

# Water Reuse – Reinventing Wastewater Management

January 2010



# ECUA Treatment Facilities





# Main Street WWTP- Today



# Hurricane Ivan Water Mark- 9/04





# Main Street WWTP - Post Ivan



# ECUA's New CWRF – 22.5 MGD



◆ December 2009

# Side-by-Side Comparison

## ◆ Main Street Wastewater Treatment Plant

- 8 mg/L TSS
- 8 mg/L CBOD5
- 6 mg/L total nitrogen
- 1 mg/L total phosphorous
- Surface water discharge
- Advanced secondary treatment

## ◆ Central Water Reclamation Facility

- 5 mg/L TSS
- 5 mg/L CBOD5
- 3 mg/L total nitrogen
- <1 mg/L total phosphorous
- 100% Industrial reuse
- AWT quality



# Industrial Sprayfields

- Required large land availability
- Water was deemed “non-public access”
- Setback distances were required, further decreasing available land
- Sprayfields were no longer an option





# Sprayfield Analysis

- ◆ Further Analysis
  - Reclaimed water was later classified as public access
  - Sprayfields became an option again
    - Eliminates set-back distances
  - Further reuse available for industries
  - Future reuse available for residents



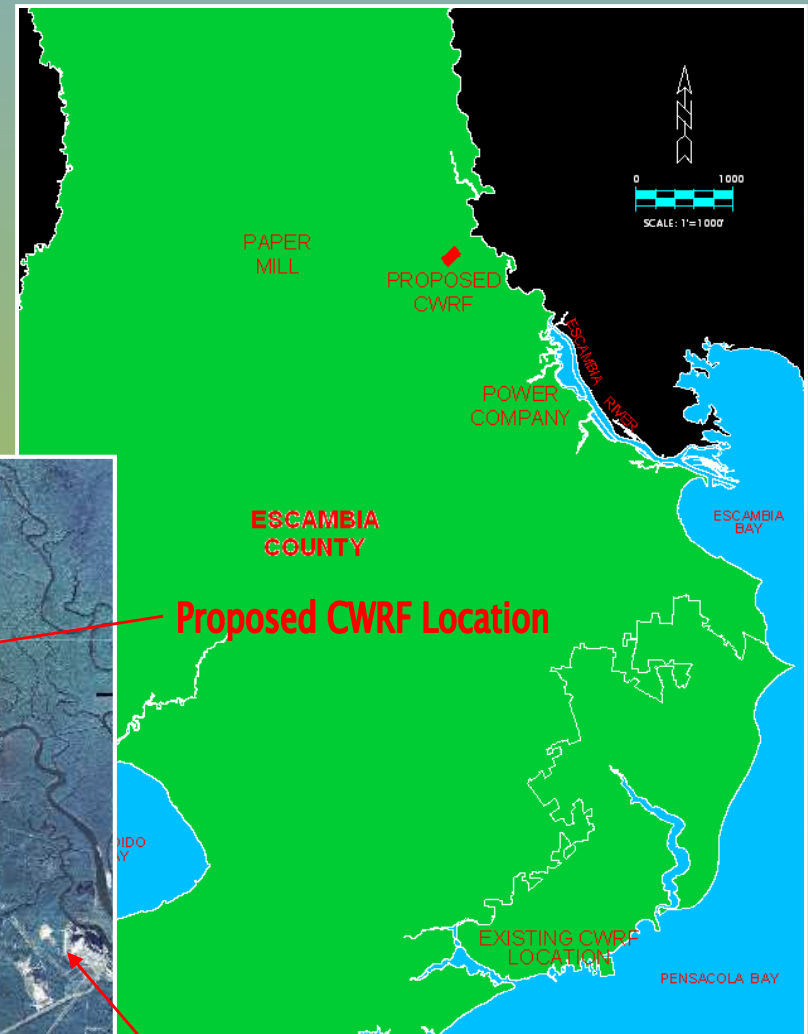
# Industrial Wetlands?





# Industrial Reuse

- Gulf Power Company
- International Paper Company



International Paper



Proposed CWRP Location

ECUA Main Street WWTP

# Flue Gas Desulphurization Scrubber

- ◆ 2002 Clean Air Interstate Rule
  - Requires power companies to reduce emissions of sulphur oxides and nitrogen oxides
  - Gulf Power to install Scrubber
    - Requires clean water
    - If source water is the Escambia River, purification required (high \$\$\$)
    - Accepts reclaimed water from the CWRP
    - What to do with the blowdown?





# Gulf Power Company Concerns

- Start up of CWRF
  - Potential delays to scrubber
  - Scrubber online before CWRF
    - Backup water source provided
- Permitting concerns
  - Concentrating effects of the constituents in the looped system
  - Impacts of municipal wastewater on the Escambia River
- NPDES Permit issued April 2009



# ECUA Issues with Gulf Power's Reuse

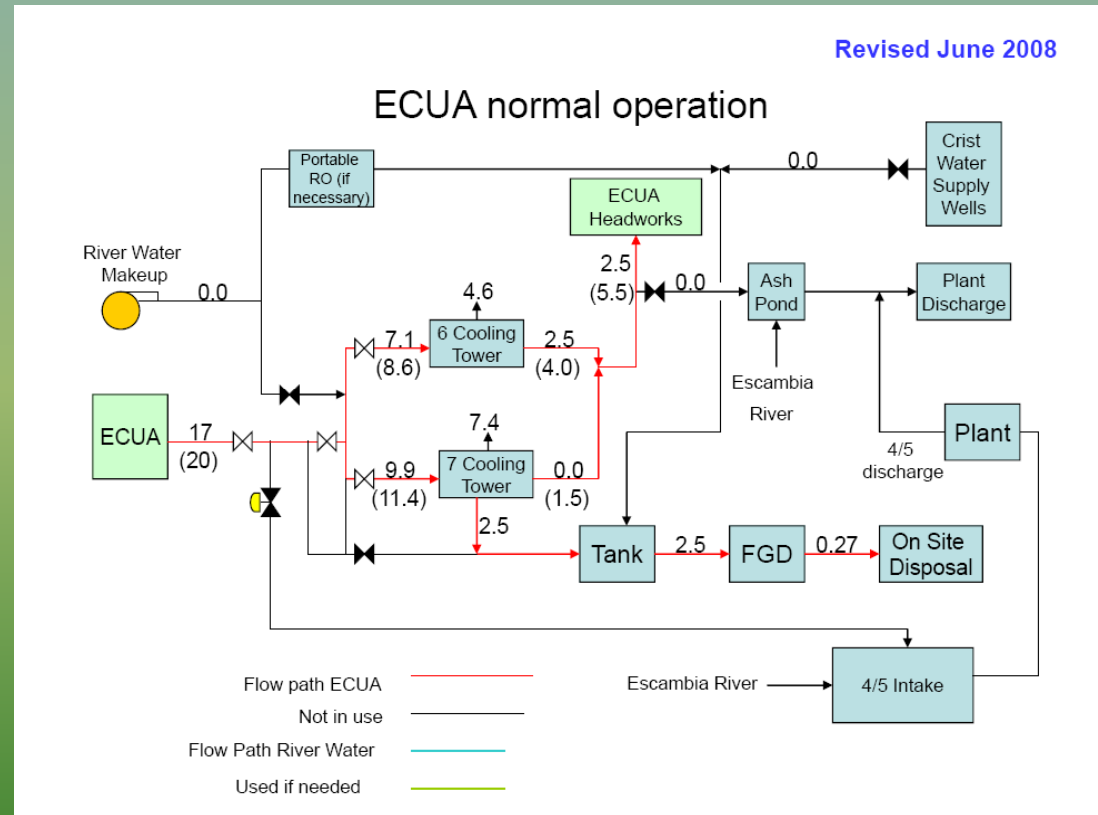
- CWRP capacity would be no longer adequate
- Violations of primary and secondary drinking water standards due to concentrating effect of loop
  - Increase will occur, but not above standards





# Gulf Power Company

- Three cooling towers operating
  - Once-through cooling water system
  - Closed-loop cooling water system
- Current supply source and discharge location: Escambia River
- Agreed to use 20 MGD of reclaimed water
  - 12 MGD will evaporate
  - 2.5 MGD will require disposal
  - 2.5 MGD returned to ECUA



# International Paper Company

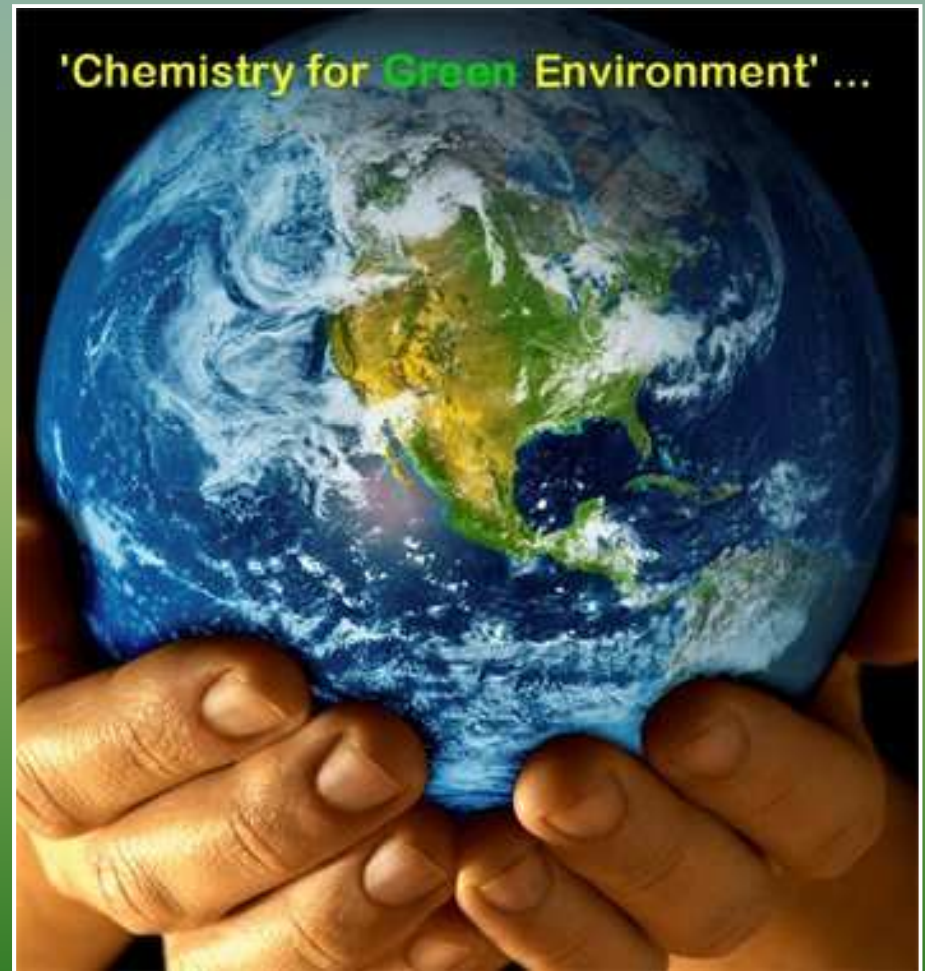
- Requires 20-25 MGD for daily operations (current source: Sand-and-Gravel Aquifer)
- Maximized water reuse
  - ◆ Up to 6 MGD can be reclaimed
- Will accept flow during IP Mill outages
- Discharge from Mill to WWTP, re-established wetlands





# Benefits of the New System

- Reliable wastewater treatment plant
- Better treatment
- Less odor
- Greater endurance to hurricanes
- Reinforces a greater potable water supply
- Existing failing surface water discharge is eliminated



Questions?