



Town of Pittsboro, North Carolina

Engineering Department

Memorandum

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

From: Fred Royal, PE, Town Engineer

Subject: Elevated Water Tank Up-date

Date: July 27, 2015

Background and Discussion

On March 9, 2015, the Board of Commissioners received a report from the Engineering Department concerning alternatives for a new water tank in Pittsboro. The Chatham Park engineers and Town staff have discussed all alternatives presented and the alternative selected for recommendation to you was for the design and construction of a 300,000 gallon tank on Chatham Park property with an automated pressurized control valve to feed pressurized water into the Town's existing standpipe. We are referring to this as Phase 1. This phase also includes the installation of a 12" water line to the tank and tapping into to the existing 16" water line coming from the water treatment plant.

As previously discussed, the key issues facing the town in this area are low pressure zones and the issue of water age/water quality. The selected alternative will increase pressure with the elevated tank, however it will not help with the water age issue without an additional automated pressurized control valve installed adjacent to the existing million gallon tank.

The original tank design was a mono-pole ellipsoid for this new tank. It is our understanding that Chatham Park proposes to use a multi-pedestal design for this new tank. This is the same design that Chatham County has incorporated at its North Chatham Elementary School and Mann's Chapel Rd. tanks.

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Another issue that this elevated tank will create is the need for individual pressure reduction valves (PRV's) for the residences in the area where pressures will increase by as much as 10 psi. Each resident will need to install a PRV to ensure that their plumbing fixtures don't rupture. The Town will need to send notices to each of these residences of the need to hire a plumbing contractor to install a PRV or the town will need to install them. The precedence, according to Mr. John Poteat is the residences were notified and provided a list of plumbing contractors to contact to have this done at their expense. Staff believes that the Town should plan, finance and install these PRV's as the residences did not create the need for the proposed elevated tank.

We propose the following schedule:

- 1) Plans, specifications and permit applications presented to the Town and NCDENR for review: December 2015
- 2) Begin construction: April 2016
- 3) Construction substantially complete: June 2017

Recommendations

Staff believes that the Phase 1 elevated tank design is the best approach to meet the need to improve water pressure in the north pressure zone of Pittsboro while meeting the near-term pressure and demand needs of Chatham Park.

However, staff also believes that this design should include a second automated pressure control valve in the area of the million gallon tank to allow our operators to by-pass the million gallon tank. The benefits to the town are primarily two-fold:

- 1) The proposed elevated tank could add to the water age in the southern pressure zone area. Including a second control valve would allow operators to by-pass the million gallon tank and provide fresh water directly into the Horton Middle School tank. This is a critical factor for water age and water quality issues in the southern end of town.
- 2) The second valve would reduce the need to flush water in the southern pressure zone. Our current water loss challenge is well-known and our strategy to reduce non-revenue water losses includes reducing flushing.

Staff also recommends that the Town plan for, finance and install the PRV's at all residences in the proposed new pressure zone as required. The cost is estimated at \$15,000.

Staff recommends that the Town Board of Commissioners approve this Phase 1 elevated water tank design and schedule to provide sufficient treated water to Chatham Park in order to meet expected needs in the near term. We also believe that this design should

include a second automated pressurize control valve to ensure that the proposed elevated tank will not add to water age in the southern pressure zone.

Attachments:

1. July 21, 2015 meeting Minutes
2. Phase 1 Plan exhibit