FINDING OF NO SIGNIFICANT IMPACT
AND ENVIRONMENTAL ASSESSMENT

TOWN OF WILKESBORO
WILKESBORO CUB CREEK WASTEWATER TREATMENT PLANT EXPANSION

RESPONSIBLE AGENCY: NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY

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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:	Town of Wilkesboro, North Carolina
Project Description:	The proposed project will upgrade major components and increase the capacity of the existing Wilkesboro Cub Creek Wastewater Treatment Plant from 4.9 million gallons per day (MGD) maximum month flow to 8 MGD maximum month flow. Improvements will include upgraded influent pump station, upgraded headworks, conversion of aeration basin to equalization basin, influent buffering, addition of secondary treatment, tertiary disk filtration, new UV disinfection system, new effluent flow metering, improved aerobic digestion and thickening, replacement of sludge dewatering unit, and a new operations building.
Project Number:	CS370829-02 & SRP-W-0208
Project Cost:	$72,000,000
Clean Water State Revolving Loan Fund:	$42,000,000
Wastewater State Reserve Program:	$18,000,000
Local Funds:	$12,000,000

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 at the State Clearinghouse.

No administrative action will be taken on the proposed project for at least 30 days after notification that the FONSI has been published in the North Carolina Environmental Bulletin.

Sincerely,

Kavitha Ambikadevi

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

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ENVIRONMENTAL ASSESSMENT

A. Proposed Facilities and Actions

The proposed project will upgrade major components and increase the capacity of the existing Wilkesboro Cub Creek Wastewater Treatment Plant (WWTP) from 4.9 million gallons per day (MGD) maximum month flow to 8 MGD maximum month flow. Improvements will include the following components:

- Upgrade the influent pump station to increase the total pumping capacity of the municipal flow.
- Retrofitted and upgrade the existing headworks including new screens and new grit classifier.
- Convert the existing aeration basin to a wet weather flow equalization basin.
- Convert secondary clarifier 4 to an influent buffer tank to converge the municipal and industrial flows upstream of secondary treatment and install pumps to convey the flow to the biological treatment system.
- Upgrade secondary treatment by constructing three AquaNereda aerobic granular sludge (AGS) tanks and converting secondary clarifier 3 to a dual sludge buffer (SB) and water level correction (WLC) tank, which will serve to thicken the WAS before pumping to the aerobic digesters; existing secondary clarifier 1 and 2, which are located in the floodplain, will be decommissioned.
- A set of two tertiary disc filter may be installed as needed based on future nutrient removal limits in the High Rock Lake basin.
- The existing UV system in the floodplain will be decommissioned, and a new UV disinfection system will be installed outside of the floodplain.
- The existing effluent Parshall flume in the floodplain will be decommissioned, and a new Parshall Flume will be constructed just downstream of the new UV disinfection system.
- The existing aerobic digesters will remain operational, and new disc thickening units will be installed in 10 years or approximately by 2032. The timing of the disc thickening unit is dependent on expected growth in the area and on the expenses of landfill tipping fees.
- The existing Huber Q-Press 800 sludge dewatering unit is nearing the end of its service life and will be replaced with another unit of the same model. A second unit will be installed to increase capacity.
- A new operations building will be constructed outside of the floodplain and near the secondary treatment process for the plant operations staff.

Funding Status: The estimated total cost for the project is $72,000,000. The Town is applying for a Clean Water State Revolving Fund (CWSRF) loan of $42,000,000 including $1,000,000 of principal forgiveness and has been awarded a State Reserve Program (SRP) grant of $18,000,000. The Town will fund the remainder of the project, including closing costs/administrative fees of $1,110,0000, through local funds. The City may apply for additional CWSRF funding.

B. Existing Environment

Topography and Soils. Wilkesboro is located in the Piedmont physiographic province. The elevation of the project area ranges from 946 feet mean sea level (msl) to 1,038 feet msl. Portions of the project site are located within the 100-year flood plain.

The project site includes the following soil units: Banister fine sandy loam, 1 to 6 percent slopes, rarely flooded (BaB), moderately well drained or somewhat poorly drained soils; characterized as strongly acidic; Codorus loam, 0 to 2 percent slopes, frequently flooded (CoA), consist of very deep, moderately well drained and somewhat poorly drained soils; Dan River loam, 0 to 4 percent slopes, occasionally flooded (DaA) very deep, well drained soils, characterized as very strongly acidic in the upper parts through slightly acidic in the lower parts; Danripple sandy clay loam, 8 to 15 percent slopes, moderately eroded (DpC2), very deep, well drained soils, characterized as very strongly acidic to moderately acidic; Fairview sandy loam, 15 to 25 percent slopes (FaD), very deep, well drained soils, characterized as extremely acidic to moderately acidic throughout; Fairview sandy clay loam, 8 to 15 percent slopes, moderately eroded (FcC2) soils, similar to Fairview sandy loam located in less steep terrain; Fairview-Urban land complex, 2 to 15 percent slopes (FrC) soils, also similar to Fairview sandy loam typically including built upon urban lands; and Rhodhiss fine sandy loam, 25 to 60 percent slope (RdE), very deep, well-drained soil characterized by very strongly acidic to slight acidic throughout.

Surface Water. The project area is located in the Yadkin Headwaters Subbasin of the Yadkin-Pee-Dee River Basin (HUC 0304010103). Surface waters in the area include Cub Creek, Little Cub Creek, and the Yadkin River. All are rated Class C. Cub Creek is impaired for poor fish community.

Water Supply. The Town's public water supply draws water from the Yadkin River.

C. Existing Wastewater Treatment Facilities

The Town owns and operates the Club Creek WWTP, which is an activated sludge plant with a permitted capacity of 4.9 MGD under NPDES Permit Number NC0021717 discharging to the Yadkin River. The WWTP was constructed in 1965 with various improvements made since construction. The plant has been maintained in good condition overall but is nearing capacity. Some service components are nearing the end of their useful life. The liquids train consists of an influent pumping station, screening and grit removal, an aeration basin with surface mixers, secondary clarification, and UV disinfection. The solids train consists of aerobic digestion, dewatering by a Huber screw press, and landfilling of dewatered solids. The average daily effluent flows in 2019 and 2020 were 4.44 MGD and 4.77 MGD, respectively. The WWTP receives 70 to 80 percent of its flow from Tyson Foods, Inc., and the WWTP site contains Tyson's influent pump station and two of Tyson's pretreatment basins. The 2021 current average daily flow is 4.21 MGD, which is approximately 86% of the plant's permitted capacity. The Town has received 22 Notices of Violations (NOVs) for effluent permit exceedances between December 2016 and December 2021. Several components are located within the 100-year floodplain.

In addition to the WWTP, the Town owns and operates a wastewater collection system consisting of 67 miles of gravity sewer, 1,383 manholes, 10 miles of force main, and 13 pump stations. An asset inventory and assessment study was recently completed including a 10-year rehabilitation and replacement plan for the collection system.

D. Need for Proposed Facilities and Actions

The Town's existing WWTP is aging and under capacity. Upgrades are needed to replace aging equipment, improve treatment, and provide additional capacity for anticipated demand. The Town's NPDES Permit previously included requirements to monitor nutrients but did not specify numerical nutrient limits. The speculative permit includes numerical limits for both TN and TP which will require improved treatment, and the Town is experiencing industrial and commercial growth. Nutrient limits to the Yadkin River may change depending on the final nutrient strategy developed for High Rock Lake. The Town has received 22 Notices of Violations (NOVs) for effluent permit exceedances between December 2016 and December 2021. In July 2021, the Town received a Sewer Line Moratorium from NCDEQ. The moratorium was issued because in the previous calendar year when the Town's effluent from the WWTP flow averaged 4.8 MGD representing 97.2 percent of the plant's current treatment capacity.

The purpose of this proposed project there is to provide an upgraded and expanded facility that will enable Wilkesboro to meet future permit limits while accommodating future growth.

E. Alternatives Analysis

No-Action: The No-action alternative would continue operation of the WWTP with aging equipment, components located in the floodplain, exceeding flow limits, and unable to meet future effluent water quality standards for total nitrogen and phosphorus. This alternative is infeasible and was rejected.

Alternative 1 – AquaNereda Aerobic Granular Sludge (AGS) (Preferred): This alternative consists of upgrading the secondary treatment process using an AquaNereda aerobic granular sludge (AGS) system operating in three new sequencing batch reactors and increasing the capacity of the WWTP from 4.9 MGD to 8 MGD. Associated improvements to the plant include influent pump station upgrades, the existing headworks will be retrofitted and upgraded, conversion of existing Clarifier No. 4 to an AGS influent buffer tank, construction of new tanks required for the Nereda process, construction of a new UV disinfection system and effluent measurement/monitoring facilities, and the addition of a new solids dewatering screw press. A new operations building is also included in this alternative. The existing aerobic digesters will remain in-use. This alternative is preferred because it meets the desired treatment flows for the plant with the lowest treatment cost per gallon, greatest energy savings, and smallest spatial footprint compared to other alternatives.

Alternative 2 – Oxidation Ditch with Mobile Organic Biofilm Process: This alternative would also upgrade treatment and increase the plant capacity using an oxidation ditch with Mobile Organic Biofilm (MOB) process by Nuvoda. The oxidation ditch would be filled with Kenaf

media to enhance treatment and settling, and a media retention screen would be included to filter out any wasted media and return it to the biological process. Associated plant upgrades would include updates to the influent pump station, rehabilitation of existing headworks system, construction of a new ultraviolet (UV) disinfection system, construction of a high river effluent pump station, addition of a new effluent flow meter, upgrades to the existing RAS pump station, and addition of a new solids dewatering unit. This alternative was rejected due to higher treatment cost per gallon, higher energy demand, and larger spatial footprint compared to the preferred alternative. Additionally, this alternative would include constructing new treatment components within the floodplain.

Alternative 3 – Conventional Sequencing Batch Reactor (SBR): This alternative consists of a conventional SBR system with four tanks located adjacent to the existing maintenance building. Associated plant improvements would include upgrades to the influent pump station, construction of new headworks north of Tyson's pretreatment basins, construction of a new UV disinfection system, addition of a new effluent flow meter, and addition of new solids thickening and dewatering units. A new plant operations/control building would also be included in this alternative. This alternative was rejected due to higher treatment cost per gallon, higher energy demand, and larger spatial footprint compared to the preferred alternative.

F. Environmental Consequences and Mitigative Measures

Topography and Soils: Significant impacts to topography and soils are not anticipated. The WWPT site has already been disturbed. Minimal grading will be required. Total impervious area will change from 14 percent to 17 percent. Disturbed areas that are not within building footprints will be re-seeded after construction. Impacts to the floodplain will include removing and demolishing the existing aeration basin and Tyson influent pump station, adding rock to existing access roads, and temporary erosion control devices. There will be no permanent changes to existing elevations within the 100-yea floodplain. The project will comply with local FEMA regulations including appropriate permits. The project will expand the WWTP, and secondary and cumulative impacts (SCI) are possible due to future wastewater lines and development in the service area. These impacts will be minimized through adherence to Town of Wilkesboro and Wilkes County ordinances addressing floodplain development, flood damage prevention, sewer use, and watershed development.

Land Use: Significant impacts to land use are not anticipated. The project is located within sites owned by the Town of Wilkesboro and Tyson Foods and used for wastewater treatment. SCI will be managed through the Town's Comprehensive Land Use Plan, which includes provisions for preserving open spaces.

Wetlands: Significant impacts to wetlands are not anticipated. There are no wetlands on the project site and therefore no direct impacts anticipated. SCI related to future growth will be minimized through the Wilkes County Watershed Ordinance, which limits certain development and places impervious surface limits on certain developments to project wetlands and streams.

Important Farmlands: Significant impacts to important farmlands are not anticipated. The project area does include soils designated as prime and unique farmland, but the site is already disturbed

and not in agricultural use. Potential SCI will be minimized through the NC Agricultural Development and Farmland Preservation Fund, which promotes farmland preservation.

Public Lands and Scenic, Recreational, and State Natural Areas: Significant impacts to public lands, scenic, recreational, or state natural areas are not expected. Parks and public lands in the surrounding area may experience increase in noise during construction activities, but these impacts will be minor and temporary.

Cultural Resources: Direct impacts to cultural and historic resources are not anticipated. The Downtown Wilkesboro Historic District is located within a mile of the project area, but impacts are not anticipated. Five previously recorded archaeological sites are located within one mile of the project site and are not expected to be impacted due to construction activities occurring at previously disturbed locations. The North Carolina State Historic Preservation Office (SHPO) conducted a review of the project and is aware of no historic resources which will be impacted by the project (July 29, 2022, ER 21-2531). Potential SCI will be minimized through Wilkesboro's Historic Preservation Committee's guidelines.

Air Quality: No significant impacts to air quality are anticipated. Construction activities may cause a temporary increase in emissions and will cease when construction is complete. Dust control measures will be implemented, and open burning of materials will not be allowed. Testing of emergency generators may cause temporary, short-term emissions. Otherwise, the project will not result in new sources of air pollution. SCI to air quality are not anticipated.

Noise Levels: No significant noise impacts are anticipated. Noise from construction activities will be temporary with construction hours restricted under the Town's Noise Ordinance. Operational noise impacts may increase slightly as a result of additional components and new technologies at the WWTP. Forested areas surrounding the project site create natural noise buffers to minimize any noise for surrounding residences. SCI may include construction noise for wastewater line installation and residential and industrial development. These impacts will be minimized through compliance with Wilkes County's High Impact Land Use Ordinance.

Water Resources: No significant negative impacts to water resources are anticipated. A sedimentation and erosion control plan will be implemented to minimize impacts to surface water from construction activities. The project will provide a benefit to nearby surface waters by removing several components from the floodplain and improving the treatment process and qualify of effluent from the WWTP. SCI related to future develop will be minimized through the Wilkes County Watershed Ordinance and stormwater provisions in the Town's Subdivision Ordinance.

Forest Resources: Significant impacts to forest resources are not expected. The project site includes scattered wooded areas. A small area of approximately 0.18 acre of upland forest will be cleared. SCI from future development will be minimized through the Town's Tree, Subdivision, and Zoning ordinance and Wilkes County Watershed Ordinance.

Shellfish or Fish and Their Habitats: Impacts to shellfish, fish, and their habitats are not expected to be significant. There are no known occurrences of threatened or endangered aquatic species in

the project site or immediate surrounding area. Impacts to aquatic species from construction activities will be minimized through adherence to a sediment and erosion control plan. Aquatic species will benefit from improved wastewater effluent quality. SCI related to future develop will be minimized through the Wilkes County Watershed Ordinance and stormwater provisions in the Town's Subdivision Ordinance.

Wildlife and Natural Vegetation: No significant impacts to wildlife and natural vegetation are expected. No threatened or endangered species have been identified within one mile of the project site. Suitable habitat exists for the Northern long-eared bat and tricolored bat. To protect these species, the recommendation from the U.S. Fish & Wildlife Service (USFWS) to avoid tree removal between March 15th and November 15th will be followed. Impacts to other terrestrial species are not anticipated. Most of the project is located in previously disturbed and maintained areas. SCI related to future development will be minimized through County and Town development ordinances.

Introduction of Toxic Substances: The project is not expected to introduce toxic substances into the environment. Construction specifications will include provisions for fuel, oil, and lubricants to be contained and equipment to be properly maintained to prevent leakage and spills. Chemicals used on-site will be controlled and maintained as currently required at the WWTP.

The U.S. Fish and Wildlife Service was consulted and provided guidance (June 2, 2023). The North Carolina Wildlife Resources Commission, Natural Heritage Program, and DWR Winston-Salem 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 (July 29, 2022, ER 21-2531).

G. Public Participation, Sources Consulted

The Town of Wilkesboro held a public meeting on November 6, 2023. The meeting included a presentation about the proposed project and opportunity for public comments. The Town also provided a 30-day period for submission of written comments. Comments at the meeting included support for the project from a councilman and a question about publishing time. No written comments were received.

The current user charge for a typical residential customer is $30.77 per month for sewer and water combined, based on consumption of 5,000 gallons per month. The proposed project will increase the bill by $9.62, for a future sewer bill of $40.39. The Town intends to raise rates through a series of smaller annual increases.

Sources consulted about this project for information or concurrence included:

1) City of Wilkesboro
2) Wilkes County
3) North Carolina Department of Environmental Quality
   -Wildlife Resources Commission

-Natural Heritage Program
-DEQ Winston-Salem 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

4) North Carolina Department of Natural and Cultural Resources
5) North Carolina State Clearinghouse
6) North Carolina Department of Public Safety
7) U.S. Fish and Wildlife Service
8) U.S. Army Corps of Engineers

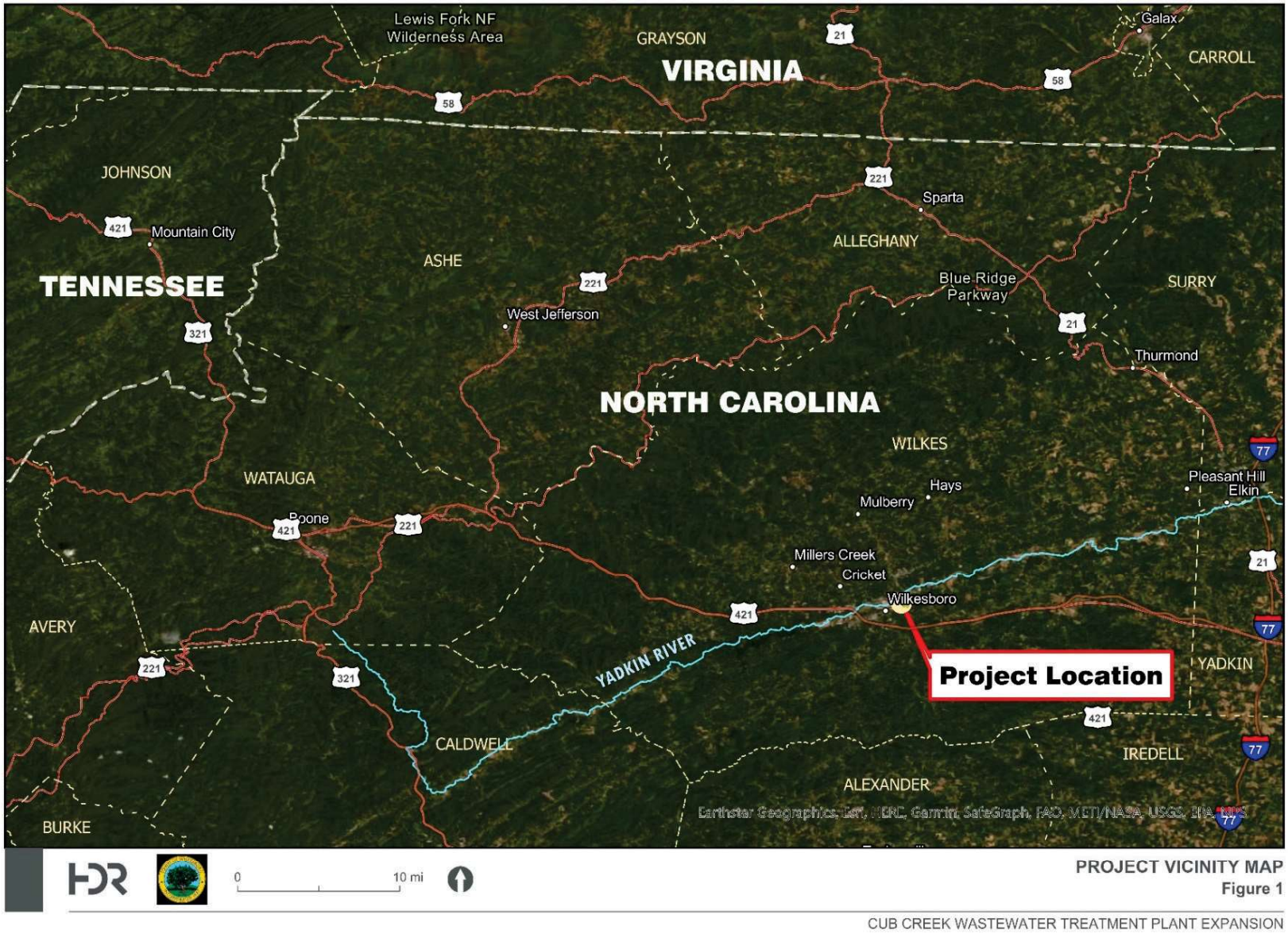

Figure 1.1. Project Vicinity Map

Figure 1.2. Project Location Map