

# REQUEST FOR BOARD ACTION / CONTRACT CONTROL FORM

Tracking Number: 3.

Date of Request: January 16, 2008

Date Request Received: January 16, 2008

Board Meeting Date Requested: January 22, 2008

Board Meeting Date Assigned: January 22, 2008

Short Title: Pender County Utility System Report

**Background:** County Manager Lori Brill, Tony Boahn from McKim and Creed, and Greg Thompson from Southern Engineering will present information on the current status of water and sewer in Pender County. In addition, the presentation will identify three major public utility goals and objectives necessary to create the operational foundation needed to effectively manage the County's infrastructure development; including 1) System Management Policies; 2) water and sewer ordinances development and 3) Strategic Planning.

Greg Thompson was brought into the county as a consultant several months ago to assist with the development of water and sewer system policies. In addition, he has been collecting and compiling water and sewer system data to determine the actual status of water and sewer allocations and capacity.

The PowerPoint presentation is attached, along with sample flow allocation letters.

**Specific Action Requested:** Receive update, approve the recommended action steps and approve the flow acceptance letters for immediate implementation.

Requested by: Lori Brill  
Department: Administration  
Title: County Manager  
Contact Phone: 259-1200  
Contact Fax:

**Request Status:**

- Request is proceeding to Board of Commissioners
- More information is needed – see attached
- Request on hold – no further information needed
- Other:

(Administrative Use Only)

**CONTRACT TYPE**

- Renewal
- For Service(s)
- Intergovernmental – County as Grantee
  - Federal Grantor
  - State Grantor
  - Grantor
- County as Grantor
  - County Funds
  - Other Funds:
- Revision
- For Equipment

**PURCHASING**

Date Rec'd: Budgeted Item:  Yes  No  
 Reviewed and Approved  
 Comments on Reverse

Date Sent: August 20, 2007 Signed:

**ATTORNEY**

Date Rec'd:  Reviewed and Approved  
 Legal Problem(s)  
 Comments on Reverse

Date Sent: Signed:

**FINANCE**

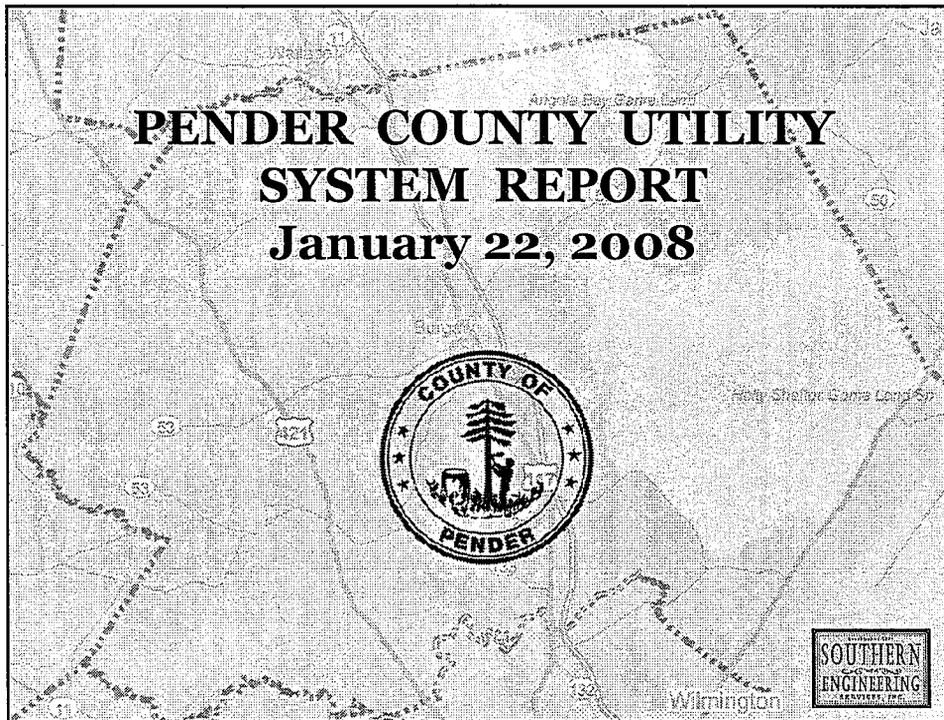
Date Rec'd: Sufficient Funds  Available  Not Available  
 Budget Amendment Necessary  
 Budgeted Amendment is Attached  
 Comments on Reverse

Date Sent: Signed:

**CLERK**

Signature(s) Required:  
 Board Chairman/County Manager  
 Other:

Date Rec'd Approved by Board:  Yes  No  
At meeting on



## **SYSTEM HISTORY**

- 1989 – Utility Study
- 1992 – CAMA Study (Utilities Focus)
- 1996 – RPTWSD Formation
- 2001 – Completion of Phase I System
- 2002 – Began Phase 3 Evaluation
- 2002 – Recommended Alternate Water Source
- 2005 – Commissioned Master Plan
- 2006 – Recommended 2 MGD Plant at Feb Retreat
- 2006 – Formation of Water and Sewer Districts
- 2006 – Completed Phase 3
- 2007 – Completed Phase 4 & 5
- 2009 – Scotts Hill WD Completion

## **SYSTEM HISTORY**

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### **System Popularity**

Phase 1.....Almost Wasn't!!

625 Customers Initial Signup

300 Additional from Several MHP's

925 Start of Construction

\*1200 Completion of Construction – 30% Growth!!

\*\*Phases 3,4,5 – Met Signups Prior to Project

## **WATER SYSTEM STATUS**

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### **Maple Hill Water System**

Available capacity: 200,000 GPD (Chinquapin)

Total number of connections:346

Average use per connection: 118 GPD

Average total consumption: 40,802 GPD

## WATER SYSTEM STATUS

### Rocky Point/Topsail Water & Sewer District

Available capacity: 800,000 GPD (300,000 GPD after improvements- 1,100,000 GPD)

Number of connections: 3,081 (157 - Commercial, 2,924 Residential)

Average use per commercial connection: 1,566 GPD

Average use per residential connection: 137 GPD

Average use per connection: 208 GPD

Average use per connection low: 146 GPD (November 2005)

Average use per connection high: 274 GPD (April 2007)

### July 2005 - November 2007

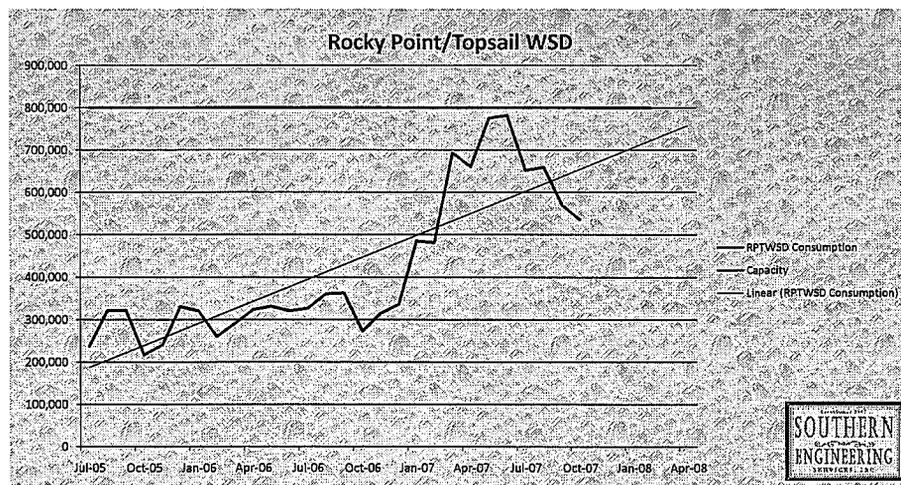
Average use per connection: 208 GPD

Current average consumption: 640,848 GPD

Average summer use per connection (05-07): 227 GPD

Average summer consumption: 699,030 GPD

## WATER SYSTEM STATUS



## **WATER SYSTEM STATUS**

### **CURRENT CUSTOMERS**

Phase 5 = Connections: 1,232 (Now Connecting)  
Projected average consumption at 208 GPD: 256,256 GPD

Total Connections (Including Phase 5): 4,313  
Projected average consumption at 208 GPD/connection: 897,104 GPD  
Projected summer consumption at 227 GPD/connection: 978,551 GPD

Low limit at 146 GPD: 629,698 GPD  
High limit at 274 GPD: 1,181,762 GPD

These values are for active connections plus projected connections from sign-up for phase 5.

## **WATER SYSTEM STATUS**

### **FUTURE DEMAND**

Total lots available for connection to system: 289 \*  
(vacant lots in approved subdivisions)

Projected water demand (208 GPD): 60,112 GPD

\*Information based on available data

**WATER SYSTEM STATUS**

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**FUTURE DEMAND**

Residential units included in proposed new subdivisions under review by planning NOT APPROVED: 8,160 (estimated)

Total Planned Units 8,160

Projected water requirements based on 208 GPD: 1,697,280 GPD

**WATER SYSTEM STATUS**

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Allocated Capacity = Current Accounts + Phase 5 + Lots Pending  
= 640,848 GPD+ 256,256 GPD+ 60,112 GPD

**Allocated Capacity = 957,216 GPD (Based on 208 GPD)**

- 120% of current supply (800,000 GPD)
- 87% of supply after Wallace improvements (1,100,000 GPD)

Future Demand = Allocated capacity + Projects under review  
= 957,216 GPD + 1,697,280 GPD

**Future Demand = 2,654,496 GPD**

- 241% of Wallace supply (1,100,000 GPD)
- 86% of supply after 421 Water Treatment Plant on line

## **WATER SYSTEM STATUS**

Master Plan projection for water in 2010

**3,140,000 GPD**

## **SEWER SYSTEM STATUS**

**Rocky Point/Topsail -**

Available capacity - 75,000 GPD \*

Number of connections: 14 commercial accounts

Average flow per connection: 3,140 GPD

Total average flow: 43,986 GPD

(Based on meter readings Dec. 2006 - Oct. 2007)

\* Contract for Treatment Capacity with City of Wilmington.  
Currently, City under sewer moratorium.

## **SEWER SYSTEM STATUS**

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### Future sewer system plans

- Option for 250,000 GPD treatment capacity upon completion of NSWWTP expansion.
- Feasibility study for sewer treatment plant on USHWY 421 in progress.

## **GOALS & OBJECTIVES**

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- System Management Policies
- Water & Sewer Ordinance
- Strategic Planning

## **SYSTEM MANAGEMENT POLICIES**

### **Allocation Management**

- Changes in state oversight
- System growth
- Protection of system resources
  - Flow Acceptance Letters
- System reports for staff and commissioners

### **Cooperative Development**

- Planned development with system improvements

### **Construction Standards**

- Public and Private systems within the County

## **WATER & SEWER ORDINANCE**

**Continuity with development related ordinance –  
(Planning & Zoning)**

### **System Protection**

- Standards for waste
- Backflow
- Water Shortage Emergency Plan
- Enforcement Action to protect system integrity

**Defines rates and fees**

## **STRATEGIC PLANNING**

### **Business Plan**

- Organizational Structure & Staffing Plan
- Capital Improvements Plan
  - Systems & Facilities (Growth/Master Plan)
- Operating & Capital Budgets
- Cost of Service / Rate & Fee Structure
- Implementation Plan

### **Asset Management**

- Replacement & Refurbishment program

### **Water System Enhancement Program**

- Operational focus
  - Identify hydraulic bottlenecks
  - Resolve pressure & flow issues

## **STRATEGIC PLANNING**

### **Water System Enhancement Program Initial Effort**

1. System Improvements for Wallace Supply
2. Identify additional water source
3. Develop Critical Project List:
  1. Projects necessary for water plant to function as expected
  2. Projects necessary to resolve existing hydraulic issues to meet 2010 demands

**REQUESTED BOARD ACTION**

- Support Recommended Goals and Objectives
- Approve Flow Acceptance Letters
- Approve Development of Water System Enhancement Program
- Support Development of Water and Sewer Ordinance
- Approve Development of Business Plan

(DATE)

(ADDRESSEE)

RE: (Name of project)

File # Pender (Public Water)

**Developer, owner or applicant, you must sign Exhibit "W1" in agreement and return prior to construction**

The Rocky Point/Topsail Water and Sewer District of Pender County currently has the capacity to provide \_\_\_\_ GPD of water for the above referenced project.

The water system is the \_\_\_\_\_ Water System, PWSID # \_\_\_\_\_, WSMP #00-????? (Date for Master Plan)

If a private water, the District must approve the design and will require a copy of the permit application, State permit, and Engineer's certification. If a public system, the District must approve the design and sign the State permit application. Private systems must employ or contract with a 24/7 operator and provide names and contact numbers to the District. All private systems must be upgraded to District Specifications and standards, at no cost to the District, if in the future it is desired to convey the system to the District. **Water quality in private systems at locations beyond the District's meter is the responsibility of the owner/operator. Water quality within the private system may require flushing by the owner/operator if potable water lines are sized for the demand at final build-out, oversized to reduce head loss, or if the system designer puts a flow restriction in the line such as an undersized meter or backflow prevention device.**

The developer, owner or responsible party, (further referred to herein as developer) will schedule a pre-construction meeting with the District in order to review project scope, specifications and standards. Any permits, encroachments, and/or easements must be obtained prior to the pre-construction meeting. **The District will not participate financially in a project if an agreement signed by the District and the developer has not been completed and executed prior to the pre-construction meeting. No buildings, structures, ponds, obstructions, trees, fences, or berms shall be placed, constructed, or situated within the rights-of-way and the easements, weather existing or to be granted. The only exception is a security fence (perpendicular to the main line, adjacent to a right-of-way, not applicable to individual lots) with removable paneling may be granted but must be submitted for approval on a case by case basis, and in any event a "Hold Harmless" agreement must be executed or incorporated into the conveyance. All easements must be a minimum of thirty (30) feet unless otherwise approved by the District.** If for any reason, you do not choose to proceed with the installation of the system under the District's conditions, the permit must be rescinded at no cost to the District.

Whether public or private, the District shall receive a forty-eight (48) hour notice prior to construction. The material used to connect the system must be per the District specification and the work must be

performed by a licensed utility contractor who is District approved. As-built drawings of the additions to, and modification of the District's system, will be provided by the developer. The as-built drawings will be drawn according to District standards and a paper copy and digital copy will be provided. As-built drawings will be submitted and reviewed for compliance with District standards prior to final inspection or approval and activation. Final acceptance of the work is at the sole discretion of the District. The owner(s) is responsible to make all directed repairs at no cost to the District prior to activating the system. All applicable fees and costs associated in connection with the District's water system must be paid prior to or at time of building permit. Backflow prevention is required as adopted by the District.

**Per NCDENR, the constructed system will not be operated, no meters, (construction, hydrant, or permanent) will be set or otherwise activated until the Engineer's and Applicant's Certifications have been submitted to and approved by NCDENR Public Water Supply Section.**

For a public utility, the one (1) year warranty will start from the date the conveyance is recorded. If the conveyance is not executed by the developer in a timely manner as directed, all building permits and/or Certificate or Occupancy for structures served by the newly constructed or modified system will be held until the conveyance information is properly submitted. This condition must be disclosed to all buyers.

Any taps which may be deemed necessary to be installed, relocated, or abandoned will be the responsibility of the developer or owner at no cost to the District, in accordance with the District specifications and approval.

Also, the District's inspector will perform all necessary water service inspections prior to obtaining any Certificate of Occupancy.

This is not a commitment of capacity. It only indicates present availability. System capacity will change as new connections are made, potentially impacting your ability to connect some or all of your proposed development to the District's system.

Respectfully:

Attachment "W1"

## Exhibit "W1"

(Name of Project)

File # Pender County

(Public Water)

I, \_\_\_\_\_, as property owner, developer, and/or responsible party, accept the above conditions of this letter. I and my employees will disclose to all parties the directives as outlined in this letter. I further understand that I must convey the system per the District's documents in a timely manner, as determined by the District, or Certificates of Occupancy and Permits, regardless of ownership, will be held until the system is properly conveyed to the District.

1. \_\_\_ (Initial) I waive the option of requesting Pender County Water and Sewer District cost participation in the cost of this system.

**OR**

2. \_\_\_\_\_ (initial) I am requesting participation. See my attached request for participation letter with three (3) independent bids for the project showing a cost breakdown and identifying the differences and values which I am requesting participation. I acknowledge that participation agreements take a minimum of sixty (60) days to execute. Additionally I understand a request for participation must be approved by the Pender County Board of Commissioners and the act of processing this participation request is in no way a guarantee that the request for participation will be granted.

**And**

3. \_\_\_\_\_ (Initial) I agree that no utility construction will commence before a participation agreement contract is in place or I will waive the participation offer (see above)

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Signature (Required)

Date

**Item 1 or 2 must be initialed prior to holding a preconstruction conference,**

**AND item 3 must be initialed prior to holding a preconstruction conference.**

(Date)

(ADDRESSEE)

**Re: Name of Project**

**File # Pender (Public Sewer)**

(You must sign and return prior to construction Exhibit "S1")

Dear (NAME)

The Rocky Point/Topsail Water and Sewer District of Pender County does currently have capacity to accept the sewage flow of \_\_\_\_\_ GPD from the above referenced project.

The receiving wastewater treatment plant will be the James A Laughlin Wastewater Treatment Plant, permit number NC0023965 (or future Pender County 421 Wastewater Treatment Plant - permit number ????????)

The District must approve the design, and if a private system (non-subdivide project) will require a copy of the permit application, State permit and Engineer's certification. Private Systems must employ or contract with a 24/7 operator and provide manes and contract numbers to the County. All private systems must be upgraded to District Specifications, at no cost to the District, if in the future it is desired to convey the system to the District.

The developer, owner or responsible party, (further referred to herein as developer) will schedule a pre-construction meeting with the District in order to review project scope, specifications and standards. Any permits, encroachments, easements and/or participation costs must be resolved prior to the pre-construction meeting. **The District will not participate financially in a project if an agreement signed by the District and the developer has not been executed prior to the pre-construction meeting. Also, all off site easements must be approved, acquired and recorded prior to the pre-construction meeting. No buildings, structures, ponds, obstructions, trees, fences, or berms shall be placed, constructed or situated within the rights-of-way and the easements, weather existing or to be granted. The only exception is a security fence (perpendicular to the main line, adjacent to a right-of-way, not applicable to individual lots) with removable paneling may be granted but must be submitted for approval on a case by case basis, and in any event a "Hold Harmless" agreement must be executed and incorporated into the conveyance. All easements must be a minimum of thirty (30) feet unless otherwise approved by the District. If for any reason, you do not choose to proceed with instillation of the system under the District conditions, the permit must be rescinded at no cost to the District. The**

District reserves the right to adjust, rescind or otherwise modify the allocation of sewer capacity or the access to allocated capacity in order to protect the integrity of the system or the best interest of the District and Pender County.

Private systems must construct services to Pender County Water and Sewer District's specifications and install sewer guards at each manhole including grease traps. Also, any private pump station's top elevation must be constructed at two (2) feet above the routed 100 year storm elevation or FIRM maps 100 year flood elevation, whichever is higher.

Whether public or private, the District shall receive a forty-eight (48) hour notice prior to construction. The material used to connect the system must be per the District specification and the work must be performed by a licensed utility contractor who is District approved. As-built drawings of the additions to, and modification of the District's system, will be provided by the developer. The as-built drawings will be drawn according to District standards and a paper copy and digital copy will be provided. As-built drawings will be submitted and reviewed for compliance with District standards prior to final inspection or approval and activation. Final acceptance of the work is at the sole discretion of the District. The developer is responsible to make all directed repairs at no cost to the District prior to activating the system. All applicable fees and costs associated in connection with the District's sewer system must be paid prior to or at time of building permit.

For a public utility, the one (1) year warranty will start from the date the conveyance is recorded. If the conveyance is not executed by the developer in a timely manner as directed, all building permits and/or Certificate of Occupancy for structures served by the newly constructed or modified system will be held until the conveyance information is properly submitted. This condition must be disclosed to all buyers.

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Also, the District's inspector will perform all necessary inspections prior to obtaining any Building Permit.

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Regards

Utility Director  
Pender County

Attachment: Exhibit "S1"

**Exhibit "S1"**

(Name of Project)

File # Pender County

(Public Sewer)

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\_\_\_\_\_  
Signature (Required)

\_\_\_\_\_  
Date

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**AND item 3 must be initialed prior to holding a preconstruction conference.**