

TWWTP Expansion Study



TWWTP Expansion Study - Purpose

The purpose of the study is to look at wastewater service area needs and planning strategies to meet expected demands in RTP and surrounding areas. RTP is expected to grow as zoning in some areas are changing to develop multi-use campuses where residents can live, work, and play. The County will need to expand its conveyance and treatment system to support the growth expected from these expanding developments.

TWWTP discharges to Northeast Creek, a tributary of Jordan Lake and within the Upper New Hope Arm sub-basin and designed to meet nutrient load requirements for permitted capacity. This study has been contracted with Freese and Nichols (FNI) to assess TWWTP's capability of increasing its existing discharge to Northeast Creek.



TWWTP Expansion Study - Phases

- Phase I (included Task 1 & 2, already under contract)
 - Task 1 Study Plan Preparation
 - Review previous data collection results supplied by Durham County
 - Review other data such as Preliminary Engineering Reports for Phase IV Upgrade, current permits, permitted industrial users, plant O&M manuals, inspection reports
 - FNI developed Study Workplan and submitted to NCDEQ for approval that included project needs assessment, study plan for Northeast Creek modeling, and methodology for projecting flows and loads in Northeast Creek sewer shed.



TWWTP Expansion Study - Phases

- Phase I (included Task 1 & 2, already under contract)
 - Task 2- Northeast Creek water quality modeling and regulatory coordination for speculative NPDES limits
 - Field investigations (stream depth & velocity, time of travel study)
 - Develop the model for Northeast Creek
 - Update existing model of Jordan Lake to include information from Northeast Creek model
 - Submit application for NPDES Speculative limits to NCDEQ

TWWTP Expansion Study - Phases

- Phase 2 (included Task 3 & 6, current request for contract amendment)
 - Task 3 – Engineers’ Alternative Analysis (EAA)
 - Population projections (will use information from the Northeast Creek sewer basin modeling currently being completed jointly between the County & City)
 - Develop a basis of design (analyze historical data and current projections)
 - Evaluate plant hydraulics (how water travels through the plant, pump capacity at influent lift station, RAS/WAS pump station)
 - Evaluate process capacity (review capacity of major treatment processes within the plant)
 - Develop treatment alternatives
 - Develop EAA alternatives
 - Develop Opinions of Probable Construction Costs

TWWTP Expansion Study - Phases

- Phase 2 (included Task 3 & 6, current request for contract amendment)
 - Task 6 – Technical Support for Jordan Lake Rules Readoption
 - Provide technical and regulatory support throughout the Jordan Lake rules readoption process
 - Review agency materials and develop technical comments and proposals
 - Communicate technical and regulatory updates
 - Participate in stakeholder meetings and discussions



TWWTP Expansion Study - Phases

- Phase 3 (included Task 4 & Special Services, future contract amendment if needed)
 - Task 4 – Preliminary Design and NPDES permitting
 - Special Services – Additional studies, applications



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Questions?