



Town of Pittsboro, North Carolina

Engineering Department

Memorandum

To: Mayor Bill Terry and the Town Board of Commissioners

From: Fred Royal, PE, Town Engineer

Subject: Wastewater Treatment Plant Expansion –Preliminary Engineering Report

Date: June 22, 2015

Background

In March, 2015, the Town entered into a contract with the Wooten Company for the purpose of the development of a Preliminary Engineering Report (PER) for the Town wastewater treatment plant (WWTP) expansion. The schedule of the contract is to develop the PER documents in a format that will meet NCDENR standards for permitting and for a revolving loan fund application (if warranted). They will develop the final documents in time for meeting the revolving loan fund cycle schedule of September 1, 2015.

The WWTP is currently permitted to collect, treat, and discharge up to 1.249 million gallons per day (MGD), average annual flows. It currently has the treatment capacity of 750,000 gallons per day. The volume of remaining WWTP allocations to “sell” is approximately 101,000 gallons per day until the plant expansion occurs. This plant capacity limitation is the key purpose behind the WWTP expansion permit to 1.249 MGD. The Town has a permit to discharge wastewater up to 3.22 MGD: to Robeson Creek (1.249 MGD) and to the Haw River (1.97 MGD).

This PER is required by NC Department of Environment and Natural Resources (NCDENR) for the WWTP expansion approval process. It is anticipated that before September 1, 2015, the Town will have the complete PER package finalized and, if approved by the Town Board of Commissioners, a draft construction loan application to submit to NCDENR for review.

Discussion

Staff has met with the Wooten Company on many occasions during this fast-paced PER development process. The primary focus is the alternatives analysis for the WWTP expansion. This expansion is considered as Phase 1 for the purposes of the PER. Phase 2 is considered as the approach beyond the 1.249 MGD expansion.

This analysis generally includes reviewing existing and future flow data over the next 20 years, selecting and analyzing three treatment technologies for consideration, reviewing the site constraints, and developing preliminary cost estimates.

A part of these discussions has been with the Chatham Park engineers to gain full access to their most up-to-date effluent models and their planned wastewater treatment approach in the future. Another discussion point has been with the Town of Sanford concerning the technical aspects of a 2 MGD raw sewage line from Pittsboro to the Big Buffalo Wastewater Treatment Plant.

The 20-year planning horizon is required by NCDENR for the WWTP expansion PER process. This planning approach was reviewed by the Wooten Company with the purpose of estimating the predicted discharges until the year 2035. It was found that, based on the predicted discharges, the existing 3.22 MGD permit will be sufficient to meet that demand for the Town of Pittsboro, including the Chatham Park required discharges.

Please see the attachments: Preliminary Engineering Report - 80% PER Summary

Next Steps

This PER is under final stages of development. The staff approach will be to consider each alternative and evaluate the key following elements: capital construction and long-term Operations and Maintenance costs, regulatory issues, technical complexity, constructability, land requirements and schedule. As an example, it is possible that up to 2.5 acres of land may be needed to avoid the FEMA floodplain and other setbacks.

Staff will plan to return to the BOC at its August 10, 2015 meeting with final recommendations. It will therefore be prudent to consider the cost implications and establish financial planning objectives. Staff and Wooten have plans to visit NCDENR to discuss the technical aspects of the PER as well as meet with Local Government Commission (LGC) representatives to discuss the revolving loan funding process.

Summary

The current and near-term projected allocation capacity demands on the plant have been increasing at a high rate over the past six to twelve months. This includes infill development and Chatham Park development activities as well as the chronic wet weather inflows. It is recommended that the Town continue the WWTP expansion process in order to continue to plan to provide sewer allocation to future development. However, we also believe it is imperative to review the remaining (approximate 101k MGD) allocation capacity and consider options to that will allow the Town to generate revenue to help off-set the costs of the WWTP expansion.

Other wastewater system (CIP) programs the Town is concurrently reviewing are:

1. Inflow and Infiltration (I &I) “find and fix” loan program - has been approved by NCDENR.

2. Lift station program (Operations and Maintenance, emergency generator management, fats, oils and grease (FOG) program)
3. Collection system modeling and selected up-grade programming based on past reports and new findings. (eg: 15-501 gravity main from the north, trunk line diameter increases, etc.)
4. Asset Management Plan development (required for higher scores for loan funds)