

Scoping Document: Draft Environmental Impact Statement for the Western Wake Regional Wastewater Management Facilities

Introduction

Wake County is growing rapidly as a result of the improving economic conditions in the region; the continued job growth in the Research Triangle Park; the attractiveness of the major universities; and the strength of the public education school system. Continued population growth is anticipated, and Wake County's infrastructure must be upgraded and expanded in response to the influx of residents, businesses and industries. The Towns of Apex, Cary, Holly Springs and Morrisville are working together to upgrade and expand their wastewater transportation, treatment and disposal systems to meet the current and future demands.

In addition to responding to increased service area demands, in July 2001 the Environmental Management Commission placed a requirement on the Towns of Cary, Apex, and Morrisville and Wake County to return wastewater to the Cape Fear River Basin by January 1, 2011 as a condition of receiving an interbasin transfer certificate to withdraw water from Jordan Lake and discharge the water to the Neuse River Basin. Thus, these communities must construct wastewater transmission, treatment and disposal facilities in order to comply with the terms and conditions of the IBT certificate issued by the EMC.

The Town of Holly Springs currently has a water reclamation facility (WRF) that discharges to Utley Creek, which is a tributary to Harris Lake. The Division of Water Quality has indicated that any increases in permitted flow that are generated to respond to increased service demands must be discharged outside of Utley Creek due to nutrient enrichment issues in the creek and downstream in Harris Lake.

A new water reclamation facility (WRF) is proposed to be constructed to treat a portion of the total wastewater generated within the Towns of Apex, Cary and Morrisville. The Town of Holly Springs plans to continue to use its Utley Creek WWTP to treat its wastewater, but the Town will share an outfall with the other communities to discharge its wastewater to the Cape Fear River.

Based on the size and complexity of the proposed project, the four communities (the Western Wake Regional Wastewater Management Facilities Project Partners or Project Partners) have decided to identify and address environmental issues through an Environmental Impact Statement (EIS) process. The Project Partners believe that it is a benefit to all interested parties to conduct a thorough environmental review, in accordance with the current laws of North Carolina, to identify the environmental impacts associated with the project and the mitigation measures that will be implemented to minimize the impacts. In addition to the EIS, the Towns are developing individual secondary and

cumulative impact (SCI) mitigation plans to address the growth-related impacts associated with each local government's planned and future infrastructure projects, including these proposed wastewater facilities. This EIS will therefore focus on direct impacts; secondary and cumulative (growth-related) impacts will be addressed through the SCI mitigation plans, which will be referenced in the EIS.

This EIS will focus on two raw wastewater pumping stations and force mains, the Western Wake Water Reclamation Facility (WRF), treated effluent pump station, effluent transmission main, and an outfall structure at the Cape Fear River. The EIS will also evaluate the impacts of the discharge on the Cape Fear River. The EIS will not address the direct impacts of any improvements made to the Town of Holly Springs Utley Creek WWTP or its associated pump station and connection to the effluent pumping station at the Western Wake WRF. The direct impact of Holly Springs flow on the Cape Fear River will be addressed in this EIS.

Study Area

Since the EIS will focus on direct impacts, the study area for the EIS is limited to the vicinity of the proposed WRF site and pumping station sites, immediate alignment areas for the raw wastewater force mains and effluent transmission main, and the outfall structure at the Cape Fear River below Buckhorn Dam (the approximate discharge location). The SCI mitigation plans include the entire planning area for each Town. In general, planning area boundaries are based on a combination of the urban service areas, extraterritorial jurisdiction (ETJ), and the Land Use Plan boundaries as well as recent boundary and urban service area agreements. The Planning Area for each Town is illustrated in the SCI Mitigation Plan for that Town.

Water Reclamation Facility and Associated Infrastructure

The Towns plan on building a WRF southwest of Apex. The Project Partners have evaluated alternative sites, but have not yet completed land acquisition. The WRF site is expected to be located in the vicinity of US Highway 1. Two raw wastewater pumping stations will convey wastewater to the WRF and an effluent pumping station, transmission main, and outfall structure will discharge treated effluent to the Cape Fear River downstream of Buckhorn Dam. Figure 1 includes a schematic that shows general locations of the infrastructure. Specific infrastructure locations will be identified in the EIS.

Water Reclamation Facility Phases

The proposed WRF will be built in two phases. Table 1 outlines the years that each phase will be completed and the projected flows associated with each phase. The permitted Phase 2 flow for the WRF will be approximately 30 mgd.

TABLE 1
Proposed WRF Phases

Phase	Year Completed	NPDES Permitted Flow (mgd)
1	2011	18
2	2020	30

In addition, the Town of Holly Springs will be expanding the Town's Utle Creek WRF to accommodate a 2030 flow of approximately 8.3 mgd. This EIS will not address the direct impacts of expanding the Utle Creek WRF.

Water Reclamation Facility Alternatives

Based on guidance provided by NC Department of Environment and Natural Resources (DENR) staff, the local governments will evaluate the following alternatives:

- 1) No Action
- 2) Optimum Operation Of Existing Facilities
- 3) Land Application
- 4) Water Reuse System
- 5) Discharge to the Cape Fear River

The alternatives analysis will include a cost analysis along with an evaluation of the environmental impacts for each alternative.

Pumping Stations

Two raw wastewater pumping stations are planned for the first phase of the regional wastewater management program and will be evaluated in the EIS. At this time, the exact locations of the pumping stations have not been determined. Alternative sites are currently being evaluated. In general, the two pumping stations will be located near the following tributaries to Jordan Lake:

- White Oak Creek
- Beaver Creek

The White Oak Creek pumping station Phase 1 capacity (peak instantaneous flow (PF)) is approximately 31 mgd, and the Beaver Creek pumping station Phase 1 capacity (PF) is approximately 40 mgd. Each of these sites will be approximately 5 acres in size, but portions of the sites will remain undisturbed.

Transportation and Transmission Lines

Approximately 15 to 20 miles of transportation and transmission lines will be evaluated in this EIS. The final routes of the lines have not yet been determined, but Figure 1 illustrates the approximate location of the lines; potential routes are currently being evaluated. The lines will follow existing roads and other rights-of-way to the maximum extent practicable to minimize impacts. The sizes and capacities for the Phase 1 lines are outlined in Table 2.

TABLE 2
Phase I Transmission Lines

Originating Pumping Station	Type of Pipeline	Peak Instantaneous Flow (mgd)	Design Year	Diameter (inches)
White Oak Creek	Force Main	30.7	2020	36
White Oak Creek	Gravity Sewer	50.8/58.0	2030	48/54
Beaver Creek	Force Main	39.8/42.1	2020	42
WRF Effluent Pumping Station	Force Main	62.5	2020	48

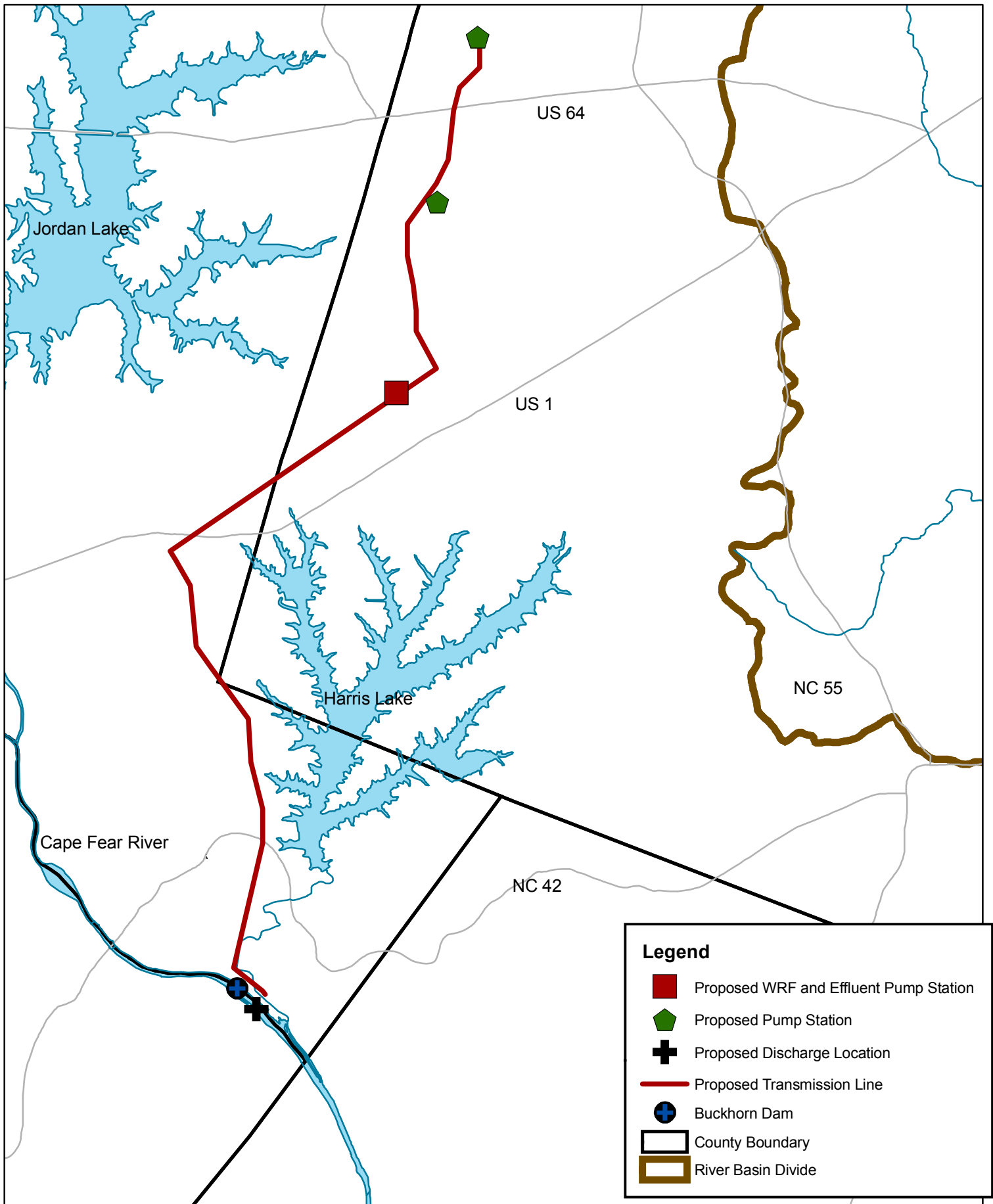
Discharge Location

The effluent discharge point will be located on the Cape Fear River downstream of Buckhorn Dam. The Division of Water Quality has indicated that the discharge should be sited downstream of Buckhorn Dam because of nutrient concerns upstream of the Dam. The discharge will consist of wastewater treated at the proposed Western Wake WRF and the Town of Holly Springs Utley Creek WRF. The 2030 discharge to the Cape Fear River from these two facilities is projected to be approximately 38 mgd at maximum month average conditions. This EIS will examine the direct impacts of the combined discharge from the Western Wake WRF and the Utley Creek WRF on the Cape Fear River.

Proposed EIS Outline

1. Cover Sheet
2. Summary, including the following information:
 - Major conclusions
 - Areas of controversy
 - Issues to be resolved
 - All permits/approvals to be obtained prior to implementation
3. Purpose and Need
4. Alternatives, including the proposed activity
5. Affected Environment
6. Environmental Consequences
7. List of Preparers
8. Appendices

The Secondary and Cumulative Impacts Mitigation Plans that are currently being prepared for each Project Partner will be cited in Section 6. Section 6 will therefore focus on the direct impacts of the proposed infrastructure.



Legend

- Proposed WRF and Effluent Pump Station
- ⬠ Proposed Pump Station
- + Proposed Discharge Location
- Proposed Transmission Line
- ⊕ Buckhorn Dam
- County Boundary
- River Basin Divide

0.5 0 2 Miles

N

Figure 1
Proposed Infrastructure
Western Wake County EIS