water Pump Station Review
Southwest PS



Equipment / Maintenance

Equipment

Are all pumps in service and available? Yes No NA

Is there cavitation or vibration? Yes No NA

Is the generator in service / good repair? Yes No NA

Are there crane rails and cranes in place? Yes No NA

Is the pump equipped with a backflow preventor/ check valve? Yes No NA

Is there a discharge pressure relief system? Yes No NA

Are treatment chemicals contained? Yes No NA

Is there a safety shower? Yes No NA

Are the isolation valves on suction and discharge? Yes No NA

Are there any visible leaks? Yes No NA

Equipment / Maintenance Rating: 3.0



Summary

Criteria	Rating	Weight	Weighted Score
Operations / Process Control	3.0	50%	1.5
Equipment / Maintenance	3.0	50%	1.5
Overall			3.0

General Comments

Operations / Process Control

Equipment / Maintenance

**Appendix E - Inspection Forms - Water Pump
Stations**

Appendix E - Water Pump Station Inspection Summary

Facility Name	Visual Inspection Inspection Score	Operational Inspection Inspection Score	Overall Score
Southwest PS	3.0	3.0	3.0
Pensacola Beach PS	2.7	2.9	2.8
Average	2.9	3.0	2.9



Emerald Coast Utility Authority
Water Pump Station Review
Pensacola Beach PS



General Information	
Pump Station Name: <u>Pensacola Beach PS</u>	Number of Pumps: <u>3</u>
Subbasin: <u>M2</u>	
Reviewer: <u>EAC/DK/AD</u>	Accompanied by: <u>Glenn Morris</u>
Date of Inspection: <u>12/3/2008</u>	Position: <u>Utility Equipment Supervisor</u>
	Phone: <u>850-476-5110 ext 2247</u>



Operations / Process Control

Operations / Process Control

- Is there lead/lag or rotating operation of pumps? Yes No NA
- Is there any remote monitoring of facilities (i.e. level, pressure)? Yes No NA
- Is the station overall status regularly reported to supervising facility? Yes No NA
- Is the log book up to date? Yes No NA

Emergency Power

- Is the facility equipped with an emergency generator? Yes No NA
- Is the generator tested regularly? Yes No NA 4 hours a Month
- Is emergency power adequate to operate pump station? Yes No NA
- Was the generator operation demonstrated? Yes No NA Crew did not Demonstrate
- Was the auto-transfer switch function demonstrated? Yes No NA Crew did not Demonstrate
- Does the diesel tank have adequate containment, volume and valving? Yes No NA

Pump Station Equipment

- Are there pressure gauges on suction and discharge? Yes No NA
- Is there a flow meter? Yes No NA
- Are the control & power panels in good condition? Yes No NA
- Is interior lighting adequate? Yes No NA
- Are there pump elapsed time meters? Yes No NA

Security

- Is the facility protected by an adequate fence or gate? Yes No NA
- Are the building doors and window locks functional? Yes No NA
- Is the exterior lighting adequate? Yes No NA

Operations / Process Control Rating: 2.9



Emerald Coast Utility Authority
Water Pump Station Review
Pensacola Beach PS

**MALCOLM
PIRNIE**

Equipment / Maintenance

Equipment

- Are all pumps in service and available? Yes No NA
- Is there cavitation or vibration? Yes No NA
- Is the generator in service / good repair? Yes No NA
- Are there crane rails and cranes in place? Yes No NA
- Is the pump equipped with a backflow preventor/ check valve? Yes No NA
- Is there a discharge pressure relief system? Yes No NA
- Are treatment chemicals contained? Yes No NA
- Is there a safety shower? Yes No NA
- Are the isolation valves on suction and discharge? Yes No NA
- Are there any visible leaks? Yes No NA

Chemical was Unmarked and Unknown

Seal Water Line on One Pump is Leaking and Flowmeter Box Wall has Groundwater Leakage

Equipment / Maintenance Rating: 2.7

GOOD = 2.5 to 3.0

ADEQUATE = 1.5 to 2.4

POOR = 0.5 to 1.4

UNACCEPTABLE = 0 to 0.4



Emerald Coast Utility Authority
Water Pump Station Review
Pensacola Beach PS



Summary

Criteria	Rating	Weight	Weighted Score
Operations / Process Control	2.9	50%	1.5
Equipment / Maintenance	2.7	50%	1.4
Overall			2.8

General Comments

Operations /
Process Control

Equipment /
Maintenance

Flowmeter Box Wall has Groundwater Leakage and Noted Corrosion and an Unknown Chemical was on Site.



Emerald Coast Utility Authority
Water Pump Station Review
Southwest PS



General Information

Pump Station Name: Southwest PS

Number of Pumps: 4

Subbasin: H1

Reviewer: EAC/DK

Accompanied by: Kevin Waters

Date of Inspection: 12/12/2008

Position: Industrial Plant Mechanic

Phone: 850-346-0848



Emerald Coast Utility Authority
Water Pump Station Review
Southwest PS



Operations / Process Control

Operations / Process Control

Is there lead/lag or rotating operation of pumps? Yes No NA _____

Is there any remote monitoring of facilities (i.e. level, pressure)? Yes No NA _____

Is the station overall status regularly reported to supervising facility? Yes No NA _____

Is the log book up to date? Yes No NA _____

Emergency Power

Is the facility equipped with an emergency generator? Yes No NA _____

Is the generator tested regularly? Yes No NA 4 hours a Month _____

Is emergency power adequate to operate pump station? Yes No NA _____

Was the generator operation demonstrated? Yes No NA _____

Was the auto-transfer switch function demonstrated? Yes No NA _____

Does the diesel tank have adequate containment, volume and valving? Yes No NA _____

Pump Station Equipment

Are there pressure gauges on suction and discharge? Yes No NA _____

Is there a flow meter? Yes No NA _____

Are the control & power panels in good condition? Yes No NA _____

Is interior lighting adequate? Yes No NA _____

Are there pump elapsed time meters? Yes No NA _____

Security

Is the facility protected by an adequate fence or gate? Yes No NA _____

Are the building doors and window locks functional? Yes No NA _____

Is the exterior lighting adequate? Yes No NA _____

Operations / Process Control Rating: 3.0



Emerald Coast Utility Authority
Water Pump Station Review
 Southwest PS

**MALCOLM
PIRNIE**

Equipment / Maintenance

Equipment

- Are all pumps in service and available? Yes No NA
- Is there cavitation or vibration? Yes No NA
- Is the generator in service / good repair? Yes No NA
- Are there crane rails and cranes in place? Yes No NA
- Is the pump equipped with a backflow preventor/ check valve? Yes No NA
- Is there a discharge pressure relief system? Yes No NA
- Are treatment chemicals contained? Yes No NA
- Is there a safety shower? Yes No NA
- Are the isolation valves on suction and discharge? Yes No NA
- Are there any visible leaks? Yes No NA

Equipment / Maintenance Rating: 3.0



Emerald Coast Utility Authority
Water Pump Station Review
Southwest PS



Summary

Criteria	Rating	Weight	Weighted Score
Operations / Process Control	3.0	50%	1.5
Equipment / Maintenance	3.0	50%	1.5
Overall			3.0

General Comments

Operations /
Process Control

Equipment /
Maintenance

**Appendix F - Inspection Forms - Wastewater
Pump Stations**

Appendix F - WWPS Inspection Summary

Property Name	Overall Score	Minimum Score	Maximum Score
Lake Estelle LS #96	1.9	2.9	2.4
11 Mile Creek LS # 186	1.4	1.7	1.5
12th. Ave. LS # 4	1.7	3.0	2.4
19th. & Blackshear LS #70	1.9	2.9	2.4
34th. Street LS # 68	1.5	2.8	2.2
9th.Ave LS # 2	1.6	2.9	2.3
Alvins Island LS # 205	1.8	1.3	1.5
Ave. 21 LS #210	2.0	2.0	2.0
Avery at X St. LS #26	1.9	2.5	2.2
Baptist Park LS #271	1.9	2.9	2.5
Baywatch Condo LS #211	1.7	2.3	2.0
Blue Angel Lake LS #255	2.1	2.7	2.4
Bristol Park LS # 99	2.0	3.0	2.5
Brookmeadow LS # 45	2.3	2.6	2.4
Camelot LS # 59	2.0	3.0	2.5
Carrolwood LS #52	0.7	2.7	1.7
Cervantes LS # 3	2.6	3.0	2.8
Chandelle LS #223	2.1	2.7	2.4
Char Bar LS 107	2.0	2.8	2.4
Charter Oaks LS# 230	1.8	3.0	2.4
Circle LS # 108	1.9	1.7	1.8
Coquina Village LS #167	1.8	2.8	2.3
Coral Creek LS #180	2.6	2.1	2.4
Country Walk LS #75	1.8	2.8	2.3
Coventry Est. LS # 56	1.4	3.0	2.2
Creighton & Scenic LS #62	2.0	2.6	2.3
Crystal Wells LS #291	2.1	2.9	2.5
Days Inn LS #42	1.9	2.9	2.4
Detroit Blvd LS #50	0.8	3.0	1.9
Eastgate LS #12	1.5	3.0	2.2
Eden Condo LS #181	1.7	2.8	2.3
Eden Crossing LS #86	1.9	2.5	2.2
Elm St. LS # 286	2.1	3.0	2.5
Emerald Shores LS 36	2.0	2.5	2.2
Evergreen LS #13	0.8	3.0	1.9
Forest Drive LS # 226	2.1	2.1	2.1
Gaberonne LS #66	1.9	2.9	2.4
General Aviation LS #243	2.1	3.0	2.6
Grand Oaks LS # 197	1.9	2.2	2.0
Graveyard LS # 58	2.7	2.7	2.7
Greenbriar (Gen) LS# 53	1.9	2.6	2.3
Gulfside LS #173	2.1	3.0	2.6
Keel Street LS# 298	2.1	2.9	2.5

Appendix F - WWPS Inspection Summary

Property Name	Score 1	Score 2	Score 3
Kings Ridge Est. LS # 276	2.2	3.0	2.6
Kings Road LS # 97	2.0	2.1	2.0
Kingswood LS #191	2.0	2.1	2.0
Lake Charlene LS #138	1.8	2.4	2.1
Largo Dr. LS #208	1.9	2.9	2.4
Lex. Square LS # 85	1.7	3.0	2.3
Lincoln Park LS #10	2.6	2.8	2.7
Maplewood LS #80	2.0	3.0	2.5
Marcus Point Blvd LS #198	0.9	2.9	1.9
Marcus Point LS 40	2.1	3.0	2.5
Marcus Pointe, 4th Add. LS #238	1.9	3.0	2.4
Mariner Condo LS #222	1.7	2.8	2.3
Mayfair LS 35	1.9	2.0	2.0
Milestone LS #231	2.6	3.0	2.8
Montclair LS #9	1.7	2.9	2.3
Navy Point II LS # 363	1.9	2.7	2.3
Northcross LS #82	1.8	2.5	2.1
Northeast LS # 7	2.8	2.9	2.9
Ocean Breeze West LS #168	1.8	3.0	2.4
old Camelot Apts. LS #104	1.8	2.3	2.0
Panferio Dr. LS #206	1.7	1.4	1.5
Paul Star Dr. LS #185	1.8	2.3	2.1
Perdido Beach LS #199	1.9	1.8	1.9
Perdido Key Cove LS #270	2.1	3.0	2.6
Perdido Sun LS #165	1.7	2.9	1.8
Pine Forest Rd. LS 228	2.1	3.0	2.6
Pine Hollow LS #194	1.9	2.9	2.4
Plaza North LS #84	1.8	3.0	2.4
Port Royal LS #15	1.7	3.0	2.4
Ray Street LS #300	2.0	2.9	2.5
River Road LS #164	1.9	3.0	2.4
Robin Road LS #351	2.1	2.9	2.5
Sandollar Condo LS #207	1.8	1.4	1.6
Sandollar LS # 81	1.9	3.0	2.4
Sandy Key Condo LS #263	2.0	2.9	2.5
Scenic Hills LS # 11	1.5	2.9	2.2
Seaglades LS # 159	1.6	1.5	1.6
SeaShore Village LS #227	1.8	2.9	2.4
Shorewood LS # 203	1.0	2.9	2.0
Silverton Subdivision LS #278	2.0	3.0	2.5
Sugar Bowl LS #212	0.7	2.5	1.6
Tate High School LS #146	2.2	2.8	2.5
Truman Arms LS #33	1.9	2.1	2.0

Appendix F - WWPS Inspection Summary

Property Name	Overall Score	Minimum Score	Maximum Score
Twin Oaks LS #128	2.0	1.9	2.0
University Park LS #55	1.9	2.7	2.3
University Town Center LS #281	2.6	3.0	2.8
Villa Sabine LS#209	1.7	2.0	1.8
Warrington #2 LS #372	1.2	3.0	2.1
Waterford Place LS #272	1.9	3.0	2.4
Westshore Drive LS 34	1.9	2.3	2.1
Whaley & Waxwell LS #72	0.7	2.2	1.4
White Cedar Garden LS # 289	2.1	2.2	2.2
Windward LS #221	1.7	3.0	2.4
Woodbridge LS #92	2.1	2.2	2.1
Zarragossa LS #295	2.1	2.9	2.5
Blue Angel Prkwy (Gen) LS #147	0.9	1.5	1.2
Rhett Road LS #37	1.8	3.0	2.4
Lurton Street LS # 69	1.8	2.9	2.3
Ebonwood LS #284	2.2	3.0	2.6
Green Street North LS #24	2.0	2.7	2.4
Green St. South LS #23	0.8	2.2	1.5
Blanchard LS # 20	0.1	2.9	1.5
Briarcliff LS #22	0.3	2.9	1.6
Cypess and "L" LS #19	2.1	3.0	2.6
Industries LS #6	0.6	1.9	1.3
Keyser LS #21	1.4	1.9	1.7
Wildlife Sanctuary LS #269	2.2	3.0	2.6
Lake Chateau LS # 76	1.8	2.1	2.0
Ellyson Field LS #14	1.8	2.2	2.0
Westinghouse LS #57	1.7	2.9	2.3
Bradberry LS #48	1.9	3.0	2.4
Fowler Ave. LS #320	2.0	3.0	2.5
Pine Forest Royale LS #280	2.0	2.9	2.4
Baars Park LS #5	1.8	2.5	2.1
Springdale Forest LS #242	2.0	2.9	2.4
Westwood Mall LS #129	1.7	2.5	2.1
Bay Meadows LS #103	1.8	2.8	2.3
Canterbury Woods 1st Add. LS #105	1.8	1.6	1.7
Corrydale LS #109	1.9	2.1	2.0
Crystal Lake LS #247	2.1	2.9	2.5
Patton Drive LS #120	1.9	1.6	1.7
Weatherstone LS #369	2.0	3.0	2.5
Browns Lane LS #327	1.9	3.0	2.4
K-Mart LS #115	1.6	2.8	2.2
Lakewood LS #325	1.9	3.0	2.4
Meadowbrook LS #117	1.6	2.1	1.8
Moreno Court LS #324	1.8	3.0	2.4

Appendix F - WWPS Inspection Summary

Oakcrest LS #118	2.0	2.9	2.5
Pen. Haven Plant LS #150	0.3	2.1	1.2
Penhaven LS #121	1.9	3.0	2.4
Sherwood LS #124	1.8	2.8	2.3
Jitney Jungle LS #114	0.2	1.8	1.0
Star Lake LS #125	2.0	2.9	2.4
Aqua Porta LS #187	2.2	1.5	1.9
Flag Pole LS #155	2.1	3.0	2.6
Grand Lagoon Nth. LS #112	1.8	2.6	2.2
Navaho Drive LS #157	1.8	3.0	2.4
Windward Cove LS #299	2.0	3.0	2.5
Chandelle #3 LS#264	2.1	2.8	2.5
Chandelle 1st Add., Phase 2 LS #234	2.1	2.5	2.3
Emerald Shores North LS #254	1.0	2.9	1.9
Keywest Sub. LS #233	1.8	2.9	2.3
Lost Key II LS #350	2.1	3.0	2.6
Bayou Grande West LS #220	1.7	2.5	2.1
Beach Haven Cove LS #274	2.0	2.9	2.5
Coral Village LS #252	2.1	3.0	2.6
Dog Track LS #184	1.9	1.7	1.8
El Dorado LS #110	2.1	2.1	2.1
Emerald Shores West LS #249	0.7	2.8	1.7
Harbor Point LS #260	1.9	2.9	2.4
Navy Housing, LS #215	2.1	2.9	2.5
Nirvana LS #245	2.0	1.8	1.9
Pinelake Estates Unit 3 LS #133	2.1	2.7	2.4
Shangri-la LS #123	2.1	3.0	2.6
Woodridge LS #202	2.1	3.0	2.6
Lillian Woods LS #262	1.9	3.0	2.4
San Sebastian LS #310	1.9	3.0	2.4
8 Mile Creek LS #302	2.0	3.0	2.5
Heritage Oaks LS #311	1.9	2.6	2.2
Keystone LS #336	1.7	2.4	2.0
Landfill LS #246	1.0	3.0	2.0
Logans Place LS #328	0.9	2.9	1.9
Longleaf Drive LS #41	1.6	1.5	1.5
Springfield LS #244	2.0	2.9	2.5
Admiral Park LS #101	1.7	2.2	1.9
Carracres West LS #106	2.0	1.6	1.8
Patricia Drive LS #119	1.9	3.0	2.4
Avondale LS #102	1.8	2.7	2.3
Boulder Creek LS #182	1.9	2.9	2.4
Brookside Hills LS #282	2.1	3.0	2.6
Magnolia Lakes II LS #314	2.1	3.0	2.6

Appendix F - WWPS Inspection Summary

Pump Station Name	Operator/Inspector/Comptroller Name	Inspector and Maintenance Rating	Overall Rating
Maple Oaks LS #296	2.1	1.8	2.0
Robinsons Mill LS# 374	2.2	3.0	2.6
Ronda Street LS #192	1.9	2.9	2.4
Turners Meadow LS #277	2.0	2.9	2.4
Ashbury Hill LS #189	1.7	2.9	2.3
Bentley Oaks LS# 330	2.1	3.0	2.6
Booker Street LS #140	0.7	2.7	1.7
Cant. Comm. Park LS #326	2.1	3.0	2.6
Carrington Lakes LS #339	2.1	3.0	2.8
Homeland Avenue LS # 142	1.8	3.0	2.4
Ironhorse LS #304	2.1	2.2	2.1
Pinebrook Estates LS # 307	2.1	2.9	2.5
Well Line Road LS#143	2.1	3.0	2.6
Westfield LS# 317	2.1	3.0	2.6
Average	1.8	2.7	2.2