

**FINDING OF NO SIGNIFICANT IMPACT
AND ENVIRONMENTAL ASSESSMENT**

**CITY OF SANFORD
WATER TREATMENT PLANT EXPANSION**

**RESPONSIBLE AGENCY: NORTH CAROLINA DEPARTMENT OF
ENVIRONMENTAL QUALITY**

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January 4, 2024

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FINDING OF NO SIGNIFICANT IMPACT

Article I, Chapter 113A of the North Carolina General Statutes requires an action to be subject to the requirements of the North Carolina Environmental Policy Act (NCEPA) if it involves the expenditure of public funds and if a potential impact is anticipated to the environment. The project has been evaluated for compliance with the NCEPA and is determined to be a major agency action, which will affect the environment.

Project Applicant:	City of Sanford, North Carolina			
Project Description:	The proposed project will expand the City of Sanford’s Water Treatment Plant (WTP) from 12 million gallons per day (MGD) to 30 MGD. The project will include the following components: raw water intake, pump station, and transmission upgrades; terminal reservoir evaluation; conventional treatment and clearwell upgrades; finished water pump station upgrades; advanced treatment processes; residuals handling upgrades; chemical system upgrades; WTP facilities; electrical and instrumentation system upgrades. The project is a regional collaboration and will also serve the Towns of Fuquay-Varina, Holly Springs, and Pittsboro. Note that the Town of Fuquay-Varina is applying for an interbasin transfer (IBT). The purpose and need for the Sanford WTP expansion does not change based on the result of that application.			
Project Number:	WIF-2025			
Project Costs:				
Funding Source	City of Sanford	Town of Fuquay	Town of Holly Springs	Project Total*
DWSRF	\$110,000,000	\$49,000,000		
ARPA Grant	\$18,883,115	\$9,000,000	\$6,000,000	
Revenue Bonds	\$22,992,153	\$39,977,814	\$59,391,688	
Local Funds for Closing Costs	\$2,659,843	\$1,779,556	\$1,187,834	
Total	\$154,535,111	\$99,757,371	\$66,579,522	\$320,872,003

**updated as of January, 2024. Project costs and their corresponding funding sources provided in the ER/EID were developed in April 2023.*

The review process indicated that significant adverse environmental impacts should not occur if mitigative measures are implemented, and an environmental impact statement will not be required. The decision was based on information in the Engineering Report/Environmental Information Document (ER/EID) submitted by the applicant and reviews by governmental agencies. The attached Environmental Assessment (EA), prepared by the Division based on the ER/EID, supports this action and outlines mitigative measures that must be followed. This Finding of No Significant Impact (FONSI) completes the environmental review record, which is available for inspection along with the full ER/EID at the State Clearinghouse.

No administrative action will be taken on the proposed project for at least 15 days after notification that the FONSI has been published in the North Carolina Environmental Bulletin. The FONSI was previously published for 30 days in June 2023. Note that this FONSI and pending approval of the ER/EID for the Water Treatment Plant expansion do not imply any approval or action on the Town of Fuquay-Varina's application for an IBT certificate. The IBT requires an extensive environmental review that is underway and separate from the review for this project.

Sincerely,

Kavitha Ambikadevi

Kavitha Ambikadevi, Section Chief
Water Infrastructure Fund Section
Division of Water Infrastructure

ENVIRONMENTAL ASSESSMENT

A. Proposed Facilities and Actions

The proposed project will expand the City of Sanford's Water Treatment Plant (WTP) from 12 million gallons per day (MGD) to 30 MGD. The proposed plant expansion is a collaboration with the Towns of Fuquay-Varina, Holly Springs, and Pittsboro to address regional drinking water demands over the next twenty years. The project will include the following components:

- replacement of raw water intake, raw water pump station, and new 30-inch, 85,000 linear feet transmission main parallel to existing transmission line;
- terminal reservoir evaluation was already completed and determined that an expansion of the existing terminal reservoir is not warranted;
- conventional treatment and clearwell upgrades including new rapid mix for all plant flow, two additional 4-stage flocculation trains, plate settlers in the existing sedimentation basins, four new sedimentation basins with plate settlers, twelve additional filters, and an additional two-million-gallon (MG) clearwell;
- finished water pump station upgrades including replacement of pump for additional capacity in the existing pump station and installation of second filter backwash pump to provide redundancy, and an additional new finished water pump station;
- advanced treatment processes including a new granulated activated carbon (GAC) facility to address PFAS and PFOA concerns;
- residuals handling upgrades including an additional backwash equalization pump, plate settler, gravity thickener, new solids pump station, new dewatering facility for three belt filter presses, and upgrades to calcium thiosulfate and polymer storage and dosing systems;
- chemical system upgrades including conversion of the existing sodium hypochlorite building to house fluoride and sulfuric acid and a new chemical building to house additional chemicals;
- WTP facilities improvements including expanded administration building, modification of existing dewatering building to serve as maintenance facility and new warehouse; and
- electrical and instrumentation system upgrades including new medium voltage (5kV) electrical system.

Note that the Town of Fuquay-Varina is applying for an interbasin transfer (IBT). The purpose and need for the Sanford WTP expansion does not change based on the result of that application. Note that this Environmental Assessment for the WTP expansion does not imply any approval or action on the Town of Fuquay-Varina's application for an IBT certificate. The IBT requires an extensive environmental review that is underway and separate from the review for this project.

Funding Status: The estimated total cost for the project is **\$320,872,003** and will be funded as shown in the table below. Please note that the cost estimates and funding sources as discussed in the ER/EID was as of April 2023.

Project Costs:				
Funding Source	City of Sanford	Town of Fuquay	Town of Holly Springs	<i>Project Total</i>
DWSRF	\$110,000,000	\$49,000,000		
ARPA Grant	\$18,883,115	\$9,000,000	\$6,000,000	
Revenue Bonds	\$22,992,153	\$39,977,814	\$59,391,688	
<i>Total Costs without Closing Costs</i>	<i>\$151,875,268</i>	<i>\$97,977,814</i>	<i>\$65,391,688</i>	<i>\$315,244,770</i>
Local Funds for Closing Costs	\$2,659,843	\$1,779,556	\$1,187,834	
Total	\$154,535,111	\$99,757,371	\$66,579,522	\$320,872,003

B. Existing Environment

Topography and Soils. Sanford is in the Piedmont physiographic province. Topography for the western portion of the transmission line consists of low rolling hills and transitions to gently sloping floodplain associated with the Cape Fear River for the eastern portion of the transmission line. Elevation for the project area ranges from 164 feet mean sea level (msl) to 264 feet msl.

The project area is in the White Store-Creedmoor soil association. The White Store-Creedmoor soil association includes sloping, slowly permeable, slightly dissected uplands underlain by Triassic rocks. The minor soils in the association include Mayodan, Granville, and Pinkston.

Surface Water. The project area is located in the Cape Fear River Basin (HUC 03030004). Streams in the project area include the Cape Fear River, Henry’s Branch and unnamed tributaries to Henry’s Branch, and unnamed tributaries to Bush Creek. The Cape Fear River and Henry’s Branch and its tributaries are classified as WS-IV; CA. The tributaries to Bush Creek are classified as C.

Water Supply. The Cape Fear River is the primary drinking water supply in the project area.

C. Existing Water Treatment Facilities

The City’s existing WTP located in Lee County provides treated water to the City of Sanford, Town of Broadway, Lee County, and sections of Chatham County. The WTP was originally constructed in 1970 with a capacity of 6 MGD. In 1990, the plant was expanded to the current

capacity of 12 MGD. The existing plant is in fair condition and in compliance with all regulatory requirements but does have aging infrastructure.

The plant draws water from the Cape Fear River through a bar screen intake structure and gravity suction main. Raw water pumping capacity is currently limited by shallow depth of water intake and low river levels. Raw water is pumped through a 30-inch transmission line to the WTP site. The raw water pump station includes three pumps installed in 2004 that are now in poor condition, and the wet well does meet current Hydraulic Institute Standards. The transmission line is in good condition, as is the 60 MG terminal reservoir. The WTP utilizes a conventional treatment train including two parallel rapid mix basins, four flocculation basins, two sedimentation basins, eight filters, and one 2 MG clearwell. The rapid mix and sedimentation basins are in fair condition; the other components are in good condition. The finished water pump station has a traditional wet well design with four finished water pumps and a filter backwash pump. One pump was rebuilt in 2021 and is in good condition; the others are in fair condition. The residuals handling system includes a backwash equalization tank and pump station in good condition, plate settler in fair condition, gravity thickener in good condition, solids pump station in good condition, and dewatering system in poor condition.

D. Need for Proposed Facilities and Actions

The existing Sanford WTP is in fair working condition and in compliance with regulatory requirements, but the plant cannot meet the City's near-term needs of 16 MGD with the current rating of 12 MGD. In addition, the Towns of Fuquay-Varina, Holly Springs, and Pittsboro have indicated that they have increasing demands as well. The proposed project for an expansion of the existing Sanford WTP to 30 MGD offers a regional solution to meet the needs of the City and other partner municipalities.

E. Alternatives Analysis

No-Action: This alternative would continue operation of the existing WTPs with no modifications. This alternative does not provide the improvements needed to address the current water demand or health needs of the service area; therefore, it was deemed infeasible and rejected.

Alternative 1 – Optimize the operation of the existing Sanford WTP: This alternative does not provide the improvements needed to address the current water demand or health needs of the service area; therefore, it was deemed infeasible and rejected.

Alternative 2 – Rehabilitate the existing Sanford WTP: The existing WTP facilities cannot treat beyond the existing 12 MGD rated capacity. The WTP cannot be optimized while meeting regulatory requirements. This alternative does not provide the improvements needed to address

the current water demand or health needs of the service area; therefore, it was deemed infeasible and rejected.

Alternative 3 – Expansion and modification of the existing WTP to 18 MGD: This alternative would include high-rating existing WTP processes where feasible while providing additional treatment trains to provide a rated WTP capacity of 18 MGD. Improvements would include replacement of existing raw water intake screens and pumps, installation of an additional transmission main, rehabilitation of existing rapid mix, installation of plate settlers into existing sedimentation basins, construction of four additional filters, construction of new granular activated carbon facility, replacement and increased capacity of one finished water pump, construction of a new chemical building, modifications to existing administration and maintenance buildings, and upgrades to software. Environmental impacts for this alternative would be similar to Alternative 4 with slightly less land disturbance and would include minor temporary and permanent impacts related to construction. This alternative could meet the projected demand for the City of Sanford, but without the inclusion of nearby utilities for a regional approach, this alternative has the highest capital cost and was rejected.

Alternative 4 – Expansion and modification of the existing Sanford WTP to 30 MGD (Preferred): This alternative would include high-rating existing WTP processes where feasible while providing additional treatment trains to provide a rated WTP capacity of 30 MGD. Improvements would include replacement and increase in capacity of existing raw water intake screens and pump station, installation of an additional transmission main, construction of a new rapid mix, construction of two additional flocculation trains, installation of plate settlers into existing sedimentation basins, construction of twelve additional filters, construction of new granular activated carbon facility, construction of an additional 12 MG clearwell, construction of an additional finished water pump station, construction of a new chemical building and new residuals handling facility, modifications to existing administration and maintenance buildings, construction of a new maintenance warehouse, upgrades to electrical system and software. Environmental impacts associated with this alternative are not expected to be significant and will include minor temporary and permanent impacts related to construction activities. This alternative is preferred because it addresses the project purpose and need, and the regional approach distributes cost impacts to other utilities that will also be served by the expanded plant.

F. Environmental Consequences and Mitigative Measures

Topography and Soils: Significant impacts to topography and soils are not anticipated. The WTP components and transmission line will be installed in previously disturbed areas. Some grading, excavation and back filling will be required. The WTP is not located in the floodplain. Portions of the raw water line will result in temporary impacts to the 100-year floodplain, but disturbed areas will be returned to original grade. A sedimentation and erosion control plan will be implemented. The proposed project will not induce growth but will support continued growth that is anticipated in the surrounding area. Secondary and cumulative impacts (SCI) to topography, soils, and floodplains may result from growth and development in the service area, but adherence to the City of Sanford’s Uniform Development Ordinance will minimize impacts.

Land Use: No significant impacts to land use are anticipated. Construction activities will take place in sites already used as a water treatment plant, pump station, and existing infrastructure corridors. No change in zoning or land use plans will be required. SCI will be managed through the City of Sanford and Lee County land use goals and recommendations in the Lee County Comprehensive Plan.

Wetlands: Significant impacts to wetlands are not anticipated. There will be temporary impacts to less than 0.05 acre of wetland for installation of the new raw water transmission line and intake structure and demolition of the existing line and intake structure. The corridor will be restored to original grade and elevation. An erosion and sediment control plan will be implemented. SCI will be minimized through compliance with Sections 404 and 401 of the Clean Water Act.

Important Farmlands: Significant impacts to important farmlands are not anticipated. The WTP site includes some prime farmland soils, but these areas are not used as farmland. Portions of the raw waterline will traverse active farmland, but original conditions will be restored with no loss of farmland resulting directly from the project. SCI will be minimized through adherence to existing local zoning ordinance and maintenance of designated Voluntary Agricultural Districts.

Public Lands and Scenic, Recreational, and State Natural Areas: Significant impacts to public lands, scenic, recreational, or state natural areas are not expected. There are recreational areas in the project vicinity associated with the Cape Fear River and Game Lands, but the project is not expected to impact the use of these areas. SCI will be minimized through adherence to the City's Uniform Development Ordinance.

Cultural Resources: Impacts to cultural and historic resources are not anticipated. One property with historic value, the Memphis Methodist Church and Cemetery, has been identified in the project area adjacent to the pipe corridor. Access to the property will be maintained during construction and no permanent impacts are not anticipated. SHPO's review indicated no historic resources that would be affected by the property. (December 7, 2021, ER 21-2642). Changes in land use may result from future development but existing regulations and coordination with SHPO are anticipated to minimize any SCI.

Air Quality: No significant impacts to air quality are anticipated. Construction activities may cause a temporary increase in airborne particulates and exhaust emissions from construction activities, but these impacts will be temporary and minor and will be minimized through Best Management Practices including dust control and emission controls on equipment. Operational impacts will be similar to impacts from the existing WTP and pump station. SCI are not expected to be significant due to existing air quality standards.

Noise Levels: No significant permanent noise impacts are anticipated. Noise from construction activities will be temporary and minimized through Best Management Practices including limitations on construction hours and use of mufflers and noise-reducing equipment. Operation of the WTP and pump station minor impacts similar to the existing facilities. SCI will be minimized through Lee County's Noise Control Ordinance.

Water Resources: No significant impacts to water resources are anticipated. A sedimentation and erosion control plan will be implemented to minimize impacts from construction activities. Operational impacts will be minimized by setting the proposed intake screens above the riverbed to avoid agitation of sediments and turbidity. The WTP will have increased NPDES discharge that is anticipated to improve water quality in the unnamed tributary to Henry's Branch due to a dilution effect by increasing water volume but not contaminant load. The project will not induce growth but will support growth that is already anticipated in the project area. SCI related to growth will be mitigated through adherence to the City's erosion and sediment control plan and requirements of the Clean Water Act. United States Geological Survey (USGS) low-flow statistical analysis for the Cape Fear River at the location of the WTP intake determined 7Q10 flows of 183 MGD. The proposed 30 MGD withdrawal from the Cape Fear River is less than 20% of the 7Q10 flows and does not require an instream flow study per 15A NCAC 01C .0408(2)(b)(i).

Forest Resources: Significant impacts to forest resources are not expected. Minor clearing may be required along the roadway for installation of transmission lines and within the WTP site boundaries for installation of new components. SCI will be managed through the City of Sanford and Lee County land use goals and recommendations in the Lee County Comprehensive Plan.

Shellfish or Fish and Their Habitats: Impacts to shellfish, fish, and their habitats are not expected to be significant. There is no evidence of threatened or endangered species in or downstream of the project area. The habitat of the riverbed will be temporarily disturbed during installation of the new intake and associated structures and demolition of existing structures. Construction trenches will be backfilled with excavated riverbed materials to restore existing habitat. The intake screens will be positioned to prevent bottom-dwelling organisms from being drawn into the intake pipe and to avoid agitation of riverbed sediments. The screen size and water flow velocity are in accordance with North Carolina Administrative Code, and the new screen will have a 75 percent reduction in the slot opening size, which will improve protection of aquatic life compared to the current intake screen. Sediment and erosion control measures will minimize impacts from construction activities. SCI will be minimized through adherence with the Clean Water Act, Endangered Species Act, and NC Public Water Supply regulations.

Wildlife and Natural Vegetation: No significant impacts to wildlife and natural vegetation are expected. No threatened and endangered species or habitats for such species have been identified in the project area. Foraging and habitat for the bald eagle is present in the greater project area, but no nests have been reported within two miles of the project site. A survey for bald eagles will be conducted prior to construction activities in close proximity to the Cape Fear River to avoid disturbance of any nests. SCI related to growth will be minimized through the City's Uniform Development Ordinance.

Introduction of Toxic Substances: The project is not expected to introduce toxic substances into the environment. Best Management Practices will be implemented to avoid introduction of toxic materials that may be used in construction equipment and operation of the facility.

The U.S. Fish and Wildlife Service was consulted and did not object to the project. The North Carolina Wildlife Resources Commission, Natural Heritage Program, and DWR Raleigh Regional Office do not object to the proposed project. The U.S. Army Corps of Engineers was

consulted and did not object to the project. The North Carolina Department of Natural and Cultural Resources is aware of no historic resources which will be impacted by the proposed project.

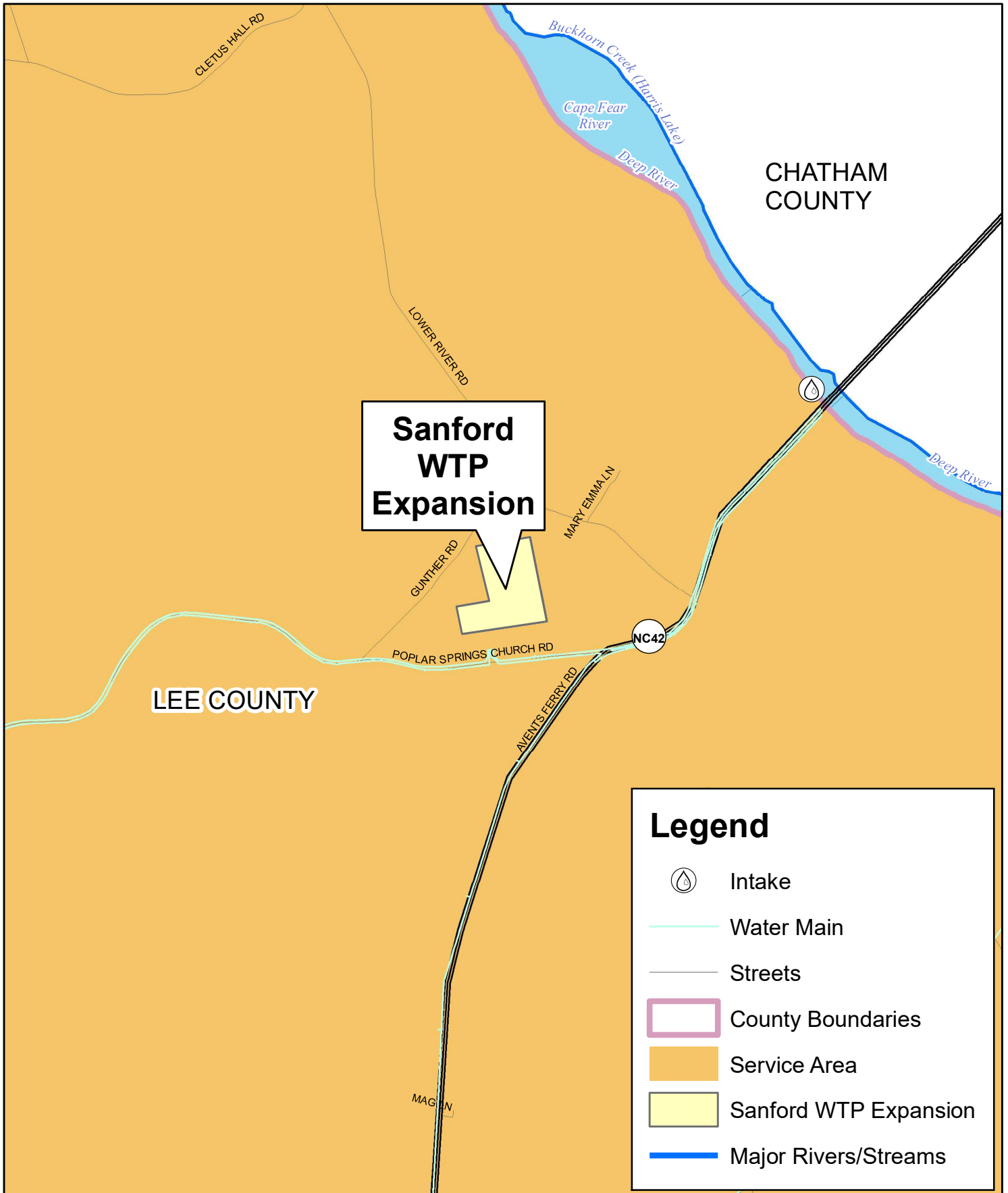
G. Public Participation, Sources Consulted

The City of Sanford held a combined in-person and virtual public meeting on March 1, 2023, including representatives from the Towns of Holly Springs, Fuquay-Varina, and Pittsboro. The meeting included a presentation about the project and opportunity for public comments at the meeting and following the meeting. No comments were received.

The current user charge for a typical residential customer is \$88.65 per month for sewer and water combined, based on consumption of 5,000 gallons per month. The proposed project will increase the bill by \$47.29 (approximately 53%) using conservative estimates, for a future sewer bill of \$135.94. The impact is less than two percent of the monthly median household income and is therefore not considered significant.

Sources consulted about this project for information or concurrence included:

- 1) City of Sanford
- 2) Lee County
- 3) Town of Fuquay-Varina
- 4) Town of Holly Springs
- 5) Town of Pittsboro
- 6) North Carolina Department of Environmental Quality
 - Wildlife Resources Commission
 - Natural Heritage Program
 - DEQ Raleigh Regional Office
 - Division of Air Quality
 - Division of Water Resources
 - Division of Forest Resources
 - Division of Environmental Assistance and Customer Service
 - Division of Waste Management
- 7) North Carolina Department of Natural and Cultural Resources
- 8) North Carolina State Clearinghouse
- 9) North Carolina Department of Public Safety
- 10) U.S. Fish and Wildlife Service
- 11) U.S. Army Corps of Engineers

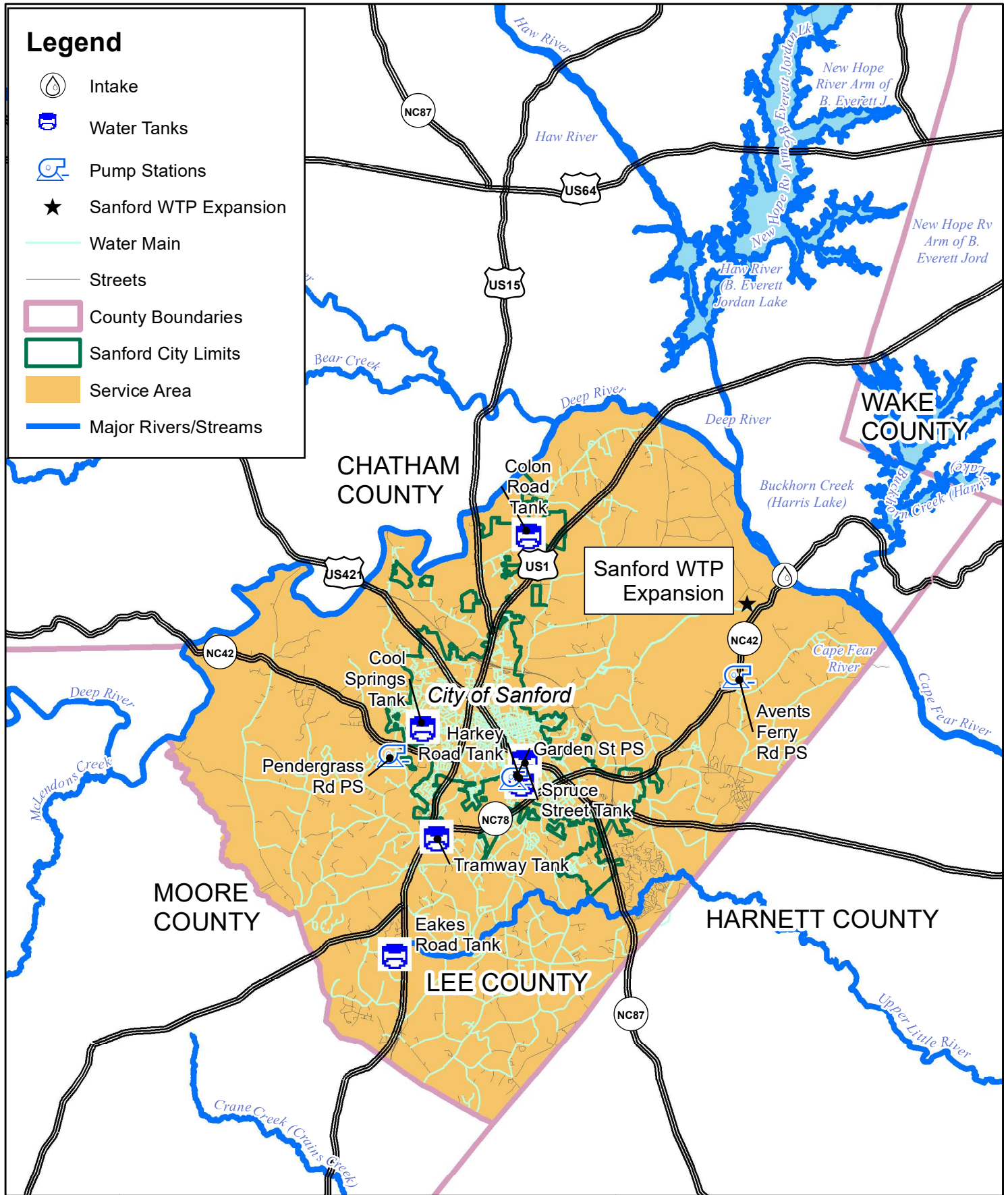


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 Miles
 1 inch equals 0.5 miles













Hazen

Figure 2-1: Project Location Map
 Sanford Water Treatment Plant
 Expansion Project



Legend

-  Intake
-  Water Tanks
-  Pump Stations
-  Sanford WTP Expansion
-  Water Main
-  Streets
-  County Boundaries
-  Sanford City Limits
-  Service Area
-  Major Rivers/Streams

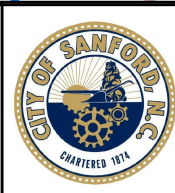
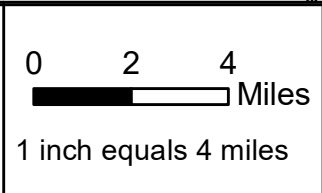


Figure 2-2: Project Vicinity Map
 Sanford Water Treatment Plant Expansion Project