

ROY COOPER
Governor
MARY PENNY KELLEY
Secretary
SHADI ESKAF
Director



December 16, 2024

Ms. Stephanie Brixey
Deputy Director / POTW Director
Durham County
5926 Highway 55 East
Durham, North Carolina 27713

Subject: Engineering Report Funding Approval
Durham County
Chin Page Road Pump Station
DWI Project No.: CS370575-04

Dear Ms. Brixey:

The Division of Water Infrastructure (Division) has completed its review of the engineering report and environmental document for the subject project. Based upon the review, the Division has determined that the above-referenced project is eligible for funding as follows:

Eligible:

Pump Station (New Pump Station to be named Chin Road Page Pump Station):

Abandonment and replacement of the existing General Electric Pump Station, outside the 100-year-flood elevation, to include: installation of a new, 4.7-MGD (initial design condition), triplex, submersible pump station, with two (2) pumps and one (1) future-pump slot; wet-well grinder, odor control, flow meter, and emergency generator; and approximately 500 LF of 24-inch force main, and 1,000 LF of 30-inch gravity-sewer pipe and associated manholes (MHs).

Outfall Gravity Sewer:

Installation of approximately 4,000 LF of 30-inch gravity-sewer pipe and associated MHs.

Non-Eligible:

Paving of roadways in excess of the excavated area; spare parts, service contracts, and maintenance contracts; and extended warranties.

Based upon a detailed review of the future bid documents, the Division may determine that portions of the project are not eligible for funding and the total funding amount may be reduced.



North Carolina Department of Environmental Quality | Division of Water Infrastructure
512 N. Salisbury Street | 1633 Mail Service Center | Raleigh, North Carolina 27699-1633
919.707.9160

Ms. Brixey
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Durham County
December 16, 2024
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If you have any questions, please contact Doug Newhouse either by telephone at 919.707.9053 or by e-mail at doug.newhouse@deq.nc.gov.

Sincerely,

Trupti Desai

Trupti Desai, P.E., Supervisor
Wastewater and Stormwater Projects Unit

Attachments: EA/FONSI

cc: John W. Brinkley, P.E., CDM Smith, Raleigh NC (brinkleyjw@cdmsmith.com)
Kelly R. Boone, P.E., CDM Smith, Raleigh NC (boonekr@cdmsmith.com)
Trupti Desai, P.E. (DWI, via e-mail)
Doug Newhouse (DWI, via e-mail)
Mark Hubbard, P.E. (DWI, via e-mail)
Keith Krzywicki, P.E. (DWI, via e-mail)
Susan Kubacki (DWI, via e-mail)
Shane Beeson, REHS (DWI, via e-mail)
DWI Agreement ID 2000057422 (ER/EID – ERAL)

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

**DURHAM COUNTY
CHIN PAGE ROAD PUMP STATION**

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

**CONTACT: KAVITHA AMBIKADEVI, SECTION CHIEF
WATER INFRASTRUCTURE FUND SECTION
DIVISION OF WATER INFRASTRUCTURE
1633 MAIL SERVICE CENTER
RALEIGH, NORTH CAROLINA 27699-1633
(919) 707-9048**

October 31, 2024

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: Durham County, North Carolina
Project Description: The proposed project involves intercepting flow near the General Electric Pump Station (GE PS), which is currently bypassed with flow going to the Stirrup Iron Creek Pump Station (SIC PS) and constructing a new pump station outside the 100-year flood plain to address capacity limitations within the sewer collection system due to ongoing growth. Flow previously conveyed through this station will be redirected and conveyed through a new 30- inch gravity sewer installed along an existing easement owned by the County to a new pump station site referred to as the Chin Page Road Pump Station located at the intersection of Chin Page Road and South Miami Boulevard.
Project Number: CS370575-04
Project Cost: \$19,298,025
Wastewater State Reserve Program: \$19,298,025

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

ENVIRONMENTAL ASSESSMENT

A. Proposed Facilities and Actions

The primary components for the new Chin Page Road Pump Station are as follows:

- Approximately 1,000 linear feet (LF) of 30-in gravity sewer to divert flow from the existing General Electric Pump Station to the new Chin Page Rd pump station.
- A new triplex submersible pump station with two pumps initially installed and provisions for a third pump to address future flows. Pumps will be equipped with variable frequency drives (VFDs) to minimize fluctuations in flow on the downstream collection system and minimize energy consumption.
- A wet-well grinder to mitigate clogging of the pumps
- A valve vault
- A meter vault with a magnetic flow meter
- Electrical equipment housed in a pre-engineered building
- Stand-by electrical generator with sound attenuation
- Liquid phase odor control system
- Approximately 500 LF of new, 24-in discharge force main across S Miami Blvd via bore-and-jack or horizontal directional drill (HDD) construction; and
- Approximately 4,000 LF of 30-in gravity sewer, running parallel to an existing gravity sewer, to connect to a new 30-in gravity sewer (by others).
- Demolition or abandonment of the existing GE pump station.

Funding Status: Durham County received a letter of intent to fund (LOIF) in March 2022 for a 100 percent Clean Water State Revolving Fund (SRF) loan amount of \$19,298,025 at a specified interest rate of 1.16% based on the Opinion of Probable Construction Costs completed as part of the County's SRF application in September 2021. The 20-year loan has a 2% loan fee, or approximately \$386,000. No other funding source has been requested. The current estimated total capital cost of the project is \$23,843,500, which was updated in 2024 as market costs continue to evolve. Durham County intends to seek approval of an additional 10% increase to the current funding amount of \$19,298,025 to \$21,227,828. The remaining funding required will come from local funds (Enterprise Fund). The current estimated total present worth of the project is approximately \$24.4 million, which includes an estimated capital cost of approximately \$23.8 million and an estimated present worth of annual O&M cost of approximately \$0.6 million. No replacement costs are anticipated in the first 20 years of the new pump station and pipeline lifetime.

B. Existing Environment

Topography and Soils. Elevations in the project area range from approximately 282 feet near the connection to the existing 30-inch sewer to approximately 362 feet at the railroad crossing. The project area is within the Chatham Group of the Triassic Basin, a geologic area consisting of sedimentary rocks with sandstone and mudstone.

E. Alternatives Analysis

No-Action: The No-Action Alternative would consist of continuing to divert flow conveyed to the existing GE PS on Chin Page Road to the SIC PS. The SIC PS is quickly approaching capacity due to the hydraulic constraints imposed by the existing force main. In an effort to address the current capacity limitations for this station, the County is installing a fourth pump along with a new flow meter at the SIC PS. These improvements will marginally increase the capacity of the existing station by 300,000 to 400,000 gpd, which is well below the projected flow needs for this station when accounting for the additional growth anticipated for the basin. Existing pumps at the SIC PS are currently unable to reach full speed due to the head loss incurred through the force main at the higher velocities. Modelling results from the 2020 sewer capacity study indicate major trunk lines draining to the SIC PS are approaching 100% of their carrying capacity. As a result of the sewers reaching their carrying capacity, the County has experienced SSOs during severe wet weather events and other instances.

This alternative is deemed “infeasible” as it would not address the wastewater demands within the basin that is served by the SICB and likely result in additional SSOs as flows increase.

Alternative 1 – New Pump Station at Chin Page Rd: Alternative 1 involves relocating the existing GE PS, which resides within a 100-year flood plain, and constructing a new pump station (Chin Page Road Pump Station) at the corner of Chin Page Road and Miami Boulevard. In addition to the flood plain considerations, the existing station is nearly 50 years old based on available deeds for the property, which is well beyond the useful life for this package station. Currently, flows that were once served by this station are being diverted to the SIC PS, which is approaching capacity.

This alternative will require the installation of 1,000 linear feet (LF) of 30-inch diameter gravity sewer to redirect flow from the existing GE PS to the new Chin Page Road Pump Station. The new station will be a triplex submersible pump station initially sized to address the future peak flow conditions. Two pumps will be installed initially, and provisions will be made in the initial design for adding a third pump to address buildout conditions with two pumps operating in parallel. The wet-well will be provided with a grinder for minimizing the potential of clogging of the submersible pumps. The submersible pumps will be equipped with variable frequency drives (VFDs). The pumps will be controlled using a submersible pressure transducer housed in a stilling well. VFDs will control the pump speed to maintain an operator adjustable wet well level. Adjacent to the station will be a valve vault followed a meter vault which houses a magnetic flow meter.

Electrical equipment will be housed in a pre-engineered building. A liquid phase odor control system will be provided given the proximity to residential and commercial development. A standby diesel generator will be provided to address outages and ensure continued operation during severe weather events.

Sediment and erosion control measures will be used around the work areas to protect adjacent flood hazard areas from sedimentation and runoff. An Erosion and Sediment Control Plan and Stormwater NPDES Permit will be developed and approved by the North Carolina Department of Environmental Quality (DEQ) prior to construction. A Floodplain Development Permit from Durham County will be obtained for the work in flood hazard areas.

SCI impacts will be mitigated by the Unified Development Ordinance of the City of Durham and Durham County (UDO), which will govern growth in the service area. Article 8.4 of the UDO requires a Floodplain Development Permit to be approved by the City-County Floodplain Administrator to ensure compliance with the UDO, protect property, and control development that would increase erosion or flood damage or alter floodplains and stream channels. Development projects will also require a Sedimentation and Erosion Control Plan to be approved by the County per Article 12.10 of the UDO, which will protect downgradient flood hazard areas from construction projects. Topography will be protected by the UDO's Steep Slope Protection Standards.

Land Use: The site of the new pump station will be converted from a vacant, wooded area to a small utility use. The site is currently part of a large commercial property and will not result in a significant change to the land use of the property. The pipelines will be buried and will not affect land use significantly other than the permanent utility easement for maintenance. No land use changes are anticipated from removing the GE pump station.

Secondary and cumulative impacts to land use in the service area could result from growth and development in the service area. Because the City and County control and direct growth and development through ordinances, it is likely that the growth and development will occur regardless of the project; however, the proposed project could facilitate this growth and development by providing adequate wastewater collection system capacity.

Construction impacts will be mitigated by restoring existing topography along the pipelines to minimize changes to land use and by minimizing regrading at the pump station site to the minimum necessary for construction. Sediment and erosion control measures will be used around the work areas to protect adjacent areas from sedimentation and runoff to minimize the impact of construction on adjacent land uses.

An Erosion and Sediment Control Plan and Stormwater NPDES Permit will be developed and approved by the North Carolina Department of Environmental Quality (DEQ) prior to construction. SCI impacts will be mitigated by the UDO, which will govern growth in the service area. Examples of ways the UDO protects existing land uses such as natural resources and controls development by zoning include Article 4.1 (Development Tiers and Zoning); Article 7.2 (Open Space); Article 8.3 (Tree Coverage Standards); Article 8.4 (Floodplain Development); Article 8.5 (Riparian Buffer Protection Standards); Article 8.8 (Steep Slope Protection Standards); Article 8.9 (Wetlands Protection Standards); Article 8.10 (Durham Inventory Site Protection, addressing Important Natural Areas, Plants, and Wildlife); Article 12.8 (Stormwater Management); and Article 12.10 (Sedimentation and Erosion Control).

soils and potential farmland from construction projects. Soils on steep slopes will be protected by the UDO's Steep Slope Protection Standards (Article 8.8).

Public Lands and Scenic, Recreational, and State Natural Areas: Operation of the pump station and pipeline will not significantly affect public lands or scenic, recreational, and state natural areas. The County currently holds a Collection System Permit to operate and maintain its wastewater collection system, and this project will become part of the County's Collection System Permit. Wastewater from this project will be conveyed to the County's Triangle WWTP. The proposed project will not require any changes to the WWTP treatment process or capacity. Operation of the pump station and pipeline will protect the downstream areas such as the Stirrup Iron Creek Marsh and Sloughs by replacing old and unreliable infrastructure and improving its function, reducing SSOs and infiltration.

Construction impacts to the Stirrup Iron Creek Marsh and Sloughs SNHA will be mitigated by using sediment and erosion control measures around the work areas to protect downstream areas including the SNHA from sedimentation and runoff. An Erosion and Sediment Control Plan and Stormwater NPDES Permit will be developed and approved by the North Carolina Department of Environmental Quality (DEQ) prior to construction. SCI impacts to public lands and scenic, recreational, and state natural areas will be mitigated by the UDO.

Cultural Resources: Direct impacts to cultural and historic resources are not anticipated.

Air Quality: No significant impacts to air quality are anticipated. Construction of the project may cause temporary, short-term, localized air quality impacts such as increases in suspended particulate matter due to dust emissions from the construction site and exhaust emissions from diesel and gasoline powered equipment. Equipment exhaust emissions typically include nitrogen oxides, hydrocarbons, carbon monoxide, and particulate matter. Some odors from hydrogen sulfide may be detected at the pump station and along the gravity sewer at manholes. However, the project will not result in a significant impact to odors at the site or offsite.

Secondary and cumulative impacts to air quality in the service area could result from growth and development in the service area. Growth and development could impact air quality in the form of additional emissions from vehicles and emissions from additional industrial facilities.

Construction equipment will be required to have air quality/emission reduction devices installed in proper operational condition. Dust on the construction site will be controlled by spraying the area with water if necessary. Temporary gravel construction entrances will also be used to control dust. The construction site will be reseeded as specified in the NC Erosion and Sediment Control Planning and Design Manual. The pump station will include an odor control system to minimize odors at the site during operation of the facility. SCI impacts will be mitigated by DEQ Air Quality regulations and permits required for facilities with emissions (e.g., industrial facilities).

Noise Levels: No significant noise impacts are anticipated. The new pumps will create noise during operation, but they will be enclosed in a below-grade, enclosed wet well, so noise is not

forest will be impacted through the clearing of trees at the new pump station site and along the pipeline routes.

Secondary and cumulative impacts to forest resources in the service area could result from growth and development in the service area. Forest resources could be permanently cleared and converted to other uses, including residential and commercial/industrial due to growth and development in service area. SCI impacts will be mitigated by the UDO, which will govern growth in the service area. Examples of ways the UDO protects existing forest resources and controls development by zoning include Article 4.1 (Development Tiers and Zoning); Article 7.2 (Open Space); Article 8.3 (Tree Coverage Standards); Article 8.4 (Floodplain Development); Article 8.5 (Riparian Buffer Protection Standards); Article 8.8 (Steep Slope Protection Standards); Article 8.9 (Wetlands Protection Standards); Article 8.10 (Durham Inventory Site Protection, addressing Important Natural Areas, Plants, and Wildlife); Article 12.8 (Stormwater Management); and Article 12.10 (Sedimentation and Erosion Control).

Shellfish or Fish and Their Habitats: Operation of the pump station and pipeline will not significantly affect adjacent streams that are habitat to fish, shellfish, and other aquatic species. The County currently holds a Collection System Permit to operate and maintain its wastewater collection system. Wastewater from this project will be conveyed to the County's Triangle WWTP. The proposed project will not require any changes to the WWTP's treatment process or capacity. Operation of the pump station and pipeline will protect the quality of water resources by replacing old, unreliable infrastructure and increasing its ability to prevent SSOs and infiltration. No direct impacts to aquatic threatened and endangered species are anticipated from this project. No work is planned to occur in streams in the project area, including Stirrup Iron Creek and Burdens Creek.

Secondary and cumulative impacts to streams that are habitat for fish, shellfish, and other aquatic species in the service area could result from growth and development in the service area. Because the City and County control and direct growth and development through ordinances, it is likely that the growth and development will occur regardless of the project; however, the proposed project could facilitate this growth and development by providing adequate wastewater collection system capacity.

Construction impacts to streams that are habitat for shellfish, fish, and other aquatic species will be mitigated by using sediment and erosion control measures around the work areas to protect downstream surface water from sedimentation and runoff. An Erosion and Sediment Control Plan and Stormwater NPDES Permit will be developed and approved by the North Carolina Department of Environmental Quality (DEQ) prior to construction. Wetlands and streams will be delineated during design of the project and avoided as much as possible, and 404/401 permits will be obtained. SCI impacts will be mitigated by the UDO, which will govern growth and development in the service area. Article 8.4 of the UDO requires a Floodplain Development Permit to be approved by the City-County Floodplain Administrator to ensure compliance with the UDO, protect property, and control development that would increase erosion or flood damage or alter floodplains and stream channels.

G. Public Participation, Sources Consulted

Durham County held a public meeting on September 9, 2024. The meeting included a presentation about the proposed project and opportunity for public comments. Durham County also provided a 30-day period for submission of written comments.

The current user charge for a typical residential customer is \$114.27 per month for sewer and water combined, based on consumption of 5,000 gallons per month. The proposed project will increase the bill by \$0.67, for a future sewer bill of \$114.94.

Sources consulted about this project for information or concurrence included:

- 1) Durham County
- 2) 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
- 3) North Carolina Department of Natural and Cultural Resources
- 4) North Carolina State Clearinghouse
- 5) North Carolina Department of Public Safety
- 6) U.S. Fish and Wildlife Service
- 7) U.S. Army Corps of Engineers

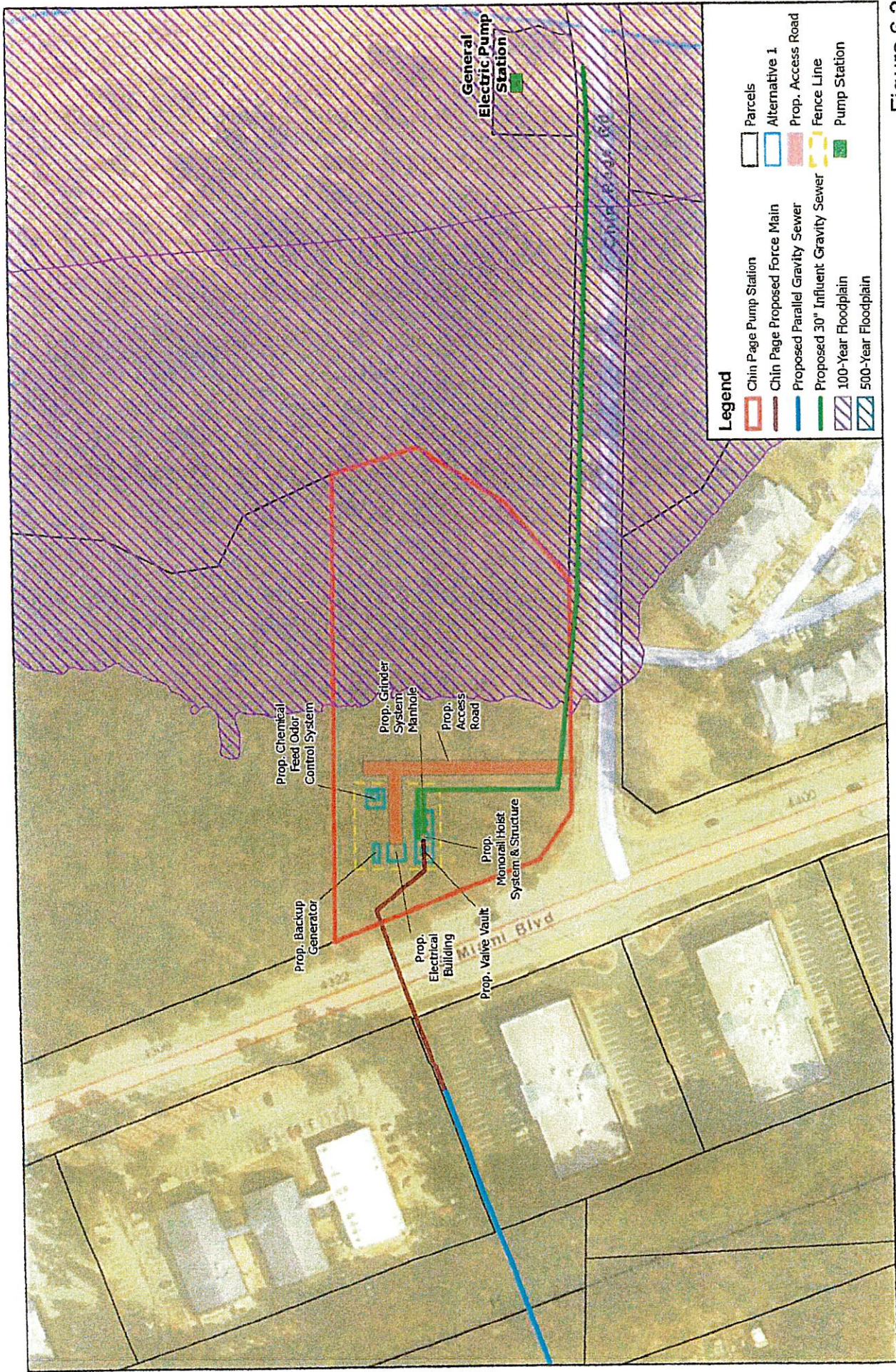


Figure 6.2
 Alternative 1
 Durham County - Chin Page Pump Station
 Durham, North Carolina



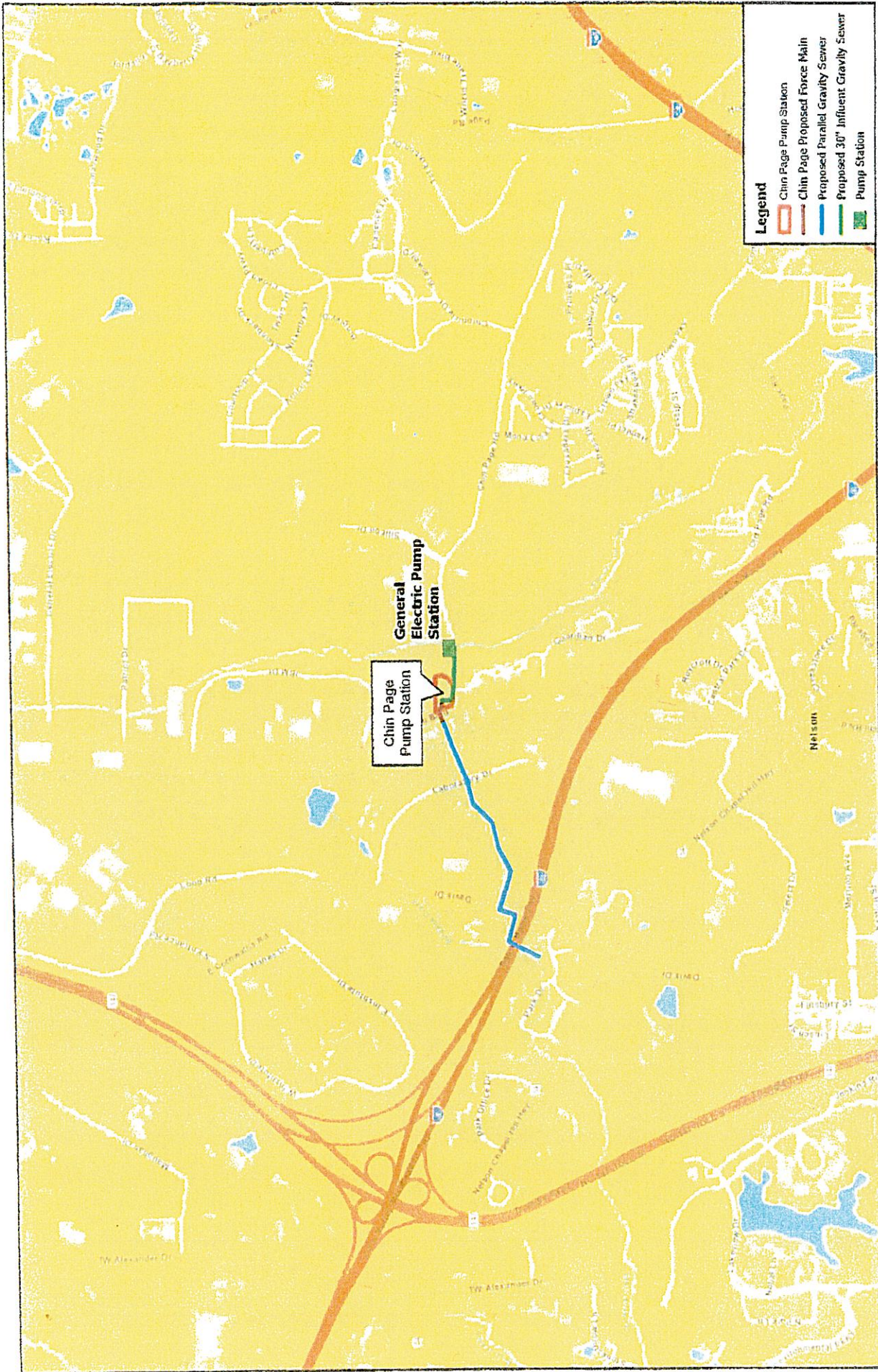


Figure 6.3
Project Vicinity Map
Durham County - Chin Page Pump Station
Durham, North Carolina

