POINT PAPER

RE-RATE STUDY &
WASTE WATER TREATMENT PLANT IMPROVEMENTS
APRIL 28, 2008

PROBLEM: The City of Palmetto has received correspondence from the Florida Department of Environmental Protection (FDEP) regarding the renewal of the permit for the Waste Water Treatment Plant (WWTP). The cost of the improvements is substantial, but must be scheduled for completion in order to renew the permits. A rate study is required to determine the appropriate revenue necessary to fund the improvements.

BACKGROUND: The City of Palmetto must renew its WWTP permit every 5 years. We have submitted our application to FDEP for renewal, and received a letter requesting additional information that, in general, is related to revising our groundwater monitoring plan to accommodate a reduction in allowable discharge and to reduce I & I.

In order to accommodate these reductions, the City must make a variety of improvements to the WWTP and to the Water, Sewer, and Stormwater systems.

In order to ensure the City’s ability to fund the necessary improvements, the City should conduct a rate study, examining the cost of improvements and current revenue. It is also important to prepare a schedule for the completion of these improvements, so as to distribute the cost over a reasonable time period, while ensuring that the City meets the requirements of the permit renewal.

Jim McLellan of Jones Edmunds will provide the City Commission with a cost analysis and presentation regarding the needed improvements and permitting requirements.
Objectives

- Evaluate WWTP to assess ability to re-rate
- Determine what would be needed to increase capacity by 1.0 MGD
- Complete repermitting of WWTP with FDEP
Re-Rate Study

- Existing WWTP Capacity = 2.4 MGD
- Want to see what is needed to get that to 3.4 MGD
  - Does the WWTP have reserve capacity >2.4 MGD?
    - If yes, how much?
Ex. WWTP has no reserve capacity
   - Cannot re-rate plant without upgrades

Main Limitations
   - Influent Lift Station
   - Grit Removal
   - Biological Process
   - Settling Tanks (Clarifiers)
2.4 MGD Current Capacity (FDEP Permit)
- Bardenpho Trains (2) = 1.4 MGD
- Oxidation Ditch = 1.0 MGD
Issues

- Plant has 3 treatment trains that operators must run as 3 separate units
- Capability of Oxidation Ditch to remove nitrogen is less than that of other 2 trains
- As flows increase towards WWTP capacity, ability to meet Nitrogen limit will become harder to do consistently
Effluent Disposal

- 2 Permitted Disposal Methods
  - Discharge to Terra Ceia Bay
    - FDEP Permit = 1.4 MGD
  - Reuse System
    - FDEP Permit = 2.625 MGD

LIMITATION: FDEP WILL NOT ALLOW CITY TO DISCHARGE >1.4 MGD TO BAY
Implications?

- To increase WWTP Capacity, City will need to:
  
  1. Expand Reuse System Capacity and/or
  
  2. Find an Alternative Disposal to Bay
Recommendations

- Improvements Completed in 2 Phases
  - Phase 1: Short Term Remedies
    - Things needed to address existing limitations
  - Phase 2: Plant Expansion
    - Things needed to achieve capacity of 3.4 MGD
Phase 1 Improvements

- Upgrade Influent Pump Station
- Install New Grit Removal System Yard Piping Improvements
- Pursue Installation of a Deep Injection Well for Wet Weather Effluent Disposal
- Continue to Expand Reuse System
Why a Deep Injection Well

- Eliminate Stringent Permit Requirements of the Terra Ceia Bay discharge
  - No more toxicity testing
  - No more copper/nickel concerns
  - Nitrogen limits would be easier to meet

- Any WWTP Expansion could be designed for less nitrogen removal
# Phase 1
## Preliminary Cost Opinion

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<tr>
<th>Description</th>
<th>Cost</th>
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<tr>
<td>Influent Pump Station</td>
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<td>Grit Removal System</td>
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<td>Deep Injection Well</td>
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<td>Permitting, Installation, &amp; Pump Station</td>
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<td>Yard Piping Improvements</td>
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<td><strong>Total</strong></td>
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Phase 2 Improvements

- Treatment Train Improvements
  - New Splitter Box
  - New Fine Bubble Diffused Air System/Blowers for Bardenpho trains
  - New Ox Ditch Aerator and Controls
  - Internal RecyIce Pump Station for Bardenpho Trains

- Secondary Clarifier Improvements
  - New Split Box
  - Remove 40’ Diameter Clarifiers and Old Trickling Filters
  - Install 2 New 80’ Diameter Clarifiers

- Filter Improvements
- Expand Disinfection System

- Aerobic Digester Improvements
- Yard Piping changes
- Electrical/Instrumentation
Potential Upgrades
## Phase 2
### Preliminary Cost Opinion

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<th>Item</th>
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- Permit Application was filed within required timeframe
- Request for Additional Information received from FDEP
- Drafting Response to RAI