



## **Town of Pittsboro, North Carolina**

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**Engineering Department**

### **Memorandum**

To: Mayor Bill Terry and Town Board of Commissioner's

From: Fred Royal, PE, Town Engineer 

Subject: FYI Jordan Lake Round 4 Water Supply Allocation Application and Resolution

Date: April 14, 2014

### **Background**

Last October, 2013 the Town Board received a memorandum concerning the Jordan Lake Partnership and the Round 4 Allocation Application process. This memo is a follow-up and a notice to review the attached draft Resolution and attachments. The Resolution is intended to accompany the Town's Round 4, Jordan Lake Water Supply Allocation Application, due to the NC Division of Water Resources by May 1, 2014. Staff continues to work on the draft application and will forward it to the BOC when it is completed. The BOC will be asked to adopt the Resolution at the April 28<sup>th</sup> meeting.

The Town of Pittsboro has been working with the Jordan Lake Partners (JLP) since March 16, 2009, via a Memorandum of Understanding (MOU). That partnership was developed as a result of the available 100 million gallons per day allotment remaining for public water supply in Jordan Lake. The Town has identified Jordan Lake as its secondary source for public water supply beyond approximately 2030. The partnership consists of all regional municipalities and counties with an interest in or current use for Jordan Lake water as a primary or secondary public water supply.

Since the MOU, the JLP has held meetings that has required extensive staff time for the purpose of developing a regional water model, an interconnection study, developing future water demand projections and preparation for the up-coming Water Allocation Application.

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As a review, the provisional water demand projections for the Town of Pittsboro are as follows:

2020 – 3.3 MGD

2030 – 7.7 MGD

2040 – 10.1 MGD

2050 – 10.8 MGD

2060 – 11.7 MGD

The estimated costs and schedule of Pittsboro's future water supply and treatment are based on the JLP peer-reviewed "Preferred Alternative", Round 4 Jordan Lake Water Supply Allocation Application as follows:

#### Fiscal Years 2015 - 2030

Incrementally increase the Town's existing water treatment plant capacity from 2 MGD to 6 MGD at the Haw River WTP over the next 15 years.

\*Estimated Capital Cost at full build-out: \$25 - \$30M  
(Operation and Maintenance (O&M) costs are not included)

\*The incremental strategy is intended to reduce costs by increasing in 2 MGD steps, once in approximately 2015 and again in approximately 2020. Please see the Pittsboro Timeline graph below. Financing requirements, actual growth demand, WTP up-grade alternatives and other variables will be a factor in this approach. The 2 MGD steps are intended to remain just ahead of the demand as the graph indicates.

#### Fiscal Years 2030 – 2060

As a balanced approach to the Haw River source, Pittsboro staff will continue working with the JLP Western Intake Partners (OWASA, Chatham County and the City of Durham) to develop a draft plan for the new proposed raw water intake, water treatment plant and finished water distribution network. Pittsboro is requesting an allocation of 6 MGD from Jordan Lake. The finished water from Jordan Lake would be pumped in a pipe from the new treatment plant to Pittsboro, where the town can plan a distribution system for this new water in the future. The other partner's finished water would be pumped further north to their respective water distribution systems. Please see the attached map.

\*\*Estimated Capital Cost at full build-out: \$46M  
(Operation and Maintenance (O&M) costs are not included)

\*\*This preferred alternative requires that the partners come to an agreement with respect to financing and construction schedules, operations and maintenance, contracting, etc. Cost savings can be achieved by requesting a Level II (future) allocation, where the allocation fees to DENR

would be significantly reduced until the time the town wishes to request a Level I (current) allocation, where the fees would be increased.

Total estimated new water supply (10 MGD) capital costs and allocation fees for the Town of Pittsboro (2015-2060): \$76M (*in 2010 dollars*)

### **Discussion**

As described in the previous October 2013 report, the town has significant work to do to plan, design, obtain permits and finance potable water supply increases. The Haw River will continue to be the primary source of drinking water until the Jordan Lake allocation process and new in-take issues are all developed and instituted.

As a requirement for the Jordan Lake Round 4 water allocation, Pittsboro will be in the position to be more proactive in water use efficiencies, water conservation planning, and emergency and redundant water source planning via interconnections. The UDO process may serve as a catalyst for the development of these programs and ordinances.

The draft Allocation Application (not included in this report) contains language for a proposed *Water Conservation Plan Strategy*. One key point in this strategy will be to reduce the town's high non-potable water losses (and costs) in the distribution system. These losses are estimated to be twenty five (25%) percent of the finished water in the distribution system alone. The normal or acceptable value is ten percent (10%).

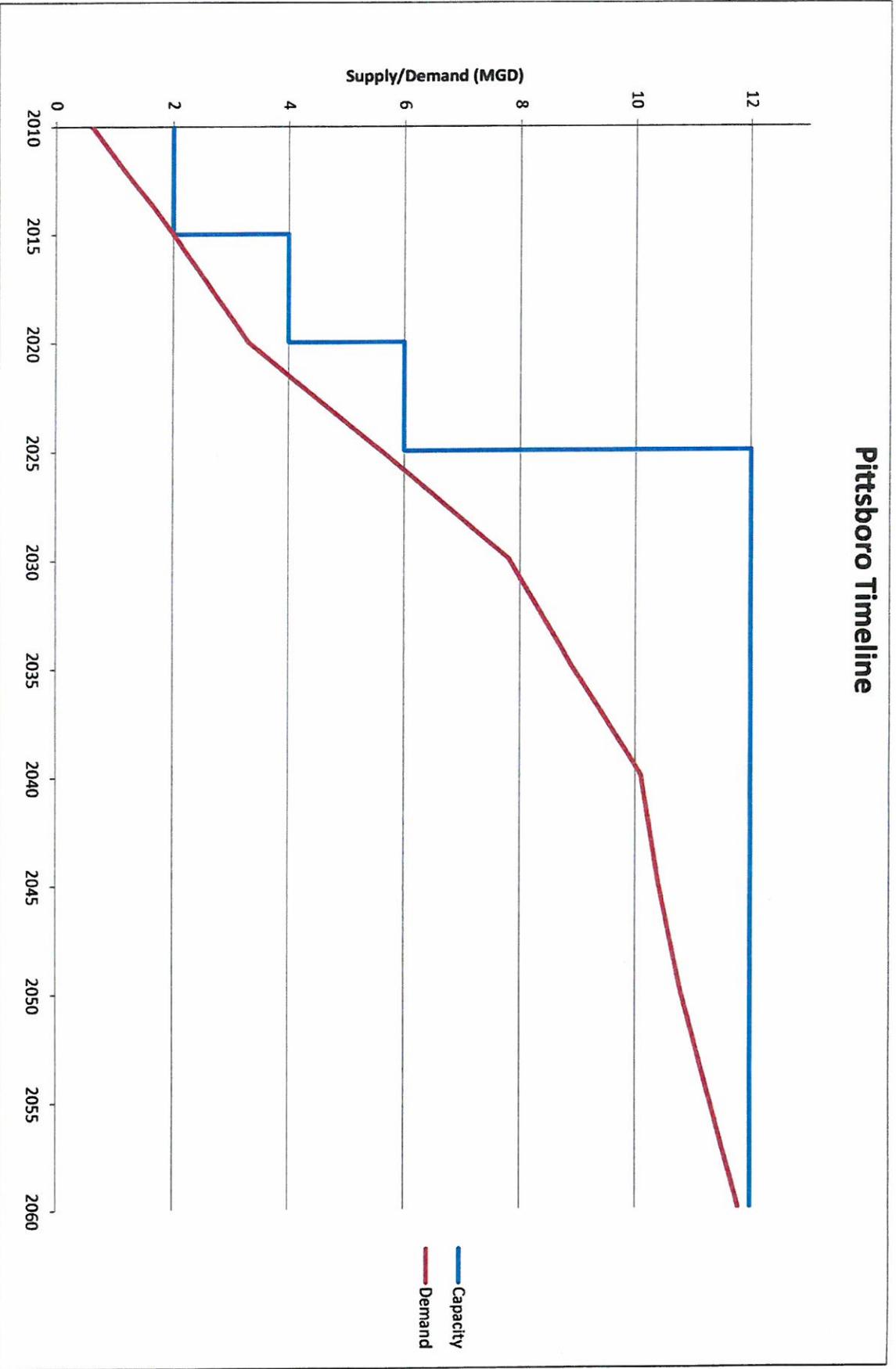
General strategies for meeting increased water demands while minimizing cost:

- Fully develop ordinances, programs and policies regarding new development water uses, including but not limited to; public education, efficient plumbing fixtures, re-claimed water use for irrigation, construction and industry requiring process water.
- Conduct annual AWWA Water Audits and programmatically work to reduce water losses in the system using CIP funds.
- Perform a financial analysis of the Enterprise Fund to assess and manage current and future expenses and revenues.

### **Recommendations**

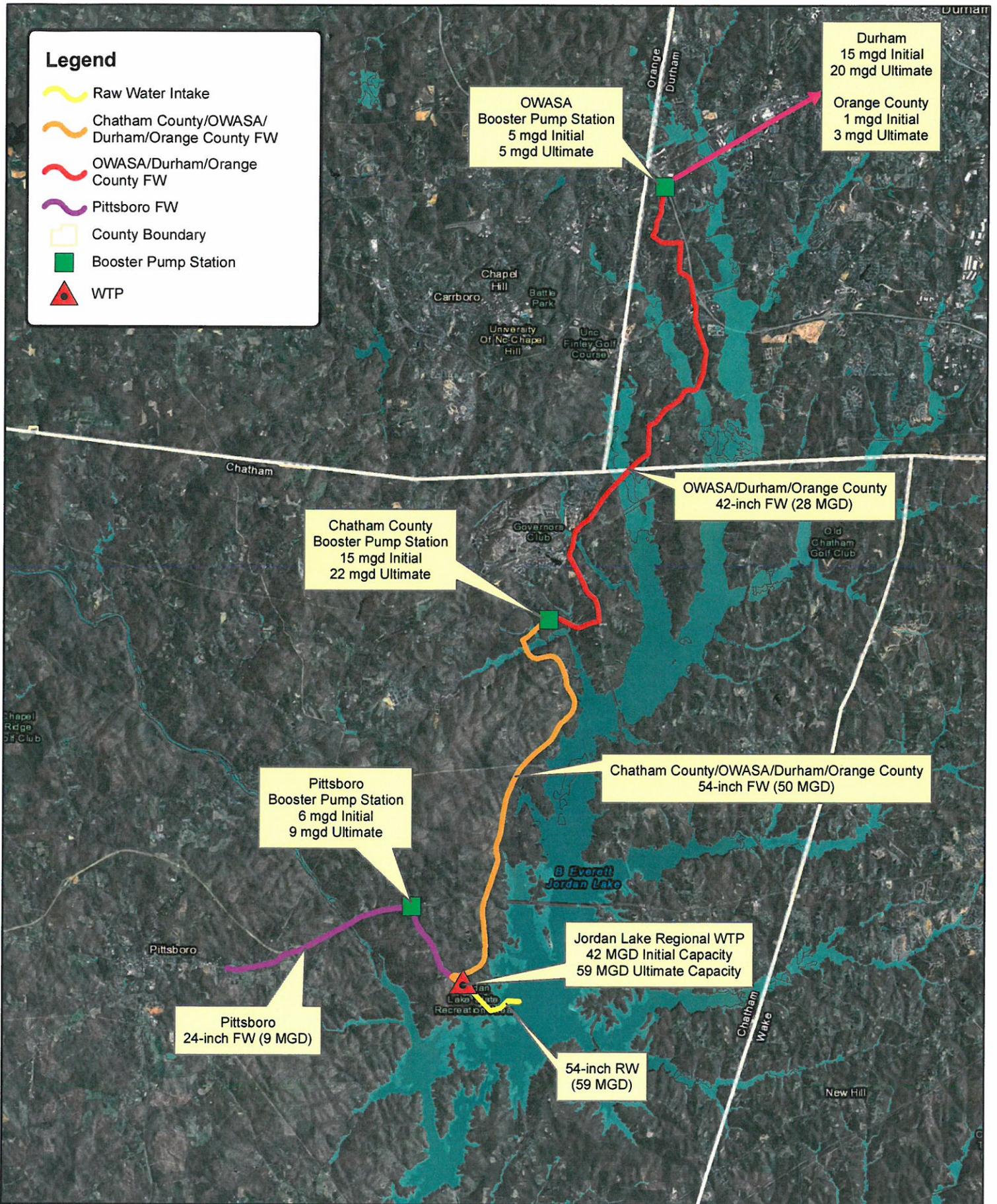
Receive this report as an FYI. Prepare for approval of the attached draft Resolution at the April 28, 2014 BOC meeting.

# Pittsboro Timeline



**Legend**

-  Raw Water Intake
-  Chatham County/OWASA/  
Durham/Orange County FW
-  OWASA/Durham/Orange  
County FW
-  Pittsboro FW
-  County Boundary
-  Booster Pump Station
-  WTP



Durham  
15 mgd Initial  
20 mgd Ultimate

Orange County  
1 mgd Initial  
3 mgd Ultimate

OWASA  
Booster Pump Station  
5 mgd Initial  
5 mgd Ultimate

Chatham County  
Booster Pump Station  
15 mgd Initial  
22 mgd Ultimate

OWASA/Durham/Orange County  
42-inch FW (28 MGD)

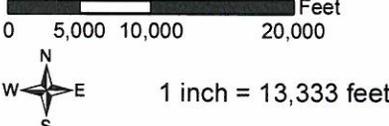
Chatham County/OWASA/Durham/Orange County  
54-inch FW (50 MGD)

Pittsboro  
Booster Pump Station  
6 mgd Initial  
9 mgd Ultimate

Jordan Lake Regional WTP  
42 MGD Initial Capacity  
59 MGD Ultimate Capacity

Pittsboro  
24-inch FW (9 MGD)

54-inch RW  
(59 MGD)



**HAZEN AND SAWYER**  
Environmental Engineers & Scientists

**Jordan Lake Regional Raw Water Intake and Water Treatment Facility**

City of Durham Department of Water Management  
Durham, North Carolina