



**U.S. Department of Housing and Urban  
Development**

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Washington, DC 20410  
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## **Environmental Assessment Determinations and Compliance Findings for HUD-assisted Projects 24 CFR Part 58**

### **Project Information**

**Project Name:** Cliffdale Crossing

**Project Location:** 8368 Cliffdale Road, Fayetteville, Cumberland County, North Carolina  
28314

**Federal Agency:** U.S. Department of Housing & Urban Development (HUD)

**Responsible Entity:** North Carolina Office of Recovery and Resiliency (NCORR)

**Grant Recipient:** Cliffdale Crossing Associates Limited Partnership

**State/Local Identifier:** B-19-DV-37-0001 and B-19-DV-37-0002

**Preparer:** Andrea Gievers, Environmental SME, NCORR

**Certifying Officer Name and Title:** Laura Hogshead, Director, NCORR

**Consultant (if applicable):**  
Nova Group, GBC

**Direct Comments to:**  
Andrea Gievers  
Environmental SME  
NCORR - Community Development  
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**Project Location:**

The proposed project address is 8368 Cliffdale Road, Fayetteville, Cumberland County, North Carolina 28314.

**Description of the Proposed Project** [24 CFR 50.12 & 58.32; 40 CFR 1508.25]:

The Cliffdale Crossing development (proposed project) involves the new construction of 80 units in a growing area of Fayetteville. The development will offer 12 one-bedroom, one-bath units, 40 two-bedroom, one-bath units and 28 three-bedroom, two-bath units in 6 two-story buildings. The development will also include a leasing/community building, all located on 8 acres. Grocery, shopping, restaurants, and schools are nearby.

**Statement of Purpose and Need for the Proposal** [40 CFR 1508.9(b)]:

The purpose of the proposed project is to construct 80 units of affordable residential rental housing in the City of Fayetteville. The City is seeking affordable housing to address the shortage in such inventory exacerbated by the effects of Hurricane Florence. The State of North Carolina was adversely impacted by the landfall of Hurricanes Matthew (October 8, 2016) and Florence (September 14, 2018). These hurricanes damaged or destroyed hundreds of homes worsening the affordable housing shortage.

This proposed project will increase affordable housing inventory for low- and moderate-income families. The City of Fayetteville adopted the Affordable Housing Study dated June 28, 2021 in order to look into solutions for the City's affordable housing shortage (See <https://www.fayettevillenc.gov/home/showpublisheddocument/18296/637613441485230000>).

The study concluded that a large supply of the area's housing doesn't meet minimum property standards (i.e., connected to approved water supplies and sewage disposal systems and being wired for electricity). More than 35% of households spend 30% or more of their income per month on housing, the study found. Fayetteville's median income is \$58,000 per year. Of the households making less than \$50,000, 69% are housing-cost burdened. For renters, the number jumps up to 75%, the study said. The study also found that housing that is available in Fayetteville is decades old and lacking in smaller apartment complexes and mobile homes. Lastly, Fayetteville's high military population has adversely affected the rental market, causing it to be fast moving and causing inflated prices due to soldiers' incomes and tendency to rent for shorter terms, according to the study. The addition of these 80 units of affordable residential rental housing will help to alleviate some of these issues and help the City of Fayetteville reach the 20,000 units that are estimated to be needed.

**Existing Conditions and Trends** [24 CFR 58.40(a)]:

The proposed project site is undeveloped land covered by natural vegetation. Historic aerial photos of the proposed project site show that the northern portion of the property consisted of wooded land, while the southern portion was utilized for agricultural purposes. From 1987 to 1993, the agricultural land appeared fallow and overgrown. From 1993 to 2020, the agricultural land was replaced with wooded land. This wooded area on the southern portion was clear cut of trees in 2020. Please refer to the attached site visit photos. Land use of the surrounding area is primarily residential with adjacent commercial properties.

**Funding Information**

<b>Grant Number</b>	<b>HUD Program</b>	<b>Funding Amount</b>
B-19-DV-37-0001 and B-19-DV-37-0002	CDBG-DR	\$2,500,000.00
<i>(Separate 24 CFR 58 Review)</i>	<i>HOME</i>	<i>\$800,000.00</i>

**Estimated Total HUD Funded Amount: \$3,300,000.00**

Non-HUD Funding Source: Bank Loan  
 Non-HUD Funding Amount: \$3,571,520.00  
 Non-HUD Funding Source: Federal LIHTC  
 Non-HUD Funding Amount: \$6,475,647.00

**Estimated Total Non-HUD Funded Amount: \$10,047,167.00**

**Estimated Total Project Cost (HUD and non-HUD funds) [24 CFR 58.32(d)]: \$13,347,167.00**

**Compliance with 24 CFR 50.4, 58.5, and 58.6 Laws and Authorities**

Record below the compliance or conformance determinations for each statute, executive order, or regulation. Provide credible, traceable, and supportive source documentation for each authority. Where applicable, complete the necessary reviews or consultations and obtain or note applicable permits of approvals. Clearly note citations, dates/names/titles of contacts, and page references. Attach additional documentation as appropriate.

<b>Compliance Factors:</b> Statutes, Executive Orders, and Regulations listed at 24 CFR §58.5 and §58.6	Are formal compliance steps or mitigation required?	Compliance determinations
<b>STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 and 58.6</b>		
<b>Airport Hazards</b>  24 CFR Part 51 Subpart D	Yes    No <input type="checkbox"/> <input checked="" type="checkbox"/>	Airport maps and a FAA circle search were reviewed for civilian, commercial service and military airports located near the proposed project site. There are no civilian, commercial service airports located within 2,500 feet of the proposed project site. There are no military airports located within 15,000 feet of the proposed project site. The proposed project is in compliance with Airport Hazards, 24 CFR Part 51 Subpart D.

		See <b>Attachments</b> – Civilian Airport Map, Military Airport Map (NEPAssist Database) and FAA Circle Search Results
<p><b>Coastal Barrier Resources</b></p> <p>Coastal Barrier Resources Act, as amended by the Coastal Barrier Improvement Act of 1990 [16 USC 3501]</p>	<p>Yes No</p> <p><input type="checkbox"/> <input checked="" type="checkbox"/></p>	<p>According to the U.S. Fish and Wildlife Service Coastal Barrier Resources System (CBRS) map for North Carolina, the proposed project site is not located in or near a CBRS unit. The proposed project is in compliance with the Coastal Barrier Resources Act, 16 USC 3501.</p> <p>See <b>Attachment</b> – USFWS CBRS Mapper</p>
<p><b>Flood Insurance</b></p> <p>Flood Disaster Protection Act of 1973 and National Flood Insurance Reform Act of 1994 [42 USC 4001-4128 and 42 USC 5154a]</p>	<p>Yes No</p> <p><input type="checkbox"/> <input checked="" type="checkbox"/></p>	<p>The proposed project site is located within Zone X (unshaded) according to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMette) Panel Number 3710948700, dated January 5, 2007. No Preliminary FIRM panels were available for the proposed project site. No FEMA Flood Zone A or V or FEMA-designated regulatory floodway is located anywhere on the proposed project site. The site is not located in a Special Flood Hazard Area, therefore, flood insurance is not required. The proposed project is in compliance with the Flood Disaster Protection Act of 1973 and National Flood Insurance Reform Act of 1994, 42 USC 4001-4128 and 42 USC 5154a.</p> <p>See <b>Attachment</b> – National Flood Hazard Layer FEMA FIRMette</p>
<p><b>STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 &amp; 58.5</b></p>		
<p><b>Clean Air</b></p> <p>Clean Air Act, as amended, particularly section 176(c) &amp; (d); 40 CFR Parts 6, 51, 93</p>	<p>Yes No</p> <p><input type="checkbox"/> <input checked="" type="checkbox"/></p>	<p>According to the NEPAssist map and EPA Green Book, the proposed project site is not located in a county in nonattainment or maintenance status for any criteria pollutants.</p> <p>In order to mitigate the generation of fugitive dust from land clearing activities, the following techniques will be utilized. Vegetative cover will be maintained as much as possible around cleared areas. Access roads and storage areas that are heavily travelled will have a water truck to stabilize potential dust during high traffic times or high wind days. Construction vehicles and machinery will operate at reduced speeds to reduce soil disturbance and fugitive dust potential. In order to mitigate the generation of emissions during construction, vehicles and other machinery will be limited to construction hours only and will not be present once construction is</p>

		<p>completed. Further, the operation of the proposed project following the completion of construction activities will not increase emissions.</p> <p>Therefore, there will be no significant impact to air quality from the proposed project. Therefore, the proposed project is in compliance with the Clean Air Act, 40 CFR Parts 6, 51, and 93.</p> <p>See <b>Attachments</b> – NEPAassist Map, EPA Greenbook 2/28/21, and EPA Green Book Current Nonattainment Counties dated 9/30/21.</p>
<p><b>Coastal Zone Management</b></p> <p>Coastal Zone Management Act, sections 307(c) &amp; (d)</p>	<p>Yes    No</p> <p><input type="checkbox"/>    <input checked="" type="checkbox"/></p>	<p>Properties located within a state's coastal management zone must comply with the approved State Coastal Zone Management Program. The North Carolina coastal zone consists of 20 coastal counties that in whole or in part are adjacent to, adjoining, intersected, or bounded by the Atlantic Ocean or any coastal sound. The proposed project site is not located within one of the 20 listed counties located in the North Carolina coastal zone. The proposed project is in compliance with the Coastal Zone Management Act, sections 307(c) &amp; (d).</p> <p>See <b>Attachment</b> – Coastal Zone Management Information</p>
<p><b>Contamination and Toxic Substances</b></p> <p>24 CFR Part 50.3(i) &amp; 58.5(i)(2)</p>	<p>Yes    No</p> <p><input type="checkbox"/>    <input checked="" type="checkbox"/></p>	<p>A Phase I ESA was performed in conformance with the scope and limitations of ASTM Practice E 1527-13 of 8368 Cliffdale Road, Fayetteville, NC, the proposed project site.</p> <p>This assessment has revealed no evidence of Recognized Environmental Conditions (REC), Controlled Recognized Environmental Conditions (CREC), or Historical Recognized Environmental Conditions (HREC) in connection with the proposed project site.</p> <p>Based on a review of the Phase I ESA report, the proposed project site complies with the following criteria:</p> <p>(i) is not Listed on an U.S. Environmental Protection Agency (EPA) Superfund National Priorities or Comprehensive Environmental Response Superfund National Priorities or Comprehensive Environmental Response, Compensation, and</p>

		<p>Liability Act (CERCLA) List, or equivalent State list;</p> <ul style="list-style-type: none"><li>(ii) is not located within 3,000 feet of a toxic or solid waste landfill site;</li><li>(iii) does not have an underground storage tank; and</li><li>(iv) is not known or suspected to be contaminated by toxic chemicals or radioactive materials.</li></ul> <p>According to the NC DEQ Division of Waste Management (DWM), there are two Pre-regulatory Landfills located within one mile of the proposed project site. The Cumberland County Cliffdale Landfill (ID# NCD980502900) was a municipal landfill closed in 1983 and located at 7583 Lowell Harris Road near residential housing. In 1995, the Cliffdale Landfill was removed from CERCLIS by EPA. The Bones Creek Cumberland County Landfill (ID# NONCD0000733) was closed in 1975 and is near residential housing. It is located approximately 4,500 feet from the proposed project site, near Town Creek Drive. According to the NC DEQ DWM Site Locator Tool, there are several facilities listed within a one-mile radius of the proposed project site. The Refuel 151 Active UST Site located at 8385 Cliffdale Road is reviewed in the Phase I ESA as Alco Food Store #33 and noted by DWM as not having a reported petroleum release (see SCH Comments attached). The Walmart Neighborhood Market 3411 is located approximately 2,800 feet west of the proposed project site is noted only as an Active UST site. The Circle K Active UST site is reviewed in the Phase I ESA. UST Incidents were noted at The Pantry 456 and The Pantry 3031 which are discussed in the Phase I ESA. A Land Use Restriction is noted for The Pantry 3031, which has a No Further Action Status and is discussed in the Phase I ESA. The Anderson Dry Cleaners is located more than 2,000 feet east of the proposed project site and is addressed in the Phase I ESA. In addition, this proposed project will connect to a municipal water supply and sewer service.</p>
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<p><b>Endangered Species</b></p> <p>Endangered Species Act of 1973, particularly section 7; 50 CFR Part 402</p>	<p>Yes    No</p> <p><input type="checkbox"/>    <input checked="" type="checkbox"/></p>	<p>The proposed project site was clear cut in 2020. The existing habitat has, therefore, been heavily disturbed from the mass tree removal process conducted onsite. Currently, the proposed project site consists of a treeless area with early successional shrubs and grasses. Based on the lack of mature habitat and the recent heavy disturbance, NOVA did not observe any suitable habitat for the federally or state listed species (see NC NHP and USFWS attachment). The wooded area to the north of the proposed project site will not be disturbed.</p> <p>NOVA did not observe any of the above listed species during the site visit. Therefore, based on the heavily disturbed nature of the proposed project site and the lack of suitable habitat for the listed species, NOVA has determined that the project will have No Effect on all of the above listed species. A Self-certification Letter and 10-step Project Review Package were prepared and submitted to the USFWS Raleigh Ecological Services Field Office on November 18, 2021. The USFWS auto-generated response stated that “you will typically not receive a response from us since the certification letter is our official response. However, if we have additional questions or we do not concur with your determinations, we will contact you during the review period.” USFWS did not contact NCORR for additional information.</p> <p>According to the USFWS National Wetlands Inventory (NWI) Mapper, the proposed project site will be located approximately 160 feet to the south of the federally mapped wetland on an adjacent parcel. Based on the December 8, 2021 North Carolina Wildlife Resources Commission</p>

		<p>(NCWRC) Letter, no concerns for threatened or endangered species were noted. NCWRC offered recommendations to minimize impacts to aquatic and terrestrial wildlife resources including best management practices for minimizing stormwater runoff, use of native landscaping, sediment/erosion control measures, and insecticide and herbicide restrictions. According to the attached NCWRC recommendations, the proposed project should “maintain or establish a minimum 100-foot undisturbed, native forested buffer along each side of perennial streams and 50-foot undisturbed, native forested buffer along each side of intermittent streams and wetlands.” Thus, incorporating NCWRC recommendations will ensure aquatic and terrestrial wildlife resources will not be adversely impacted as part of the proposed project.</p> <p>Based on this information, threatened species, endangered species, and critical habitats are not considered an environmental concern at the proposed project site.</p> <p>See <b>Attachments</b> – USFWS Response, NCORR Submission, Self-certification Letter and 10-step Project Review Package, NC NHP Database Report, and NCWRC Letter</p>
<p><b>Explosive and Flammable Hazards</b></p> <p>24 CFR Part 51 Subpart C</p>	<p>Yes    No</p> <p><input type="checkbox"/>    <input checked="" type="checkbox"/></p>	<p>No large ASTs or other explosive or flammable hazards were identified during the site visit and review of aerial reconnaissance of the proposed project site and the surrounding area using the NEPAassist Database. Additionally, the Phase I ESA did not identify any RECs on the site. Based on a review of aerial imagery from Google Earth, the site is not within 1 mile of any current stationary aboveground storage containers.</p> <p>See <b>Attachment</b> – Above Ground Storage Tanks 1-mile Radius Map</p>
<p><b>Farmlands Protection</b></p> <p>Farmland Protection Policy Act of 1981, particularly sections 1504(b) and 1541; 7 CFR Part 658</p>	<p>Yes    No</p> <p><input type="checkbox"/>    <input checked="" type="checkbox"/></p>	<p>According to the TigerWeb 2010 U.S. Census Bureau data, the proposed project site is located within an “urbanized” area.</p> <p>Soil groups listed in the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) WebSoil Survey for the proposed project site included Wagram loamy sand (WaB) and Norfolk loamy sand (NoA). Wagram loamy sand had a farmland classification of farmland of statewide</p>



		<p>importance. Norfolk loamy sand had a farmland classification of prime farmland. However, according to Google Earth imagery and historical aerial photos, the proposed project site was heavily disturbed from logging activities. The proposed project site is not considered to be agricultural land because the site and surrounding area are identified as urbanized.</p> <p>See <b>Attachments</b> – USDA NRCS WebSoil Survey and TigerWeb 2010 U.S. Census Bureau data</p>
<p><b>Floodplain Management</b></p> <p>Executive Order 11988, particularly section 2(a); 24 CFR Part 55</p>	<p>Yes    No</p> <p><input type="checkbox"/>    <input checked="" type="checkbox"/></p>	<p>The proposed project site is located within Zone X (unshaded) according to FEMA FIRMette Panel Number 3710948700, dated January 5, 2007. No Preliminary FIRM panels were available for the proposed project site area. No FEMA Flood Zone A or V or FEMA-designated regulatory floodway is located anywhere on the proposed project site. The site is not located in a Special Flood Hazard Area. The proposed project is in compliance with this section.</p> <p>See <b>Attachment</b> – National Flood Hazard Layer FEMA FIRMette</p>
<p><b>Historic Preservation</b></p> <p>National Historic Preservation Act of 1966, particularly sections 106 and 110; 36 CFR Part 800</p>	<p>Yes    No</p> <p><input type="checkbox"/>    <input checked="" type="checkbox"/></p>	<p>Based on the height and size of the proposed development as well as neighborhood context, Nova has determined that the visual Area of Potential Effects (APE) for this project is an area 1,500 feet from the proposed project site. Based on research completed by Laura L. Mancuso, a Secretary of the Interior Qualified Architectural Historian, no properties over 50 years old are located within the APE. In addition, a review of properties listed on or eligible for listing on the National Register of Historic Places was completed on September 23, 2021, by Ms. Mancuso. No properties were identified on the site or within the 1,500-foot visual APE; therefore, a determination was made that no historic properties will be affected by the proposed undertaking. A Phase I Archaeological Review Report was also completed by the Archaeological Consultants of the Carolinas, Inc. Please see the attached Report which concludes that no cultural resources were identified, and no further archaeological investigations are recommended.</p> <p>NCORR submitted a Finding of “No Historic Properties Affected” pursuant to 36 CFR</p>

		<p>800.4(d)(1) on November 4, 2021 to the NC State Historic Preservation Office (SHPO) for review. The NC SHPO responded on December 14, 2021 and stated that, “[w]e have conducted a review of the project and are aware of no historic resources which would be affected by the project. Therefore, we have no comment on the project as proposed.”</p> <p>The Catawba Indian Nation is the only federally-recognized Tribe identified with interests in Cumberland County on the HUD Tribal Directory Assessment Tool (TDAT). Project information was sent by NCORR to the Chief and THPO of the Catawba Indian Nation on November 4, 2021 for a determination if there are any significant cultural resource concerns with this proposed project. The Catawba Indian Nation responded on December 13, 2021 stating that they have “no immediate concerns with regard to traditional cultural properties, sacred sites or Native American archaeological sites within the boundaries of the proposed project site. However, the Catawba are to be notified if Native American artifacts and/or human remains are located during the ground disturbance phase of this project.”</p> <p>On January 28, 2022, a project notification letter was sent to the State-recognized Lumbee Tribe of North Carolina. A response was not received.</p> <p><b>See Attachments</b> – NCORR SHPO Submission, SHPO Response, NCORR Catawba Submissions, Catawba Indian Nation Response, Archaeological Survey of the Cliffdale Crossing Tract Cumberland County, North Carolina, and Lumbee Tribe Project Notification Letter</p>
<p><b>Noise Abatement and Control</b></p> <p>Noise Control Act of 1972, as amended by the Quiet Communities Act of 1978; 24 CFR Part 51 Subpart B</p>	<p>Yes    No</p> <p><input type="checkbox"/>    <input checked="" type="checkbox"/></p>	<p>A Noise Assessment was conducted. The noise level was acceptable: less than 65.0 dB. The proposed project site is not situated within 1,000 feet of a significant road or within 3,000 feet of a railroad. The proposed project site is situated within 15 miles of an airport (Pope AAF is approximately 7.07 miles away, P K Airpark is approximately 7.11 miles away and the Fayetteville Regional Airport is approximately 9.42 miles away). DNL calculations for the Airport Noise Contour Map from the National Transportation Atlas online mapper indicate that the proposed project site is not within the 65 dB</p>

		<p>zone for any of the noise sources. NOVA also reviewed the Pope AFB noise contour map and determined that the proposed project site is approximately 4 miles away from the 65 dB zone surrounding the airport.</p> <p>Based on a review of the DNL calculations for the Airport Noise Contour Map from the National Transportation Atlas online mapper, the proposed project site is not within the 65 dB zone for any of the noise sources. NOVA also reviewed the Pope AFB noise contour map and determined that Property is approximately 4 miles away from the 65 dB zone surrounding the airport.</p> <p>Based on a review of the above resources, the proposed development location is within the Acceptable Noise Zone, with Day-Night Average Sound Levels from potential noise generators not exceeding 65 decibels. No special approvals or noise mitigation requirements are needed.</p> <p>Short-term construction work will adhere to local noise control standards/regulations. Construction noise will be limited to daytime hours. Construction equipment will be required to meet sound control requirements. The project is in compliance with HUD's Noise regulation.</p> <p>See <b>Attachment</b> – Airport Distance Maps, Airport Noise Contour Map and Pope AFB Airport Noise Contour Map</p>
<p><b>Sole Source Aquifers</b></p> <p>Safe Drinking Water Act of 1974, as amended, particularly section 1424(e); 40 CFR Part 149</p>	<p>Yes    No</p> <p><input type="checkbox"/>    <input checked="" type="checkbox"/></p>	<p>No sole source aquifers are located in North Carolina, according to the EPA. No further action is required,</p> <p>See <b>Attachment</b> – Sole Source Aquifer Map</p>
<p><b>Wetlands Protection</b></p> <p>Executive Order 11990, particularly sections 2 and 5</p>	<p>Yes    No</p> <p><input type="checkbox"/>    <input checked="" type="checkbox"/></p>	<p>According to the USFWS NWI Mapper, the proposed project site will be located approximately 160 feet to the south of the federally mapped wetland on an adjacent parcel. The December 8, 2021 NCWRC Letter offered recommendations to minimize impacts to aquatic and terrestrial wildlife resources including best management practices for minimizing stormwater runoff, use of native landscaping, sediment/erosion control measures, and insecticide and herbicide restrictions. According to the attached NCWRC recommendations, the proposed project should “maintain or establish a minimum 100-foot undisturbed, native forested buffer along each side of perennial streams and 50-foot undisturbed, native forested buffer along each</p>

		<p>side of intermittent streams and wetlands.” Thus, incorporating NCWRC recommendations will ensure aquatic and terrestrial wildlife resources, including wetlands, will not be adversely impacted as part of the proposed project.</p> <p>Best management practices for erosion and sedimentation control such as silt fencing will be utilized during construction. A NC DEQ Erosion Control Permit and an Erosion and Sedimentation Control Plan will be required for the proposed project. Also, a Stormwater Pollution Protection Plan will be required. Based on a review of the above resources, there will be no impact to wetlands.</p> <p>See <b>Attachment</b> – NWI Map and NCWRC Letter</p>
<p><b>Wild and Scenic Rivers</b></p> <p>Wild and Scenic Rivers Act of 1968, particularly section 7(b) and (c)</p>	<p>Yes    No</p> <p><input type="checkbox"/>    <input checked="" type="checkbox"/></p>	<p>According to the Department of the Interior National Park Service Nationwide Rivers Inventory Map and National Wild and Scenic River System Map, the proposed project site is not located within 0.25 miles of a WSR or NRI river.</p> <p>Based on a review of the above resources, the project will have no impact on Wild and Scenic Rivers.</p> <p>See <b>Attachment</b> – Department of the Interior National Park Service Nationwide Rivers Inventory Map and National Wild and Scenic River System Map</p>
<p><b>ENVIRONMENTAL JUSTICE</b></p>		
<p><b>Environmental Justice</b></p> <p>Executive Order 12898</p>	<p>Yes    No</p> <p><input type="checkbox"/>    <input checked="" type="checkbox"/></p>	<p>According to the EPA Environmental Justice Screening and Mapping Tool, the proposed project site is located in a potential Environmental Justice area. The ACS Summary Report indicates that the area has a large minority population consisting of 62% in the immediate area. Based on the household income data obtained from the EJSCREEN ACS Summary Report, 35% of the households in the project area are between \$25,000 - \$50,000, and an additional 15% households lower than this range. This range is lower than the median household income data for the State based on US Census Bureau information.</p> <p>The proposed project does not facilitate development which would result in disproportionate adverse environmental impacts on low-income or minority populations. Rather,</p>

		<p>the proposed project will benefit low- and moderate-income residents through the construction of 80 units of affordable residential rental housing. The proposed project will provide more options for safe and affordable housing in an area that needs it.</p> <p>The proposed project is in compliance with Environmental Justice, Executive Order 12898.</p> <p>See <b>Attachment</b> – EJSCREEN Reports</p>
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**Environmental Assessment Factors** [24 CFR 58.40; Ref. 40 CFR 1508.8 &1508.27] Recorded below is the qualitative and quantitative significance of the effects of the proposal on the character, features and resources of the project area. Each factor has been evaluated and documented, as appropriate and in proportion to its relevance to the proposed action. Verifiable source documentation has been provided and described in support of each determination, as appropriate. Credible, traceable and supportive source documentation for each authority has been provided. Where applicable, the necessary reviews or consultations have been completed and applicable permits of approvals have been obtained or noted. Citations, dates/names/titles of contacts, and page references are clear. Additional documentation is attached, as appropriate. **All conditions, attenuation or mitigation measures have been clearly identified.**

**Impact Codes:** Use an impact code from the following list to make the determination of impact for each factor.

- (1) Minor beneficial impact
- (2) No impact anticipated
- (3) Minor Adverse Impact – May require mitigation
- (4) Significant or potentially significant impact requiring avoidance or modification which may require an Environmental Impact Statement

Environmental Assessment Factor	Impact Code	Impact Evaluation
<b>LAND DEVELOPMENT</b>		
Conformance with Plans / Compatible Land Use and Zoning / Scale and Urban Design	2	<p>According to the City of Fayetteville zoning map view, the proposed project site is located within Zone SF-6, which is described as single family residential 6, single family design standards and multifamily design standards. A City Planning and Zoning meeting was held, and the project received approval prior to submission of the Final Tax Credit Application for the proposed project. A Technical Review Committee Meeting was required for the application for final permits. The City Planning/Technical Review Committee Meeting was held 2/2/2022 and the proposed project received City planning approval on 3/21/2022.</p> <p>The proposed project site is surrounded by residential development and is located near interstate highways and shopping centers. Additionally, the proposed project will be in accordance</p>

		<p>with all local land use, zoning and urban design. Previously, the proposed project site was utilized for timber harvest. Timber harvesting does not fit in with the typical land use of the surrounding area. Land use of the surrounding area is primarily residential with adjacent commercial properties. Based on a review of the above resources, the proposed project will be compatible with the surrounding area.</p> <p>See <b>Attachment</b> – TigerWeb Map, Google Earth Aerial, Zoning Map, and City of Fayetteville 2010-2015 Consolidated Plan</p>
Soil Suitability/ Slope/ Erosion/ Drainage/ Storm Water Runoff	2	<p>The proposed project will be designed to properly handle slope, erosion, drainage, and storm water runoff.</p> <p>No sloping of the proposed project site was observed during the time of the site visit or identified on the topographic map of the area. A Stormwater Pollution Protection Plan and an Erosion and Sedimentation Control Plan will be implemented for the project. The proposed project will connect to the local public street (Cliffdale Road) to the south.</p> <p>According to the Geotechnical Exploration Report completed by Alpha Environmental on January 31, 2022, the results of the soil exploration indicated that the site is suitable for the proposed apartment housing development utilizing typical grading and foundation preparation methods. No blasting or special earth excavation is expected to be required. No deep or special foundation are anticipated.</p> <p>It is currently unclear if fill material will be needed. If, however, fill material is required, it will come from an approved source that has an action erosion control permit (per NC Regulations) and the soils will be tested by the geotechnical engineer prior to importing the material to ensure that it meets project requirements. The proposed project will be designed in a way to balance the grading and not require any off-site material if possible. No soil removal is planned. However, should soil need to be removed from the site, it will be quantified and only exported to an approved site per NC requirements.</p> <p>Based on a review of the above resources and the proposed implementation of the Stormwater Pollution Prevention Plan and the Erosion and Sedimentation Control Plan, the proposed project will not have an anticipated impact on the surrounding area.</p> <p>See <b>Attachments</b> - Soil Report, WebSoil Survey Map, and Geotechnical Exploration Report.</p>
Hazards and Nuisances including Site Safety and Noise	2	<p>Construction of the proposed project site will increase noise levels in the area, however, this will be temporary. Construction will adhere to the local noise control standards and regulations. Once construction is complete, operational noise will be within local standards and similar to other multifamily developments. Based on a review of the Phase I ESA, no hazards or nuisances were</p>

		<p>identified. According to NC DEQ, the owner must notify the proper regional office if "orphan" underground storage tanks (USTS) are discovered during any excavation operation.</p> <p>The proposed project is a relatively small development and meets the noise thresholds in the above sections. Public safety services will have easy access to the development via Cliffdale Road to the south. Therefore, the proposed project will have no anticipated hazard or nuisance impact on the surrounding area.</p> <p>Short-term construction work will adhere to local noise control standards/regulations. Construction noise will be limited to daytime hours. Construction equipment will be required to meet sound control requirements.</p> <p>See <b>Attachments</b> - Phase I ESA, NC DEQ DWM Map and Reports, State Clearinghouse Comments from NC DEQ, Oil and Natural Gas Map, Pipelines Map, Transmission Lines Map, and ASTs 1-mile Map</p>
Energy Consumption	2	<p>The proposed project is a relatively small development and, therefore, will have no anticipated impact to energy consumption. The proposed project will connect to the existing public utilities that are adjacent to the site. These utilities will be extended into the site to serve the proposed project. Additionally, the proposed project will have an Energy Efficiency Certification, and blower door tests, duct leakage, insulation, etc. will be conducted to prevent energy leakage/waste.</p> <p>Based on a review of the above resources, the proposed project is a relatively small development, an Energy Efficiency Certification will be obtained, and leakage/waste prevention measures will be conducted. The site is also located close to commercial facilities. Therefore, the proposed project will have no or minimal anticipated impact to energy consumption.</p>

Environmental Assessment Factor	Impact Code	Impact Evaluation
<b>SOCIOECONOMIC</b>		
Employment and Income Patterns	1	<p>According to the EJSCREEN reports of the proposed project area, the population density per square mile is 1,119 people as of data obtained from 2014 through 2018.</p> <p>Local businesses consist of service and retail-based industries. Both industries have been adversely impacted from the COVID-19 pandemic by reducing the available workforce. The construction of this proposed project would increase the workforce and consumers in the nearby area by providing affordable housing.</p>

		<p>The proposed project will not adversely impact traffic during construction as vehicles will be utilized on the proposed project site and not within the existing roadway to the south.</p> <p>Based on a review of the above resources, the completion of this proposed project would help increase the available workforce within the surrounding area. The surrounding area consists of service and retail businesses which have been adversely impacted from the COVID-19 pandemic. Therefore, this proposed project would supplement the workforce and consumers in the surrounding area by providing affordable housing. A minor beneficial impact is anticipated to employment patterns of the surrounding area.</p> <p>See <b>Attachment</b> – EJSCREEN Reports</p>
<p>Demographic Character Changes, Displacement</p>	<p>2</p>	<p>The proposed project is a relatively small development and, therefore, will have no anticipated impact to demographic character changes and displacement.</p> <p>The proposed project site is currently vacant land. The construction of this project will have a beneficial impact to the surrounding area by providing housing for low- to moderate-income households. The additional affordable homes will provide the existing demographic population housing.</p> <p>According to the local zoning map, the proposed project meets the local zoning code. The proposed project will also meet the surrounding area characteristics that consist primarily of residential homes.</p> <p>The proposed project is a relatively small development that meets the existing characteristics of the surrounding area. The site is vacant and the proposed project would not cause the displacement of individuals or families, destroy jobs, local businesses or public community facilities, or disproportionately affect particular populations. Therefore, the project will have no anticipated impact on the demographic character or displacement of people in the surrounding area.</p> <p>See <b>Attachment</b> – Aerial Map and EJSCREEN Reports</p>

Environmental Assessment Factor	Impact Code	Impact Evaluation
<b>COMMUNITY FACILITIES AND SERVICES</b>		
<p>Educational and Cultural Facilities</p>	<p>2</p>	<p>Nearby education facilities include Middle Creek Creative School and E.E. Miller Elementary School. Middle Creek Creative School is located approximately 0.26 miles to the east of the proposed project location. E.E. Miller Elementary School is located approximately 0.59 miles to the southeast of the proposed project</p>



		<p>location. No museums were identified within the surrounding area of the proposed project.</p> <p>The proposed project is relatively small and will be located within a surrounding area that already consists of a residential neighborhood. The relatively small number of new affordable housing will not have an anticipated adverse impact on the local education or cultural facilities.</p> <p>See <b>Attachment</b> – Aerial Map</p>
Commercial Facilities	1	<p>Local businesses in the surrounding area of the proposed project consist of service and retail-based industries. Both industries have been adversely impacted from the COVID-19 pandemic by reducing the available workforce. The construction of this proposed project would increase the workforce and consumers in the nearby area by providing affordable housing.</p> <p>Based on a review of the above resources, the completion of this project would help increase the available workforce and consumers within the surrounding area. The surrounding area consists of service and retail businesses which have been adversely impacted from the COVID-19 pandemic. Therefore, this proposed project would have a minor beneficial anticipated impact on commercial facilities.</p> <p>See <b>Attachment</b> – EJSCREEN Reports</p>
Health Care and Social Services	2	<p>The nearest health care services are Hoke Hospital located approximately 3.56 miles to the southwest and FirstHealth Moore Regional Hospital – Hoke which is located approximately 5.95 miles to the southwest of the property. Fayetteville Fire Station 17 is located approximately 4.07 miles to the southeast and Fayetteville Police Department Cross Creek substation is located approximately 4.23 miles to the east of the project location.</p> <p>The proposed project meets the characteristics of the surrounding area and is relatively small. The relatively small number of new affordable housing will have no anticipated adverse impact on local health care and social services. Additionally, the proposed project location is relatively close to emergency and social services.</p>
Solid Waste Disposal / Recycling	2	<p>Garbage and recycling will be managed by a local waste hauler. The proposed project is relatively small and matches the characteristics of the surrounding residential neighborhood. The proposed project will support the local population by providing affordable housing. A private waste hauler will be utilized for the project. Therefore, there will be no impact to the tax base to haul away solid waste.</p> <p>Fill material is not likely to be needed based on the current project plans. If, however, fill material is required, it will come from an approved source that has an action erosion control permit (per NC Regulations) and the soils will be tested by the geotechnical engineer prior to importing the material to ensure that it meets project requirements. The proposed project will be designed in a way to balance the grading and not require any off-site material, if</p>

		<p>possible. No soil removal is planned. However, should soil need to be removed from the site, it will be quantified and only exported to an approved site per NC requirements.</p> <p>The proposed project meets the characteristics of the surrounding area and is relatively small. Additionally, the proposed project will utilize a private waste hauler that will not impact the current tax base to remove solid waste. The relatively small number of new affordable housing will have no anticipated adverse impact on solid waste disposal/recycling.</p> <p>The NC DEQ DWM Solid Waste Section (Section) reviewed the proposed project and noted that “for any planned or proposed projects, it is recommended that during any land clearing, demolition and construction, the responsible party and/or its contractors would make every feasible effort to minimize the generation of waste, to recycle materials for which viable markets exist, and to use recycled products and materials in the development of this project where suitable. Any waste generated by and of the projects that cannot be beneficially reused or recycled must be disposed of at a solid waste management facility permitted by the Division. The Section strongly recommends that the responsible party require all contractors to provide proof of proper disposal for all generated waste to permitted facilities.” In addition, the NC DEQ notes that “[a]ny open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900.”</p> <p>See <b>Attachment</b> - State Clearinghouse Comments from NC DEQ</p>
Waste Water / Sanitary Sewers	2	<p>The proposed project will connect to the municipal sewer service. Water, sewer and stormwater permits will be obtained and permit conditions and regulations complied with. According to the NC DEQ, permits might be required for the proposed project under: 1) Permit to construct &amp; operate wastewater treatment facilities, non-standard sewer system extensions &amp; sewer systems that do not discharge into state surface waters and 2) Permit to construct &amp; operate, sewer extensions involving gravity sewers, pump stations and force mains discharging into a sewer collection System; and 3) NPDES - permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into state surface waters. The proposed project will obtain all applicable federal, state and local permits and comply with requirements and conditions.</p> <p>The proposed project meets the characteristics of the surrounding area and is relatively small. Additionally, the project proponent will be obtaining water, sewer and stormwater permits as part of the proposed project. Therefore, the proposed project will have no anticipated adverse impact to wastewater/sanitary sewers of the surrounding area.</p> <p>See <b>Attachment</b> – State Clearinghouse Comments from NC DEQ</p>

Water Supply	2	<p>The proposed project is a relatively small development and, therefore, will have no anticipated adverse impact to the water supply. The project proponent will be obtaining water permits as part of the proposed project. The proposed project will connect to the existing utilities located immediately adjacent to the proposed project site to the south. According to NC DEQ, plans and specifications for the construction, expansion, or alteration of a public water system must be approved by the Division of Water Resources/Public Water Supply Section prior to the award of a contract or the initiation of construction as per 15A NCAC 18C .0300 et. seq. In addition, all public water supply systems must comply with state and federal drinking water monitoring requirements. According to NC DEQ, if any wells are discovered on the proposed project site, then abandonment of any wells must be in accordance with Title 15A. Subchapter 2C.0100.</p> <p>The proposed project meets the characteristics of the surrounding area and is relatively small. Additionally, the project proponent will be obtaining water permits as part of the proposed project. Therefore, the proposed project will have no anticipated adverse impact to the water supply of the surrounding area.</p> <p>See <b>Attachment</b> – State Clearinghouse Comments from NC DEQ</p>
Public Safety - Police, Fire and Emergency Medical	2	<p>The nearest health care services are Hoke Hospital located approximately 3.56 miles to the southwest and FirstHealth Moore Regional Hospital – Hoke which is located approximately 5.95 miles to the southwest of the proposed project site. Fayetteville Fire Station 17 is located approximately 4.07 miles to the southeast and Fayetteville Police Department Cross Creek substation is located approximately 4.23 miles to the east of the proposed project location.</p> <p>The proposed project meets the characteristics of the surrounding area and is relatively small. The relatively small number of new affordable housing units will have no anticipated adverse impact on local public safety and emergency medical services.</p>
Parks, Open Space and Recreation	2	<p>Lake Rim Park is located approximately 2.05 miles to the south of the proposed project site. Onsite amenities on the proposed project site include a dog park, playground, landscaped grass areas, benches and covered picnic areas. There are no nearby State Parks according to <a href="https://www.ncparks.gov/find-a-park">https://www.ncparks.gov/find-a-park</a>. The proposed project will involve the creation of their own open space and recreational areas as well as match the surrounding area.</p> <p>The proposed project meets the characteristics of the surrounding area and is relatively small. The relatively small number of new affordable housing units, and included onsite amenities will have no anticipated adverse impact to the surrounding parks, open space and recreational activities.</p>
Transportation and Accessibility	2	<p>Fayetteville Area System of Transit maintains a bus stop location immediately south of the proposed project site along Cliffdale Road. This bus route makes stops near local schools, restaurants,</p>

	<p>grocery stores and other businesses to the south and east of the proposed project site.</p> <p>The proposed project site is not located near a busy intersection. According to the NCDOT Annual Average Daily Traffic Mapping Application, the access road (Cliffdale Road) is not considered a congested road.</p> <p>The proposed project meets the characteristics of the surrounding area and is relatively small. The relatively small number of new affordable housing units is not located along a high traffic road, according to the NCDOT data, and public transportation is located immediately adjacent. Therefore, the proposed project is not anticipated to have an impact on the surrounding transportation.</p> <p>See <b>Attachment</b> – Traffic Map and Fayetteville Area System of Transit Map</p>
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Environmental Assessment Factor	Impact Code	Impact Evaluation
<b>NATURAL FEATURES</b>		
Unique Natural Features, Water Resources	2	<p>Previously, the proposed project site was utilized for timber harvest. Timber harvesting does not fit in with the typical land use of the surrounding area. Land use of the surrounding area is primarily residential with adjacent commercial properties.</p> <p>The proposed project site was clear cut in 2020. The existing habitat has, therefore, been heavily disturbed from the mass tree removal process conducted onsite. Currently, the proposed project site consists of a treeless area with early successional shrubs and grasses. Based on the lack of mature habitat and the recent heavy disturbance, NOVA did not observe any suitable habitat for the federally or state listed species above. The wooded area to the north of the proposed project site will not be disturbed. According to the NC NHP Database, the Fort Bragg (Central Section) designated Natural Area is located within one mile of the proposed project site but no impacts are expected from this multifamily development on this Natural Area.</p> <p>According to the USFWS NWI Mapper, the proposed project site will be located approximately 160 feet to the south of the federally mapped wetland on an adjacent parcel. Based on the December 8, 2021 North Carolina Wildlife Resources Commission (NCWRC) Letter, no concerns for threatened or endangered species were noted. NCWRC offered recommendations to minimize impacts to aquatic and terrestrial wildlife resources including best management practices for minimizing stormwater runoff, use of native landscaping, sediment/ erosion control measures, and insecticide and herbicide restrictions. According to the attached NCWRC recommendations, the proposed project</p>

		<p>should “maintain or establish a minimum 100-foot undisturbed, native forested buffer along each side of perennial streams and 50-foot undisturbed, native forested buffer along each side of intermittent streams and wetlands.” Thus, incorporating NCWRC recommendations will ensure aquatic and terrestrial wildlife resources will not be adversely impacted as part of the proposed project.</p> <p>Also, a NC DEQ Erosion Control Permit will be obtained as part of the proposed project. This will help mitigate potential erosion during the construction of the project. Based on the previous land use of the property, the proposed project will be relatively small and will meet the existing characteristics of the surrounding area. The wetland identified north of the project site will not be impacted due to strict erosion control measures that will be implemented (NC DEQ Erosion Control Permit). Also, a Stormwater Pollution Protection Plan will be required.</p> <p>According to NC DEQ, the Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An Erosion and Sedimentation Control Plan will be required if one or more acres are to be disturbed. Plan must be filed with and approved by applicable Regional Office (Land Quality Section) at least 30 days before beginning activity. A NPDES Construction Stormwater permit (NCG010000) is also usually issued should design features meet minimum requirements.</p> <p>See <b>Attachment</b> – NWI Wetland Map, State Clearinghouse Comments from NC DEQ, NC NHP Database Report, and NCWRC Letter</p>
Vegetation, Wildlife	2	<p>The proposed project site was clear cut in 2020. The existing habitat has, therefore, been heavily disturbed from the mass tree removal process conducted onsite. Currently, the proposed project site consists of a treeless area with early successional shrubs and grasses. Based on the lack of mature habitat and the recent heavy disturbance, NOVA did not observe any suitable habitat for the federally or state listed species (see NC NHP and USFWS attachment). The wooded area to the north of the proposed project site will not be disturbed.</p> <p>NOVA did not observe any of the above listed species during the site visit. Therefore, based on the heavily disturbed nature of the proposed project site and the lack of suitable habitat for the listed species, NOVA has determined that the project will have No Effect on all of the above listed species. A Self-certification Letter and 10-step Project Review Package were prepared and submitted to the USFWS Raleigh Ecological Services Field Office on November 18, 2021. The USFWS auto-generated response stated that “you will typically not receive a response from us since the certification letter is our official response. However, if we have</p>

		<p>additional questions or we do not concur with your determinations, we will contact you during the review period.” USFWS did not contact NCORR for additional information.</p> <p>Based on the December 8, 2021 NCWRC Letter, no concerns for threatened or endangered species were noted. NCWRC offered recommendations to minimize impacts to aquatic and terrestrial wildlife resources including best management practices for minimizing stormwater runoff, use of native landscaping, sediment/ erosion control measures, and insecticide and herbicide restrictions. Landscaping on the proposed project site will be based on City requirements. Centipede sod and some seed will be used. Landscape plantings will be native to this area and appropriate for the climate zone of the project area.</p> <p>Based on the previous land use of the property, the proposed project will be relatively small and will meet the existing characteristics of the surrounding area. Therefore, the project will have no adverse impact on vegetation and wildlife resources.</p> <p>See <b>Attachments</b> – USFWS Response, NCORR Submission, Self-certification Letter and 10-step Project Review Package, NC NHP Database Report, and NCWRC Letter</p>
Other Factors	2	N/A

**Additional Studies Performed:**

Phase I Environmental Site Assessment, October 25, 2021

Phase I Archaeological Review, October 21, 2021

Geotechnical Exploration Report completed by Alpha Environmental on January 31, 2022

**Field Inspection (Date and completed by):**

September 27 and 28, 2021 by Michael O’Neal, Nova Field Associate.

**List of Sources, Agencies and Persons Consulted** [40 CFR 1508.9(b)]:

Type	Source
Aerial Photographs	Environmental Risk Information Services (ERIS)
City Directories	ERIS
Coastal Barrier Resource System Mapper	<a href="https://www.fws.gov/cbra/maps/Mapper.html">https://www.fws.gov/cbra/maps/Mapper.html</a>
Coastal Zone Management	<a href="https://coast.noaa.gov/czm/mystate/">https://coast.noaa.gov/czm/mystate/</a>
Endangered Species	<a href="https://ecos.fws.gov/ipac/location/index">https://ecos.fws.gov/ipac/location/index</a> <a href="https://ncnhde.natureserve.org/content/map">https://ncnhde.natureserve.org/content/map</a>
State Environmental Clearinghouse	<a href="https://ncadmin.nc.gov/about-doa/special-programs/state-environmental-review-clearinghouse">https://ncadmin.nc.gov/about-doa/special-programs/state-environmental-review-clearinghouse</a>
EPA’s NEPAAssist Tool Interactive Map	<a href="https://nepassisttool.epa.gov/nepassist/nepamap.aspx">https://nepassisttool.epa.gov/nepassist/nepamap.aspx</a>

EPA Current Nonattainment Counties for All Criteria Pollutants	<a href="https://www3.epa.gov/airquality/greenbook/ancl.html">https://www3.epa.gov/airquality/greenbook/ancl.html</a>
Farmland / Urban Areas	<a href="https://www.arcgis.com/home/webmap/viewer.html?url=https%3A%2F%2Ftigerweb.geo.census.gov%2Farcgis%2Frest%2Fservices%2FTIGERweb%2FTigerWMS_Census2010%2FMapServer&amp;source=sd">https://www.arcgis.com/home/webmap/viewer.html?url=https%3A%2F%2Ftigerweb.geo.census.gov%2Farcgis%2Frest%2Fservices%2FTIGERweb%2FTigerWMS_Census2010%2FMapServer&amp;source=sd</a>
Federal Aviation Administration Circle Search	<a href="https://oeaaa.faa.gov/oeaaa/external/searchAction.jsp?action=showCircleSearchAirportsForm">https://oeaaa.faa.gov/oeaaa/external/searchAction.jsp?action=showCircleSearchAirportsForm</a>
Federal Emergency Management Agency (FEMA)	Federal Emergency Management Agency, Federal Insurance Administration, National Flood Insurance Program, 3710948700J, January 5, 2007
Federal Railroad Administration Map	<a href="https://www.fra.dot.gov/Page/P0053">https://www.fra.dot.gov/Page/P0053</a>
Geology	United States Geological Survey (USGS) and the NC Geologic Survey
Housing Information	City of Fayetteville, North Carolina 2010-2015 Consolidated Plan City of Fayetteville Affordable Housing Study dated June 28, 2021 at <a href="https://www.fayettevillenc.gov/home/showpublisheddocument/18296/637613441485230000">https://www.fayettevillenc.gov/home/showpublisheddocument/18296/637613441485230000</a>
Hydrology	North Carolina Department of Environmental and Natural Resources - Division of Water Resources, <a href="http://geodata.lib.ncsu.edu/stategov/gws/2010/Aquifer%20Characteristics.htm">http://geodata.lib.ncsu.edu/stategov/gws/2010/Aquifer%20Characteristics.htm</a>
National Register of Historic Places Interactive Map	<a href="https://www.nps.gov/maps/full.html?mapId=7ad17cc9-b808-4ff8-a2f9-a99909164466">https://www.nps.gov/maps/full.html?mapId=7ad17cc9-b808-4ff8-a2f9-a99909164466</a>
Nationwide Rivers Inventory & Rivers.org	<a href="https://www.nps.gov/maps/full.html?mapId=8adbe798-0d7e-40fb-bd48-225513d64977">https://www.nps.gov/maps/full.html?mapId=8adbe798-0d7e-40fb-bd48-225513d64977</a> <a href="https://www.rivers.gov/mapping-gis.php">https://www.rivers.gov/mapping-gis.php</a>
Oil/Gas Exploration	North Carolina Environmental Quality - Oil & Gas Program (online source), <a href="https://deq.nc.gov/about/divisions/energy-mineral-land-resources/energy-group/oil-gas-program">https://deq.nc.gov/about/divisions/energy-mineral-land-resources/energy-group/oil-gas-program</a> .
Radon	United States Environmental Protection Agency (EPA) Map of Radon Zones (online resource) <a href="http://www.epa.gov/radon/pdfs/zonemapcolor.pdf">http://www.epa.gov/radon/pdfs/zonemapcolor.pdf</a>
Regulatory Database Information	ERIS, 8368 Cliffdale Road, Fayetteville, NC, Inquiry No. 21101400310, October 18, 2021 NC DEQ DWM, <a href="https://deq.nc.gov/about/divisions/waste-management/superfund-section/inactive-hazardous-sites-program/pre-regulatory-landfill-program">https://deq.nc.gov/about/divisions/waste-management/superfund-section/inactive-hazardous-sites-program/pre-regulatory-landfill-program</a> NC DEQ DWM Site Locator Tool, <a href="https://ncdenr.maps.arcgis.com/apps/webappviewer/index.html?id=7dd59be2750b40bebebf49fc383f688">https://ncdenr.maps.arcgis.com/apps/webappviewer/index.html?id=7dd59be2750b40bebebf49fc383f688</a>
Sanborn Maps	ERIS
Sole Source Aquifers Interactive Map	<a href="https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b">https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b</a>
Soils	United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), Web Soil Survey (online resource), <a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a> . Geotechnical Exploration Report dated January 31, 2022.
Topographic Map	United States Geological Survey – 7.5 Minute Topographic Quadrangle of Cliffdale, NC, 2016.
Transmission Line Online Mapper	<a href="https://www.arcgis.com/home/webmap/viewer.html?panel=gallery&amp;suggestField=true&amp;url=https%3A%2F%2Fservices1.arcgis.com%2FHp6G80Pky0om7QvQ%2Farcgis%2Frest%2Fservices%2FElectric_Power_Transmission_Lines%2FFeatureServer%2F0">https://www.arcgis.com/home/webmap/viewer.html?panel=gallery&amp;suggestField=true&amp;url=https%3A%2F%2Fservices1.arcgis.com%2FHp6G80Pky0om7QvQ%2Farcgis%2Frest%2Fservices%2FElectric_Power_Transmission_Lines%2FFeatureServer%2F0</a>
United States Bureau of Transportation Statistics Geospatial Applications - National Transportation Atlas	<a href="https://maps.bts.dot.gov/AppGallery/">https://maps.bts.dot.gov/AppGallery/</a> , Fayetteville Area System of Transit map, NCDOT Annual Average Daily Traffic (AADT) Mapping Application
Vapor Screening Tool	ERIS

Water Wells	NC DENR Water Well Inventory (online source), <a href="https://deq.nc.gov/groundwater-facility-maps">https://deq.nc.gov/groundwater-facility-maps</a> .
Wetlands	U.S. Department of the Interior National Wetlands Inventory Geotrack Mapping System - <a href="http://www.fws.gov/wetlands/Data/Mapper.html">www.fws.gov/wetlands/Data/Mapper.html</a>
Zoning Classification and Land Use	City of Fayetteville Zoning Map

**List of Permits To Be Obtained** (later identified permits will be added to the ERR):

NPDES Construction Stormwater permit (NCG010000)

NC DEQ Erosion Control Permit

City of Fayetteville, Storm water permit

City of Fayetteville, Planning approval (in hand)

PWC, Potable Water system extension permit

PWC, Sanitary Sewer system extension permit

NC DOT, Driveway permit

**Public Outreach** [24 CFR 50.23 & 58.43]:

Fayetteville Observer (publication date of 9/30/2021)

A City Planning and Zoning meeting was held, and the project received approval prior to submission of the Final Tax Credit Application for the proposed project.

A Technical Review Committee Meeting was required for the application for final permits. The City Planning/Technical Review Committee Meeting was held 2/2/2022 and the proposed project received City planning approval on 3/21/2022.

**Cumulative Impact Analysis** [24 CFR 58.32]:

The proposed project will be a multifamily affordable housing complex that will provide new, safe housing that is needed in the area according to the City of Fayetteville Affordable Housing Study dated June 28, 2021. This proposed project will increase affordable housing inventory for low- and moderate-income families in the City of Fayetteville. No or minimal impacts are anticipated as the project is a relatively small development and is located in an area that was previously disturbed from tree clear cutting in 2020. This site was found to be a suitable site with minimal adverse environmental impacts for multifamily affordable housing in an area that needs it. This project will have positive cumulative socioeconomic and aesthetic impacts on the neighborhood by promoting a neighborhood with mixed-income residents. It is expected that the proposed project will increase the City's tax base and improve a vacant, clear-cut lot. There are no adverse cumulative impacts identified for this proposed project on natural resources, socioeconomic conditions, cultural/ historic resources, or quality of life for residents of these neighborhoods. Thus, the proposed project will be in conformance with the City's overall land use, zoning and plan goals for the site and neighborhood.

**Alternatives** [24 CFR 58.40(e); 40 CFR 1508.9]

No alternative sites were identified that meet the specific needs of the proposed development.

**No Action Alternative** [24 CFR 58.40(e)]:

The No Action Alternative means that the proposed activity would not take place. Under the No Action Alternative, affordable housing would not be constructed at the vacant site. A portion of



the City of Fayetteville will remain un-served or underserved with respect to affordable housing options. Potential residents will be required to find housing needs elsewhere.

### **Summary of Findings and Conclusions:**

The preceding Statutory Checklist and Environmental Assessment Checklist, and the discussion below, document that the proposed work will comply with regulations in 24 CFR part 58 and that there are no direct or cumulative adverse environmental impacts anticipated as a result of the proposed action.

### **Mitigation Measures and Conditions [40 CFR 1505.2(c)]**

Summarize below all mitigation measures adopted by the Responsible Entity to reduce, avoid, or eliminate adverse environmental impacts and to avoid non-compliance or non-conformance with the above-listed authorities and factors. These measures/conditions must be incorporated into project contracts, development agreements, and other relevant documents. The staff responsible for implementing and monitoring mitigation measures should be clearly identified in the mitigation plan.

Any change to the approved scope of work will require re-evaluation by the Certifying Officer for compliance with NEPA and other laws and Executive Orders.

This review does not address all federal, state, and local requirements. Acceptance of federal funding requires recipient to comply with all federal, state and local laws. Failure to obtain all appropriate federal, state, and local environmental permits and clearances may jeopardize federal funding. Guidelines, recommendations, and requirements identified during the State Clearinghouse inter-agency review shall be considered and required, where applicable.

Law, Authority, or Factor	Mitigation Measure
<p><b>Clean Air</b></p> <p>Clean Air Act, as amended, particularly section 176(c) &amp; (d); 40 CFR Parts 6, 51, 93</p>	<p>In order to mitigate the generation of fugitive dust from land clearing activities, the following techniques will be utilized. Vegetative cover will be maintained as much as possible around cleared areas. Access roads and storage areas that are heavily travelled will have a water truck to stabilize potential dust during high traffic times or high wind days. Construction vehicles and machinery will operate at reduced speeds to reduce soil disturbance and fugitive dust potential. In order to mitigate the generation of emissions during construction, vehicles and other machinery will be limited to construction hours only and will not be present once construction is completed.</p>
<p><b>Wetlands Protection</b></p> <p>Executive Order 11990, particularly sections 2 and 5</p>	<p>Best management practices for erosion and sedimentation control such as silt fencing will be utilized during construction. NCWRC offered recommendations to minimize impacts to aquatic and terrestrial wildlife resources including best</p>

<p><b>Unique Natural Features /Water Resources</b></p> <p><b>Soil Suitability / Slope/ Erosion / Drainage and Storm Water Runoff</b></p>	<p>management practices for minimizing stormwater runoff, use of native landscaping, sediment/ erosion control measures, and insecticide and herbicide restrictions. According to the attached NCWRC recommendations, the proposed project should “maintain or establish a minimum 100-foot undisturbed, native forested buffer along each side of perennial streams and 50-foot undisturbed, native forested buffer along each side of intermittent streams and wetlands.” Thus, incorporating NCWRC recommendations will ensure aquatic and terrestrial wildlife resources will not be adversely impacted as part of the proposed project.</p> <p>Also, a NC DEQ Erosion Control Permit will be obtained as part of the proposed project. This will help mitigate potential erosion during the construction of the project. According to NC DEQ, the Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An Erosion and Sedimentation Control Plan will be required if one or more acres are to be disturbed. Plan must be filed with and approved by applicable Regional Office (Land Quality Section) at least 30 days before beginning activity. A NPDES Construction Stormwater permit (NCG010000) is also usually issued should design features meet minimum requirements. Also, a Stormwater Pollution Protection Plan will be required.</p>
<p><b>Noise Abatement and Control</b></p> <p>Noise Control Act of 1972, as amended by the Quiet Communities Act of 1978; 24 CFR Part 51 Subpart B</p> <p><b>Hazards and Nuisances including Site Safety and Site-Generated Noise</b></p>	<p>Short-term construction work will adhere to local noise control standards/regulations. Construction noise will be limited to daytime hours. Construction equipment will be required to meet sound control requirements.</p>

**Determination:**

**Finding of No Significant Impact** [24 CFR 58.40(g)(1); 40 CFR 1508.27]

The project will not result in a significant impact on the quality of the human environment.

**Finding of Significant Impact** [24 CFR 58.40(g)(2); 40 CFR 1508.27]

The project may significantly affect the quality of the human environment.

Preparer Signature: Andrea Sivers Date: 3/25/22

Name/Title/Organization: Andrea Gievers, Environmental SME, NCORR

Certifying Officer Signature: *Laura H. Hogshead* Date: 3/25/2022

Name/Title: Laura H. Hogshead, Director, NCORR

This original, signed document and related supporting material must be retained on file by the Responsible Entity in an Environmental Review Record (ERR) for the activity/project (ref: 24 CFR Part 58.38) and in accordance with recordkeeping requirements for the HUD program(s).



The following photographs were taken on September 27 and 28, 2021 unless otherwise noted.

1. View looking north from the center of the Subject Property.



2. View looking east from the center of the Subject Property.



3. View looking south from the center of the Subject Property.



4. View looking west from the center of the Subject Property.



5. View looking north from the southern portion of the Subject Property.



6. View looking east from the southern portion of the Subject Property.



---

**Applicant's Name:** Smith Duggins Developers, LLC  
**Project Name:** Cliffdale Crossing  
**Nova Project Number:** CK21-8848

7. View looking south from the southern portion of the Subject Property.



8. View looking west from the southern portion of the Subject Property.





9. View looking northwest from Cliffdale Road.



10. View looking west from Cliffdale Road.



11. View looking northwest to the Subject Property from Enforcement Drive.



12. View looking west-northwest to the Subject Property from Cliffdale Road at the edge of the APE.



---

**Applicant's Name:** Smith Duggins Developers, LLC  
**Project Name:** Cliffdale Crossing  
**Nova Project Number:** CK21-8848

13. View looking southeast to the Subject Property from Buhmann Drive at the edge of the APE.



14. View looking east-southeast to the Subject Property from Buhmann Drive.



---

**Applicant's Name:** Smith Duggins Developers, LLC  
**Project Name:** Cliffdale Crossing  
**Nova Project Number:** CK21-8848

15. View looking east to the Subject Property from Buhmann Drive.



16. View looking east-northeast to the Subject Property from Cliffdale Road from the edge of the APE.



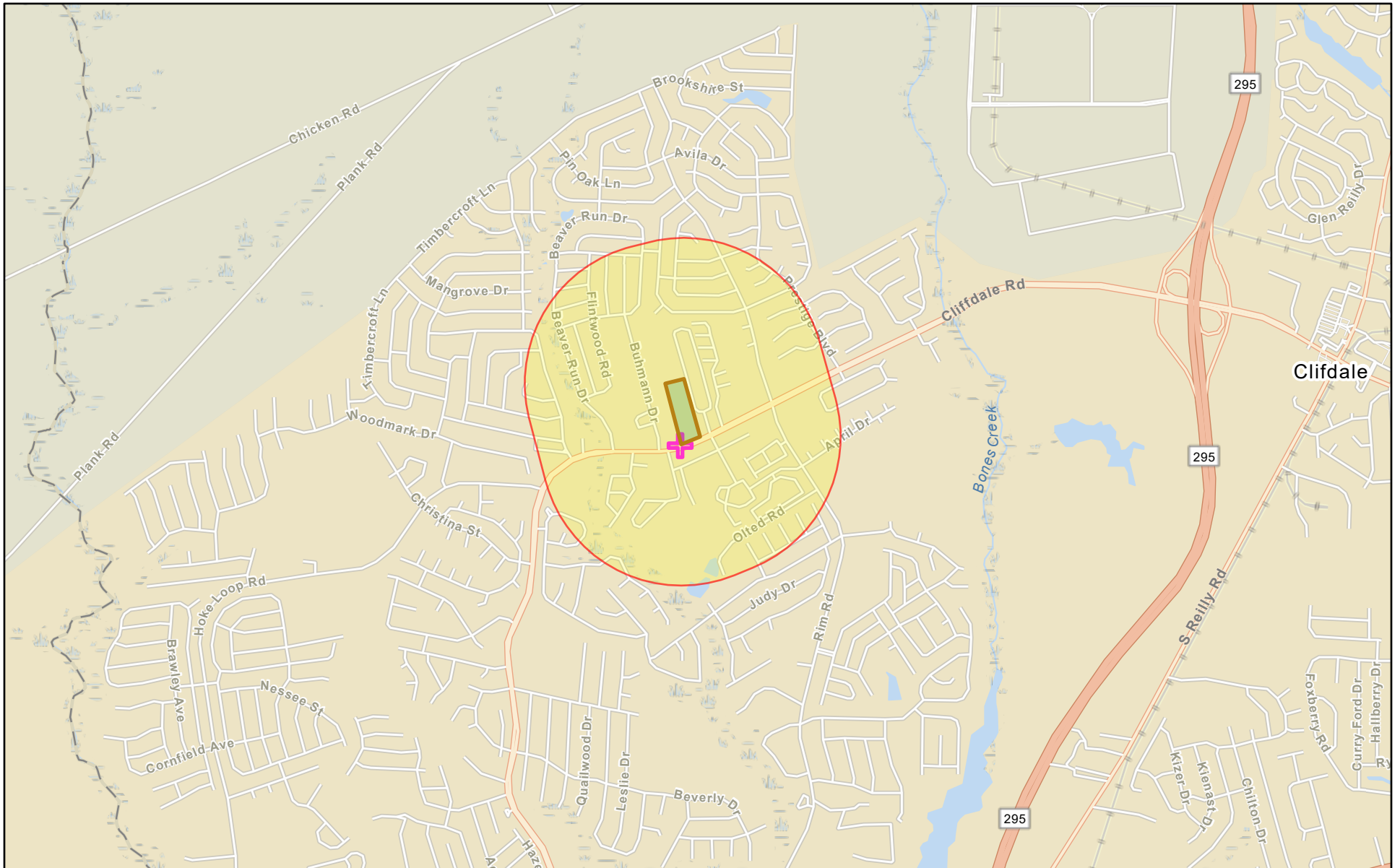
17. View looking southwest to the Subject Property from Glen Iris Drive.








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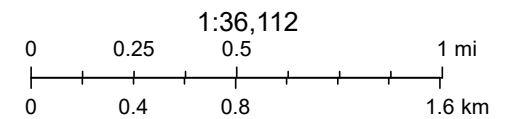
**Applicant's Name:** Smith Duggins Developers, LLC  
**Project Name:** Cliffdale Crossing  
**Nova Project Number:** CK21-8848

# HEROS 01 Civilian Airports 2500 ft.



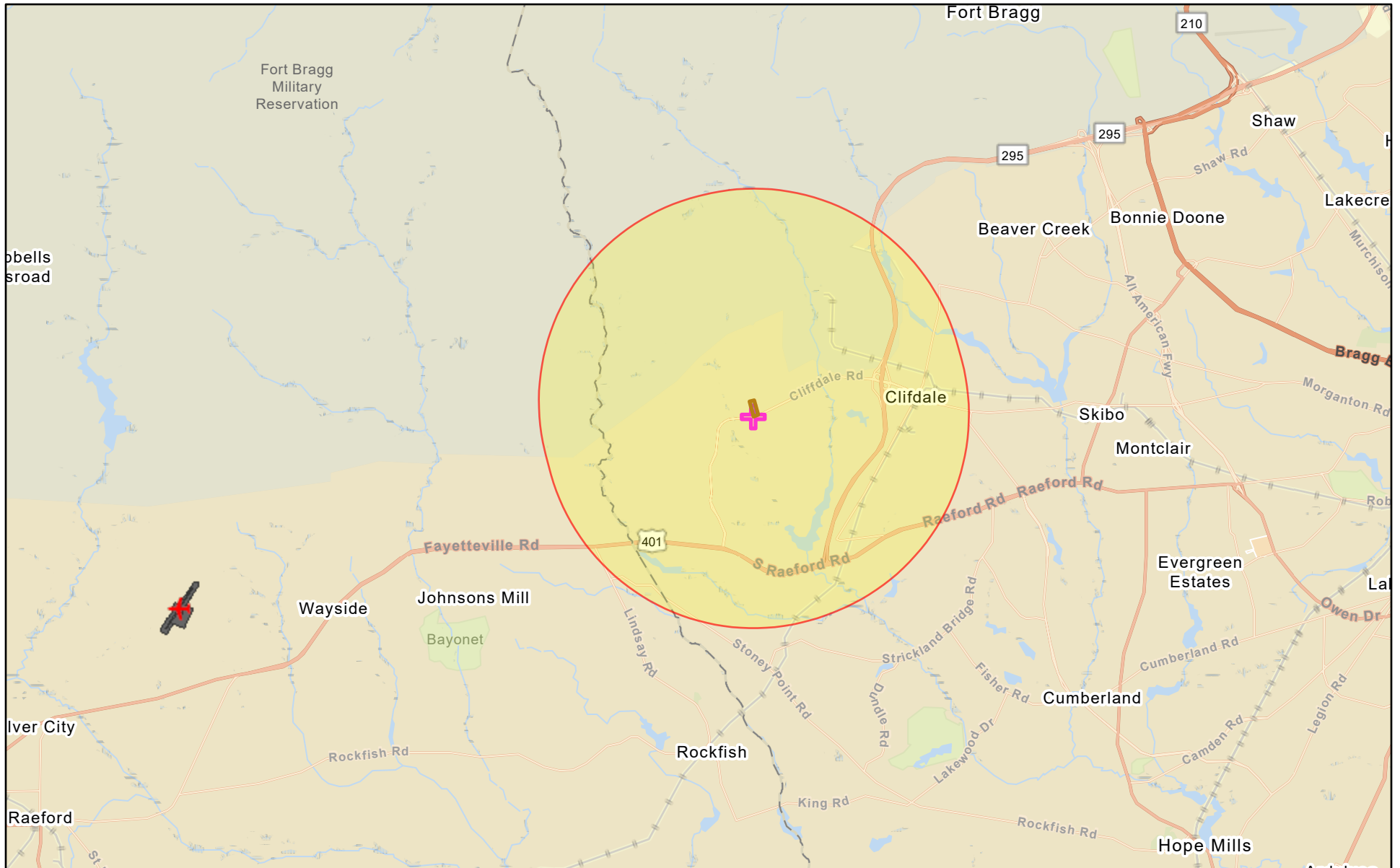
October 22, 2021

-  Project Buffer
-  Search Result (point)
-  Airport Polygons
-  Cliffdale
-  Airport Points








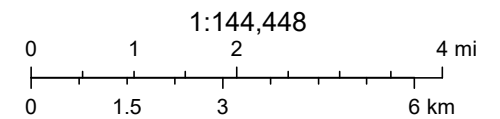
Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, EPA OEI

# HEROS 01 Military Airports 15000 ft.



October 22, 2021

-  Project Buffer
-  Search Result (point)
-  Airport Polygons
-  Cliffdale
-  Airport Points



Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, EPA OEI



### Circle Search For Airports Results

Records 1 to 5 of 5

Page 1 of 1

Locator Id	Name	Site Type	City	State	Latitude	Longitude	Distance(NM)	Azimuth
<a href="#">POB</a>	POPE AAF	Airport	FAYETTEVILLE	NC	35° 10' 15.20" N	79° 0' 52.19" W	7.07	195.88°
<a href="#">5W4</a>	P K AIRPARK	Airport	RAEFORD	NC	35° 1' 11.50" N	79° 11' 27.61" W	7.11	71.62°
<a href="#">FBG</a>	SIMMONS AAF	Airport	FORT BRAGG	NC	35° 7' 55.45" N	78° 56' 10.35" W	7.32	232.29°
<a href="#">FAY</a>	FAYETTEVILLE RGNL/GRANNIS FLD	Airport	FAYETTEVILLE	NC	34° 59' 28.40" N	78° 52' 49.00" W	9.42	294.86°
<a href="#">2GC</a>	GRAYS CREEK	Airport	FAYETTEVILLE	NC	34° 53' 37.29" N	78° 50' 36.71" W	14.26	313.43°

Rows per Page:  ▼

Records 1 to 5 of 5

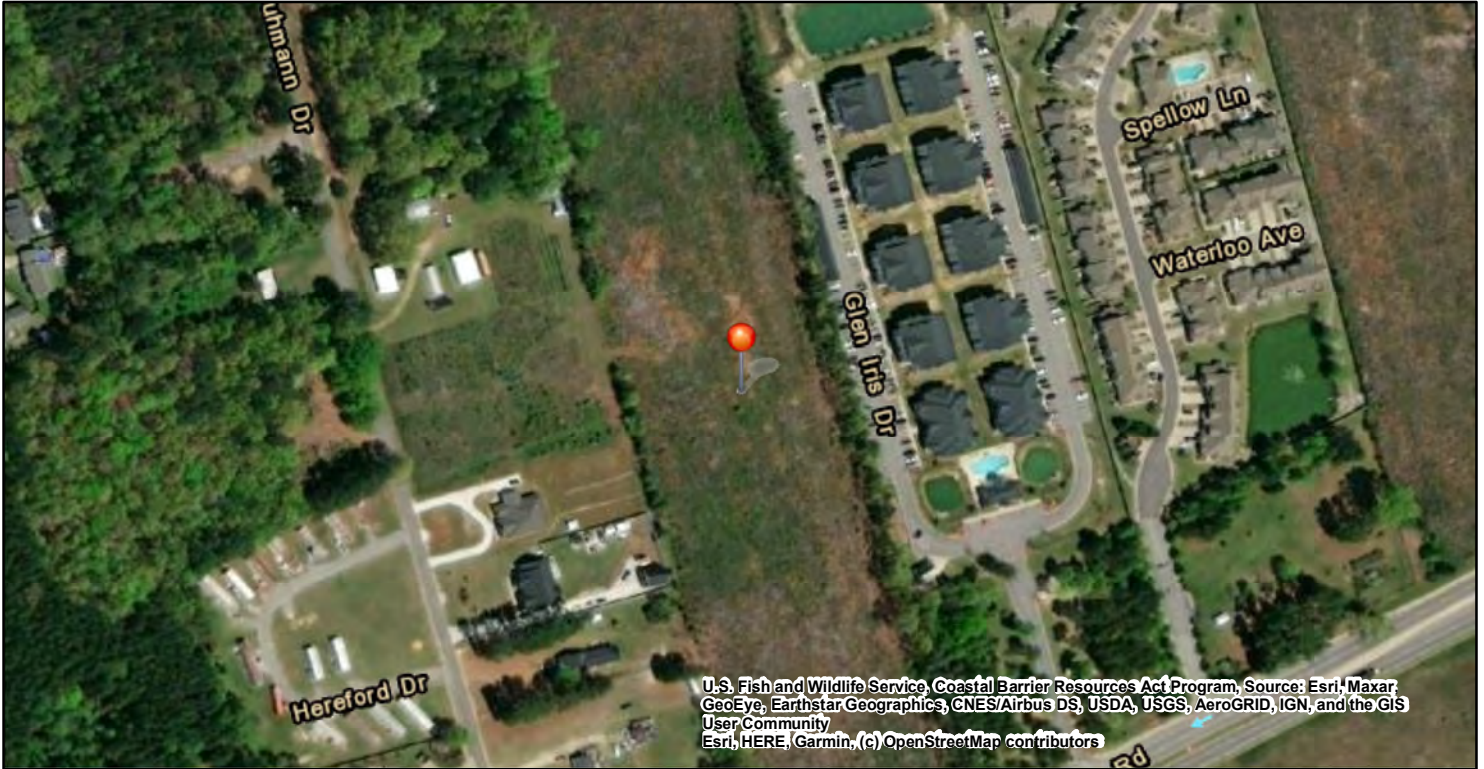
Page: [1](#)

Page 1 of 1






Coastal Barrier Resources System Mapper Documentation



CBRS Units

- Otherwise Protected Area
- CBRS Buffer Zone
- System Unit
-  -79.054468, 35.059491

0 65 130 260 390 ft 1:4,514

 The pin location displayed on the map is a point selected by the user. Failure of the user to ensure that the pin location displayed on this map correctly corresponds with the user supplied address/location description below may result in an invalid federal flood insurance policy. **The U.S. Fish and Wildlife Service (Service) has not validated the pin location with respect to the user supplied address/location description below. The Service recommends that all pin locations be verified by federal agencies prior to use of this map for the provision or denial of federal funding or financial assistance** . Please note that a structure bisected by the Coastal Barrier Resources System (CBRS) boundary (i.e., both "partially in" and "partially out") is within the CBRS and therefore affected by CBRA's restrictions on federal flood insurance. A pin placed on a bisected structure must be placed on the portion of the structure within the unit (including any attached features such as a deck or stairs).

**User Name:** Chris Bond  
**User Organization:** Nova Group, GBC  
**User Supplied Address/Location Description:** 8368 Cliffdale Road, Fayetteville, NC 28314  
**Pin Location:** Outside CBRS  
**Pin Flood Insurance Prohibition Date:** N/A  
**Pin System Unit Establishment Date:** N/A

The user placed pin location is not within the CBRS. The official CBRS maps are accessible at <https://www.fws.gov/cbra/maps/index.html> .

The CBRS information is derived directly from the CBRS web service provided by the Service. This map was exported on 10/13/2021 and does not reflect changes or amendments subsequent to this date. The CBRS boundaries on this map may become superseded by new boundaries over time.

This map image may be void if one or more of the following map elements do not appear: basemap imagery, CBRS unit labels, prohibition date labels, legend, scale bar, map creation date. For additional information about flood insurance and the CBRS, visit: <https://www.fws.gov/cbra/Flood-Insurance.html> .

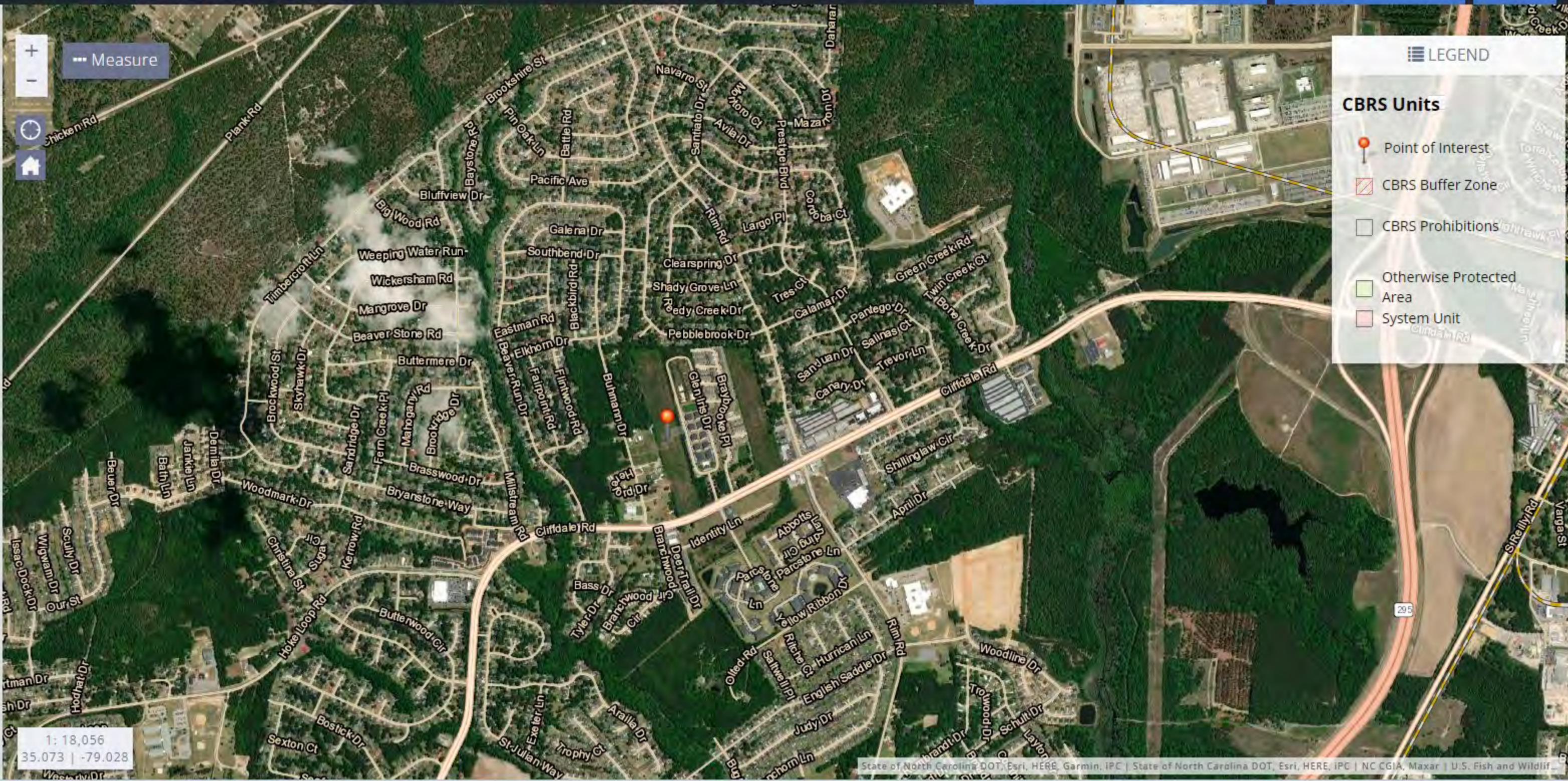


BASEMAPS

MAP LAYERS

CBRS Units

[Click here to learn more about CBRS Units.](#)

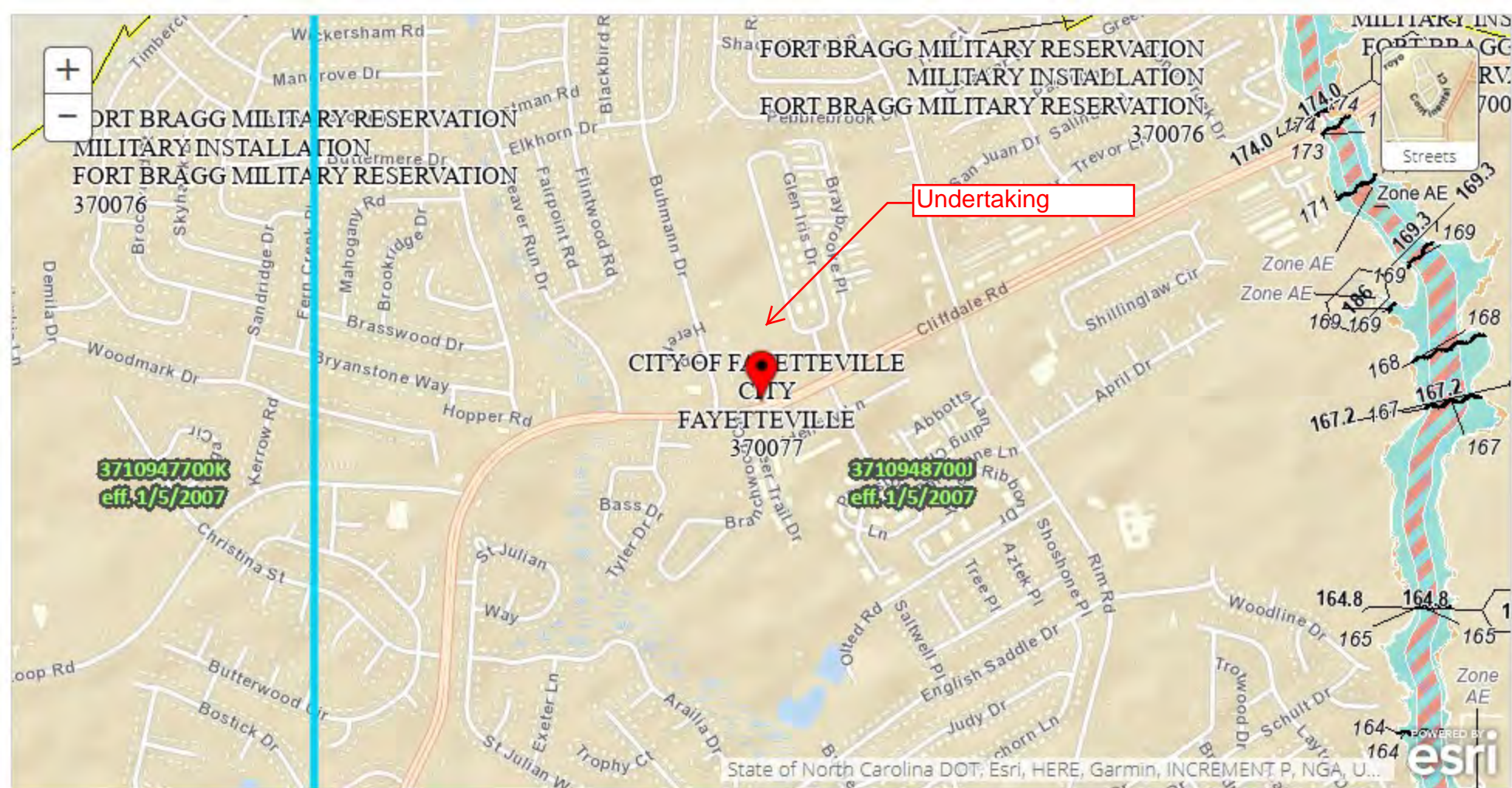


LEGEND

**CBRS Units**

- Point of Interest
- CBRS Buffer Zone
- CBRS Prohibitions
- Otherwise Protected Area
- System Unit

1:18,056  
35.073 | -79.028



PIN



Approximate location based on user input and does not represent an authoritative property location



Selected FloodMap Boundary



Digital Data Available

**SPECIAL FLOOD HAZARD AREAS**



Without Base Flood Elevation (BFE)  
Zone A, V, A99



With BFE or Depth



Regulatory Floodway Zone AE, AO, AH, VE, AR



0.2% Annual Chance Flood Hazard. Areas of 1% annual chance flood with average



**20.2** Cross Sections with 1% Annual Chance Water Surface Elevation  
**17.5**



Coastal Transect



Base Flood Elevation Line (BFE)



Limit of Study



Jurisdiction Boundary

8368 Cliffdale Road, Fayetteville. X

Show search results for 8368 Cliffdal...



Undertaking

CITY OF FAYETTEVILLE  
 CITY  
 FAYETTEVILLE  
 370077  
 [3710948700]  
 eff. 1/5/2007

Legend

- Effective FIRM Panels**
- GeoIndex
  - No Digital Data Available
  - Digital Data Available
  - Unmapped
- NFHL**
- LOMRs
  - Effective
- Political Jurisdictions
  -
- Profile Baselines
  -
- Cross-Sections
  -
- Base Flood Elevations
  -
- Levees
  -
- Coastal Transects
  -
- Transect Baselines
  -
- General Structures
  - Flood Structure
  - Bridge
  - Dam, Weir, Jetty
  - Other Structures
- River Mile Markers
  -
- Limit of Moderate Wave Action
  -
- Flood Hazard Boundaries
  - Limit Lines

# NEPAssist Report

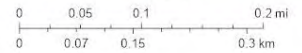
## Cliffdale Crossing



October 13, 2021

- Cliffdale Crossing
- + Search Result (point)

1:5,733



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Input Coordinates: 35.060560,-79.054352,35.058619,-79.053665,35.057565,-79.053236,35.057398,-79.053612,35.057223,-79.054298,35.060358,-79.055414,35.060560,-79.054352

Project Area	0.01 sq mi
Within an Ozone 8-hr (1997 standard) Non-Attainment/Maintenance Area?	no
Within an Ozone 8-hr (2008 standard) Non-Attainment/Maintenance Area?	no
Within a Lead (2008 standard) Non-Attainment/Maintenance Area?	no
Within a SO2 1-hr (2010 standard) Non-Attainment/Maintenance Area?	no
Within a PM2.5 24hr (2006 standard) Non-Attainment/Maintenance Area?	no
Within a PM2.5 Annual (1997 standard) Non-Attainment/Maintenance Area?	no
Within a PM2.5 Annual (2012 standard) Non-Attainment/Maintenance Area?	no
Within a PM10 (1987 standard) Non-Attainment/Maintenance Area?	no
Within a Federal Land?	no
Within an impaired stream?	no
Within an impaired waterbody?	no
Within a waterbody?	no
Within a stream?	no
Within an NWI wetland?	Available Online
Within a Brownfields site?	no
Within a Superfund site?	no
Within a Toxic Release Inventory (TRI) site?	no
Within a water discharger (NPDES)?	no
Within a hazardous waste (RCRA) facility?	no

Within an air emission facility?	no
Within a school?	no
Within an airport?	no
Within a hospital?	no
Within a designated sole source aquifer?	no
Within a historic property on the National Register of Historic Places?	no
Within a Toxic Substances Control Act (TSCA) site?	no
Within a Land Cession Boundary?	no
Within a tribal area (lower 48 states)?	no
Within the service area of a mitigation or conservation bank?	yes
Within the service area of an In-Lieu-Fee Program?	yes

Created on: 10/13/2021 1:18:58 PM



You are here: EPA Home > Green Book > >National Area and County-Level Multi-Pollutant Information >North Carolina Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants

## North Carolina Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants

Data is current as of February 28, 2022

Listed by County, NAAQS, Area. The 8-hour Ozone (1997) standard was revoked on April 6, 2015 and the 1-hour Ozone (1979) standard was revoked on June 15, 2005.

\* The 1997 Primary Annual PM-2.5 NAAQS (level of 15 µg/m<sup>3</sup>) is revoked in attainment and maintenance areas for that NAAQS. For additional information see the PM-2.5 NAAQS SIP Requirements Final Rule, effective October 24, 2016. (81 FR 58009)

Change the State:

NORTH CAROLINA

Important Notes

Download National Dataset: [dbf](#) | [xls](#) | [Data dictionary \(PDF\)](#)

County	NAAQS	Area Name	Nonattainment in Year	Redesignation to Maintenance	Classification	Whole or/Part County	Population (2010)	State/County FIPS Codes
<b>NORTH CAROLINA</b>								
Cabarrus County	8-Hour Ozone (1997)-NAAQS revoked	Charlotte-Gastonia-Rock Hill, NC-SC	04050607080910111213	01/02/2014	Moderate	Whole	178,011	37/025
Cabarrus County	8-Hour Ozone (2008)	Charlotte-Rock Hill, NC-SC	121314	08/27/2015	Marginal	Part	176,928	37/025
Catawba County	PM-2.5 (1997)-NAAQS revoked	Hickory-Morganton-Lenoir, NC	050607080910	12/19/2011 *	Former Subpart 1	Whole	154,358	37/035
Chatham County	8-Hour Ozone (1997)-NAAQS revoked	Raleigh-Durham-Chapel Hill, NC	040506	12/26/2007	Former Subpart 1	Part	32,372	37/037
Davidson County	1-Hour Ozone (1979)-NAAQS revoked	Greensboro-Winston-Salem-High Point, NC	92	11/08/1993	Moderate	Whole	162,878	37/057
Davidson County	PM-2.5 (1997)-NAAQS revoked	Greensboro-Winston Salem-High Point, NC	050607080910	12/19/2011 *	Former Subpart 1	Whole	162,878	37/057



County	NAAQS	Area Name	Nonattainment in Year	Redesignation to Maintenance	Classification	Whole or/ Part County	Population (2010)	State/ County FIPS Codes
Davie County	1-Hour Ozone (1979)-NAAQS revoked	Greensboro-Winston-Salem-High Point, NC	92	11/08/1993	Moderate	Part	1	37/059
Durham County	1-Hour Ozone (1979)-NAAQS revoked	Raleigh-Durham, NC	9293	06/17/1994	Moderate	Whole	267,587	37/063
Durham County	8-Hour Ozone (1997)-NAAQS revoked	Raleigh-Durham-Chapel Hill, NC	040506	12/26/2007	Former Subpart 1	Whole	267,587	37/063
Durham County	Carbon Monoxide (1971)	Raleigh-Durham, NC	929394	09/18/1995	Moderate <= 12.7ppm	Whole	267,587	37/063
Edgecombe County	8-Hour Ozone (1997)-NAAQS revoked	Rocky Mount, NC	040506	01/05/2007	Former Subpart 1	Whole	56,552	37/065
Forsyth County	1-Hour Ozone (1979)-NAAQS revoked	Greensboro-Winston-Salem-High Point, NC	92	11/08/1993	Moderate	Whole	350,670	37/067
Forsyth County	Carbon Monoxide (1971)	Winston-Salem, NC	9293	11/07/1994	Moderate <= 12.7ppm	Whole	350,670	37/067
Franklin County	8-Hour Ozone (1997)-NAAQS revoked	Raleigh-Durham-Chapel Hill, NC	040506	12/26/2007	Former Subpart 1	Whole	60,619	37/069
Gaston County	1-Hour Ozone (1979)-NAAQS revoked	Charlotte-Gastonia, NC	929394	07/05/1995	Moderate	Whole	206,086	37/071
Gaston County	8-Hour Ozone (1997)-NAAQS revoked	Charlotte-Gastonia-Rock Hill, NC-SC	04050607080910111213	01/02/2014	Moderate	Whole	206,086	37/071
Gaston County	8-Hour Ozone (2008)	Charlotte-Rock Hill, NC-SC	121314	08/27/2015	Marginal	Part	190,849	37/071

County	NAAQS	Area Name	Nonattainment in Year	Redesignation to Maintenance	Classification	Whole or/ Part County	Population (2010)	State/ County FIPS Codes
Granville County	1-Hour Ozone (1979)-NAAQS revoked	Raleigh-Durham, NC	9293	06/17/1994	Moderate	Part	17,725	37/077
Granville County	8-Hour Ozone (1997)-NAAQS revoked	Raleigh-Durham-Chapel Hill, NC	040506	12/26/2007	Former Subpart 1	Whole	59,916	37/077
Guilford County	1-Hour Ozone (1979)-NAAQS revoked	Greensboro-Winston-Salem-High Point, NC	92	11/08/1993	Moderate	Whole	488,406	37/081
Guilford County	PM-2.5 (1997)-NAAQS revoked	Greensboro-Winston-Salem-High Point, NC	050607080910	12/19/2011 *	Former Subpart 1	Whole	488,406	37/081
Haywood County	8-Hour Ozone (1997)-NAAQS revoked	Haywood and Swain Cos (Great Smoky NP), NC	040506070809	01/06/2010	Former Subpart 1	Part	985	37/087
Iredell County	8-Hour Ozone (1997)-NAAQS revoked	Charlotte-Gastonia-Rock Hill, NC-SC	04050607080910111213	01/02/2014	Moderate	Part	68,089	37/097
Iredell County	8-Hour Ozone (2008)	Charlotte-Rock Hill, NC-SC	121314	08/27/2015	Marginal	Part	65,899	37/097
Johnston County	8-Hour Ozone (1997)-NAAQS revoked	Raleigh-Durham-Chapel Hill, NC	040506	12/26/2007	Former Subpart 1	Whole	168,878	37/101
Lincoln County	8-Hour Ozone (1997)-NAAQS revoked	Charlotte-Gastonia-Rock Hill, NC-SC	04050607080910111213	01/02/2014	Moderate	Whole	78,265	37/109
Lincoln County	8-Hour Ozone (2008)	Charlotte-Rock Hill, NC-SC	121314	08/27/2015	Marginal	Part	64,189	37/109

County	NAAQS	Area Name	Nonattainment in Year	Redesignation to Maintenance	Classification	Whole or/ Part County	Population (2010)	State/ County FIPS Codes
Mecklenburg County	1-Hour Ozone (1979)-NAAQS revoked	Charlotte-Gastonia, NC	929394	07/05/1995	Moderate	Whole	919,628	37/119
Mecklenburg County	8-Hour Ozone (1997)-NAAQS revoked	Charlotte-Gastonia-Rock Hill, NC-SC	04050607080910111213	01/02/2014	Moderate	Whole	919,628	37/119
Mecklenburg County	8-Hour Ozone (2008)	Charlotte-Rock Hill, NC-SC	121314	08/27/2015	Marginal	Whole	919,628	37/119
Mecklenburg County	Carbon Monoxide (1971)	Charlotte, NC	929394	09/18/1995	Not Classified	Whole	919,628	37/119
Nash County	8-Hour Ozone (1997)-NAAQS revoked	Rocky Mount, NC	040506	01/05/2007	Former Subpart 1	Whole	95,840	37/127
Orange County	8-Hour Ozone (1997)-NAAQS revoked	Raleigh-Durham-Chapel Hill, NC	040506	12/26/2007	Former Subpart 1	Whole	133,801	37/135
Person County	8-Hour Ozone (1997)-NAAQS revoked	Raleigh-Durham-Chapel Hill, NC	040506	12/26/2007	Former Subpart 1	Whole	39,464	37/145
Rowan County	8-Hour Ozone (1997)-NAAQS revoked	Charlotte-Gastonia-Rock Hill, NC-SC	04050607080910111213	01/02/2014	Moderate	Whole	138,428	37/159
Rowan County	8-Hour Ozone (2008)	Charlotte-Rock Hill, NC-SC	121314	08/27/2015	Marginal	Part	130,057	37/159
Swain County	8-Hour Ozone (1997)-NAAQS revoked	Haywood and Swain Cos (Great Smoky NP), NC	040506070809	01/06/2010	Former Subpart 1	Part	3,288	37/173
Union County	8-Hour Ozone (1997)-NAAQS revoked	Charlotte-Gastonia-Rock Hill, NC-SC	04050607080910111213	01/02/2014	Moderate	Whole	201,292	37/179

County	NAAQS	Area Name	Nonattainment in Year	Redesignation to Maintenance	Classification	Whole or/ Part County	Population (2010)	State/ County FIPS Codes
Union County	8-Hour Ozone (2008)	Charlotte-Rock Hill, NC-SC	121314	08/27/2015	Marginal	Part	176,055	37/179
Wake County	1-Hour Ozone (1979)-NAAQS revoked	Raleigh-Durham, NC	9293	06/17/1994	Moderate	Whole	900,993	37/183
Wake County	8-Hour Ozone (1997)-NAAQS revoked	Raleigh-Durham-Chapel Hill, NC	040506	12/26/2007	Former Subpart 1	Whole	900,993	37/183
Wake County	Carbon Monoxide (1971)	Raleigh-Durham, NC	929394	09/18/1995	Moderate <= 12.7ppm	Whole	900,993	37/183

Important Notes

Discover.

Connect.

Ask.

Follow.

2022-02-28



**You are here:** EPA Home > Green Book > Current Nonattainment Counties for All Criteria Pollutants

## Current Nonattainment Counties for All Criteria Pollutants

Data is current as of September 30, 2021

The 8-hour Ozone (1997) standard was revoked on April 6, 2015 and the 1-hour Ozone (1979) standard was revoked on June 15, 2005.

The asterisk (\*) indicates only a portion of the county is included in the designated nonattainment area (NA).

Download National Dataset of all designated areas (currently nonattainment, maintenance, revoked):

[dbf](#) | [xls](#) | [Data dictionary \(PDF\)](#)

---

Listed by State, County, NAAQS \* Part County NA NA Area Name  
(Classification, if applicable)

---

### ALASKA

Fairbanks North Star Borough

*PM-2.5 (2006)* \*Fairbanks, AK - (Serious)

### ARIZONA

Cochise County

*PM-10 (1987)* \*Paul Spur/Douglas (Cochise County), AZ - (Moderate)

Gila County

*Lead (2008)* \*Hayden, AZ

*PM-10 (1987)* \*Hayden, AZ - (Moderate)

*PM-10 (1987)* \*Miami, AZ - (Moderate)

*Sulfur Dioxide (2010)* \*Hayden, AZ

*Sulfur Dioxide (2010)* \*Miami, AZ

*8-Hour Ozone (2015)* \*Phoenix-Mesa, AZ - (Marginal)

Maricopa County

*PM-10 (1987)* \*Phoenix, AZ - (Serious)

*8-Hour Ozone (2008)* \*Phoenix-Mesa, AZ - (Moderate)

*8-Hour Ozone (2015)* \*Phoenix-Mesa, AZ - (Marginal)

Pima County

*PM-10 (1987)* \*Rillito, AZ - (Moderate)

Pinal County

*Lead (2008)* \*Hayden, AZ

*PM-10 (1987)* \*Hayden, AZ - (Moderate)

*PM-10 (1987)* \*Miami, AZ - (Moderate)

*PM-10 (1987)* \*Phoenix, AZ - (Serious)

*PM-10 (1987)* \*West Pinal, AZ - (Serious)

*PM-2.5 (2006)* \*West Central Pinal, AZ - (Moderate)

*Sulfur Dioxide (1971)* \*Hayden (Pinal County), AZ

*Sulfur Dioxide (2010)* \*Hayden, AZ

*8-Hour Ozone (2008)* \*Phoenix-Mesa, AZ - (Moderate)

*8-Hour Ozone (2015)* \*Phoenix-Mesa, AZ - (Marginal)

Santa Cruz County

	<i>PM-10 (1987)</i>	*Nogales, AZ - (Moderate)
	<i>PM-2.5 (2006)</i>	*Nogales, AZ - (Moderate)
Yuma County		
	<i>PM-10 (1987)</i>	*Yuma, AZ - (Moderate)
	<i>8-Hour Ozone (2015)</i>	*Yuma, AZ - (Marginal)
<b>CALIFORNIA</b>		
Alameda County		
	<i>PM-2.5 (2006)</i>	San Francisco Bay Area, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	San Francisco Bay Area, CA - (Marginal)
	<i>8-Hour Ozone (2015)</i>	San Francisco Bay Area, CA - (Marginal)
Amador County		
	<i>8-Hour Ozone (2015)</i>	Amador County, CA - (Marginal)
Butte County		
	<i>8-Hour Ozone (2008)</i>	Chico (Butte County), CA - (Marginal)
	<i>8-Hour Ozone (2015)</i>	Butte County, CA - (Marginal)
Calaveras County		
	<i>8-Hour Ozone (2008)</i>	Calaveras County, CA - (Marginal)
	<i>8-Hour Ozone (2015)</i>	Calaveras County, CA - (Marginal)
Contra Costa County		
	<i>PM-2.5 (2006)</i>	San Francisco Bay Area, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	San Francisco Bay Area, CA - (Marginal)
	<i>8-Hour Ozone (2015)</i>	San Francisco Bay Area, CA - (Marginal)
El Dorado County		
	<i>PM-2.5 (2006)</i>	*Sacramento, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	*Sacramento Metro, CA - (Severe 15)
	<i>8-Hour Ozone (2015)</i>	*Sacramento Metro, CA - (Moderate)
Fresno County		
	<i>PM-2.5 (1997)</i>	San Joaquin Valley, CA - (Serious)
	<i>PM-2.5 (2006)</i>	San Joaquin Valley, CA - (Serious)
	<i>PM-2.5 (2012)</i>	San Joaquin Valley, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	San Joaquin Valley, CA - (Extreme)
	<i>8-Hour Ozone (2015)</i>	San Joaquin Valley, CA - (Extreme)
Imperial County		
	<i>PM-2.5 (2006)</i>	*Imperial Co, CA - (Moderate)
	<i>PM-2.5 (2012)</i>	*Imperial County, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	Imperial County, CA - (Moderate)
	<i>8-Hour Ozone (2015)</i>	Imperial County, CA - (Marginal)
Inyo County		
	<i>PM-10 (1987)</i>	*Owens Valley, CA - (Serious)
Kern County		
	<i>PM-10 (1987)</i>	*East Kern Co, CA - (Serious)
	<i>PM-2.5 (1997)</i>	*San Joaquin Valley, CA - (Serious)
	<i>PM-2.5 (2006)</i>	*San Joaquin Valley, CA - (Serious)
	<i>PM-2.5 (2012)</i>	*San Joaquin Valley, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	*Kern Co (Eastern Kern), CA - (Severe 15)
	<i>8-Hour Ozone (2008)</i>	*San Joaquin Valley, CA - (Extreme)
	<i>8-Hour Ozone (2015)</i>	*Kern County (Eastern Kern), CA - (Moderate)
	<i>8-Hour Ozone (2015)</i>	*San Joaquin Valley, CA - (Extreme)
Kings County		
	<i>PM-2.5 (1997)</i>	San Joaquin Valley, CA - (Serious)
	<i>PM-2.5 (2006)</i>	San Joaquin Valley, CA - (Serious)
	<i>PM-2.5 (2012)</i>	San Joaquin Valley, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	San Joaquin Valley, CA - (Extreme)
	<i>8-Hour Ozone (2015)</i>	San Joaquin Valley, CA - (Extreme)
Los Angeles County		
	<i>Lead (2008)</i>	*Los Angeles County-South Coast Air Basin, CA
	<i>PM-2.5 (1997)</i>	*Los Angeles-South Coast Air Basin, CA - (Moderate)
	<i>PM-2.5 (2006)</i>	*Los Angeles-South Coast Air Basin, CA - (Serious)

<i>PM-2.5 (2012)</i>	*Los Angeles-South Coast Air Basin, CA - (Serious)
<i>8-Hour Ozone (2008)</i>	*Los Angeles-San Bernardino Counties (West Mojave Desert), CA - (Severe 15)
<i>8-Hour Ozone (2008)</i>	*Los Angeles-South Coast Air Basin, CA - (Extreme)
<i>8-Hour Ozone (2015)</i>	*Los Angeles-San Bernardino Counties (West Mojave Desert), CA - (Severe 15)
<i>8-Hour Ozone (2015)</i>	*Los Angeles-South Coast Air Basin, CA - (Extreme)
<b>Madera County</b>	
<i>PM-2.5 (1997)</i>	San Joaquin Valley, CA - (Serious)
<i>PM-2.5 (2006)</i>	San Joaquin Valley, CA - (Serious)
<i>PM-2.5 (2012)</i>	San Joaquin Valley, CA - (Moderate)
<i>8-Hour Ozone (2008)</i>	San Joaquin Valley, CA - (Extreme)
<i>8-Hour Ozone (2015)</i>	San Joaquin Valley, CA - (Extreme)
<b>Marin County</b>	
<i>PM-2.5 (2006)</i>	San Francisco Bay Area, CA - (Moderate)
<i>8-Hour Ozone (2008)</i>	San Francisco Bay Area, CA - (Marginal)
<i>8-Hour Ozone (2015)</i>	San Francisco Bay Area, CA - (Marginal)
<b>Mariposa County</b>	
<i>8-Hour Ozone (2008)</i>	Mariposa County, CA - (Moderate)
<i>8-Hour Ozone (2015)</i>	Mariposa County, CA - (Marginal)
<b>Merced County</b>	
<i>PM-2.5 (1997)</i>	San Joaquin Valley, CA - (Serious)
<i>PM-2.5 (2006)</i>	San Joaquin Valley, CA - (Serious)
<i>PM-2.5 (2012)</i>	San Joaquin Valley, CA - (Moderate)
<i>8-Hour Ozone (2008)</i>	San Joaquin Valley, CA - (Extreme)
<i>8-Hour Ozone (2015)</i>	San Joaquin Valley, CA - (Extreme)
<b>Mono County</b>	
<i>PM-10 (1987)</i>	*Mono Basin, CA - (Moderate)
<b>Napa County</b>	
<i>PM-2.5 (2006)</i>	San Francisco Bay Area, CA - (Moderate)
<i>8-Hour Ozone (2008)</i>	San Francisco Bay Area, CA - (Marginal)
<i>8-Hour Ozone (2015)</i>	San Francisco Bay Area, CA - (Marginal)
<b>Nevada County</b>	
<i>8-Hour Ozone (2008)</i>	*Nevada Co. (Western part), CA - (Serious)
<i>8-Hour Ozone (2015)</i>	*Nevada County (Western part), CA - (Moderate)
<b>Orange County</b>	
<i>PM-2.5 (1997)</i>	Los Angeles-South Coast Air Basin, CA - (Moderate)
<i>PM-2.5 (2006)</i>	Los Angeles-South Coast Air Basin, CA - (Serious)
<i>PM-2.5 (2012)</i>	Los Angeles-South Coast Air Basin, CA - (Serious)
<i>8-Hour Ozone (2008)</i>	Los Angeles-South Coast Air Basin, CA - (Extreme)
<i>8-Hour Ozone (2015)</i>	Los Angeles-South Coast Air Basin, CA - (Extreme)
<b>Placer County</b>	
<i>PM-2.5 (2006)</i>	*Sacramento, CA - (Moderate)
<i>8-Hour Ozone (2008)</i>	*Sacramento Metro, CA - (Severe 15)
<i>8-Hour Ozone (2015)</i>	*Sacramento Metro, CA - (Moderate)
<b>Plumas County</b>	
<i>PM-2.5 (2012)</i>	*Plumas County, CA - (Moderate)
<b>Riverside County</b>	
<i>PM-10 (1987)</i>	*Coachella Valley, CA - (Serious)
<i>PM-2.5 (1997)</i>	*Los Angeles-South Coast Air Basin, CA - (Moderate)
<i>PM-2.5 (2006)</i>	*Los Angeles-South Coast Air Basin, CA - (Serious)

<i>PM-2.5 (2012)</i>	*Los Angeles-South Coast Air Basin, CA - (Serious)
<i>8-Hour Ozone (2008)</i>	*Los Angeles-South Coast Air Basin, CA - (Extreme)
<i>8-Hour Ozone (2008)</i>	*Morongo Band of Mission Indians - (Serious)
<i>8-Hour Ozone (2008)</i>	*Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation - (Moderate)
<i>8-Hour Ozone (2008)</i>	*Riverside Co, (Coachella Valley), CA - (Severe 15)
<i>8-Hour Ozone (2015)</i>	*Los Angeles-South Coast Air Basin, CA - (Extreme)
<i>8-Hour Ozone (2015)</i>	*Morongo Band of Mission Indians, CA - (Serious)
<i>8-Hour Ozone (2015)</i>	*Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA - (Marginal)
<i>8-Hour Ozone (2015)</i>	*Riverside County (Coachella Valley), CA - (Severe 15)
<b>Sacramento County</b>	
<i>PM-2.5 (2006)</i>	Sacramento, CA - (Moderate)
<i>8-Hour Ozone (2008)</i>	Sacramento Metro, CA - (Severe 15)
<i>8-Hour Ozone (2015)</i>	Sacramento Metro, CA - (Moderate)
<b>San Bernardino County</b>	
<i>PM-10 (1987)</i>	*San Bernardino Co, CA - (Moderate)
<i>PM-10 (1987)</i>	*Trona, CA - (Moderate)
<i>PM-2.5 (1997)</i>	*Los Angeles-South Coast Air Basin, CA - (Moderate)
<i>PM-2.5 (2006)</i>	*Los Angeles-South Coast Air Basin, CA - (Serious)
<i>PM-2.5 (2012)</i>	*Los Angeles-South Coast Air Basin, CA - (Serious)
<i>8-Hour Ozone (2008)</i>	*Los Angeles-San Bernardino Counties (West Mojave Desert), CA - (Severe 15)
<i>8-Hour Ozone (2008)</i>	*Los Angeles-South Coast Air Basin, CA - (Extreme)
<i>8-Hour Ozone (2015)</i>	*Los Angeles-San Bernardino Counties (West Mojave Desert), CA - (Severe 15)
<i>8-Hour Ozone (2015)</i>	*Los Angeles-South Coast Air Basin, CA - (Extreme)
<b>San Diego County</b>	
<i>8-Hour Ozone (2008)</i>	*Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation - (Moderate)
<i>8-Hour Ozone (2008)</i>	*San Diego County, CA - (Severe 15)
<i>8-Hour Ozone (2015)</i>	*Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA - (Marginal)
<i>8-Hour Ozone (2015)</i>	*San Diego County, CA - (Severe 15)
<b>San Francisco County</b>	
<i>PM-2.5 (2006)</i>	San Francisco Bay Area, CA - (Moderate)
<i>8-Hour Ozone (2008)</i>	San Francisco Bay Area, CA - (Marginal)
<i>8-Hour Ozone (2015)</i>	San Francisco Bay Area, CA - (Marginal)
<b>San Joaquin County</b>	
<i>PM-2.5 (1997)</i>	San Joaquin Valley, CA - (Serious)
<i>PM-2.5 (2006)</i>	San Joaquin Valley, CA - (Serious)
<i>PM-2.5 (2012)</i>	San Joaquin Valley, CA - (Moderate)
<i>8-Hour Ozone (2008)</i>	San Joaquin Valley, CA - (Extreme)
<i>8-Hour Ozone (2015)</i>	San Joaquin Valley, CA - (Extreme)
<b>San Luis Obispo County</b>	
<i>8-Hour Ozone (2008)</i>	*San Luis Obispo (Eastern San Luis Obispo), CA - (Marginal)
<i>8-Hour Ozone (2015)</i>	*San Luis Obispo (Eastern part), CA - (Marginal)
<b>San Mateo County</b>	
<i>PM-2.5 (2006)</i>	San Francisco Bay Area, CA - (Moderate)



	<i>8-Hour Ozone (2008)</i>	San Francisco Bay Area, CA - (Marginal)
	<i>8-Hour Ozone (2015)</i>	San Francisco Bay Area, CA - (Marginal)
Santa Clara County		
	<i>PM-2.5 (2006)</i>	San Francisco Bay Area, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	San Francisco Bay Area, CA - (Marginal)
	<i>8-Hour Ozone (2015)</i>	San Francisco Bay Area, CA - (Marginal)
Solano County		
	<i>PM-2.5 (2006)</i>	*Sacramento, CA - (Moderate)
	<i>PM-2.5 (2006)</i>	*San Francisco Bay Area, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	*Sacramento Metro, CA - (Severe 15)
	<i>8-Hour Ozone (2008)</i>	*San Francisco Bay Area, CA - (Marginal)
	<i>8-Hour Ozone (2015)</i>	*Sacramento Metro, CA - (Moderate)
	<i>8-Hour Ozone (2015)</i>	*San Francisco Bay Area, CA - (Marginal)
Sonoma County		
	<i>PM-2.5 (2006)</i>	*San Francisco Bay Area, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	*San Francisco Bay Area, CA - (Marginal)
	<i>8-Hour Ozone (2015)</i>	*San Francisco Bay Area, CA - (Marginal)
Stanislaus County		
	<i>PM-2.5 (1997)</i>	San Joaquin Valley, CA - (Serious)
	<i>PM-2.5 (2006)</i>	San Joaquin Valley, CA - (Serious)
	<i>PM-2.5 (2012)</i>	San Joaquin Valley, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	San Joaquin Valley, CA - (Extreme)
	<i>8-Hour Ozone (2015)</i>	San Joaquin Valley, CA - (Extreme)
Sutter County		
	<i>8-Hour Ozone (2008)</i>	*Sacramento Metro, CA - (Severe 15)
	<i>8-Hour Ozone (2015)</i>	*Sacramento Metro, CA - (Moderate)
	<i>8-Hour Ozone (2015)</i>	*Sutter Buttes, CA - (Marginal)
Tehama County		
	<i>8-Hour Ozone (2008)</i>	*Tuscan Buttes, CA - (Marginal)
	<i>8-Hour Ozone (2015)</i>	*Tuscan Buttes, CA - (Marginal (Rural Transport))
Tulare County		
	<i>PM-2.5 (1997)</i>	San Joaquin Valley, CA - (Serious)
	<i>PM-2.5 (2006)</i>	San Joaquin Valley, CA - (Serious)
	<i>PM-2.5 (2012)</i>	San Joaquin Valley, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	San Joaquin Valley, CA - (Extreme)
	<i>8-Hour Ozone (2015)</i>	San Joaquin Valley, CA - (Extreme)
Tuolumne County		
	<i>8-Hour Ozone (2015)</i>	Tuolumne County, CA - (Marginal)
Ventura County		
	<i>8-Hour Ozone (2008)</i>	*Ventura County, CA - (Serious)
	<i>8-Hour Ozone (2015)</i>	*Ventura County, CA - (Serious)
Yolo County		
	<i>PM-2.5 (2006)</i>	*Sacramento, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	Sacramento Metro, CA - (Severe 15)
	<i>8-Hour Ozone (2015)</i>	Sacramento Metro, CA - (Moderate)
<b>COLORADO</b>		
Adams County		
	<i>8-Hour Ozone (2008)</i>	Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Serious)
	<i>8-Hour Ozone (2015)</i>	Denver Metro/North Front Range, CO - (Marginal)
Arapahoe County		
	<i>8-Hour Ozone (2008)</i>	Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Serious)
	<i>8-Hour Ozone (2015)</i>	Denver Metro/North Front Range, CO - (Marginal)
Boulder County		
	<i>8-Hour Ozone (2008)</i>	Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Serious)
	<i>8-Hour Ozone (2015)</i>	Denver Metro/North Front Range, CO - (Marginal)

**Broomfield County**

- 8-Hour Ozone (2008)* Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Serious)
- 8-Hour Ozone (2015)* Denver Metro/North Front Range, CO - (Marginal)

**Denver County**

- 8-Hour Ozone (2008)* Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Serious)
- 8-Hour Ozone (2015)* Denver Metro/North Front Range, CO - (Marginal)

**Douglas County**

- 8-Hour Ozone (2008)* Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Serious)
- 8-Hour Ozone (2015)* Denver Metro/North Front Range, CO - (Marginal)

**Jefferson County**

- 8-Hour Ozone (2008)* Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Serious)
- 8-Hour Ozone (2015)* Denver Metro/North Front Range, CO - (Marginal)

**Larimer County**

- 8-Hour Ozone (2008)* \*Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Serious)
- 8-Hour Ozone (2015)* \*Denver Metro/North Front Range, CO - (Marginal)

**Weld County**

- 8-Hour Ozone (2008)* \*Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Serious)
- 8-Hour Ozone (2015)* \*Denver Metro/North Front Range, CO - (Marginal)

**CONNECTICUT****Fairfield County**

- 8-Hour Ozone (2008)* New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
- 8-Hour Ozone (2015)* New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)

**Hartford County**

- 8-Hour Ozone (2008)* Greater Connecticut, CT - (Serious)
- 8-Hour Ozone (2015)* Greater Connecticut, CT - (Marginal)

**Litchfield County**

- 8-Hour Ozone (2008)* Greater Connecticut, CT - (Serious)
- 8-Hour Ozone (2015)* Greater Connecticut, CT - (Marginal)

**Middlesex County**

- 8-Hour Ozone (2008)* New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
- 8-Hour Ozone (2015)* New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)

**New Haven County**

- 8-Hour Ozone (2008)* New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
- 8-Hour Ozone (2015)* New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)

**New London County**

- 8-Hour Ozone (2008)* Greater Connecticut, CT - (Serious)
- 8-Hour Ozone (2015)* Greater Connecticut, CT - (Marginal)

**Tolland County**

- 8-Hour Ozone (2008)* Greater Connecticut, CT - (Serious)
- 8-Hour Ozone (2015)* Greater Connecticut, CT - (Marginal)

**Windham County**

- 8-Hour Ozone (2008)* Greater Connecticut, CT - (Serious)
- 8-Hour Ozone (2015)* Greater Connecticut, CT - (Marginal)

**DELAWARE**

## New Castle County

*8-Hour Ozone (2008)* Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)

*8-Hour Ozone (2015)* Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)

## Sussex County

*8-Hour Ozone (2008)* Seaford, DE - (Marginal)

**DISTRICT OF COLUMBIA**

## District of Columbia

*8-Hour Ozone (2015)* Washington, DC-MD-VA - (Marginal)

**GEORGIA**

## Bartow County

*8-Hour Ozone (2015)* Atlanta, GA - (Marginal)

## Clayton County

*8-Hour Ozone (2015)* Atlanta, GA - (Marginal)

## Cobb County

*8-Hour Ozone (2015)* Atlanta, GA - (Marginal)

## DeKalb County

*8-Hour Ozone (2015)* Atlanta, GA - (Marginal)

## Fulton County

*8-Hour Ozone (2015)* Atlanta, GA - (Marginal)

## Gwinnett County

*8-Hour Ozone (2015)* Atlanta, GA - (Marginal)

## Henry County

*8-Hour Ozone (2015)* Atlanta, GA - (Marginal)

**GUAM**

## Guam

*Sulfur Dioxide (1971)\*Piti, GU*

*Sulfur Dioxide (1971)\*Tanguisson, GU*

*Sulfur Dioxide (2010)\*Piti-Cabras, GU*

**IDAHO**

## Bannock County

*PM-10 (1987)* \*Fort Hall Indian Reservation - (Moderate)

## Power County

*PM-10 (1987)* \*Fort Hall Indian Reservation - (Moderate)

## Shoshone County

*PM-2.5 (2012)* \*West Silver Valley, ID - (Moderate)

**ILLINOIS**

## Cook County

*8-Hour Ozone (2008)* Chicago-Naperville, IL-IN-WI - (Serious)

*8-Hour Ozone (2015)* Chicago, IL-IN-WI - (Marginal)

## DuPage County

*8-Hour Ozone (2008)* Chicago-Naperville, IL-IN-WI - (Serious)

*8-Hour Ozone (2015)* Chicago, IL-IN-WI - (Marginal)

## Grundy County

*8-Hour Ozone (2008)* \*Chicago-Naperville, IL-IN-WI - (Serious)

*8-Hour Ozone (2015)* \*Chicago, IL-IN-WI - (Marginal)

## Kane County

*8-Hour Ozone (2008)* Chicago-Naperville, IL-IN-WI - (Serious)

*8-Hour Ozone (2015)* Chicago, IL-IN-WI - (Marginal)

## Kendall County

*8-Hour Ozone (2008)* \*Chicago-Naperville, IL-IN-WI - (Serious)

*8-Hour Ozone (2015)* \*Chicago, IL-IN-WI - (Marginal)

## Lake County

*8-Hour Ozone (2008)* Chicago-Naperville, IL-IN-WI - (Serious)

*8-Hour Ozone (2015)* Chicago, IL-IN-WI - (Marginal)

## Madison County

*Sulfur Dioxide (2010)\*Alton Township, IL*

*8-Hour Ozone (2015)* St. Louis, MO-IL - (Marginal)

## McHenry County

*8-Hour Ozone (2008)* Chicago-Naperville, IL-IN-WI - (Serious)

*8-Hour Ozone (2015)* Chicago, IL-IN-WI - (Marginal)

Monroe County

*8-Hour Ozone (2015)* St. Louis, MO-IL - (Marginal)

St. Clair County

*8-Hour Ozone (2015)* St. Louis, MO-IL - (Marginal)

Will County

*8-Hour Ozone (2008)* Chicago-Naperville, IL-IN-WI - (Serious)

*8-Hour Ozone (2015)* Chicago, IL-IN-WI - (Marginal)

## INDIANA

Clark County

*8-Hour Ozone (2015)* Louisville, KY-IN - (Marginal)

Floyd County

*8-Hour Ozone (2015)* Louisville, KY-IN - (Marginal)

Huntington County

*Sulfur Dioxide (2010)\**Huntington, IN

Lake County

*8-Hour Ozone (2008)* Chicago-Naperville, IL-IN-WI - (Serious)

*8-Hour Ozone (2015)\**Chicago, IL-IN-WI - (Marginal)

Porter County

*8-Hour Ozone (2008)* Chicago-Naperville, IL-IN-WI - (Serious)

*8-Hour Ozone (2015)\**Chicago, IL-IN-WI - (Marginal)

## IOWA

Muscatine County

*Sulfur Dioxide (2010)\**Muscatine, IA

## KANSAS

Saline County

*Lead (2008)* \*Saline County, KS

## KENTUCKY

Boone County

*8-Hour Ozone (2015)\**Cincinnati, OH-KY - (Marginal)

Bullitt County

*8-Hour Ozone (2015)* Louisville, KY-IN - (Marginal)

Campbell County

*8-Hour Ozone (2015)\**Cincinnati, OH-KY - (Marginal)

Henderson County

*Sulfur Dioxide (2010)\**Henderson-Webster Counties, KY

Jefferson County

*8-Hour Ozone (2015)* Louisville, KY-IN - (Marginal)

Kenton County

*8-Hour Ozone (2015)\**Cincinnati, OH-KY - (Marginal)

Oldham County

*8-Hour Ozone (2015)* Louisville, KY-IN - (Marginal)

Webster County

*Sulfur Dioxide (2010)\**Henderson-Webster Counties, KY

## LOUISIANA

Evangeline Parish

*Sulfur Dioxide (2010)\**Evangeline Parish (Partial), LA

St. Bernard Parish

*Sulfur Dioxide (2010)* St. Bernard Parish, LA

## MARYLAND

Anne Arundel County

*Sulfur Dioxide (2010)\**Anne Arundel County and Baltimore County, MD

*8-Hour Ozone (2008)* Baltimore, MD - (Moderate)

*8-Hour Ozone (2015)* Baltimore, MD - (Marginal)

Baltimore County

*Sulfur Dioxide (2010)\**Anne Arundel County and Baltimore County, MD

*8-Hour Ozone (2008)* Baltimore, MD - (Moderate)

*8-Hour Ozone (2015)* Baltimore, MD - (Marginal)

Baltimore city

*8-Hour Ozone (2008)* Baltimore, MD - (Moderate)

8-Hour Ozone (2015)	Baltimore, MD - (Marginal)
Calvert County	
8-Hour Ozone (2015)	Washington, DC-MD-VA - (Marginal)
Carroll County	
8-Hour Ozone (2008)	Baltimore, MD - (Moderate)
8-Hour Ozone (2015)	Baltimore, MD - (Marginal)
Cecil County	
8-Hour Ozone (2008)	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
8-Hour Ozone (2015)	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Charles County	
8-Hour Ozone (2015)	Washington, DC-MD-VA - (Marginal)
Frederick County	
8-Hour Ozone (2015)	Washington, DC-MD-VA - (Marginal)
Harford County	
8-Hour Ozone (2008)	Baltimore, MD - (Moderate)
8-Hour Ozone (2015)	Baltimore, MD - (Marginal)
Howard County	
8-Hour Ozone (2008)	Baltimore, MD - (Moderate)
8-Hour Ozone (2015)	Baltimore, MD - (Marginal)
Montgomery County	
8-Hour Ozone (2015)	Washington, DC-MD-VA - (Marginal)
Prince George's County	
8-Hour Ozone (2015)	Washington, DC-MD-VA - (Marginal)
<b>MASSACHUSETTS</b>	
Dukes County	
8-Hour Ozone (2008)	Dukes County, MA - (Marginal)
<b>MICHIGAN</b>	
Allegan County	
8-Hour Ozone (2015)	*Allegan County, MI - (Marginal)
Berrien County	
8-Hour Ozone (2015)	Berrien County, MI - (Marginal)
Livingston County	
8-Hour Ozone (2015)	Detroit, MI - (Marginal)
Macomb County	
8-Hour Ozone (2015)	Detroit, MI - (Marginal)
Monroe County	
8-Hour Ozone (2015)	Detroit, MI - (Marginal)
Muskegon County	
8-Hour Ozone (2015)	*Muskegon County, MI - (Marginal)
Oakland County	
8-Hour Ozone (2015)	Detroit, MI - (Marginal)
St. Clair County	
Sulfur Dioxide (2010)	*St. Clair, MI
8-Hour Ozone (2015)	Detroit, MI - (Marginal)
Washtenaw County	
8-Hour Ozone (2015)	Detroit, MI - (Marginal)
Wayne County	
Sulfur Dioxide (2010)	*Detroit, MI
8-Hour Ozone (2015)	Detroit, MI - (Marginal)
<b>MINNESOTA</b>	
Dakota County	
Lead (2008)	*Eagan, MN
<b>MISSOURI</b>	
Dent County	
Lead (2008)	*Iron, Dent, and Reynolds Counties, MO
Franklin County	
8-Hour Ozone (2015)	*St. Louis, MO-IL - (Marginal)
Iron County	
Lead (2008)	*Iron, Dent, and Reynolds Counties, MO

Jackson County	
<i>Sulfur Dioxide (2010)</i>	*Jackson County, MO
Jefferson County	
<i>Lead (1978)</i>	*Jefferson County (part); Herculaneum, MO
<i>Lead (2008)</i>	*Jefferson County, MO
<i>Sulfur Dioxide (2010)</i>	*Jefferson County, MO
<i>8-Hour Ozone (2015)</i>	St. Louis, MO-IL - (Marginal)
New Madrid County	
<i>Sulfur Dioxide (2010)</i>	*New Madrid County, MO
Reynolds County	
<i>Lead (2008)</i>	*Iron, Dent, and Reynolds Counties, MO
St. Charles County	
<i>8-Hour Ozone (2015)</i>	St. Louis, MO-IL - (Marginal)
St. Louis County	
<i>8-Hour Ozone (2015)</i>	St. Louis, MO-IL - (Marginal)
St. Louis city	
<i>8-Hour Ozone (2015)</i>	St. Louis, MO-IL - (Marginal)
<b>MONTANA</b>	
Flathead County	
<i>PM-10 (1987)</i>	*Flathead County; Whitefish and vicinity, MT - (Moderate)
Lake County	
<i>PM-10 (1987)</i>	*Polson, MT - (Moderate)
<i>PM-10 (1987)</i>	*Ronan, MT - (Moderate)
Lincoln County	
<i>PM-2.5 (1997)</i>	*Libby, MT - (Moderate)
Rosebud County	
<i>PM-10 (1987)</i>	*Lame Deer, MT - (Moderate)
Sanders County	
<i>PM-10 (1987)</i>	*Sanders County (part); Thompson Falls and vicinity, MT - (Moderate)
Yellowstone County	
<i>Sulfur Dioxide (1971)</i>	*Laurel Area (Yellowstone County), MT
<b>NEVADA</b>	
Clark County	
<i>8-Hour Ozone (2015)</i>	*Las Vegas, NV - (Marginal)
<b>NEW JERSEY</b>	
Atlantic County	
<i>8-Hour Ozone (2008)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
<i>8-Hour Ozone (2015)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Bergen County	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Burlington County	
<i>8-Hour Ozone (2008)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
<i>8-Hour Ozone (2015)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Camden County	
<i>8-Hour Ozone (2008)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
<i>8-Hour Ozone (2015)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Cape May County	
<i>8-Hour Ozone (2008)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)

	<i>8-Hour Ozone (2015)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Cumberland County	<i>8-Hour Ozone (2008)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
	<i>8-Hour Ozone (2015)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Essex County	<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
	<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Gloucester County	<i>8-Hour Ozone (2008)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
	<i>8-Hour Ozone (2015)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Hudson County	<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
	<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Hunterdon County	<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
	<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Mercer County	<i>8-Hour Ozone (2008)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
	<i>8-Hour Ozone (2015)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Middlesex County	<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
	<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Monmouth County	<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
	<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Morris County	<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
	<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Ocean County	<i>8-Hour Ozone (2008)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
	<i>8-Hour Ozone (2015)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Passaic County	<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
	<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Salem County	<i>8-Hour Ozone (2008)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)

<i>8-Hour Ozone (2015)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Somerset County	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Sussex County	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Union County	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Warren County	
<i>Sulfur Dioxide (1971)</i>	*Warren Co, NJ
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
<b>NEW MEXICO</b>	
Dona Ana County	
<i>PM-10 (1987)</i>	*Anthony, NM - (Moderate)
<i>8-Hour Ozone (2015)</i>	*Dona Ana County (Sunland Park Area), NM - (Marginal)
<b>NEW YORK</b>	
Bronx County	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Chautauqua County	
<i>8-Hour Ozone (2008)</i>	Jamestown, NY - (Marginal)
Kings County	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Nassau County	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
New York County	
<i>PM-10 (1987)</i>	New York Co, NY - (Moderate)
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Queens County	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Richmond County	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)



<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Rockland County	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
St. Lawrence County	
<i>Sulfur Dioxide (2010)*</i>	St. Lawrence County, NY
Suffolk County	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Westchester County	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)

**OHIO**

Butler County	
<i>8-Hour Ozone (2015)</i>	Cincinnati, OH-KY - (Marginal)
Clermont County	
<i>8-Hour Ozone (2015)</i>	Cincinnati, OH-KY - (Marginal)
Cuyahoga County	
<i>8-Hour Ozone (2015)</i>	Cleveland, OH - (Marginal)
Geauga County	
<i>8-Hour Ozone (2015)</i>	Cleveland, OH - (Marginal)
Hamilton County	
<i>8-Hour Ozone (2015)</i>	Cincinnati, OH-KY - (Marginal)
Lake County	
<i>8-Hour Ozone (2015)</i>	Cleveland, OH - (Marginal)
Lorain County	
<i>8-Hour Ozone (2015)</i>	Cleveland, OH - (Marginal)
Medina County	
<i>8-Hour Ozone (2015)</i>	Cleveland, OH - (Marginal)
Morgan County	
<i>Sulfur Dioxide (2010)*</i>	Muskingum River, OH
Portage County	
<i>8-Hour Ozone (2015)</i>	Cleveland, OH - (Marginal)
Summit County	
<i>8-Hour Ozone (2015)</i>	Cleveland, OH - (Marginal)
Warren County	
<i>8-Hour Ozone (2015)</i>	Cincinnati, OH-KY - (Marginal)
Washington County	
<i>Sulfur Dioxide (2010)*</i>	Muskingum River, OH

**OREGON**

Klamath County	
<i>PM-2.5 (2006)</i>	*Klamath Falls, OR - (Moderate)
Lane County	
<i>PM-10 (1987)</i>	*Lane Co, OR - (Moderate)
<i>PM-2.5 (2006)</i>	*Oakridge, OR - (Moderate)

**PENNSYLVANIA**

Allegheny County	
<i>PM-2.5 (1997)</i>	*Liberty-Clairton, PA - (Moderate)
<i>PM-2.5 (2006)</i>	*Liberty-Clairton, PA - (Moderate)
<i>PM-2.5 (2012)</i>	Allegheny County, PA - (Moderate)
<i>Sulfur Dioxide (2010)*</i>	Allegheny, PA
<i>8-Hour Ozone (2008)</i>	Pittsburgh-Beaver Valley, PA - (Marginal)
Armstrong County	
<i>Sulfur Dioxide (1971)*</i>	Armstrong Co, PA

	<i>Sulfur Dioxide (2010)</i> *Indiana, PA
	<i>8-Hour Ozone (2008)</i> Pittsburgh-Beaver Valley, PA - (Marginal)
Beaver County	
	<i>Lead (2008)</i> *Lower Beaver Valley, PA
	<i>Sulfur Dioxide (2010)</i> *Beaver, PA
	<i>8-Hour Ozone (2008)</i> Pittsburgh-Beaver Valley, PA - (Marginal)
Berks County	
	<i>Lead (2008)</i> *Lyons, PA
	<i>Lead (2008)</i> *North Reading, PA
	<i>8-Hour Ozone (2008)</i> Reading, PA - (Marginal)
Bucks County	
	<i>8-Hour Ozone (2008)</i> Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
	<i>8-Hour Ozone (2015)</i> Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Butler County	
	<i>8-Hour Ozone (2008)</i> Pittsburgh-Beaver Valley, PA - (Marginal)
Carbon County	
	<i>8-Hour Ozone (2008)</i> Allentown-Bethlehem-Easton, PA - (Marginal)
Chester County	
	<i>8-Hour Ozone (2008)</i> Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
	<i>8-Hour Ozone (2015)</i> Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Delaware County	
	<i>8-Hour Ozone (2008)</i> Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
	<i>8-Hour Ozone (2015)</i> Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Fayette County	
	<i>8-Hour Ozone (2008)</i> Pittsburgh-Beaver Valley, PA - (Marginal)
Indiana County	
	<i>Sulfur Dioxide (2010)</i> Indiana, PA
Lancaster County	
	<i>8-Hour Ozone (2008)</i> Lancaster, PA - (Marginal)
Lehigh County	
	<i>8-Hour Ozone (2008)</i> Allentown-Bethlehem-Easton, PA - (Marginal)
Montgomery County	
	<i>8-Hour Ozone (2008)</i> Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
	<i>8-Hour Ozone (2015)</i> Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Northampton County	
	<i>8-Hour Ozone (2008)</i> Allentown-Bethlehem-Easton, PA - (Marginal)
Philadelphia County	
	<i>8-Hour Ozone (2008)</i> Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
	<i>8-Hour Ozone (2015)</i> Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Warren County	
	<i>Sulfur Dioxide (2010)</i> *Warren, PA
Washington County	
	<i>8-Hour Ozone (2008)</i> Pittsburgh-Beaver Valley, PA - (Marginal)
Westmoreland County	
	<i>8-Hour Ozone (2008)</i> Pittsburgh-Beaver Valley, PA - (Marginal)
<b>PUERTO RICO</b>	
Arecibo Municipio	
	<i>Lead (2008)</i> *Arecibo, PR
Bayamon Municipio	
	<i>Sulfur Dioxide (2010)</i> *San Juan, PR
Catano Municipio	

*Sulfur Dioxide (2010)* San Juan, PR  
 Guaynabo Municipio  
*Sulfur Dioxide (2010)\**San Juan, PR  
 Salinas Municipio  
*Sulfur Dioxide (2010)\**Guayama-Salinas, PR  
 San Juan Municipio  
*Sulfur Dioxide (2010)\**San Juan, PR  
 Toa Baja Municipio  
*Sulfur Dioxide (2010)\**San Juan, PR

**TENNESSEE**

Sullivan County  
*Sulfur Dioxide (2010)\**Sullivan County, TN

**TEXAS**

Anderson County  
*Sulfur Dioxide (2010)\**Freestone and Anderson Counties, TX  
 Bexar County  
*8-Hour Ozone (2015)* San Antonio, TX - (Marginal)  
 Brazoria County  
*8-Hour Ozone (2008)* Houston-Galveston-Brazoria, TX - (Serious)  
*8-Hour Ozone (2015)* Houston-Galveston-Brazoria, TX - (Marginal)  
 Chambers County  
*8-Hour Ozone (2008)* Houston-Galveston-Brazoria, TX - (Serious)  
*8-Hour Ozone (2015)* Houston-Galveston-Brazoria, TX - (Marginal)  
 Collin County  
*8-Hour Ozone (2008)* Dallas-Fort Worth, TX - (Serious)  
*8-Hour Ozone (2015)* Dallas-Fort Worth, TX - (Marginal)  
 Dallas County  
*8-Hour Ozone (2008)* Dallas-Fort Worth, TX - (Serious)  
*8-Hour Ozone (2015)* Dallas-Fort Worth, TX - (Marginal)  
 Denton County  
*8-Hour Ozone (2008)* Dallas-Fort Worth, TX - (Serious)  
*8-Hour Ozone (2015)* Dallas-Fort Worth, TX - (Marginal)  
 El Paso County  
*PM-10 (1987)* \*El Paso Co, TX - (Moderate)  
 Ellis County  
*8-Hour Ozone (2008)* Dallas-Fort Worth, TX - (Serious)  
*8-Hour Ozone (2015)* Dallas-Fort Worth, TX - (Marginal)  
 Fort Bend County  
*8-Hour Ozone (2008)* Houston-Galveston-Brazoria, TX - (Serious)  
*8-Hour Ozone (2015)* Houston-Galveston-Brazoria, TX - (Marginal)  
 Freestone County  
*Sulfur Dioxide (2010)\**Freestone and Anderson Counties, TX  
 Galveston County  
*8-Hour Ozone (2008)* Houston-Galveston-Brazoria, TX - (Serious)  
*8-Hour Ozone (2015)* Houston-Galveston-Brazoria, TX - (Marginal)  
 Harris County  
*8-Hour Ozone (2008)* Houston-Galveston-Brazoria, TX - (Serious)  
*8-Hour Ozone (2015)* Houston-Galveston-Brazoria, TX - (Marginal)  
 Howard County  
*Sulfur Dioxide (2010)\**Howard County, TX  
 Hutchinson County  
*Sulfur Dioxide (2010)\**Hutchinson County, TX  
 Johnson County  
*8-Hour Ozone (2008)* Dallas-Fort Worth, TX - (Serious)  
*8-Hour Ozone (2015)* Dallas-Fort Worth, TX - (Marginal)  
 Kaufman County  
*8-Hour Ozone (2008)* Dallas-Fort Worth, TX - (Serious)  
*8-Hour Ozone (2015)* Dallas-Fort Worth, TX - (Marginal)  
 Liberty County  
*8-Hour Ozone (2008)* Houston-Galveston-Brazoria, TX - (Serious)  
 Montgomery County

*8-Hour Ozone (2008)* Houston-Galveston-Brazoria, TX - (Serious)  
*8-Hour Ozone (2015)* Houston-Galveston-Brazoria, TX - (Marginal)

Navarro County

*Sulfur Dioxide (2010)\**Navarro County, TX

Panola County

*Sulfur Dioxide (2010)\**Rusk and Panola Counties, TX

Parker County

*8-Hour Ozone (2008)* Dallas-Fort Worth, TX - (Serious)

*8-Hour Ozone (2015)* Dallas-Fort Worth, TX - (Marginal)

Rockwall County

*8-Hour Ozone (2008)* Dallas-Fort Worth, TX - (Serious)

Rusk County

*Sulfur Dioxide (2010)\**Rusk and Panola Counties, TX

Tarrant County

*8-Hour Ozone (2008)* Dallas-Fort Worth, TX - (Serious)

*8-Hour Ozone (2015)* Dallas-Fort Worth, TX - (Marginal)

Titus County

*Sulfur Dioxide (2010)\**Titus County, TX

Waller County

*8-Hour Ozone (2008)* Houston-Galveston-Brazoria, TX - (Serious)

Wise County

*8-Hour Ozone (2008)* Dallas-Fort Worth, TX - (Serious)

*8-Hour Ozone (2015)* Dallas-Fort Worth, TX - (Marginal)

## UTAH

Box Elder County

*PM-2.5 (2006)* \*Salt Lake City, UT - (Serious)

Davis County

*PM-2.5 (2006)* Salt Lake City, UT - (Serious)

*8-Hour Ozone (2015)* Northern Wasatch Front, UT - (Marginal)

Duchesne County

*8-Hour Ozone (2015)* \*Uinta Basin, UT - (Marginal)

Salt Lake County

*PM-2.5 (2006)* Salt Lake City, UT - (Serious)

*Sulfur Dioxide (1971)* Salt Lake Co, UT

*8-Hour Ozone (2015)* Northern Wasatch Front, UT - (Marginal)

Tooele County

*PM-2.5 (2006)* \*Salt Lake City, UT - (Serious)

*Sulfur Dioxide (1971)\**Tooele Co, UT

*8-Hour Ozone (2015)* \*Northern Wasatch Front, UT - (Marginal)

Uintah County

*8-Hour Ozone (2015)* \*Uinta Basin, UT - (Marginal)

Utah County

*PM-2.5 (2006)* \*Provo, UT - (Serious)

*8-Hour Ozone (2015)* \*Southern Wasatch Front, UT - (Marginal)

Weber County

*PM-2.5 (2006)* \*Salt Lake City, UT - (Serious)

*8-Hour Ozone (2015)* \*Northern Wasatch Front, UT - (Marginal)

## VIRGINIA

Alexandria city

*8-Hour Ozone (2015)* Washington, DC-MD-VA - (Marginal)

Arlington County

*8-Hour Ozone (2015)* Washington, DC-MD-VA - (Marginal)

Fairfax County

*8-Hour Ozone (2015)* Washington, DC-MD-VA - (Marginal)

Fairfax city

*8-Hour Ozone (2015)* Washington, DC-MD-VA - (Marginal)

Falls Church city

*8-Hour Ozone (2015)* Washington, DC-MD-VA - (Marginal)

Giles County

*Sulfur Dioxide (2010)\**Giles County, VA

Loudoun County

*8-Hour Ozone (2015)* Washington, DC-MD-VA - (Marginal)

Manassas Park city

*8-Hour Ozone (2015)* Washington, DC-MD-VA - (Marginal)

Manassas city

*8-Hour Ozone (2015)* Washington, DC-MD-VA - (Marginal)

Prince William County

*8-Hour Ozone (2015)* Washington, DC-MD-VA - (Marginal)

## WASHINGTON

Whatcom County

*Sulfur Dioxide (2010)*\*Whatcom County, WA

## WISCONSIN

Door County

*8-Hour Ozone (2015)* \*Door County-Revised, WI - (Marginal (Rural Transport))

Kenosha County

*8-Hour Ozone (2008)* \*Chicago-Naperville, IL-IN-WI - (Serious)

*8-Hour Ozone (2015)* \*Chicago, IL-IN-WI - (Marginal)

Manitowoc County

*8-Hour Ozone (2015)* \*Manitowoc County, WI - (Marginal)

Milwaukee County

*8-Hour Ozone (2015)* Milwaukee, WI - (Marginal)

Oneida County

*Sulfur Dioxide (2010)*\*Rhineland, WI

Ozaukee County

*8-Hour Ozone (2015)* Milwaukee, WI - (Marginal)

Racine County

*8-Hour Ozone (2015)* \*Milwaukee, WI - (Marginal)

Sheboygan County

*8-Hour Ozone (2015)* \*Sheboygan County, WI - (Marginal)

Washington County

*8-Hour Ozone (2015)* \*Milwaukee, WI - (Marginal)

Waukesha County

*8-Hour Ozone (2015)* \*Milwaukee, WI - (Marginal)

## WYOMING

Lincoln County

*8-Hour Ozone (2008)* \*Upper Green River Basin Area, WY - (Marginal)

Sublette County

*8-Hour Ozone (2008)* Upper Green River Basin Area, WY - (Marginal)

Sweetwater County

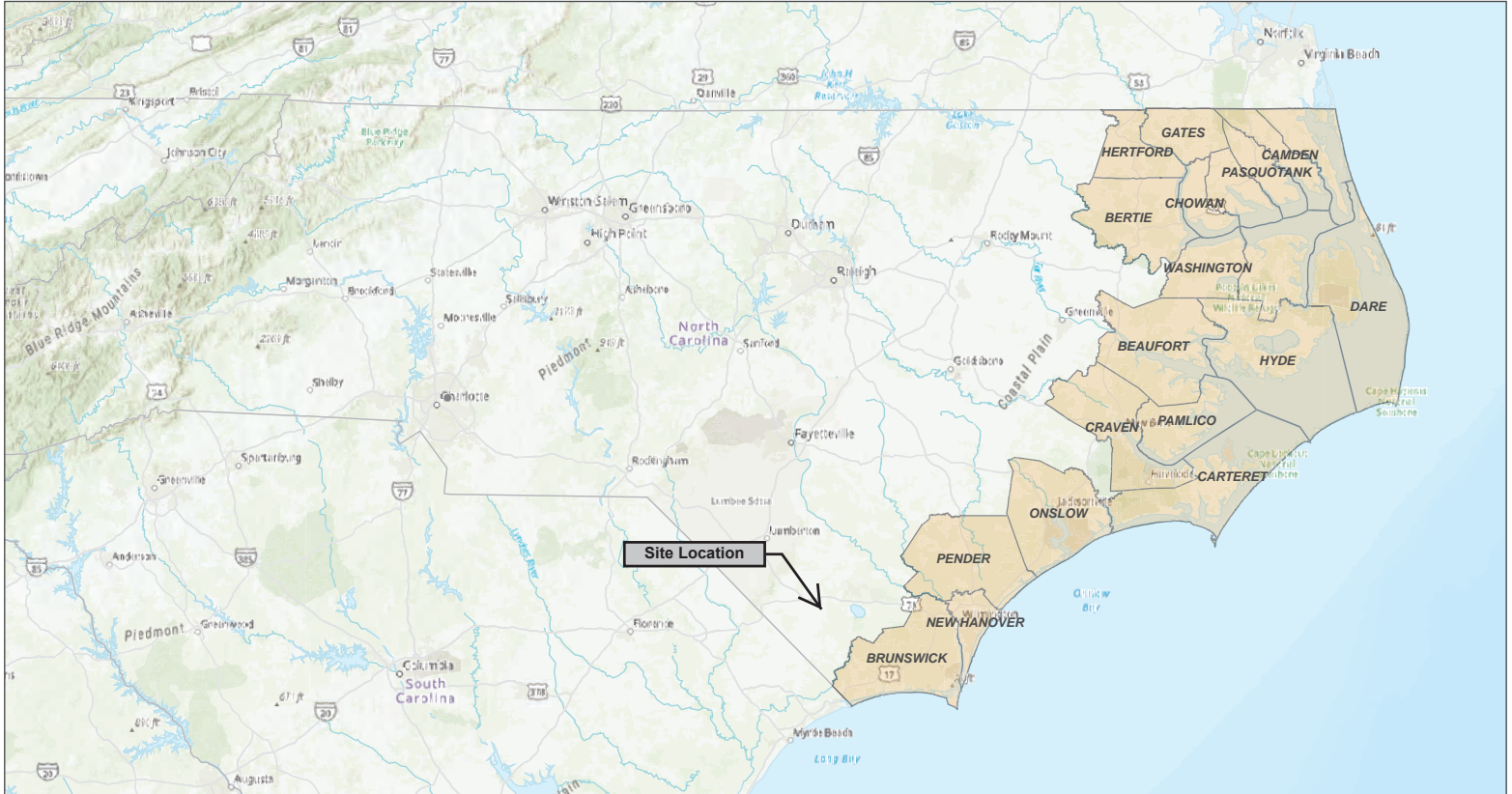
*8-Hour Ozone (2008)* \*Upper Green River Basin Area, WY - (Marginal)

Discover.  
Connect.  
Ask.

Follow.

2021-09-30

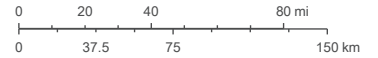
# Division of Coastal Management



2/10/2021, 4:25:02 PM

 CAMA Jurisdiction

1:2,311,162



Esri, HERE, Garmin, FAO, NOAA, USGS, EPA, NPS, Esri, USGS

Map generated using the North Carolina Department of Environmental Quality - Division of Coastal Management Interactive Map Viewer online at <https://ncdenr.maps.arcgis.com/apps/webappviewer/index.html>.

NC Department of Environmental Quality  
2017



# Coastal Zone Management Programs

Alabama [#alabama]	Alaska (*) [#alaska]	American Samoa [#samoa]
California [#california]	Connecticut [#connecticut]	Delaware [#delaware]
Florida [#florida]	Georgia [#georgia]	Guam [#guam]
Hawaii [#hawaii]	Illinois [#illinois]	Indiana [#indiana]
Louisiana [#louisiana]	Maine [#maine]	Maryland [#maryland]
Massachusetts [#massachusetts]	Michigan [#michigan]	Minnesota [#minnesota]
Mississippi [#mississippi]	New Hampshire [#newhampshire]	New Jersey [#newjersey]
New York [#newyork]	North Carolina [#northcarolina]	Northern Mariana Islands [#mariana]
Ohio [#ohio]	Oregon [#oregon]	Pennsylvania [#pennsylvania]
Puerto Rico [#puertorico]	Rhode Island [#rhodeisland]	South Carolina [#southcarolina]
Texas [#texas]	Virgin Islands [#virginislands]	Virginia [#virginia]
Washington [#washington]	Wisconsin [#wisconsin]	

\* All 35 coastal and Great Lakes states and territories (with the exception of Alaska) participate in the National Coastal Zone Management Program.

## ALABAMA

The Alabama Coastal Management Program [<http://www.adem.state.al.us/programs/coastal/default.cnt>], approved by NOAA in 1979, is administered by two state agencies:

- The Alabama Department of Conservation and Natural Resources [<https://www.outdooralabama.com/coastal-programs/alabama-coastal-area-management-program>] is responsible for planning, fiscal management, public education, and research management; and the
- Alabama Department of Environmental Management [<http://adem.alabama.gov/programs/coastal/default.cnt>] carries out permitting, regulatory, and enforcement functions.

The primary authority for the coastal management program is the Alabama Coastal Area Act of 1976 (Act 534). The Alabama coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] extends inland to the continuous 10-foot contour in Mobile and Baldwin Counties.

## ALASKA

Alaska withdrew from the voluntary National Coastal Zone Management Program [[/czm/about/](#)] on July 1, 2011. Contact NOAA's Office for Coastal Management for additional information.

## AMERICAN SAMOA

The American Samoa Coastal Management Program [<http://doc.as/resource-management/ascmp/>], approved by NOAA in 1980, is led by the American Samoa Department of Commerce. The coastal program has developed a unique approach that incorporates both western and traditional systems of management. The American Samoa Coastal Management Act provides the primary authority for the program. American Samoa's coastal zone boundary [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] consists of seven islands, totaling roughly 77 square miles, with a coastline of 126 miles.

## CALIFORNIA

The California Coastal Management Program, approved by NOAA in 1978, is administered by three state agencies:

- The California Coastal Commission [<https://www.coastal.ca.gov/>] manages development along the California coast except San Francisco Bay, where the
- San Francisco Bay Conservation and Development Commission [<https://www.bcdc.ca.gov/>] oversees development.
- The California Coastal Conservancy [<https://scc.ca.gov/>] purchases, protects, restores, and enhances coastal resources, and provides access to the shore.

The primary authorities for the California Coastal Management Program are the California Coastal Act, McAteer-Petris Act, and Suisan Marsh Preservation Act. The California coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] generally extends 1,000 yards inland from the mean high tide line. The coastal zone for the San Francisco Bay Conservation and Development Commission includes the open water, marshes, and mudflats of greater San Francisco Bay, and areas 100 feet inland from the line of highest tidal action.

## CONNECTICUT

The Connecticut Coastal Management Program [<https://portal.ct.gov/DEEP>], approved in 1980, is administered by the Office of Long Island Sound Programs within the Department of Energy and Environmental Protection. The primary authority for the coastal management program is the Connecticut Coastal Management Act of 1980. Connecticut has a two-tiered coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>]. The first tier, the "coastal boundary," generally extends inland 1,000 feet from the shore. The second tier, the "coastal area," includes all of the state's 36 coastal municipalities.

## **DELAWARE**

The Delaware Coastal Management Program [<https://dnrec.alpha.delaware.gov/coastal-programs/coastal-management/>] was approved by NOAA in 1979. The coastal management program's lead agency is the Division of Climate, Coastal, and Energy, Department of Natural Resources and Environmental Control. The program coordinates across nearly every state agency to ensure the effective implementation of policies, state laws, regulations and executive orders that affect coastal resources. Because the goals of the coastal management program are to balance the use, preservation, and development of coastal resources, these policies cover a surprising range of coastal issues.

The whole state of Delaware is designated as a coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] due to its small size and is divided into two tiers: the "coastal strip" and the rest of the state. The coastal strip, averaging four miles in width, receives special zoning protection from industrial development, while the second tier only falls under general program provisions.

## **FLORIDA**

The Florida Coastal Management Program [<https://floridadep.gov/fcmp>] was approved by NOAA in 1981, with the Florida Department of Environmental Protection serving as the lead agency. A network of nine state agencies and five water management districts together enforce 23 separate statutes. The Florida coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] is the entire state but is divided into two tiers. Only coastal cities and counties that include or are contiguous to state water bodies are eligible to receive coastal management funds.

## **GEORGIA**

The Georgia Coastal Management Program [<https://coastalgadnr.org/CoastalManagement>] was approved by NOAA in 1998, with Georgia's Department of Natural Resources, Coastal Resources Division, serving as the lead agency. The Georgia Coastal Management Act authorized the creation of the Georgia Coastal Management Program. The Georgia coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] includes the state's six coastal counties and five "inland tier" counties, which include Chatham, Effingham, Bryan, Liberty, McIntosh, Long, Glynn, Wayne, Brantley, Camden, and Charlton counties.

## **GUAM**

The Guam Coastal Management Program [<http://bsp.guam.gov/guam-coastal-management-program/>] was approved in 1979, and is overseen by the Bureau of Statistics and Plans. The coastal management program guides the use, protection, and development of land and ocean resources within Guam's coastal zone.

Guam's comprehensive planning enabling legislation, Seashore Protection Act, and several executive orders are among the key legislation for the coastal management program. Because Guam is a small island, the entire land area is included within its coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>].

## **HAWAII**

The Hawaii Coastal Management Program [<http://planning.hawaii.gov/czm/>], approved by NOAA in 1978, is led by the Hawaii Office of Planning. The coastal management program is a network of authorities and partnerships collectively implementing the objectives and policies of Hawaii's Coastal Zone Management Statutes (Chapter 205A, HRS). The entire state of Hawaii falls within Hawaii's coastal zone boundary [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>].

## **ILLINOIS**

The Illinois Coastal Management Program [<http://www.dnr.illinois.gov/cmp/Pages/default.aspx>] is the newest state partner in the National Coastal Zone Management Program, gaining approval in 2012. Illinois' program, under the direction of the Illinois Department of Natural Resources, Office of Coastal Management, focuses on several priority issues in the Illinois coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>], a 63-mile stretch along Lake Michigan. The program manages impacts to its Lake Michigan shoreline through the Rivers, Lakes, and Streams Act, Lake Michigan Shore Line Act, and a network of other authorities.

## **INDIANA**

The Indiana Coastal Management Program [<https://www.in.gov/dnr/lake-michigan-coastal-program/>], approved by NOAA in 2002, is led by the Indiana Department of Natural Resources. The coastal management program is a networked program built upon a framework of state laws and authorities addressing key coastal priorities. The Coastal Advisory Board, which represents various stakeholder groups, determines the priorities for each grant funding cycle and provides a forum for public input on regional issues affecting Lake Michigan coastal resources. The Indiana coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] is based on watershed boundaries and varies from a little less than two miles to 17 miles from the shore.

## **LOUISIANA**

The Louisiana Coastal Management Program [<http://www.dnr.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=85&ngid=5>], approved by NOAA in 1980, is administered by the Department of Natural Resources through the Office of Coastal Management. The primary authority for the coastal management program is the State and Local Coastal Resources Management Act of 1978. The Louisiana coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>], which varies from 16 to 32 miles inland from the Gulf coast, is a 10 million-acre area that includes 40 percent of the nation's coastal wetlands.

## **MAINE**

The Maine Coastal Management Program [<https://www.maine.gov/dmr/mcp/index.htm>], approved in 1978, is led by the Maine Department of Agriculture, Conservation, and Forestry. The coastal management program consists of a network of 19 state laws with four state agencies working in cooperation with local governments, nonprofit organizations, private businesses, and the public to improve management of coastal resources. Maine's coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] extends to the inland boundary of all towns bordering tidal waters and includes all coastal islands.

## **MARYLAND**



The Maryland Coastal Management Program [<https://dnr.maryland.gov/ccs/Pages/funding/czma.aspx>] was approved by NOAA in 1978, with the Department of Natural Resources acting as the lead agency. The coastal management program is a networked program composed of several state planning and regulatory programs implementing a suite of enforceable policies to protect coastal resources and manage coastal uses, including the Chesapeake Bays Critical Areas Protection Program. Maryland's coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] follows the inland boundary of the counties (and Baltimore City) bordering the Atlantic Ocean, Chesapeake Bay, and the Potomac River (as far as the municipal limits of Washington, D.C.).

### **MASSACHUSETTS**

The Massachusetts Coastal Management Program [<https://www.mass.gov/orgs/massachusetts-office-of-coastal-zone-management>], approved by NOAA in 1978, is administered by the Office of Coastal Zone Management within the Executive Office of Environmental Affairs and serves as the lead for coastal policy and technical assistance in the state.

The Executive Office of Environmental Affairs enforces 20 program policies and nine management principles governing activities within the coastal zone. The Massachusetts coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] roughly includes all land within a half-mile of coastal waters and salt marshes, as well as all islands.

### **MICHIGAN**

The Michigan Coastal Management Program [[http://www.michigan.gov/deq/0,4561,7-135-3313\\_3677\\_3696-11188--,00.html](http://www.michigan.gov/deq/0,4561,7-135-3313_3677_3696-11188--,00.html)] was approved by NOAA in 1978, and is administered by the Department of Environmental Quality. Key management authorities of the coastal management program include several parts of the Natural Resources and Environmental Protection Act pertaining to Shorelands Protection and Management (Part 323), Great Lakes Submerged Lands (Part 325), and Sand Dunes Protection and Management (Part 353).

Boasting the world's largest freshwater coastline, Michigan's coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] generally extends a minimum of 1,000 feet inland from the ordinary high water mark, with the boundary extending further inland in some locations to encompass important coastal features.

### **MINNESOTA**

The Minnesota Coastal Management Program [<http://www.dnr.state.mn.us/waters/lakesuperior/index.html>] was approved by NOAA in 1999 and consists of a network of agencies and programs led by the Department of Natural Resources.

Key legislation includes the Shoreland Management Act and the North Shore Management Plan. Minnesota's coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] includes the area approximately six miles inland from Lake Superior, following the nearest township boundaries along the shore.

### **MISSISSIPPI**

The Mississippi Coastal Management Program [<https://dmr.ms.gov/coastal-resources-management-2/>], approved by NOAA in 1980, consists of a network of agencies with authority in the coastal zone. The Department of Marine Resources, through the Office of Coastal Ecology, serves as the lead agency.

The primary authority guiding the coastal management program is the Coastal Wetlands Protection Act. The Mississippi coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] includes the three coastal counties, as well as all adjacent coastal waters and the barrier islands of the coast.

### **NEW HAMPSHIRE**

The New Hampshire Department of Environmental Services leads the implementation of the state's coastal program. The New Hampshire Coastal Management Program [<http://des.nh.gov/organization/divisions/water/wmb/coastal/index.htm>], approved by NOAA in 1982, is a networked program where several state agencies help enforce the coastal management program's 16 coastal policies. The New Hampshire coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] covers areas next to the Atlantic Ocean and the lower Piscataqua River, along with areas bordering the Great Bay and tidal rivers, and all 17 municipalities along tidal waters.

### **NEW JERSEY**

The New Jersey Coastal Management Program [<https://www.state.nj.us/dep/cmp/>] was approved by NOAA in 1978 and is directly administered by its lead agency, the New Jersey Department of Environmental Protection, in partnership with the New Jersey Meadowlands Commission, as the lead planning agency for the Hackensack Meadowlands District.

The coastal management program is based on three major laws: the Coastal Area Facility Review Act, the Wetlands Act of 1970, and the Waterfront Development Law. New Jersey's coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] encompasses approximately 1,800 miles of tidal coastline and ranges in width from 100 feet to 24 miles inland.

### **NEW YORK**

The New York Coastal Management Program [<https://dos.ny.gov/state-coastal-management-program>] was approved by NOAA in 1982, with the New York Department of State serving as the lead agency. The Executive Law Article 42, Waterfront Revitalization of Coastal Areas and Inland Waterways, provides the state with the authority to establish a coastal program, develop coastal policies, define the coastal boundaries, and establish state consistency requirements.

The inland New York coastal zone boundary [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] is variable but generally is 1,000 feet from the shoreline in non-urbanized areas. In urbanized areas and other developed locations along the coastline, the inland boundary is usually 500 feet or less from the shoreline, with the boundary possibly extending inland up to 10,000 feet to encompass significant coastal resources.

## **NORTH CAROLINA**

The North Carolina Coastal Management Program [<https://deq.nc.gov/about/divisions/coastal-management>] , approved by NOAA in 1978, is administered by the Division of Coastal Management within the Department of Environment and Natural Resources. The primary authority for the coastal management program is the Coastal Area Management Act.

North Carolina's coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] includes 20 coastal counties that in whole or in part are adjacent to, adjoining, intersected, or bounded by the Atlantic Ocean or any coastal sound.

## **NORTHERN MARIANA ISLANDS**

The Commonwealth of the Northern Mariana Islands is made up of 14 islands that span 440 miles of the western Pacific Ocean, with the Division of Coastal Resources Management [<https://dcrm.gov.mp/>] serving as the lead agency for the Northern Mariana Islands Coastal Management Program. NOAA approved the commonwealth's coastal management program in 1980. Since the islands are small, the entire land and water area of the commonwealth is included within the coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] .

## **OHIO**

The Ohio Coastal Management Program [<https://ohiodnr.gov/wps/portal/gov/odnr/discover-and-learn/safety-conservation/about-odnr/coastal-management>] was approved by NOAA in 1997, with the Ohio Department of Natural Resources serving as the lead agency for the networked program. The coastal management program incorporates state laws, regulations, and programs within 41 management policies that are organized around nine issue areas [<https://ohiodnr.gov/wps/portal/gov/odnr/discover-and-learn/safety-conservation/about-odnr/coastal-managementcmp>] . Ohio's coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] is quite varied and runs through the nine counties bordering Lake Erie and its tributaries. The boundary width ranges from about one-eighth of a mile to 15 miles depending on features, such as coastal wetlands and bluffs.

## **OREGON**

The Oregon Coastal Management Program [<https://www.oregon.gov/LCD/OCMP/pages/index.aspx>] , approved by NOAA in 1977, consists of a network of agencies with authority in the coastal zone. The Oregon Department of Land Conservation and Development serves as the lead agency. The primary authority for the coastal management program is the Oregon Land Use Planning Act and the 19 statewide planning goals. The Oregon coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] includes the state's coastal watersheds and extends inland to the crest of the coast range, with a few minor exceptions.

## **PENNSYLVANIA**

The Pennsylvania Coastal Management Program [<https://www.dep.pa.gov/Business/Water/Compacts%20and%20Commissions/Coastal%20Resources%20Management%20Program/Pages/default.aspx>] , approved in 1980, is administered by the Department of Environmental Protection. The coastal management program comprises two widely separated coastal areas: the 63-mile Lake Erie shoreline and the 57-mile stretch of coastline along the Delaware Estuary.

The program relies on a network of state authorities. The Pennsylvania coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] along Lake Erie varies from 900 feet in urban areas to over three miles in rural areas, and the Delaware River Estuary boundary extends inland from 660 feet in urbanized areas to 3.5 miles in rural areas.

## **PUERTO RICO**

Puerto Rico's Coastal Management Program [<https://www.drna.pr.gov/tag/zona-costanera/>] was approved by NOAA in 1978 and comprises a network of state agencies led by the Department of Natural and Environmental Resources. The program encompasses 40 statutes.

Puerto Rico's coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] generally extends 1,000 meters (one kilometer) inland, but extends further inland in places to include important coastal resources.

## **RHODE ISLAND**

The Rhode Island Coastal Management Program [<http://www.crmc.ri.gov/>] , approved by NOAA in 1978, is administered by the Rhode Island Coastal Resources Management Council. The primary authority for the coastal management program is the Coastal Resources Management Act of 1971. Rhode Island's coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] encompasses the entire state, although the inland extent of the coastal management program's regulatory authority is generally 200 feet inland from any coastal feature.

## **SOUTH CAROLINA**

The South Carolina Coastal Management Program [<https://scdhec.gov/environment/your-water-coast/ocean-coastal-resource-management/coastal-zone-management/south>] was approved by NOAA in 1979, and the lead agency is the Department of Health and Environmental Control. The primary authority for the coastal management program is the 1977 Coastal Tidelands and Wetlands Act. The South Carolina coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] includes all lands and waters in the counties of the state that contain any one or more "critical areas," which are defined as coastal waters, tidelands, beaches, and beach/dune system.

## **TEXAS**

The Texas Coastal Management Program [<https://www.glo.texas.gov/coast/grant-projects/cmp/index.html>] , approved by NOAA in 1996, is administered by the Texas General Land Office in conjunction with the Coastal Coordination Advisory Committee. The Coastal Coordination Act is the primary authority for the Texas Coastal Management Program. The Texas coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] is generally the area seaward of the Texas coastal facility designation line, up to three marine leagues into the Gulf of Mexico.

## **VIRGIN ISLANDS**

The U.S. Virgin Islands Coastal Management Program was approved by NOAA in 1979. The lead agency is the Department of Planning and Natural Resources. The primary authority for the coastal management program is the U.S. Virgin Islands Coastal Zone Management Act, and the coastal zone

[<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] includes the entire territory.

## **VIRGINIA**

The Virginia Coastal Management Program [<http://www.deq.state.va.us/Programs/CoastalZoneManagement.aspx>] was approved by NOAA in 1986, and the Department of Environmental Quality serves as the lead agency. Authorized by a commonwealth executive order, the coastal management program is structured as a network of agencies that have authority for implementing nine core policies and a set of advisory policies covering wetlands, fisheries, water quality, dunes and beaches, subaqueous lands, and other coastal resources in the Virginia coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>]. The coastal zone includes the state's 29 coastal counties, 17 cities, and 42 incorporated towns.

## **WASHINGTON**

The Washington Coastal Management Program [<https://ecology.wa.gov/Water-Shorelines/Shoreline-coastal-management/Coastal-zone-management>], approved by NOAA in 1976, was the first approved program in the nation. The Department of Ecology serves as the lead coastal management agency. The primary authority for the coastal management program is the Shoreline Management Act of 1971. The Washington coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] includes the state's 15 coastal counties that front saltwater.

## **WISCONSIN**

The Wisconsin Coastal Management Program [<https://doa.wi.gov/Pages/LocalGovtsGrants/CoastalManagement.aspx>], approved by NOAA in 1978, is administered by the Department of Administration, Bureau of Intergovernmental Relations. The coastal management program is a networked program implemented in partnership with the Wisconsin Coastal Management Council, with representatives from local governments, state agencies, Native American tribes, and interest groups. The council sets the policy direction for the program. The Wisconsin coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] comprises the 15 counties fronting Lake Superior, Lake Michigan, and Green Bay.

For more information, contact us [<https://coast.noaa.gov/contactform/>].

[About the National Program \[/czm/about/\]](/czm/about/)

[Coastal Management Fellowship \[https://coast.noaa.gov/fellowship/coastalmanagement.html\]](https://coast.noaa.gov/fellowship/coastalmanagement.html)

[Coastal Zone Management Act \[/czm/act/\]](/czm/act/)

[Evaluations \[/czm/evaluations/\]](/czm/evaluations/)

[National Program Funding Summary \[https://coast.noaa.gov/data/czm/media/funding-summary.pdf\]](https://coast.noaa.gov/data/czm/media/funding-summary.pdf)

[National Program Publications \[/czm/publications/\]](/czm/publications/)

[Performance Measures \[/czm/performance/\]](/czm/performance/)

[Program Change Website \[https://coast.noaa.gov/czmprogramchange/\]](https://coast.noaa.gov/czmprogramchange/)

[Program Guidance \[/czm/guidance/\]](/czm/guidance/)

[Regulations \[https://www.ecfr.gov/cgi-bin/text-idx?SID=73fa77136a5eecb25a52b3ef02368ecb&tpl=/ecfrbrowse/Title15/15cfr923\\_main\\_02.tpl\]](https://www.ecfr.gov/cgi-bin/text-idx?SID=73fa77136a5eecb25a52b3ef02368ecb&tpl=/ecfrbrowse/Title15/15cfr923_main_02.tpl)

[States and Territories \[/czm/mystate/\]](/czm/mystate/)

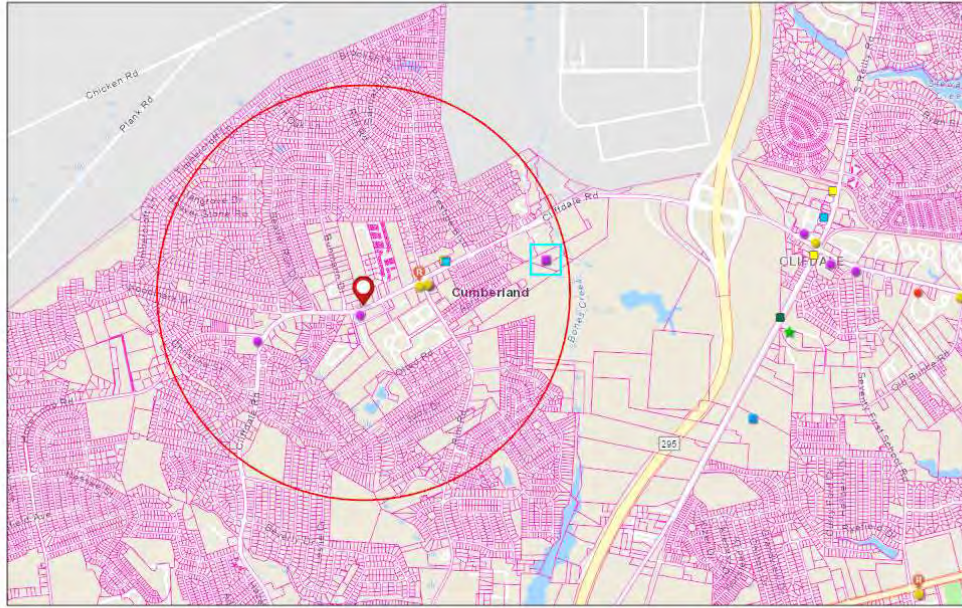


# DWM Site Locator Tool Screening Report

## Area of Interest (AOI) Information

Area : 87,513,003.29 ft<sup>2</sup>

Mar 21 2022 6:32:38 Eastern Daylight Time



- ★ Hazardous Waste Sites
- DryCleaning Compliance
- UST Incidents
- Federal Remediation Branch
- DryCleaning Historical Boiler Inspections
- AST Incidents
- Pre-Regulatory Landfill Sites
- DryCleaning City Directories
- UST Active Facilities

1:36,112  
0 0.25 0.5 1 mi  
0 0.4 0.8 1.6 km  
NCDOT GIS Unit: State of North Carolina DOT, EXP, HERE, Garmin

## Pre-Regulatory Landfill Sites

#	EPAID	SITENAME	Count
1	NCD980502900	Cumberland County/Cliffdale LF	1
2	NONCD0000733	Cumberland County Landfill - Bones Creek	1

## UST Incidents

#	IncidentNumber	IncidentName	Count
1	19702	PANTRY 456	1
2	22150	THE PANTRY 3031 (DBA QUICK STOP)	1

## UST Active Facilities

#	FACILID	FACILNAME	Count
1	00-0-0000012310	CIRCLE K 2720456	1
2	00-0-0000037127	REFUEL 151	1
3	00-0-0000040008	WALMART NEIGHBORHOOD MARKET 3411	1

## Land Use Restriction and/or Notices

#	Prj_Number	Prj_Name	Count
1	FA-1176	THE PANTRY 3031 (DBA QUICK STOP)	1

## DryCleaning Historical Boiler Inspections

#	Drycleaner	InspDate	Count
1	ANDERSONS CLEANERS	6/22/1997	1

## DryCleaning Compliance

#	Facility_ID	Facility_Name	Count
1	260006C	Anderson Cleaners	1

\*324PRLFSF548\*



DocumentID NCD980502900

SITENAME CUMBERLAND COUNTY/CLIFFDALE LF

DocumentType Correspondence (C)

RptSegment 1

DocDate 1/31/2005

DocRcvd 1/31/2005

Box SF548

AccessLevel Public

Division Waste Management

Section Superfund

Program IHS (IHS)

DocCat Facility



Site Name: CUMBERLAND CO/CLIFFDALE LF  
ID Number: NCD980502900  
Site Address: CLIFFDALE RD(SR)  
City: FAYETTEVILLE

In IHS Inventory? Yes  
Other Agency Lead SWS  
NFA or NFA-Restricted Use? No  
Unable to Locate

State Plane X:

Latitude: 35.0585

State Plane Y:

Longitude: -79.0455

Directions: CLIFFDALE RD(SR 1402) & SR1400



LDFL Size (Acres):	42	Present Within 1000 ft of Ldfi		
Property Size (Acres):	42	Church	No	Residence On Ldfi? No
Date Open:		School	No	Potable Well Within 500 ft? No
Date Closed:	1983	Day Care	No	Adjoins Perennial SW? No
		Residential	No	

Notes: CREOSOTE SALTS FROM CLARK & PROCTOR TURP CO IN FAYETTEVILLE. OWNED BY CUMBERLAND CO AS OF 2/2000..

(End Site Record)

*Cumberland Co.*

*Pine Trees across street*





English Saddle Dr

Judy Dr

Bugle Call Dr

Frenchom Ln

Foxhunt Ln

Foxhound Ct

Old Hunt Pl

Deerfoot Rd

Oak Meadow

Grouse Run Ln

Ssssssstine Rd

Levi Rd

Martha Ct

Harris Rd

Gooder

Rim Rd

Castle Falls Cir

Mounta

Cellner Dr

High Kite Pl

Nan St

Shumont Dr

Beverly Dr

Fox Fern Dr

Blackford Dr

Stitch St

Patrick Dr

Cliffdale  
Sanitary Landfill  
71<sup>st</sup> township site  
SR-1406

October 30, 1978

Cliffdale Quad.

out

Mr. Rodney M. Honeycutt, P. E.  
County Engineer  
Cumberland County Joint Planning Board  
801 Arsenal Avenue  
Post Office Box 3005  
Fayetteville, North Carolina 28305

Dear Mr. Honeycutt:

*JW VC*

RE: Addendum to Order of Approval for the  
Cliffdale Sanitary Landfill Expansion

The approved plan for the Cliffdale Sanitary Landfill Expansion includes the following required modifications and recommendations:

Required modifications:

1. Soil borings were terminated at elevations of 169 feet to 173 feet; therefore, maximum excavation limits for solid waste disposal shall be terminated at elevations of 179 feet to 183 feet.
2. Surface drainage for the area enclosed by the 200 foot contour line, located on the south perimeter of the present operational phase, must be maintained by excavation below 195 feet in the proposed south perimeter drainage ditch on the expansion phase.

Recommendations:

1. Lateral movement of sub-surface water from off site sources, particularly from the south, toward the proposed expansion may be a potential problem. It is recommended that the south perimeter drainage ditch be excavated to, and channel bottom terminated in, the upper SC or other impermeable soil layers. The upper impermeable soil layers should perch laterally moving water and discharge this water into the south perimeter drainage ditch.
2. Soil borings indicate stratified permeable and impermeable earth material layers on the expansion phase. These layers are tilted from the horizontal in such a manner that highly permeable layers with a gradient to the groundwater table, may be exposed during excavation. If maximum excavation limits are terminated in SM, or particularly SP materials, then any mobile contaminants resulting

Mr. Honeycutt  
Page 2  
October 30, 1978

from landfill activity could be a potential source of discharge to groundwater. To minimize this potential, it is recommended that 24-inch and 48-foot compacted blankets of SC, SC-SM, CL materials be placed over exposed SM and SP lenses respectively. Compaction with a Rex 350 in successive 6-inch layers to 95 percent standard Proctor (ASTM D698, AASHO T99) should be sufficient.

3. Rip-rap may not be sufficient to prevent cutting of discharge area from drainage ditch to sedimentation basin.
4. Consideration should be given to stabilization devices, such as piping, for movement of surface water from the finished landfill face to the toe of perimeter dikes.

If I can be of any assistance to you, please contact me.

Respectfully,

William L. Meyer  
Environmental Engineer  
Solid Waste & Vector Control Branch  
Sanitary Engineering Section

WLM/wss

cc: Mr. Terry F. Dover

October 17, 1978

Mr. Rodney M. Honeycutt, P. E.  
County Engineer  
Cumberland County Joint Planning Board  
801 Arsenal Avenue  
Post Office Box 3005  
Fayetteville, North Carolina 28305

Dear Mr. Honeycutt:

The plan for the Cliffdale Landfill Expansion, located in Cumberland County, has been reviewed and approved with the following conditions:

1. The site be operated in accordance with the approved plan and in accordance with the Division of Health Services' "Rules for Solid Waste Management".
2. The Order of Approval be recorded with the Cumberland County Register of Deeds.

Sincerely,

O. W. Strickland, Supervisor  
Solid Waste Management Unit  
Solid Waste & Vector Control Branch  
Sanitary Engineering Section

OWS/wss

cc: Mr. Terry F. Dover  
Mr. C. L. Twine

Enclosure

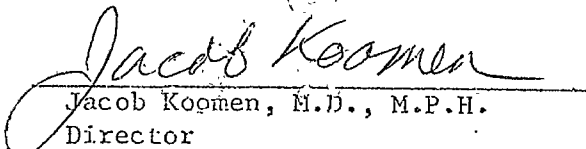
N. C. DEPARTMENT OF HUMAN RESOURCES  
DIVISION OF HEALTH SERVICES  
SOLID WASTE & VECTOR CONTROL BRANCH  
P. O. BOX 2091  
RALEIGH, NORTH CAROLINA 27602

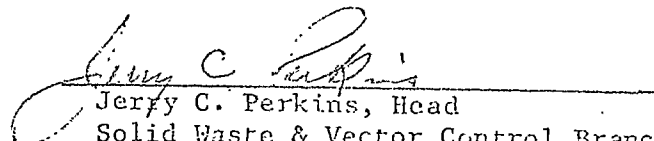
Wake County  
Raleigh, NC

ORDER OF APPROVAL  
for  
Cliffdale Landfill  
Cumberland County :

- I. Order of Approval Issued to C. L. Twine  
on October 17, 19 78.
- II. Required information for evaluating proposed site and operational plans for a sanitary landfill on the below described property has been submitted for review in compliance with the "Solid Waste Management Rules". Those plans are hereby approved for operation with a complete set of the approved plans being returned to the applicant.
- III. Description of Property:  
BEGINNING at a twin poplar, a common corner with Cumberland County (Book 2319, page 567), a line running South 67 degrees 17 minutes East 1,499.42 feet to a new iron pipe, a common corner with David F. McInnis Heirs property; thence with the McInnis line South 69 degrees 27 minutes West 1,000.00 feet to a new iron pipe, a common corner with David F. McInnis Heirs property; thence North 26 degrees 33 minutes West 81.84 feet to a new iron pipe; thence due West 770.34 feet to a new iron pipe, a common corner with Cumberland County property; thence with the Cumberland County line North 22 degrees 49 minutes East 929.50 feet to the beginning, a twin poplar, containing 19.387 acres, more or less, being the same land described in a deed to Alex Bethune (Book 436, page 104) dated December 26, 1941.
- IV. Effective Date: This approval is not effective until the applicant has recorded this document with the Register of Deeds in the county where the sanitary landfill is located. (G.S. 130-166.21)

This is to certify that this is an exact and true copy of the above order of approval.

  
Jacob Koomen, M.D., M.P.H.  
Director  
Division of Health Services

  
Jerry C. Perkins, Head  
Solid Waste & Vector Control Branch  
Sanitary Engineering Section

# CUMBERLAND COUNTY JOINT PLANNING BOARD

801 Arsenal Avenue • P. O. Box 3005



Fayetteville, North Carolina

Telephone (919) 483-8131



October 3, 1978

North Carolina Department of Human  
Resources  
Division of Health Services  
Solid Waste and Vector Control Branch  
Sanitary Engineering Section  
P. O. Box 2091  
Raleigh, North Carolina 27602

Attention: Mr. O. W. Strickland


Re: Cliffdale Landfill Expansion  
Cumberland County, North Carolina

Dear Sirs:

Please find enclosed three (3) copies each of the description of  
the Cliffdale Landfill Expansion property.

Let me know if additional information is required.

Yours truly,

  
RODNEY M. HONEYCUTT  
County Engineer  
Cumberland County Joint Planning Board

RMH/bjc

cc: Mr. Carter Twine  
County Manager

DESCRIPTION

Cumberland County Property

For

Cliffdale Landfill Expansion

Beginning at a twin poplar, a common corner with Cumberland County (Book 2319, page 567), a line running South 67 degrees 17 minutes East 1,499.42 feet to a new iron pipe, a common corner with David F. McInnis Heirs property; thence with the McInnis line South 69 degrees 27 minutes West 1,000.00 feet to a new iron pipe, a common corner with David F. McInnis Heirs property; thence North 26 degrees 33 minutes West 81.84 feet to a new iron pipe; thence due West 770.34 feet to a new iron pipe, a common corner with Cumberland County property; thence with the Cumberland County line North 22 degrees 49 minutes East 929.50 feet to the beginning, a twin poplar, containing 19.387 acres, more or less, being the same land described in a deed to Alex Bethune (Book 436, page 104) dated December 26, 1941.

DIVISION OF ENVIRONMENTAL MANAGEMENT

September 21, 1978

MEMORANDUM TO: R. A. Carter, Coordinator  
Wastewater Management

FROM: Dennis R. Ramsey, Regional Supervisor *DRR*  
Fayetteville Regional Office

SUBJECT: Proposed Expansion  
Cumberland County (Cliffdale) Landfill  
Cumberland County



On September 1, 1978, I received a request from Mr. O. W. Strickland, Supervisor, Solid Waste Management Unit, Department of Human Resources for my comments on the subject expansion. As a result of a staff evaluation plus a site visit by myself and Mr. Bill Bright (Groundwater Hydrologist, Fayetteville Regional Office), the following facts were established.

1. The existing Cliffdale Landfill became operational in 1971.
2. In 1977, the City of Fayetteville began using this landfill.
3. The existing landfill contains 42.01 acres.
4. The proposed landfill site is directly adjacent to the existing landfill and contains 19.39 acres. Of this 19.39 acres only about one half is proposed for use. The rest was not usable due to a small stream that runs through it. This stream is Middle Creek (Class C) and it is the headwaters for Lake Rim.
5. The entire landfill is surrounded by a natural buffer area of trees and brush.
6. No houses are located within 1,000 feet of the proposed site.
7. Four soil borings were made on the proposed site by the Soil Conservation Service. The soil was found to contain layers of silts, silty sand, clayey sand and clay in random patterns.
8. The area filling method will be utilized at the proposed landfill site. There will be a minimum of four (4) feet of undisturbed earth between the lowest excavation and the ground water table.
9. All runoff from this site will be routed through a sediment basin before draining into Middle Creek.
10. Lab analysis run on an existing surface water holding pond at the existing landfill on May 23, 1978, failed to show any signs of chemical pollution. No biological data was available.



Memo to Mr. Carter  
Page 2  
September 21, 1978

11. The existing Cliffdale landfill is projected to be filled in approximately two (2) months.
12. The proposed landfill is only a temporary operation to allow for the establishment of a larger landfill. It is expected to be filled in one year.
13. Mr. Bill Bright has advised me that the proposed site appears to be acceptable (see attached memo).
14. The existing landfill appears to be well operated.

Due to the above facts, it is my recommendation that Mr. Strickland be advised that our office has no objection to the proposed expansion.

If any additional information or clarification is needed, please advise.

DRR/fbc

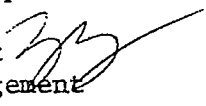
Attachment

DIVISION OF ENVIRONMENTAL MANAGEMENT

September 21, 1978

M E M O R A N D U M

TO: Dennis Ramsey  
Regional Supervisor

FROM: Bill Bright   
Water Management

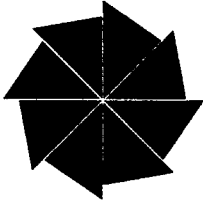
SUBJECT: Cumberland County (Cliffdale) Landfill

An on-site investigation was made of subject landfill on September 19, 1978. The investigation revealed a clay-rich environment and a water table that is at least 30-35 feet below land surface. Further, the present landfill is merely going to be extended and allowances have been made for a suitable buffer.

Therefore, from the standpoint of the groundwater resources of the general area, there is no opposition to extending the landfill.

BB/lr





# North Carolina Department of Natural Resources & Community Development

James B. Hunt, Jr., Governor

Howard N. Lee, Secretary

September 12, 1978



Mr. W. O. Strickland  
Solid Waste and Vector Control Branch  
Sanitary Engineering Section  
North Carolina Department of Human Resources  
Division of Health Services  
P. O. Box 2091  
Raleigh, North Carolina 27602

RE: Cliffdale Landfill Expansion  
Cumberland County

Dear Mr. Strickland:

The Land Quality Section has completed a review of the aforementioned project and we are satisfied that it meets the requirements of the Sedimentation Pollution Control Act of 1973. The erosion control measures indicated on sheet 4 of 8 of the plans and the seeding specifications described on page B-2 of the narrative should adequately control erosion for the site. It will be of utmost importance that these erosion control measures be installed as early as possible and also that all areas such as dikes, slopes, etc., that are brought to final grade, be seeded within 30 days after the grading is completed.

I would like to thank you for the opportunity to review the plan and offer our comments before construction is to begin. If you have any questions, please feel free to contact this office.

Sincerely,

Joe Glass  
Regional Engineer  
Land Quality Section

JG:gc

**PROPOSED LANDFILL EXPANSION**

**CLIFFDALE SITE**

**CUMBERLAND COUNTY, NORTH CAROLINA**

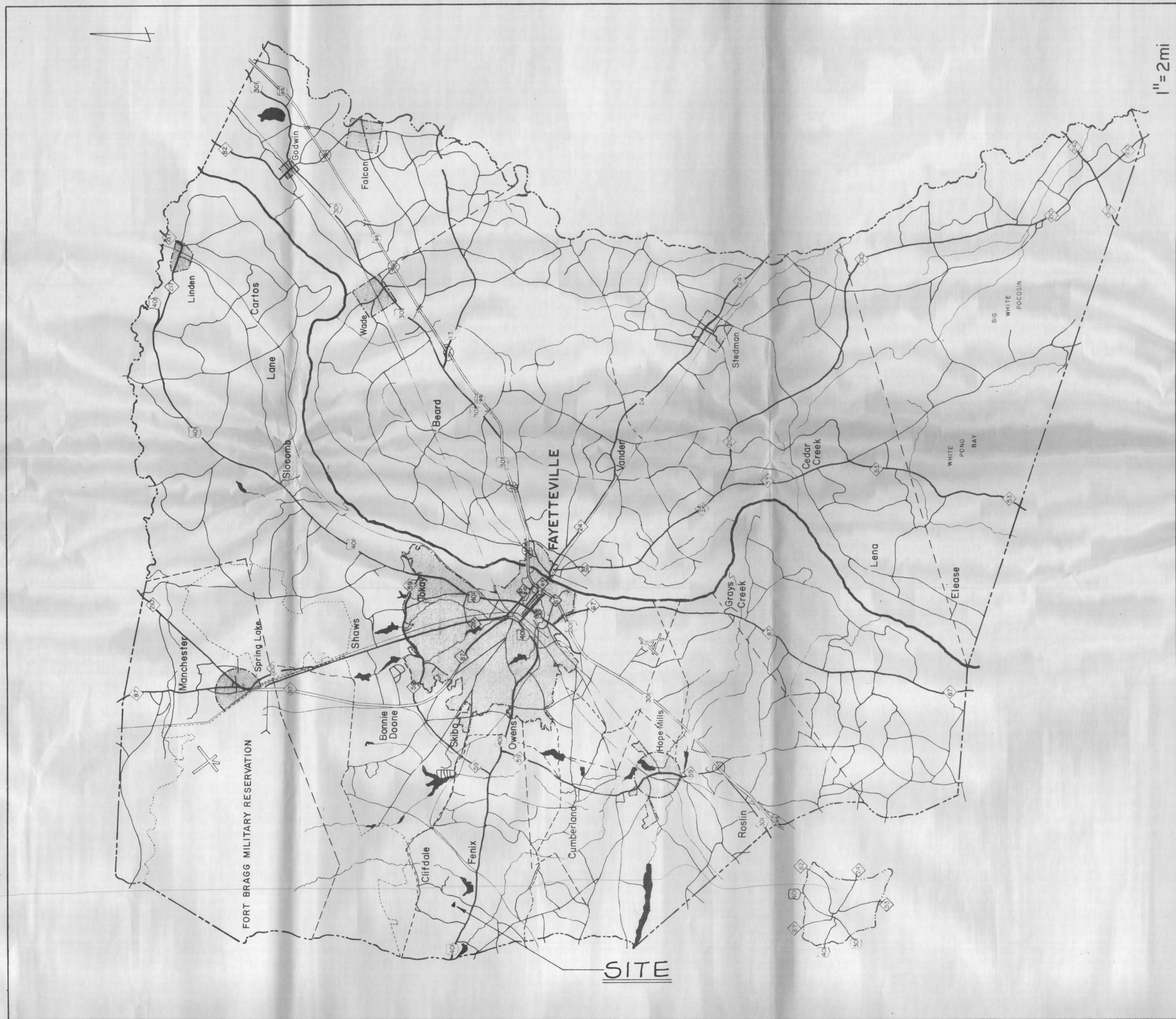


PREPARED BY

CUMBERLAND COUNTY JOINT PLANNING BOARD



AUG 16, 1978



**INDEX**

SHEET No.	TITLE
1	COVER SHEET
2	LOCATION MAP & INDEX
3	ORIGINAL TOPOGRAPHY & BORING LOCATION
4	FINAL TOPOGRAPHY & EROSION-SEDIMENTATION CONTROL PLAN
5	LANDFILL CROSS SECTIONS
6	MISCELLANEOUS PROFILES - CROSS SECTIONS
7	RECORDATION MAP
8	PROPOSED LAND USE AFTER COMPLETION OF SANITARY LANDFILL

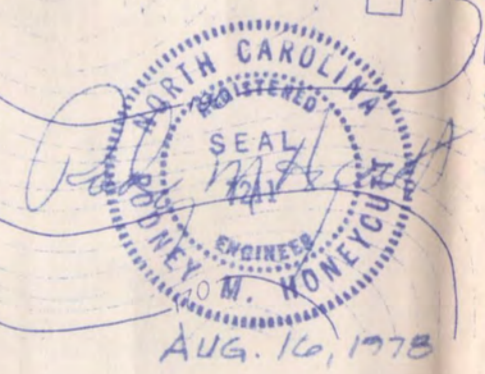
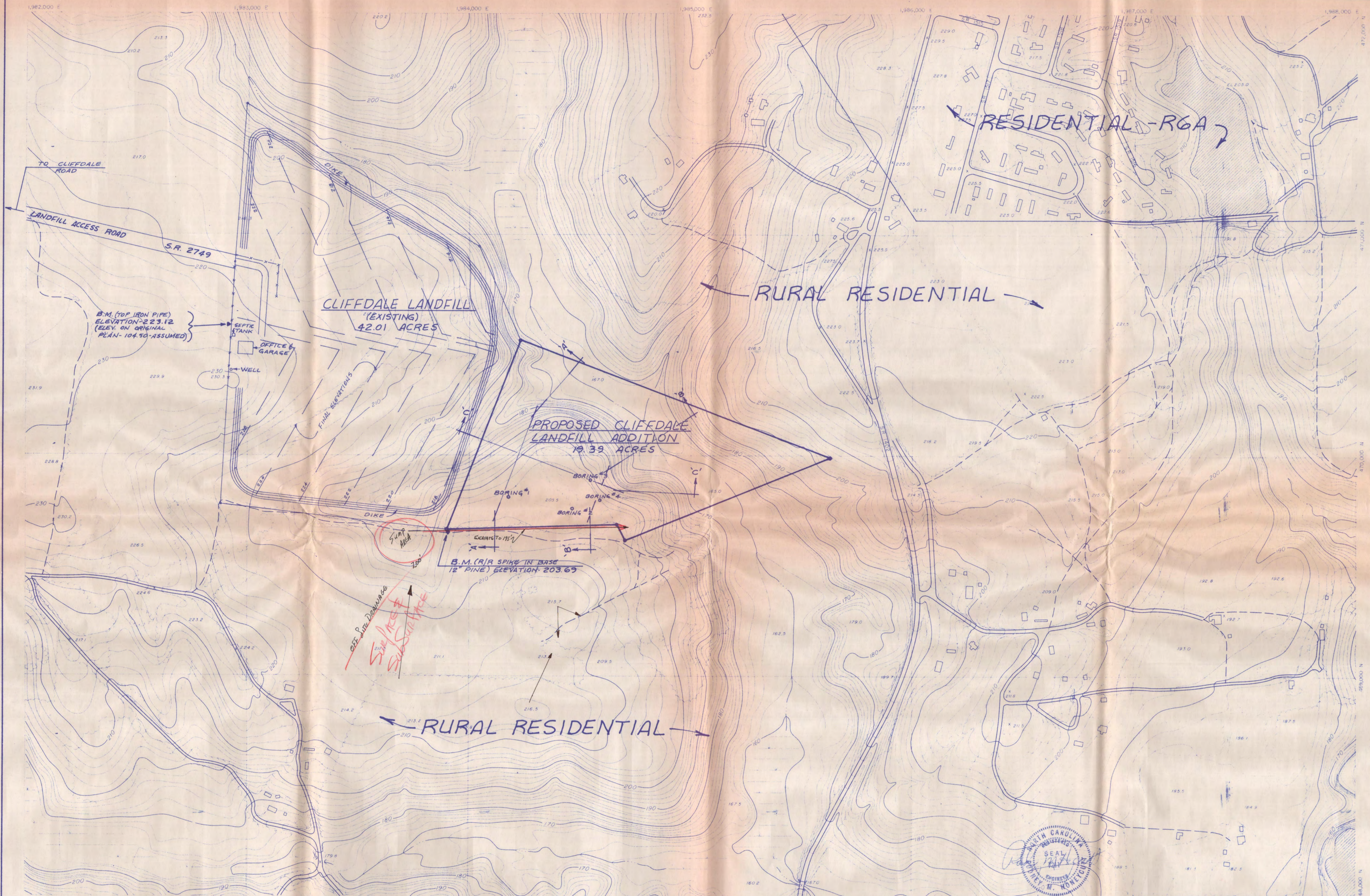
**CUMBERLAND COUNTY  
PLANNING DEPARTMENT**

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**CUMBERLAND COUNTY**  
PROPOSED CLIFFDALE LANDFILL EXPANSION  
LOCATION MAP  
& INDEX

SCALE 1" = 2 MILES      DATE JUG. 78





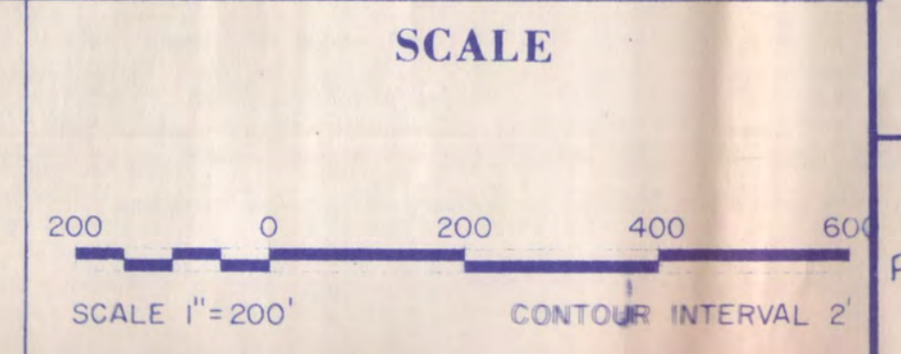
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		INTERSTATE		
		COUNTY		
		U.S.		
		STATE		
		TRAIL		
		RAILROAD		
		FENCE		
		WALL		

# TOPOGRAPHIC MAP

## CUMBERLAND COUNTY

### NORTH CAROLINA

COMPILED BY PHOTOGRAMMETRIC SERVICES INC. FROM AERIAL PHOTOGRAPHY, FLOWN IN THE SPRING OF 1971, IN ACCORDANCE WITH CONTRACT WITH BOARD OF COMMISSIONERS OF CUMBERLAND COUNTY AND ADMINISTERED BY THE CUMBERLAND COUNTY JOINT PLANNING BOARD



**CUMBERLAND COUNTY**  
PLANNING DEPARTMENT

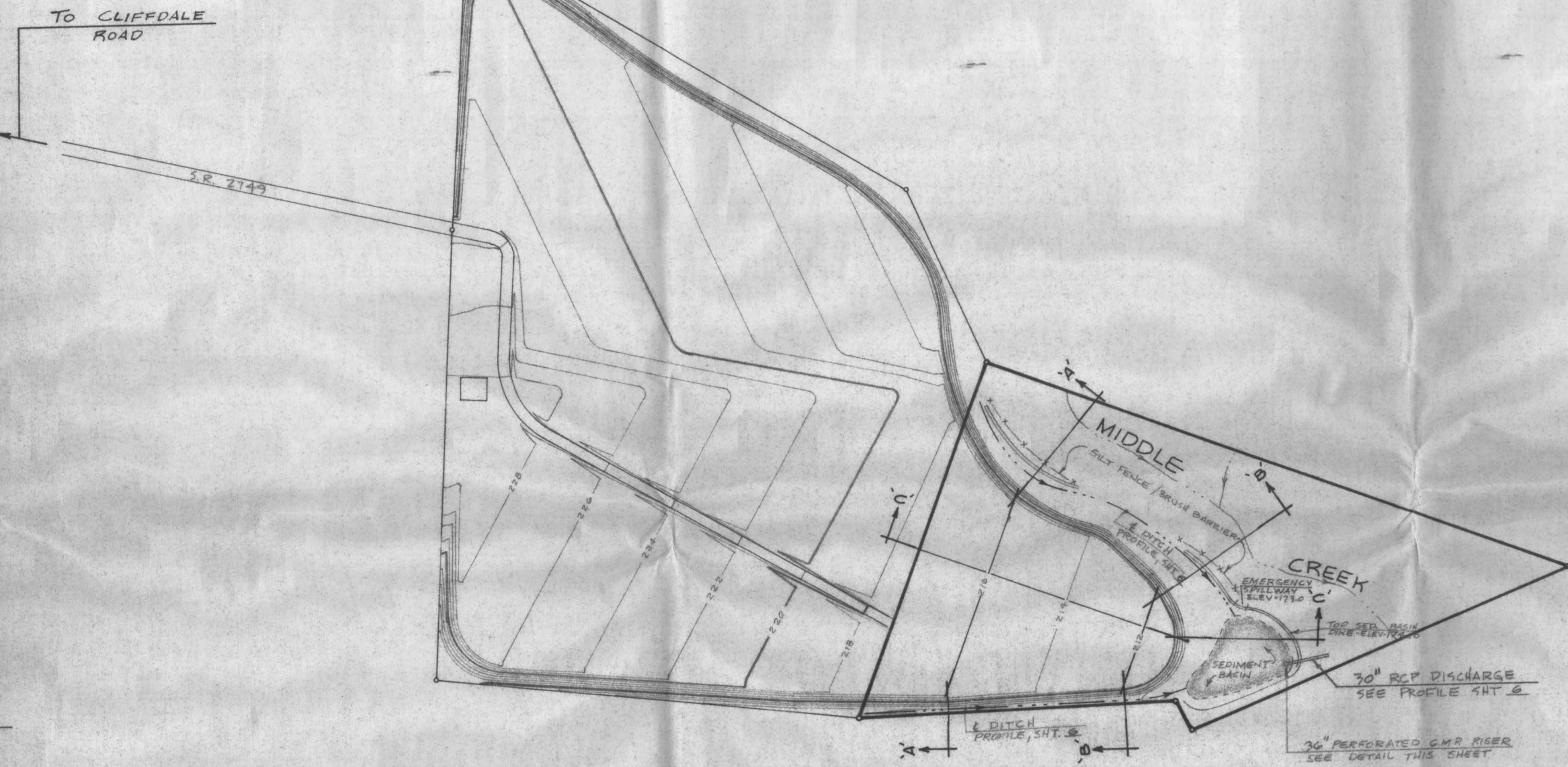
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**CUMBERLAND COUNTY**

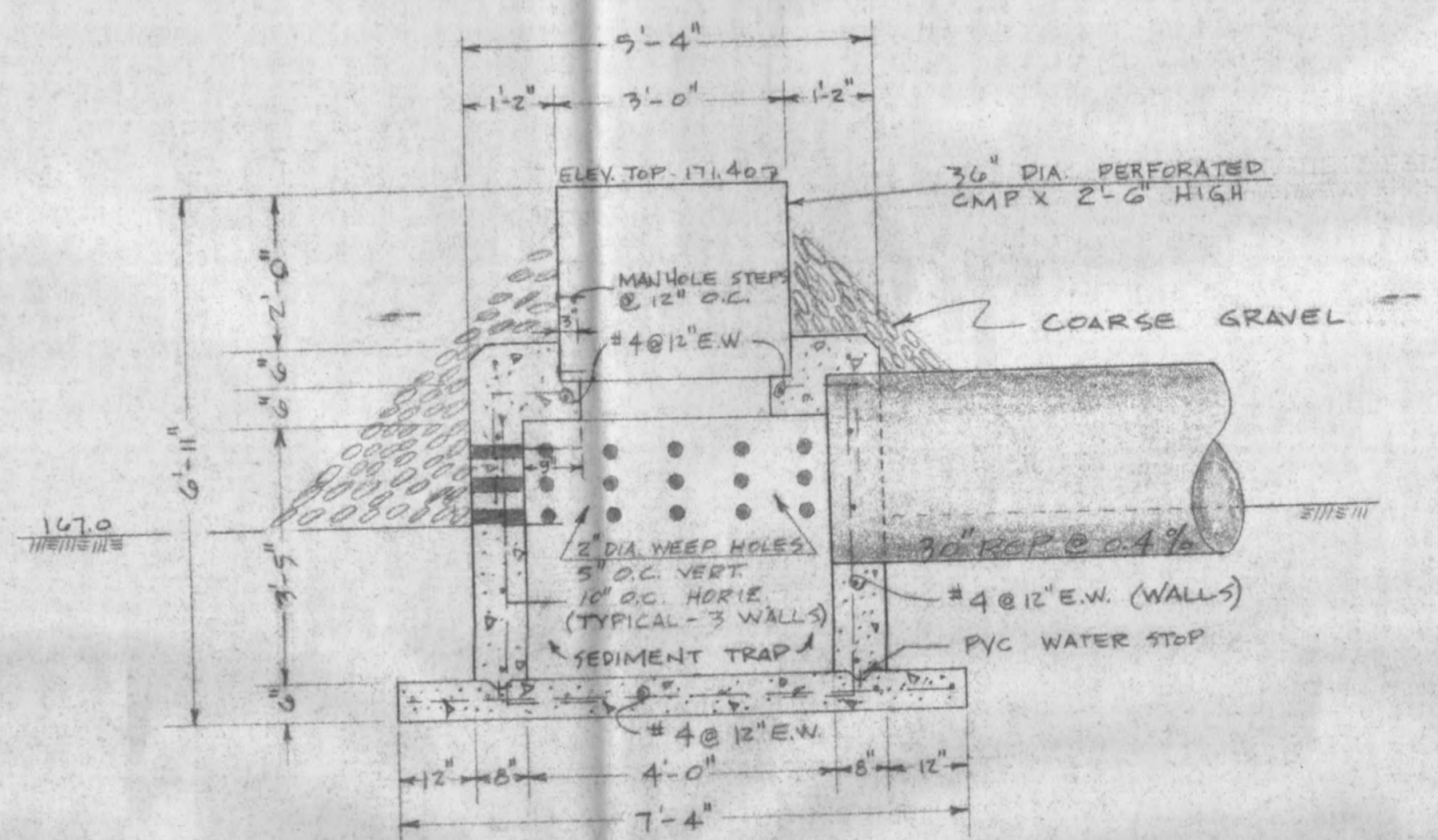
PROPOSED CLIFFDALE LANDFILL EXPANSION

ORIGINAL TOPOGRAPHY  
& BORING LOCATION

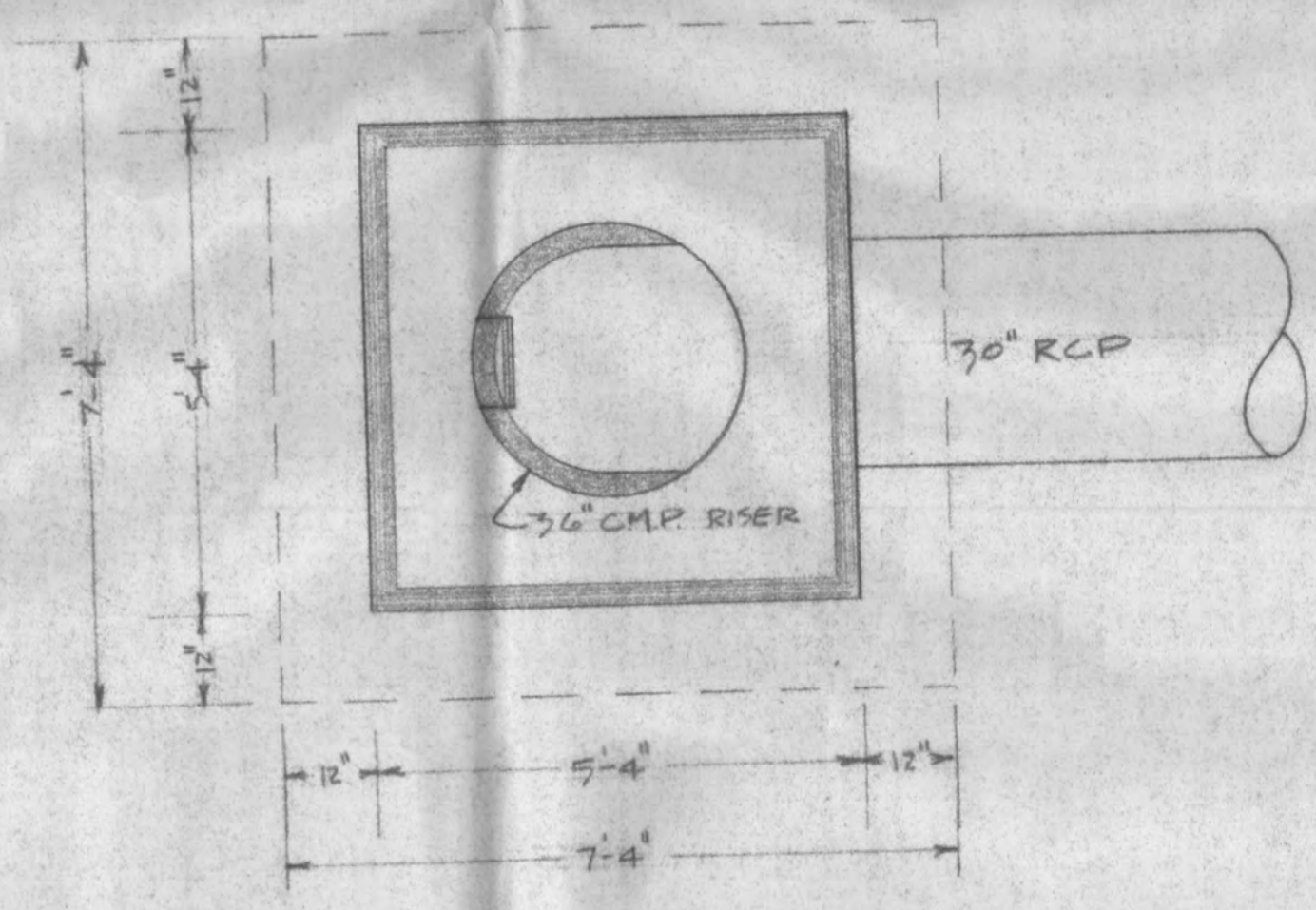
SCALE 1"=200'      DATE AUG. 78



SCALE: 1" = 200'



PLAN VIEW  
PERFORATED CMP RISER DETAIL  
SCALE: 1/2" = 1'-0"



TOP VIEW  
PERFORATED CMP RISER DETAIL  
SCALE: 1/2" = 1'-0"



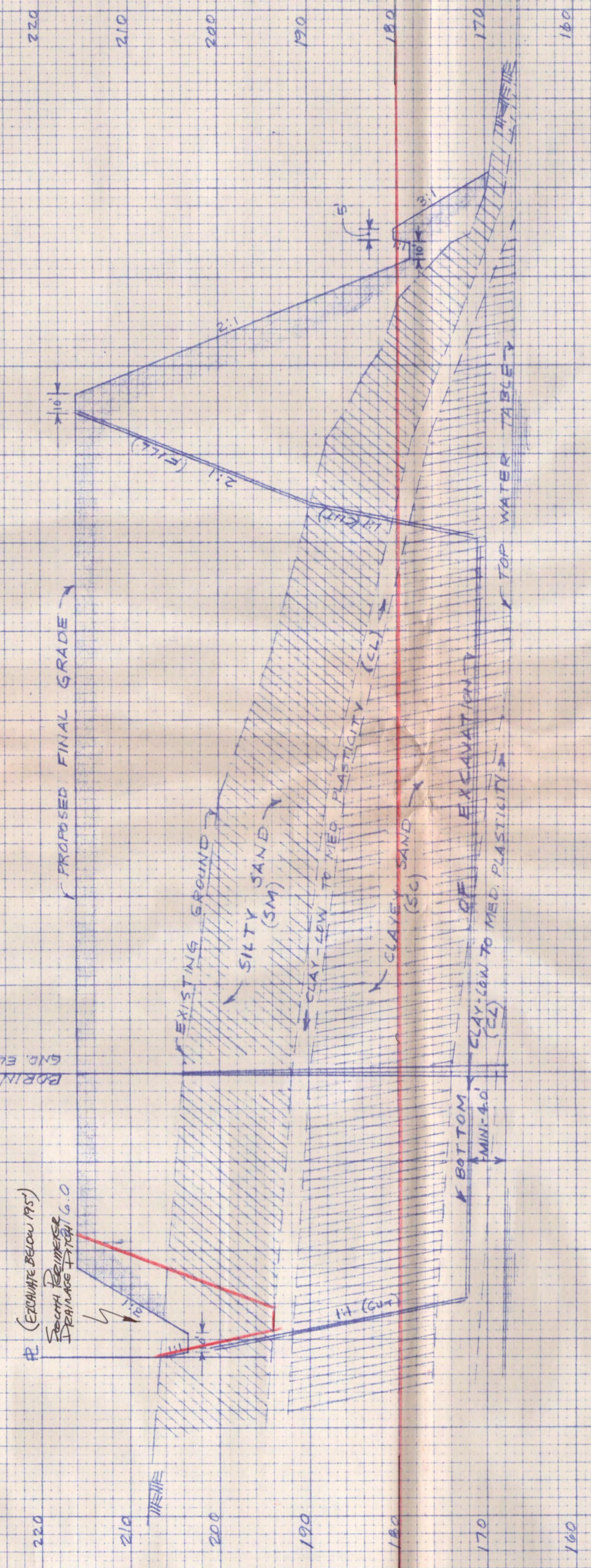
CUMBERLAND COUNTY JOINT PLANNING BOARD  
801 ARSENAL AVE. FAYETTEVILLE, N.C.

CUMBERLAND COUNTY, N.C.  
PROPOSED CLIFFDALE LANDFILL EXPANSION

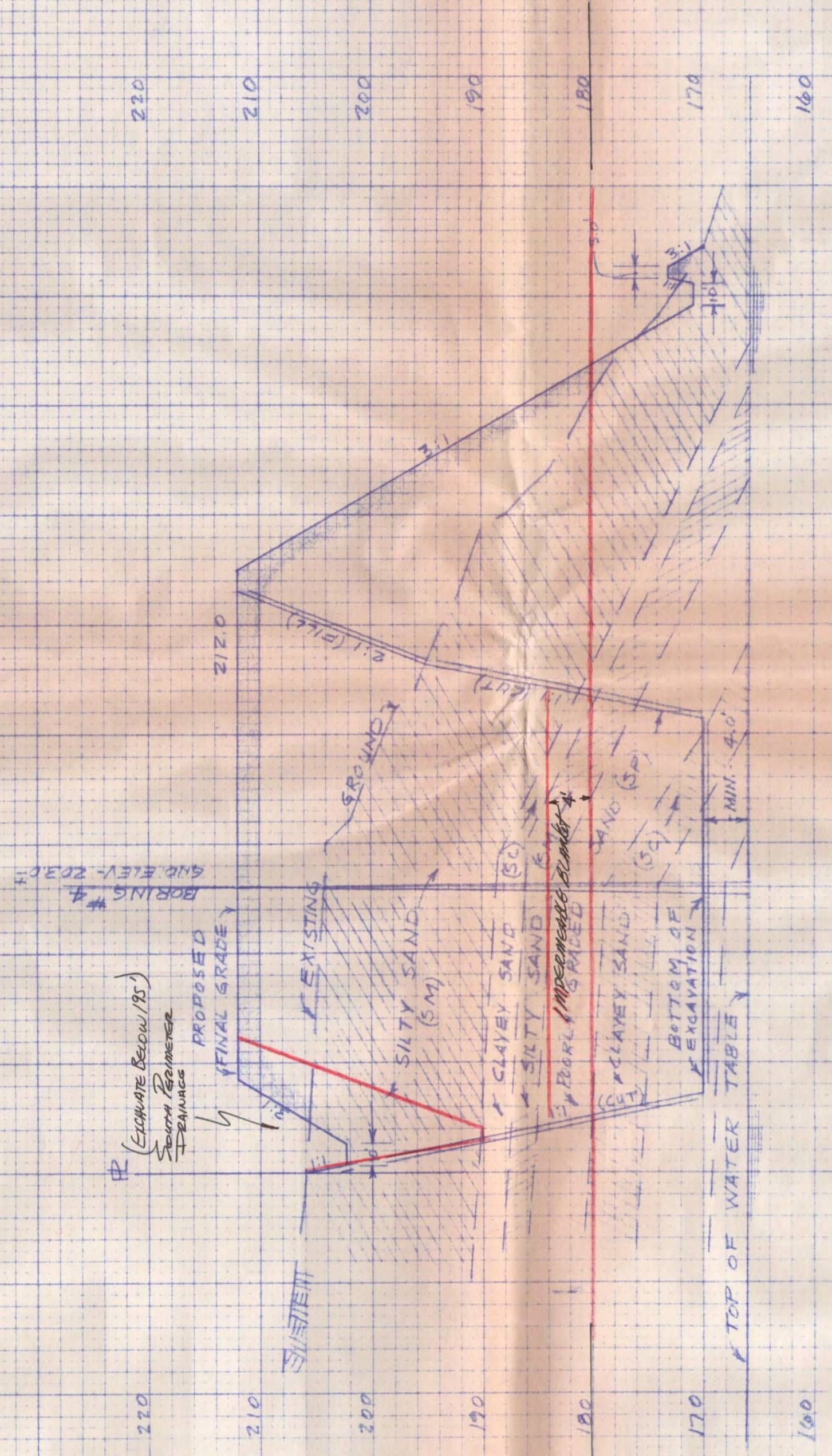
FINAL TOPOGRAPHY  
EROSION-SEDIMENTATION CONTROL PLAN

DATE AUG, '78	DRAFTSMAN RMH	SHEET NO. 4
SCALE As SHOWN	JOB NUMBER	OF 8





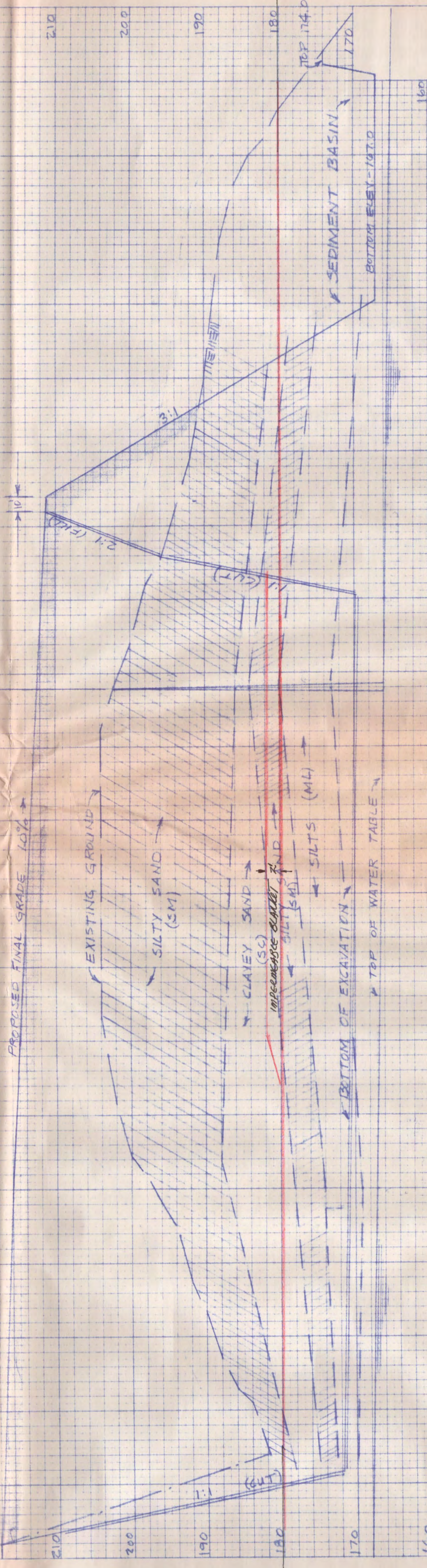
SECTION A-A



SECTION B-B

NOTE: THESE WERE LAYERS NOT RECORDED (PRESUMED TO BE SLIGHT GRADIENT TO STREAM)  
 NOTE: WATER LEVEL APPROX. 15'-0" IN STREAM ABN. TO DYE, WATER TABLE CONTROL BY WATER LEVEL IN STREAM  
 NO DRAINAGE METHOD OF REMOVING SURFACE RUNOFF FROM FINISHED LANDFILL TO TOP OF EXCAVATION ONE  
 Total Volume of Runoff from Channel Not Recoded. Volume of Off-Dike Surface Drainage to Down Dike Drainages  
 Should Be Included in Storage Capacity. (Sediment Basin Considered)

BRING #3  
 GND. ELEV. 202.0 ft



SECTION C-C

NOTE: TO MAINTAIN EXCAVATION LIMITS 180' - SITE EXCAVATED TO BE BELOW 180'  
 (a) SURFACE DRAINAGE DITCH SHALL BE LOCATED TO BE BELOW 180'  
 TO BE OPEN TO MAINTAIN SURFACE DRAINAGE TO THE  
 TO INTERCEPT SURFACE DRAINAGE TO THE EXCAVATION TO BE BELOW 180'  
 TO INTERCEPT SURFACE DRAINAGE TO THE EXCAVATION TO BE BELOW 180'  
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 TO INTERCEPT SURFACE DRAINAGE TO THE EXCAVATION TO BE BELOW 180'



CUMBERLAND COUNTY PLANNING DEPARTMENT

CUMBERLAND COUNTY, N.C.

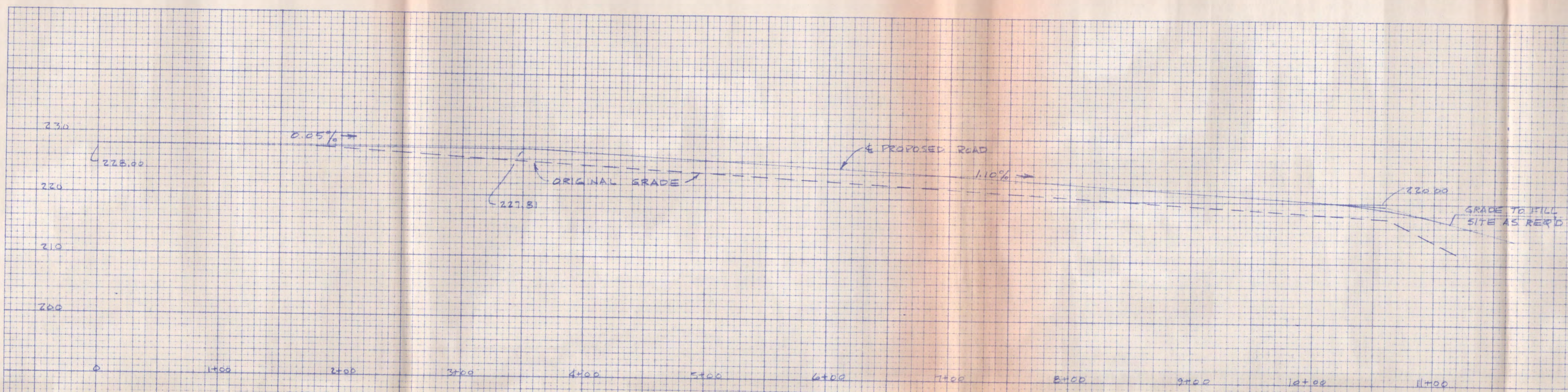
PROPOSED CLIFFDALE LANDFILL EXPANSION

CROSS SECTIONS

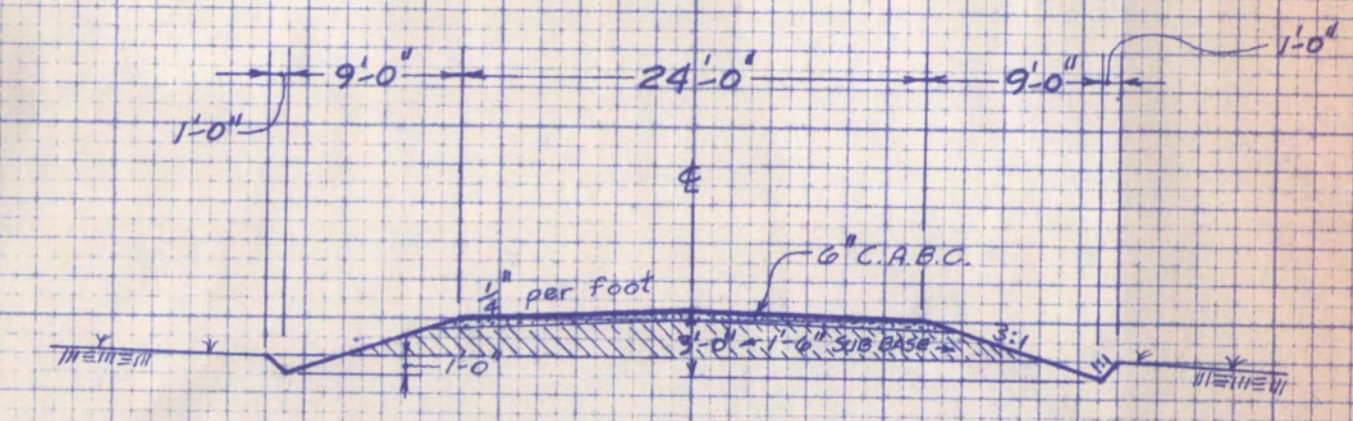
SCALE VERT. 1" = 10'  
 HORIZ. 1" = 50'

DATE July 78

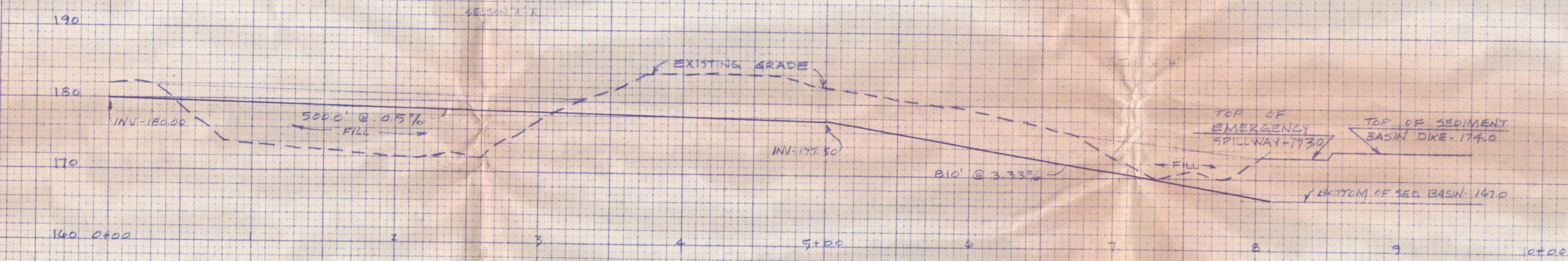
FINAL SURVEY BY DATE  
 SURVEYED PLOTTED  
 NOTE BOOK TEMPLATE  
 NO. AREAS CHECKED



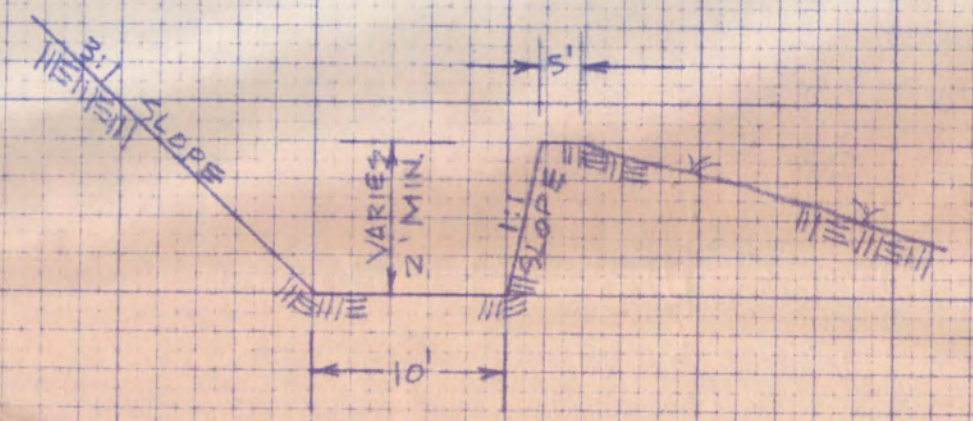
**PROFILE**  
PROPOSED CLIFFDALE LANDFILL EXPANSION ACCESS ROAD  
 SCALE: VERT. 1"=10' ; HORIZ. 1"=50'



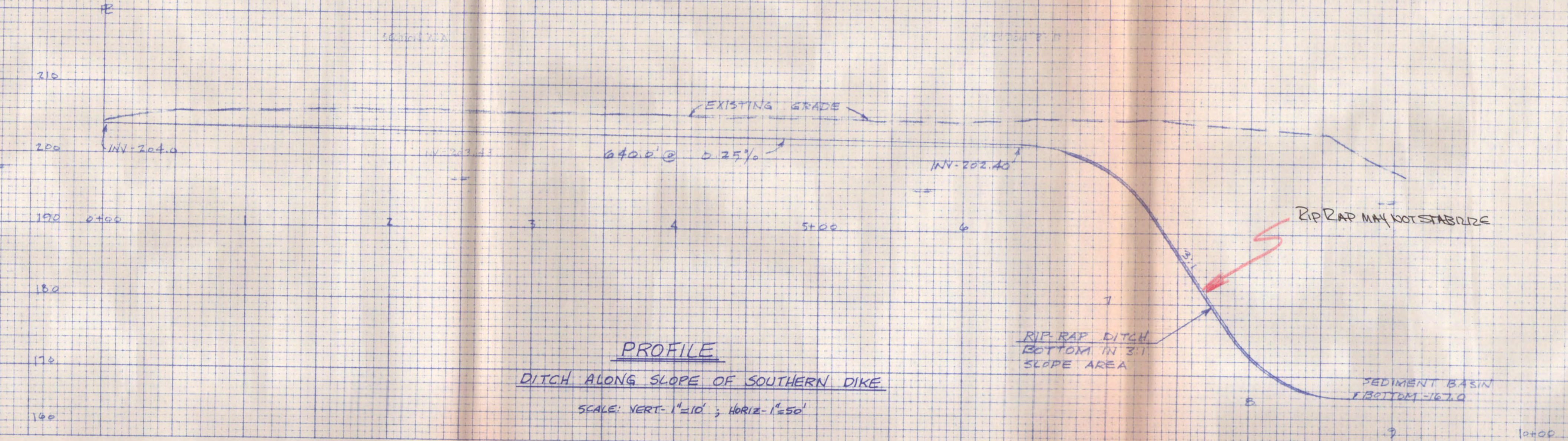
**TYPICAL CROSS SECTION**  
PROPOSED ACCESS ROAD  
 NO SCALE



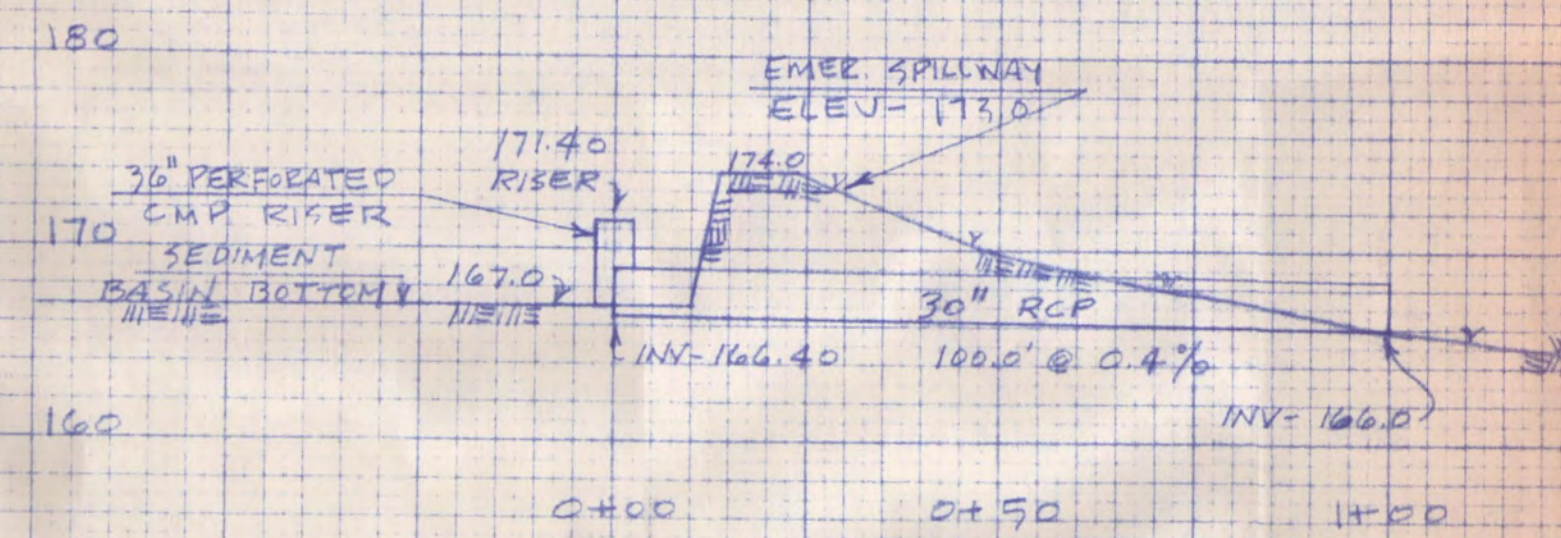
**PROFILE**  
DITCH ALONG SLOPE OF NORTHERN DIKE  
 SCALE: VERT. 1"=10' ; HORIZ. 1"=50'



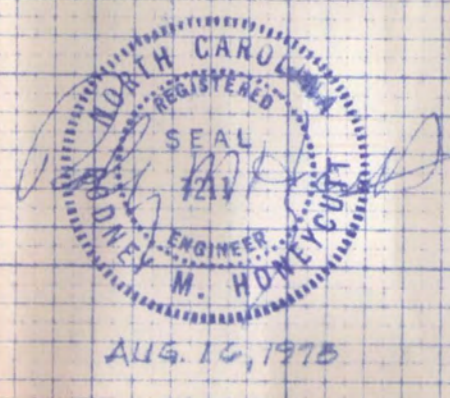
**CROSS SECTION**  
TYPICAL DRAINAGE DITCH  
 NO SCALE



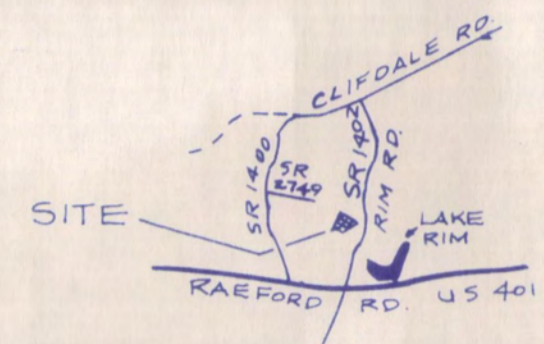
**PROFILE**  
DITCH ALONG SLOPE OF SOUTHERN DIKE  
 SCALE: VERT. 1"=10' ; HORIZ. 1"=50'



**PROFILE**  
SEDIMENT BASIN DISCHARGE PIPE  
 SCALE: VERT. 1"=10' ; HORIZ. 1"=25'



**CUMBERLAND COUNTY**  
**PLANNING DEPARTMENT**  
**CUMBERLAND COUNTY**  
 PROPOSED CLIFFDALE LANDFILL EXPANSION  
 PROFILES-CROSS SECTIONS AS NOTED  
 SCALE AS NOTED DATE AUG. '75



VICINITY MAP  
1" = 1 MILE (APPROX)

WADDELL HOLLIDAY  
Book 489, PAGE 78

I, \_\_\_\_\_, CERTIFY THAT THIS MAP WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION, THAT THE ERROR OF CLOSURE AS CALCULATED BY LATITUDES AND DEPARTURES IS 1/15,000, THAT THIS MAP WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED. WITNESS MY HAND AND SEAL THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, A.D., 1978.

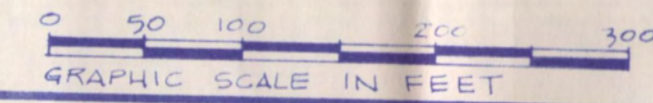
CUMBERLAND COUNTY  
Book 2319, PAGE 567

TWIN  
POPLARS

19.387 ACRES

DAVID F. McINNIS (DECEASED)  
Book 549, PAGE 147

GORDAN B. NEWTON



CUMBERLAND COUNTY  
PLANNING DEPARTMENT

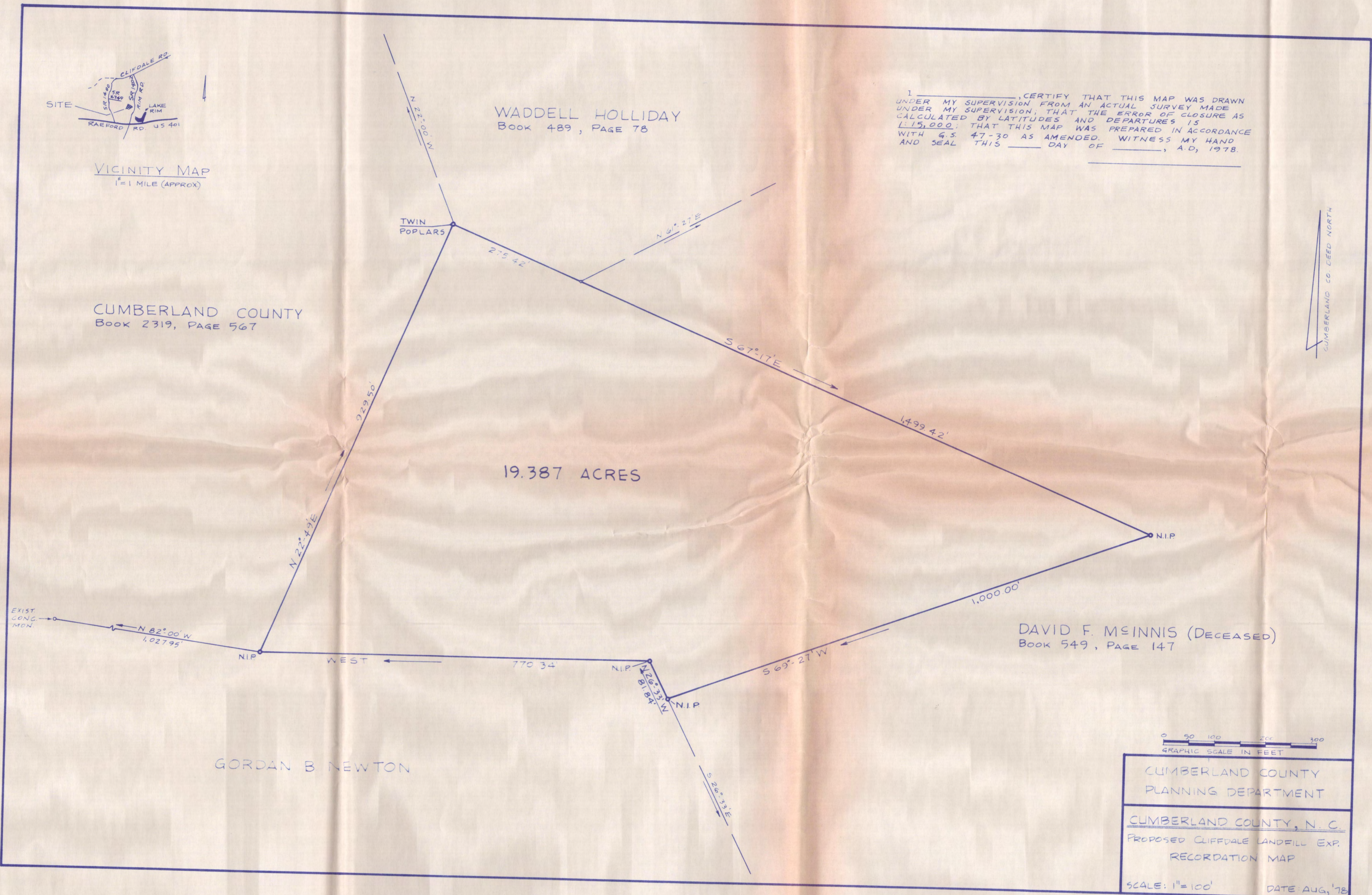
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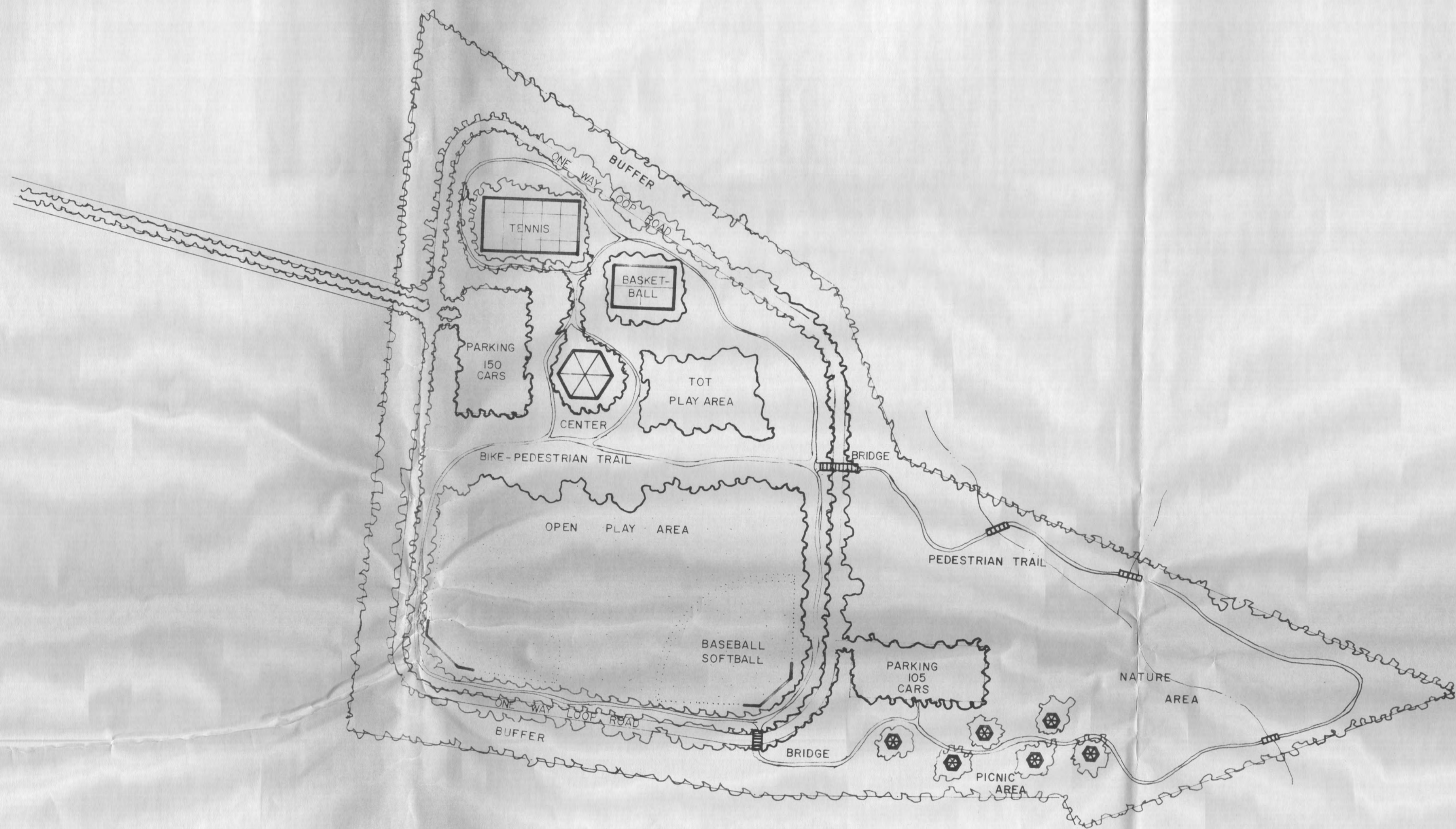
CUMBERLAND COUNTY, N. C.  
PROPOSED CLIFDALE LANDFILL EXP.  
RECORDATION MAP

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SCALE: 1" = 100'      DATE: AUG, '78  
SHEET 7 OF 8

CUMBERLAND CO. DEED NORTH





Aug 16, 1978

**CUMBERLAND COUNTY  
PLANNING DEPARTMENT**

PROPOSED LAND USE  
AFTER COMPLETION  
OF SANITARY LANDFILL.

CUMBERLAND COUNTY  
**SCALE 1" = 200'** **DATE AUG. 78**



REPORT  
PROPOSED

LANDFILL EXPANSION  
CLIFFDALE SITE

CUMBERLAND COUNTY, NORTH CAROLINA

Prepared By

Cumberland County Planning Department

August, 1978



August 16, 1978

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  - B. Buffer
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  - B. Soil Borings
  
- III. DRAINAGE
  
- IV. OPERATIONAL PLANS
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  - B. Material Disposed
  - C. Equipment
  - D. Operational Responsibility
  - E. Future Land Use
  - F. Life Expectancy

## I. SITE DATA

### A. Land Use and Zoning

All zoning within one-fourth ( $\frac{1}{4}$ ) mile of the property purchased for the proposed Cliffdale Landfill expansion is Rural Residential except one residential area to the Northwest zoned R6A. The R6A classification denotes an area consisting of a mix of single and multi-family dwellings and permitting the use of trailer houses. This area is located as shown on plan sheet 3 of 8 approximated 1,150 feet from the landfill property line. Due to topography, this section of county property is not acceptable for sanitary landfill use at this time; therefore all zoning is rural residential within one-fourth ( $\frac{1}{4}$ ) mile of the actual landfill area boundary.

### B. Buffer

The entire landfill is surrounded by a natural buffer consisting of mostly tall pines with medium to thick under brush.

### C. Adjacent Structures

The only buildings located within ( $\frac{1}{4}$ ) mile of the landfill boundary are three (3) rural residents located approximately 1,000-1,200 feet to the southwest. These homes are separated from the landfill by a ridge line and a pine forest with medium under brush.

## II. SUBSURFACE EVALUATION

### A. General

The proposed landfill site is located adjacent to the existing landfill. The soil conditions and water table in the proposed landfill are generally the same types and locations as in the existing landfill.

B. Soil Borings

Soil borings at the proposed landfill site were made by the Cumberland County Health Department assisted by Soil Scientists from the United States Department of Agriculture, Soil Conservation Service. The following table lists the soil classification, depth and elevation of each soil boring.

Boring #1

top gnd. elev. = 204

<u>Depth</u>	<u>Classification</u>
0-12	SM
12-14	CL
14-30	SC
30-35	CL

Boring #2

top gnd. elev. = 205

<u>Depth</u>	<u>Classification</u>
0-15	SM
15-24	SC
24-35	SM

Boring #3

top gnd. elev. = 202

<u>Depth</u>	<u>Classification</u>
0-16	SM
16-18	SC
18-22	SM
22-29	ML

Boring #4

top gnd. elev. = 203

<u>Depth</u>	<u>Classification</u>
0-14	SM
14-17	SC
17-19	SM
19-23	SP
23-29	SC
29-35	CL

Refer to attachment "A" for further information concerning these soil borings.

A permanent bench mark has been established on the southwest corner of the landfill expansion property. The bench mark is a railroad spike in the base of a twelve inch (12") pine tree, elevation 203.69 (sea level elevation). Each soil boring has been located relative to the land fill boundary and the ground elevation of each boring has been established from the permanent bench mark.



### III. DRAINAGE

Middle Creek divides the county property purchased for the proposed landfill expansion. The creek is located in a swamp ranging from 200-500 feet wide. Middle Creek drains the entire landfill expansion property and is headwaters for Lake Rim.

### IV. OPERATIONAL PLANS

#### A. Site Facilities

The office, garage and sanitary facilities at the existing landfill site will remain for the landfill expansion area.

#### B. Disposal Method

The area filling method will be utilized at the proposed landfill site. There will be a minimum of four (4) feet of undisturbed earth between the lowest excavation and the ground water table.

#### C. Erosion-Sedimentation Control

An erosion and sedimentation plan is included on the final topo map, plan sheet 4 of 8. All runoff including runoff from dike slopes will be routed through a sediment basin before draining into Middle Creek. All calculations necessary for the erosion-sedimentation control plan are included as attachment "B".

### V. RECORDATION

A preliminary recordation map is included in the plans. See plan sheet 7 of 8.

VI. OTHER PERTINENT INFORMATION

A. Population-Area Served

The entire county will be served by the landfill including all municipalities. The estimated population to be served is 243,573.

B. Material Disposed

The primary use of the landfill will be for disposing of household, commercial and industrial refuse and rubble.

C. Equipment

Following is a list of equipment available at the landfill site.

1. 250-C Loader
2. Dragline
3. Two Rex 350 Compactors
4. 444 Pan
5. Bulldozer
6. Pickup Truck
7. Five Roll-off container truck
8. Van

D. Operational Responsibility

Roy Washington is responsible for operation and maintenance at the existing and proposed landfill site expansion. The landfill will be operated in accordance with the North Carolina Solid Waste Management Rules as prepared by the Department of Human Resources, Division of Health Services, Sanitary Engineering Section to the best of Mr. Washington's knowledge and abilities.

E. Future Use

A county recreational area is planned for the completed sanitary landfill. See plan sheet 8 of 8 for the preliminary plan.

F. Life Expectancy

The anticipated life time of the landfill expansion is  
12 months.

UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

P. O. Box 64337, Fayetteville, N. C. 28306

June 14, 1978

Mr. Joe P. Gladden  
County Sanitarian  
Cumberland County Health Dept.  
P. O. Box 470  
Fayetteville, N. C. 28302

Dear Mr. Gladden:

On December 22, 1977, Soil Scientists Berman Hudson and Albert Mills assisted County Health Department personnel in boring and recording soils information for a proposed land fill site on Cliffdale Road in Cumberland County.

Six borings were made. Four holes were 35 feet deep, one was 29 feet deep, and one was 14 feet deep. The water table was not evident in any of the holes bored.

Attached are data logged from these borings. Texture classes are presented in the unified system, with a legend attached explaining the symbols used. These data indicate that most of the subject area consists of from 6 to about 15 feet of sandy material underlain by clayey sands and low plasticity clays.

Sincerely yours,

*Berman D. Hudson*

Berman D. Hudson  
Soil Scientist

Attachments

Hole # 1

<u>Depth (ft.)</u>	<u>Texture</u>
0-12	SM
12-14	CL
14-30	SC
30-35	CL

Hole # 2

<u>Depth (ft.)</u>	<u>Texture</u>
0-15	SM
15-24	SC
24-35	SM

Hole # 3

<u>Depth (ft.)</u>	<u>Texture</u>
0-16	SM
16-18	SC
18-22	SM
22-29	ML

Hole # 4

<u>Depth (ft.)</u>	<u>Texture</u>
0-14	SM
14-17	SC
17-19	SM
19-23	SP
23-29	SC
29-35	CL

Hole # 5

<u>Depth (ft.)</u>	<u>Texture</u>
0-6	SM
6-8	SC
8-15	SM-SC
12-30	SC
30-32	SM-SC
32-35	SP

Hole # 6

<u>Depth (ft.)</u>	<u>Texture</u>
0-6	SM
6-8	SC
8-11	CL
11-14	SC-CL

A-

**TYPES OF MATERIAL ENCOUNTERED IN BORINGS**  
(Use one of systems below)

**UNIFIED CLASSIFICATION**

- GW - Well graded gravels; gravel, sand mix
- GP - Poorly graded gravels
- GM - Silty gravels; gravel-sand-silt mix
- GC - Clayey gravels; gravel-sand-clay mix
- SW - Well graded sands; sand-gravel mix
- SP - Poorly graded sands
- SM - Silty sand
- SC - Clayey sands; sand-clay mixtures
- ML - Silts; silty, v. fine sands; sandy or clayey silt
- CL - Clays of low to medium plasticity
- CH - Inorganic clays of high plasticity
- MH - Elastic silts
- OL - Organic silts and silty clays, low plasticity
- OH - Organic clays, medium to high plasticity

**USDA CLASSIFICATION**

- g - gravel
- s - sand
- vfs - very fine sand
- sl - sandy loam
- fsl - fine sandy loam
- l - loam
- gl - gravelly loam
- si - silt
- sil - silt loam
- cl - clay loam
- sicl - silty clay loam
- scl - sandy clay loam
- sic - silty clay
- c - clay

1. Suitable material for embankment is available  Yes  No (Indicate where located on the sketch on reverse side)

REMARKS:

2. Explain hazards requiring special attention in design. (Seepage, spring, rock etc.)

GENERAL REMARKS:

PROPOSED CLIFFDALE LANDFILL EXPANSIONErosion-Sedimentation Control  
Including Runoff Calculations1. KNOWN DATA

- a. Soil type - Lucy 1s - Hydrologic group A  
Wagram 1s - Hydrologic group A
- b. Drainage Area - 35 Acres (Maximum)
- c. 2 year - 24 hour rainfall - 3.8 inches  
10 year - 24 hour rainfall - 5.8 inches  
25 year - 24 hour rainfall - 6.8 inches
- d. Pasture or range poor (for design) condition

Use curve number 49

- e. Slope - 1% - use correction factor 1.00 on ES sheet labeled flat for peak flow.

2. PEAK DISCHARGE

2 year	-	6.5	cfs	these figures are high
10 year	-	22.0	cfs	since CN of 49 is not
25 year	-	31.0	cfs	available-using CN 60

3. DESIGN

- a. use 10 year flow

22.0 cfs @ 0.4% slope

use 30" RCP - cap. approx. 26.0 cfs

- b. use 36" perforated rise pipe w/ anti vortexing device at entrance

- c. Max discharge Velocity - 5.2 ± fps

10 year storm discharge velocity - 5.1 ± fps

2 year storm discharge velocity - 3.7 ± fps

- d. Since drainage is into a swamp immediately ahead of Lake Rim, velocity will not cause an erosion problem (due to Lake - Swamp stilling effect). But should erosion become a problem due to velocity, rip-rap will be installed along effluent channel.

- e. Upon completion of dike, slopes will be immediately seeded and mulched as follows:

(assumed seeded in fall)

50# tall fescue grass per acre

Mulch - 1½ tons straw per acre

1000# 10-10-10 fertilizer per acre

2 tons agriculture lime per acre

- f. Upon completion of landfill or any area thereof, it will be seeded the same as (e) immediately.



# CUMBERLAND COUNTY JOINT PLANNING BOARD

801 Arsenal Avenue • P. O. Box 3005



Telephone (919) 483-8131

Fayetteville, North Carolina 28305



August 16, 1978

North Carolina Department of Human  
Resources  
Division of Health Services  
Solid Waste & Vector Control Branch  
Sanitary Engineering Section  
P. O. Box 2091  
Raleigh, North Carolina 27602

Re: Cliffdale Landfill Expansion  
Cumberland County, North Carolina

Dear Sirs:

We are enclosing three (3) copies each of the plans and report for the proposed expansion of the Cliffdale Landfill Site. Please review these items at your earliest convenience.

Let us know if we can provide you with additional information.

Yours truly,

Rodney M. Honeycutt, P.E.  
County Engineer

RMB/bjc

cc: Mr. Carter Twine, County Manager  
w/Enclosure

Mr. Joe Glass w/Enclosure

7/11

NORTH CAROLINA  
DEPARTMENT OF HUMAN RESOURCES

DIVISION OF HEALTH SERVICES  
SOUTH CENTRAL REGIONAL OFFICE  
225 GREEN STREET  
WACHOVIA BUILDING — SUITE 506  
FAYETTEVILLE, NORTH CAROLINA 28301



April 10, 1978

Mr. Lacy Williams, Jr., R. S.  
Director of Environmental Health  
✓ Cumberland County Health Department  
Post Office Box 470  
Fayetteville, North Carolina 28302

*JTK*  
Dear Mr. Williams:

Mr. Joe Gladden and myself made a site evaluation on the 32 acre tract of property located adjacent to the present Cliffdale landfill Friday, April 7, 1978.

I foresee no problems in developing this site into an additional phase for your present landfill operation. My only stipulation would be that a 100 foot buffer be required between the creek and any part of the landfill development.

If you have any further questions or if I may be of assistance to you, please do not hesitate to contact me.

Sincerely,

*Terry F. Dover*  
Terry F. Dover  
District Sanitarian  
Solid Waste & Vector Control Branch

TFD:jbr  
cc: Mr. O. W. Strickland

NORTH CAROLINA  
DEPARTMENT OF HUMAN RESOURCES

DIVISION OF HEALTH SERVICES  
SOUTH CENTRAL REGIONAL OFFICE  
225 GREEN STREET  
WACHOVIA BUILDING — SUITE 506  
FAYETTEVILLE, NORTH CAROLINA 28301

August 29, 1977

Mr. Carter L. Twine, County Manager  
County of Cumberland  
Post Office Drawer 1829  
Fayetteville, North Carolina 28301

Dear Mr. Twine:

This letter is to inform you of the conditions found at the Cliffdale-Cumberland County landfill on my routine inspection of August 25, 1977. Accompanying me on my inspection was Mr. John Johnson, Regional Engineer, Land Quality Section, Department of Natural and Economic Resources. Mr. Johnson's concern is sedimentation and erosion control of which he is making evaluations of all sanitary landfills within the southeastern region.

As you may or may not be aware, Mr. Johnson's office becomes concerned with erosion problems when the sedimentation from said erosion either (1) enters a flowing stream, or (2) erodes onto adjacent property. We have both of these problems at the Cliffdale landfill. These problems have been developing over the last eight months and they have been duly noted on the last three inspection reports. To correct the problems we must rework silt fences and regrade and reseed all dyke slopes.

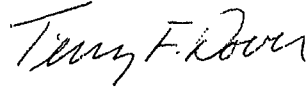
Concerning the day-to-day operation of the landfill, I was most disappointed. The morning of the inspection all landfill equipment was inoperative. Waste was spread out over at least one acre of ground with the necessary compaction and coverage with earth nonexistent. As I stated to you in our meeting, Cumberland County-Cliffdale landfill volumewise is one of the ten largest landfills in this state. You are grossly underequipped to handle the volume of waste and operate a good solid waste disposal site. This office must insist that improvements be made in the daily operation.

We would be happy to give you all the assistance possible in helping to eliminate the problems.

Mr. Carter L. Twine, County Manager  
Page Two  
August 29, 1977

If you have any questions or if we can be of further assistance to you, please do not hesitate to contact us.

Sincerely,



Terry F. Dover  
District Sanitarian  
Solid Waste & Vector Control Branch

TFD:jbr

cc: Mr. O. W. Strickland  
Mr. Lacy Williams, Jr.

March 7, 1977

Mr. Lucy Williams, Jr.  
Director, Environmental Health  
Cumberland County Health Department  
515 Person Street JWR  
Fayetteville, North Carolina 28302

Dear Mr. Williams:

Your request for review and approval of the revised plans for the Cumberland County sanitary landfill located near Cliffdale has been received. The proposed revisions have been found to be acceptable and are hereby approved with the following conditions:

1. The operations are to conform to the requirements of the Department of Natural Resources, Division of Health Services "Solid Waste Management Rules".
2. Operating conditions specified in prior approvals are a part of this approval.

This site having been originally approved in May, 1972, has not had the documents prepared for site recordation. At your option, these documents can be prepared upon receipt of the site description in narrative form.

If this office can be of further assistance, do not hesitate to call.

Yours truly,

Jerry G. Forline, Head  
Solid Waste & Vector Control Branch  
Sanitary Engineering Section

JCF:bn

cc: Mr. Terry F. Dover

112

NORTH CAROLINA DEPARTMENT OF HUMAN RESOURCES  
DIVISION OF HEALTH SERVICES

OFFICE MEMORANDUM

2-15-77

DATE

TO: Mr. Perkins  
FROM: T.F.D.  
RE: Enclosed plans

Please find enclosed proposed changes in the final elevations at the Cumberland Co. Clift Dale Landfill. I discussed the changes with Mr. Williams and feel they are appropriate to eliminate excess cover material.



# Health Department

County of Cumberland

Fayetteville, N.C. 28302

February 10, 1977



Mr. Terry F. Dover, District Sanitarian  
Solid Waste & Vector Control Branch  
Division of Health Services  
South Central Regional Office  
Wachovia Bank Building, Suite 506  
225 Green Street  
Fayetteville, North Carolina 28301

Dear Mr. Dover:

As per your instructions a few days ago please find revised plans for Cliffdale or Cumberland County, North Carolina, landfill for your review and for your colleagues' review and approval.

As you know, due to the amount of excavation that remains to be done in the area to be filled and use of the excess dirt that will come from these excavations including the existing enormous stock pile of dirt on the completed area, we respectfully request these proposed changes. I trust that these are in keeping with your comments expressed recently.

1. Using Cross Section Line "B" (see plans) as the dividing line for Cliffdale landfill, the area to the south of this line will be raised eight feet more than the original plans. This will be done with approximately six feet of garbage and two feet of earth cap.
2. The area to the north of Section Line "B" has been filled and capped. This area will have an additional two feet of dirt distributed over it. We propose to make the lift beginning at Section Line "B" at finished grade as shown on the plans. We will then have a one-foot rise in every 15.5 feet. This will peak approximately 100 feet south of Section line "B". We will then maintain a slope of not more than one per cent. The finished grade will slope to the south and to the east.

If we can be of further assistance, please let us know. However, it is hoped at this time that the information submitted as an addendum to this section will suffice.

Very truly yours,

A handwritten signature in cursive script that reads "Lacy Williams, Jr.".

Lacy Williams, Jr., R. S.  
Director of Environmental Health

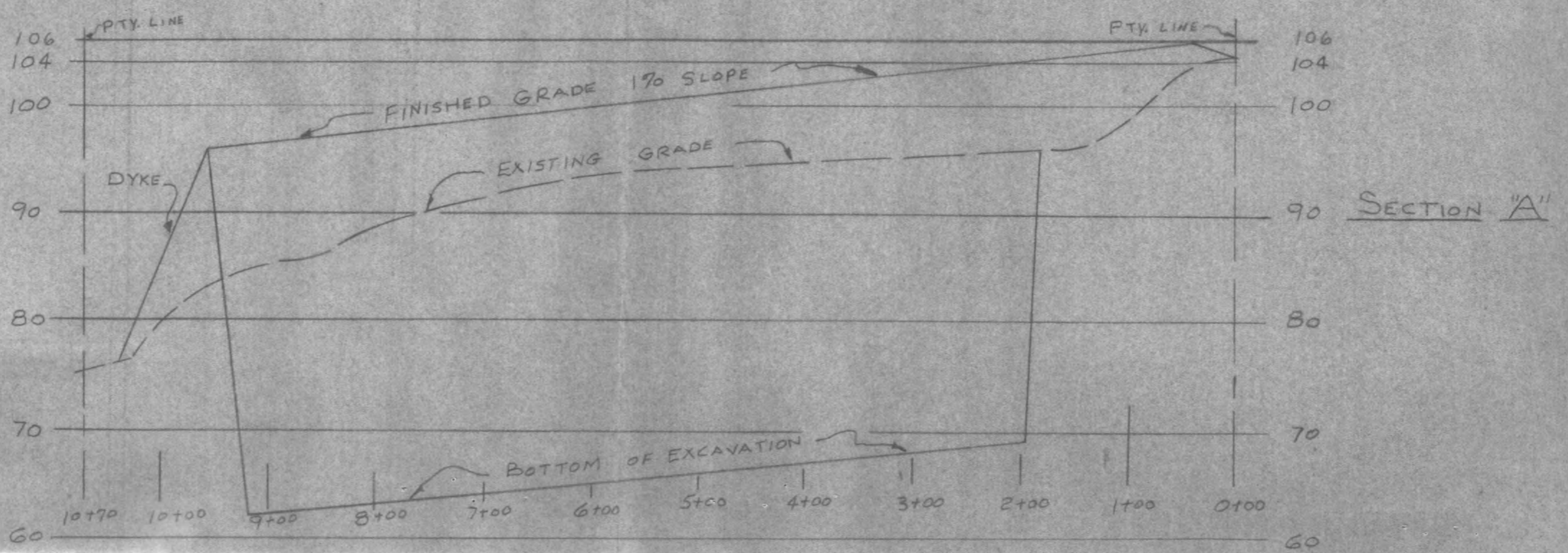
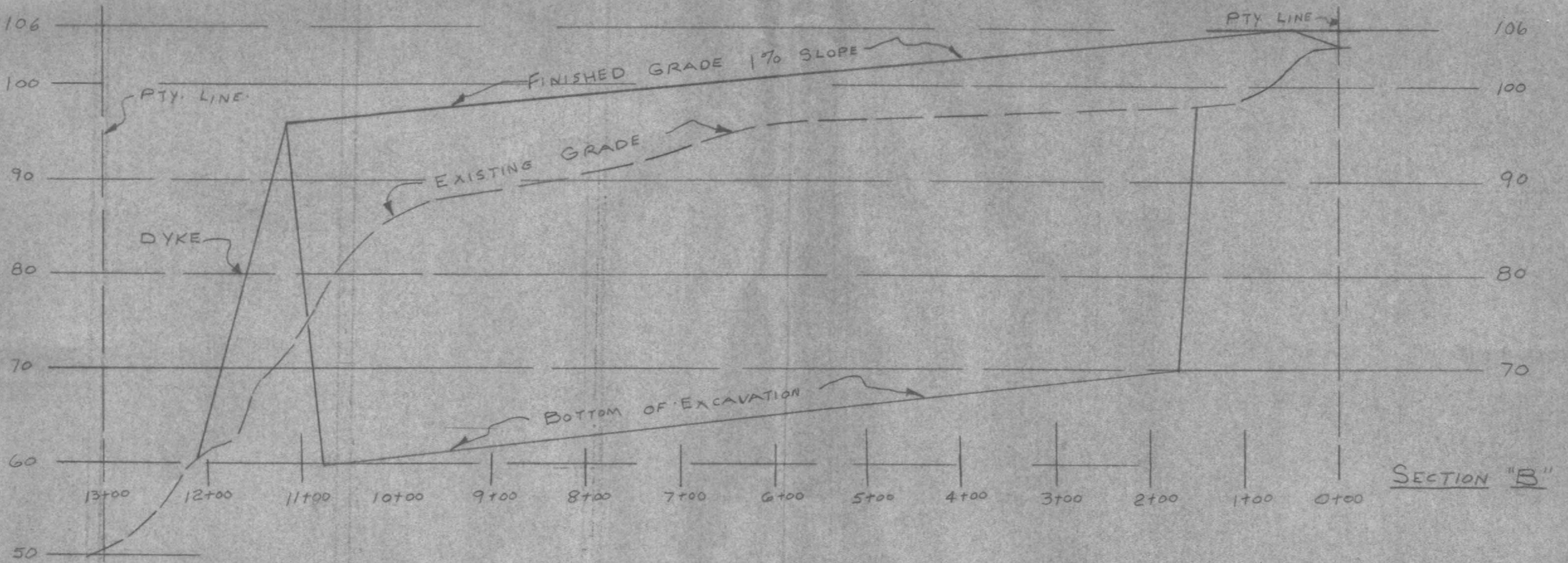
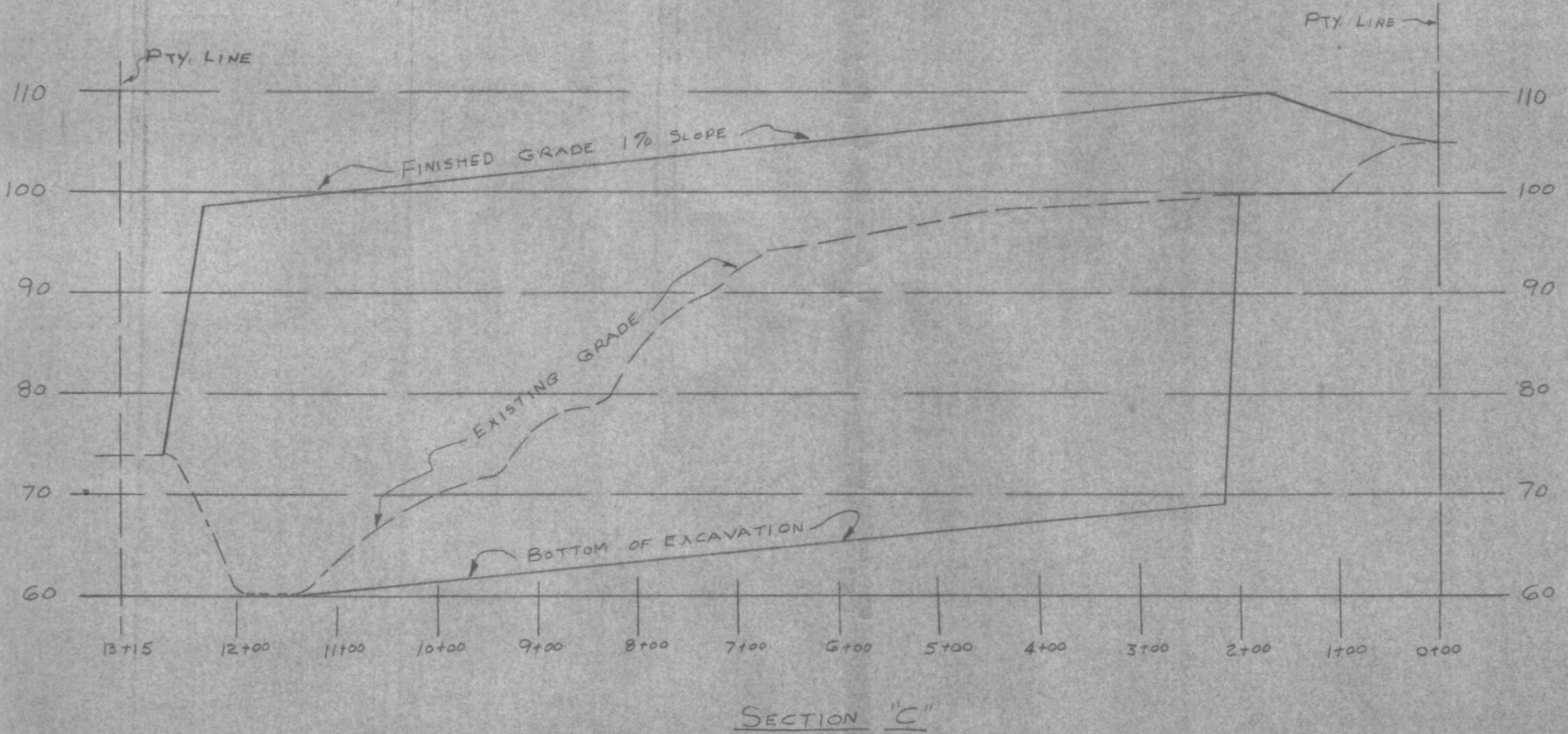
Enclosures

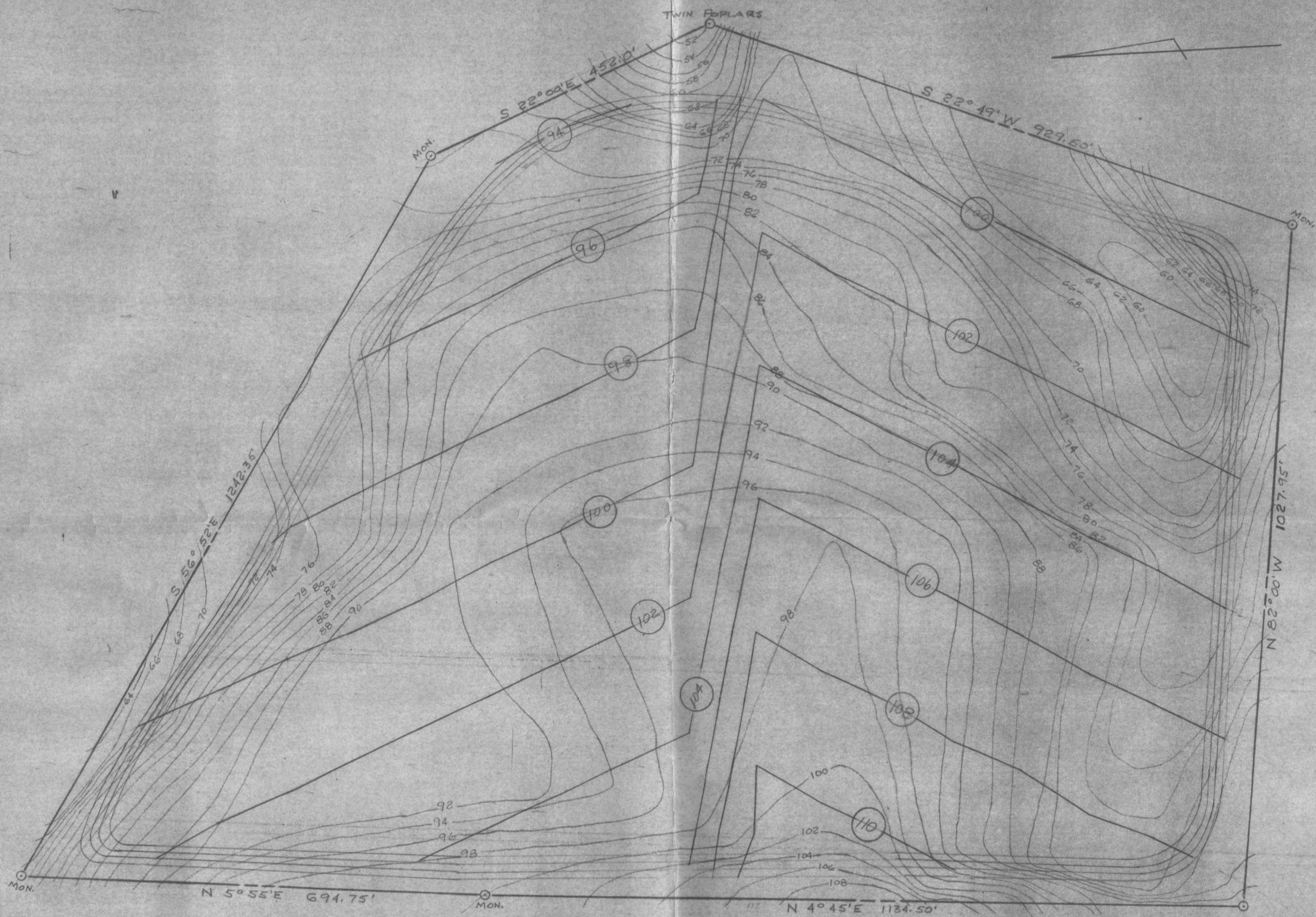
cc: Joseph S. Canady





CROSS SECTIONS  
CLIFFDALE LANDFILL  
 71<sup>ST</sup> TWSR CUMBERLAND CO.  
 DATE JAN. 1977  
 SCALE: HORIZ 1"=100' VERT. 1"=10'





100 FINISHED ELEVATIONS

### CLIFFDALE LANDFILL

71<sup>ST</sup> TOWNSHIP CUMBERLAND COUNTY, N.C.  
 DATE: JAN. 1977  
 SCALE: 1"=100'

*diff/dale*

December 19, 1974

Mr. Lacy Williams, Jr., R. S.  
Director of Environmental Health  
Cumberland County Health Department  
Fayetteville, N. C. 28302

Dear Mr. Williams:

The revised operational plans for the Cumberland County Sanitary Landfill off S.R. 1400 have been reviewed and the following applies:

1. The plans are hereby approved for operations meeting the requirements of the N. C. Department of Human Resources, Division of Health Services "Rules and Regulations Providing Standards for Solid Waste Disposal."
2. As referenced in the original approval, a separation distance of at least three feet is to be maintained between waste placed in excavated areas and the site's ground water table.
3. Although 1% finished grades have been designated, it is recommended that diversion berms for surface water control be developed as the site development progresses. Also step-down facilities, such as drop boxes with inlet and outlet pipe or paved spillways should be considered for surface water and erosion control where major portions of the surface water spill over the completed dike.

If this office can be of further assistance, do not hesitate to call.

Yours truly,

Jerry C. Perkins, Assistant Head  
Solid Waste & Vector Control Branch  
Sanitary Engineering Section

JCP/ct  
Enclosure

cc: Mr. Terry Dover

# Health Department

County of Cumberland

Fayetteville, N. C. 28302

December 11, 1974



Department of Human Resources  
Division of Health Services  
Sanitary Engineering Division  
Solid Waste and Vector Control  
Post Office Box 2091  
Raleigh, North Carolina 27602

RE: Cliffdale Sanitary Landfill  
(Formerly 71st Area Landfill)

Gentlemen:

In accordance with instructions outlined in the State Board of Health Bulletin Number 411, dated March 11, 1971, we are enclosing three copies each of the following proposed changes in the operation of subject landfill. Original plans and operational procedures approved by your office on May 23, 1972.

- A. Plat plan (sheet no. 1) indicating property boundaries, dimensions, existing elevations, service roads, fences, gates, buildings, well, septic tank and bulk roll-off containers, also diversion drainage ditch, dyke and location of cross section cuts. Plan also shows area completed with final cover and seeded. Sheet number two indicates cross section of cuts, existing grades, excavations and finished grade. Sheet number three indicates finished elevations of completed site.
- B. Pertinent information regarding proposed operational changes are as follow:
  1. Population and area served;
    - a. 152,000 estimated total.
    - b. Rural Cumberland County including towns of Spring Lake, Hope Mills and Stedman.
  2. Anticipated type, quantity and source of material to be disposed of at site: household, commercial and industrial solid waste, estimated 2,000<sup>+</sup> plus cubic yards per day.
- C. Plans for development of entire remaining portion of property utilizing area method of disposal.
- D. Daily maintenance will be performed by Cumberland County using the following listed equipment: one Rex 350 Trashmaster Compactor, one International 250 front-end loader; one International 22 cubic yard scraper pan and one Allis-Chalmers 7-G front end loader.

Department of Human Resources

Page 2

December 11, 1974

- E. All other aspects will remain the same as previously approved by your office with the exception of the hours of operation of landfill proper. Operational hours to be in accordance with needs and demands of public as posted at entrance gate.
- F. To the best of my knowledge at this time the sanitary landfill site will be operated in accordance with the rules and regulations and standards for solid waste disposal as set forth by the North Carolina State Board of Health.

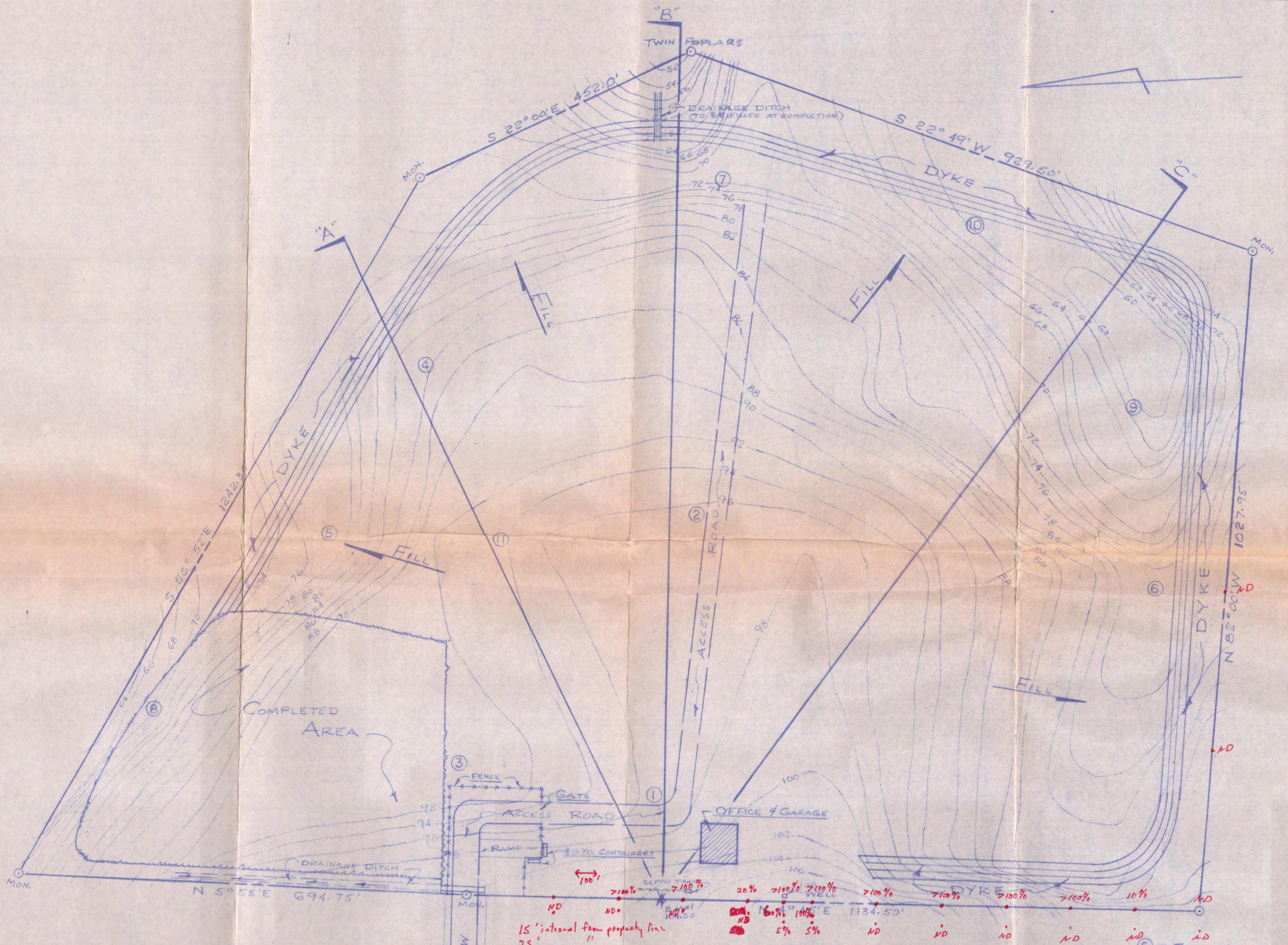
Very truly yours,



Lacy Williams, Jr., R. S.  
Director of Environmental Health

cc: Mr. Terry Dover

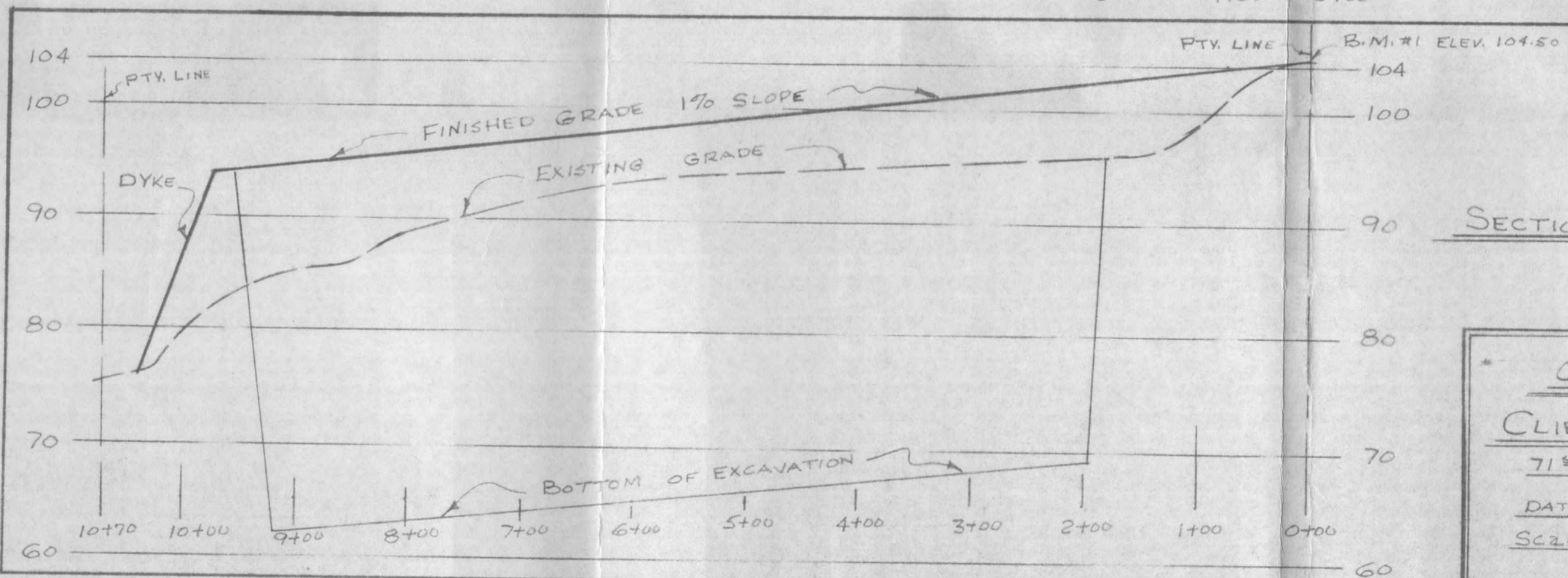
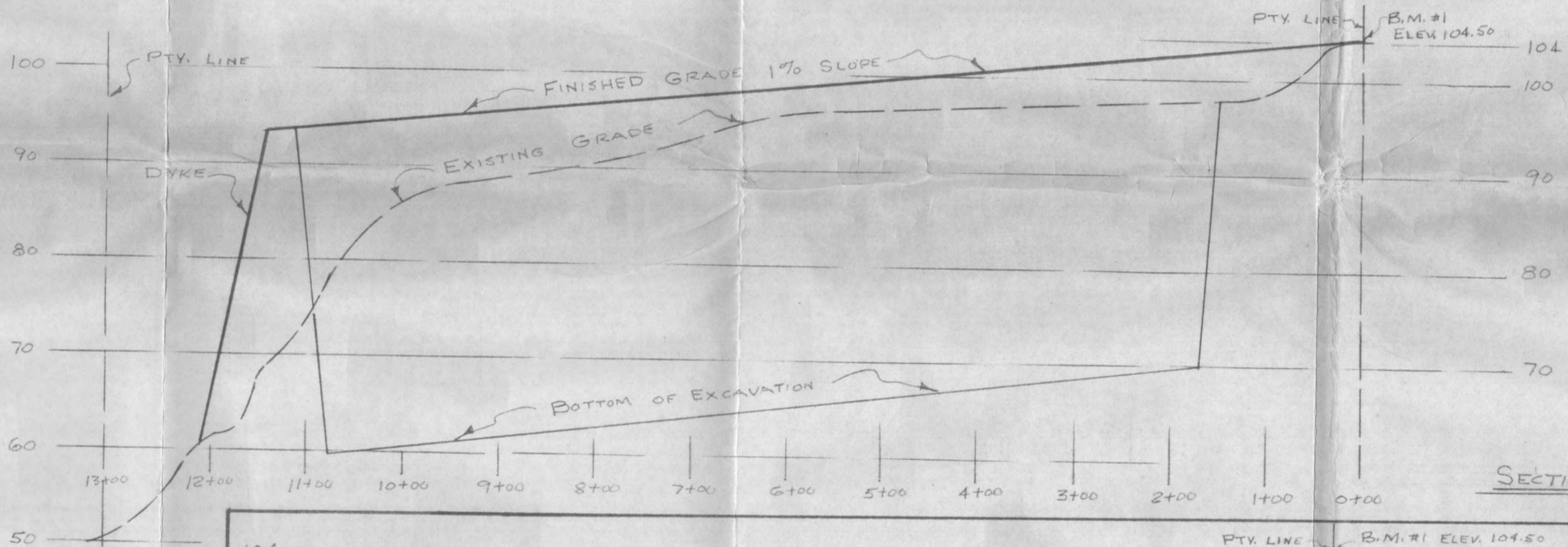
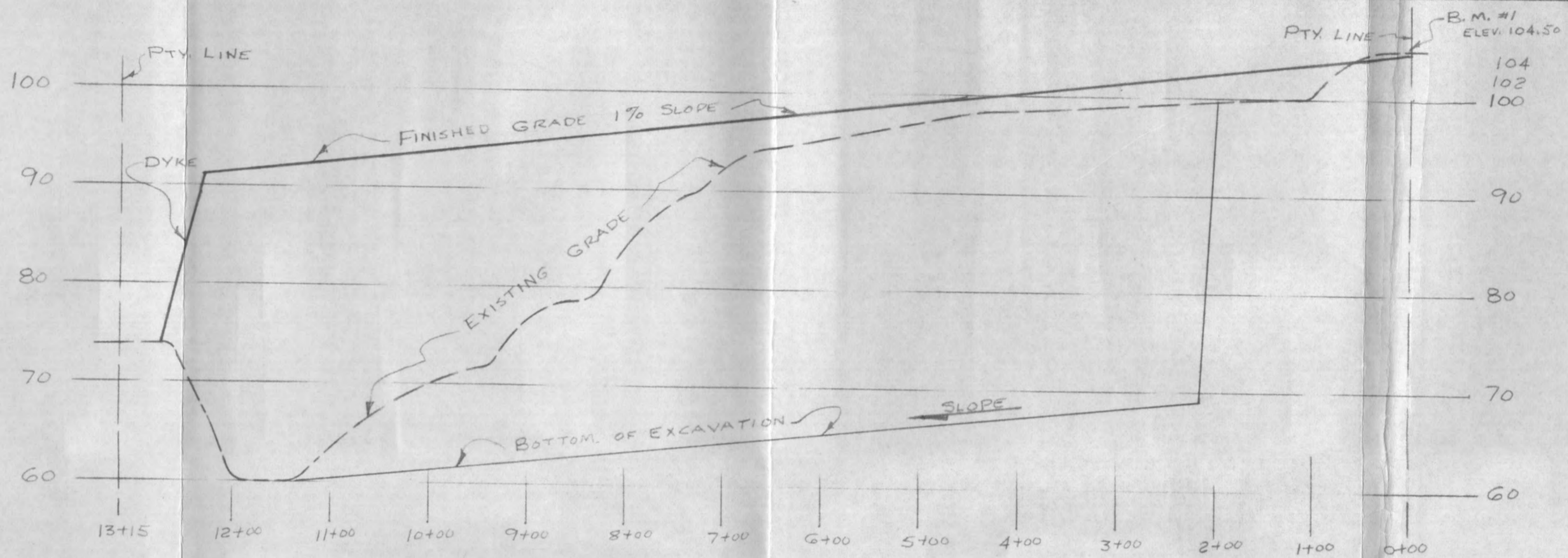
Enclosures: 3



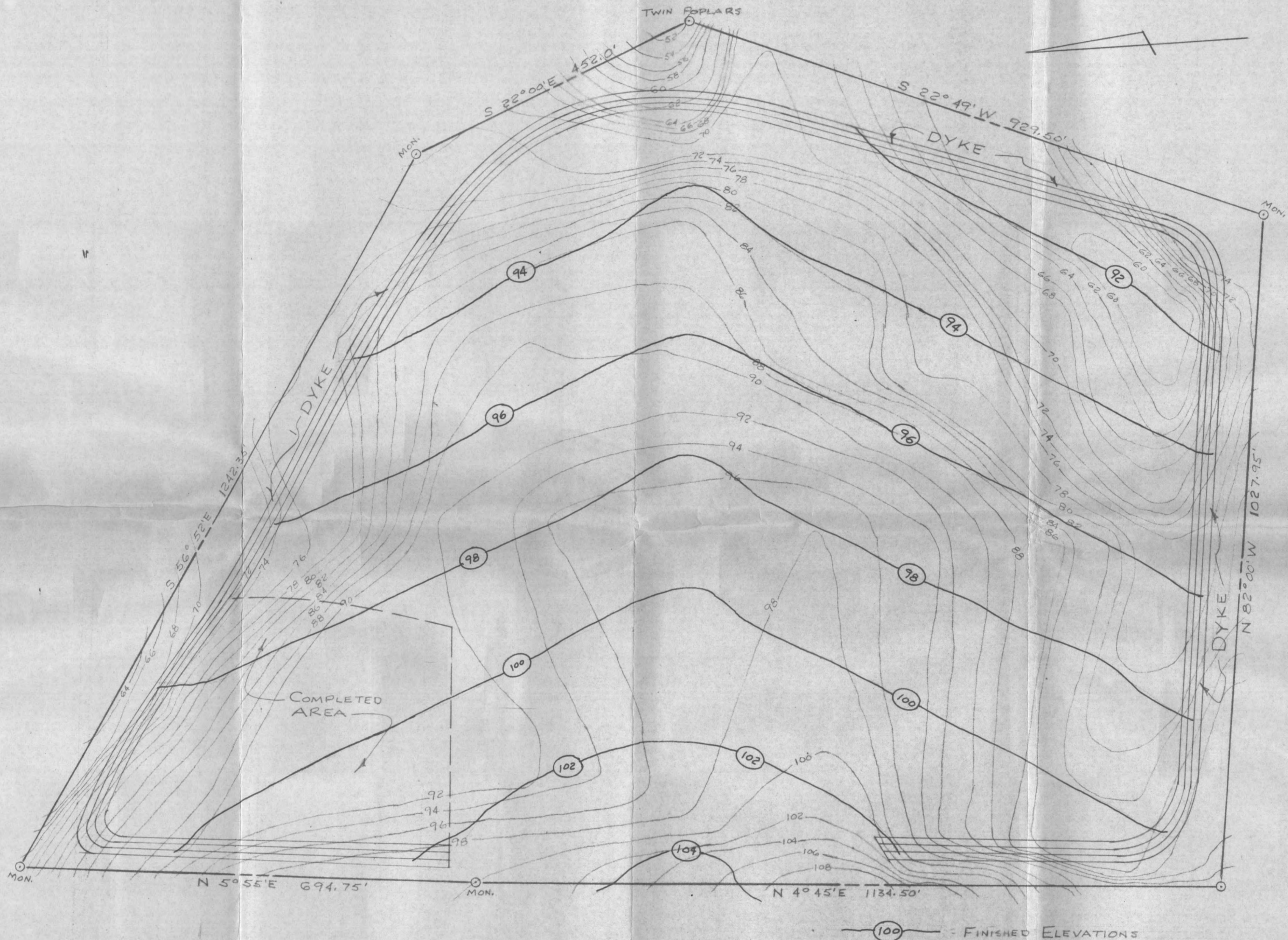
15' interval from property line  
25' "

**PLOT PLAN**  
**CLIFFDALE LANDFILL**  
 71<sup>ST</sup> TOWNSHIP CUMBERLAND COUNTY, NC  
 DATE: Nov. 1974  
 SCALE: 1"=100'

**PLOT PLAN**



CROSS SECTIONS  
CLIFFDALE LANDFILL  
 71<sup>ST</sup> TWSB, CUMBERLAND CO.  
 DATE: NOV. 1974  
 SCALE: HORIZ. 1"=100' VERT. 1"=10'  
 SHEET 2 OF 3  
 G.F.



CLIFFDALE LANDFILL

71<sup>ST</sup> TOWNSHIP      CUMBERLAND COUNTY, NC  
 DATE: NOV. 1974  
 SCALE: 1"=100'

FINISHED ELEVATIONS



May 23, 1972

Mr. Lacy Williams, Jr., R.S.  
Director of Environmental Health  
Cumberland County Health Department  
P. O. Box 470  
Fayetteville, North Carolina 28302

JWR

Dear Mr. Williams:

The required information for site appraisal concerning the proposed sanitary landfill site off SR 1400 in the Lake Rim area has been reviewed and the site found suitable for sanitary landfill operations.

Information required for the operational plan appraisal has been reviewed for work Phase I and is hereby approved for operations meeting the requirements of the N. C. State Board of Health "Rules and Regulations Providing Standards for Solid Waste Disposal." A separation distance of at least three feet is to be maintained at all times between trench excavated bottom and the ground water table.

It is suggested that a provision in the trench preparation include leaving three feet of the earth material to be excavated from the trench bottom to be scooped for daily and final cover. This feature should reduce trench preparation cost and provide cover material at the immediate working face of the trench.

Prior to operations in the work Phase II area, submit the required information for operational plan review.

Sincerely,



Sidney H. Usry, Chief  
Solid Waste & Vector Control Section  
Sanitary Engineering Division

JCP: jp

Enclosure

cc: Mr. Fred Wood

N. C. STATE BOARD OF HEALTH  
CHECK-OFF SHEET FOR PROPOSED SANITARY LANDFILL SITES

COUNTY CUMBERLAND LOCATION LAKEVIEW AREA (SR 1700) ACRES 40

PROPERTY OWNER CUMBERLAND CO PROPOSED OPERATOR CUMBERLAND CO  
LEWIS SANITATION SERVICES

1. Is this site within the boundaries of a public water supply watershed? Watershed \_\_\_\_\_ YES OK NO
2. Does any portion of this site contain floodplain areas? YES  NO \_\_\_\_\_
3. Are there public or private wells nearby that could be affected? YES \_\_\_\_\_ NO   
Nearest well in feet \_\_\_\_\_ (Elaborate in Comments Section)
4. Are there springs present on the site? Number \_\_\_\_\_ YES \_\_\_\_\_ NO
5. Will this site require dyking? YES  NO \_\_\_\_\_
6. Will this site require piping of surface drainage? YES \_\_\_\_\_ NO
7. Not precluding required boring information, does this site have adequate cover material for the sanitary landfill development? YES  NO \_\_\_\_\_
8. Will this site require diversion of surface water? YES \_\_\_\_\_ NO   
Receiving stream for surface drainage from site LITTLE ROCKFISH CREEK
9. Will this site require extensive preparation, such as clearing? YES  NO \_\_\_\_\_  
(Elaborate in Comments Section)
10. Will this site require a new all-weather access road? YES  NO \_\_\_\_\_  
(Elaborate in Comments Section)
11. Evaluate the following:
 

	POOR	GOOD	EXCELLENT
A. Surface soil conditions as related to cover requirements.	_____	<input checked="" type="checkbox"/>	_____
B. Location as related to population density	_____	<input checked="" type="checkbox"/>	_____
C. Accessibility to users	_____	<input checked="" type="checkbox"/>	_____
12. Based on the observations made above and otherwise, do you recommend that the requestor proceed with the requirements of Section IX of the North Carolina State Board of Health "Rules and Regulations Providing Standards for Solid Waste Disposal"? YES  NO \_\_\_\_\_
13. COMMENTS: (Include any requirements noted by you for the sanitary landfill development and operation)
 

2. VERY MINOR PER. CONTAMIN.

5. CORE SECTIONS @ END OF PROPOSED TRENCHES

9. HEAVY GROWTH OF SMALL TREES, BACKPACK,

PEAVE

10. TO BE BUILT BY N.C. HIGHWAY DEPT.
14. Number of borings recommended for a representative sampling of the site 12
15. Percent of usable land 95%. Include sketch of site on back of this form.

17 May 1972  
(DATE)

J. C. Pickett  
N. C. State Board of Health  
District Sanitarian for Solid Waste  
or  
Sanitary Engineer

1400

Dwelling

Proposed access

Dwelling

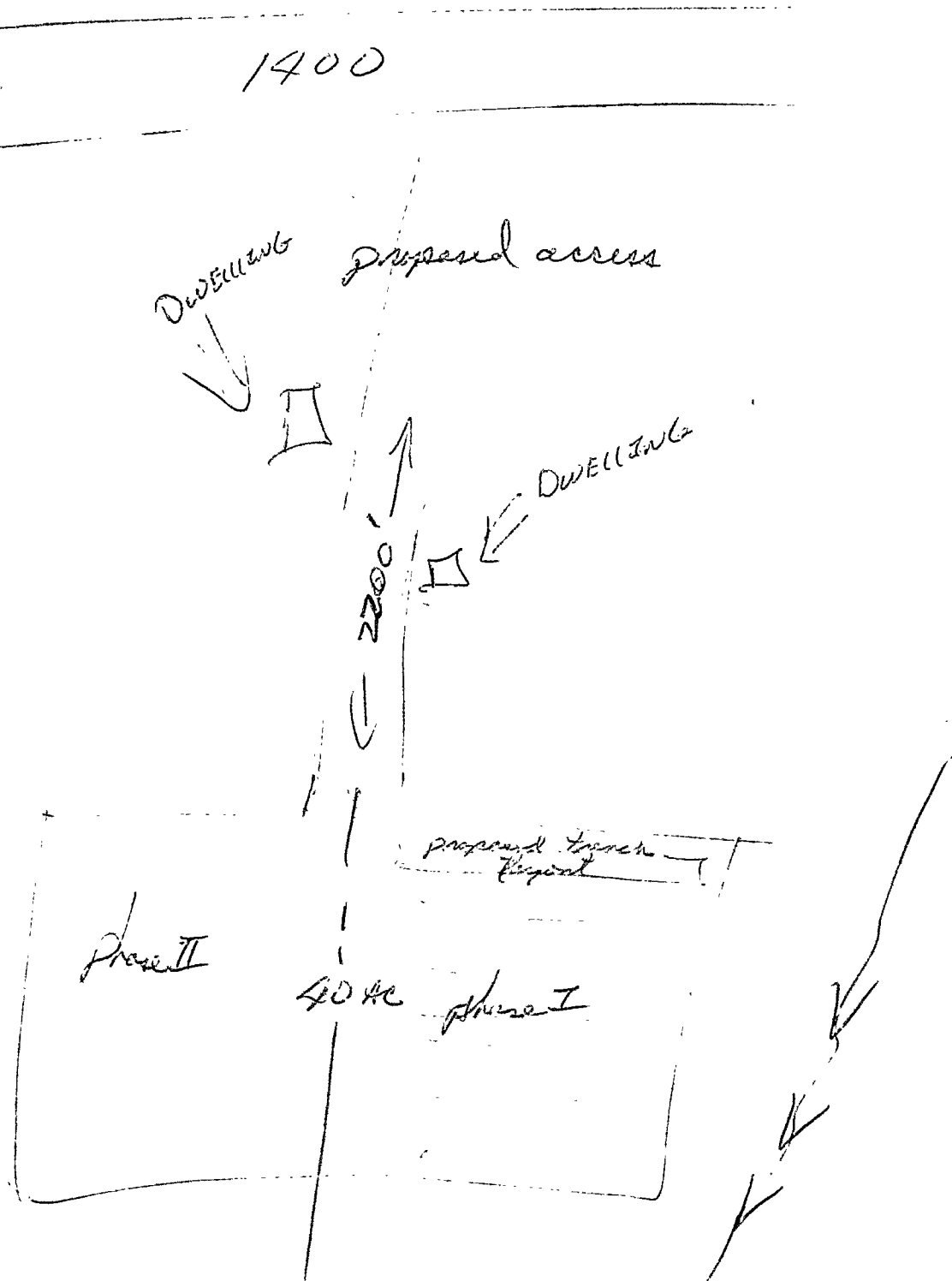
2200'

Proposed trench layout

Phase II

40 AC

Phase I



RECEIVED

60

N. C. STATE BOARD OF HEALTH  
CHECK-OFF SHEET FOR PROPOSED SANITARY LANDFILL SITES

SANITARY ENGINEERING  
DIVISION  
ACRES 6.2

COUNTY Cumberland LOCATION Lakerim Area  
PROPERTY OWNER Mr. M.D. Williams PROPOSED OPERATOR Lewis Sanitation Service

1. Is this site within the boundaries of a public water supply watershed? Watershed \_\_\_\_\_ YES \_\_\_\_\_ NO
2. Does any portion of this site contain floodplain areas? YES \_\_\_\_\_ NO
3. Are there public or private wells nearby that could be affected? YES \_\_\_\_\_ NO   
Nearest well in feet 1200 (Elaborate in Comments Section)
4. Are there springs present on the site? Number \_\_\_\_\_ YES \_\_\_\_\_ NO
5. Will this site require dyking? YES  NO \_\_\_\_\_
6. Will this site require piping of surface drainage? YES \_\_\_\_\_ NO
7. Not precluding required boring information, does this site have adequate cover material for the sanitary landfill development? YES  NO \_\_\_\_\_
8. Will this site require diversion of surface water? YES  NO \_\_\_\_\_  
Receiving stream for surface drainage from site Little Rock Fish Creek
9. Will this site require extensive preparation, such as clearing? YES  NO \_\_\_\_\_  
(Elaborate in Comments Section)
10. Will this site require a new all-weather access road? YES  NO \_\_\_\_\_  
(Elaborate in Comments Section)
11. Evaluate the following:
 

	POOR	GOOD	EXCELLENT
A. Surface soil conditions as related to cover requirements.	_____	<input checked="" type="checkbox"/>	_____
B. Location as related to population density	_____	<input checked="" type="checkbox"/>	_____
C. Accessibility to users	_____	<input checked="" type="checkbox"/>	_____
12. Based on the observations made above and otherwise, do you recommend that the requestor proceed with the requirements of Section IX of the North Carolina State Board of Health "Rules and Regulations Providing Standards for Solid Waste Disposal"? YES  NO \_\_\_\_\_
13. COMMENTS: (Include any requirements noted by you for the sanitary landfill development and operation) This site joins a lake owned by the state wildlife commission. Mr Williams is going to contact the wildlife people and get their reaction.
14. Number of borings recommended for a representative sampling of the site 5
15. Percent of usable land 75%. Include sketch of site on back of this form.

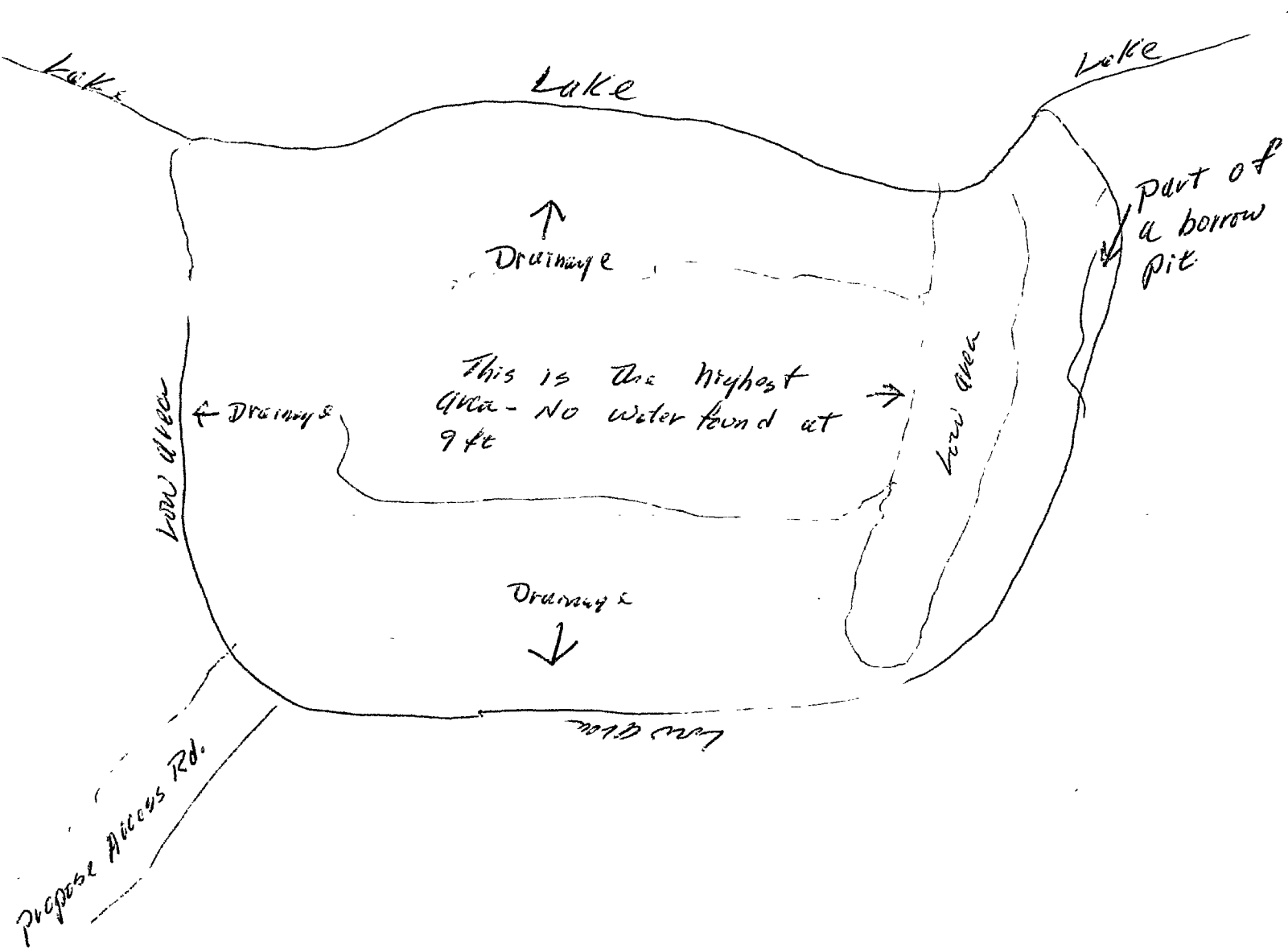
March 25 1972  
(DATE)

[Signature]  
N. C. State Board of Health  
District Sanitarian for Solid Waste  
or  
Sanitary Engineer

I believe the biggest problem will be wind blown paper in the lake.

This site is on a knoll will drainage in all directions

Before this site can be approved the wildlife people will have to be consulted.



N. C. STATE BOARD OF HEALTH  
CHECK-OFF SHEET FOR PROPOSED SANITARY LANDFILL SITES

71<sup>st</sup> Site  
Files  
70

COUNTY Cumberland Co LOCATION Lake Rim area ACRES 41.5  
SR1400

PROPERTY OWNER Lowell F. Harris PROPOSED OPERATOR Lewis Sanitation Service  
County owned property

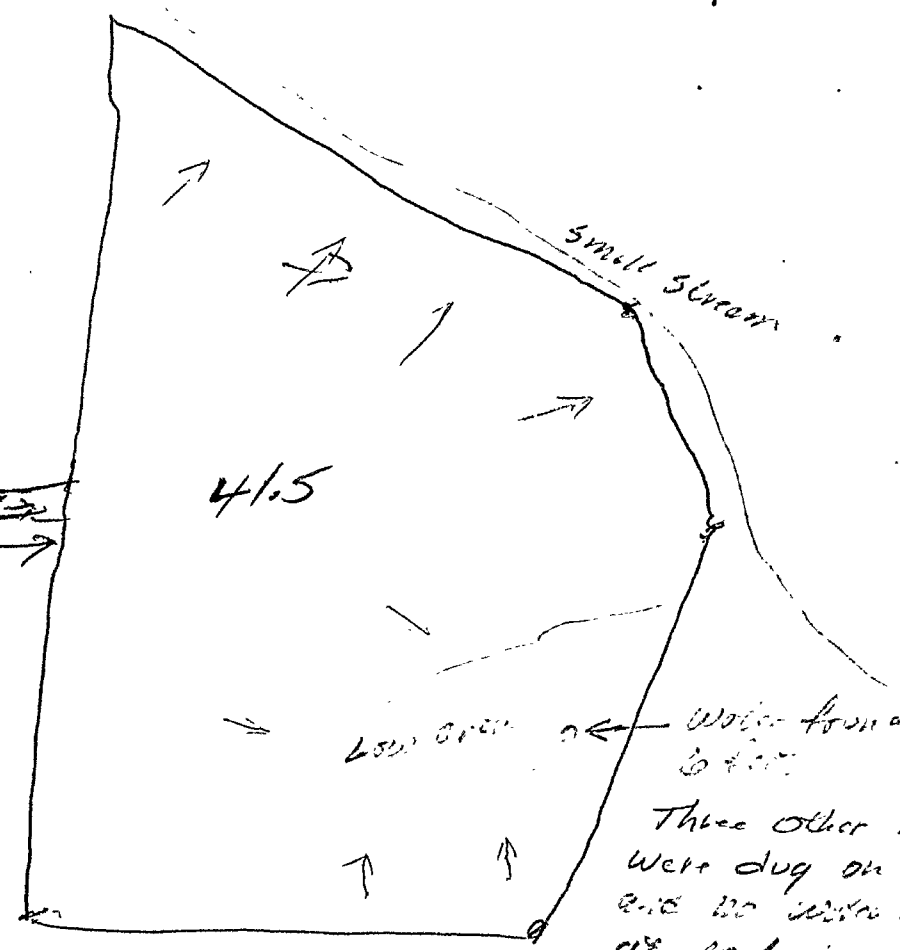
1. Is this site within the boundaries of a public water supply watershed? Watershed \_\_\_\_\_ YES \_\_\_\_\_ NO
2. Does any portion of this site contain floodplain areas? YES \_\_\_\_\_ NO
3. Are there public or private wells nearby that could be affected? YES \_\_\_\_\_ NO   
Nearest well in feet 700 (Elaborate in Comments Section)
4. Are there springs present on the site? Number \_\_\_\_\_ YES \_\_\_\_\_ NO
5. Will this site require dyking? YES \_\_\_\_\_ NO
6. Will this site require piping of surface drainage? YES \_\_\_\_\_ NO
7. Not precluding required boring information, does this site have adequate cover material for the sanitary landfill development? YES  NO \_\_\_\_\_
8. Will this site require diversion of surface water? YES  NO \_\_\_\_\_  
Receiving stream for surface drainage from site \_\_\_\_\_
9. Will this site require extensive preparation, such as clearing? YES  NO \_\_\_\_\_  
(Elaborate in Comments Section)
10. Will this site require a new all-weather access road? YES  NO \_\_\_\_\_  
(Elaborate in Comments Section)
11. Evaluate the following:
 

	POOR	GOOD	EXCELLENT
A. Surface soil conditions as related to cover requirements.	_____	_____	<input checked="" type="checkbox"/>
B. Location as related to population density	_____	<input checked="" type="checkbox"/>	_____
C. Accessibility to users	_____	<input checked="" type="checkbox"/>	_____
12. Based on the observations made above and otherwise, do you recommend that the requestor proceed with the requirements of Section IX of the North Carolina State Board of Health "Rules and Regulations Providing Standards for Solid Waste Disposal"?  
YES  NO \_\_\_\_\_
13. COMMENTS: (Include any requirements noted by you for the sanitary landfill development and operation) This looks like a very good site

14. Number of borings recommended for a representative sampling of the site 5
15. Percent of usable land 100%. Include sketch of site on back of this form.

April 6 1972  
(DATE)

J. J. G. Wood  
N. C. State Board of Health  
District Sanitarian for Solid Waste  
or  
Sanitary Engineer



House  
↓  
□

Access Rd 1600'  
← 1600' →

41.5

Small Stream

Low area

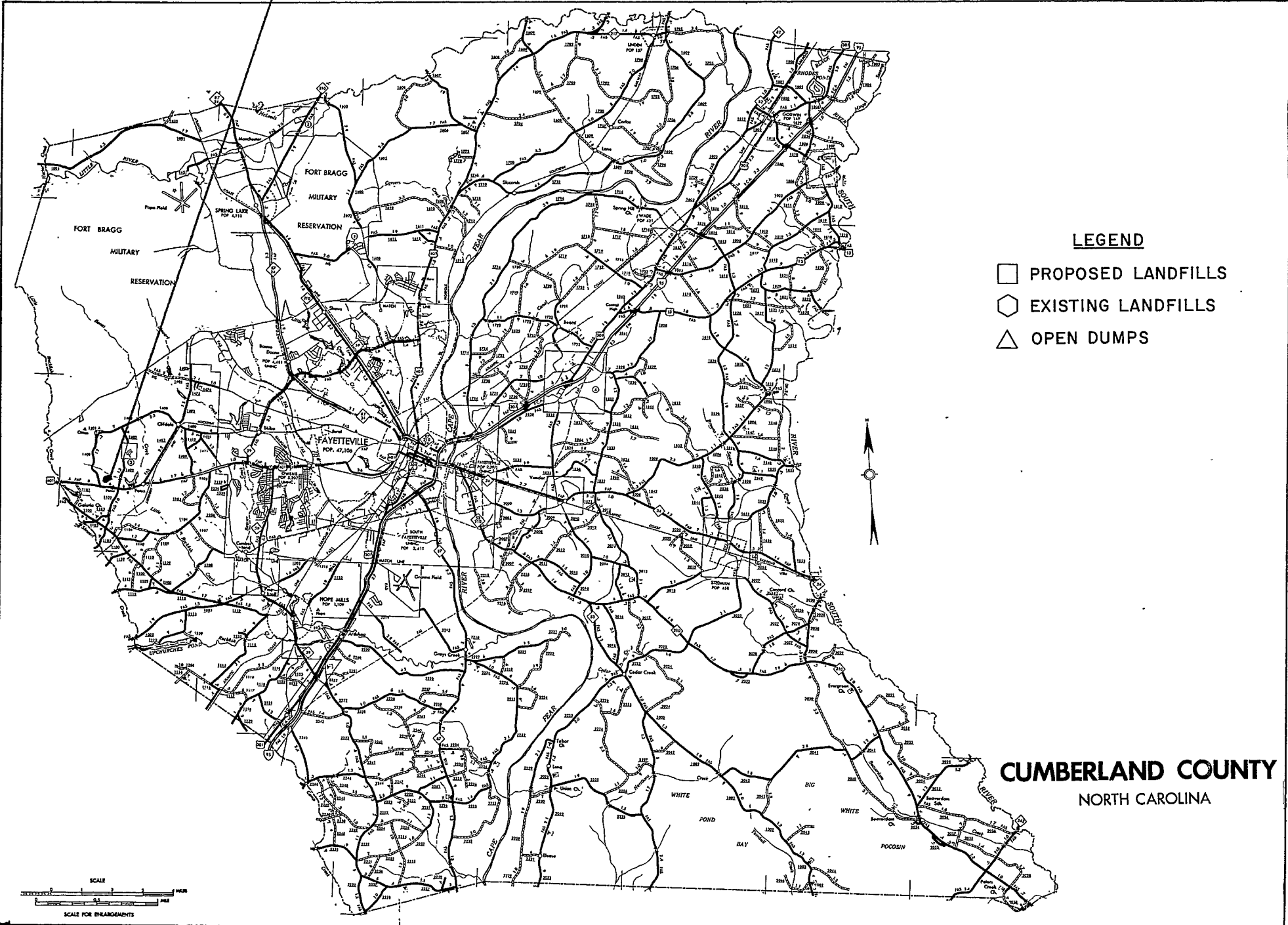
Water found at 10 feet

Three other holes were dug on the side and no water was found at 10 feet

1400  
5R

401 Foundation →

*Harris property*



**LEGEND**

- PROPOSED LANDFILLS
- ⬡ EXISTING LANDFILLS
- △ OPEN DUMPS

**CUMBERLAND COUNTY**  
NORTH CAROLINA

SCALE  
SCALE FOR ENLARGEMENTS





SOIL AND WATER CONSERVATION DISTRICT

P. O. Box 4323  
Fayetteville, N. C. 28306

April 6, 1972

Mr. Terry Dover  
Cumberland County Health Dept.  
P. O. Box 470  
Fayetteville, N. C. 28302

Dear Mr. Dover:

This is in reply to your request for soils information on proposed landfill site in Seventy-First township.

On the basis of the latest information that is available from the Soil Conservation Service, we submit the attached information.

Sincerely yours,

Clifton McNeill  
Chairman

CM/ja

Attachment

**RECEIVED**

APR 7 1972

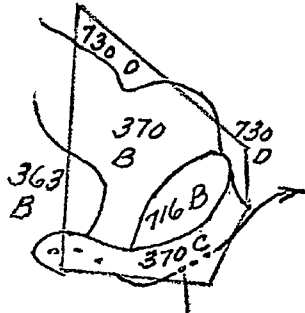
**ENVIRONMENTAL HEALTH  
DIVISION**

Cumberland County Health Department  
Proposed Landfill Site  
Approximate Scale 1" = 1320'  
Soil Conservation Service

Soils:

- 370B Wagram loamy sand, 0-6% slopes
- 363B Lucy loamy sand, 0-6% slopes
- 716B Wakulla sand, 0-6% slopes
- 370C Wagram loamy sand, 6-10% slopes
- 730D Troup sand, 8-15% slopes

Degree of soil limitation for landfill site.

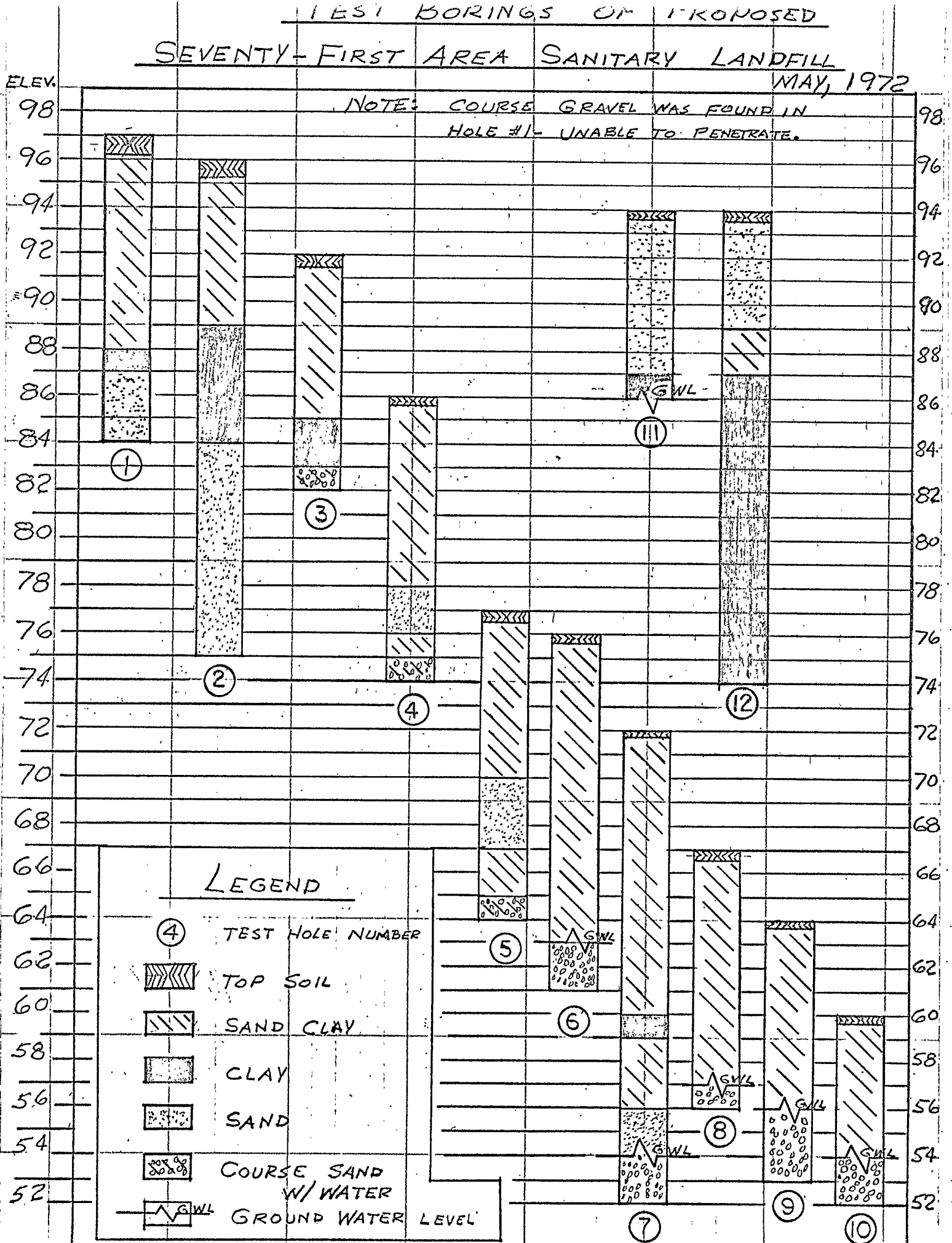


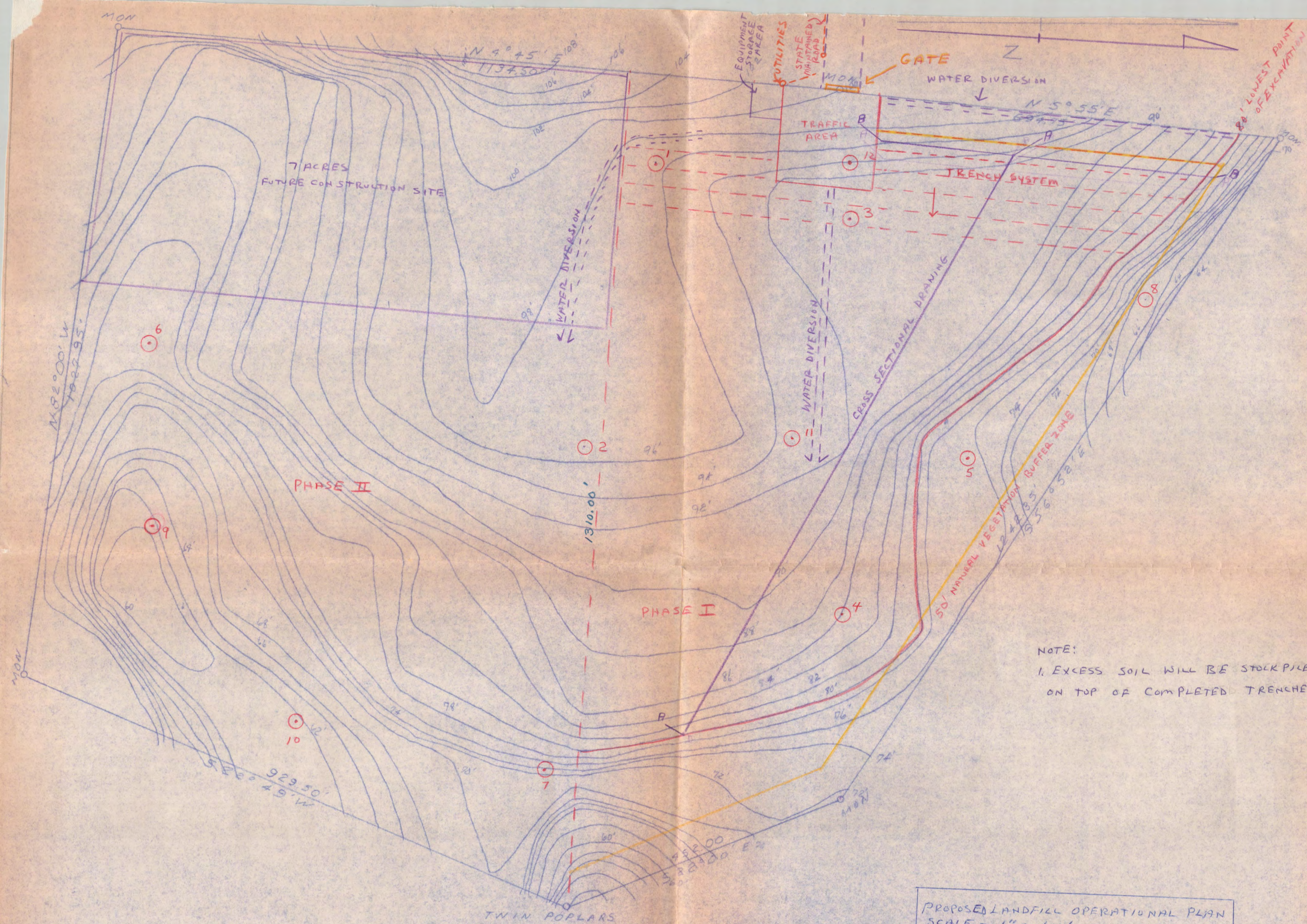
- 370B Slight limitation
- 370C Slight limitation
- 363B Slight limitation
- 730D Moderate limitation due to moderately rapid permeability which affects ability of soil to retard movement of landfill leachate.
- 176B Severe limitation due to rapid permeability which affects ability of soil to retard movement of landfill leachate.

# TEST BORINGS OF PROPOSED SEVENTY-FIRST AREA SANITARY LANDFILL

MAY, 1972

NOTE: COURSE SAND WAS FOUND IN  
HOLE #1 - UNABLE TO PENETRATE.





NOTE:  
 1. EXCESS SOIL WILL BE STOCKPILED  
 ON TOP OF COMPLETED TRENCHES.

PROPOSED LANDFILL OPERATIONAL PLAN SCALE - 1" = 100'
71ST AREA, CUMBERLAND COUNTY, N.C.
MAY 16, 1972

# Health Department

County of Cumberland

Fayetteville, North Carolina 28302

May 17, 1972

RECEIVED

MAY 18 1972

North Carolina State Board of Health  
Sanitary Engineering Division  
Solid Waste and Vector Control Section  
Raleigh, North Carolina

SUBJECT: 71st Area Landfill  
Cumberland County, North Carolina

SANITARY ENGINEERING  
DIVISION

Gentlemen:


In accordance with instructions outlined in the State Board of Health Bulletin Number 411 dated March 11, 1971, we are enclosing three copies each of the following for the proposed landfill.

- I. Topographic maps, one inch equals 100 feet with 2 feet contour intervals showing boundaries of property owned by County of Cumberland.
  - A. Proposed area for a county operated landfill with dimensions.
  - B. Locations of soil borings.
  - C. Access and entrance roads to the site.
  - D. Location of cross section made on drawing.
  - E. Proposed direction for trenching operations.
  - F. Proposed location of equipment storage.
  - G. Proposed location of ditches for diversion of upland drainage.
- II. Aerial photographs (scale 1" = 400')
  - A. Landfill location.
  - B. Dwellings.
  - C. Private water supplies.
  - D. Streams.
  - E. Lakes.
- III. Soil report from U. S. Soil Conservation Service.
- IV. Test boring results.

- V. Cross sectional drawings.
  - A. Vertical and horizontal view.
  - B. Present land elevations.
  - C. Proposed fill (finished) elevations.
- VI. Pertinent information for the proposed landfill and its operation is as follows:
  - A. Population and area served:
    - 1. 35,000 estimated total.
      - a. Louis Sanitation Company is presently serving approximately 25,000 persons.
      - b. It is estimated that 10,000 people will be served by depositing individually at the site.
    - 2. General area to be served will be Seventy-First Township, Cumberland County.
  - B. Anticipated type, quantity and source of material to be disposed of at site: household, commercial and industrial refuse, estimated 400 cubic yards per day.
  - C.
    - 1. Initial plan for development of approximately twenty acres, or one-half of total site, beginning on the N. W. side of the property.
    - 2. Utilizing a trench method of disposal.
    - 3. The trenches shall be approximately 25 feet in width at the base and a maximum of 10 feet in depth with sloped sides, bottom of trench sloped to drain.
    - 4. Refuse cells shall be constructed in an orderly manner, maximum depth being no greater than 8 feet compacted as densely as practical and covered after each day of operation with a compacted layer of at least 6 inches of suitable cover. All completed cells shall be covered with at least 2 feet of compacted earth, sloped no greater than 1 percent to allow surface water run-off.
    - 5. Surface water shall be diverted from working area of landfill by diversion ditches.
  - D. Initial preparation of landfill will be performed by dragline and bulldozer. Daily maintenance operation will be performed by 32,000 pound tracked loader, or necessary equivalent machine.

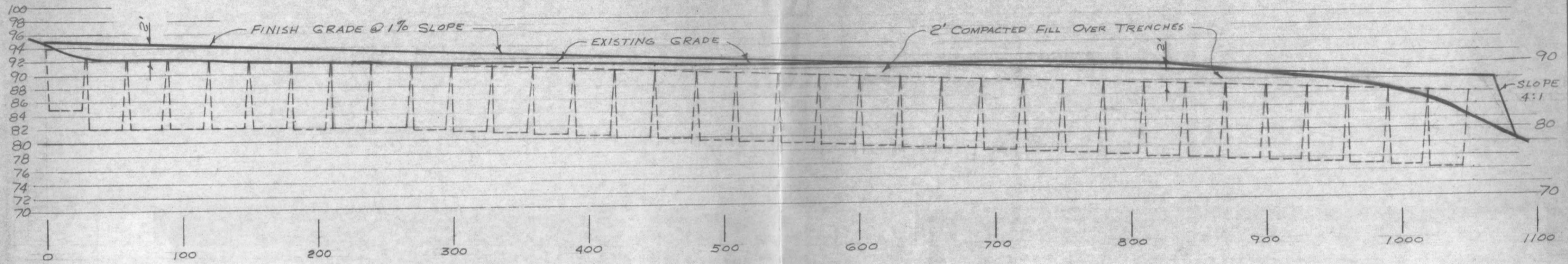
- E. At the present time, Louis Sanitation Company is charged with the responsibility of daily maintenance as per franchised agreement between Cumberland County and said company. In the event changes are made regarding this phase of responsibility, State Board of Health will be notified.
- F. Sanitary landfill site is intended for use as a county recreation area after completion.
- G. Anticipated lifetime of project will be approximately three and one-half years for phase I.
- H. Landfill operational hours will be 9:00 a. m. to 5:00 p. m., Monday through Friday, and 9:00 a. m. to 1:00 p. m., Saturday. Landfill to be closed on Sunday. Operational hours as set forth by local board of health regulations. Instructional signs posted at the site entrance shall include: hours of operation, other instructions and general information.
- I. An attendant will be on duty at the site at all times when it is open for public use.
- J. An approved pit privy will be installed on the site for proper sewage disposal.
- K. The sanitary landfill site will be operated in accordance to the rules and regulations and standards for solid waste disposal as set forth by the North Carolina State Board of Health.

Very truly yours,

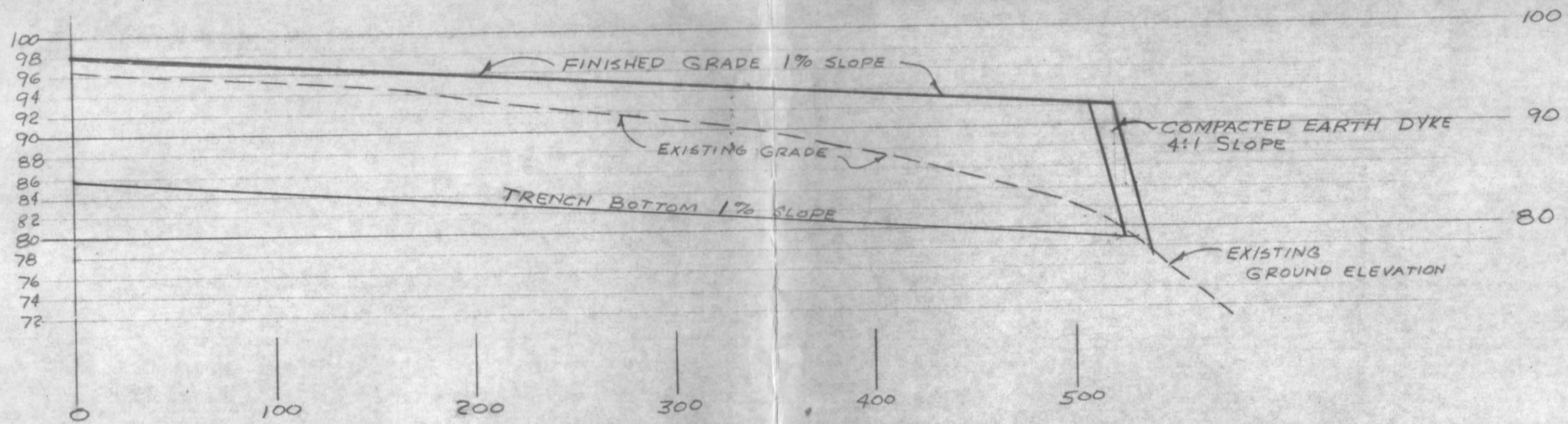
  
Lacy Williams, Jr., R. S.  
Director of Environmental Health

LWJr:jbr  
Enclosures

NOTE:  
 WASTE TO BE 3' ABOVE  
 GROUND WATER LEVEL  
 AT ALL TIMES.



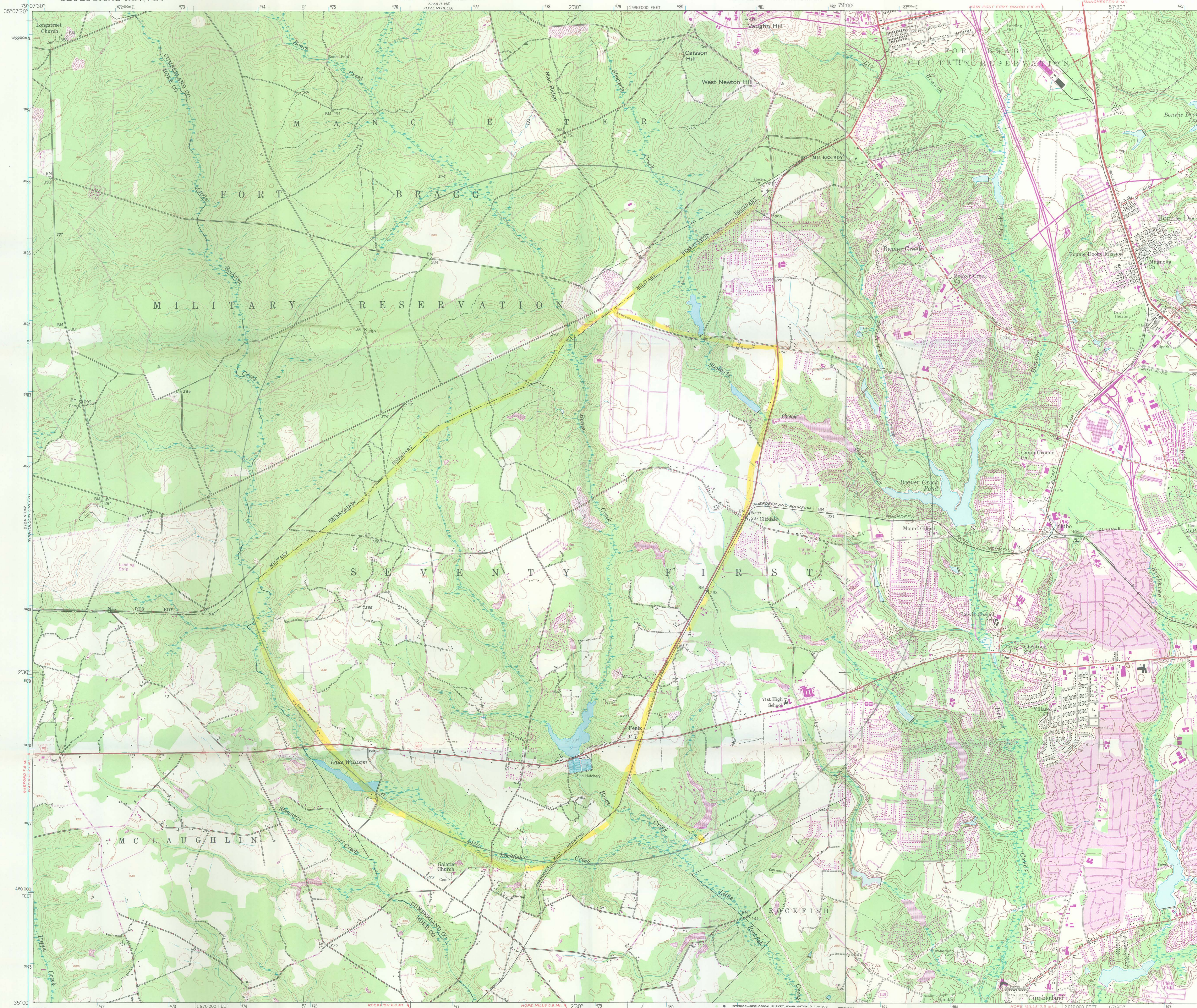
CROSS SECTION A-A Scale: HORIZ. 1"=50' VERT. 1"=10'



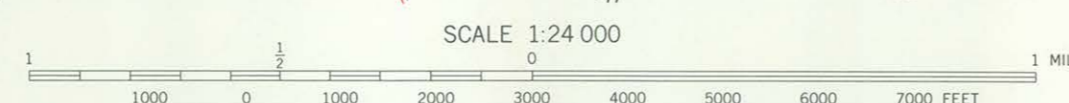
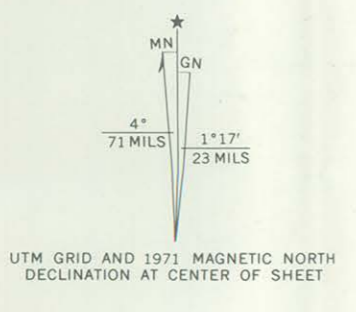
CROSS SECTION B-B Scale: HORIZ. 1"=50' VERT. 1"=10'

CROSS SECTIONS  
PROPOSED 71<sup>ST</sup> AREA LANDFILL  
CUMBERLAND COUNTY, N.C.  
MAY, 1972





Mapped by the Army Map Service  
Edited and published by the Geological Survey  
Control by USGS, USC&GS, and CE  
Topography from aerial photographs by multiplex methods  
Aerial photographs taken 1946-1947. Field check 1948  
Polyconic projection. 1927 North American datum  
10,000-foot grid based on North Carolina coordinate system  
1000-meter Universal Transverse Mercator grid ticks,  
zone 17, shown in blue  
Revisions shown in purple compiled by the Geological Survey from  
aerial photographs taken 1971. This information not field checked



CONTOUR INTERVAL 10 FEET  
DATUM IS MEAN SEA LEVEL

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS  
FOR SALE BY U. S. GEOLOGICAL SURVEY, WASHINGTON, D. C. 20242  
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

*Entire 23 miles area  
now PWS  
& private*

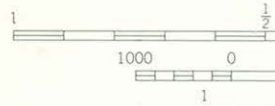
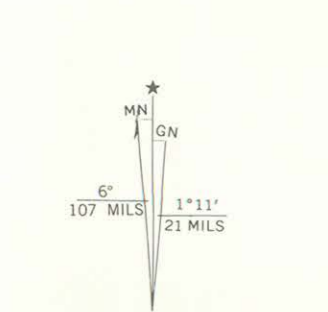
ROAD CLASSIFICATION

HARD-SURFACE ALL WEATHER ROADS	DRY WEATHER ROADS
Heavy-duty ————	Improved dirt ————
Medium-duty ————	Unimproved dirt ————
Loose-surface, graded, or narrow hard-surface - - - - -	
U. S. Route	State Route

CLIFDALE, N. C.  
SE/4 CLIFDALE 15' QUADRANGLE  
N3500-W7900/7.5

EDITION OF 1950  
PHOTOREVISED 1971  
AMS 5154 II SE-SERIES V842

Mapped by the Army Map Service  
Published for civil use by the Geological Survey  
Control by USGS, NOS/NOAA, and USCE  
Topography by photogrammetric methods from aerial photographs  
taken 1946-1947. Planimetric detail revised from aerial  
photographs taken 1955. Field checked 1957  
Polyconic projection. 10,000-foot grid ticks based on  
North Carolina coordinate system. 1000-meter Universal  
Transverse Mercator grid ticks, zone 17, shown in blue. 1927  
North American Datum. To place on the predicted North  
American Datum 1983 move the projection lines 12 meters  
south and 22 meters west as shown by dashed corner ticks  
Red tint indicates areas in which only landmark buildings are shown  
There may be private inholdings within the boundaries of  
the National or State reservations shown on this map



THIS MAP  
FOR SALE  
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

EPA DID NOT MAIL  
TO FACILITY

DATE: August 22, 1995  
SUBJECT: REMOVAL FROM EPA'S CERCLIS INVENTORY  
FROM: Matthew J. Robbins, Brownfields Coordinator  
Waste Management Division, Region IV

TO: CUMBERLAND COUNTY LDFL  
CLIFFDALE RD AND ST RD 1400  
FAYETTEVILLE  
NC 28301

EPA has identified the Brownfields Initiative as one of the Agency's top priorities. The term "brownfields" refers to previously used properties that may lie vacant because potential contamination makes them unmarketable to the private sector. EPA has recently announced a comprehensive Brownfields strategy, including Pilot grants to municipalities, to stimulate economic revitalization.

One part of the strategy has been for EPA to review its complete inventory of Superfund sites. These sites have been screened and determined to require no remedial action under the Federal Superfund Program based on information available as well as on conditions and policies that currently exist. This is to notify you that EPA has removed your facility from EPA's computer inventory known as CERCLIS. THIS DOES NOT INDICATE THAT THE STATE HAS MADE A SIMILAR DETERMINATION.

If you have any questions, please call me at 404/347-5059 ext. 6214.

cc: State Agency



North Carolina Department of Human Resources  
Division of Health Services  
P.O. Box 2091 • Raleigh, North Carolina 27602-2091

James G. Martin, Governor  
David T. Flaherty, Secretary

Ronald H. Levine, M.D., M.P.H.  
State Health Director

September 12, 1987

Ms. Denise Smith  
EPA NC CERCLA Project Officer  
EPA Region IV Waste Division  
345 Courtland Street, N.E.  
Atlanta, GA 30365

Dear Ms. Smith:

Subject: Preliminary Assessment Report  
Cumberland County Landfill, NC D980502900  
Cliffdale Rd. (SR 1400)  
Fayetteville, NC 28301

Enclosed please find the Preliminary Assessment report for the subject site. This priority is based on review of available data.

The Cumberland County Landfill is located on Cliffdale Rd. (SR 1400) approximately 6 miles west of Fayetteville, NC. Fayetteville is in central Cumberland County. The site has always been privately owned, but was leased by Cumberland County for use as a municipal landfill. The county operated the site from around 1971 to 1973.

E.I. Dupont, Fayetteville Works reported disposing of 2700 tons of plant waste at this site between 1971 and 1973. Dupont now indicates that this was non-hazardous plant trash similar to waste currently disposed at the Bladen County Landfill. No other specific waste disposals have been reported at this site.

The site is currently being used as a horse farm. It is approximately 800 feet west of Bones Creek. Lake Rim, less than 2 miles downstream of the site is used for recreational boating and fishing. Outflow from the lake goes to the Fayetteville Fish Hatchery which has been in operation there since the 1930's. There are no monitoring wells on site, however, the nearest drinking water well is less than 2,000 feet from the site at Colony Village MHP. It appears that all residents, at least 10,000 people, within 3 miles of the site are dependent on groundwater for drinking water supply.

Ms. Denise Smith  
September 11, 1987  
Page 2

Currently, there is no documentation of disposal of hazardous substances at this site. There have also been no known releases from the site. However, there are significant groundwater and surface water targets which could be impacted in the event of a release. Sampling and inspection are therefore suggested. Based on the available data, a medium priority for inspection is recommended.

On September 3, 1987, this Preliminary Assessment was reviewed by CERCLA Unit personnel; and by the following representatives from the North Carolina Department of Natural Resources and Community Development, Division of Environmental Management: Glenn Ross, Air Quality Section; and Vince Schneider, Water Quality Section.

If you have any questions, please call me at (919) 733-2801.

Sincerely,



Pat DeRosa, Waste Management Specialist  
CERCLA Unit  
Solid and Hazardous Waste Management Branch  
Environmental Health Section

PD/pd/0472b.37



**POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT  
PART 1 - SITE INFORMATION AND ASSESSMENT**

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D980502900

**II. SITE NAME AND LOCATION**

01 SITE NAME (Legal, common, or descriptive name of site) Cumberland County Landfill		02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER Cliffdale Rd. (SR 1400)			
03 CITY Fayetteville	04 STATE NC	05 ZIP CODE 28301	06 COUNTY Cumberland	07 COUNTY CODE 26	08 CONG DIST 07
09 COORDINATES LATITUDE 35 03 42. _		LONGITUDE 079 02 23. _			

10 DIRECTIONS TO SITE (Starting from nearest public road)  
Take US 401 South to Fayetteville. Turn right onto the Central Business Loop to Hay St. Turn right onto Hay St. and continue west into Morganton Rd. ~ 1 1/2 miles. Bear left at fork onto Cliffdale Rd. (SR 1400). Continue 6 miles west, site on left, just past Bones Creek.

**III. RESPONSIBLE PARTIES**

01 OWNER (If known) Mrs. Hepner		02 STREET (Business, mailing, residential)			
03 CITY Fayetteville	04 STATE NC	05 ZIP CODE 28301	06 TELEPHONE NUMBER ( )		
07 OPERATOR (If known and different from owner) Cumberland County Health Dept.		08 STREET (Business, mailing, residential) 227 Fountainhead Lane			
09 CITY Fayetteville	10 STATE NC	11 ZIP CODE 28301	12 TELEPHONE NUMBER (919) 483-9046		
13 TYPE OF OWNERSHIP (Check one) <input checked="" type="checkbox"/> A. PRIVATE <input type="checkbox"/> B. FEDERAL: _____ (Agency name) <input type="checkbox"/> C. STATE <input type="checkbox"/> D. COUNTY <input type="checkbox"/> E. MUNICIPAL <input type="checkbox"/> F. OTHER: _____ (Specify) <input type="checkbox"/> G. UNKNOWN					

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)  
 A. RCRA 3001 DATE RECEIVED: \_\_\_\_/\_\_\_\_/\_\_\_\_ MONTH DAY YEAR     B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: \_\_\_\_/\_\_\_\_/\_\_\_\_ MONTH DAY YEAR     C. NONE

**IV. CHARACTERIZATION OF POTENTIAL HAZARD**

01 ON SITE INSPECTION <input type="checkbox"/> YES    DATE ____/____/____ MONTH DAY YEAR <input checked="" type="checkbox"/> NO		BY (Check all that apply) <input type="checkbox"/> A. EPA <input type="checkbox"/> B. EPA CONTRACTOR <input type="checkbox"/> C. STATE <input type="checkbox"/> D. OTHER CONTRACTOR <input type="checkbox"/> E. LOCAL HEALTH OFFICIAL <input type="checkbox"/> F. OTHER: _____ (Specify) CONTRACTOR NAME(S): _____			
02 SITE STATUS (Check one) <input type="checkbox"/> A. ACTIVE <input checked="" type="checkbox"/> B. INACTIVE <input type="checkbox"/> C. UNKNOWN		03 YEARS OF OPERATION ~ 1971   1973 <input type="checkbox"/> UNKNOWN <small>BEGINNING YEAR    ENDING YEAR</small>			

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED  
E.I. Dupont, Fayetteville Works reported disposing of 2700 tons of waste at this site between 1971 - 1973 (Eckhardt List). Dupont currently indicates that this was non-hazardous plant trash similar to waste currently disposed at the Bladen County Landfill. This site was operated as a county landfill. No hazardous wastes are known to be disposed

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION here. No monitoring wells on site. Fayetteville Fish Hatchery and Lake Rim less than 2 miles downstream. Site is currently used as a horse farm.

**V. PRIORITY ASSESSMENT**

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)  
 A. HIGH (Inspection required promptly)     B. MEDIUM (Inspection required)     C. LOW (Inspect on time available basis)     D. NONE (No further action needed, complete current disposition form)

**VI. INFORMATION AVAILABLE FROM**

01 CONTACT Environmental Lacy Williams, Health Section		02 OF (Agency/Organization) Cumberland County Health Dept.		03 TELEPHONE NUMBER 919 483-9046	
04 PERSON RESPONSIBLE FOR ASSESSMENT Pat DeRosa		05 AGENCY NC DHR	06 ORGANIZATION St HWM Br.	07 TELEPHONE NUMBER (919) 733-2801	08 DATE 8 / 18 / 87 <small>MONTH DAY YEAR</small>





POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT  
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D980502900

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 <input checked="" type="checkbox"/> A. GROUNDWATER CONTAMINATION 03 POPULATION POTENTIALLY AFFECTED: <u>&gt; 10,000</u>	02 <input type="checkbox"/> OBSERVED (DATE: _____ ) 04 NARRATIVE DESCRIPTION	<input checked="" type="checkbox"/> POTENTIAL <input type="checkbox"/> ALLEGED
None reported. The nearest well is < 2,000 feet from the site at Colony Village MHP. City water is not available to most residents. At least 10,000 people depend on groundwater from private and community wells.		
01 <input checked="" type="checkbox"/> B. SURFACE WATER CONTAMINATION 03 POPULATION POTENTIALLY AFFECTED: _____	02 <input type="checkbox"/> OBSERVED (DATE: _____ ) 04 NARRATIVE DESCRIPTION	<input checked="" type="checkbox"/> POTENTIAL <input type="checkbox"/> ALLEGED
None reported. The nearest creek, Bones Creek, is 800 ft. east of the site. Lake Rim, < 2 miles downstream, is used for recreation. The Fayetteville Fish Hatchery is also < 2 miles downstream.		
01 <input type="checkbox"/> C. CONTAMINATION OF AIR 03 POPULATION POTENTIALLY AFFECTED: _____	02 <input type="checkbox"/> OBSERVED (DATE: _____ ) 04 NARRATIVE DESCRIPTION	<input type="checkbox"/> POTENTIAL <input type="checkbox"/> ALLEGED
01 <input type="checkbox"/> D. FIRE/EXPLOSIVE CONDITIONS 03 POPULATION POTENTIALLY AFFECTED: _____	02 <input type="checkbox"/> OBSERVED (DATE: _____ ) 04 NARRATIVE DESCRIPTION	<input type="checkbox"/> POTENTIAL <input type="checkbox"/> ALLEGED
01 <input type="checkbox"/> E. DIRECT CONTACT 03 POPULATION POTENTIALLY AFFECTED: _____	02 <input type="checkbox"/> OBSERVED (DATE: _____ ) 04 NARRATIVE DESCRIPTION	<input type="checkbox"/> POTENTIAL <input type="checkbox"/> ALLEGED
01 <input checked="" type="checkbox"/> F. CONTAMINATION OF SOIL 03 AREA POTENTIALLY AFFECTED: _____ <small>(Acres)</small>	02 <input type="checkbox"/> OBSERVED (DATE: _____ ) 04 NARRATIVE DESCRIPTION	<input checked="" type="checkbox"/> POTENTIAL <input type="checkbox"/> ALLEGED
None reported.		
01 <input type="checkbox"/> G. DRINKING WATER CONTAMINATION 03 POPULATION POTENTIALLY AFFECTED: _____	02 <input type="checkbox"/> OBSERVED (DATE: _____ ) 04 NARRATIVE DESCRIPTION	<input type="checkbox"/> POTENTIAL <input type="checkbox"/> ALLEGED
01 <input type="checkbox"/> H. WORKER EXPOSURE/INJURY 03 WORKERS POTENTIALLY AFFECTED: _____	02 <input type="checkbox"/> OBSERVED (DATE: _____ ) 04 NARRATIVE DESCRIPTION	<input type="checkbox"/> POTENTIAL <input type="checkbox"/> ALLEGED
01 <input type="checkbox"/> I. POPULATION EXPOSURE/INJURY 03 POPULATION POTENTIALLY AFFECTED: _____	02 <input type="checkbox"/> OBSERVED (DATE: _____ ) 04 NARRATIVE DESCRIPTION	<input type="checkbox"/> POTENTIAL <input type="checkbox"/> ALLEGED



POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT  
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION  
01 STATE 02 SITE NUMBER  
NC D980502900

II. HAZARDOUS CONDITIONS AND INCIDENTS *(Continued)*

01  J. DAMAGE TO FLORA 02  OBSERVED (DATE: \_\_\_\_\_)  POTENTIAL  ALLEGED  
04 NARRATIVE DESCRIPTION

01  K. DAMAGE TO FAUNA 02  OBSERVED (DATE: \_\_\_\_\_)  POTENTIAL  ALLEGED  
04 NARRATIVE DESCRIPTION *(Include name(s) of species)*

01  L. CONTAMINATION OF FOOD CHAIN 02  OBSERVED (DATE: \_\_\_\_\_)  POTENTIAL  ALLEGED  
04 NARRATIVE DESCRIPTION

01  M. UNSTABLE CONTAINMENT OF WASTES 02  OBSERVED (DATE: \_\_\_\_\_)  POTENTIAL  ALLEGED  
*(Spills/runoff/standing liquids/leaking drums)*  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

01  N. DAMAGE TO OFFSITE PROPERTY 02  OBSERVED (DATE: \_\_\_\_\_)  POTENTIAL  ALLEGED  
04 NARRATIVE DESCRIPTION

01  O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs 02  OBSERVED (DATE: \_\_\_\_\_)  POTENTIAL  ALLEGED  
04 NARRATIVE DESCRIPTION

01  P. ILLEGAL/UNAUTHORIZED DUMPING 02  OBSERVED (DATE: \_\_\_\_\_)  POTENTIAL  ALLEGED  
04 NARRATIVE DESCRIPTION

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

IV. COMMENTS

V. SOURCES OF INFORMATION *(Cite specific references, e. g., state files, sample analysis, reports)*

See attached list of references 1 - 10.

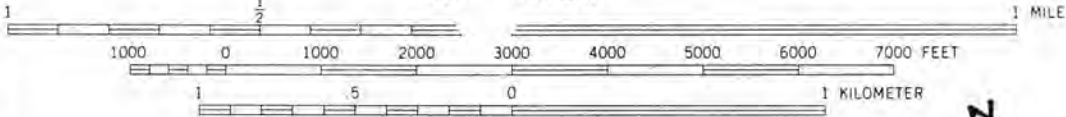


PA REFERENCES

Cumberland County Landfill  
NCD980502900

1. USGS 7.5' Quadrangle Map: Cliffdale, NC 1948 (photorevised 1982).
2. CERCLA File: Cumberland County Landfill, NCD980502900, 698 Ann St., Fayetteville, NC. Solid and Hazardous Waste Management Branch, NC DHR, Raleigh, NC.
3. US EPA, Regional ERRIS List Inventory, by County, ERS-RPT-20, Report Date, July 31, 1987.
4. Pamphlet: Cumberland County Sanitary Landfills, April 1971. Solid Waste File: Cumberland County. Solid and Hazardous Waste Management Branch, NC DHR, Raleigh, NC.
5. Memo to file from Pat DeRosa, NC CERCLA Unit, August 17, 1987. Telephone conversation with Terry Dover, Solid and Hazardous Waste Management Branch, Fayetteville, NC.
6. Memo to file from Pat DeRosa, NC CERCLA Unit, August 17, 1987. Telephone conversation with Tom Olcott, EI Dupont, Fayetteville, NC.
7. Memo to file from Pat DeRosa, NC CERCLA Unit, August 17, 1987. Telephone conversation with Keith Ashley, NC Wildlife Commission, Fayetteville, NC.
8. Memo to file from Pat DeRosa, NC CERCLA Unit, September 10, 1987. Telephone conversation with Lacy Williams, Cumberland County Health Department, Fayetteville, NC.
9. Memo to file from Pat DeRosa, NC CERCLA Unit, September 10, 1987. Personal communication with Dick Caspar, Water Supply Branch, NC DHR, Raleigh, NC.
10. Water Map, City of Fayetteville and Vicinity, 1984. Public Works Commission, Fayetteville, NC.

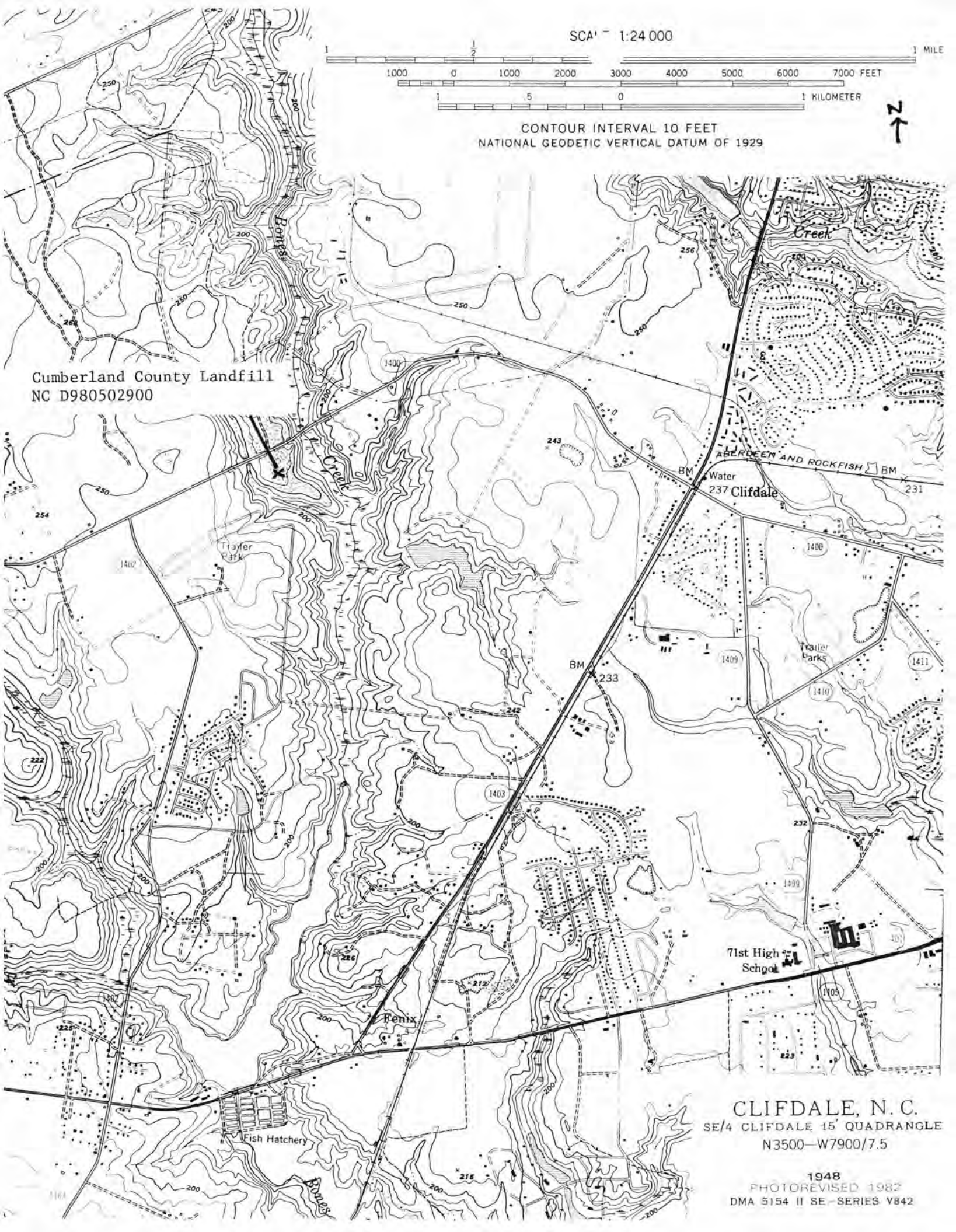
SCALE 1:24 000



CONTOUR INTERVAL 10 FEET  
NATIONAL GEODETIC VERTICAL DATUM OF 1929

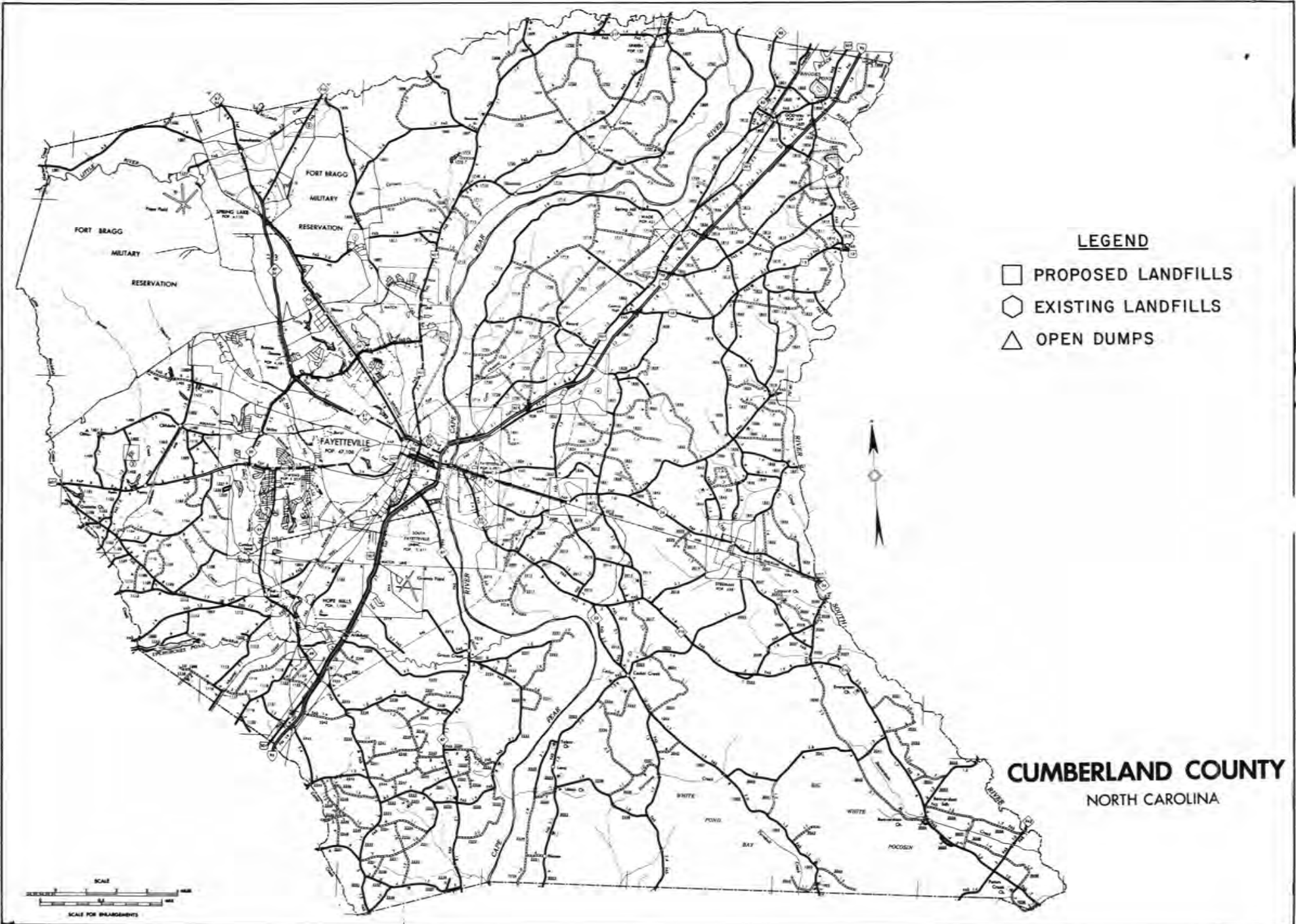


Cumberland County Landfill  
NC D980502900



CLIFDALE, N. C.  
SE/4 CLIFDALE 15' QUADRANGLE  
N3500-W7900/7.5

1948  
PHOTOREVISED 1987  
DMA 5154 II SE-SERIES V842



**LEGEND**

- PROPOSED LANDFILLS
- ⬡ EXISTING LANDFILLS
- △ OPEN DUMPS

**CUMBERLAND COUNTY**  
NORTH CAROLINA

SITE: NUMBER 2004 PAGE 1 FOR THIS SITE  
CUMBERLAND COUNTY LANDFILL  
~~BUNGE ROAD~~ SR 1400 present Co. landfill  
CUMBERLAND COUNTY, NC X----

COMPANY: COMPANY-FACILITY NUMBER 7053  
BORDEN CHEMICAL DIV  
X----  
FAYETTEVILLE PLANT  
1411 INDUSTRIAL DR  
FAYETTEVILLE, NC 28301  
COMPOSITION OF WASTE:

FIRST YEAR USED: 1974  
LAST YEAR USED: 1979

HUNDRED TONS: 2  
THOUSAND CUBIC YDS.: .  
THOUSAND GALLONS: .

*G. 019*  
ORGAN1

*Amides,  
amides,  
amides*  
ORGAN10

*Resins*  
ORGAN12



POTENTIAL HAZARDOUS WASTE SITE  
IDENTIFICATION AND PRELIMINARY ASSESSMENT

REGION IV SITE NUMBER (to be assigned by HQ) 2004

NOTE: This form is completed for each potential hazardous waste site to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and II through X as completely as possible before Section II (Preliminary Assessment). File this form in the Regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335; 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME <u>Cumberland Co. Landfill (FAY)</u>		B. STREET (or other identifier) <u>Bunce Rd</u>	
C. CITY <u>Fayetteville</u>	D. STATE	E. ZIP CODE	F. COUNTY NAME <u>Cumberland</u>
G. OWNER/OPERATOR (if known)			
1. NAME <u>Note: have no knowledge of this site AT ABOVE</u>		2. TELEPHONE NUMBER	
H. TYPE OF OWNERSHIP			
<input type="checkbox"/> 1. FEDERAL <input type="checkbox"/> 2. STATE <input type="checkbox"/> 3. COUNTY <input type="checkbox"/> 4. MUNICIPAL <input type="checkbox"/> 5. PRIVATE <input type="checkbox"/> 6. UNKNOWN			

I. SITE DESCRIPTION <u>Sanitary Landfill</u>	
J. HOW IDENTIFIED (i.e., citizen's complaints, OSHA citations, etc.) <u>Eck Rep.</u>	K. DATE IDENTIFIED (mo., day, & yr.)
L. PRINCIPAL STATE CONTACT	
1. NAME	2. TELEPHONE NUMBER

II. PRELIMINARY ASSESSMENT (complete this section last)

A. PARENT SERIOUSNESS OF PROBLEM	
<input type="checkbox"/> 1. HIGH <input type="checkbox"/> 2. MEDIUM <input type="checkbox"/> 3. LOW <input type="checkbox"/> 4. NONE <input type="checkbox"/> 5. UNKNOWN	
B. RECOMMENDATION	
<input type="checkbox"/> 1. NO ACTION NEEDED (no hazard) <input type="checkbox"/> 2. IMMEDIATE SITE INSPECTION NEEDED a. TENTATIVELY SCHEDULED FOR: _____ b. WILL BE PERFORMED BY: _____	
<input type="checkbox"/> 3. SITE INSPECTION NEEDED a. TENTATIVELY SCHEDULED FOR: _____ b. WILL BE PERFORMED BY: _____	
<input type="checkbox"/> 4. SITE INSPECTION NEEDED (low priority)	

C. PREPARER INFORMATION		
1. NAME <u>Gordon Layton</u>	2. TELEPHONE NUMBER <u>733-2175</u>	3. DATE (mo., day, & yr.) <u>2/22/80</u>

III. SITE INFORMATION

A. SITE STATUS		
<input type="checkbox"/> 1. ACTIVE (those industrial or municipal sites which are being used for waste treatment, storage, or disposal or are currently liable, even if infrequently)	<input type="checkbox"/> 2. INACTIVE (those sites which no longer receive wastes)	<input type="checkbox"/> 3. OTHER (specify) _____ (Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)
B. IS GENERATOR ON SITE?		
<input type="checkbox"/> 1. NO <input type="checkbox"/> 2. YES (specify generator's four-digit SIC Code): _____		
C. GRA. OF SITE (in acres)	D. IF APPARENT SERIOUSNESS OF SITE IS HIGH, SPECIFY COORDINATES	
	1. LATITUDE (deg.-min.-sec)	2. LONGITUDE (deg.-min.-sec)
E. ARE THERE BUILDINGS ON THE SITE?		
<input type="checkbox"/> 1. NO <input type="checkbox"/> 2. YES (specify): _____		

**IV. CHARACTERIZATION OF SITE ACTIVITY**

the major site activity/ies and details relating to each activity by marking 'X' in the appropriate boxes.

A. TRANSPORTER		B. STORER	X	C. TREATER	X	D. DISPOSER
1. RAIL		1. PILE		1. FILTRATION		1. LANDFILL
2. SHIP		2. SURFACE IMPOUNDMENT		2. INCINERATION		2. LANDFARM
3. BARGE		3. DRUMS		3. VOLUME REDUCTION		3. OPEN DUMP
4. TRUCK		4. TANK, ABOVE GROUND		4. RECYCLING/RECOVERY		4. SURFACE IMPOUNDMENT
5. PIPELINE		5. TANK, BELOW GROUND		5. CHEM./PHYS. TREATMENT		5. MIDNIGHT DUMPING
6. OTHER (specify):		6. OTHER (specify):		6. BIOLOGICAL TREATMENT		6. INCINERATION
				7. WASTE OIL REPROCESSING		7. UNDERGROUND INJECTION
				8. SOLVENT RECOVERY		8. OTHER (specify):
				9. OTHER (specify):		

**E. SPECIFY DETAILS OF SITE ACTIVITIES AS NEEDED**

**V. WASTE RELATED INFORMATION**

**A. WASTE TYPE**

- 1 UNKNOWN     2. LIQUID     3. SOLID     4. SLUDGE     5. GAS

**B. WASTE CHARACTERISTICS**

1. UNKNOWN     2. CORROSIVE     3. IGNITABLE     4. RADIOACTIVE     5. HIGHLY VOLATILE  
 6. TOXIC     7. REACTIVE     8. INERT     9. FLAMMABLE

10. OTHER (specify):

**C. WASTE CATEGORIES**

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present.

a. SLUDGE		b. OIL		c. SOLVENTS		d. CHEMICALS		e. SOLIDS		f. OTHER	
AMOUNT		AMOUNT		AMOUNT		AMOUNT		AMOUNT		AMOUNT	
UNIT OF MEASURE		UNIT OF MEASURE		UNIT OF MEASURE		UNIT OF MEASURE		UNIT OF MEASURE		UNIT OF MEASURE	
X	(1) PAINT, PIGMENTS	X	(1) OILY WASTES	X	(1) HALOGENATED SOLVENTS	X	(1) ACIDS	X	(1) FLYASH	X	(1) LABORATORY PHARMACEUT.
	(2) METALS SLUDGES		(2) OTHER (specify):		(2) NON-HALOGENATED SOLVENTS		(2) PICKLING LIQUORS		(2) ASBESTOS		(2) HOSPITAL
	(3) POTW				(3) OTHER (specify):		(3) CAUSTICS		(3) MILLING/MINE TAILINGS		(3) RADIOACTIVE
	(4) ALUMINUM SLUDGE						(4) PESTICIDES		(4) FERROUS SMLTG. WASTES		(4) MUNICIPAL
	(5) OTHER (specify):						(5) DYES/INKS		(5) NON-FERROUS SMLTG. WASTES		(5) OTHER (specify):
							(6) CYANIDE		(6) OTHER (specify):		
							(7) PHENOLS				
							(8) HALOGENS				
							(9) PCB				
							(10) METALS				
							(11) OTHER (specify):				

V. WASTE RELATED INFORMATION (continued)

ST SUBSTANCES OF GREATEST CONCERN WHICH MAY BE ON THE SITE (place in descending order of hazard).

ADDITIONAL COMMENTS OR NARRATIVE DESCRIPTION OF SITUATION KNOWN OR REPORTED TO EXIST AT THE SITE.

VI. HAZARD DESCRIPTION

A. TYPE OF HAZARD	B. POTENTIAL HAZARD (mark 'X')	C. ALLEGED INCIDENT (mark 'X')	D. DATE OF INCIDENT (mo., day, yr.)	E. REMARKS
1. NO HAZARD				
2. HUMAN HEALTH				
3. NON-WORKER INJURY/EXPOSURE				
4. WORKER INJURY				
5. CONTAMINATION OF WATER SUPPLY				
6. CONTAMINATION OF FOOD CHAIN				
7. CONTAMINATION OF GROUND WATER				
8. CONTAMINATION OF SURFACE WATER				
9. DAMAGE TO FLORA/FAUNA				
10. FISH KILL				
11. CONTAMINATION OF AIR				
12. NOTICEABLE ODORS				
13. CONTAMINATION OF SOIL				
14. PROPERTY DAMAGE				
15. FIRE OR EXPLOSION				
16. SPILLS/LEAKING CONTAINERS/ RUNOFF/STANDING LIQUIDS				
17. SEWER, STORM DRAIN PROBLEMS				
18. EROSION PROBLEMS				
19. INADEQUATE SECURITY				
20. INCOMPATIBLE WASTES				
21. MIDNIGHT DUMPING				
OTHER (specify):				

**VII. PERMIT INFORMATION**

STATE ALL APPLICABLE PERMITS HELD BY THE SITE.

1. NPDES PERMIT     2. SPCC PLAN     3. STATE PERMIT (specify): \_\_\_\_\_  
 4. AIR PERMITS     5. LOCAL PERMIT     6. RCRA TRANSPORTER  
 7. RCRA STORER     8. RCRA TREATER     9. RCRA DISPOSER

10. OTHER (specify): \_\_\_\_\_

**B. IN COMPLIANCE?**

1. YES     2. NO     3. UNKNOWN

4. WITH RESPECT TO (list regulation name & number): \_\_\_\_\_

**VIII. PAST REGULATORY ACTIONS**

- A. NONE     B. YES (summarize below)

**IX. INSPECTION ACTIVITY (past or on-going)**

- A. NONE     B. YES (complete items 1,2,3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION

**X. REMEDIAL ACTIVITY (past or on-going)**

- A. NONE     B. YES (complete items 1, 2, 3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION

NOTE: Based on the information in Sections III through X, fill out the Preliminary Assessment (Section II) information on the first page of this form.



SITE: NUMBER 2015 PAGE 1 FOR THIS SITE  
CUMBERLAND COUNTY LANDFILL  
CLIFFDALE RD  
FAYETTEVILLE, NC X----

*Not present site, Frost Co. site*

COMPANY: COMPANY-FACILITY NUMBER 16028  
E.I. DUPONT DE NEMOURS & CO INC  
PLASTIC PRODUCTS & RESINS  
FAYETTEVILLE WORKS  
P.O. DRAWER Z  
FAYETTEVILLE, NC 28303  
COMPOSITION OF WASTE:

FIRST YEAR USED: 1971  
LAST YEAR USED: 1973

HUNDRED TONS: 27  
THOUSAND CUBIC YDS.: .  
THOUSAND GALLONS: .

*Q Org*  
ORGAN1

*Q Inorg*  
INORG1

ORGAN10  
INORG2

*Amides  
amines  
imines*

*salts*

*Resins*  
ORGAN12

LEGEND: IF LISTED, THEN PRESENT IN WASTED. IF NOT LISTED, THEN ITEM NOT PRESENT, NOT KNOWN IF PRESENT, OR DATA MISSING.



POTENTIAL HAZARDOUS WASTE SITE IDENTIFICATION AND PRELIMINARY ASSESSMENT

REGION IV SITE NUMBER (to be assigned by HQ) 2015

NOTE: This form is completed for each potential hazardous waste site to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II (Preliminary Assessment). Fill this form in the Regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335); 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME: Cumberland County Landfill  
 B. STREET (or other identifier): Cliffdale Rd SR 1400  
 C. CITY: Fayetteville  
 D. STATE: NC  
 E. ZIP CODE: 28301  
 F. COUNTY NAME: Cumberland  
 G. OWNER/OPERATOR (if known):  
 1. NAME: EI Dupont Fayetteville Works  
 2. TELEPHONE NUMBER:  
 H. TYPE OF OWNERSHIP:  
 1. FEDERAL  2. STATE  3. COUNTY  4. MUNICIPAL  5. PRIVATE  6. UNKNOWN

I. SITE DESCRIPTION: Landfill  
 J. HOW IDENTIFIED (i.e., citizen's complaints, OSHA citations, etc.): Etk Report  
 K. DATE IDENTIFIED (mo., day, & yr.):  
 L. PRINCIPAL STATE CONTACT:  
 1. NAME: Bill Meyer  
 2. TELEPHONE NUMBER: (919) 733-2178

II. PRELIMINARY ASSESSMENT (complete this section last)

A. APPARENT SERIOUSNESS OF PROBLEM:  
 1. HIGH  2. MEDIUM  3. LOW  4. NONE  5. UNKNOWN  
 B. RECOMMENDATION:  
 1. NO ACTION NEEDED (no hazard)  
 2. IMMEDIATE SITE INSPECTION NEEDED  
 3. SITE INSPECTION NEEDED  
 4. SITE INSPECTION NEEDED (low priority)  
 a. TENTATIVELY SCHEDULED FOR:  
 b. WILL BE PERFORMED BY:

C. PREPARER INFORMATION:  
 1. NAME: Terry F. Daura  
 2. TELEPHONE NUMBER: (919) 733-2178  
 3. DATE (mo., day, & yr.):

III. SITE INFORMATION

A. SITE STATUS:  
 1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if intermittently.)  
 2. INACTIVE (Those sites which no longer receive wastes.)  
 3. OTHER (specify):  
 1971-1973  
 B. IS GENERATOR ON-SITE?  
 1. NO  2. YES (specify generator's four-digit SIC Code):  
 C. AREA OF SITE (in acres): 10  
 D. IF APPARENT SERIOUSNESS OF SITE IS HIGH, SPECIFY COORDINATES:  
 1. LATITUDE (deg.-min.-sec.):  
 2. LONGITUDE (deg.-min.-sec.):  
 E. ARE THERE BUILDINGS ON THE SITE?  
 1. NO  2. YES (specify):

### IV. CHARACTERIZATION OF SITE ACTIVITY

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

X' A. TRANSPORTER	X' B. STORER	X' C. TREATER	X' D. DISPOSER
1. RAIL	1. PILE	1. FILTRATION	1. LANDFILL
2. SHIP	2. SURFACE IMPOUNDMENT	2. INCINERATION	2. LANDFARM
3. BARGE	3. DRUMS	3. VOLUME REDUCTION	3. OPEN DUMP
4. TRUCK	4. TANK, ABOVE GROUND	4. RECYCLING/RECOVERY	4. SURFACE IMPOUNDMENT
5. PIPELINE	5. TANK, BELOW GROUND	5. CHEM./PHYS. TREATMENT	5. MIDNIGHT DUMPING
6. OTHER (specify):	6. OTHER (specify):	6. BIOLOGICAL TREATMENT	5. INCINERATION
		7. WASTE OIL REPROCESSING	7. UNDERGROUND INJECTION
		8. SOLVENT RECOVERY	8. OTHER (specify):
		9. OTHER (specify):	

**E. SPECIFY DETAILS OF SITE ACTIVITIES AS NEEDED**

First Landfill operated by Cumberland County closed 1973

### V. WASTE RELATED INFORMATION

**A. WASTE TYPE**

- 1 UNKNOWN   
  2 LIQUID   
  3 SOLID   
  4 SLUDGE   
  5 GAS

**B. WASTE CHARACTERISTICS**

- 1 UNKNOWN   
  2 CORROSIVE   
  3 IGNITABLE   
  4 RADIOACTIVE   
  5 HIGHLY VOLATILE  
 6 TOXIC   
  7 REACTIVE   
  8 INERT   
  9 FLAMMABLE

10. OTHER (specify):

**C. WASTE CATEGORIES**

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present.

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e. SOLIDS	f. OTHER
AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT
UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE
X' (1) PAINT, PIGMENTS	X' (1) OILY WASTES	X' (1) HALOGENATED SOLVENTS	X' (1) ACIDS	27 hundred tons	X' (1) LABORATORY PHARMACEUT.
(2) METALS SLUDGES	(2) OTHER (specify):	(2) NON-HALOGNTD. SOLVENTS	(2) PICKLING LIQUORS	(1) FLYASH	(2) HOSPITAL
(3) POTW		(3) OTHER (specify):	(3) CAUSTICS	(2) ASBESTOS	(3) RADIOACTIVE
(4) ALUMINUM SLUDGE			(4) PESTICIDES	(3) MILLING/ MINE TAILINGS	(4) MUNICIPAL
(5) OTHER (specify):			(5) DYES/INKS	(4) FERROUS SMLTG. WASTES	(5) OTHER (specify):
			(6) CYANIDE	(5) NON-FERROUS SMLTG. WASTES	
			(7) PHENOLS	(6) OTHER (specify):	
			(8) HALOGENS		
			(9) PCB		
			(10) METALS		
			(11) OTHER (specify):		

V. WASTE RELATED INFORMATION (continued)

3. LIST SUBSTANCES OF GREATEST CONCERN WHICH MAY BE ON THE SITE (priorities descending order of hazard).

ORGANICS - Amides, Amines - Imides  
 Inorganics - Mercaptans

4. ADDITIONAL COMMENTS OR NARRATIVE DESCRIPTION OF SITUATION KNOWN OR REPORTED TO EXIST AT THE SITE.

VI. HAZARD DESCRIPTION

A. TYPE OF HAZARD	B. POTENTIAL HAZARD (mark 'X')	C. ALLEGED INCIDENT (mark 'X')	D. DATE OF INCIDENT (mo., day, yr.)	E. REMARKS
1. NO HAZARD				
2. HUMAN HEALTH				
3. NON-WORKER INJURY/EXPOSURE				
4. WORKER INJURY				
5. CONTAMINATION OF WATER SUPPLY				
6. CONTAMINATION OF FOOD CHAIN				
7. CONTAMINATION OF GROUND WATER				
8. CONTAMINATION OF SURFACE WATER				
9. DAMAGE TO VEGETATION/FLORA/FAUNA				
10. FISH KILL				
11. CONTAMINATION OF AIR				
12. NOTICEABLE ODORS				
13. CONTAMINATION OF SOIL				
14. PROPERTY DAMAGE				
15. FIRE OR EXPLOSION				
16. SPILLS/LEAKING CONTAINERS/ RUNOFF/STANDING LIQUIDS				
17. SEWER, STORM DRAIN PROBLEMS				
18. EROSION PROBLEMS				
19. INADEQUATE SECURITY				
20. INCOMPATIBLE WASTES				
21. MIDNIGHT DUMPING				
OTHER (specify):				

**V. PERMIT INFORMATION**

A. INDICATE ALL APPLICABLE PERMITS HELD BY THE FIRM:

1. NPDES PERMIT     2. SPCC PLAN     3. STATE PERMIT (specify): \_\_\_\_\_  
 4. AIR PERMITS     5. LOCAL PERMIT     6. RCRA TRANSPORTER  
 7. RCRA STORER     8. RCRA TREATER     9. RCRA DISPOSER  
 10. OTHER (specify): \_\_\_\_\_

B. IN COMPLIANCE?

1. YES     2. NO     3. UNKNOWN

4. WITH RESPECT TO (list regulation name & number): \_\_\_\_\_

**VIII. PAST REGULATORY ACTIONS**

- A. NONE     B. YES (summarize below)

**IX. INSPECTION ACTIVITY (past or on-going)**

- A. NONE     B. YES (complete items 1,2,3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION

**X. REMEDIAL ACTIVITY (past or on-going)**

- A. NONE     B. YES (complete items 1, 2, 3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION

NOTE: Based on the information in Sections III through X, fill out the Preliminary Assessment (Section II) information on the first page of this form.

POTENTIAL HAZARDOUS WASTE SITE  
IDENTIFICATION AND PRELIMINARY ASSESSMENT

REGION IV SITE NUMBER (to be assigned by HQ) 2015

NOTE: This form is completed for each potential hazardous waste site to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II (Preliminary Assessment). File this form in the Regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency; site Tracking System; Hazardous Waste Enforcement Task Force (EW-335); 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME <i>Cumberland Co. Landfill</i>		B. STREET (or other identifier) <i>SR. 1400 Cliffdale Rd.</i>	
C. CITY <i>Fayetteville</i>	D. STATE <i>NC</i>	E. ZIP CODE	F. COUNTY NAME <i>Cumberland</i>
G. OWNER/OPERATOR (if known) 1. NAME <i>Cumberland Co.</i>		2. TELEPHONE NUMBER <i>919 868-3166</i>	
H. TYPE OF OWNERSHIP <input type="checkbox"/> 1. FEDERAL <input type="checkbox"/> 2. STATE <input checked="" type="checkbox"/> 3. COUNTY <input type="checkbox"/> 4. MUNICIPAL <input type="checkbox"/> 5. PRIVATE <input type="checkbox"/> 6. UNKNOWN			

I. SITE DESCRIPTION  
*Sanitary Landfill*

J. HOW IDENTIFIED (i.e., citizen's complaints, OSHA citations, etc.) <i>Eck Rep.</i>	K. DATE IDENTIFIED (mo., day, & yr.)
L. PRINCIPAL STATE CONTACT 1. NAME <i>Bill Meyer</i>	2. TELEPHONE NUMBER <i>733-2178</i>

II. PRELIMINARY ASSESSMENT (complete this section last)

A. APPARENT SERIOUSNESS OF PROBLEM  
 1. HIGH     2. MEDIUM     3. LOW     4. NONE     5. UNKNOWN

B. RECOMMENDATION  
 1. NO ACTION NEEDED (no hazard)  
 2. IMMEDIATE SITE INSPECTION NEEDED  
     a. TENTATIVELY SCHEDULED FOR: \_\_\_\_\_  
     b. WILL BE PERFORMED BY: \_\_\_\_\_  
 3. SITE INSPECTION NEEDED  
     a. TENTATIVELY SCHEDULED FOR: \_\_\_\_\_  
     b. WILL BE PERFORMED BY: \_\_\_\_\_  
 4. SITE INSPECTION NEEDED (low priority)

C. PREPARER INFORMATION

1. NAME <i>London Luster</i>	2. TELEPHONE NUMBER <i>733-2178</i>	3. DATE (mo., day, & yr.) <i>2/22/80</i>
---------------------------------	--	---

III. SITE INFORMATION

A. SITE STATUS  
 1. ACTIVE (those in regular or occasional use which are being used for waste treatment, storage, or disposal on a continuing basis, even if infrequently)  
 2. INACTIVE (those sites which no longer receive wastes)  
     *Closed 1974*  
 3. OTHER (specify): \_\_\_\_\_  
     (Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)

B. IS GENERATOR ON SITE?  
 1. NO     2. YES (specify generator's four-digit SIC Code): \_\_\_\_\_

C. AREA OF SITE (in acres)  
*20*

D. IF APPARENT SERIOUSNESS OF SITE IS HIGH, SPECIFY COORDINATES  
 1. LATITUDE (deg.-min.-sec.)  
 2. LONGITUDE (deg.-min.-sec.)

F. ARE THERE BUILDINGS ON THE SITE?  
 1. NO     2. YES (specify): \_\_\_\_\_

**IV. CHARACTERIZATION OF SITE ACTIVITY**

Major site activity ( ) and details relating to each activity by method: 'X' in the appropriate boxes.

A. TRANSPORTER	B. STORER	X	C. TREATER	X	D. DISPOSER
AIR	1. PILE		1. FILTRATION	X	1. LANDFILL
SHIP	2. SURFACE IMPOUNDMENT		2. INCINERATION		2. LANDFARM
BARGE	3. DRUMS		3. VOLUME REDUCTION		3. OPEN DUMP
4. TRUCK	4. TANK, ABOVE GROUND		4. RECYCLING/RECOVERY		4. SURFACE IMPOUNDMENT
5. PIPELINE	5. TANK, BELOW GROUND		5. CHEM./PHYS. TREATMENT		5. MIDNIGHT DUMPING
6. OTHER (specify):	6. OTHER (specify):		6. BIOLOGICAL TREATMENT		6. INCINERATION
			7. WASTE OIL REPROCESSING		7. UNDERGROUND INJECTION
			8. SOLVENT RECOVERY		8. OTHER (specify):
			9. OTHER (specify):		

E. SPECIFY DETAILS OF SITE ACTIVITIES AS NEEDED

**V. WASTE RELATED INFORMATION**

**A. WASTE TYPE**

1 UNKNOWN     2. LIQUID     3. SOLID     4. SLUDGE     5. GAS

**B. WASTE CHARACTERISTICS**

1. UNKNOWN     2. CORROSIVE     3. IGNITABLE     4. RADIOACTIVE     5. HIGHLY VOLATILE  
 6. TOXIC     7. REACTIVE     8. INERT     9. FLAMMABLE

10. OTHER (specify):

**C. WASTE CATEGORIES**

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

*NO*

2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present.

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e. SOLIDS	f. OTHER
AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT
UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE
X' (1) PAINT, PIGMENTS	X' (1) OILY WASTES	X' (1) HALOGENATED SOLVENTS	X' (1) ACIDS	X' (1) FLYASH	X' (1) LABORATORY PHARMACEUT.
(2) METALS SLUDGES	(2) OTHER (specify):	(2) NON-HALOGNTD. SOLVENTS	(2) PICKLING LIQUORS	(2) ASBESTOS	(2) HOSPITAL
(3) POTW		(3) OTHER (specify):	(3) CAUSTICS	(3) MILLING/ MINE TAILINGS	(3) RADIOACTIVE
(4) ALUMINUM SLUDGE			(4) PESTICIDES	(4) FERROUS SMLTG. WASTES	(4) MUNICIPAL
(5) OTHER (specify):			(5) DYES/INKS	(5) NON-FERROUS SMLTG. WASTES	(5) OTHER (specify):
			(6) CYANIDE	X' (6) OTHER (specify):	
			(7) PHENOLS	<i>Industrial SOLIDS</i>	
			(8) HALOGENS		
			(9) PCB		
			(10) METALS		
			(11) OTHER (specify):		

V. WASTE RELATED INFORMATION (continued)

PLACES OF GREATEST CONCERN WHICH MAY BE ON THE SITE (list in descending order of hazard).

ORGANICS

ADDITIONAL COMMENTS OR NARRATIVE DESCRIPTION OF SITUATION KNOWN OR REPORTED TO EXIST AT THE SITE.

VI. HAZARD DESCRIPTION

A. TYPE OF HAZARD	B. POTENTIAL HAZARD (mark 'X')	C. ALLEGED INCIDENT (mark 'X')	D. DATE OF INCIDENT (mo., day, yr.)	E. REMARKS
1. NO HAZARD				
2. HUMAN HEALTH				
3. NON-WORKER INJURY/EXPOSURE				
4. WORKER INJURY				
5. CONTAMINATION OF WATER SUPPLY				
6. CONTAMINATION OF FOOD CHAIN				
7. CONTAMINATION OF GROUND WATER				
8. CONTAMINATION OF SURFACE WATER	X			
9. DAMAGE TO FLORA/FAUNA				
10. FISH KILL				
11. CONTAMINATION OF AIR				
12. NOTICEABLE ODORS				
13. CONTAMINATION OF SOIL				
14. PROPERTY DAMAGE				
15. FIRE OR EXPLOSION				
16. SPILLS/LEAKING CONTAINERS/RUNOFF/STANDING LIQUIDS				
17. SEWER, STORM DRAIN PROBLEMS				
18. EROSION PROBLEMS				
19. INADEQUATE SECURITY				
20. INCOMPATIBLE WASTES				
21. MIDNIGHT DUMPING				
22. OTHER (specify):				



VII. PERMIT INFORMATION

ALL APPLICABLE PERMITS HELD BY THE SITE.

1. FDES PERMIT     2. SPCC PLAN     3. STATE PERMIT (specify): SOLID WASTE  
 4. AIR PERMITS     5. LOCAL PERMIT     6. RCRA TRANSPORTER  
 7. RCRA STORER     8. RCRA TREATER     9. RCRA DISPOSER

10. OTHER (specify): \_\_\_\_\_

B. IN COMPLIANCE?

1. YES     2. NO     3. UNKNOWN

4. WITH RESPECT TO (list regulation name & number): NC. Solid WASTE Rules

VIII. PAST REGULATORY ACTIONS

- A. NONE     B. YES (summarize below)

IX. INSPECTION ACTIVITY (past or on-going)

- A. NONE     B. YES (complete items 1, 2, 3, & 4 below)

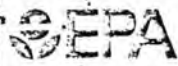
1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION
Inspection	10/11/79	STATE	Routine Quarterly

X. REMEDIAL ACTIVITY (past or on-going)

- A. NONE     B. YES (complete items 1, 2, 3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION

NOTE: Based on the information in Sections III through X, fill out the Preliminary Assessment (Section II) information on the first page of this form.



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT

REGION IV SITE NUMBER (to be assigned by HQ) 2015

GENERAL INSTRUCTIONS: Complete Sections I and III through XV of this form as completely as possible. Then use the information on this form to develop a Tentative Disposition (Section II). File this form in its entirety in the regional Hazardous Waste Log file. Be sure to include all appropriate Supplemental Reports in the file. Submit a copy of the forms to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335); 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME: Cumberland Cty Landfill  
B. STREET (or other identifier): Cliffdale Rd  
C. CITY: Fayetteville  
D. STATE: N.C.  
E. ZIP CODE: 28301  
F. COUNTY NAME: Cumberland

G. SITE OPERATOR INFORMATION  
1. NAME: Cumberland County Board of Commissioners  
2. TELEPHONE NUMBER: 919-483-4897  
3. STREET: Cliffdale Rd SR 1400  
4. CITY: Fayetteville  
5. STATE: N.C.  
6. ZIP CODE: 28301

H. REALTY OWNER INFORMATION (if different from operator of site)  
1. NAME: S/A  
2. TELEPHONE NUMBER: 919  
3. CITY: \_\_\_\_\_  
4. STATE: \_\_\_\_\_  
5. ZIP CODE: \_\_\_\_\_

I. SITE DESCRIPTION: LANDFILL

J. TYPE OF OWNERSHIP  
 1. FEDERAL  2. STATE  3. COUNTY  4. MUNICIPAL  5. PRIVATE

II. TENTATIVE DISPOSITION (complete this section last)

A. ESTIMATE DATE OF TENTATIVE DISPOSITION (mo., day, & yr.): 1971-1973  
B. APPARENT SERIOUSNESS OF PROBLEM  
 1. HIGH  2. MEDIUM  3. LOW  4. NONE

K. PREPARER INFORMATION  
NAME: Andrew L. Robinson Jr  
2. TELEPHONE NUMBER: 919-486-1191  
3. DATE (mo., day, & yr.): 10-24-80

III. INSPECTION INFORMATION

A. PRINCIPAL INSPECTOR INFORMATION  
1. NAME: Andrew L. Robinson Jr  
2. TITLE: District Sanitarian  
3. ORGANIZATION: N.C. Solid & Hazardous Waste Management Branch  
4. TELEPHONE NO. (area code & no.): 919-486-1191

B. INSPECTION PARTICIPANTS

1. NAME	2. ORGANIZATION	3. TELEPHONE NO.

C. SITE REPRESENTATIVES INTERVIEWED (corporate officials, workers, residents)

1. NAME	2. TITLE & TELEPHONE NO.	3. ADDRESS

III. INS.

ION INFORMATION (continued)

D. GENERATOR INFORMATION (sources of waste)

1. NAME	2. TELEPHONE NO.	3. ADDRESS	4. WASTE TYPE GENERATED
ET Dupont De Nemour Co Inc	(919) 483-4681	RD, Box 2 Faye, N.C.	Amides Amines Organic Inorganic mercaptans

E. TRANSPORTER/HALER INFORMATION

1. NAME	2. TELEPHONE NO.	3. ADDRESS	4. WASTE TYPE TRANSPORTED

F. IF WASTE IS PROCESSED ON SITE AND ALSO SHIPPED TO OTHER SITES, IDENTIFY OFF-SITE FACILITIES USED FOR DISPOSAL.

1. NAME	2. TELEPHONE NO.	3. ADDRESS

G. DATE OF INSPECTION  
(mo., day, & yr.)  
10-6-80

H. TIME OF INSPECTION  
2:00 P.M.

I. ACCESS GAINED BY: (credentials must be shown in all cases)

1. PERMISSION  2. WARRANT

J. WEATHER (describe)

Dry

IV. SAMPLING INFORMATION

A. Mark 'X' for the types of samples taken and indicate where they have been sent e.g., regional lab, other EPA lab, contractor, etc. and estimate when the results will be available.

1. SAMPLE TYPE	2. SAMPLE TAKEN (mark 'X')	3. SAMPLE SENT TO:	4. DATE RESULTS AVAILABLE
a. GROUNDWATER			
b. SURFACE WATER			
c. WASTE			
d. AIR			
e. RUNOFF			
f. SPILL			
g. SOIL			
h. VEGETATION			
i. OTHER (specify)			

B. FIELD MEASUREMENTS TAKEN (e.g., radioactivity, explosivity, PH, etc.)

1. TYPE	2. LOCATION OF MEASUREMENTS	3. RESULTS

IV. SAMPLING INFORMATION (continued)

C. PHOTOS

1. TYPE OF PHOTOS

- a. GROUND     b. AERIAL

2. PHOTOS IN CUSTODY OF:

D. SITE MAPPED?

YES. SPECIFY LOCATION OF MAPS:

E. COORDINATES

1. LATITUDE (deg.-min.-sec.)

2. LONGITUDE (deg.-min.-sec.)

V. SITE INFORMATION

A. SITE STATUS

1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if infrequently.)
2. INACTIVE (Those sites which no longer receive wastes.)
3. OTHER (specify): \_\_\_\_\_  
(Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)

B. IS GENERATOR ON SITE?

1. NO     2. YES (specify generator's four-digit SIC Code): \_\_\_\_\_

C. AREA OF SITE (in acres)

D. ARE THERE BUILDINGS ON THE SITE?

1. NO     2. YES (specify): \_\_\_\_\_

VI. CHARACTERIZATION OF SITE ACTIVITY

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

<input type="checkbox"/> X	A. TRANSPORTER	<input type="checkbox"/> X	B. STORER	<input type="checkbox"/> X	C. TREATER	<input type="checkbox"/> X	D. DISPOSER
	1. RAIL		1. PILE		1. FILTRATION		<input checked="" type="checkbox"/> 1. LANDFILL
	2. SHIP		2. SURFACE IMPOUNDMENT		2. INCINERATION		2. LANDFARM
	3. BARGE		3. DRUMS		3. VOLUME REDUCTION		3. OPEN DUMP
	4. TRUCK		4. TANK, ABOVE GROUND		4. RECYCLING/RECOVERY		4. SURFACE IMPOUNDMENT
	5. PIPELINE		5. TANK, BELOW GROUND		5. CHEM./PHYS./TREATMENT		5. MIDNIGHT DUMPING
	6. OTHER (specify):		6. OTHER (specify):		6. BIOLOGICAL TREATMENT		6. INCINERATION
					7. WASTE OIL REPROCESSING		7. UNDERGROUND INJECTION
					8. SOLVENT RECOVERY		8. OTHER (specify):
					9. OTHER (specify):		

E. SUPPLEMENTAL REPORTS: If the site falls within any of the categories listed below, Supplemental Reports must be completed. Indicate which Supplemental Reports you have filled out and attached to this for..

1. STORAGE     2. INCINERATION     3. LANDFILL     4. SURFACE IMPOUNDMENT     5. DEEP WELL
6. CHEM/BIO/PHYS TREATMENT     7. LANDFARM     8. OPEN DUMP     9. TRANSPORTER     10. RECYCLOR/RECLAIMER

VII. WASTE RELATED INFORMATION

A. WASTE TYPE

1. LIQUID     2. SOLID     3. SLUDGE     4. GAS

B. WASTE CHARACTERISTICS

1. CORROSIVE     2. IGNITABLE     3. RADIOACTIVE     4. HIGHLY VOLATILE
5. TOXIC     6. REACTIVE     7. INERT     8. FLAMMABLE

9. OTHER (specify):

WASTE CATEGORIES

Are records of wastes available? Specify items such as manifests, inventories, etc. below.

VII. WASTE RELATED INFORMATION (continued)

2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present.

a. SLUDGE		b. OIL		c. SOLVENTS		d. CHEMICALS		e. SOLIDS		f. OTHER	
AMOUNT		AMOUNT		AMOUNT		AMOUNT		AMOUNT		AMOUNT	
UNIT OF MEASURE		UNIT OF MEASURE		UNIT OF MEASURE		UNIT OF MEASURE		UNIT OF MEASURE		UNIT OF MEASURE	
<input checked="" type="checkbox"/>	(1) PAINT, PIGMENTS	<input checked="" type="checkbox"/>	(1) OILY WASTES	<input checked="" type="checkbox"/>	(1) HALOGENATED SOLVENTS	<input checked="" type="checkbox"/>	(1) ACIDS	<input checked="" type="checkbox"/>	(1) FLYASH	<input checked="" type="checkbox"/>	(1) LABORATORY, PHARMACEUT.
	(2) METALS SLUDGES	<input type="checkbox"/>	(2) OTHER (specify):		(2) NON-HALOGNTD. SOLVENTS		(2) PICKLING LIQUORS		(2) ASBESTOS		(2) HOSPITAL
	(3) POTW				(3) OTHER (specify):		(3) CAUSTICS		(3) MILLING/MINE TAILINGS		(3) RADIOACTIVE
	(4) ALUMINUM SLUDGE						(4) PESTICIDES		(4) FERROUS SMELTING WASTES		(4) MUNICIPAL
	(5) OTHER (specify):						(5) DYES/INKS		(5) NON-FERROUS SMLTG. WASTES		(5) OTHER (specify):
							(6) CYANIDE		(6) OTHER (specify):		
					(7) PHENOLS						
					(8) HALOGENS						
					(9) PCB						
					(10) METALS						
					(11) OTHER (specify):						

27  
Hundred tons

D. LIST SUBSTANCES OF GREATEST CONCERN WHICH ARE ON THE SITE (place in descending order of hazard)

1. SUBSTANCE	2. FORM (mark 'X')			3. TOXICITY (mark 'X')				4. CAS NUMBER	5. AMOUNT	6. UNIT
	a. SOLID	b. LIQ.	c. VA-POR	a. HIGH	b. MED.	c. LOW	d. NONE			

VIII. HAZARD DESCRIPTION

FIELD EVALUATION HAZARD DESCRIPTION Place an 'X' in the box to indicate that the listed hazard exists. Describe the hazard in the space provided.

A. HUMAN HEALTH HAZARDS

*NONE*

VIII. HAZARD DESCRIPTION

(continued)

B. NON-WORKER INJUR

POSURE

C. WORKER INJURY/EXPOSURE

D. CONTAMINATION OF WATER SUPPLY

E. CONTAMINATION OF FOOD CHAIN

F. CONTAMINATION OF GROUND WATER

G. CONTAMINATION OF SURFACE WATER

H. DAMAGE TO FLORA/FAUNA

I. FISH KILL

J. CONTAMINATION OF AIR

K. NOTICEABLE ODORS

L. CONTAMINATION OF SOIL

M. PROPERTY DAMAGE

VIII. HAZARD DESCRIPTION (continued)

N. FIRE OR EXPLOSION

O. SPILLS/LEAKING CONTAINERS/RUNOFF/STANDING LIQUID

P. SEWER, STORM DRAIN PROBLEMS

Q. EROSION PROBLEMS

R. INADEQUATE SECURITY

S. INCOMPATIBLE WASTES



VIII. HAZARD DESCRIPTION (continued)

T. MIDNIGHT DUMPING

U. OTHER (specify):

IX. POPULATION DIRECTLY AFFECTED BY SITE

A. LOCATION OF POPULATION	B. APPROX. NO. OF PEOPLE AFFECTED	C. APPROX. NO. OF PEOPLE AFFECTED WITHIN UNIT AREA	D. APPROX. NO. OF BUILDINGS AFFECTED	E. DISTANCE TO SITE (specify units)
1. IN RESIDENTIAL AREAS				
2. IN COMMERCIAL OR INDUSTRIAL AREAS				
3. IN PUBLICLY TRAVELLED AREAS				
4. PUBLIC USE AREAS (parks, schools, etc.)				

X. WATER AND HYDROLOGICAL DATA

A. DEPTH TO GROUNDWATER (specify units)	B. DIRECTION OF FLOW	C. GROUNDWATER USE IN VICINITY
D. POTENTIAL YIELD OF AQUIFER	E. DISTANCE TO DRINKING WATER SUPPLY (specify unit of measure)	F. DIRECTION TO DRINKING WATER SUPPLY

G. TYPE OF DRINKING WATER SUPPLY

1. NON-COMMUNITY < 15 CONNECTIONS\*     
  2. COMMUNITY (specify town): \_\_\_\_\_ > 15 CONNECTIONS  
 3. SURFACE WATER     
  4. WELL

**X. WATER AND HYDROLOGICAL DATA (continued)**

1. LIST ALL DRINKING WATER WELLS WITHIN A 1/4 MILE RADIUS OF SITE

1. WELL	2. DEPTH (specify unit)	3. LOCATION (proximity to population/buildings)	4. NON-COMMUNITY (mark 'X')	5. COMMUNITY (mark 'X')

**I. RECEIVING WATER**

1. NAME

2. SEWERS

3. STREAMS/RIVERS

4. LAKES/RESERVOIRS

5. OTHER (specify):

6. SPECIFY USE AND CLASSIFICATION OF RECEIVING WATERS

**XI. SOIL AND VEGETATION DATA**

LOCATION OF SITE IS IN:

A. KNOWN FAULT ZONE

B. KARST ZONE

C. 100 YEAR FLOOD PLAIN

D. WETLAND

E. A REGULATED FLOODWAY

F. CRITICAL HABITAT

G. RECHARGE ZONE OR SOLE SOURCE AQUIFER

**XII. TYPE OF GEOLOGICAL MATERIAL OBSERVED**

Mark 'X' to indicate the type(s) of geological material observed and specify where necessary, the component parts.

'X'	A. COVERED	'X'	B. BEDROCK (specify below)	'X'	C. OTHER (specify below)
1. SAND	X				
2. CLAY	X				
3. GRAVEL					

**XIII. SOIL PERMEABILITY**

A. UNKNOWN

B. VERY HIGH (100,000 to 1000 cm/sec.)

C. HIGH (1000 to 10 cm/sec.)

D. MODERATE (10 to .1 cm/sec.)

E. LOW (.1 to .001 cm/sec.)

F. VERY LOW (.001 to .00001 cm/sec.)

**G. RECHARGE AREA**

1. YES

2. NO

3. COMMENTS:

**H. DISCHARGE AREA**

1. YES

2. NO

3. COMMENTS:

**I. SLOPE**

1. ESTIMATE % OF SLOPE

5%

2. SPECIFY DIRECTION OF SLOPE, CONDITION OF SLOPE, ETC.

Direction toward Rockfish Creek

**J. OTHER GEOLOGICAL DATA**

XIV PERMIT INFORMATION

List all applicable permits held by the site and provide the related information.

A. PERMIT TYPE <i>(e.g., RCRA, State, NPDES, etc.)</i>	B. ISSUING AGENCY	C. PERMIT NUMBER	D. DATE ISSUED <i>(mo., day, &amp; yr.)</i>	E. EXPIRATION DATE <i>(mo., day, &amp; yr.)</i>	F. IN COMPLIANCE <i>(mark 'X')</i>		
					1. YES	2. NO	3. UNKNOWN

XV. PAST REGULATORY OR ENFORCEMENT ACTIONS

NONE       YES *(summarize in this space)*

*(This area is left blank for summarizing past regulatory or enforcement actions.)*

NOTE: Based on the information in Sections III through XV, fill out the Tentative Disposition (Section II) information on the first page of this form.

LANDFILLS SITE INSPECTION REPORT  
(Supplemental Report)

INSTRUCTION  
Answer and Explain  
as Necessary. 2015

1. EVIDENCE OF SITE INSTABILITY (Erosion, Settling, Sink Holes, etc)

YES  NO

EVIDENCE OF IMPROPER DISPOSAL OF BULK LIQUIDS, SEMI-SOLIDS AND SLUDGES INTO THE LANDFILL

YES  NO

3. CHECK RECORDS OF CELL LOCATION AND CONTENTS AND BENCHMARK

YES  NO

4. WASTES SURROUNDED BY SORBENT MATERIAL

YES  NO

5. DIVERSION STRUCTURES ARE EFFECTIVELY CONSTRUCTED AND PROPERLY MAINTAINED

YES  NO

6. EVIDENCE OF PONDING OF WATER ON SITE

YES  NO

7. EVIDENCE OF IMPROPER/INADEQUATE DRAINING

YES  NO

8. ADEQUATE LEACHATE COLLECTION SYSTEM (If "Yes", specify Type)

YES  NO

8a. SURFACE LEACHATE SPRING

YES  NO

9. RECORDS OF LEACHATE ANALYSIS

YES  NO

10. GAS MONITORING

YES  NO

11. GROUNDWATER MONITORING WELLS

YES  NO

ARTIFICIAL MEMBRANE LINER INSTALLED

YES  NO

13. SPECIFIC CONTAINMENT MEASURES (Clay Bottom, Sides, etc)

YES  NO

14. FIXATION (Stabilization) OF WASTE

YES  NO

15. ADEQUATE CLOSURE OF INACTIVE PORTION OF FACILITY

YES  NO

16. COVER (Type)

sand/clay

16a. THICKNESS

at least 2'

16b. PERMEABILITY

16c. DAILY APPLICATION

YES  NO



POTENTIAL HAZARDOUS WASTE SITE  
TENTATIVE DISPOSITION

REGION IV SITE NUMBER 2015

File this form in the regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335); 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME Cumberland City Landfill	B. STREET Clyde Rd, SR 1400
C. CITY Fayetteville	D. STATE N.C.
	E. ZIP CODE 28301

II. TENTATIVE DISPOSITION

Indicate the recommended action(s) and agency(ies) that should be involved by marking 'X' in the appropriate boxes.

RECOMMENDATION	MARK 'X'	ACTION AGENCY			
		EPA	STATE	LOCAL	PRIVATE
A. NO ACTION NEEDED -- NO HAZARD	X				
B. INVESTIGATIVE ACTION(S) NEEDED (If yes, complete Section III.)					
C. REMEDIAL ACTION NEEDED (If yes, complete Section IV.)					
D. ENFORCEMENT ACTION NEEDED (if yes, specify in Part E whether the case will be primarily managed by the EPA or the State and what type of enforcement action is anticipated.)					

E. RATIONALE FOR DISPOSITION

No visible evidence of health hazards

F. INDICATE THE ESTIMATED DATE OF FINAL DISPOSITION (mo., day, & yr.)

10-24-80

G. IF A CASE DEVELOPMENT PLAN IS NECESSARY, INDICATE THE ESTIMATED DATE ON WHICH THE PLAN WILL BE DEVELOPED (mo., day, & yr.)

H. PREPARER INFORMATION

1. NAME Andrew Robinson	2. TELEPHONE NUMBER 919-484-1191	3. DATE (mo., day, & yr.) 10-24-80
----------------------------	-------------------------------------	---------------------------------------

III. INVESTIGATIVE ACTIVITY NEEDED

A. IDENTIFY ADDITIONAL INFORMATION NEEDED TO ACHIEVE A FINAL DISPOSITION.

B. PROPOSED INVESTIGATIVE ACTIVITY (Detailed Information)

1. METHOD FOR OBTAINING NEEDED ADDITIONAL INFO.	2. SCHEDULED DATE OF ACTION (mo, day, & yr)	3. TO BE PERFORMED BY (EPA, Contractor, State, etc.)	4. ESTIMATED MANHOURS	5. REMARKS
a. TYPE OF SITE INSPECTION				
(1)				
(2)				
(3)				
b. TYPE OF MONITORING				
(1)				
(2)				
c. TYPE OF SAMPLING				
(1)				
(2)				

**III. INVESTIGATIVE ACTIVITY NEEDED and PART B-PROPOSED INVESTIGATIVE ACTIVITY (Continued)**

<b>d. TYPE OF LAB ANALYSIS</b>				
(1)				
(2)				
<b>e. OTHER (specify)</b>				
(1)				
(2)				

**C. ELABORATE ON ANY OF THE INFORMATION PROVIDED IN PART B (on front & above) AS NEEDED TO IDENTIFY ADDITIONAL INVESTIGATIVE WORK.**

<b>D. ESTIMATED MANHOURS BY ACTION AGENCY</b>			
<b>1. ACTION AGENCY</b>	<b>2. TOTAL ESTIMATED MANHOURS FOR INVESTIGATIVE ACTIVITIES</b>	<b>1. ACTION AGENCY</b>	<b>2. TOTAL ESTIMATED MANHOURS FOR INVESTIGATIVE ACTIVITIES</b>
a. EPA		b. STATE	
c. EPA CONTRACTOR		d. OTHER (specify)	

**IV. REMEDIAL ACTIONS**

**A. SHORT TERM/EMERGENCY STRATEGY (On Site & Off-Site):** List all emergency actions needed to bring site under immediate control, e.g., restrict access, provide alternate water supply, etc. See instructions for a list of Key Words for each of the actions to be used in the space below.

1. ACTION	2. EST. START DATE (mo, day, & yr)	3. EST. END DATE (mo, day, & yr)	4. ACTION AGENCY (EPA, State, Private Party)	5. ESTIMATED COST	6. SPECIFY 311 OR OTHER ACTION; INDICATE THE MAGNITUDE OF THE WORK REQUIRED
				\$	
				\$	
				\$	
				\$	
				\$	
				\$	
				\$	

**B. LONG TERM STRATEGY (On Site & Off-Site):** List all long term solutions, e.g., excavation, removal, ground water monitoring wells, etc. See instructions for a list of Key Words for each of the actions to be used in the spaces below.

1. ACTION	2. EST. START DATE (mo, day, & yr)	3. EST. END DATE (mo, day, & yr)	4. ACTION AGENCY (EPA, State, Private Party)	5. ESTIMATED COST	6. SPECIFY 311 OR OTHER ACTION; INDICATE THE MAGNITUDE OF THE WORK REQUIRED
				\$	
				\$	
				\$	
				\$	
				\$	
				\$	
				\$	

<b>C. ESTIMATED MANHOURS AND COST BY ACTION AGENCY</b>					
<b>1. ACTION AGENCY</b>	<b>2. TOTAL EST. MANHOURS FOR REMEDIAL ACTIVITIES</b>	<b>3. TOTAL EST. COST FOR REMEDIAL ACTIVITIES</b>	<b>1. ACTION AGENCY</b>	<b>2. TOTAL EST. MANHOURS FOR REMEDIAL ACTIVITIES</b>	<b>3. TOTAL EST. COST FOR REMEDIAL ACTIVITIES</b>
a. EPA			b. STATE		
c. PRIVATE PARTIES			d. OTHER (specify)		

SITE: NUMBER 2015 PAGE 1 FOR THIS SITE  
CUMBERLAND COUNTY LANDFILL  
CLIFFDALE RD  
FAYETTEVILLE, NC X----

*not present site, Frost Co. site*

COMPANY: COMPANY-FACILITY NUMBER 16028  
E.I. DUPONT DE NEMOURS & CO INC  
PLASTIC PRODUCTS & RESINS  
FAYETTEVILLE WORKS  
P.O. DRAWER Z  
FAYETTEVILLE, NC 28303  
COMPOSITION OF WASTE:

FIRST YEAR USED: 1971  
LAST YEAR USED: 1973

HUNDRED TONS: 27  
THOUSAND CUBIC YDS.: .  
THOUSAND GALLONS: .

*G.Org*  
ORGAN1

*G.Inorg*  
INORG1

*Amides  
amines  
imines*  
ORGAN10  
*salts*  
INORG2

*Resins*  
ORGAN12

LEGEND: IF LISTED, THEN PRESENT IN WASTED. IF NOT LISTED, THEN ITEM NOT PRESENT, NOT KNOWN IF PRESENT, OR DATA MISSING.



POTENTIAL HAZARDOUS WASTE SITE  
IDENTIFICATION AND PRELIMINARY ASSESSMENT

REGION IV SITE NUMBER (to be assigned by HQ) 2015

NOTE: This form is completed for each potential hazardous waste site to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II (Preliminary Assessment). File this form in the Regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335), 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME <i>Cumberland County Landfill</i>		B. STREET (or other identifier) <i>Cliffdale Rd SR 1400</i>	
C. CITY <i>Fayetteville</i>		D. STATE <i>NC</i>	E. ZIP CODE <i>28301</i>
G. OWNER/OPERATOR (if known) 1. NAME <i>E.I. DuPont Fayetteville Works</i>		2. TELEPHONE NUMBER	
H. TYPE OF OWNERSHIP <input type="checkbox"/> 1. FEDERAL <input type="checkbox"/> 2. STATE <input checked="" type="checkbox"/> 3. COUNTY <input type="checkbox"/> 4. MUNICIPAL <input type="checkbox"/> 5. PRIVATE <input type="checkbox"/> 6. UNKNOWN			

I. SITE DESCRIPTION  
*Landfill*

J. HOW IDENTIFIED (i.e., citizen's complaints, OSHA citations, etc.) <i>Eck Report</i>	K. DATE IDENTIFIED (mo., day, & yr.)
---	--------------------------------------

L. PRINCIPAL STATE CONTACT 1. NAME <i>Bill Meyer</i>	2. TELEPHONE NUMBER <i>(919) 733-2178</i>
--	--

II. PRELIMINARY ASSESSMENT (complete this section last)

APPARENT SERIOUSNESS OF PROBLEM  
 1. HIGH   
  2. MEDIUM   
  3. LOW   
  4. NONE   
  5. UNKNOWN

B. RECOMMENDATION

<input type="checkbox"/> 1. NO ACTION NEEDED (no hazard)	<input type="checkbox"/> 2. IMMEDIATE SITE INSPECTION NEEDED a. TENTATIVELY SCHEDULED FOR:
<input checked="" type="checkbox"/> 3. SITE INSPECTION NEEDED a. TENTATIVELY SCHEDULED FOR:	b. WILL BE PERFORMED BY:
b. WILL BE PERFORMED BY:	<input type="checkbox"/> 4. SITE INSPECTION NEEDED (low priority)

C. PREPARER INFORMATION 1. NAME <i>Terry F. Decker</i>	2. TELEPHONE NUMBER <i>(919) 733-2178</i>	3. DATE (mo., day, & yr.)
--	--	---------------------------

III. SITE INFORMATION

A. SITE STATUS

<input type="checkbox"/> 1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if intermittently.)	<input checked="" type="checkbox"/> 2. INACTIVE (Those sites which no longer receive wastes.) <i>1971-1973</i>	<input type="checkbox"/> 3. OTHER (specify): (Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)
--	---	---

B. IS GENERATOR ON SITE?  
 1. NO   
  2. YES (specify generator's four-digit SIC Code):

C. AREA OF SITE (in acres) <i>10</i>	D. IF APPARENT SERIOUSNESS OF SITE IS HIGH, SPECIFY COORDINATES 1. LATITUDE (deg.-min.-sec.) 2. LONGITUDE (deg.-min.-sec.)
---	--

E. ARE THERE BUILDINGS ON THE SITE?  
 1. NO   
  2. YES (specify):



Attached  
 3-1

**IV. CHARACTERIZATION OF SITE ACT**

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

<input checked="" type="checkbox"/> A. TRANSPORTER	<input checked="" type="checkbox"/> B. STORER	<input checked="" type="checkbox"/> C. TREATER	<input checked="" type="checkbox"/> D. DISPOSER
1. RAIL	1. PILE	1. FILTRATION	<input checked="" type="checkbox"/> 1. LANDFILL
2. SHIP	2. SURFACE IMPOUNDMENT	2. INCINERATION	2. LANDFARM
3. BARGE	3. DRUMS	3. VOLUME REDUCTION	3. OPEN DUMP
4. TRUCK	4. TANK, ABOVE GROUND	4. RECYCLING/RECOVERY	4. SURFACE IMPOUNDMENT
5. PIPELINE	5. TANK, BELOW GROUND	5. CHEM./PHYS. TREATMENT	5. MIDNIGHT DUMPING
6. OTHER (specify):	6. OTHER (specify):	6. BIOLOGICAL TREATMENT	5. INCINERATION
		7. WASTE OIL REPROCESSING	7. UNDERGROUND INJECTION
		8. SOLVENT RECOVERY	8. OTHER (specify):
		9. OTHER (specify):	

**E. SPECIFY DETAILS OF SITE ACTIVITIES AS NEEDED**

*First Landfill operated by Cumberland County closed 1973*

**V. WASTE RELATED INFORMATION**

**A. WASTE TYPE**

1 UNKNOWN  
  2 LIQUID  
  3 SOLID  
  4 SLUDGE  
  5 GAS

**B. WASTE CHARACTERISTICS**

1 UNKNOWN  
  2 CORROSIVE  
  3 IGNITABLE  
  4 RADIOACTIVE  
  5 HIGHLY VOLATILE  
 6 TOXIC  
  7 REACTIVE  
  8 INERT  
  9 FLAMMABLE

10. OTHER (specify):

**C. WASTE CATEGORIES**

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present.

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e. SOLIDS	f. OTHER
AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT
UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE
				27	
				<i>hundred tons</i>	
<input checked="" type="checkbox"/> (1) PAINT, PIGMENTS	<input checked="" type="checkbox"/> (1) OILY WASTES	<input checked="" type="checkbox"/> (1) HALOGENATED SOLVENTS	<input checked="" type="checkbox"/> (1) ACIDS	<input checked="" type="checkbox"/> (1) FLYASH	<input checked="" type="checkbox"/> (1) LABORATORY PHARMACEUT.
(2) METALS SLUDGES	(2) OTHER (specify):	(2) NON-HALOGNTD. SOLVENTS	(2) PICKLING LIQUORS	(2) ASBESTOS	(2) HOSPITAL
(3) POTW		(3) OTHER (specify):	(3) CAUSTICS	(3) MILLING/ MINE TAILINGS	(3) RADIOACTIVE
(4) ALUMINUM SLUDGE			(4) PESTICIDES	(4) FERROUS SMLTG. WASTES	(4) MUNICIPAL
(5) OTHER (specify):			(5) DYES/INKS	(5) NON-FERROUS SMLTG. WASTES	(5) OTHER (specify):
			(6) CYANIDE	(6) OTHER (specify):	
			(7) PHENOLS		
			(8) HALOGENS		
			(9) PCB		
			(10) METALS		
			(11) OTHER (specify):		

VI. WASTE RELATED INFORMATION (contir

3. LIST SUBSTANCES OF GREATEST

ERN WHICH MAY BE ON THE SITE (place in de

ing order of hazard).

ORGANICS - Amides, Amines - Imides  
 Inorganics - Mercaptans

4. ADDITIONAL COMMENTS OR NARRATIVE DESCRIPTION OF SITUATION KNOWN OR REPORTED TO EXIST AT THE SITE.

VI. HAZARD DESCRIPTION

A. TYPE OF HAZARD	B. POTENTIAL HAZARD (mark 'X')	C. ALLEGED INCIDENT (mark 'X')	D. DATE OF INCIDENT (mo., day, yr.)	E. REMARKS
1. NO HAZARD				
2. HUMAN HEALTH				
3. NON-WORKER INJURY/EXPOSURE				
4. WORKER INJURY				
5. CONTAMINATION OF WATER SUPPLY				
6. CONTAMINATION OF FOOD CHAIN				
7. CONTAMINATION OF GROUND WATER				
8. CONTAMINATION OF SURFACE WATER				
9. DAMAGE TO FLORA/FAUNA				
10. FISH KILL				
11. CONTAMINATION OF AIR				
12. NOTICEABLE ODORS				
13. CONTAMINATION OF SOIL				
14. PROPERTY DAMAGE				
15. FIRE OR EXPLOSION				
16. SPILLS/LEAKING CONTAINERS/ RUNOFF/STANDING LIQUIDS				
17. SEWER, STORM DRAIN PROBLEMS				
18. EROSION PROBLEMS				
19. INADEQUATE SECURITY				
20. INCOMPATIBLE WASTES				
21. MIDNIGHT DUMPING				
OTHER (specify):				

**VII. PERMIT INFORMATION**

A. INDICATE ALL APPLICABLE PERMITS HELD BY THE SITE.

- 1. NPDES PERMIT       2. SPCC PLAN       3. STATE PERMIT (specify): \_\_\_\_\_
- 4. AIR PERMITS       5. LOCAL PERMIT       6. RCRA TRANSPORTER
- 7. RCRA STORER       8. RCRA TREATER       9. RCRA DISPOSER
- 10. OTHER (specify): \_\_\_\_\_

B. IN COMPLIANCE?

- 1. YES       2. NO       3. UNKNOWN

4. WITH RESPECT TO (list regulation name & number): \_\_\_\_\_

**VIII. PAST REGULATORY ACTIONS**

- A. NONE       B. YES (summarize below)

**IX. INSPECTION ACTIVITY (past or on-going)**

- A. NONE       B. YES (complete items 1, 2, 3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION

**X. REMEDIAL ACTIVITY (past or on-going)**

- A. NONE       B. YES (complete items 1, 2, 3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION

NOTE: Based on the information in Sections III through X, fill out the Preliminary Assessment (Section II) information on the first page of this form.

POTENTIAL HAZARDOUS WASTE SITE IDENTIFICATION AND PRELIMINARY ASSESSMENT

REGION IV SITE NUMBER (to be assigned by HQ) 2015

NOTE: This form is completed for each potential hazardous waste site to help set priorities for site inspection. The information submitted on this form is based on available records and may be updated on subsequent forms as a result of additional inquiries and on-site inspections.

GENERAL INSTRUCTIONS: Complete Sections I and III through X as completely as possible before Section II (Preliminary Assessment). File this form in the Regional Hazardous Waste Log File and submit a copy to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335); 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME: Cumberland Co. Landfill  
 B. STREET (or other identifier): S.R. 1400, Cuffdale Rd.  
 C. CITY: Fayetteville  
 D. STATE: NC  
 E. ZIP CODE:  
 F. COUNTY NAME: Cumberland  
 G. OWNER/OPERATOR (if known):  
 1. NAME: Cumberland Co.  
 2. TELEPHONE NUMBER: 919 868-3166  
 H. TYPE OF OWNERSHIP:  1. FEDERAL  2. STATE  3. COUNTY  4. MUNICIPAL  5. PRIVATE  6. UNKNOWN

I. SITE DESCRIPTION

J. HOW IDENTIFIED (i.e., citizen's complaints, OSHA citations, etc.): Ec. Rep.  
 K. DATE IDENTIFIED (mo., day, & yr.):  
 L. PRINCIPAL STATE CONTACT:  
 1. NAME: Bill Meyer  
 2. TELEPHONE NUMBER: 733-2178

II. PRELIMINARY ASSESSMENT (complete this section last)

A. APPARENT SERIOUSNESS OF PROBLEM:  1. HIGH  2. MEDIUM  3. LOW  4. NONE  5. UNKNOWN  
 B. RECOMMENDATION:  
 1. NO ACTION NEEDED (no hazard)  
 2. IMMEDIATE SITE INSPECTION NEEDED  
 a. TENTATIVELY SCHEDULED FOR:  
 b. WILL BE PERFORMED BY:  
 3. SITE INSPECTION NEEDED  
 a. TENTATIVELY SCHEDULED FOR:  
 b. WILL BE PERFORMED BY:  
 4. SITE INSPECTION NEEDED (low priority)

C. PREPARER INFORMATION

1. NAME: Gordon Luster  
 2. TELEPHONE NUMBER: 733-2178  
 3. DATE (mo., day, & yr.): 2/22/80

III. SITE INFORMATION

A. SITE STATUS:  
 1. ACTIVE (those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if inter-quantity)  
 2. INACTIVE (those sites which no longer receive wastes)  
 3. OTHER (specify): Closed 1974  
 (Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)

D. IS GENERATOR ON SITE?

1. NO  2. YES (specify generator's four-digit SIC Code):

E. AREA OF SITE (in acres)

20  
 IF APPARENT SERIOUSNESS OF SITE IS HIGH, SPECIFY COORDINATES:  
 1. LATITUDE (deg.-min.-sec.):  
 2. LONGITUDE (deg.-min.-sec.):

F. ARE THERE BUILDINGS ON THE SITE?

1. NO  2. YES (specify):

**IV. CHARACTERIZATION OF SITE ACTIVITY**

major site activity(ies) details relating to each activity by marking the appropriate boxes.

TRANSPORTER	X	B. STORER	X	C. TREATER	X	D. DISPOSER
AIR		1. PILE		1. FILTRATION		1. LANDFILL
SHIP		2. SURFACE IMPOUNDMENT		2. INCINERATION		2. LANDFARM
BARGE		3. DRUMS		3. VOLUME REDUCTION		3. OPEN DUMP
4. TRUCK		4. TANK, ABOVE GROUND		4. RECYCLING/RECOVERY		4. SURFACE IMPOUNDMENT
5. PIPELINE		5. TANK, BELOW GROUND		5. CHEM./PHYS. TREATMENT		5. MIDNIGHT DUMPING
6. OTHER (specify):		6. OTHER (specify):		6. BIOLOGICAL TREATMENT		6. INCINERATION
				7. WASTE OIL REPROCESSING		7. UNDERGROUND INJECTION
				8. SOLVENT RECOVERY		8. OTHER (specify):
				9. OTHER (specify):		

E. SPECIFY DETAILS OF SITE ACTIVITIES AS NEEDED

**V. WASTE RELATED INFORMATION**

**A. WASTE TYPE**

1 UNKNOWN     2. LIQUID     3. SOLID     4. SLUDGE     5. GAS

**B. WASTE CHARACTERISTICS**

1. UNKNOWN     2. CORROSIVE     3. IGNITABLE     4. RADIOACTIVE     5. HIGHLY VOLATILE  
 6. TOXIC     7. REACTIVE     8. INERT     9. FLAMMABLE

10. OTHER (specify):

**C. WASTE CATEGORIES**

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

*NO*

2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present.

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e. SOLIDS	f. OTHER
AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT
UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE
X (1) PAINT, PIGMENTS	X (1) OILY WASTES	X (1) HALOGENATED SOLVENTS	X (1) ACIDS	X (1) FLYASH	X (1) LABORATORY PHARMACEUT.
(2) METALS SLUDGES	(2) OTHER (specify):	(2) NON-HALOGNTD. SOLVENTS	(2) PICKLING LIQUORS	(2) ASBESTOS	(2) HOSPITAL
(3) POTW		(3) OTHER (specify):	(3) CAUSTICS	(3) MILLING/ MINE TAILINGS	(3) RADIOACTIVE
(4) ALUMINUM SLUDGE			(4) PESTICIDES	(4) FERROUS SMLTG. WASTES	(4) MUNICIPAL
(5) OTHER (specify):			(5) DYES/INKS	(5) NON-FERROUS SMLTG. WASTES	(5) OTHER (specify):
			(6) CYANIDE	X (6) OTHER (specify): <i>INDUSTRIAL SOLIDS</i>	
			(7) PHENOLS		
			(8) HALOGENS		
			(9) PCB		
			(10) METALS		
			(11) OTHER (specify):		

V. WASTE RELATED INFORMATION (continued)

DISTANCES OF GREATEST CONCERN WHICH MAY BE ON THE SITE (place in descending order of hazard).

OKg. 23

ADDITIONAL COMMENTS OR NARRATIVE DESCRIPTION OF SITUATION KNOWN OR REPORTED TO EXIST AT THE SITE.

VI. HAZARD DESCRIPTION

A. TYPE OF HAZARD	B. POTENTIAL HAZARD (mark 'X')	C. ALLEGED INCIDENT (mark 'X')	D. DATE OF INCIDENT (mo., day, yr.)	E. REMARKS
1. NO HAZARD				
2. HUMAN HEALTH				
3. NON-WORKER INJURY/EXPOSURE				
4. WORKER INJURY				
5. CONTAMINATION OF WATER SUPPLY				
6. CONTAMINATION OF FOOD CHAIN				
7. CONTAMINATION OF GROUND WATER				
8. CONTAMINATION OF SURFACE WATER	X			
9. DAMAGE TO FLORA/FAUNA				
10. FISH KILL				
11. CONTAMINATION OF AIR				
12. NOTICEABLE ODORS				
13. CONTAMINATION OF SOIL				
14. PROPERTY DAMAGE				
15. FIRE OR EXPLOSION				
16. SPILLS/LEAKING CONTAINERS/RUNOFF/STANDING LIQUIDS				
17. SEWER, STORM DRAIN PROBLEMS				
18. EROSION PROBLEMS				
19. INADEQUATE SECURITY				
20. INCOMPATIBLE WASTES				
21. MIDNIGHT DUMPING				
22. OTHER (specify):				

VII. PERMIT INFORMATION

ALL APPLICABLE PERMITS HELD BY THE SITE.

- 1. NPDES PERMIT
- 2. SPCC PLAN
- 3. STATE PERMIT (specify): SOLID WASTE
- 4. AIR PERMITS
- 5. LOCAL PERMIT
- 6. RCRA TRANSPORTER
- 7. RCRA STORER
- 8. RCRA TREATER
- 9. RCRA DISPOSER
- 10. OTHER (specify):

B. IN COMPLIANCE?

1. YES       2. NO       3. UNKNOWN

4. WITH RESPECT TO (list regulation name & number): NC Solid Waste Rules

VIII. PAST REGULATORY ACTIONS

- A. NONE       B. YES (summarize below)

IX. INSPECTION ACTIVITY (past or on-going)

- A. NONE       B. YES (complete items 1, 2, 3, & 4 below)

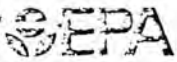
1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION
Inspection	10/11/77	STATE	Routine Quarterly

X. REMEDIAL ACTIVITY (past or on-going)

- A. NONE       B. YES (complete items 1, 2, 3, & 4 below)

1. TYPE OF ACTIVITY	2. DATE OF PAST ACTION (mo., day, & yr.)	3. PERFORMED BY: (EPA/State)	4. DESCRIPTION

NOTE: Based on the information in Sections III through X, fill out the Preliminary Assessment (Section II) information on the first page of this form.



POTENTIAL HAZARDOUS WASTE SITE  
SITE INSPECTION REPORT

REGION IV SITE NUMBER (to be assigned by HQ) 2015

GENERAL INSTRUCTIONS: Complete Sections I and III through XV of this form as completely as possible. Then use the information on this form to develop a Tentative Disposition (Section II). File this form in its entirety in the regional Hazardous Waste Log File. Be sure to include all appropriate Supplemental Reports in the file. Submit a copy of the forms to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (EN-335); 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME Cumberland Cty Landfill		B. STREET (or other identifier) Cliffdale Rd	
C. CITY Fayetteville		D. STATE N.C.	E. ZIP CODE 28301
F. COUNTY NAME Cumberland			
G. SITE OPERATOR INFORMATION			
1. NAME Cumberland County Board of Commissioners		2. TELEPHONE NUMBER 919-483-4897	
3. STREET Cliffdale Rd SR 1400		4. CITY Fayetteville	
5. STATE N.C.		6. ZIP CODE 28301	
H. REALTY OWNER INFORMATION (if different from operator of site)			
1. NAME S/A		2. TELEPHONE NUMBER 919	
3. CITY		4. STATE	
5. ZIP CODE			
I. SITE DESCRIPTION Landfill			
J. TYPE OF OWNERSHIP			
<input type="checkbox"/> 1. FEDERAL <input type="checkbox"/> 2. STATE <input checked="" type="checkbox"/> 3. COUNTY <input type="checkbox"/> 4. MUNICIPAL <input type="checkbox"/> 5. PRIVATE			

II. TENTATIVE DISPOSITION (complete this section last)

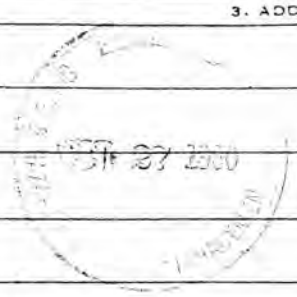
A. ESTIMATE DATE OF TENTATIVE DISPOSITION (mo., day, & yr.) 1971-1973	B. APPARENT SERIOUSNESS OF PROBLEM <input type="checkbox"/> 1. HIGH <input type="checkbox"/> 2. MEDIUM <input checked="" type="checkbox"/> 3. LOW <input type="checkbox"/> 4. NONE
PREPARER INFORMATION	
1. NAME Andrew L. Robinson Jr	2. TELEPHONE NUMBER 919-486-1191
3. DATE (mo., day, & yr.) 10-24-80	

III. INSPECTION INFORMATION

A. PRINCIPAL INSPECTOR INFORMATION	
1. NAME Andrew L. Robinson Jr	2. TITLE District Sanitarian
3. ORGANIZATION N.C. Solid & Hazardous Waste Management Branch	4. TELEPHONE NO. (area code & no.) 919-486-1191
B. INSPECTION PARTICIPANTS	

1. NAME	2. ORGANIZATION	3. TELEPHONE NO.

C. SITE REPRESENTATIVES INTERVIEWED (corporate officials, workers, residents)		
1. NAME	2. TITLE & TELEPHONE NO.	3. ADDRESS





III. INSPECTION INFORMATION (continue...)

D. GENERATOR INFORMATION (sources of waste)

1. NAME	2. TELEPHONE NO.	3. ADDRESS	4. WASTE TYPE GENERATED
ET Dupont DE Nemour CO INC	(519) 483-4681	Pld. By Z Faye, N.C.	Amides Amines Organic Inorganic mercaptans

E. TRANSPORTER/Hauler INFORMATION

1. NAME	2. TELEPHONE NO.	3. ADDRESS	4. WASTE TYPE TRANSPORTED

F. IF WASTE IS PROCESSED ON SITE AND ALSO SHIPPED TO OTHER SITES, IDENTIFY OFF-SITE FACILITIES USED FOR DISPOSAL.

1. NAME	2. TELEPHONE NO.	3. ADDRESS

G. DATE OF INSPECTION H. TIME OF INSPECTION I. ACCESS GAINED BY: (credentials must be shown in all cases)

10-6-80 (mo., day, & year)	2:00 P.M.	<input checked="" type="checkbox"/> 1. PERMISSION <input type="checkbox"/> 2. WARRANT
-------------------------------	-----------	---

J. WEATHER (describe)

Dry

IV. SAMPLING INFORMATION

A. Mark 'X' for the types of samples taken and indicate where they have been sent e.g., regional lab, other EPA lab, contractor, etc. and estimate when the results will be available.

1. SAMPLE TYPE	2. SAMPLE TAKEN (mark 'X')	3. SAMPLE SENT TO:	4. DATE RESULTS AVAILABLE
a. GROUNDWATER			
b. SURFACE WATER			
c. WASTE			
d. AIR			
e. RUNOFF			
f. SPILL			
g. SOIL			
h. VEGETATION			
i. OTHER (specify)			

B. FIELD MEASUREMENTS TAKEN (e.g., radioactivity, explosivity, PH, etc.)

1. TYPE	2. LOCATION OF MEASUREMENTS	3. RESULTS

IV. SAMPLING INFORMATION (continued)

C. PHOTOS

1. TYPE OF PHOTOS

- a. GROUND     b. AERIAL

2. PHOTOS IN CUSTODY OF:

D. SITE MAPPED?

- YES. SPECIFY LOCATION OF MAPS:

E. COORDINATES

1. LATITUDE (deg.-min.-sec.)

2. LONGITUDE (deg.-min.-sec.)

V. SITE INFORMATION

A. SITE STATUS

1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if infrequently.)
2. INACTIVE (Those sites which no longer receive wastes.)
3. OTHER (specify): \_\_\_\_\_  
(Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)

B. IS GENERATOR ON SITE?

1. NO     2. YES (specify generator's four-digit SIC Code): \_\_\_\_\_

C. AREA OF SITE (in acres)

D. ARE THERE BUILDINGS ON THE SITE?

1. NO     2. YES (specify): \_\_\_\_\_

VI. CHARACTERIZATION OF SITE ACTIVITY

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

<input checked="" type="checkbox"/> X	A. TRANSPORTER	<input type="checkbox"/> X	B. STORER	<input type="checkbox"/> X	C. TREATER	<input type="checkbox"/> X	D. DISPOSER
	1. RAIL		1. PILE		1. FILTRATION		<input checked="" type="checkbox"/> X 1. LANDFILL
	2. SHIP		2. SURFACE IMPOUNDMENT		2. INCINERATION		2. LANDFARM
	3. BARGE		3. DRUMS		3. VOLUME REDUCTION		3. OPEN DUMP
	4. TRUCK		4. TANK, ABOVE GROUND		4. RECYCLING/RECOVERY		4. SURFACE IMPOUNDMENT
	5. PIPELINE		5. TANK, BELOW GROUND		5. CHEM./PHYS./TREATMENT		5. MIDNIGHT DUMPING
	6. OTHER (specify):		6. OTHER (specify):		6. BIOLOGICAL TREATMENT		6. INCINERATION
					7. WASTE OIL REPROCESSING		7. UNDERGROUND INJECTION
					8. SOLVENT RECOVERY		8. OTHER (specify):
					9. OTHER (specify):		

E. SUPPLEMENTAL REPORTS: If the site falls within any of the categories listed below, Supplemental Reports must be completed. Indicate which Supplemental Reports you have filled out and attached to this form.

1. STORAGE     2. INCINERATION     3. LANDFILL     4. SURFACE IMPOUNDMENT     5. DEEP WELL
6. CHEM/BIO/PHYS TREATMENT     7. LANDFARM     8. OPEN DUMP     9. TRANSPORTER     10. RECYCLOR/RECLAIMER

VII. WASTE RELATED INFORMATION

A. WASTE TYPE

1. LIQUID     2. SOLID     3. SLUDGE     4. GAS

B. WASTE CHARACTERISTICS

1. CORROSIVE     2. IGNITABLE     3. RADIOACTIVE     4. HIGHLY VOLATILE
5. TOXIC     6. REACTIVE     7. INERT     8. FLAMMABLE
9. OTHER (specify): \_\_\_\_\_

WASTE CATEGORIES

Are records of wastes available? Specify items such as manifests, inventories, etc. below.

II. WASTE RELATED INFORMATION (cont 1)

2. Estimate the amount (specify unit of measure) of waste by category; mark 'X' to indicate which wastes are present.

a. SLUDGE		b. OIL		c. SOLVENTS		d. CHEMICALS		e. SOLIDS		f. OTHER	
AMOUNT		AMOUNT		AMOUNT		AMOUNT		AMOUNT		AMOUNT	
UNIT OF MEASURE		UNIT OF MEASURE		UNIT OF MEASURE		UNIT OF MEASURE		UNIT OF MEASURE		UNIT OF MEASURE	
<input checked="" type="checkbox"/>	(1) PAINT, PIGMENTS	<input checked="" type="checkbox"/>	(1) OILY WASTES	<input checked="" type="checkbox"/>	(1) HALOGENATED SOLVENTS	<input checked="" type="checkbox"/>	(1) ACIDS	<input checked="" type="checkbox"/>	(1) FLYASH	<input checked="" type="checkbox"/>	(1) LABORATORY, PHARMACEUT.
<input type="checkbox"/>	(2) METALS SLUDGES	<input type="checkbox"/>	(2) OTHER(specify):	<input type="checkbox"/>	(2) NON-HALOGNTD. SOLVENTS	<input type="checkbox"/>	(2) PICKLING LIQUORS	<input type="checkbox"/>	(2) ASBESTOS	<input type="checkbox"/>	(2) HOSPITAL
<input type="checkbox"/>	(3) POTW			<input type="checkbox"/>	(3) OTHER(specify):	<input type="checkbox"/>	(3) CAUSTICS	<input type="checkbox"/>	(3) MILLING/MINE TAILINGS	<input type="checkbox"/>	(3) RADIOACTIVE
<input type="checkbox"/>	(4) ALUMINUM SLUDGE			<input type="checkbox"/>	(4) PESTICIDES	<input type="checkbox"/>	(4) FERROUS SMELTING WASTES	<input type="checkbox"/>	(4) MUNICIPAL		
<input type="checkbox"/>	(5) OTHER(specify):			<input type="checkbox"/>	(5) DYES/INKS	<input type="checkbox"/>	(5) NON-FERROUS SMLTG. WASTES	<input type="checkbox"/>	(5) OTHER(specify):		
				<input type="checkbox"/>	(6) CYANIDE	<input type="checkbox"/>	(6) OTHER(specify):	<input type="checkbox"/>			
		<input type="checkbox"/>	(7) PHENOLS	<input type="checkbox"/>		<input type="checkbox"/>					
		<input type="checkbox"/>	(8) HALOGENS	<input type="checkbox"/>		<input type="checkbox"/>					
		<input type="checkbox"/>	(9) PCB	<input type="checkbox"/>		<input type="checkbox"/>					
		<input type="checkbox"/>	(10) METALS	<input type="checkbox"/>		<input type="checkbox"/>					
		<input type="checkbox"/>	(11) OTHER(specify):	<input type="checkbox"/>		<input type="checkbox"/>					

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Arthur Long

D. LIST SUBSTANCES OF GREATEST CONCERN WHICH ARE ON THE SITE (place in descending order of hazard)

1. SUBSTANCE	2. FORM (mark 'X')			3. TOXICITY (mark 'X')				4. CAS NUMBER	5. AMOUNT	6. UNIT
	a. SOLID	b. LIQ.	c. VA-POR	a. HIGH	b. MED.	c. LOW	d. NONE			

VIII. HAZARD DESCRIPTION

FIELD EVALUATION HAZARD DESCRIPTION: Place an 'X' in the box to indicate that the listed hazard exists. Describe the hazard in the space provided.

A. HUMAN HEALTH HAZARDS

*NONE*

VIII. HAZARD DESCRIPTION (continue)

B. NON-WORKER INJURY/EXPOSURE

C. WORKER INJURY/EXPOSURE

D. CONTAMINATION OF WATER SUPPLY

E. CONTAMINATION OF FOOD CHAIN

F. CONTAMINATION OF GROUND WATER

G. CONTAMINATION OF SURFACE WATER

VIII. HAZARD DESCRIPTION (continued)

H. DAMAGE TO FLORA/FAUNA

I. FISH KILL

J. CONTAMINATION OF AIR

K. NOTICEABLE ODORS

L. CONTAMINATION OF SOIL

M. PROPERTY DAMAGE

VIII. HAZARD DESCRIPTION (continued)

N. FIRE OR EXPLOSION

O. SPILLS/LEAKING CONTAINERS/RUNOFF/STANDING LIQUID

P. SEWER, STORM DRAIN PROBLEMS

Q. EROSION PROBLEMS

R. INADEQUATE SECURITY

S. INCOMPATIBLE WASTES

VIII. HAZARD DESCRIPTION (continued)

T. MIDNIGHT DUMPING

U. OTHER (specify):

IX. POPULATION DIRECTLY AFFECTED BY SITE

A. LOCATION OF POPULATION	B. APPROX. NO. OF PEOPLE AFFECTED	C. APPROX. NO. OF PEOPLE AFFECTED WITHIN UNIT AREA	D. APPROX. NO. OF BUILDINGS AFFECTED	E. DISTANCE TO SITE (specify units)
1. IN RESIDENTIAL AREAS				
2. IN COMMERCIAL OR INDUSTRIAL AREAS				
3. IN PUBLICLY TRAVELLED AREAS				
4. PUBLIC USE AREAS (parks, schools, etc.)				

X. WATER AND HYDROLOGICAL DATA

A. DEPTH TO GROUNDWATER (specify unit)	B. DIRECTION OF FLOW	C. GROUNDWATER USE IN VICINITY
D. POTENTIAL YIELD OF AQUIFER	E. DISTANCE TO DRINKING WATER SUPPLY (specify unit of measure)	F. DIRECTION TO DRINKING WATER SUPPLY
G. TYPE OF DRINKING WATER SUPPLY		
<input checked="" type="checkbox"/> 1. NON-COMMUNITY < 15 CONNECTIONS* <input type="checkbox"/> 2. COMMUNITY (specify town): _____ > 15 CONNECTIONS		
<input type="checkbox"/> 3. SURFACE WATER <input checked="" type="checkbox"/> 4. WELL		

**X. WATER AND HYDROLOGICAL DATA (continued)**

4. LIST ALL DRINKING WATER WELLS WITHIN A 1/4 MILE RADIUS OF SITE

1. WELL	2. DEPTH (specify unit)	3. LOCATION (proximity to population/buildings)	4. NON-COM- MUNITY (mark 'X')	5. COMMUN- ITY (mark 'X')

5. RECEIVING WATER

1. NAME \_\_\_\_\_
2. SEWERS                       3. STREAMS/RIVERS
4. LAKES/RESERVOIRS       5. OTHER (specify): \_\_\_\_\_

6. SPECIFY USE AND CLASSIFICATION OF RECEIVING WATERS \_\_\_\_\_

**XI. SOIL AND VEGETATION DATA**

LOCATION OF SITE IS IN:

- A. KNOWN FAULT ZONE       B. KARST ZONE       C. 100 YEAR FLOOD PLAIN       D. WETLAND
- E. A REGULATED FLOODWAY       F. CRITICAL HABITAT       G. RECHARGE ZONE OR SOLE SOURCE AQUIFER

**XII. TYPE OF GEOLOGICAL MATERIAL OBSERVED**

Mark 'X' to indicate the type(s) of geological material observed and specify where necessary, the component parts.

*X*	A. COVERED BURDEN	*X*	B. BEDROCK (specify below)	*X*	C. OTHER (specify below)
	1. SAND	X			
	2. CLAY	X			
	3. GRAVEL				

**XIII. SOIL PERMEABILITY**

- A. UNKNOWN       B. VERY HIGH (100,000 to 1000 cm/sec.)       C. HIGH (1000 to 10 cm/sec.)
- D. MODERATE (10 to .1 cm/sec.)       E. LOW (.1 to .001 cm/sec.)       F. VERY LOW (.001 to .00001 cm/sec.)

G. RECHARGE AREA

1. YES       2. NO      3. COMMENTS: \_\_\_\_\_

H. DISCHARGE AREA

1. YES       2. NO      3. COMMENTS: \_\_\_\_\_

I. SLOPE

1. ESTIMATE % OF SLOPE: **5%**      2. SPECIFY DIRECTION OF SLOPE, CONDITION OF SLOPE, ETC.: **Direction toward Rockfish Creek**

J. OTHER GEOLOGICAL DATA \_\_\_\_\_



**XIV. PERMIT INFORMATION**

List all applicable permits held by the site and provide the related information.

A. PERMIT TYPE <i>(e.g., RCRA, State, NPDES, etc.)</i>	B. ISSUING AGENCY	C. PERMIT NUMBER	D. DATE ISSUED <i>(mo., day, &amp; yr.)</i>	E. EXPIRATION DATE <i>(mo., day, &amp; yr.)</i>	F. IN COMPLIANCE <i>(mark 'X')</i>		
					1. YES	2. NO	3. UNKNOWN

**XV. PAST REGULATORY OR ENFORCEMENT ACTIONS**

NONE       YES *(summarize in this space)*

NOTE: Based on the information in Sections III through XV, fill out the Tentative Disposition (Section II) information on the first page of this form.

LANDFILLS SITE INSPECTION REPORT  
(Supplemental Report)

INSTRUCTION  
Answer and Explain  
as Necessary. 2015

1. EVIDENCE OF SITE INSTABILITY (Erosion, Settling, Sink Holes, etc)

YES  NO

2. EVIDENCE OF IMPROPER DISPOSAL OF BULK LIQUIDS, SEMI-SOLIDS AND SLUDGES INTO THE LANDFILL

YES  NO

3. CHECK RECORDS OF CELL LOCATION AND CONTENTS AND BENCHMARK

YES  NO

4. WASTES SURROUNDED BY SORBENT MATERIAL

YES  NO

5. DIVERSION STRUCTURES ARE EFFECTIVELY CONSTRUCTED AND PROPERLY MAINTAINED

YES  NO

6. EVIDENCE OF PONDING OF WATER ON SITE

YES  NO

7. EVIDENCE OF IMPROPER/INADEQUATE DRAINING

YES  NO

8. ADEQUATE LEACHATE COLLECTION SYSTEM (If "Yes", specify Type)

YES  NO

8a. SURFACE LEACHATE SPRING

YES  NO

9. RECORDS OF LEACHATE ANALYSIS

YES  NO

10. GAS MONITORING

YES  NO

11. GROUNDWATER MONITORING WELLS

YES  NO

ARTIFICIAL MEMBRANE LINER INSTALLED

YES  NO

13. SPECIFIC CONTAINMENT MEASURES (Clay Bottom, Sides, etc)

YES  NO

14. FIXATION (Stabilization) OF WASTE

YES  NO

15. ADEQUATE CLOSURE OF INACTIVE PORTION OF FACILITY

YES  NO

16. COVER (Type)

Sand/clay

16a. THICKNESS

at least 2'

16b. PERMEABILITY

16c. DAILY APPLICATION

YES  NO

U. S. ENVIRONMENTAL PROTECTION AGENCY  
 REGIONAL ERRIS SITE INVENTORY  
 BY COUNTY

IA ID NO.	SITE NAME	CITY NAME	CNTY NAME	SITE DISC DATE	EVE TYP CDE	PA DATE COMP	EVE TYP CDE	SI DATE STRT	SI DATE COMP	NO SO CO	RC ST IN	N P L
0080891039	LACKEY IND WHSE	WHITEVILLE	COLUMBUS	80/07/01	PA1	86/07/18						
0991278631	LCP CHEMS-NC INC	RIEGELWOOD	COLUMBUS	79/11/01	PA1	82/08/01				02	1	
0991278045	RECON DRUM CO	COLUMBUS	COLUMBUS	80/09/01	PA1	85/12/24						6
0000828616	USS AGRI-CHEMICALS FARM SERVI*	WHITEVILLE	COLUMBUS	81/06/01	PA2	85/12/24				01		
0024766719	WRIGHT CHEMICAL CORP	RIEGLEWOOD	COLUMBUS	83/03/01	PA1	86/05/15						
0045924065	AMF HATTERAS YACHTS	NEW BERN	CrAVEN	80/08/01	PA1	85/06/27						7
0003193588	BARBOUR BOAT WORKS INC	NEW BERN	CrAVEN	80/08/01	PA1	85/09/25						6
0003201837	ENCEE CHEMICAL SALES INC	BRIDGETON	CrAVEN	80/08/01	PA1	85/06/27						
0003190584	EVERHART LUMBER CO	NEW BERN	CrAVEN	83/08/01	PA1	84/03/01	SI1	84/06/01	84/06/01			
0981929854	ROWE'S CORNER DRUM DUMP	ROWES CORNER	CrAVEN									
1981474075	ROWES CORNER DUMP	ROWES CORNER	CrAVEN	86/04/23	PA1	86/12/10						
1003197704	SALT WOOD PRODUCTS INC	COVE CITY	CrAVEN	80/08/01	PA1	85/11/21						7
1980848840	SCOTT'S CREEK BATTERY SITE	NEW BERN	CrAVEN	84/05/01	PA1	86/12/10	SI1	84/06/01	84/06/01			
1075550517	SWISS BEAR INC	NEW BERN	CrAVEN	80/08/01	PA1	85/06/01						6
0981928088	THE TEXT, NEW BERN	NEW BERN	CrAVEN	87/03/10								
170027261	USMC AIR STATION CHERRY POINT	CHERRY POINT	CrAVEN	80/08/01	PA1	83/01/01				12	1	
0980802839	USMC SLOCUM CRK MARINE CORPS *	CHERRY POINT	CrAVEN	83/08/18								
003189024	BORDEN CHEMICAL FAYETTEVILLE *	FAYETTEVILLE	CUMBERLAND	79/11/01	PA1	85/09/18	SI1		87/02/07			6
003188828	CAPE FEAR WOOD PRESERVING	FAYETTEVILLE	CUMBERLAND	84/08/01	PA1	86/10/10	SI1	85/10/05	86/06/19			
003188844	CAROLINA TRANSFORMER	FAYETTEVILLE	CUMBERLAND	78/12/01	PA1	79/04/01	SI1	78/11/01	79/04/01			
024548133	CLARKE & PROCTOR TURPENTINE C*	FAYETTEVILLE	CUMBERLAND	80/08/01	PA1	85/09/18						6
980502892	CREEK BRIDGE	FAYETTEVILLE	CUMBERLAND	79/11/01	PA1	85/09/18						
980502900	CUMBERLAND COUNTY LDFL	FAYETTEVILLE	CUMBERLAND	79/11/01	PA1	80/02/01	SI1	80/10/01	80/10/01			
							SI2	80/10/01	80/10/01			2
047368642	DUPONT EI DE NEMOURS/FAYETTVI*	FAYETTEVILLE	CUMBERLAND	79/11/01	PA1	80/03/01						6
003198934	FASCO INDUSTRIES INC	FAYETTEVILLE	CUMBERLAND	80/08/01	PA1	85/09/16						
980502934	FAYETTEVILLE LDFL	FAYETTEVILLE	CUMBERLAND	80/02/01	PA1	80/02/01						
981928021	HOLLINGS WORTH PROPERTY	FAYETTEVILLE	CUMBERLAND	87/03/25								
980502983	HOPE MILLS LDFL	CUMBERLAND CO	CUMBERLAND	79/11/01	PA1	80/02/01						
048958615	KELLY-SPRINGFIELD TIRE CO	FAYETTEVILLE	CUMBERLAND	80/08/01	PA1	85/02/01						6
980503031	MILAN YARD LDFL	FAYETTEVILLE	CUMBERLAND	79/11/01	PA1	85/09/18						
088563242	MONSANTO COMPANY	FAYETTEVILLE	CUMBERLAND	79/11/01	PA1	80/03/01				02		6
					PA2	85/06/01						
981744717	PARKER FARM	FAYETTEVILLE	CUMBERLAND	86/09/22								
570024475	POPE AFB	POPE AIR FORCE*	CUMBERLAND	80/08/01	PA1	83/01/01				01		6
990714479	ROHM & HAAS CO CARODEL PLANT	FAYETTEVILLE	CUMBERLAND	80/08/01	PA1	85/09/18						7
039047485	ROHM & HAAS INC	FAYETTEVILLE	CUMBERLAND	79/11/01	PA1	80/03/01	SI1	80/10/01	80/10/01			
							SI2	80/10/01	80/10/01			
000623199	TEXACO INC	FAYETTEVILLE	CUMBERLAND	80/08/01	PA1	85/06/01						6
210020121	USA XVIII ARBN CORPS & FORT B*	FORT BRAGG	CUMBERLAND	80/08/01	PA1	83/01/01				01		6
980803001	WHALEHEAD BEACH	COROLLA	CURRITUCK	83/10/01								
981750425	BUXTON DUMP	BUXTON	DARE	86/10/15	PA1	87/06/13	SI1		87/06/17			
000648402	BATTERY TECH (DURACELL LEXING*)	LEXINGTON	DAVIDSON	80/08/01	PA1	86/10/10	SI1	86/01/27	86/03/13			7
060295417	BURLINGTON FURNITURE/CENT MAI*	LEXINGTON	DAVIDSON	80/08/01								6
991278581	BURLINGTON FURNITURE/LUMBER P*	LEXINGTON	DAVIDSON	81/06/01	PA1	86/07/18	SI1		87/05/13	01		
160298809	CLASSIC FURNITURE CORP	THOMASVILLE	DAVIDSON	80/08/01	PA1	85/09/25						6
139129697	DUPONT, E I CO	DENTON	DAVIDSON	80/03/01	PA1	80/03/01						
					PA2	85/06/27						
100475608	E. I. DUPONT COMPANY	DENTON	DAVIDSON	79/11/01								
180557581	LEXINGTON MUNI LDFL	LEXINGTON	DAVIDSON	81/06/01	PA1	84/05/01				01		
100616334	LILLY CO DRUM RECOND PLT	THOMASVILLE	DAVIDSON	80/08/01	PA1	84/12/01						6
103288756	MASONITE CORP CUSTOM COMPONEN*	THOMASVILLE	DAVIDSON	80/08/01	PA1	84/08/01						6



## WHAT IS A COUNTY LANDFILL?

A county landfill is a place operated by franchised solid waste collectors and in conjunction with the County of Cumberland for the proper disposal of solid waste. Four landfills are operated by county franchised refuse collectors, and Cumberland County is now operating two other landfills under direct supervision of the Cumberland County Health Department. It is an effort by the Board of County Commissioners and the County Board of Health to prevent the health hazards and offensiveness created by the improper dumping or burning of garbage, trash and other refuse.

## WHO CAN USE COUNTY LANDFILL FACILITIES? IS THERE A CHARGE?

Any person may dispose of his individual residential garbage at any landfill without charge, providing the load does not exceed three 32 gallon standard garbage cans per trip.

Fees for commercial users are set at 35 cents per cubic yard, or a minimum of \$1.00 per load. Further information on landfill use, fees, etc., may be obtained from the Environmental Health Division, Cumberland County Health Department, telephone 483-9046.

## WHERE ARE THE LANDFILLS LOCATED AND WHEN ARE THEY OPEN?

There are six county landfills. Operational hours are 9:00 a.m. until 5:00 p.m., Monday through Friday, and from 9 a.m. until 1:00 p.m. on Saturday.

(1) Cliffdale landfill is located on Cliffdale

Road (S.R. 1400) near Bones Creek and Colony Village Mobile Home Park between Reilly Road (S.R. 1403 or Black Jack Road) and State Road 1402.

(2) Murchison Road landfill is located behind Trailertown Mobile Home Park. Enter on entrance road to Trailertown, off County Club Drive (Highway 59), continue straight on dirt road to entrance of landfill site.

(3) Hope Mills landfill is located off Camden Road (Wire Road or S.R. 1003) south of intersection of Camden Road and Highway N. C. 59 near Koonce's Store. Turn left at sign, Whittington Stables, continue on dirt road one-half mile. Landfill on left.

(4) Stedman landfill is located on S.R. 1846 between Maxwell Road (S.R. 1006) and S.R. 1847.

(5) Wade-Godwin-Falcon landfill is located on S.R. 1802 (Culbreth Road) between Godwin and U.S. Highway 301, near Taylor Hole Branch.

(6) Grays Creek landfill is located between S.R. 2234 and S.R. 2235 off Highway N. C. 87, approximately 11 miles south of Fayetteville, behind Grays Creek Superette.

## WHAT MAY BE DISPOSED OF AT A COUNTY LANDFILL?

Almost any type of garbage, trash or refuse that accumulates around a residence may be disposed of at a county landfill. Rubble such as tree stumps, logs, limbs and scrap building debris may be disposed of at Hope Mills, Murchison Road and Cliffdale locations. No junked vehicles or tires allowed. No poisonous or inflammable material accepted at these sites without permission of Cumberland County Health

Director. Special arrangements must be made before disposing of large animals.

A special disposal site is open for disposal of tires only between the hours of 9:00 a.m. and 4:00 p.m., Monday through Friday. A permit is required and a small fee is charged. Permits may be obtained at Cumberland County Health Department between the hours of 8:00 a.m. and 3:00 p.m.

## WHAT REGULATIONS CONTROL THE ACCUMULATION AND DISPOSAL OF SOLID WASTE?

Cumberland County Board of Health regulations prohibit the accumulation of garbage or refuse on any premises except when stored in an approved container. The regulations also prohibit the disposal of garbage or refuse except in an approved sanitary manner. When an owner or tenant permits garbage or refuse to accumulate on his property, he is responsible for its proper disposal even if it was dumped there without his permission. His only recourse is to be willing and able to prove in the courts who dumped the garbage or refuse and that it was without his permission.

## WHO CAN I CONTACT TO REMOVE SOLID WASTES FROM MY PREMISES ON A SCHEDULED BASIS?

There are two franchised collectors operating in Cumberland County. They are Liebers Sanitation Service and Louis Sanitation Service, Inc.

PLEASE KEEP OUR COUNTY CLEAN! 4/71

August 17, 1987


TO: File  
FROM: Pat DeRosa PD  
RE: Fayetteville Landfill, NCD980502934  
Cumberland Co. Landfill, NCD980502900

On August 13, 1987, I spoke by telephone with Terry Dover, Solid and Hazardous Waste Management Branch Fayetteville, NC (919) 486-1191 regarding old landfill sites in the Fayetteville area. Regarding the Fayetteville Landfill on Gray St., Terry was not aware of any site on Gray St. He knew of 3 sites in that area (1) Milan Yard Landfill (2) an old municipal landfill behind the sewage plant, and (3) a small demolition landfill, filled in by the city near Cross Creek. Terry said that Borden could have used Milan Yard and/or the treatment plant site which were both municipal landfills.

Regarding the Cumberland County Landfill on Cliffdale Rd., (SR1400), Terry identified 2 former sites. The first site was leased by the county and located in the south side of Cliffdale Rd. just west of Bones Creek. The second site was once owned by the county and located 2 miles west and south of the first site, also on SR1400. The current Cumberland County Landfill on Ann St. opened in April 1980.

PD/pb/0472b.22


August 17, 1987

TO: File  
FROM: Pat DeRosa   
RE: Cumberland County Landfill  
NC D980502900

On August 17, 1987, I spoke by telephone with Tom Olcott, Environmental Control Coordinator, E.I. Dupont, Fayetteville, NC (919) 483-4681 regarding the reported disposal of waste from Dupont at the subject site. This disposal occurred between 1971-1973 as reported on the Eckhardt List. Mr. Olcott said that Dupont had disposed of plant trash off site but had not disposed of any chemical waste off site. Plant trash could have included paper, wood, garbage, cardboard, scrap metal, glass laminates, nylon strapping, and sodium bicarbonate residue from empty packaging. Other solid wastes were incinerated. Process waste and domestic waste went to the secondary WWTP on the Dupont site and sludge went to lagoons on site.

PD/pb/0472b.19

August 17, 1987

TO: File  
FROM: Pat DeRosa   
RE: Cumberland County Landfill  
NCD980502900

On August 17, 1987, I spoke by telephone with Keith Ashley, Fisheries Biologist, NC Wildlife Commission (919) 866-4250 regarding surface water usage within 3 miles downstream of the subject site. Mr. Ashley said that the Fayetteville Fish Hatchery, indicated on the USGS topographic map, is still in use and has been since the 1930's. Additional information about monitoring at the hatchery might be available from Marshall Ray or Bob Curry at (919) 867-6390. Lake Rim, which supplies the hatchery, is also used for recreational fishing, boating, and some swimming.

PD/pb/0472b.21



September 12, 1987

TO: File

FROM: Pat DeRosa PD

RE: Cumberland County Landfill  
NC D980502900

On September 11, 1987, I spoke by telephone with Lacy Williams, Environmental Health Section, Cumberland County Health Dept. (919) 483-9046 regarding the current ownership and usage of the subject site. Mr. Williams said that the property was purchased in 1984 by a Mrs. Hepner of Fayetteville, NC. He said the property is currently used as a horse farm or stable. He said the old landfill site is next to an adjoining property used as a NC DOT borrow pit.

PD/pd/0444b.65

September 10, 1987

TO: File

FROM: Pat DeRosa PD

RE: Fayetteville Landfill NCD980502934  
Cumberland County Landfill NCD980502900

I spoke today with Dick Caspar, Water Supply Branch, NC DHR, Raleigh, NC, (919) 733-2321 regarding water supply intakes within 3 miles downstream of the subject sites. According to Branch records, there are no surface water intakes within 3 miles downstream of either site.

PD/pb/0472b.32

REGION IV RCRA/NPL POLICY QUESTIONNAIRE FOR INITIAL SCREENING

Site Name Cumberland County Landfill  
 City Fayetteville State NC  
 Facility I.D. Number NCD 980 502 900  
 Type of Facility: Generator \_\_\_\_\_ Transporter \_\_\_\_\_ TSD \_\_\_\_\_

I. RCRA APPLICABILITY

	yes	no
Does the facility have RCRA interim status?	_____	<u>X</u>
Does the facility have a final or post-closure permit? If so, date issued _____	_____	<u>X</u>
Is the facility a non-notifier that has been identified by States or EPA?	_____	<u>X</u>
Is the facility a known or possible protective filer?	_____	<u>X</u>
Have RCRA wastes been stored onsite for longer than 90 days since November 19, 1980?	_____	<u>X</u>
Have RCRA wastes been disposed onsite since November 19, 1980?	_____	<u>X</u>

STOP HERE IF ALL ANSWERS TO QUESTIONS IN SECTION I ARE NO

II. FINANCIAL STATUS

	yes	no
Is the facility owned by an entity that has filed for bankruptcy under federal laws (Chapter 7 or 11) or State laws?	_____	_____
If yes, what has it filed under?		
Chapter 7 _____ Chapter 11 _____ Other _____		

III. ENFORCEMENT

RCRA Status

yes      no

Has the facility lost authorization to operate via LOIS, 3005(c) permit denial, 3008(h) IS termination, 3005(d) permit revocation?      \_\_\_\_\_

Has the facilities interim status been terminated via another mechanism (i.e. administrative termination)?      \_\_\_\_\_

IV. CERCLA STATUS

What CERCLA financed remedial or removal activities have been initiated at the site? (RI/FS, RD/RA, O&M, forward planning, and removal; does not include enforcement or PA/SI activities).

V. Enforcement Status

yes      no

In general, would you characterize the facility as demonstrating an unwillingness to undertake corrective action based on prior State, CERCLA or RCRA actions?      \_\_\_\_\_

If yes, please describe and cite the authorities exercised.

yes      no

Is the owner/operator a party to any enforcement action at the site?      \_\_\_\_\_

If not, why not?

Are any PRPs (including owner/operators) undertaking remedial studies or action in response to CERCLA enforcement authorities? What is the extent/type of work that has been completed (RI/FS, etc.) and who (generators, owner/operator, etc.) is conducting the work?



**POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT  
PART 1 - SITE INFORMATION AND ASSESSMENT**

**I. IDENTIFICATION**  
01 STATE: NC 02 SITE NUMBER: D980502900

**II. SITE NAME AND LOCATION**

01 SITE NAME (Legal, common, or descriptive name of site): Cumberland County Landfill  
02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER: Cliffdale Rd (SR 1400)  
03 CITY: Fayetteville  
04 STATE: NC 05 ZIP CODE: 28301 06 COUNTY: Cumberland 07 COUNTY CODE: 26 08 CONG DIST: 07  
09 COORDINATES LATITUDE: 35 03 42 LONGITUDE: 77 02 23

10 DIRECTIONS TO SITE (Starting from nearest public road): Take US 401 South to Fayetteville. Turn right onto the Central Business Loop to Hay St. Turn right onto Hay St + continue west onto Morganton Rd ~ 1 1/2 miles. Bear left at fork onto Cliffdale Rd (SR 1400). Continue 6 miles west, site on left

III. RESPONSIBLE PARTIES just past Bones Creek.

01 OWNER (if known): Mrs. Hepner  
02 STREET (Business, mailing, residential):  
03 CITY: Fayetteville  
04 STATE: NC 05 ZIP CODE: 28301 06 TELEPHONE NUMBER: ( )  
07 OPERATOR (if known and different from owner): Cumberland County Health Dept.  
08 STREET (Business, mailing, residential): 227 Fountainhead Lane  
09 CITY: Fayetteville  
10 STATE: NC 11 ZIP CODE: 28301 12 TELEPHONE NUMBER: (919) 483-9046

13 TYPE OF OWNERSHIP (Check one)  
 A. PRIVATE  B. FEDERAL: \_\_\_\_\_ (Agency name)  C. STATE  D. COUNTY  E. MUNICIPAL  
 F. OTHER: \_\_\_\_\_ (Specify)  G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply)  
 A. RCRA 3001 DATE RECEIVED: \_\_\_\_\_ MONTH DAY YEAR  B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: \_\_\_\_\_ MONTH DAY YEAR  C. NONE

**IV. CHARACTERIZATION OF POTENTIAL HAZARD**

01 ON SITE INSPECTION BY (Check all that apply)  
 YES DATE: \_\_\_\_\_ MONTH DAY YEAR  A. EPA  B. EPA CONTRACTOR  C. STATE  D. OTHER CONTRACTOR  
 NO  E. LOCAL HEALTH OFFICIAL  F. OTHER: \_\_\_\_\_ (Specify)  
CONTRACTOR NAME(S): \_\_\_\_\_

02 SITE STATUS (Check one) 03 YEARS OF OPERATION  
 A. ACTIVE  B. INACTIVE  C. UNKNOWN  
~ 1971 | 1973  UNKNOWN  
BEGINNING YEAR ENDING YEAR

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED  
E. I. DuPont, Fayetteville works reported disposing of 2700 tons of waste at this site between 1971-1973 (Eckhardt List). DuPont currently indicates that this was non-hazardous plant trash similar to waste currently disposed

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION  
at the Bladen County sanitary landfill. This site was operated as a county landfill. NO hazardous waste are known to be disposed here. No monitoring wells on site. Fayetteville Fish Hatchery + Lake Rim less than 2 miles downstream.

V. PRIORITY ASSESSMENT Site is currently used as horse farm.

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2 - Waste Information and Part 3 - Description of Hazardous Conditions and Incidents)  
 A. HIGH (Inspection required promptly)  B. MEDIUM (Inspection required)  C. LOW (Inspect on time available basis)  D. NONE (No further action needed, complete current disposition form)

**VI. INFORMATION AVAILABLE FROM**

01 CONTACT: Lacy Williams, Environmental Health Section  
02 OF (Agency/Organization): Cumberland County Health Dept. 03 TELEPHONE NUMBER: (919) 483-9046  
04 PERSON RESPONSIBLE FOR ASSESSMENT: Pat De Rosa  
05 AGENCY: NC DHR 06 ORGANIZATION: S+HWM Br. 07 TELEPHONE NUMBER: 1919 1733-2801 08 DATE: 8/18/87  
MONTH DAY YEAR



POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT  
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

NC D980502940

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)	02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)	03 WASTE CHARACTERISTICS (Check all that apply)
<input checked="" type="checkbox"/> A. SOLID <input type="checkbox"/> B. POWDER, FINES <input type="checkbox"/> C. SLUDGE  <input type="checkbox"/> D. OTHER _____ <small>(Specify)</small>	<input type="checkbox"/> E. SLURRY <input type="checkbox"/> F. LIQUID <input type="checkbox"/> G. GAS  TONS <u>2700</u>  CUBIC YARDS _____  NO. OF DRUMS _____	<input type="checkbox"/> A. TOXIC <input type="checkbox"/> B. CORROSIVE <input type="checkbox"/> C. RADIOACTIVE <input type="checkbox"/> D. PERSISTENT  <input type="checkbox"/> E. SOLUBLE <input type="checkbox"/> F. INFECTIOUS <input type="checkbox"/> G. FLAMMABLE <input type="checkbox"/> H. IGNITABLE  <input type="checkbox"/> I. HIGHLY VOLATILE <input type="checkbox"/> J. EXPLOSIVE <input type="checkbox"/> K. REACTIVE <input type="checkbox"/> L. INCOMPATIBLE <input checked="" type="checkbox"/> M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

See attached list of references 1-8.



POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
NC D 9805029M

1. HAZARDOUS CONDITIONS AND INCIDENTS

01  A. GROUNDWATER CONTAMINATION 02  OBSERVED (DATE: \_\_\_\_\_)  POTENTIAL  ALLEGED

03 POPULATION POTENTIALLY AFFECTED: >10,000 04 NARRATIVE DESCRIPTION

None reported. The nearest well is <2,000 feet from nearest Colony Village MHP. City water is not available to most residents. At least 10,000 people depend on groundwater from private & community wells.

01  B. SURFACE WATER CONTAMINATION 02  OBSERVED (DATE: \_\_\_\_\_)  POTENTIAL  ALLEGED

03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

None reported. The nearest creek, Bone Creek, is 500 ft. east of the site. Lake Tim is, <2 miles downstream, is used for recreation. The Fayetteville Fish Hatchery is also <2 miles downstream.

01  C. CONTAMINATION OF AIR 02  OBSERVED (DATE: \_\_\_\_\_)  POTENTIAL  ALLEGED

03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

01  D. FIRE/EXPLOSIVE CONDITIONS 02  OBSERVED (DATE: \_\_\_\_\_)  POTENTIAL  ALLEGED

03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

01  E. DIRECT CONTACT 02  OBSERVED (DATE: \_\_\_\_\_)  POTENTIAL  ALLEGED

03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

01  F. CONTAMINATION OF SOIL 02  OBSERVED (DATE: \_\_\_\_\_)  POTENTIAL  ALLEGED

03 AREA POTENTIALLY AFFECTED: \_\_\_\_\_ (Acres) 04 NARRATIVE DESCRIPTION

None reported.

01  G. DRINKING WATER CONTAMINATION 02  OBSERVED (DATE: \_\_\_\_\_)  POTENTIAL  ALLEGED

03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

01  H. WORKER EXPOSURE/INJURY 02  OBSERVED (DATE: \_\_\_\_\_)  POTENTIAL  ALLEGED

03 WORKERS POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

01  I. POPULATION EXPOSURE/INJURY 02  OBSERVED (DATE: \_\_\_\_\_)  POTENTIAL  ALLEGED

03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION



POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT  
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER

NC D980502900

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01  J. DAMAGE TO FLORA 02  OBSERVED (DATE: \_\_\_\_\_)  POTENTIAL  ALLEGED  
04 NARRATIVE DESCRIPTION

01  K. DAMAGE TO FAUNA 02  OBSERVED (DATE: \_\_\_\_\_)  POTENTIAL  ALLEGED  
04 NARRATIVE DESCRIPTION (include name(s) of species)

01  L. CONTAMINATION OF FOOD CHAIN 02  OBSERVED (DATE: \_\_\_\_\_)  POTENTIAL  ALLEGED  
04 NARRATIVE DESCRIPTION

01  M. UNSTABLE CONTAINMENT OF WASTES 02  OBSERVED (DATE: \_\_\_\_\_)  POTENTIAL  ALLEGED  
(Spills/runoff/standing liquids/leaking drums)  
03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

01  N. DAMAGE TO OFFSITE PROPERTY 02  OBSERVED (DATE: \_\_\_\_\_)  POTENTIAL  ALLEGED  
04 NARRATIVE DESCRIPTION

01  O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs 02  OBSERVED (DATE: \_\_\_\_\_)  POTENTIAL  ALLEGED  
04 NARRATIVE DESCRIPTION

01  P. ILLEGAL/UNAUTHORIZED DUMPING 02  OBSERVED (DATE: \_\_\_\_\_)  POTENTIAL  ALLEGED  
04 NARRATIVE DESCRIPTION

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e. g., state files, sample analysis, reports)

See attached list of references 1-10.



\*24IHSSF501\*



DocumentID NCD980502900

Site Name CUMBERLAND COUNTY LANDFILL

DocumentType Notification Form (NF)

RptSegment 1

DocDate 4/22/1988

DocRcvd 4/25/1988

Box SF501

AccessLevel PUBLIC

Division WASTE MANAGEMENT

Section SUPERFUND

Program IHS (IHS)

DocCat Facility

COPY

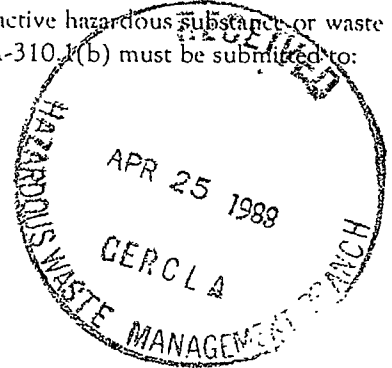
N.C. Department of Human Resources  
Division of Health Services

For Agency Use Only  
SITE # S1S260100176

SECTION A  
NOTIFICATION OF AN INACTIVE HAZARDOUS SUBSTANCE  
OR WASTE DISPOSAL SITE

North Carolina General Statutes Section 130A-310 provides for protection of the public from inactive hazardous substance or waste disposal sites. Notification information, required by North Carolina General Statutes Section 130A-310.1(b) must be submitted to:

Superfund Unit  
Division of Health Services  
P.O. Box 2091  
Raleigh, NC 27602-2091



Please read instructions before completing.

Please type or print in black ink.

A. SITE NAME AND PERSON REQUIRED TO NOTIFY:

1. Site Name CLIFFDALE LANDFILL / Cumberland Co Landf  
(One site per form)

2. Person Completing Form:  
Name L. S. CARTER  
Mailing Address 698 ANN ST.  
City FAYETTEVILLE State NC Zip Code 28301  
Telephone (919) 483-4897

Present Owner   
Past Owner   
Present Operator   
Past Operator   
Other   
(specify) Director, County  
Solid Waste Management

3. Present Owner:  
Name CUMBERLAND COUNTY  
Mailing Address P.O. Box 1829  
City FAYETTEVILLE State N.C. Zip Code 28302  
Telephone (919) 483-8131

Corporation   
Partnership   
Individual   
Other Responsible Party   
(specify) COUNTY

4. Other \_\_\_\_\_  
Mailing Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_  
Telephone (\_\_\_\_) \_\_\_\_\_

Past Owner   
Present Operator   
Past Operator   
Other Responsible Party   
(specify) \_\_\_\_\_

5. Other \_\_\_\_\_  
Mailing Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_  
Telephone (\_\_\_\_) \_\_\_\_\_

Past Owner   
Present Operator   
Past Operator   
Other Responsible Party   
(specify) \_\_\_\_\_

Site Name CLIFFDALE

**B. SITE LOCATION:**

1. Street or Route Address 7583 LOWELL HARRIS ROAD  
 City or Town FAYETTEVILLE, N.C. 28304  
 County CUMBERLAND COUNTY

2. Directions to the Site (Use state road numbers where possible.)

U.S. 401 South from Fayetteville to Raeford  
Turn off on SR 1400 (Cliffdale Road)  
Turn off on LOWELL HARRIS Road - proceed in Cliffdale Landfill Gate.  
(SR 2749)

3. Attach a Department of Transportation map or a USGS map showing the location of the site or facility. Label the map with the site name.

4. Check the appropriate description of the area surrounding the site. (More than one may apply.)

- Residential                       Industrial                       Forest Land  
 Business                           Pasture Land                       Farm Land  
 Other (specify) \_\_\_\_\_

**C. TYPE AND YEARS OF OPERATION:**

1. Type of Operation State permitted sanitary landfill  Present  
 Standard Industrial Classification Code (SIC) N/A  Past  
 Years of Operation (Dates) from 07/22 to 07/80

2. Type of Operation \_\_\_\_\_  Present  
 Standard Industrial Classification Code (SIC) \_\_\_\_\_  Past  
 Years of Operation (Dates) from \_\_\_/\_\_\_/\_\_\_ to \_\_\_/\_\_\_/\_\_\_

3. Type of Operation \_\_\_\_\_  Present  
 Standard Industrial Classification Code (SIC) \_\_\_\_\_  Past  
 Years of Operation (Dates) from \_\_\_/\_\_\_/\_\_\_ to \_\_\_/\_\_\_/\_\_\_

**D. ENVIRONMENTAL PERMIT HISTORY:**

If no environmental permit has been issued, check "None" for each type of permit. Complete for each of the following.

Type of Permit	None	Permit Number	Date Issued	Expiration Date	Comments
1. NPDES	<input type="checkbox"/>	_____	___/___/___	___/___/___	_____
2. Air	<input type="checkbox"/>	_____	___/___/___	___/___/___	_____
3. RCRA	<input type="checkbox"/>	_____	___/___/___	___/___/___	_____
4. RCRA interim status	<input type="checkbox"/>	_____	___/___/___	___/___/___	_____
5. State	<input type="checkbox"/>	_____	___/___/___	___/___/___	_____
a. Non-discharge	<input type="checkbox"/>	_____	___/___/___	___/___/___	_____
b. High productivity well	<input type="checkbox"/>	_____	___/___/___	___/___/___	_____
c. Other (specify) <u>*</u>	<input type="checkbox"/>	<u>5846</u>	<u>05/86</u>	<u>05/91</u>	<u>(Methane Control System)</u>
6. Local (specify) _____	<input type="checkbox"/>	_____	___/___/___	___/___/___	_____
7. Other (specify) _____	<input type="checkbox"/>	_____	___/___/___	___/___/___	_____

*\* Permit for Construction and operation of air pollution abatement facilities or emission sources (DNER + CD)*

**E. CURRENT ENVIRONMENTAL PERMITS:**

If no environmental permit has been issued, check "None" for each type of permit. Complete for each of the following.

Type of Permit	None	Permit Number	Date Issued	Expiration Date	Comments
1. NPDES	<input type="checkbox"/>	_____	___/___/___	___/___/___	_____
2. Air	<input type="checkbox"/>	_____	___/___/___	___/___/___	_____
3. RCRA	<input type="checkbox"/>	_____	___/___/___	___/___/___	_____
4. RCRA interim status	<input type="checkbox"/>	_____	___/___/___	___/___/___	_____
5. State	<input type="checkbox"/>	_____	___/___/___	___/___/___	_____
a. Non-discharge	<input type="checkbox"/>	_____	___/___/___	___/___/___	_____
b. High productivity well	<input type="checkbox"/>	_____	___/___/___	___/___/___	_____
c. Other (specify) <u>✓</u>	<input type="checkbox"/>	<u>(see par D)</u>	___/___/___	___/___/___	_____
6. Local (specify) _____	<input type="checkbox"/>	_____	___/___/___	___/___/___	_____
7. Other (specify) _____	<input type="checkbox"/>	_____	___/___/___	___/___/___	_____

**F. KNOWN OR SUSPECTED RELEASE OF HAZARDOUS SUBSTANCE OR WASTE TO THE ENVIRONMENT:**

(More than one may apply.)

Environmental Media	Date of Known or Suspected Release						Comments
	Known	Suspected	Likely	Unlikely	None		
1. Groundwater	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	
2. Surface water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	
3. Surface soil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	
4. Subsurface soil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	
5. Air	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____	

**G. PHYSICAL STATE OF HAZARDOUS SUBSTANCE OR WASTE AS DEPOSITED: (More than one may apply.)**

- 1.  Solid
- 2.  Powder
- 3.  Liquid
- 4.  Sludge
- 5.  Non-Containerized Gas
- 6.  Containerized Gas
- 7.  Other (describe) \_\_\_\_\_

**H. HAZARDOUS SUBSTANCE OR WASTE DISPOSAL AND STORAGE METHOD: (More than one may apply.)**

- 1.  Piles
- 2.  Land treatment
- 3.  Landfill
- 4.  Tanks, underground
- 5.  Tanks, above ground
- 6.  Septic tanks
- 7.  Impoundment
- 8.  Underground injection
- 9.  Drums, above ground
- 10.  Drums, above ground, in open
- 11.  Drums, below ground
- 12.  Other (specify) \_\_\_\_\_

**I. HAZARDOUS SUBSTANCE OR WASTE TYPE USED OR DISPOSED ON SITE: (More than one may apply.)**

- 1.  Organics
- 2.  Inorganics
- 3.  Solvents
- 4.  Pesticides
- 5.  Heavy metals
- 6.  Acids
- 7.  Bases
- 8.  PCBs
- 9.  Mixed municipal waste
- 10.  Unknown
- 11.  Other (specify) \_\_\_\_\_

Site Name CLIFFDALE

J. HAZARDOUS SUBSTANCE OR WASTE QUANTITY: (More than one may apply.)

1. Pounds:

- less than 10 pounds
- 10 pounds or more, but less than 100 pounds
- 100 pounds or more, but less than 1000 pounds
- 1000 pounds or more
- Unknown

4. Gallons:

- less than 10 gallons
- 10 gallons or more, but less than 100 gallons
- 100 gallons or more, but less than 1000 gallons
- 1000 gallons or more
- Unknown

2. Drums:

- less than 10 drums
- 10 drums or more, but less than 100 drums
- 100 drums or more, but less than 1000 drums
- 1000 drums or more
- Unknown

5. Total area of site:

- less than 1 acre
- 1 acre or more, but less than 5 acres
- 5 acres or more, but less than 10 acres
- 10 acres or more
- Unknown

3. Cubic Feet:

- less than 10 cubic feet
- 10 cubic feet or more, but less than 100 cubic feet
- 100 cubic feet or more, but less than 1000 cubic feet
- 1000 cubic feet or more
- Unknown

K. SOURCE OF HAZARDOUS SUBSTANCE OR WASTE USED OR DISPOSED ON SITE:

(More than one may apply)

	Used On Site	On-Site Disposal	Off-Site Disposal
1. Mining	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Construction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Textiles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Fertilizer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Paper/printing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Leather tanning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Iron/steel foundry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Chemical, general	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Plating/polishing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Military/ammunition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Electrical conductors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Transformers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Utility companies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Sanitary/refuse	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
15. Photo finish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Lab/hospital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Wood treating	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Battery reclamation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Pesticides formulation, packaging and/or distribution	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Herbicide formulation, packaging and/or distribution	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Other Agrichemical formulation, packaging and/or distribution	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Dry cleaning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Petrochemical processing or refining	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Unknown	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Other (specify) <u>MUNICIPAL SOLID WASTE</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Site Name CLIFFDALE

L. SPECIFIC HAZARDOUS SUBSTANCE OR WASTE COMPOUNDS ASSOCIATED WITH THE SITE, IF KNOWN: (More than one may apply.)

Waste Compounds/ Substances	Generated On Site	Off-Site Disposal	On-Site Disposal
1. <u>MUNICIPAL SOLID WASTE (MSW)</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

M. ACCESSIBILITY OF SITE: (More than one may apply.)

- 1.  Security guard
- 2.  Physical barrier (steep bank, creek, walls, etc.)  
Describe physical barriers Steep banks on three sides of facility
- 3.  Site completely surrounded by fence
- 4.  Site partially surrounded by fence
- 5.  Locked gate
- 6.  Unlocked gate
- 7.  No control of access to site
- 8.  Other (specify) Daily operations of a Household Solid Waste Container Site. (Transfer Station in nature)

N. REMEDIAL ACTION: (More than one may apply.)

- 1.  No environmental action
  - 2.  Environmental study
  - 3.  Remedial action
- N/A

O. AVAILABILITY OF ANALYTICAL MONITORING DATA:

Is analytical monitoring data for the site available? Limited history of leachate testing prior to 1980.  
 YES     NO

IF YES: check the appropriate box to indicate the purpose for which the data was collected. (More than one may apply.)

- CERCLA
- RCRA
- Remedial Action
- Environmental Audit
- Other (specify) Normal procedures by State DHES.

IF DATA WAS COLLECTED: FIRST COMPLETE SECTION P. CERTIFICATION AND SIGNATURE ON THE NEXT PAGE AND THEN COMPLETE DHS 3525, SECTION B SITE DATA ADDENDUM NOTIFICATION OF AN INACTIVE HAZARDOUS SUBSTANCE OR WASTE DISPOSAL SITE.

Site Name

CLIFFDALE

P. CERTIFICATION AND SIGNATURE:

I certify that to the best of my knowledge and belief the information supplied on this form is complete and accurate.

Signature

*Laurence S. Carter*

Date

4-22-88

Name and Title (Type or print)

L. S. CARTER, DIRECTOR CUMBERLAND COUNTY SWIM

Mailing Address

698 ANN ST.

FAYETTEVILLE, N.C. 28301

NORTH CAROLINA

Cumberland

County

I,

Betsy Currence

, a Notary Public for said County and State, do hereby certify that

Laurence S. Carter

personally appeared before me this day and acknowledged the due execution

of the foregoing instrument.

Witness my hand and official seal, this the

22<sup>nd</sup>

day of

April

19 88

(Official Seal)

*Betsy Currence*

Notary Public

My commission expires

October 1,

19 90

For Agency Use Only  
SITE # 515260100176

SECTION B  
SITE DATA ADDENDUM FOR AN INACTIVE HAZARDOUS SUBSTANCE  
OR WASTE DISPOSAL SITE

North Carolina General Statutes Section 130A-310 provides for protection of the public from inactive hazardous substance or waste disposal sites. Notification information and site data, required by North Carolina General Statutes Section 130A-310.1(b) must be submitted to:

Superfund Unit  
Division of Health Services  
P.O. Box 2091  
Raleigh, NC 27602-2091

Please read instructions before completing.

Please type or print in black ink.

A. SITE NAME AND PERSON REQUIRED TO NOTIFY:

1. Site Name CLIFFDALE LANDFILL  
(One site per form)

2. Person Completing Form:  
Name L.S. CARTER  
Mailing Address 698 ANN ST.  
City FAYETTEVILLE State NC Zip Code 28301  
Telephone (919) 483-4897

Present Owner   
Past Owner   
Present Operator   
Past Operator   
Other   
(specify) Director, County  
Solid Waste Management

3. Present Owner:  
Name CUMBERLAND COUNTY  
Mailing Address P.O. Box 1829  
City Fayetteville State NC Zip Code 28302  
Telephone (919) 483-8131

Corporation   
Partnership   
Individual   
Other   
(specify) County

B. SITE LOCATION:

Street or Route Address 7583 LOWELL HARRIS ROAD  
City or Town FAYETTEVILLE, N.C. 28304  
County CUMBERLAND



Site Name

CLIFFDALE

**C. ON-SITE WATER AND SEWER:**

**1. Wastewater Management**

Does the site currently have an on-site wastewater management system?  YES  NO

Has the site previously had an on-site wastewater management system?  YES  NO  UNKNOWN

If there is a past or present on-site wastewater treatment system, check all appropriate boxes below to describe the wastewater treatment system used at the facility. Indicate the dates of operation for each wastewater treatment system. More than one system may apply. Complete for all on-site systems, both past and present.

	Process Wastewater		Sanitary Wastewater		Dates of Operation	
	Yes	No	Yes	No	Beginning	Ending
Municipal Pretreatment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	---/---	---/---
a. With sludge generation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	---/---	---/---
b. Without sludge generation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	---/---	---/---
On-site wastewater disposal						
a. Drainfield	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	---/---	---/---
b. Septic tank	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	---/---	---/---
c. Land Application	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	---/---	---/---
Biological treatment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	---/---	---/---
Discharge to surface water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	---/---	---/---
Name of surface water	_____					
NPDES #	_____					

**2. Water Supply Source**

Does the site now have or has it in the past had a water system?  YES  NO

If yes, complete the following:

	Groundwater		Surface Water		Dates of Operation	
	Yes	No	Yes	No	Beginning	Ending
Municipal or County _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	---/---	---/---
Community _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	---/---	---/---
Non-Community _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	---/---	---/---

If surface water source is used, name of the body of water \_\_\_\_\_

Provide the use of the surface water:  Potable  Production  Cooling  Fire protection  Irrigation  Other (specify) \_\_\_\_\_

Attach a facility or local map with intake point marked for private or on-site surface water sources. Label the map with the site name.

Site Name CLIFFDALE

**D. ON-SITE WELLS:**

Does the site now have or has it in the past had any on-site wells?  YES | | NO  
If yes, complete the following:

- 1. Attach a facility or site map showing the location of all on-site wells. Label the attachment: "D. 1. On-Site Wells".
- 2. Total number of on-site wells: 21
- 3. For each on-site well, provide the following information:

- a. Label the corresponding well on the map required in D. 1.: \_\_\_\_\_
- b. Presently used?  YES  NO
- c. If not presently in use, give year abandoned: \_\_\_\_\_
- d. Type of well:  Monitoring  Injection  
 Production  Fire Protection  
 Cooling  Irrigation  
 Potable  Other (specify) Methane Gas Extraction
- e. Permitted well?  YES  NO N/A  
Permit Number \_\_\_\_\_
- f. Type of construction: See attachment
- g. Date installed: 1985 & 1986
- h. Depth of well: 20' to 30' ft.
- i. Size (diameter): See attachment inches
- j. Depth to static water level: 15-30' ft.
- k. Has laboratory analysis ever indicated ground water contamination?  YES  NO

Additional Section B, Part D. 3. forms are available.

**E. CLOSEST OFF-SITE WELL**

Provide the following information for the closest currently used off-site well within a one-mile radius of the site, where such information is known to you: Unknown

- 1. Owner \_\_\_\_\_
- 2. Location Address \_\_\_\_\_
- 3. City \_\_\_\_\_
- 4. Show the location of the well on a map of the area. Label the attachment: "E. 4. Off-Site Well".

**F. ANALYTICAL MONITORING DATA**

Complete for any monitoring which has been done at the site.

- 1. Groundwater — Has groundwater monitoring been conducted at the site?  YES  NO  
If yes, complete the following:

	Date	Method	Method Number	Compounds Detected	Level
a. Organics					
(1) Purgeables					
(2) Base Neutrals/Acid					
(3) PCB					
(4) Pesticides/Herbicides					
(5) Other					
b. Inorganics					

Laboratory performing analyses: \_\_\_\_\_  
Does the laboratory have EPA contract laboratory status?  YES  NO

Site Name

CLIFFDALE

2. Surface Water — Has surface water monitoring been conducted at the site?  YES  NO *In State Records*  
If yes, complete the following:

	Date	Method	Method Number	Compounds Detected	Level
a. Organics					
(1) Purgeables					
(2) Base Neutrals/Acid					
(3) PCB					
(4) Pesticides/Herbicides					
(5) Other					
b. Inorganics					

Laboratory performing analyses: \_\_\_\_\_  
Does the laboratory have EPA contract laboratory status?  YES  NO

3. Soil — Has soil testing been conducted at the site?  YES  NO  
If yes, complete the following:

	Date	Method	Method Number	Compounds Detected	Level
a. Organics					
(1) Purgeables					
(2) Base Neutrals/Acid					
(3) PCB					
(4) Pesticides/Herbicides					
(5) Other					
b. Inorganics					

Laboratory performing analyses: \_\_\_\_\_  
Does the laboratory have EPA contract laboratory status?  YES  NO

4. Air — Has air monitoring been conducted at the site?  YES  NO  
If yes, complete the following:

	Date	Method	Method Number	Compounds Detected	Level
a. Organics					
b. Inorganics					
c. Particulates					
d. Visible Emissions					
e. Ambient Air Monitoring					
f. Other					

Laboratory performing analyses: \_\_\_\_\_  
Does the laboratory have EPA contract laboratory status?  YES  NO

G. CLEANUP ACTIONS

Describe briefly any cleanup activities at the site and attach a map showing cleanup activities. Label the map with the site name.

*Periodic Erosion, Sedimentation control activities.*

*Design and construction of Methane Gas monitoring and control system.*

Site Name

CLIFFDALE

List documents related to cleanup actions including, but not limited to, work plans, cleanup action plans, and remedial action plans.

Document Date	Document Name	Purpose of Document
		NA

H. RECORDATION

Is the location/existence of the disposal site recorded in the register of deeds' office in the county or counties in which the land is located?  YES  NO

If yes, date of recordation: 1972

I. CERTIFICATION AND SIGNATURE:

I certify that to the best of my knowledge and belief, the information supplied on this form is complete and accurate.

Signature [Signature] Date 4-22-88

Name and Title (Type or print) L. S. CARTER, DIRECTOR SWM

Mailing Address 698 ANN ST. Fayetteville, N.C. 28301

NORTH CAROLINA

Cumberland County

I, Betsy Currence, a Notary Public for said County and State, do hereby certify that Laurence S. Carter personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

Witness my hand and official seal, this the 22nd day of April, 1988

(Official Seal)

[Signature] Betsy Currence Notary Public

My commission expires October 1, 1990

\*313PRLFSF548\*



DocumentID NONCD0000733

SITENAME CUMBERLAND COUNTY LANDFILL - BONES CREEK

DocumentType Correspondence (C)

RptSegment 1

DocDate 11/28/2007

DocRcvd 11/28/2007

Box SF548

AccessLevel Public

Division Waste Management

Section Superfund

Program IHS (IHS)

DocCat Facility



## North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director

Division of Waste Management

Michael F. Easley, Governor  
William G. Ross Jr., Secretary

November 28, 2007

Ms. Katie M. Gallup  
1452 Keswick Drive  
Fayetteville, NC 28304

Re: Cumberland County Landfill – Bones Creek  
NONCD0000733  
Cumberland County, NC  
Parcel ID No.: 9487-86-7887

Dear Ms. Gallup:

A State contractor (Marshall Miller & Associates, Inc.) has determined that the above referenced property was previously used as a portion of a larger landfill.

A report was submitted to the North Carolina Division of Waste Management by the contractor identifying the property's past use as a landfill and included general information about the property and vicinity. No immediate hazard was observed associated with the landfill area. The property will remain as part of the Division's inventory of unpermitted landfills and continue to be part of public record.

To address properties such as yours, the General Assembly of North Carolina ratified Senate Bill 1492 that creates a program whereby the State will assess and remedy the environmental hazards at these old unpermitted landfills. The funding for this work becomes effective July 1, 2008 and will be used by the Division to hire contractors to perform assessment and remediation activities at these old landfills on a priority basis.

Your cooperation when your property is scheduled for assessment and remediation activities would be very much appreciated.

We ask that our office be notified prior to any redevelopment plans so that the public or environment is not adversely affected. If you have any questions regarding the content of the report or this letter please call me at (919) 508-8463.

Sincerely,

Bruce E. Lefler Jr., Hydrogeologist  
Inactive Hazardous Site Branch  
NC Division of Waste Management



## North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director

Division of Waste Management

Michael F. Easley, Governor  
William G. Ross Jr., Secretary

November 28, 2007

Ms. Gerda Hepner  
7579 Deerwood Drive  
Fayetteville, NC 28303

Re: Cumberland County Landfill – **Bones Creek**  
NONCD0000733  
Cumberland County, NC  
Parcel ID No.: 9487-87-5002

Dear Ms. Hepner:

On July 10, 2006 the above referenced property was inspected by a State contractor (Marshall Miller & Associates, Inc.) to determine if it had previously been used as a landfill and to identify any potential hazards if a landfill was present. That inspection confirmed the presence of a landfill.

A report was submitted to the North Carolina Division of Waste Management by the contractor identifying the property's past use as a landfill and included general information about the property and vicinity. No immediate hazard was observed associated with the landfill area. The property will remain as part of the Division's inventory of unpermitted landfills and continue to be part of public record.

To address properties such as these, the General Assembly of North Carolina ratified Senate Bill 1492 that creates a program whereby the State will assess and remedy the environmental hazards at these old unpermitted landfills. The funding for this work becomes effective July 1, 2008 and will be used by the Division to hire contractors to perform assessment and remediation activities at these old landfills on a priority basis.

Your cooperation when this property is scheduled for assessment and remediation activities would be very much appreciated.

Thank you for your cooperation thus far in allowing access to this property. We ask that our office be notified prior to any redevelopment plans so that the public or environment is not adversely affected. If you have any questions regarding the content of the report or this letter please call me at (919) 508-8463.

Sincerely,

Bruce E. Lefler Jr., Hydrogeologist  
Inactive Hazardous Site Branch  
NC Division of Waste Management

**Site Name:** CUMBERLAND CO LDFL - BONES CREEK      **In IHS Inventory?** No  
**ID Number:** NONCD0000733      **Other Agency Lead**  
**Site Address:** SR 1400      **NFA or NFA-Restricted Use?** No  
**City:**      **Unable to Locate**

**State Plane X:**      **Latitude:**  
**State Plane Y:**      **Longitude:**

**Directions:** SR 1400 BONES CREEK

*Cliffdale + Town Creek Dr*

LDFL Size (Acres):	Present Within 1000 ft of Ldfl		Residence On Ldfl?	No
	<b>Property Size (Acres):</b>	<b>Church</b>		
<b>Date Open:</b>	<b>School</b>	No	<b>Adjoins Perennial SW?</b>	No
<b>Date Closed:</b> 1975	<b>Day Care</b>	No		
	<b>Residential</b>	No		

**Notes:** FROM TERRY DOVER'S LIST

(End Site Record)

*Bone Creek Investments LLC*

*Pine trees + Cedar trees      Houses all around*



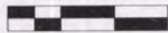








SITE MAP



80 0 80 160 Feet



-  Streets
-  Water
-  Parcel Lines
-  Parcels (USE THIS ONE)



THE COUNTY OF CUMBERLAND AND ITS GIS DEPARTMENT DISCLAIMS ACCOUNTABILITY FOR THIS PRODUCT AND MAKES NO WARRANTY EXPRESS OR IMPLIED CONCERNING THE ACCURACY THEREOF. RESPONSIBILITY FOR INTERPRETATION AND APPLICATION OF THIS PRODUCT LIES WITH THE USER.

**Site Summary Report**  
**CUMBERLAND COUNTY LANDFILL – BONES CREEK**  
**ID Number: NONCD0000733**  
**Cumberland, North Carolina**

**Hurricane Recovery Act of 2005**  
**State of North Carolina**  
**State Contract 6010S**  
**MM&A Project Number NCUL103-01**



*Prepared For:*

**North Carolina Department of Environmental and Natural Resources**  
**Division of Waste Management - Superfund Section**  
**Inactive Hazardous Sites Branch**  
**401 Oberlin Road, Suite 150**  
**Raleigh, NC 27605**

*Prepared By:*

**MARSHALL MILLER & ASSOCIATES, INC.**  
**5825 Triangle Drive**  
**Raleigh, NC 27617**  
**(Ph.) 919-786-1414 (Fax) 919-786-1418**

**September 6, 2006**

**Prepared By:**

**Hilton Freed**  
*Staff Scientist*

**Reviewed By:**

**Andrew D. Waggener**  
*Program Manager*



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- Figure 2 - Property/Water Well Location Map*
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- Figure 4 - Site Location Map*

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- Table 1 - Tabulated GPS Coordinates*

**APPENDICES**

**APPENDIX A**

- Cumberland County Tax Department - Deeds*
- Cumberland County Tax Department - 2006 Tax Sheets*

**APPENDIX B**

- Records of Communication*

**APPENDIX C**

- Site Inspection Photodocumentation*

**APPENDIX D**

- Field Reconnaissance Sheet*

**APPENDIX E**

- Site Plan for a Sanitary Landfill in Cumberland County*

**APPENDIX F**

- Aerial Photograph - Cumberland County DSWC, 1950*
- Aerial Photograph - Cumberland County DSWC, 1959*
- Aerial Photograph - Cumberland County DSWC, 1966*
- Aerial Photograph - Cumberland County DSWC, 1972*
- Aerial Photograph - Cumberland County DSWC, 1981*
- Aerial Photograph - NCDOT, 1991*

**1.0 SITE INFORMATION**

**ID NUMBER:** NONCD0000733

**SITE NAME:** Cumberland County Landfill – Bones Creek

**LOCATION:** Southeast of the intersection of Cliffdale Road and Town Creek Drive, at the end of Winward Cove road, 113 feet behind Town Creek Apartments and a multi-unit storage facility

**COUNTY:** Cumberland

**LANDFILL SIZE:** 6.1 acres

**PROPERTY (SITE) SIZE:** 7.88 acres

**DATE OPENED:** Between 1960 and 1966

**DATE CLOSED:** 1975

**SITE OWNER:** Northern: Gerda Hepner  
Southern: Katie M. Gallup

**OWNER CONTACT:** Gerda Hepner

**OWNER ADDRESS:** Northern: 7579 Deerwood Drive, Fayetteville, North Carolina  
28303

Southern: 1452 Keswick Drive, Fayetteville, North Carolina 28304

**OWNER TELEPHONE NUMBER:** Northern: (910) 822-2825  
Southern: (910) 424-3600

**NAD 83 PIN:** Northern: 9487-87-5002-  
Southern: 9487-86-7887-

**DEED REFERENCE:** Northern: Deed Book 6492, Page Number 626  
Southern: Deed Book 2822, Page Number 81

**COORDINATES (at point of entrance to Site):**

**STATE PLANE COORDINATES (SPC); NAD83, Meters**

X: 606087.73; Y: 145380.19

**DEGREES, MINUTES, SECONDS (DMS); WGS 84**

Lat.: N 35° 03' 38"; Long.: W 79° 2' 16.7"

## 2.0 AREAS OF NOTE

The following areas of note were observed during the site inspection:

- The area immediately at the entrance of the Site contains recently deposited surface litter consisting of glass bottles and aluminum cans.
- A church is located approximately 967 feet to the northeast of the disposal area with which there is an associated water supply well.

## 3.0 SITE LOCATION RESEARCH SUMMARY

Marshall Miller & Associates, Inc. (MM&A) has completed an assessment of the former Cumberland County Landfill-Bones Creek located near Fayetteville in Cumberland County, North Carolina. The assessment included historical research and a site inspection to confirm the Site location, to develop an understanding of the operational and development history and to evaluate the current Site and vicinity conditions.

For the purpose of this report, the term Site refers to the two properties on which the old landfill was located. The term disposal area is specific to the actual location where refuse was buried or disposed.

## 3.1 SITE SUMMARY

### 3.1.1 Site Ownership and Dates of Operation

Though no documentation was located to confirm the date of initial operation, aerial photography indicates an opening date between 1959 and 1966.

According to records from Cumberland County, the property comprising the northern portion of the Site is currently owned by Ms. Gerda Hepner (Deed Book 6492, Page Number 626), and the property comprising the southern portion of the Site is owned by Ms. Katie M. Gallup (Deed Book 2822, Page Number 81). Copies of these deeds are provided in **Appendix A**.

*The Old Landfill Inventory Sheet*, obtained from the North Carolina Department of

Environment and Natural Resources (NCDENR), Division of Solid Waste offices in Raleigh, indicates that the Site was closed for landfill activities in 1975. This is supported by aerial photography.

MM&A obtained permission to access the property from Ms. Gerda Hepner prior to performing an on-site inspection. A copy of the Request for Site Access Letter and Follow-up telephone logs are included as **Appendix B**.

### **3.1.2 Site Location**

The Site is located 9.12 miles from the Fayetteville City Hall at 433 Hay Street with a bearing of 274 degrees from true north. The Site location and the surrounding area are depicted in the various maps included with this report (**Figures 1 through 4**).

### **3.1.3 General Site Description**

The Site is located in a residential setting on the southeastern side of Cliffdale Road near its intersection with Town Creek Drive. The property is bordered to the east by Bones Creek, to the west by woodlands and a residential neighborhood, to the south by undeveloped land, and to the north by an apartment complex and multi-unit storage facility. The Site can be accessed approximately 113 feet south of the terminus of Winward Cove road.

The Site is trapezoidal in shape, and encompasses an area of 7.88 acres. The disposal area is irregular in shape and occupies approximately 6.1 acres of the Site. A small earthen berm surrounds the disposal area on three sides.

The Site gently undulates with minor mounding to its center and has a total relief of approximately 50 feet.

The Site was reported by county personnel to have accepted general debris, municipal waste, and household refuse. The debris noted during the Site visit supported this.



## **3.2 SITE CONDITIONS**

The following sections discuss the site conditions based on the historical research and the site inspection. Captioned photographs are included in **Appendix C** to illustrate the condition of the Site as observed during the site visit that was performed on July 10, 2006. A copy of the Field Reconnaissance Sheet is included as **Appendix D**.

### **3.2.1 On-Site Structures**

No historical or current on-site structures were identified at this location based on the site visit and historical resources, which included aerial photography, topographical maps, and other resources.

### **3.2.2 Current Site Usage**

The Site is undeveloped and not currently being utilized for any specific purpose.

### **3.2.3 On-Site Water Supply Wells and Intakes**

No on-site wells were identified nor are thought to have ever been present at the Site.

### **3.2.4 Surface Water Features**

The Site is bounded to the east by Bones Creek and to the west by an unnamed seasonal stream, which converges with Bones Creek south of the Site.

### **3.2.5 Disposal Area**

Based on GPS coordinates and aerial photographs, the disposal area occupies approximately 6.1 acres of the 7.8 acre Site. The disposal area is not clearly identifiable on the Site due to heavy vegetation. The disposal area is completely covered with grasses, weeds, vines and large trees and is surrounded by forested land consisting primarily of pines and a mix of deciduous trees. An unimproved dirt road terminates approximately 100 feet into the northern perimeter of the disposal area.

### **3.2.6 Disposal Area Conditions**

Heavy plant growth has occurred on and around the disposal area, making it indistinguishable from the rest of the Site and making access difficult. Road access is good for approximately 100 feet into the disposal area, whereupon it ends as it encounters dense vegetation. The surface of the disposal area contains scattered household debris consisting of stoves, tanks, refrigerators and minor deposits of glass and plastic. A wrecked pickup truck and the remains of a scrapped corrugated tin shack were also observed. The debris in the property that comprises the southern portion of the disposal area is more scattered and consists of glass, plastic and aluminum cans.

A personal interview with Mr. Soles, R.S., Environmental Health Supervisor, with the County of Cumberland Environmental Health Department, affirmed the location and the type of refuse disposed at the facility. Mr. Soles recalled, from his personal inspection visits to the Site, that it was a refuse dump that received general debris, municipal waste, and household refuse.

### **3.2.7 Evidence of Human Activity**

No evidence of human activity was noted during the on-site inspection.

### **3.2.8 Potential Landfill Gas Migration Pathways**

No potential landfill gas migration pathways were observed. This Site does not contain any building foundations or underground utilities that would promote the migration of landfill gasses.

### **3.2.9 Physical Barriers**

Vehicle access is limited to the Site by two locked gates in the multi-unit storage facility area at the end of Winward Cove road. There is evidence of barbed wire fencing on the western perimeter.

### 3.2.10 Other Pertinent Information

The disposal area was noted to encompass two parcels of property referred to as the Site.

Mr. Soles indicated that refuse might have been dumped in the adjacent sand pit to the north of the Site, which is located on property owned by Bone Creek Investments, LLC. This property currently contains a multi-unit storage facility and an apartment complex. According to Mr. Thomas Hollinshed, the principle of Bone Creek Investments, LLC, no landfill materials had been dumped in the sand pit before constructing the multi-unit storage facility and apartment complex. Additionally, the *Site Plan for a Sanitary Landfill in Cumberland County*, filed at the NCDENR, Division of Solid Waste office in Raleigh, specifically outlines the Site location as being south of the sand pit. A copy of the *Site Plan for a Sanitary Landfill in Cumberland County* is provided in **Appendix E**.

## 3.3 VICINITY CONDITIONS

### 3.3.1 Structures Located within 50 Feet of the Disposal Area

No historical or current structures were identified within 50 feet of the disposal area, based on the site visit and historical resources, which included interviews, aerial photography, and topographic maps.

### 3.3.2 Water Supply Wells and Intakes

According to personal interviews and information gathered from the Cumberland County Department of Utilities, there is one water supply well within 1,000 feet of the disposal area. The well is located at a church approximately 967 feet to the northeast and it does not appear to be located hydraulically downgradient from the disposal area. The location of the water supply well is shown on **Figures 1 and 2**.

According to research on the NCDENR, Water Quality Division, Public Water Supply Website, there are no permitted Well Head Protection Areas in the vicinity of the Site.

### **3.3.3 Current Land Usage**

Current land usage within 1,000 feet of the disposal area is as follows:

*North:* The land use adjacent to the north of the disposal area consists of an apartment complex and a multi-unit storage facility. The nearest apartment building is approximately 75 feet north of the disposal area. Cliffdale Road is approximately 850 feet from the Site and a residential neighborhood is beyond that.

*East:* The area to the east of the disposal area consists of mixed woodlands. The closest development in this direction is the church, located approximately 967 feet northeast of the Site.

*West:* The land immediately west of the disposal area consists of mixed woodlands for approximately 400 feet. Beyond this wooded area, the land has been cleared for an additional 500 feet until reaching a residential neighborhood, which lies approximately 900 feet west of the disposal area.

*South:* The land south of the disposal area consists of mixed woodlands with no development within 1,000 feet of the Site.

### **3.3.4 Surface Water Features**

Bones Creek flows in a southerly direction bordering the Site's eastern perimeter to a pond approximately 1,826 feet to the south. Additionally, two unnamed seasonal streams from the west and east converge with Bones Creek due south of the Site. Bones Creek is classified as Class C waters in the 15A NCAC 2B Standards.

## **3.4 AERIAL PHOTOGRAPHY REVIEW**

MM&A obtained aerial photographs from the Cumberland County Department of Soil and Water Conservation (DSWC), the North Carolina Department of Transportation (NCDOT),

and the United States Geological Survey (USGS) to provide information on the operational history of the dump and the development history of the vicinity.

The source and year for the aerial photographs obtained are as follows:

- 1950 Cumberland County DSWC, AOC-4E-7, Frame (B6)
- 1959 Cumberland County DSWC, AOC-5AA-65, Frame (B6)
- 1966 Cumberland County DSWC, AOC-2GG-179, Frame (C5)
- 1972 Cumberland County DSWC, 370512-85, Frame (C6)
- 1981 Cumberland County DSWC, Frame (A3)
- 1991 NCDOT Aerial Photo

The aerial photographs listed above are included in **Appendix F**. Following is a summary of the observations made from the review of the aerial photography:

Aerial photography from 1950 indicates that the disposal area was not visible at that time and the sand pit to the north was clearly visible. The remainder of the land within 1,000 feet was undeveloped or used for agriculture.

In 1959, the disposal area still was not visible. The sand pit operation to the north of the Site has enlarged from its extent in the 1950 aerial photograph. The surrounding area remains undeveloped, as it appeared in the 1950 photograph.

In 1966, aerial photography indicates that the disposal area was visible at that time, south of the sand pit operation. At that time, the sand pit operation had expanded across Cliffdale Road to the north. Additionally, road access to the west and south of the Site has been provided.

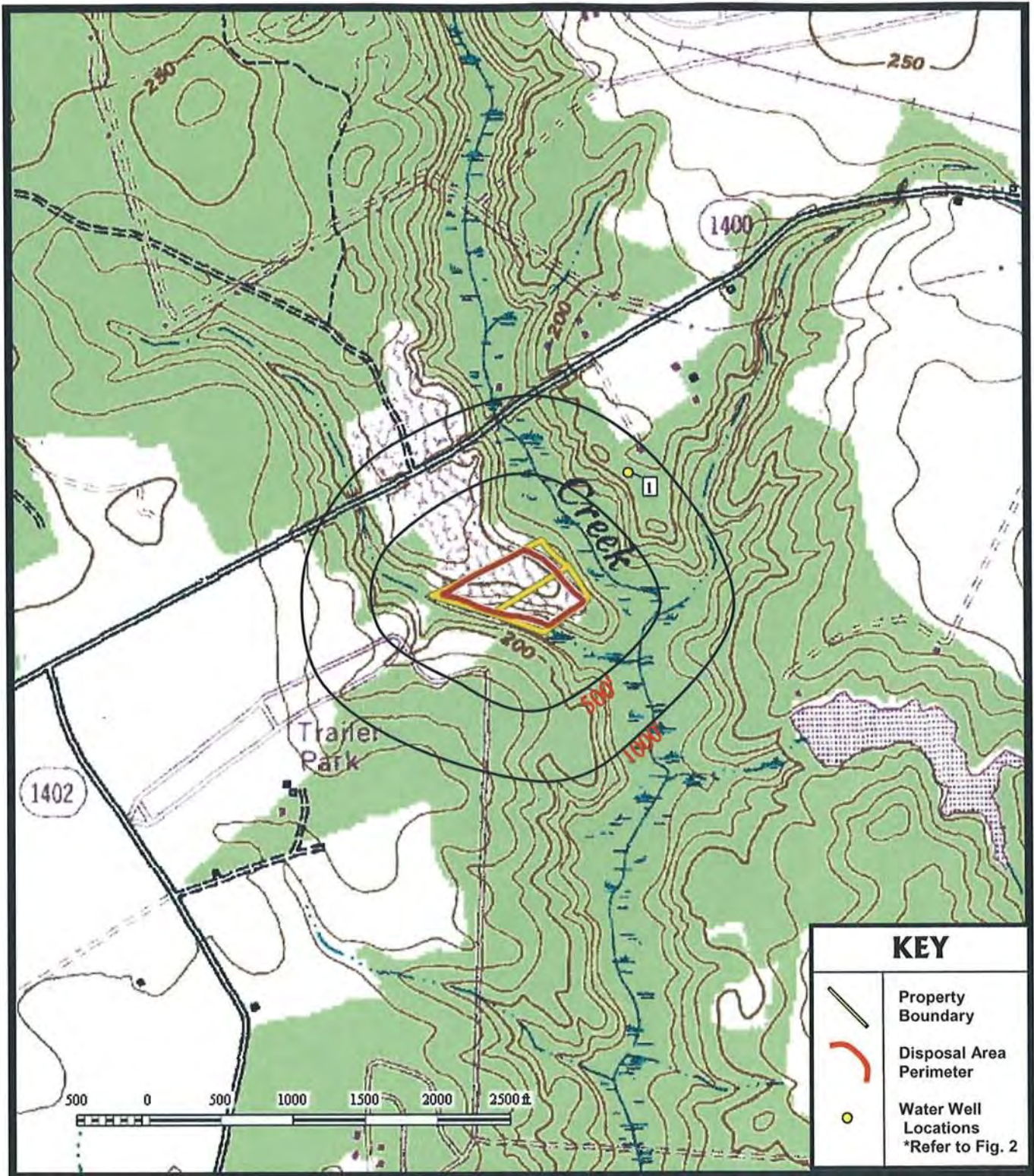
Road and subdivision development to the southwest of the Site is clearly indicated by 1972. Further expansion of the sand pit north of Cliffdale Road had occurred.

By 1981, revegetation of the disposal area had occurred. Subdivision development had increased to the southwest and the sand pit operation to the north has been decreased as evidenced by reforestation.

As of 1991, the road into the disposal area was visible, and the area of surface disturbance is slight and barely visible in the photograph. The land to the south indicates that some reforestation had occurred since the closing of the landfill in 1975. The majority of the land to the south is undeveloped and forested. The sand pit to the south of Cliffdale Road is visible, though smaller, and the portion of the sand pit to the north of Cliffdale Road appears to be reclaimed.

## **FIGURES**





**FIGURE 1**

NCDENR/OLD UNLINED LANDFILL ASSESSMENTS  
 CUMBERLAND COUNTY LANDFILL -  
 BONES CREEK  
 NONCD0000733  
 CLIFFDALE, CUMBERLAND COUNTY, NORTH CAROLINA

SCALE 1" = 1,000'

**TOPOGRAPHIC MAP**

Prepared by:  
**MARSHALL MILLER & ASSOCIATES**  
 NCUL103-01 08/2006

SOURCE:  
 USGS 7.5' Cliffdale, NC Quadrangle 1948  
 PHOTOREVISED 1982









### WATER WELL LEGEND

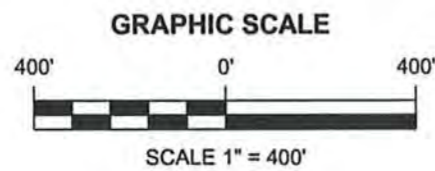
WATER WELL ID	PARCEL NO.	PROPERTY OWNER/ ADDRESS	DISTANCE (FEET)	DIRECTION
①	9487-87-9970	CLIFFDALE COMMUNITYCHURCH 7763 CLIFFDALE ROAD FAYETTEVILLE, NC 28314	761	NE

### LEGEND

-  EXISTING PROPERTY LINE
-  DUMP PARCEL PROPERTY LINE
-  CREEK
-  DISPOSAL AREA



KEY MAP

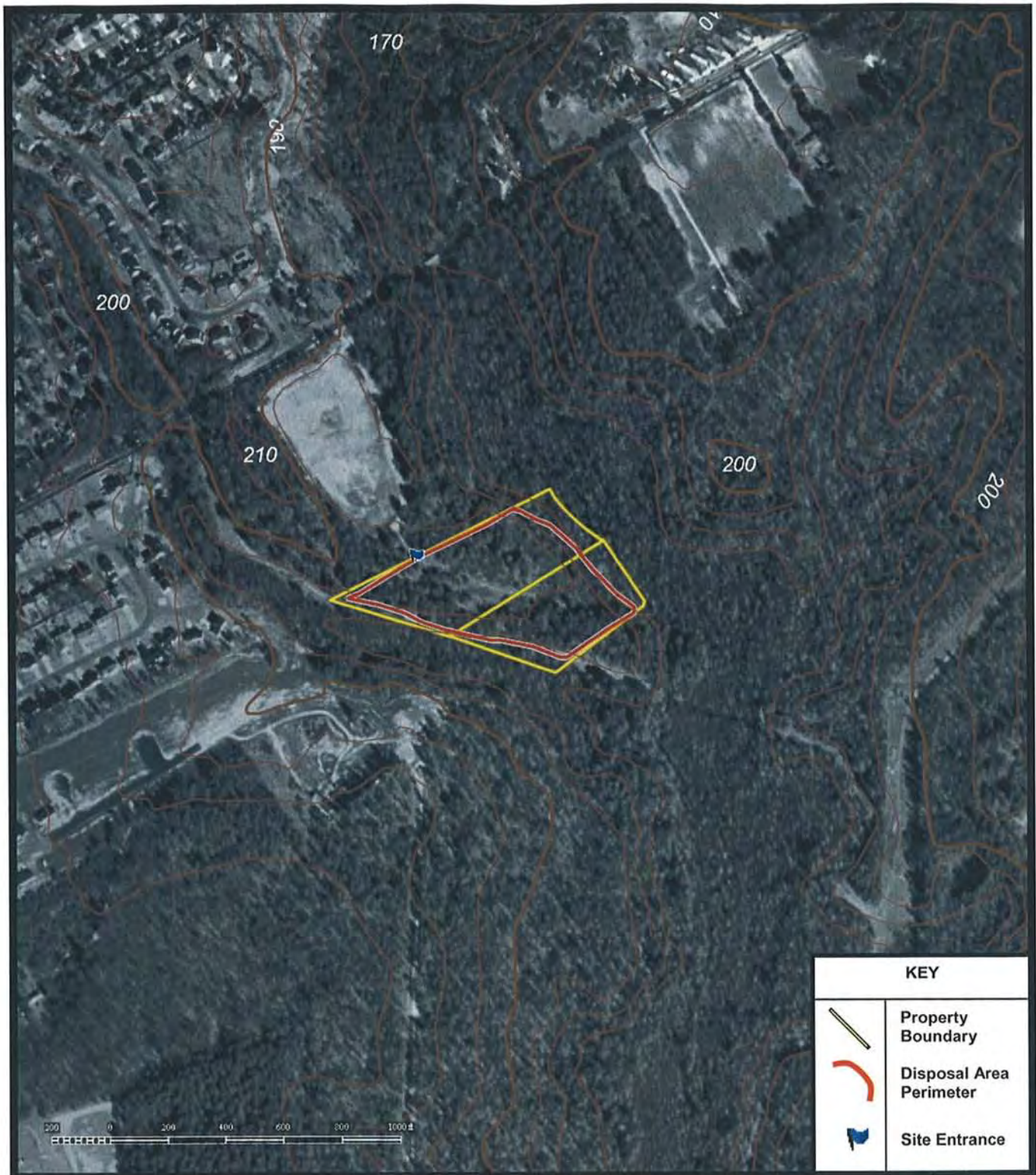


Prepared By:  
**MARSHALL MILLER & ASSOCIATES**  
 Geology, Environmental Sciences & Engineering, Geophysics  
 Raleigh, VA • Charleston, WV • Charlottesville, VA • Blacksburg, VA • Durham, VA • Claxton, VA • Cheriton, VA



DESIGNED:	SD
DRAWN:	WLG
CHECKED:	DW
DATE:	08/01/2006
SCALE:	1" = 400'
PROJECT NO.:	NCUL103
FILE NO.:	BONES 'CK.dwg

NCDENR/OLD UNLINED LANDFILLS  
 CUMBERLAND CO. LANDFILL-BONES CREEK  
 NONCD0000733  
 CLIFFDALE, CUMBERLAND COUNTY, N.C.  
 PROPERTY/WATER WELL LOCATION MAP



Contour Interval = 10 feet

**FIGURE 3**

NCDENR/OLD UNLINED LANDFILL ASSESSMENTS  
 CUMBERLAND COUNTY LANDFILL -  
 BONES CREEK  
 NONCD0000733  
 CLIFFDALE, CUMBERLAND COUNTY, NORTH CAROLINA

SCALE 1" = 500'

**VICINITY MAP**

CUMBERLAND COUNTY  
 CLIFFDALE QUAD



NORTH CAROLINA  
 QUADRANGLE LOCATION

Prepared by:



SOURCE:

- USGS Digital Orthophoto Quarter Quadrangles - Fayetteville, NC 1999
- Topographic data from NCDOT GIS Unit



**FIGURE 4**

NCDENR/OLD UNLINED LANDFILL ASSESSMENTS  
 CUMBERLAND COUNTY LANDFILL -  
 BONES CREEK  
 NONCD0000733  
 CLIFFDALE, CUMBERLAND COUNTY, NORTH CAROLINA

*APPROXIMATE SCALE 1" = 3300'*

**SITE LOCATION MAP**

CUMBERLAND COUNTY  
 CLIFFDALE QUAD



Prepared by:



NCUL103-01 08/2006

SOURCE:  
 Microsoft Streets & Trips 2006

## **TABLES**



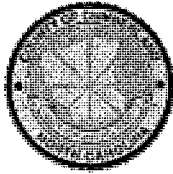
**TABLE 1**  
**Tabulated GPS Coordinates**  
**Cumberland County Landfill -**  
**Bones Creek**  
**NONCD0000733**  
**Cumberland County**

Table 1  
Project No. NCUL103-01  
Date 8/16/2006  
Page No. 1

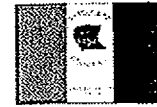
GPS Waypoint Description	NAD 83 State Plane Coordinates (Meters)		WGS 84	
	State Plane X	State Plane Y	Latitude	Longitude
Entrance, Tires	606087.73	145380.19	35° 03' 38.0"	-79° 02' 16.7"
Old Truck, Debris	606132.89	145422.66	35° 03' 38.6"	-79° 02' 16.3"
General Area of Debris	606142.84	145440.96	35° 03' 39.4"	-79° 02' 16.9"
General Area of Debris	606142.84	145440.96	35° 03' 39.9"	-79° 02' 16.4"
General Area of Debris	606047.32	145382.98	35° 03' 38.1"	-79° 02' 20.2"
Berm	606056.62	145353.25	35° 03' 37.2"	-79° 02' 19.9"
Old Tank	606194.73	145357.41	35° 03' 36.9"	-79° 02' 19.6"
Metal Debris	606200.45	145346.98	35° 03' 37.2"	-79° 02' 14.5"
Standing Water	606211.02	145317.58	35° 03' 36.9"	-79° 02' 14.2"
Small Berm	606230.09	145344.09	35° 03' 36.0"	-79° 02' 13.8"
Perimeter Point	606 069.20	145 417.97	35° 03' 39.2"	-79° 02' 19.4"
Perimeter Point	606 106.39	145 436.71	35° 03' 39.8"	-79° 02' 17.9"
Perimeter Point	606 140.55	145 452.51	35° 03' 40.3"	-79° 02' 16.6"
Perimeter Point	606 177.01	145 455.58	35° 03' 40.4"	-79° 02' 15.2"
Perimeter Point	606 205.16	145 425.94	35° 03' 39.5"	-79° 02' 14.0"
Perimeter Point	606 235.59	145 394.77	35° 03' 38.5"	-79° 02' 12.8"
Perimeter Point	606 261.47	145 358.45	35° 03' 37.3"	-79° 02' 11.8"
Perimeter Point	606 257.73	145 321.18	35° 03' 36.1"	-79° 02' 12.0"
Perimeter Point	606 218.26	145 304.73	35° 03' 35.5"	-79° 02' 13.5"
Perimeter Point	606 184.82	145 312.06	35° 03' 35.8"	-79° 02' 14.8"
Perimeter Point	606 148.35	145.318.70	35° 03' 36.0"	-79° 02' 16.3"
Perimeter Point	606 049.57	145 343.66	35° 03' 36.8"	-79° 02' 20.2"
Perimeter Point	606 044.91	145 404.98	35° 03' 38.8"	-79° 02' 20.4"
Perimeter Point	606 073.00	145 419.40	35° 03' 39.3"	-79° 02' 19.3"



**APPENDIX A**  
*Cumberland County Tax Department –  
Deeds & Tax Sheets*



**Cumberland County**  
*North Carolina*  
**REAL ESTATE TAX SHEET**  
 EMAIL



[Click for Property Info Sheet](#)

[| Tax Records](#) | [General Info](#) | [Phone Numbers](#) | [Real Estate](#) | [Personal](#) | [| County](#) |

DATE: 08/31/2006

COUNTY OF CUMBERLAND

TIME: 15:45:51

**Parcel ID:** 9487-87-5002- **TaxYear:** 2006

**Owner Name:** HEPNER, GERDA Z LIFE ESTATE

**Owner Address:** 7579 DEERWOOD DR FAYETTEVILLE NC 28303-1928

**Situs Address:** 000000 ? N/A N/A

**Taxing District:** 1000 FAYETTEVILLE

**Taxing Rate:** 0.014100000

**Tax Bill Number:** 1911303 UNKNOWN

**Old Parcel ID:** 9487-86-5904-

**Property Class:** AGRICULTURAL & FOREST

**Legal Description:** 4.73 ACRES MONROE & PATE LD

	Total	Land	Building	Misc.
<b>Appraised:</b>	9,887.00	0.00	0.00	0.00
<b>Assessed:</b>	9,887.00	0.00	0.00	0.00
<b>Exemption:</b>	0.00			
<b>Taxable:</b>	9,887.00			

	Tax Year: 2006	Applied	Paid	Owed
<b>Tax:</b>		139.41	0.00	139.41
<b>Sass:</b>		0.00	0.00	0.00
<b>Fees:</b>		0.00	0.00	0.00
<b>Interest:</b>		0.00	0.00	0.00
<b>Total:</b>		139.41	0.00	139.41

Interest/Discount data is not current - please call for up-to-date amount (910-678-7507)

ADDED BILL EXISTS - NUMBER UNKNOWN

Receipt #	Receipt Type	Payment Date	Paid Amount
	<b>Authority</b>	<b>Description</b>	<b>Orig Amount</b>
	CNTY	COUNTY WIDE	87.01
	FAYET	FAYETTEVILLE	52.40

[Click for Property Info Sheet](#)

Personal Property Search for HEPNER, GERDA Z LIFE ESTATE [Go](#)

[| Tax Records](#) | [General Info](#) | [Phone Numbers](#) | [Real Estate](#) | [Personal](#) | [County](#)

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The public information contained herein is furnished as a public service by the Cumberland County Treasurer's Office. The Cumberland County Treasurer's Office makes **no warranties**, either expressed or implied, concerning the accuracy, completeness, reliability, or suitability of the information for any other particular use. Furthermore, the Cumberland County Treasurer's Office assumes **no liability** associated with the use or misuse of said information.

---

1096724



Excise Tax .00

Recording Time, Book and Page

Tax Lot No. .... Parcel Identifier No. ....  
Verified by ..... County on the ..... day of ....., 19.....  
by .....

Mail after recording to ... Ms. Katie M. Gallup .....  
1452 Keswick Drive, Fayetteville, NC 28304  
This instrument was prepared by ... Lloyd K. Swaringen, Atty.  
Brief description for the index [ ]

### NORTH CAROLINA GENERAL WARRANTY DEED

THIS DEED made this 15th day of May, 1981, by and between

GRANTOR

GRANTEE

Myrtle P. Monroe, widow

Katie M. Gallup

1452 Keswick Drive  
Fayetteville, NC 28304

Enter in appropriate block for each party: name, address, and, if appropriate, character of entity, e.g. corporation or partnership.

The designation Grantor and Grantee as used herein shall include said parties, their heirs, successors, and assigns, and shall include singular, plural, masculine, feminine or neuter as required by context.

WITNESSETH, that the Grantor, for a valuable consideration paid by the Grantee, the receipt of which is hereby acknowledged, has and by these presents does grant, bargain, sell and convey unto the Grantee in fee simple, all that certain lot or parcel of land situated in the City of Seventy-First Township, Cumberland County, North Carolina and more particularly described as follows:

BEGINNING at a point in the Southern line of the original 10.5 acre tract of which this is a part, said point also being the Southeast corner of a 7.35 acre tract conveyed to Harry D. Martin and wife, Ethel Martin by deed recorded in Book of Deeds 1021, Page 467, Cumberland County Registry, and runs thence as the Northern line of said 7.35 acres, North 69 degrees 17 minutes West 379.17 feet to a point, said point being the Northeast corner of the 7.35 acre tract, thence with the Northern line of the original 10.5 acre tract of which this is a part, North 62 degrees 50 minutes East 625.47 feet to a stake on the West bank of Bones Creek, thence down the Run of Bones Creek, South 30 degrees 45 minutes East 253.56 feet to a concrete monument on the West bank of said Creek, said monument also being a corner of the W. P. Saunders Estate, thence with the Southern line of the original tract of which this is a part, and the line of the Saunders Estate, South 58 degrees 40 minutes West 388.08 feet to the point of beginning. Containing 3.15 acres, and being a part of the second tract in a deed to Myrtle P. Monroe, dated 20 June, 1962, and recorded in Book of Deeds 932, Page 254, Cumberland County Registry.

The property hereinabove described was acquired by Grantor by instrument recorded in .....

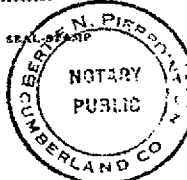
A map showing the above described property is recorded in Plat Book ..... page.....  
TO HAVE AND TO HOLD the aforesaid lot or parcel of land and all privileges and appurtenances thereto belonging to the Grantee in fee simple.

And the Grantor covenants with the Grantee, that Grantor is seized of the premises in fee simple, has the right to convey the same in fee simple, that title is marketable and free and clear of all encumbrances, and that Grantor will warrant and defend the title against the lawful claims of all persons whomsoever except for the exceptions hereinafter stated. Title to the property hereinabove described is subject to the following exceptions:

IN WITNESS WHEREOF, the Grantor has hereunto set his hand and seal, or if corporate, has caused this instrument to be signed in its corporate name by its duly authorized officers and its seal to be hereunto affixed by authority of its Board of Directors, the day and year first above written.

By: Myrtle P. Monroe (Corporate Name) (SEAL)  
Myrtle P. Monroe  
By: ..... (SEAL)  
..... (SEAL)  
ATTEST: ..... (SEAL)  
..... Secretary (Corporate Seal) (SEAL)

USE BLACK INK ONLY



NORTH CAROLINA, Cumberland County.  
I, a Notary Public of the County and State aforesaid, certify that Myrtle P. Monroe Grantor, personally appeared before me this day and acknowledged the execution of the foregoing instrument. Witness my hand and official stamp or seal, this 15th day of May 1981.  
My commission expires: 3/21/84 Bertie D. Pierpont Notary Public

SEAL-STAMP

NORTH CAROLINA, ..... County.  
I, a Notary Public of the County and State aforesaid, certify that ..... Secretary of personally came before me this day and acknowledged that he is ..... a North Carolina corporation, and that by authority duly given and as the act of the corporation, the foregoing instrument was signed in its name by its President, sealed with its corporate seal and attested by ..... as its Secretary. Witness my hand and official stamp or seal, this ..... day of ..... 19.....  
My commission expires: ..... Notary Public

NORTH CAROLINA, CUMBERLAND COUNTY  
The foregoing or annexed certificate of Bertie D. Pierpont Notary Public/Notary Public is/are certifying to be correct.  
This instrument was presented for registration and recorded in this Office at Book 2822 Page 81  
This 27 day of May 1981 at 4:05 O'clock P.M.  
By Marion Clark P. Wilburn  
Register of Deeds Deputy Register of Deeds

NO REVENUE

RECEIVED  
4-16-2004 AM 11:11:31  
J. LEE WARREN JR.  
REGISTER OF DEEDS  
CUMBERLAND CO., N.C.

17894

0.00  
Excise Tax

Recording Time, Book and Page

Mail After Recording To: *John Blackwell*

This Instrument Prepared by John Blackwell, Jr.

NORTH CAROLINA

**DEED RESERVING LIFE ESTATE**

CUMBERLAND COUNTY

**THIS DEED**, made this 14<sup>th</sup> day of April 2004, by GERDA Z. HEPNER unmarried, herein called Grantor, of Cumberland County, North Carolina, to GREGORY L. HEPNER, herein called Grantee, of Cumberland County:

**WITNESSETH:**

That the Grantor, for a valuable consideration paid by the Grantee, the receipt of which is hereby acknowledged, has and by these presents does grant, bargain, sell and convey unto the Grantee in fee simple, but subject to the life estate herein reserved, his heirs, successors and assigns, certain land, the same lying and being in the County of Cumberland, State of North Carolina, and more particularly described as follows:

See attached Schedule "A"

The Grantor does hereby reserve a life estate in the above described tracts of land for herself.

**TO HAVE AND TO HOLD**, the aforesaid land and all privileges and appurtenances thereto belonging, to the said Grantee, his heirs and assigns, to his only use and behoove forever, but subject always to the life estates herein reserved by Grantor and conveyed by Grantor.

And the said Grantor covenants that they are seized of said premises in fee, and has the right to convey the same in fee simple, that the same are free and clear from all encumbrances, and that she will warrant and defend the said title to the same against the lawful claims of all persons whomsoever.

Wherever used herein, the singular shall include the plural, the plural the singular, and the use of any gender shall be applicable to all genders as the context may require.

IN TESTIMONY WHEREOF, the said Grantor has hereunto set her hand and seal the day and year first above written.

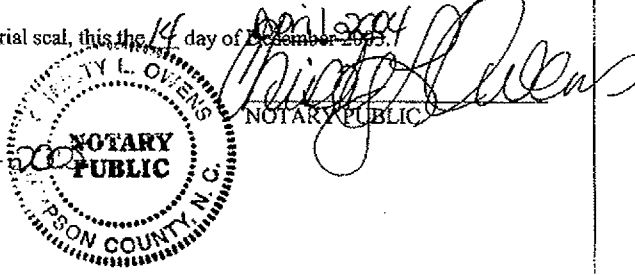
*Gerda Z. Hepner* (SEAL)  
GERDA Z. HEPNER

NORTH CAROLINA

SAMPSON COUNTY

I, *Christy Owens*, a Notary Public of said County and State, do hereby certify that GERDA Z. HEPNER personally appeared before me this day and acknowledged the due execution of the foregoing.

Witness my hand and notarial seal, this the *14* day of *December*, *2003*.



My commission expires: *4-30-2005*

RECORD OF POOR QUALITY  
DUE TO CONDITION OF  
ORIGINAL DOCUMENT

The foregoing Certificate of *Christy L. Owens*

is/are certified to be correct. This instrument and this certificate are duly registered at the date and time and in the Book and Page shown on the first page hereof.

By *Patricia Archers* J. LEE WARREN, JR. REGISTER OF DEEDS FOR CUMBERLAND COUNTY, Deputy/Assistant - Register of Deeds

6492  
8628

BK 6492 PG 628

TRACT 1  
Being all of Lot 17, Deerwood Subdivision, as per plat of same duly recorded in Plat Book 34, Page 30, of the Cumberland County Registry.

TRACT 2  
Adjoining the Howard Culbreth land on the North, Bone Creek on the East, Margin of Pate Road on the west. BEGINNING at a concrete marker on the West side of the run of Bone Creek, Howard Culbreth's Southeast corner, and runs with the Culbreth line South 67 degrees 02 minutes West 2,384 feet (a fence on the line) to a concrete marker; thence South 56 degrees 44 minutes West 1,074 feet to the West margin of Pate Road, concrete marker, thence south 28 degrees 15 minutes East 379.5 feet with the margin of said Road to a concrete marker in the Center line of a 60 foot road right-of-way; thence as the center line of said 60 foot right-of-way, and with a line for Myrtle P. Monroe's trace, North 59 degrees 14 minutes East 1,070.6 feet to a concrete marker; thence continuing with the center line of said 60 foot road right-of-way and with Lacy Alexander Pate's line and beyond, North 62 degrees 50 minutes East 2,425 feet to the run of Bone Creek; thence with the West side of the run Northwardly to the beginning, containing 29.2 acres, less all subsequent conveyances of this tract, leaving 6.6 acres, more or less, to be conveyed by this deed.

---

**APPENDIX B**  
*Records of Communication*



COPY

**CERTIFIED MAIL  
RETURN RECEIPT REQUESTED**

June 28, 2006

Ms. Gerda Hepner  
7579 Deerwood Drive  
Fayetteville, North Carolina 28303


*Re: Request for Site Access  
Cumberland County Landfill – Bones Creek  
Bones Creek Dump (State Site ID Number NONCD0000733)  
Cumberland County, North Carolina*

Dear Ms. Hepner:

On behalf of the North Carolina Department of Environment and Natural Resources (NCDENR), Marshall Miller & Associates, Inc. (MM&A) is submitting this information to you in advance of requesting access to inspect your property. The purpose of the requested inspection is explained in a copy of a letter from NCDENR, which is attached. We will contact you within approximately one week from the date of this letter to answer any questions that you may have. You may also contact the NCDENR representatives listed on the attached letter with any questions.

We look forward to talking with you.

Sincerely,  
**MARSHALL MILLER & ASSOCIATES, INC.**

  
Andrew D. Waggener  
Program Manager

cc: Bruce Lefler, NCDENR

Attachment

5825 Triangle Drive / Raleigh, NC 27617 / Tel: (919) 786-1414 / Fax: (919) 786-1418  
Web Site – <http://www.mma1.com> • E-mail – [corp@mma1.com](mailto:corp@mma1.com)  
Branch Offices in Charleston, WV / Harrisburg, PA / Kansas City, KS / Kingsport, TN / Lexington, KY / Raleigh, NC / Richmond, VA



15

Communication Log		
Landfill Name: <u>Cum. Bedford County Lobl. Bones Creek</u> ID: <u>N0600000733</u>		
Contact Name	<u>City of Fayetteville - Public Works Commission</u> Phone: <u>(910) 483-1401</u>	
Address:	<u>P.O. BOX 1089 Fayetteville, NC 28302</u>	
	Street Address	Alternate Number
	<u>FAYETTEVILLE</u>	<u>28302</u>
	City	Zip Code
		State <u>NC</u>
Date	Time	Notes
6-17-06	2:00	Spoke to secretary about locating One Creek Investments, LLC. Due to the business, Inf. Act, she could not release corporate contact info. She referred me to: <u>www.secretary.state.nc.us</u> Thomas O. Hollinshead 910-864-8987 605 South Rocky Road Ste. 1 Fayetteville, NC 28314 (Contacted One Creek 910-864-8987 fax: 910-864-4444)
6-28-06	9:00	910-497-8673 James, Alice, Thomas Linda referred me to the above # at a storage container site and apt. complex, ltr for Tom.

Owner of property:







2

Communication Log

Landfill Name: Cumberland County Landfill - Bonebrake ID: N0600000733

Contact Name: Tom Heston Phone: 9107884889

Address: 108 South Reilly Rd.

Street Address: FAYETTEVILLE State: NC Alternate Number: 28302

City: FAYETTEVILLE Zip Code: 28302

Date	Time	Notes
6/28/06	9:30	Tom returned my call: stated that his property was fully developed with apartments and storage units. This property was mined for sand. The site in question is across the street and owned by GERDA HEPNER. Address is by Reilly Rd. and it is bounded by creek on 3 sides. This property was also mined for sand with drag lines and backfilled with trash.
6/29/06	11:30	Called Tom to determine Monticello Assoc. property location and association. He informed me that the property is owned by Gerda Hepner and is south of his property.

Owner of property:





3.

**Communication Log**

Landfill Name: Cumberland County Landfill - Bone Creek ID: N0NED0000933

Contact Name: GERDA HEPNER Phone: (910) 822-2825

Address: 7579 Deerwood DR

Street Address: Fayetteville Alternate Number: 28303  
 City: NC State: NC Zip Code: 28303

Date	Time	Notes
7-7-06	9:00	<p>Draw Wagon received call from Gerda Hepner. She knew of the existence of the landfill on the property. The City of Fayetteville's Health Dept. inspected it and dug a deep test pit in 1985. The landfill consisted of tree stumps and debris.</p> <p>The apartments north of the land were built on the clay pit which provided material for DOT.</p> <p>Gerda gave us permission to inspect her property.</p>

Owner of property:





4

**Communication Log**

**Landfill Name:** Cumberland County Landfill - Rose Creek **ID:** N0600000733  
**Contact Name:** Tom Hollinshead et al **Phone:** 910 1864-8787  
**Address:** Dixdale Road  
Street Address  
Fayetteville NC City State  
28800 Zip Code  
Alternate Number

Date	Time	Notes
7-18-06		called Thomas Hollinshead at Rose Creek Investments; they are on City Water: 9482-87-1412- 910-497-8623 (storage units)
7-18-06		called Cliff Lake Community Church; they are using well water. 9482-87-9920- 910-860-3559
7-18-06		called Steven Collop, they are using well water. 9482-97-8915- 910-482-4897
7-18-06		called Michael Benjamin. they are using city water. 9482-77-6762- 910-868-2842
7-18-06		called Kenneth Poyar; they are using city water. 9482-76-4426 910-864-8722

Owner of property:





5

Communication Log		
Landfill Name: <u>Cumberland County Landfill - Snow Creek</u> ID: <u>NCNCD 00009 733</u>		
Contact Name	<u>DANNY SOLES</u>	Phone: <u>(910) 433-3855</u>
Address:	<u>227 FOUNTAINHEAD LANE</u>	
	Street Address	Alternate Number
	<u>FAYETTEVILLE</u>	<u>28301</u>
	City	State
		Zip Code
Date	Time	Notes
<u>8-24-06</u>	<u>3:45</u>	<u>Spoke to Mr. Soles about Snow Creek. He stated that before the storage buildings were established there was a landfill there, and before the landfill there was a sand pit operation. He stated that the refuse placed in the area was mixed commercial, construction and residential debris.</u>

Owner of property:





6.

Hurricane Recovery Act of 2005  
 State of North Carolina  
 State Contract N06909  
 Marshall Miller & Associates, Inc. Contract No. N06010S

Communication Log		
Landfill Name: <u>Lumberton County Landfill - One Link</u> ID: <u>NONE00000783</u>		
Contact Name	<u>Tom Hollinshead</u>	Phone: <u>(910) 844-8789</u>
Address:	<u>605 S. Reilly Rd., Ste. 1</u>	Alternate Number
	Street Address	
	<u>Fayetteville</u>	<u>28314</u>
	City	Zip Code
		State <u>NC</u>
Date	Time	Notes
<u>8-28-06</u>	<u>9 a.m.</u>	<p>Spoke with MR. Hollinshead and he stated that landfill material was <u>not</u> used as fill for the apartment complex or storage unit foundation. He stated that the property was leased from the state and operated as a <u>small</u> borrow pit. He stated that the right or eastern side of the property had a ditch in it which was used to fill in the west side of the property which had been mined. He said that approximately 70-80,000 cu yds. of fill had been moved from the unmined side of the property to fill in the mined side.</p> <p>He stated that S+MS did a soil compaction test before he built on the property and that everything tested OK.</p>

Owner of property:



**APPENDIX C**  
*Site Inspection Photodocumentation*

**Marshall Miller & Associates, Inc.**  
**NCDENR Old Unlined Landfill Photodocumentation**

**Site Name: Cumberland County Landfill-  
Bones Creek**

**Site City/County: Cliffdale/Cumberland  
County**

**Site ID No.: NONCD0000733**

**Project Number: NCUL103-01**

**PHOTO 1**

**Date: 7/11/2006**

**Description:  
Entrance to Site and  
Disposal Area  
immediately south  
of apartment  
complex and rental  
storage unit  
business.  
Unimproved dirt  
road is  
approximately 100  
feet long.**



**PHOTO 2**

**Date: 7/11/2006**

**Description:  
Tires and surface  
litter consisting of  
glass and plastic  
bottles, 193 feet  
from entrance to  
Site.**



**Marshall Miller & Associates, Inc.**  
**NCDENR Old Unlined Landfill Photodocumentation**

**Site Name: Cumberland County Landfill-  
Bones Creek**

**Site City/County: Cliffdale/Cumberland  
County**

**Site ID No.: NONCD0000733**

**Project Number: NCUL103-01**

**PHOTO 3**

**Date: 7/11/2006**

**Description:  
Metal debris 190  
feet from entrance  
of Site.**



**PHOTO 4**

**Date: 7/11/2006**

**Description:  
Old tank, 194 feet  
from entrance of  
Site.**





**Marshall Miller & Associates, Inc.**  
**NCDENR Old Unlined Landfill Photodocumentation**

**Site Name: Cumberland County Landfill-  
Bones Creek**

**Site City/County: Clffdale/Cumberland  
County**

**Site ID No.: NONCD0000733**

**Project Number: NCUL103-01**

**PHOTO 5**

**Date: 7/11/2006**

**Description:  
Plastic construction  
debris, 202 feet  
from entrance of  
Site.**



**PHOTO 6**

**Date: 7/11/2006**

**Description:  
Plastic construction  
debris, 210 feet  
from entrance of  
Site.**



**Marshall Miller & Associates, Inc.**  
**NCDENR Old Unlined Landfill Photodocumentation**

**Site Name: Cumberland County Landfill-  
Bones Creek**

**Site City/County: Cliffdale/Cumberland  
County**

**Site ID No.: NONCD0000733**

**Project Number: NCUL103-01**

**PHOTO 7**

**Date: 7/11/2006**

**Description:  
Vegetation growth  
in central disposal  
area.**



**PHOTO 8**

**Date: 7/11/2006**

**Description:  
Old pickup truck  
and debris, 194 feet  
from entrance of  
Site.**



**Marshall Miller & Associates, Inc.**  
**NCDENR Old Unlined Landfill Photodocumentation**

**Site Name: Cumberland County Landfill-  
Bones Creek**

**Site City/County: Cliffdale/Cumberland  
County**

**Site ID No.: NONCD0000733**

**Project Number: NCUL103-01**

**PHOTO 9**

**Date: 7/11/2006**

**Description:  
Old tin shack, 210  
feet from entrance  
of Site.**



**PHOTO 10**

**Date: 7/11/2006**

**Description:  
Ceramic floor tiles  
and plastic  
container, 185 feet  
from entrance of  
Site.**



**Marshall Miller & Associates, Inc.**  
**NCDENR Old Unlined Landfill Photodocumentation**

**Site Name: Cumberland County Landfill-  
Bones Creek**

**Site City/County: Cliffdale/Cumberland  
County**

**Site ID No.: NONCD0000733**

**Project Number: NCUL103-01**

**PHOTO 11**

**Date: 7/11/2006**

**Description:  
Construction debris,  
190 feet from  
entrance of Site.**



**PHOTO 12**

**Date: 7/11/2006**

**Description:  
Metal debris, 210  
feet from entrance  
of Site.**



**Marshall Miller & Associates, Inc.**  
**NCDENR Old Unlined Landfill Photodocumentation**

**Site Name: Cumberland County Landfill-  
Bones Creek**

**Site City/County: Cumberland County**

**Site ID No.: NONCD0000733**

**Project Number: NCUL103-01**

**PHOTO 13**

**Date: 7/11/2006**

**Description:  
Standing water in  
tire rut, 193 feet  
from entrance of  
Site.**



**APPENDIX D**  
*Field Reconnaissance Sheet*



MARSHALL MILLER & ASSOCIATES  
NCDENR OLD UNLINED LANDFILL AUDIT CHECK LIST

Audit Performed By: Hilton FREDO + Jake HOESE Date: 7-15-86

1.0 Site Information

ID NUMBER: W09ED0000733  
SITE NAME: Cumberland County Landfill - Bones Creek  
LOCATION: South of Intersection of Cliffdale Road + Town Creek Drive  
East of Rim Road Directly Behind Apartment Complex  
+ Rental Storage Units.

COUNTY: Cumberland

LANDFILL SIZE: 4.4 acres  
PROPERTY (SITE) SIZE: 7.88 acres  
DATE OPENED: Between 1963-1966  
DATE CLOSED: 1975

OWNER: GORDA HARNER  
OWNER CONTACT: GORDA HARNER  
OWNER ADDRESS: 7599 DEERWOOD DRIVE  
Fayetteville, NC 28303

OWNER TELEPHONE NUMBER: \_\_\_\_\_  
Date of Contact: 7-9-84 Permission to Go On Site:  Yes  No  
Permission Granted by: \_\_\_\_\_ Phone \_\_\_\_\_ Writing \_\_\_\_\_  
*If permission is not granted the MM&A PM must contact the DWM.*

TAX PARCEL No./PIN: 9487-87-5002-  
DEED REFERENCE: BK: 06492 PG: 00626

COORDINATES (at point of entrance to Site):  
STATE PLANE COORDINATES (SPC); NAD83, Meters  
X: 606087.735 ; Y: 145380.19N  
DEGREES, MINUTES, SECONDS (DMS); WGS 84  
Lat.: N 35° 03' 38" ; Long.: W 79° 2' 18.7"



2.0 Areas of Note

Vehicle access requires passing through two locked gates in the storage rental area of the apartment complex.

3.0 Site Location Research Summary

3.1 Site Summary

3.1.1 Site Ownership and Dates of Operation

(Though this information is included in section 1.0, it may be useful to make notes regarding deeds in this area)

3.1.2 Site Location

Nearest Intersection and Distance: Cliffdale Road and Town Creek Drive  
819 feet north of site

Distance from Center of Town: 9.12 miles from the Fayetteville City Hall

Other Pertinent Location Info.: Directly behind apartment complex and rental storage buildings.





3.1.3 General Site Description

Site Shape: TRAP 2010  
Location of Disposal Area Relative to Site: central to and a majority of site.  
Topography of Site: haphazard, rough terrain

3.2 Site Conditions

3.2.1 On-Site Structures

Buildings on Site: \_\_\_ Yes  No  
Number of Buildings: --- Type of Building: ---  
Building Use: --- Type of Building: ---  
Construction: --- Square Footage: ---  
Stories: --- Approx. Dimensions: ---  
Approx. Age: ---  
Building Exterior Condition: ---  
Building Interior Condition: ---  
Odors: ---  
Spillage: ---  
House Keeping: ---  
Potential Asbestos: ---  
Environmental Concerns Associated with Building:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



3.2.2 Current Site Usage (e.g. residential, church, school, agricultural, business,  
other)

NONE

3.2.3 On-Site Water Supply Wells and Intakes

NONE

(If no well houses are observed, note the presence/absence of fire hydrants on the site)

3.2.4 Surface Water Features (e.g. streams, lakes, ponds, wetlands, rivers,  
sinkholes)

ONE small pool of stagnant water in a tree out

3.2.5 Disposal Area (Brief Description)

Heavily wooded and overgrown with mature trees, oaks, pines,  
et al. Topography is undulating and raised relative to  
surrounding area.  
Ground cover consists of briars, vines and plants and  
grasses.

3.2.6 Disposal Area Conditions

Completely overgrown with difficult foot access.  
Road access is good for 100' on dirt road.  
Scattered household debris consisting of stoves, tanks,  
refrigerators, 1 wrecked pickup truck and a demolished  
corrugated tin shack like the landfill area.



UST's: NONE

AST's: NONE

Drum Storage: NONE

Erosion: NONE

Slope Failure: NONE

Leechate Seeps: NONE

Vegetation: EVERYWHERE

Settling: NONE

Odor: heavy fetid rotting odor of organic debris in NE corner of site.

Stained Soil: NONE

**3.2.7 Evidence of Human Activity**

Automobile Traffic: NOTICE RECENT Industrial Activity: NONE

Burning: NONE Dumping: old debris

Other (Describe): surfaces litter consisting of glass and plastic bottles near entrance of site.

**3.2.8 Potential Landfill Gas Migration Pathways**

Underground Utilities: NONE Building Foundations: NONE

Abandoned Wells: NONE

Other: ---



3.2.9 Physical Barriers

Earthen Berms: noted on E. Ward S. Fencing: BARRED around perimeter

Other: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3.2.10 Other Pertinent Data (Include coordinates of any environmental concern)

Disposal Area may extend south into next property.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3.3 Vicinity Conditions

3.3.1 Structures Located within 50 Feet of the Disposal Area

Buildings Within 50' of Disposal Area: \_\_\_ Yes  No  
Number of Buildings: --- Type of Building: ---  
Building Use: --- Type of Building: ---  
Construction: --- Square Footage: ---  
Stories: --- Approx. Dimensions: ---  
Approx. Age: ---  
Building Exterior Condition: ---  
\_\_\_\_\_  
Building Interior Condition: ---  
Odors: ---  
Spillage: ---



House Keeping: \_\_\_\_\_

Potential Asbestos: \_\_\_\_\_

Environmental Concerns Associated with Building:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**3.3.2 Water Supply Wells and Intakes**

NONE  
\_\_\_\_\_  
\_\_\_\_\_

**3.3.3 Current Land Usage**

Properties: \_\_\_\_\_ Type/Use: \_\_\_\_\_

North: Apartment complex and rental storage units.

South: Underdeveloped.

East: Underdeveloped.



West: undeveloped

Environmental Concerns Related to Adjacent or Surrounding Properties:

NONE.

3.3.4 Surface Water Features (e.g. streams, lakes, ponds, wetlands, rivers, sinkholes)

Stagnant water in tire rut towards south perimeter.

Summary of On-Site Environmental Concerns:

NONE.





**APPENDIX E**  
*Site Plan for a Sanitary Landfill in Cumberland County*









**APPENDIX F**

*Aerial Photographs -*

*Cumberland County DSWC, 1950*

*Cumberland County DSWC, 1959*

*Cumberland County DSWC, 1966*

*Cumberland County DSWC, 1972*

*Cumberland County DSWC, 1981*

*NCDOT, 1991*



## AERIAL PHOTOGRAPH 1950

CUMBERLAND COUNTY  
CLIFFDALE QUAD

Prepared by:



NCUL103-01 08/2006

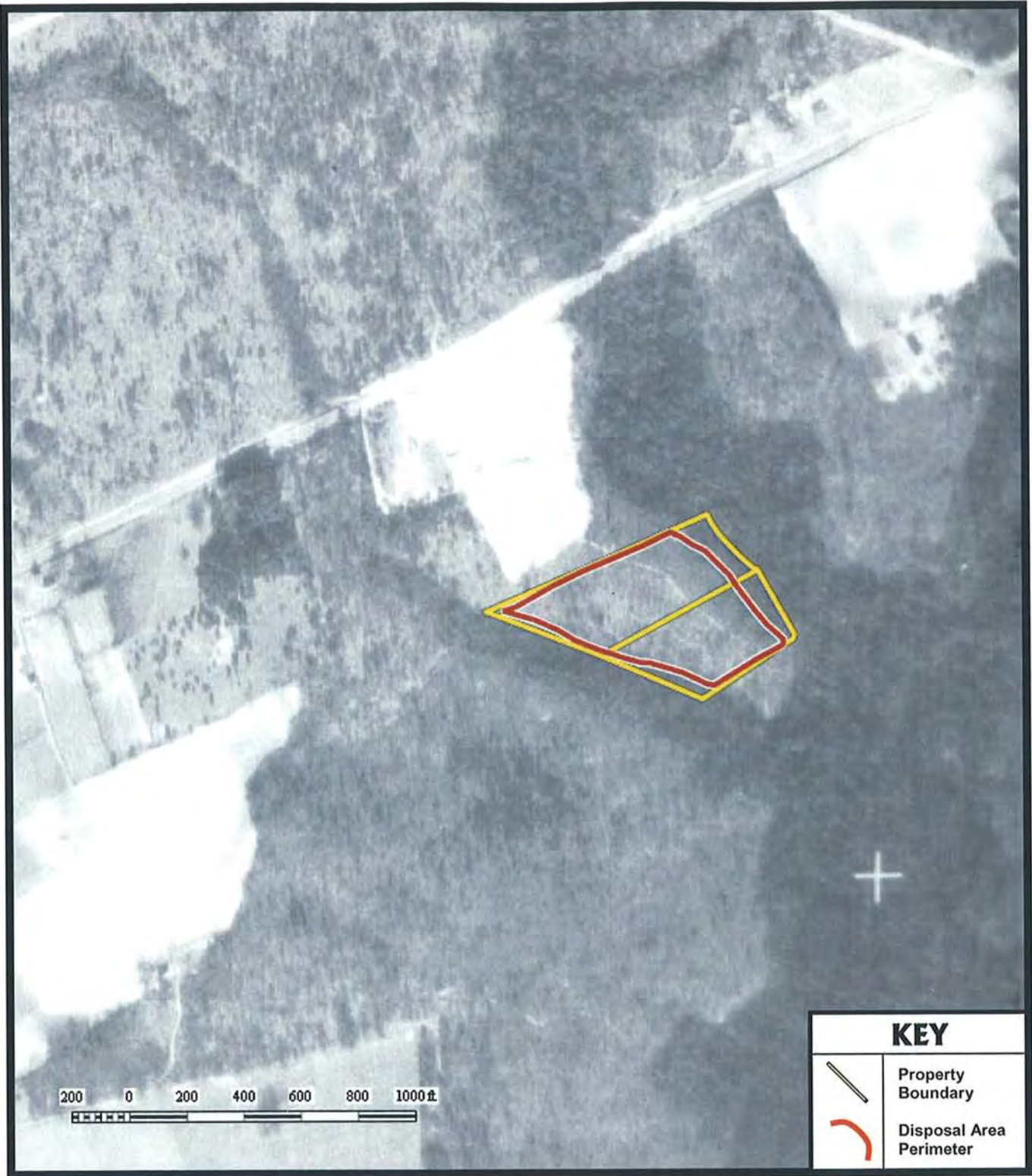
SOURCE:  
Cumberland County Department of Soil and Water  
Conservation, Frame (B6) AOC-4E-72

NCDENR/OLD UNLINED LANDFILL ASSESSMENTS  
CUMBERLAND COUNTY LANDFILL -  
BONES CREEK  
NONCD0000733  
CLIFFDALE, CUMBERLAND COUNTY, NORTH CAROLINA

SCALE 1" = 500'



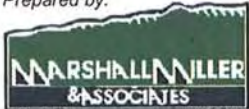
NORTH CAROLINA  
QUADRANGLE LOCATION



## AERIAL PHOTOGRAPH 1959

CUMBERLAND COUNTY  
CLIFDALE QUAD

Prepared by:



NCUL103-01 08/2006

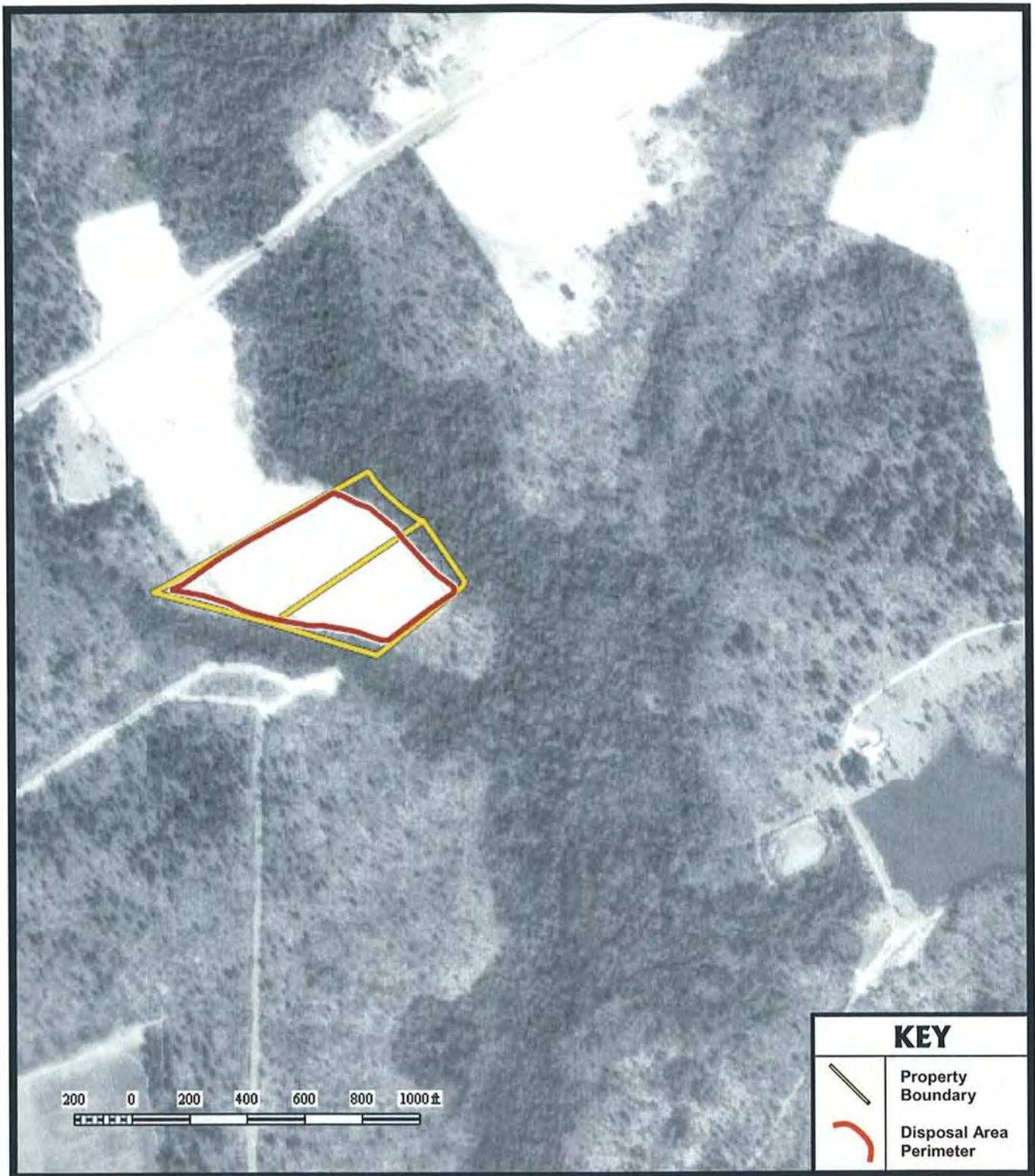
SOURCE:  
Cumberland County Department of Soil and Water  
Conservation, Frame (B6) AOC-SAA-65

NCDENR/OLD UNLINED LANDFILL ASSESSMENTS  
CUMBERLAND COUNTY LANDFILL -  
BONES CREEK  
NONCD0000733  
CLIFDALE, CUMBERLAND COUNTY, NORTH CAROLINA

**SCALE 1" = 500'**



NORTH CAROLINA  
QUADRANGLE LOCATION



## AERIAL PHOTOGRAPH 1966

CUMBERLAND COUNTY  
CLIFFDALE QUAD

Prepared by:



SOURCE:  
Cumberland County Department of Soil and Water  
Conservation, Frame (CS) AOC-2GG-179

NCDENR/OLD UNLINED LANDFILL ASSESSMENTS  
CUMBERLAND COUNTY LANDFILL -  
BONES CREEK  
NONCD0000733  
CLIFFDALE, CUMBERLAND COUNTY, NORTH CAROLINA

**SCALE 1" = 500'**



NORTH CAROLINA  
QUADRANGLE LOCATION



## AERIAL PHOTOGRAPH 1972

CUMBERLAND COUNTY  
CLIFFDALE QUAD

Prepared by:

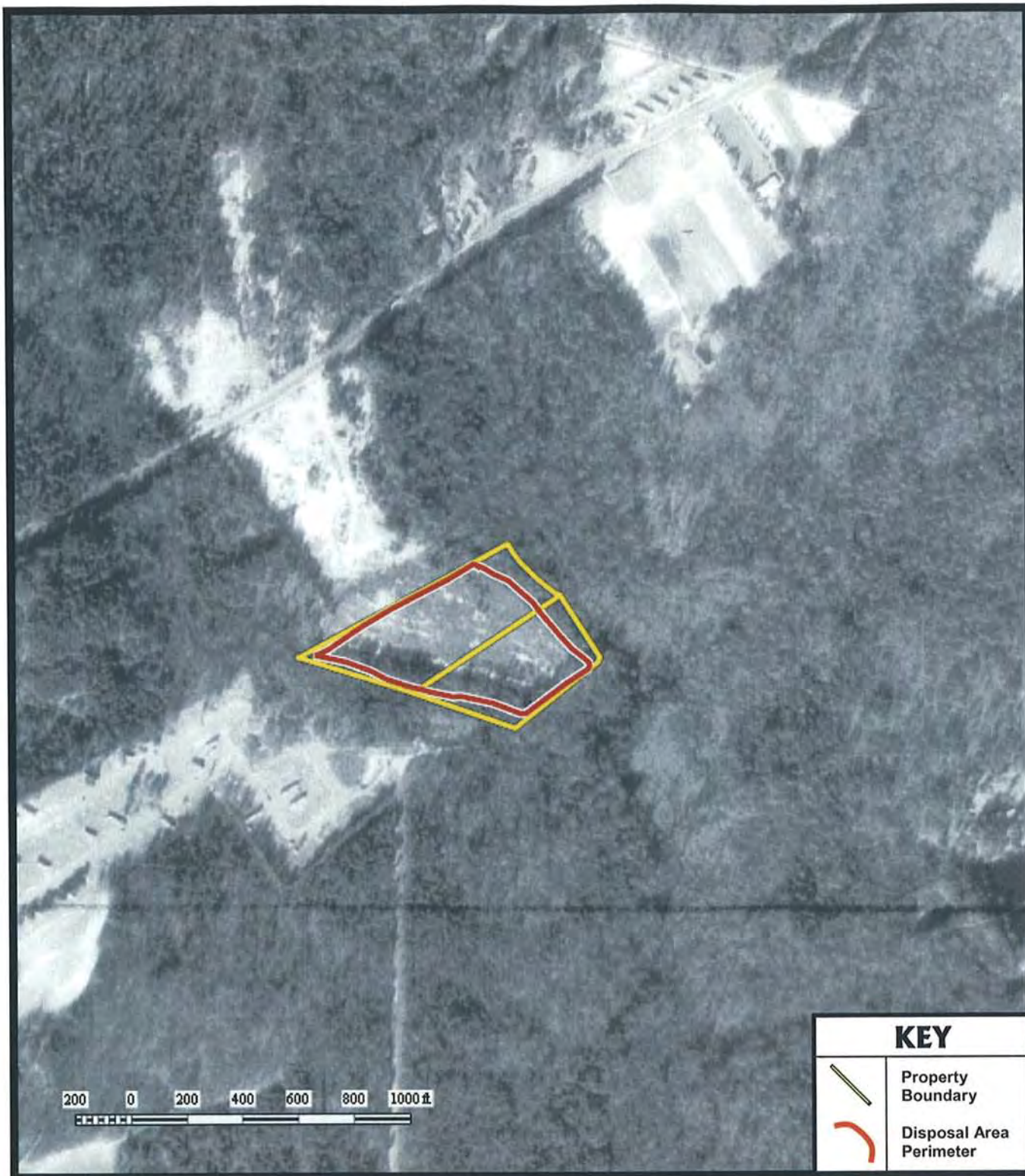


NCDENR/OLD UNLINED LANDFILL ASSESSMENTS  
CUMBERLAND COUNTY LANDFILL -  
BONES CREEK  
NONCD0000733  
CLIFFDALE, CUMBERLAND COUNTY, NORTH CAROLINA

SOURCE:  
Cumberland County Department of Soil and Water  
Conservation, Frame (C6) 37051 172-85

SCALE 1" = 500'





## AERIAL PHOTOGRAPH 1981

CUMBERLAND COUNTY  
CLIFDALE QUAD

Prepared by:



SOURCE:  
Cumberland County Department of Soil and Water  
Conservation, Frame (A3)

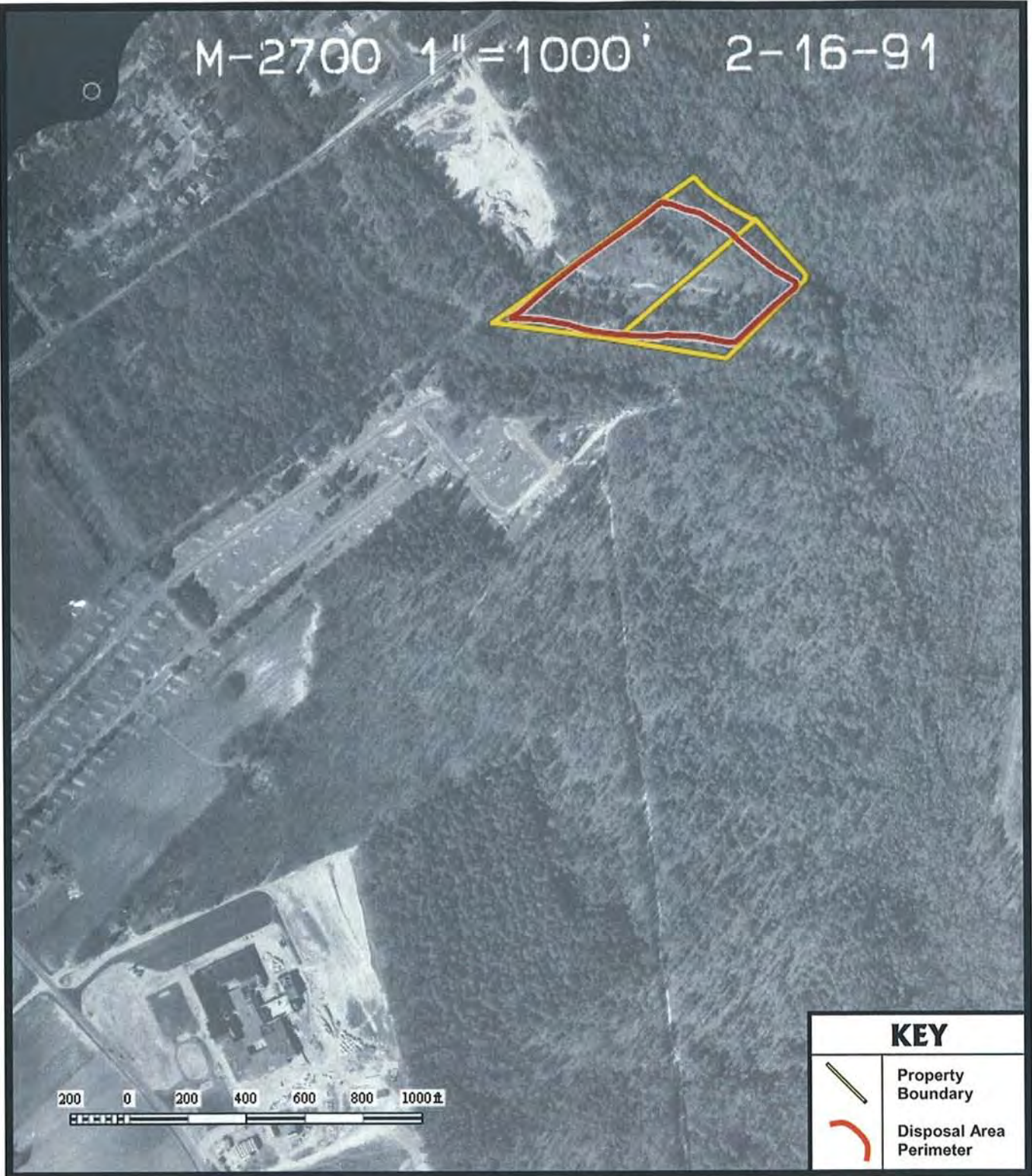
NCDENR/OLD UNLINED LANDFILL ASSESSMENTS  
CUMBERLAND COUNTY LANDFILL -  
BONES CREEK  
NONCD0000733  
CLIFDALE, CUMBERLAND COUNTY, NORTH CAROLINA

**SCALE 1" = 500'**





M-2700 1" = 1000' 2-16-91



### AERIAL PHOTOGRAPH 1991

CUMBERLAND COUNTY  
CLIFFDALE QUAD

Prepared by:



NCDENR/OLD UNLINED LANDFILL ASSESSMENTS  
 CUMBERLAND COUNTY LANDFILL -  
 BONES CREEK  
 NONCD0000733  
 CLIFFDALE, CUMBERLAND COUNTY, NORTH CAROLINA

SOURCE:  
NCDOT, Mission 2700, Frame (RC-110)

**SCALE 1" = 500'**



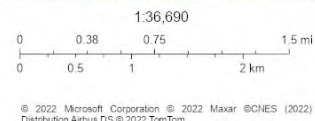
## NEPAssist EPA Facilities - Cliffdale Crossing

Map



March 24, 2022

- Water Dischargers (NPDES)
- Superfund (NPL)
- Hazardous Waste (RCRAInfo)
- Hazardous Waste (RCRAInfo)
- Air Pollution (ICIS-AIR)
- Toxic Releases (TRI)
- Project Buffer
- + NEPAssist EPA Facilities - Cliffdale Crossing



### Geographic coordinates:

POINT (35.057159,-79.054432)  
with buffer 1 mile

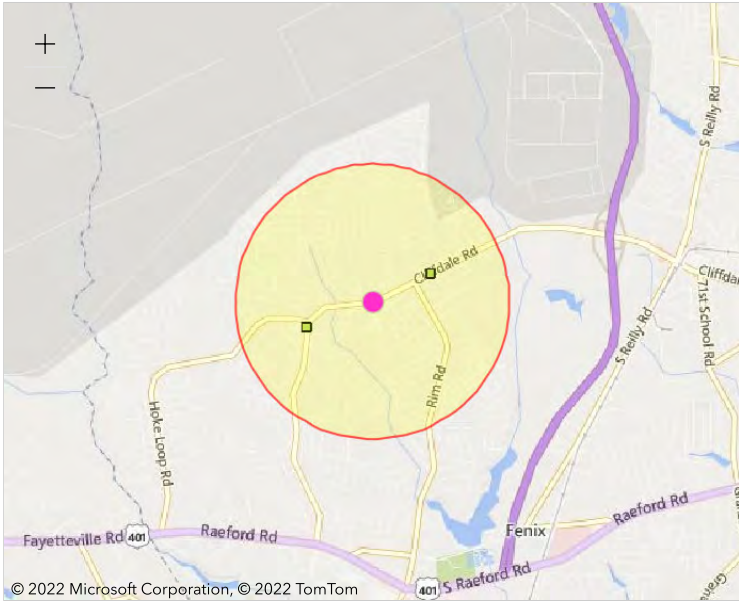
Note: The information in the following reports is based on publicly available databases and web services. The National Report uses nationally available datasets and the State Reports use datasets available through the EPA Regions. Click on the hyperlinked question to view the data source and associated metadata.

### National Report

Project Location	35.057159,-79.054432
Within 1 mile of an Ozone 8-hr (1997 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of an Ozone 8-hr (2008 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a Lead (2008 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a SO2 1-hr (2010 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a PM2.5 24hr (2006 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a PM2.5 Annual (1997 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a PM2.5 Annual (2012 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a PM10 (1987 standard) Non-Attainment/Maintenance Area?	no
Within 1 mile of a Federal Land?	yes
Within 1 mile of an impaired stream?	yes
Within 1 mile of an impaired waterbody?	no

Within 1 mile of a waterbody?	no
Within 1 mile of a stream?	yes
Within 1 mile of an NWI wetland?	click here <b>May take several minutes</b>
Within 1 mile of a Brownfields site?	no
Within 1 mile of a Superfund site?	no
Within 1 mile of a Toxic Release Inventory (TRI) site?	no
Within 1 mile of a water discharger (NPDES)?	no
Within 1 mile of a hazardous waste (RCRA) facility?	yes
Within 1 mile of an air emission facility?	no
Within 1 mile of a school?	no
Within 1 mile of an airport?	no
Within 1 mile of a hospital?	no
Within 1 mile of a designated sole source aquifer?	no
Within 1 mile of a historic property on the National Register of Historic Places?	no
Within 1 mile of a Toxic Substances Control Act (TSCA) site?	no
Within 1 mile of a Land Cession Boundary?	no
Within 1 mile of a tribal area (lower 48 states)?	no
Within 1 mile of the service area of a mitigation or conservation bank?	yes
Within 1 mile of the service area of an In-Lieu-Fee Program?	yes

- ⊕ [North Carolina Report](#) ⓘ
- ⊕ [Demographic Reports](#) ⓘ
- ⊕ [USFWS IPaC Report](#) ⓘ



Report question: *Within 1 of a Hazardous waste site? yes*

Modify question by entering a new buffer distance and unit for the selected study area:

- Name**
- ANDERSON CLEANERS (FAYETTEVILLE, NC) ([https://enviro.epa.gov/enviro/efsystemquery.rcrainfo?](https://enviro.epa.gov/enviro/efsystemquery.rcrainfo?fac_search=handler_id&fac_search_type=Equal+To&postal_code=&location_address=&add_search_type=Beginning+With&city_name=&county_name=&state_code=&naics_type=Equal+to&naics_to=&univ_search=0&univA:))  
 fac\_search=handler\_id&fac\_search\_type=Equal+To&postal\_code=&location\_address=&add\_search\_type=Beginning+With&city\_name=&county\_name=&state\_code=&naics\_type=Equal+to&naics\_to=&univ\_search=0&univA:  
**REGISTRY\_ID:** 110004054166  
**LATITUDE:** 35.06013  
**LONGITUDE:** -79.04693  
**PGM\_SYS\_ACRNM:** RCRAINFO  
**PGM\_SYS\_ID:** NCR000003517  
**LOCATION\_ADDRESS:** 8126 CLIFFDALE RD STE 707  
**CITY\_NAME:** FAYETTEVILLE  
**COUNTY\_NAME:** CUMBERLAND  
**STATE\_CODE:** NC  
**EPA\_REGION:** Region 4  
**POSTAL\_CODE:** 28314  
**FIPS\_CODE:** 37051  
**HUC\_CODE:**
  - WALMART NEIGHBORHOOD MARKET #3411 (FAYETTEVILLE, NC) ([https://enviro.epa.gov/enviro/efsystemquery.rcrainfo?](https://enviro.epa.gov/enviro/efsystemquery.rcrainfo?fac_search=handler_id&fac_search_type=Equal+To&postal_code=&location_address=&add_search_type=Beginning+With&city_name=&county_name=&state_code=&naics_type=Equal+to&naics_to=&univ_search=0&univA:))  
 fac\_search=handler\_id&fac\_search\_type=Equal+To&postal\_code=&location\_address=&add\_search\_type=Beginning+With&city\_name=&county\_name=&state\_code=&naics\_type=Equal+to&naics\_to=&univ\_search=0&univA:  
**REGISTRY\_ID:** 110066974983  
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**LONGITUDE:** -79.062937  
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**PGM\_SYS\_ID:** NCR000166165  
**LOCATION\_ADDRESS:** 8660 CLIFFDALE RD  
**CITY\_NAME:** FAYETTEVILLE  
**COUNTY\_NAME:** CUMBERLAND  
**STATE\_CODE:** NC  
**EPA\_REGION:** Region 4  
**POSTAL\_CODE:** 28314  
**FIPS\_CODE:** 37051  
**HUC\_CODE:**

Appendix Q  
State Clearinghouse Comments



STATE OF NORTH CAROLINA  
DEPARTMENT OF ADMINISTRATION

Roy Cooper  
GOVERNOR

Pamela B. Cashwell  
Secretary

December 9, 2021

Claudia Young  
NC Housing Finance Agency  
Post Office Box 28066  
Raleigh, NC 27611-8066

Re: SCH File # 22-E-4600-0099 Proposed project is for the construction of Cliffdale Crossing.  
Project will consist of an 80 unit apartment community for low to moderate income families.  
The development will offer 12 one bedroom, one bath units, 40 two-bedroom, one bath units  
and 28 three bedroom, two bath units in six 2 story

Dear Claudia Young:

The above referenced environmental impact information has been submitted to the State Clearinghouse under the provisions of the National Environmental Policy Act. According to G.S. 113A-10, when a state agency is required to prepare an environmental document under the provisions of federal law, the environmental document meets the provisions of the State Environmental Policy Act. Attached to this letter for your consideration are comments made by the agencies in the review of this document.

If any further environmental review documents are prepared for this project, they should be forwarded to this office for intergovernmental review.

Should you have any questions, please do not hesitate to call.

Sincerely,

CRYSTAL BEST  
State Environmental Review Clearinghouse

Attachments

*Mailing Address:*  
NC DEPARTMENT OF ADMINISTRATION  
1301 MAIL SERVICE CENTER  
RALEIGH, NC 27699-1301

*Telephone:* (919)807-2425  
*Fax:* (919)733-9571  
*COURIER:* #51-01-00  
*Email:* [state.clearinghouse@doa.nc.gov](mailto:state.clearinghouse@doa.nc.gov)  
*Website:* [www.ncadmin.nc.gov](http://www.ncadmin.nc.gov)

*Location:*  
116 WEST JONES STREET  
RALEIGH, NORTH CAROLINA

Control No.: 22-E-4600-0099  
County.: CUMBERLAND

Date Received: 11/8/2021  
Agency Response: 12/8/2021  
Review Closed: 12/8/2021

LYN HARDISON  
CLEARINGHOUSE COORDINATOR  
DEPT OF ENVIRONMENTAL QUALITY

Project Information

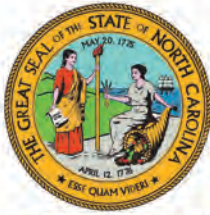
Type: National Environmental Policy Act Environmental Assessment  
Applicant: NC Housing Finance Agency  
Project Desc.: Proposed project is for the construction of Cliffdale Crossing. Project will consist of an 80 unit apartment community for low to moderate income families. The development will offer 12 one bedroom, one bath units, 40 two-bedroom, one bath units and 28 three bedroom, two bath units in six 2 story buildings. The development will also include a leasing/community building, all located on 8 acres.

As a result of this review the following is submitted:

No Comment       Comments Below       Documents Attached

Reviewed By: LYN HARDISON

Date: 12/8/2021



NORTH CAROLINA  
Environmental Quality

ROY COOPER  
Governor

ELIZABETH S. BISER  
Secretary

To: Crystal Best  
State Clearinghouse  
NC Department of Administration

From: Lyn Hardison  
Division of Environmental Assistance and Customer Service  
Washington Regional Office

RE: 22-0099  
Environmental Assessment - Proposed project is for the construction of Cliffdale Crossing, which will consist of an 80-unit apartment community for low to moderate income families.  
Cumberland County

Date: December 8, 2021

The Department of Environment Quality has reviewed the proposal for the referenced project. Based on the information provided, several of our agencies have identified permits that may be required and offered some valuable guidance to minimize impacts to aquatic and terrestrial wildlife resources. The comments are attached for the applicant's review.

The Department will continue to be available to assist the applicant with any question or concerns.

Thank you for the opportunity to respond.

Attachments



North Carolina Department of Environmental Quality

217 West Jones Street | 1601 Mail Service Center | Raleigh, North Carolina 27699-1601

919.707.8600





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☒ NORTH CAROLINA WILDLIFE RESOURCES COMMISSION ☒

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Cameron Ingram, Executive Director

**MEMORANDUM**

**TO:** Lyn Hardison, Environmental Assistance Coordinator  
NCDEQ Division of Environmental Assistance and Customer Services

**FROM:** Gabriela Garrison  
Eastern Piedmont Coordinator *Gabriela Garrison*  
Habitat Conservation

**DATE:** December 8, 2021

**SUBJECT:** Request for Environmental Scoping for Cliffdale Crossing Apartments, Cumberland County, DEQ Project No. 22-0099.

Biologists with the North Carolina Wildlife Resources Commission (NCWRC) have reviewed the subject document. Comments are provided in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667e), North Carolina Environmental Policy Act (G.S. 113A-1 through 113A-10; 1 NCAC 25) and North Carolina General Statutes (G.S. 113-131 et seq.).

A new development, Cliffdale Crossing Apartments, is proposed for construction along Cliffdale Road, west of its intersection with Rim Road in Fayetteville. The site is currently 8 acres and undeveloped. Planned construction includes 12, one-bedroom units, 40, two-bedroom units, and 28 three-bedroom units in six, two-story buildings, as well as a community building.

The NCWRC offers the following recommendations to minimize impacts to aquatic and terrestrial wildlife resources:

1. The project footprint should be surveyed for wetlands and streams to ensure there are no impacts to surface waters. In addition to providing wildlife habitat, wetland areas and streams aid in flood control and water quality protection. United States Army Corps of Engineers Section 404 Permits and NC Division of Water Resources Section 401 Certifications are required for any impacts to jurisdictional streams or wetlands.
2. Maintain or establish a minimum 100-foot undisturbed, native forested buffer along each side of perennial streams and 50-foot undisturbed, native forested buffer along each side of intermittent streams and wetlands. Forested riparian buffers protect habitat areas and travel corridors for wildlife species. In addition, forested riparian buffers protect water quality by stabilizing stream banks and filtering stormwater runoff.
3. Stormwater runoff to receiving surface waters can be minimized by reducing impervious surfaces and increasing infiltration on site using Low Impact Development (LID). Using LID technology in landscaping will not only help maintain the predevelopment hydrologic regime, but also enhance the aesthetic and habitat value of the site. LID techniques include bioretention areas that can collect

December 8, 2021  
Cliffdale Crossing Apartments  
DEQ Project No.: 22-0099

stormwater from driveways and parking areas. Additional alternatives include narrower roads, swales versus curbs/gutters and permeable surfaces such as turf stone, brick, and cobblestone. Compared to conventional developments, implementing appropriate LID techniques can be more cost-effective, increase property values, provide space-saving advantages, reduce runoff, and protect water quality (Roseen et al. 2011). Additional information on LID can be found at the NC State University LID guide: [http://www.onsiteconsortium.org/npsdeal/NC\\_LID\\_Guidebook.pdf](http://www.onsiteconsortium.org/npsdeal/NC_LID_Guidebook.pdf).

4. Consider using native shrubs, grasses, and wildflower seed mixes that are beneficial to wildlife for stabilization and beautification. The NCWRC strongly recommends against the use of fescue-based mixtures and *Sericea lespedeza* (*Lespedeza cuneata*) as stabilizing groundcovers. *Sericea lespedeza* in particular is an egregious and invasive, non-native species that is very hard to eradicate. Using native plant species instead of ornamentals should reduce the need for water, fertilizers, and pesticides. Free technical assistance from NCWRC biologists is available for ideas on establishing vegetation or incorporating other measures that are beneficial for wildlife.
5. Insecticides and herbicides should not be used within 100 feet of perennial streams and 50 feet of intermittent streams, or within floodplains and wetlands associated with these streams.
6. Stringent sediment and erosion control measures should be installed prior to any land-disturbing activity. The use of biodegradable and wildlife-friendly sediment and erosion control devices is strongly recommended. Silt fencing, fiber rolls and/or other products should have loose-weave netting that is made of natural fiber materials with movable joints between the vertical and horizontal twines. Silt fencing and similar materials that have been reinforced with plastic or metal mesh should be avoided as they impede the movement of terrestrial wildlife species. Excessive silt and sediment loads can have detrimental effects on aquatic resources including destruction of spawning habitat, suffocation of eggs and clogging of gills.

The NCWRC encourages the applicant to consider additional measures to protect aquatic and terrestrial wildlife species in developing landscapes. The NCWRC's *Guidance Memorandum to Address and Mitigate Secondary and Cumulative Impacts to Aquatic and Terrestrial Wildlife Resources and Water Quality* (August 2002; [http://www.ncwildlife.org/Portals/0/Conserving/documents/2002\\_GuidanceMemorandumforSecondaryandCumulativeImpacts.pdf](http://www.ncwildlife.org/Portals/0/Conserving/documents/2002_GuidanceMemorandumforSecondaryandCumulativeImpacts.pdf)) details measures to minimize secondary and cumulative impacts to aquatic and terrestrial wildlife resources; in addition, the NCWRC's Green Growth Toolbox (<https://www.ncwildlife.org/conserving/programs/Green-Growth-Toolbox>) provides information on nature-friendly planning.

Thank you for the opportunity to review and comment on this project. If I can be of further assistance, please contact me at (910) 409-7350 or [gabriela.garrison@ncwildlife.org](mailto:gabriela.garrison@ncwildlife.org).

#### Literature Cited

Roseen, R. M., T. V. Janeski, J. J. Houle, M. H. Simpson, and J. Gunderson. 2011. Forging the Link: Linking the Economic Benefits of Low Impact Development and Community Decisions. Available at: <https://owl.cwp.org/mdocs-posts/roseen-et-al-2011-forging-the-link/>.

ROY COOPER  
Governor  
ELIZABETH S. BISER  
Secretary  
MICHAEL SCOTT  
Director



## MEMORANDUM

TO: Michael Scott, Division Director through Sharon Brinkley

FROM: Drew Hammonds, Eastern District Supervisor - Solid Waste Section

DATE: December 6, 2021

SUBJECT: Review: SW 22-0099 – Cumberland County (EA – NC Housing Finance Agency – Proposed project is for the construction of Cliffdale Crossing which will consist of an 80-unit apartment community for low to moderate income families)

---

The Division of Waste Management, Solid Waste Section (Section) has reviewed the documents submitted for the subject project in Cumberland County, NC. Based on the information provided in these documents, the Section at this time does not see an adverse impact on the surrounding communities and likewise knows of no situations in the communities, which would affect this project.

As always for any planned or proposed projects, it is recommended that during any land clearing, demolition and construction, the responsible party and/or its contractors would make every feasible effort to minimize the generation of waste, to recycle materials for which viable markets exist, and to use recycled products and materials in the development of this project where suitable. **Any waste generated by and of the projects that cannot be beneficially reused or recycled must be disposed of at a solid waste management facility permitted by the Division. The Section strongly recommends that the responsible party require all contractors to provide proof of proper disposal for all generated waste to permitted facilities.**

Permitted solid waste management facilities are listed on the Division of Waste Management, Solid Waste Section portal site at: <https://deq.nc.gov/about/divisions/waste-management/waste-management-rules-data/solid-waste-management-annual-reports/solid-waste-permitted-facility-list>

Questions regarding solid waste management for this project should be directed to Mr. David Powell, Environmental Senior Specialist, Solid Waste Section, at (910) 433-3350.

cc: David Powell, Environmental Senior Specialist



North Carolina Department of Environmental Quality | Division of Waste Management  
Fayetteville Regional Office | 225 Green Street, Suite 714 | Fayetteville, North Carolina 28301  
910.433.3300

ROY COOPER  
Governor  
ELIZABETH S. BISER  
Secretary  
MICHAEL SCOTT  
Director



Date: December 8, 2021

To: Michael Scott, Director  
Division of Waste Management

Through: Janet Macdonald  
Inactive Hazardous Sites Branch – Special Projects Unit

From: Bonnie S. Ware  
Inactive Hazardous Sites Branch

Subject: NEPA Project # 22-0099, NC Housing Finance Agency, Cumberland County, North Carolina

The Superfund Section has reviewed the proximity of sites under its jurisdiction to the NC Housing Finance Agency project. Proposed project is for the construction of Cliffdale Crossing which will consist of an 80-unit apartment community for low to moderate income families. The development will offer 12 one bedroom, one bath units, 40 two-bedroom, one bath units and 28 three bedroom, two bath units in six 2 story buildings, and a leasing/community building.

Two (2) Superfund Section sites were identified within one mile of the project as shown on the attached report. The Superfund Section recommends that site files be reviewed to ensure that appropriate precautions are incorporated into any construction activities that encounter potentially contaminated soil or groundwater. Superfund Section files can be viewed at: <http://deq.nc.gov/waste-management-laserfiche>.

Please contact Janet Macdonald at 919.707.8349 if you have any questions concerning the Superfund Section review portion of this SEPA/NEPA inquiry.



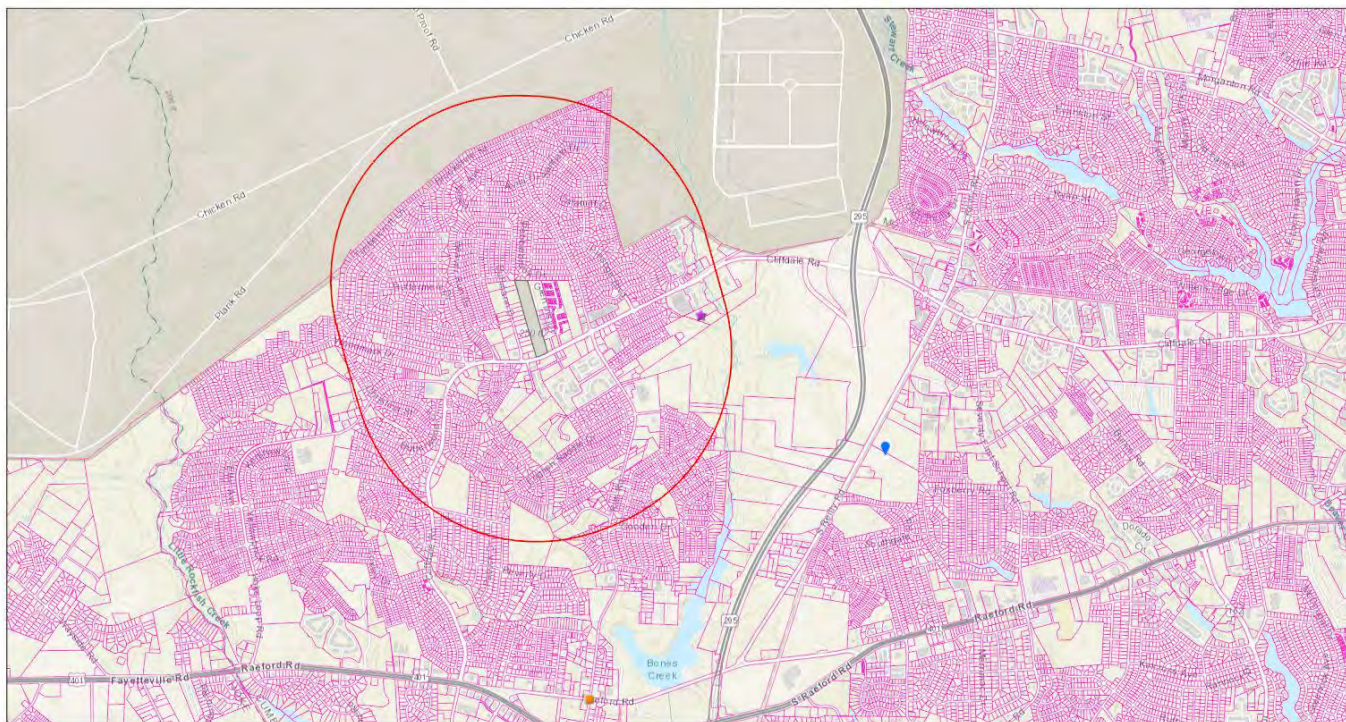
North Carolina Department of Environmental Quality | Division of Waste Management  
217 West Jones Street | 1646 Mail Service Center | Raleigh, North Carolina 27699-1646  
919.707.8200





# SUPERFUND SECTION SITES ONLY : SEPA/NEPA

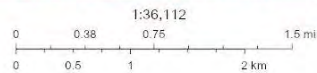
## Area of Interest (AOI) Information

Area : 2,651.53 acres

Dec 8 2021 14:01:07 Eastern Standard Time



-  Federal Remediation Branch
-  Pre Regulatory Landfill Sites
-  Inactive Hazardous Sites
-  Parcels (Polygons) - Parcels



County of Cumberland, State of North Carolina DOT, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA

Superfund Section Sites Only : 22-0099 Cumberland County

## Summary

Name	Count	Area(acres)	Length(mi)
Certified DSCA Sites	0	N/A	N/A
Federal Remediation Branch Sites	0	N/A	N/A
Inactive Hazardous Sites	0	N/A	N/A
Pre-Regulatory Landfill Sites	2	N/A	N/A
Brownfields Program Sites	0	N/A	N/A

## Pre-Regulatory Landfill Sites

#	EPAID	SITENAME	Count
1	NCD980502900	Cumberland County/Cliffdale LF	1
2	NONCD0000733	Cumberland County Landfill - Bones Creek	1

State of North Carolina Department of Environmental Quality  
 INTERGOVERNMENTAL REVIEW PROJECT COMMENTS

Reviewing Regional Office: FRO  
 Project Number: 22-0099 Due Date: 12/08/2021  
 County: Cumberland

After review of this project it has been determined that the DEQ permit(s) and/or approvals indicated may need to be obtained in order for this project to comply with North Carolina Law. Questions regarding these permits should be addressed to the Regional Office indicated on the reverse of the form. All applications, information and guidelines relative to these plans and permits are available from the same Regional Office.

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
<input checked="" type="checkbox"/>	Permit to construct & operate wastewater treatment facilities, non-standard sewer system extensions & sewer systems that do not discharge into state surface waters.	Application 90 days before begins construction or award of construction contracts. On-site inspection may be required. Post-application technical conference usual.	30 days (90 days)
<input checked="" type="checkbox"/>	Permit to construct & operate, sewer extensions involving gravity sewers, pump stations and force mains discharging into a sewer collection system	Fast-Track Permitting program consists of the submittal of an application and an engineer's certification that the project meets all applicable State rules and Division Minimum Design Criteria.	30 days (N/A)
<input checked="" type="checkbox"/>	NPDES - permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into state surface waters.	Application 180 days before begins activity. On-site inspection. Pre-application conference usual. Additionally, obtain permit to construct wastewater treatment facility-granted after NPDES. Reply time, 30 days after receipt of plans or issue of NPDES permit-whichever is later.	90-120 days (N/A)
<input type="checkbox"/>	Water Use Permit	Pre-application technical conference usually necessary.	30 days (N/A)
<input type="checkbox"/>	Well Construction Permit	Complete application must be received and permit issued prior to the installation of a groundwater monitoring well located on property not owned by the applicant, and for a large capacity (>100,000 gallons per day) water supply well.	7 days (15 days)
<input type="checkbox"/>	Dredge and Fill Permit	Application copy must be served on each adjacent riparian property owner. On-site inspection. Pre-application conference usual. Filling may require Easement to Fill from N.C. Department of Administration and Federal Dredge and Fill Permit.	55 days (90 days)
<input type="checkbox"/>	Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15 A NCAC (2Q.0100 thru 2Q.0300)	Application must be submitted and permit received prior to construction and operation of the source. If a permit is required in an area without local zoning, then there are additional requirements and timelines (2Q.0113).	90 days
<input checked="" type="checkbox"/>	Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900	N/A	60 days (90 days)
<input type="checkbox"/>	Demolition or renovations of structures containing asbestos material must be in compliance with 15 A NCAC 20.1110 (a) (1) which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-707-5950	Please Note - The Health Hazards Control Unit (HHCU) of the N.C. Department of Health and Human Services, must be notified of plans to demolish a building, including residences for commercial or industrial expansion, even if no asbestos is present in the building.	60 days (90 days)
<input checked="" type="checkbox"/>	The Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An erosion & sedimentation control plan will be required if one or more acres are to be disturbed. Plan must be filed with and approved by applicable Regional Office (Land Quality Section) at least 30 days before beginning activity. A NPDES Construction Stormwater permit (NCG010000) is also usually issued should design features meet minimum requirements. A fee of \$65 for the first acre or any part of an acre. An express review option is available with additional fees.		20 days (30 days)
<input type="checkbox"/>	Sedimentation and erosion control must be addressed in accordance with NCDOT's approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable Stormwater conveyances and outlets.		(30 days)
<input type="checkbox"/>	Sedimentation and erosion control must be addressed in accordance with _____ <b>Local Government's</b> approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable Stormwater conveyances and outlets.		Based on Local Program
<input type="checkbox"/>	Compliance with 15A NCAC 2H .0126 - NPDES Stormwater Program which regulates three types of activities: Industrial, Municipal Separate Storm Sewer System & Construction activities that disturb ≥1 acre.		30-60 days (90 days)
<input type="checkbox"/>	Compliance with 15A NCAC 2H 1000 -State Stormwater Permitting Programs regulate site development and post-construction stormwater runoff control. Areas subject to these permit programs include all 20 coastal counties, and various other counties and watersheds throughout the state.		45 days (90 days)

State of North Carolina Department of Environmental Quality  
 INTERGOVERNMENTAL REVIEW PROJECT COMMENTS

Reviewing Regional Office: FRO  
 Project Number: 22-0099 Due Date: 12/08/2021  
 County: Cumberland

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
<input type="checkbox"/>	Mining Permit	On-site inspection usual. Surety bond filed with DEQ Bond amount varies with type mine and number of acres of affected land. Affected area greater than one acre must be permitted. The appropriate bond must be received before the permit can be issued.	30 days (60 days)
<input type="checkbox"/>	Dam Safety Permit	If permit required, application 60 days before begin construction. Applicant must hire N.C. qualified engineer to: prepare plans, inspect construction, and certify construction is according to DEQ approved plans. May also require a permit under mosquito control program. And a 404 permit from Corps of Engineers. An inspection of site is necessary to verify Hazard Classification. A minimum fee of \$200.00 must accompany the application. An additional processing fee based on a percentage or the total project cost will be required upon completion.	30 days (60 days)
<input type="checkbox"/>	Oil Refining Facilities	N/A	90-120 days (N/A)
<input type="checkbox"/>	Permit to drill exploratory oil or gas well	File surety bond of \$5,000 with DEQ running to State of NC conditional that any well opened by drill operator shall, upon abandonment, be plugged according to DEQ rules and regulations.	10 days N/A
<input type="checkbox"/>	Geophysical Exploration Permit	Application filed with DEQ at least 10 days prior to issue of permit. Application by letter. No standard application form.	10 days N/A
<input type="checkbox"/>	State Lakes Construction Permit	Application fee based on structure size is charged. Must include descriptions & drawings of structure & proof of ownership of riparian property	15-20 days N/A
<input checked="" type="checkbox"/>	401 Water Quality Certification	Compliance with the T15A 02H .0500 Certifications are required whenever construction or operation of facilities will result in a discharge into navigable water as described in 33 CFR part 323.	60 days (130 days)
<input type="checkbox"/>	Compliance with Catawba, Goose Creek, Jordan Lake, Randleman, Tar Pamlico or Neuse Riparian Buffer Rules is required. Buffer requirements: <a href="http://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/401-wetlands-buffer-permits/401-riparian-buffer-protection-program">http://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/401-wetlands-buffer-permits/401-riparian-buffer-protection-program</a>		
<input type="checkbox"/>	Nutrient Offset: Loading requirements for nitrogen and phosphorus in the Neuse and Tar-Pamlico River basins, and in the Jordan and Falls Lake watersheds, as part of the nutrient-management strategies in these areas. DWR nutrient offset information: <a href="http://deq.nc.gov/about/divisions/water-resources/planning/nonpoint-source-management/nutrient-offset-information">http://deq.nc.gov/about/divisions/water-resources/planning/nonpoint-source-management/nutrient-offset-information</a>		
<input type="checkbox"/>	CAMA Permit for MAJOR development	\$250.00 - \$475.00 fee must accompany application	75 days (150 days)
<input type="checkbox"/>	CAMA Permit for MINOR development	\$100.00 fee must accompany application	22 days (25 days)
<input checked="" type="checkbox"/>	Abandonment of any wells, if required must be in accordance with Title 15A. Subchapter 2C.0100.		
<input checked="" type="checkbox"/>	Notification of the proper regional office is requested if "orphan" underground storage tanks (USTS) are discovered during any excavation operation.		
<input checked="" type="checkbox"/>	Plans and specifications for the construction, expansion, or alteration of a public water system must be approved by the Division of Water Resources/Public Water Supply Section prior to the award of a contract or the initiation of construction as per 15A NCAC 18C .0300 et. seq., Plans and specifications should be submitted to 1634 Mail Service Center, Raleigh, North Carolina 27699-1634. All public water supply systems must comply with state and federal drinking water monitoring requirements. For more information, contact the Public Water Supply Section, (919) 707-9100.		30 days
<input type="checkbox"/>	If existing water lines will be relocated during the construction, plans for the water line relocation must be submitted to the Division of Water Resources/Public Water Supply Section at 1634 Mail Service Center, Raleigh, North Carolina 27699-1634. For more information, contact the Public Water Supply Section, (919) 707-9100.		30 days
<input type="checkbox"/>	Plans and specifications for the construction, expansion, or alteration of the _____ water system must be approved through the _____ delegated plan approval authority. Please contact them at _____ for further information.		



State of North Carolina Department of Environmental Quality  
 INTERGOVERNMENTAL REVIEW PROJECT COMMENTS

Reviewing Regional Office: FRO  
 Project Number: 22-0099 Due Date: 12/08/2021  
 County: Cumberland

Other Comments (attach additional pages as necessary, being certain to comment authority)

Division	Initials	No comment	Comments	Date Review
DAQ	JDC	<input checked="" type="checkbox"/>		12/2/2021
DWR-WQROS	KMB	<input checked="" type="checkbox"/>		12/2/2021
DWR-PWS	HLC	<input type="checkbox"/>	See above comments	11/30/2021
DEMLR (LQ & SW)	LHB	<input type="checkbox"/>	Please note the Sedimentation Fee is now \$100.00 per acre.	12/7/2021
DWM – UST	KEC	<input type="checkbox"/>	The UST Section, Fayetteville Regional Office, does not have record of a petroleum release in the general area of concern for this project number, nor are there any records of registered USTs. The nearest registered USTs are located at 8385 Cliffdale Road, Facility ID 00-0-0000037127). There are no records of a reported petroleum release for this facility.	11/30/2021
Other Comments		<input type="checkbox"/>		/ /

**REGIONAL OFFICES**

Questions regarding these permits should be addressed to the Regional Office marked below.

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> <b>Asheville Regional Office</b><br>2090 U.S. 70 Highway<br>Swannanoa, NC 28778-8211<br>Phone: 828-296-4500<br>Fax: 828-299-7043 | <input checked="" type="checkbox"/> <b>Fayetteville Regional Office</b><br>225 Green Street, Suite 714,<br>Fayetteville, NC 28301-5043<br>Phone: 910-433-3300<br>Fax: 910-486-0707 | <input type="checkbox"/> <b>Mooresville Regional Office</b><br>610 East Center Avenue, Suite 301,<br>Mooresville, NC 28115<br>Phone: 704-663-1699<br>Fax: 704-663-6040 |
| <input type="checkbox"/> <b>Raleigh Regional Office</b><br>3800 Barrett Drive,<br>Raleigh, NC 27609<br>Phone: 919-791-4200<br>Fax: 919-571-4718           | <input type="checkbox"/> <b>Washington Regional Office</b><br>943 Washington Square Mall,<br>Washington, NC 27889<br>Phone: 252-946-6481<br>Fax: 252-975-3716                      | <input type="checkbox"/> <b>Wilmington Regional Office</b><br>127 Cardinal Drive Ext.,<br>Wilmington, NC 28405<br>Phone: 910-796-7215<br>Fax: 910-350-2004             |
|   | <input type="checkbox"/> <b>Winston-Salem Regional Office</b><br>450 Hanes Mill Road, Suite 300,<br>Winston-Salem, NC 27105<br>Phone: 336-776-9800<br>Fax: 336-776-9797            |  |

# Department of Environmental Quality Project Review Form

**Project Number: 22-0099**

**County: Cumberland**

**Date Received: 11-8-2021**

**Due Date: 12-3-2021**

**Project Description:** *Environmental Assessment - Proposed project is for the construction of Cliffdale Crossing which will consist of an 80-unit apartment community for low to moderate income families. The development will offer 12 one bedroom, one bath units, 40 two-bedroom, one bath units and 28 three bedroom, two bath units in six 2 story buildings, and a leasing/community building.*

This Project is being reviewed as indicated below:

Regional Office	Regional Office Area	In-House Review	
<input type="checkbox"/> Asheville	<input checked="" type="checkbox"/> Air	<input type="checkbox"/> Air Quality	<input type="checkbox"/> Coastal Management
<input checked="" type="checkbox"/> Fayetteville	<input checked="" type="checkbox"/> DWR	<input type="checkbox"/> Parks & Recreation	<input type="checkbox"/> Marine Fisheries
<input type="checkbox"/> Mooresville	<input checked="" type="checkbox"/> DWR - Public Water	<input checked="" type="checkbox"/> Waste Mgmt	<input type="checkbox"/> Military Affairs
<input type="checkbox"/> Raleigh	<input checked="" type="checkbox"/> DEMLR (LQ & SW)	<input type="checkbox"/> Water Resources Mgmt (Public Water, Planning & Water Quality Program)	<input type="checkbox"/> DMF-Shellfish Sanitation
<input type="checkbox"/> Washington	<input checked="" type="checkbox"/> DWM	<input type="checkbox"/> DWR-Transportation Unit	<input checked="" type="checkbox"/> Wildlife <u>Gabriela</u>
<input type="checkbox"/> Wilmington			<input type="checkbox"/> Wildlife/DOT
<input type="checkbox"/> Winston-Salem			

Manager Sign-Off/Region:	Date: 12/8/21	In-House Reviewer/Agency: Melodi Deaver, Hazardous Waste Section
--------------------------	------------------	---

Response (check all applicable)

No objection to project as proposed.
  No Comment

Insufficient information to complete review
  Other (specify or attach comments)

If you have any questions, please contact:  
**Lyn Hardison at [lyn.hardison@ncdenr.gov](mailto:lyn.hardison@ncdenr.gov) or (252) 948-3842**  
**943 Washington Square Mall Washington NC 27889**  
**Courier No. 16-04-01**

Control No.: 22-E-4600-0099  
County.: CUMBERLAND

Date Received: 11/8/2021  
Agency Response: 12/8/2021  
Review Closed: 12/8/2021

JEANNE STONE  
CLEARINGHOUSE COORDINATOR  
DEPT OF TRANSPORTATION

Project Information

Type: National Environmental Policy Act ironmental Assessment  
Applicant: NC Housing Finance Agency  
Project Desc.: Proposed project is for the construction of Cliffdale Crossing. Project will consist of an 80 unit apartment community for low to moderate income families. The development will offer 12 one bedroom, one bath units, 40 two-bedroom, one bath units and 28 three bedroom, two bath units in six 2 story buildings. The development will also include a leasing/community building, all located on 8 acres.

As a result of this review the following is submitted:

No Comment       Comments Below       Documents Attached

Reviewed By: JEANNE STONE

Date: 11/8/2021

Control No.: 22-E-4600-0099  
County.: CUMBERLAND

Date Received: 11/8/2021  
Agency Response: 12/8/2021  
Review Closed: 12/8/2021

JINTAO WEN  
CLEARINGHOUSE COORDINATOR  
DPS - DIV OF EMERGENCY MANAGEMENT

Project Information

Type: National Environmental Policy Act ironmental Assessment  
Applicant: NC Housing Finance Agency  
Project Desc.: Proposed project is for the construction of Cliffdale Crossing. Project will consist of an 80 unit apartment community for low to moderate income families. The development will offer 12 one bedroom, one bath units, 40 two-bedroom, one bath units and 28 three bedroom, two bath units in six 2 story buildings. The development will also include a leasing/community building, all located on 8 acres.

As a result of this review the following is submitted:

No Comment       Comments Below       Documents Attached

Reviewed By: JINTAO WEN

Date: 11/22/2021



Nova  
Group

Inspired Solutions  
by Nova Group

# Phase I Environmental Site Assessment

## Property

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Cliffdale Crossing  
8368 Cliffdale Road Ste 200  
Fayetteville, NC 28314

## Prepared For

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Smith Duggins Developers, LLC  
2929 Breezewood Ave. Ste 200  
Fayetteville, NC 28303

## Prepared By

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Nova Group, GBC  
4726 Pimlico Lane  
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Robert S. Hird, PG, CPG  
SVP - Chief Operations Officer

Nova Project No: CK21-8848  
Report Date: October 25, 2021  
Inspection Date: September 27 and 28, 2021



[novagroupgbc.com/carbonneutral](http://novagroupgbc.com/carbonneutral)

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## EXECUTIVE SUMMARY

Nova Group, GBC (Nova) was authorized by Smith Duggins Developers, LLC to conduct a Phase I Environmental Site Assessment (ESA) of the Cliffdale Crossing property located at 8368 Cliffdale Road, Fayetteville, NC ("the Property"). Nova has conducted this ESA in general accordance with the scope and limitations of American Society for Testing and Materials (ASTM) Designation E1527-13, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process"(ASTM E1527-13), and the United States Housing and Urban Development Multifamily Accelerate Processing (HUD MAP) protocols. There are no exceptions to, or deletions from the ASTM E 1527-13 standard practice and authorized Scope of Services unless otherwise stated herein.

On September 27 and 28, 2021, Michael O'Neal, representing Nova, conducted a Property reconnaissance to assess the possible presence of recognized environmental conditions (RECs) and non-ASTM environmental issues, as prescribed by the scope of work, at the Property. Nova's assessment included a review of ASTM-defined sources of historical information, reconnaissance of adjoining properties, background research, and review of available local, state, and federal regulatory records.

The Property consists of a single tract, irregular-shaped parcel that is approximately 18.18 acres in size. Currently, the Property is unimproved and consists of wooded land. No structures or significant surface features were noted on the Property at the time of the reconnaissance.

The following is a summary of historical uses at the Property:

- ▶ The Property has consisted of undeveloped land or vacant land utilized for agricultural purposes throughout its known history (researched back to 1937).

Property	
Time Period	Historical Summary
1937 to Present	Undeveloped land or vacant land utilized for agricultural purposes.

Following review of standard/additional database sources, the following listings (if any) have been identified for the Property.

During the vicinity reconnaissance, Nova observed the following land use on properties in the immediate vicinity of the Property.

Current Use of Adjoining Properties	
North	Three single-family residences (705 and 709 Mayflower Court and 7257 Pebblebrook Drive)
East	Bristol Park multi-family residential apartment complex (1141 Glen Iris Drive)

Current Use of Adjoining Properties	
South	Single-family residence (8363 Cliffdale Road) and a vacant lot (8383 Cliffdale Road)
West	11 single-family residences (8384 Cliffdale Road and 375 - 487 Buhmann Drive) and agricultural and wooded land

## Conclusions and Recommendations

Nova has performed a Phase I ESA in conformance with the scope and limitations of ASTM E1527-13 of 8368 Cliffdale Road, Fayetteville, NC, the Property. Any exceptions to or deletions from this practice are described in Section 1.4 of this report.

Conclusion(s)	Recommendation(s)
This assessment has revealed no evidence of RECs in connection with the Property.	Based on the information available during the course of this assessment, Nova does not recommend further assessment of the Property at this time.

## Non-Scope Considerations (NSCs)/Business Environmental Risks (BERs)

Environmental issues with regard to NSCs or BERs, if any, identified in connection with the Property at the time of the Property assessment are detailed below.

Finding	Recommendation
None	None

## 1.0 INTRODUCTION

Nova was authorized by Smith Duggins Developers, LLC, to conduct a Phase I ESA of Cliffdale Crossing located at 8368 Cliffdale Road, Fayetteville, NC ("the Property"). Nova has conducted this ESA in general in accordance with the scope and limitations of ASTM E1527-13 and HUD MAP protocols. There are no exceptions to, or deletions from the ASTM E1527-13 standard practice and the authorized Scope of Services unless otherwise stated herein.

On September 27 and 28, 2021, Michael O'Neal, representing Nova, conducted a Property reconnaissance to assess the possible presence of RECs and non-ASTM environmental issues, as prescribed by the scope of work, at the Property. Nova's assessment included a review of ASTM-defined sources of historical information, reconnaissance of adjoining properties, background research, and review of available local, state, and federal regulatory records.

Nova contracted Environmental Risk Information Services to perform a search for local, state, and federal regulatory records pertaining to environmental concerns for the Property and facilities in the vicinity of the Property.

### 1.1 Purpose

The purpose of this Phase I ESA was to identify existing or potential RECs (as defined by ASTM E-1527-13) in connection with the Property. Nova understands that the findings of this study will be used by Smith Duggins Developers, LLC to assist in evaluating RECs in connection with the Property.

### 1.2 Scope of Services

Nova's Scope of Services for this Phase I ESA conforms with ASTM E1527-13) and HUD MAP protocols. Services provided for this project included:

- ▶ Review of readily available topographic, geologic, and hydrogeologic information pertaining to the Property and surrounding area;
- ▶ Review of the readily available information regarding historical land use activities at the Property, and interviews with people that have knowledge regarding the past or present uses of the Property, and with present and past owners, operators, and occupants of the Property, where feasible;
- ▶ A reconnaissance of the Property to visually and physically observe the Property for evidence of potential recognized environmental conditions;
- ▶ A limited review of federal, state, and local regulatory information records for reported potential environmental hazards on or in the vicinity of the Property;
- ▶ Review of previous environmental reports, if available.

The potential for a vapor migration condition to exist in the subsurface at the Property was included in the Scope of this ESA. No sampling or analytical testing was conducted as part of this Phase I ESA.

This Phase I ESA does not constitute a regulatory compliance audit of the Property. Copies of resumes of Nova staff involved in the preparation of this report are included in the Appendix.

## 1.3 Assumptions

There is a possibility that even with the proper application of these methodologies there may exist Property conditions that could not be identified within the scope of the assessment or which were not reasonably identifiable from the available information. Nova believes that the information obtained from the record review and the interviews concerning the Property is reliable. However, Nova cannot and does not warrant or guarantee that the information provided by these other sources is accurate or complete.

## 1.4 Limitations and Exceptions

The findings and conclusions contain all of the limitations inherent in these methodologies that are referred to in the ASTM E1527-13. Nova was not requested to limit or deviate from the ASTM E1527-13 during the conduct of this assessment. The following limiting condition(s), deletion(s), deviation(s), and/or data failure(s)/data gap(s) as listed, if any, are not critical and do not alter the conclusions or recommendations of this assessment unless otherwise stated.

### 1.4.1 Limiting Conditions

Limiting Conditions include access limitations or other physical obstructions such as adjacent buildings, bodies of water, asphalt/concrete, or other paved surface areas, as well as other physical constraints including rain or snow, observed at the time of the assessment.

- ▶ No significant inaccessible areas, limitations, or physical obstructions/constraints were encountered during the Property reconnaissance.

### 1.4.2 Data Gaps

A data gap, as defined in ASTM E1527-13, is the *"lack of or inability to obtain information required by this practice despite good faith efforts by the environmental professional to gather such information."*

- ▶ Data gaps in excess of the recommended five-year interval were encountered. However, based on the available information reviewed, this data failure is not considered to be a significant data gap and is not expected to alter the conclusions or recommendations of this assessment.
- ▶ Nova encountered a data gap by not interviewing current or past Property owners, or adjoining property owners, as none were available for comment, did not respond to requests to information, or did not exist. However, based on our review of the available municipal, regulatory, and historical information, the absence of information obtained from interviews with these individuals is not considered significant to the findings, conclusions, or recommendations of this assessment.

- ▶ The City of Fayetteville Code Enforcement Division, City of Fayetteville Fire Prevention Division, and Cumberland County Department of Public Health were unresponsive to information requests. Based on our review of the available municipal, regulatory, and historical information, the absence of information obtained from interviews with referenced agencies is not considered significant to the findings, conclusions, or recommendations of this assessment. Should information be received from referenced agencies that alter the findings of this ESA, an addendum to this report will be provided under separate cover.

## 1.5 Special Terms and Conditions

Authorization to perform this work was given by a directive from Smith Duggins Developers, LLC.

The conclusions and findings set forth in this report are strictly limited in time and scope to the date of the evaluations. The conclusions presented in the report are based solely on the services described therein, and not on scientific tasks or procedures beyond the scope of agreed-upon services or the time and budgeting restraints imposed by the Client. No subsurface exploratory drilling or sampling was done under the scope of this work. Unless specifically stated otherwise in the report, no chemical analyses have been performed during the course of this ESA.

Some of the information provided in this report is based upon personal interviews, and research of available documents, records, and maps held by the appropriate government and private agencies. This is subject to the limitations of historical documentation, availability, and accuracy of pertinent records, and the personal recollections of those persons contacted.

The content and conclusions provided by Nova in this report are based solely on the information collected during our investigation and activities at the Property, our present understanding of the Property conditions, and our professional judgment in light of such information at the time this report was prepared. Part of the findings in this investigation is based on data provided by others. This report presents Nova's professional opinion, and no warranty, expressed or implied, is made.

## 1.6 User Reliance

The Services performed hereunder (including the reports prepared by Nova) are for the use and benefit of The United States Department of Housing and Urban Development and Smith Duggins Developers, LLC and may also be relied upon by Smith Duggins Developers, LLC or any of their affiliates, agents and advisors, initial and subsequent holders from time to time of any debt and/or debt securities secured, directly or indirectly, by any participation interest in any such debt, any indenture trustee, servicer or other agent acting on behalf of such holders of such debt and/or debt securities; any rating agencies; and the institutional provider(s) from time to time of any liquidity facility or credit support for such financings, and their respective successors and assigns.

## 1.7 User Provided Information

Pursuant to ASTM E1527-13, Nova requested the following Property information from Smith Duggins Developers, LLC (User of this report) and from the Key Site Manager (KSM). Information provided by the User (if any) or the KSM is included in various sections of this report.

### User Provided Information

Item	Provided by User	Not Provided by User
Environmental Pre-survey Questionnaire		✓
Title Records		✓
Environmental Cleanup Liens or AULs (40 CFR 312.25 and 40 CFR 312.26(a)(1)(v) and vi))		✓
Specialized Knowledge (40 CFR 312.28)		✓
Valuation Reduction for Environmental Issues (40 CFR 312.29)		✓
Identification of KSM		✓
Reason for Performing Phase I ESA	✓	
Prior Environmental Reports		✓
Other		✓

## 2.0 PROPERTY DESCRIPTION

### 2.1 Location and Legal Description

A summary of Property details is provided in the following table. A topographic map, as well as figures, are included in the Appendices.

Location and Legal Description	
Property Location	8368 Cliffdale Road Fayetteville, NC 28314
APN(s)	9487-36-6817
Historical/Listed Property Address(es)	N/A
Acreage	18.18
Abbreviated Legal Description	A legal description is provided on the survey/plat map as discussed below and included in the Appendix.
Current Owner / Date of Acquisition	K&Js Properties, LLC and TPGM Properties, LLC / April 3, 2012
Survey Map / Alta Survey	A survey/plat map depicting current and/or future Property features/development was not provided.

### 2.2 Property and Vicinity General Characteristics

Nearby land use in the vicinity of the Property as well as the general setting of the Property is described below.

Property and Vicinity General Characteristics	
General Surrounding Area Use	Combined mixed use residential / commercial
Zoning Information	Single-Family Residential 6 District (SF-6)
On-Property Parking Facilities	Neither surface parking or parking facilities are currently present within the limits of the Property.

Property and Vicinity General Characteristics	
Public Thoroughfares/ Roads	Property: N/A North: N/A East: N/A South: Cliffdale Road West: N/A
Landscaping	The Property is undeveloped land covered by natural vegetation.
Topography / On-Property Water Bodies	No apparent routes of direct discharge that have the potential of facilitating the migration of hazardous substances or petroleum products that are likely to migrate to or from the Property, or from nearby/adjoining property were observed. Water bodies were not observed within the limits of the Property and/or in close proximity.

## 2.3 Current Property Use and Occupants

The Property is currently unoccupied and consists of undeveloped, wooded land.

## 2.4 Description of Property Improvements

The Property is currently unimproved and consists of wooded land.

### 2.4.1 Services and Utilities

The Property currently consists of undeveloped, wooded land and is not served by municipal services or utilities.

## 2.5 Current Adjoining and Surrounding Site Uses

During the vicinity reconnaissance, Nova observed the following land use on properties in the immediate vicinity of the Property:

Current Use of Adjoining Properties	
North	Three single-family residences (705 and 709 Mayflower Court and 7257 Pebblebrook Drive)
East	Bristol Park multi-family residential apartment complex (1141 Glen Iris Drive)
South	Single-family residence (8363 Cliffdale Road) and a vacant lot (8383 Cliffdale Road)
West	11 single-family residences (8384 Cliffdale Road and 375 - 487 Buhmann Drive) and agricultural and wooded land



Based on the investigation of current adjoining land use, the current use, treatment, storage, disposal, or generation of hazardous substances or petroleum products were not observed. RECs were not identified based on the current uses of the above-referenced adjoining properties.

## 3.0 RECORDS REVIEW

### 3.1 Standard Environmental Record Sources

#### 3.1.1 State and Federal Regulatory Review

Information from standard federal, state and tribal environmental record sources was provided through ERIS. Data from governmental agency lists are updated and integrated into one database, which is updated as data is released. This integrated database also contains postal service data in order to enhance address matching. Records from one government source are compared to records from another to clarify any address ambiguities. The demographic and geographic information available provides assistance in identifying and managing risk. The accuracy of the geocoded locations is approximately +/-300 feet.

Nova reviewed all ASTM-required databases within the ASTM-specified search radii. Additional non-ASTM federal/state/tribal databases were also reviewed.

In some cases, location information supplied by the regulatory agencies is insufficient to allow the database companies to geocode facility locations. These facilities are listed under the unmappable facilities section within the database report. Any unmappable facilities identified in the regulatory database that have the potential to impact the Property are discussed below in the appropriate sections.

##### 3.1.1.1 Regulatory Report Summary

The following is a summary of standard/additional database sources within the ASTM prescribed Approximate Minimum Search Distance (AMSD). Refer to the Appendix for a complete listing.

##### Regulatory Report Summary

Database	Search Radius	Target Property	Within 0.12mi	0.12mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
HIST MLTS	0.02	0	-	-	-	-	0
HIST TSCA	0.125	0	0	-	-	-	0
HMIRS	0.125	0	0	-	-	-	0
HSDS	1.0	0	0	0	0	0	0
ICIS	0.02	0	-	-	-	-	0
INDIAN LUST	0.5	0	0	0	0	-	0
INDIAN UST	0.25	0	0	0	-	-	0
INST	0.5	0	0	0	0	-	0
IODI	0.5	0	0	0	0	-	0
LAST	0.5	0	0	0	0	-	0
LUCIS	0.5	0	0	0	0	-	0
LUR	0.5	0	0	1	0	-	1

Database	Search Radius	Target Property	Within 0.12mi	0.12mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
LUST	0.5	0	0	1	1	-	2
LUST TRUST	0.5	0	0	1	0	-	1
MGP	1.0	0	0	0	0	0	0
MINES	0.25	0	0	0	-	-	0
MLTS	0.02	0	-	-	-	-	0
MRDS	1.0	0	0	0	0	1	1
NCDL	0.125	0	0	-	-	-	0
NPL	1.0	0	0	0	0	0	0
ODI	0.5	0	0	0	0	-	0
OLD LF	0.5	0	0	0	0	-	0
PCB	0.5	0	0	0	0	-	0
PFAS	0.5	0	0	0	0	-	0
PFAS NPL	0.5	0	0	0	0	-	0
PFAS TRI	0.5	0	0	0	0	-	0
PFAS WATER	0.5	0	0	0	0	-	0
PIPELINE INCIDENT	0.02	0	-	-	-	-	0
PROPOSED NPL	1.0	0	0	0	0	0	0
PRP	0.02	0	-	-	-	-	0
RCRA CORRACTS	1.0	0	0	0	0	0	0
RCRA LQG	0.25	0	0	0	-	-	0
RCRA NON GEN	0.25	0	0	0	-	-	0
RCRA SQG	0.25	0	0	0	-	-	0
RCRA TSD	0.5	0	0	0	0	-	0
RCRA VSQG	0.25	0	0	0	-	-	0
REFN	0.25	0	0	0	-	-	0
SCRD DRYCLEANER	0.5	0	0	0	0	-	0
SDTF	0.125	0	0	-	-	-	0
SEMS	0.5	0	0	0	0	-	0
SEMS ARCHIVE	0.5	0	0	0	0	-	0
SEMS LIEN	0.02	0	-	-	-	-	0
SHWS	1.0	0	0	0	0	0	0
SMCRA	1.0	0	0	0	0	0	0
SOIL REM PERMITS	0.25	0	0	0	-	-	0
SPILLS	0.125	0	0	-	-	-	0
SSTS	0.25	0	0	0	-	-	0
SUPERFUND ROD	1.0	0	0	0	0	0	0
SWF/LF	0.5	0	2	0	0	-	2
SWRCY	0.5	0	0	0	0	-	0
TANK	0.25	0	0	0	-	-	0
TIER 2	0.125	0	0	-	-	-	0

Database	Search Radius	Target Property	Within 0.12mi	0.12mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
TRIS	0.02	0	-	-	-	-	0
TSCA	0.125	0	0	-	-	-	0
UIC	0.02	0	-	-	-	-	0
URANIUM	1.0	0	0	0	0	0	0
UST	0.25	0	1	1	-	-	2
VCP	0.5	0	0	0	0	-	0
AIR PERMIT	0.25	0	0	0	-	-	0
ALT FUELS	0.25	0	0	0	-	-	0
AST	0.25	0	0	0	-	-	0
BROWNFIELDS	0.5	0	0	0	0	-	0
BULK TERMINAL	0.25	0	0	0	-	-	0
CERCLIS	0.5	0	0	0	0	-	0
CERCLIS LIENS	0.02	0	-	-	-	-	0
CERCLIS NFRAP	0.5	0	0	0	0	-	0
COAL ASH LF	0.5	0	0	0	0	-	0
DELETED NPL	0.5	0	0	0	0	-	0
DELISTED DRYCLEANERS	0.25	0	0	0	-	-	0
DELISTED FED DRY	0.25	0	0	0	-	-	0
DELISTED FSS	0.25	0	0	0	-	-	0
DELISTED ILST	0.5	0	0	0	0	-	0
DELISTED IUST	0.25	0	0	0	-	-	0
DELISTED LST	0.5	0	0	0	0	-	0
DELISTED SHWS	1.0	0	0	0	0	0	0
DOE FUSRAP	1.0	0	0	0	0	0	0
DRYC CLEANUP	0.5	0	0	0	2	-	2
DRYCLEANERS	0.25	0	0	0	-	-	0
DTNK	0.25	0	0	0	-	-	0
ERNS	0.02	0	-	-	-	-	0
ERNS 1982 TO 1986	0.02	0	-	-	-	-	0
ERNS 1987 TO 1989	0.02	0	-	-	-	-	0
FED BROWNFIELDS	0.5	0	0	0	0	-	0
FED DRYCLEANERS	0.25	0	0	0	-	-	0
FED ENG	0.5	0	0	0	0	-	0
FED INST	0.5	0	0	0	0	-	0
FEEDLOTS	0.5	0	0	0	0	-	0
FEMA UST	0.25	0	0	0	-	-	0
FINDS/FRS	0.02	0	-	-	-	-	0
FORMER NIKE	1.0	0	0	0	0	0	0
FRP	0.25	0	0	0	-	-	0

Database	Search Radius	Target Property	Within 0.12mi	0.12mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
FTTS ADMIN	0.02	0	-	-	-	-	0
FTTS INSP	0.02	0	-	-	-	-	0
FUDS	1.0	0	0	0	0	0	0
FUEL STATIONS	0.25	0	1	0	-	-	1
HAZ	0.25	0	0	0	-	-	0
HIST GAS STATIONS	0.25	0	0	0	-	-	0

### 3.1.1.2 On-Property Regulatory Records Summary

The Property was not identified on any of the regulatory databases reviewed for this ESA.

### 3.1.1.3 Adjacent/Adjoining Facility Regulatory Listing(s)

Adjacent/adjoining facilities were not identified on any of the regulatory databases reviewed for this ESA.

### 3.1.1.4 Off-Property, Non-Adjoining Facility Listings

The following summarizes notable off-Property and non-adjacent facilities. Additional facilities listed within the prescribed AMSD that have been determined not to be pertinent (i.e. regulatory status, distance, or topographic considerations) to this assessment are detailed within the regulatory database report included in the Appendix.

ERIS Map Key #	Database	Facility Name and Address	Direction and Distance From the Property	Discussion
1	SWF/LF	D.C. Carter Septic Tank Services 708 Mayflower Court	NW 143 Feet	<b>Permit:</b> NCS-01161 <b>Facility Type:</b> Septage Firm <b>Status:</b> Active <b>Activity Code:</b> Hauler <b>Discussion:</b> Listed twice and appears to be a mailing address (residence) and not the business location

ERIS Map Key #	Database	Facility Name and Address	Direction and Distance From the Property	Discussion
2	UST	Alco Food Store #33 8385 Cliffdale Road	SW 184 Feet	<b>UST(s):</b> Two 10,000-gallon Diesel Fuel USTs <b>Installation Date:</b> 12/31/2010 <b>Status:</b> Active <b>UST:</b> One 10,000-gallon Diesel Fuel UST <b>Installation Date:</b> 4/4/2011 <b>Status:</b> Active <b>UST:</b> One 20,000-gallon Gasoline UST <b>Installation Date:</b> 12/31/2010 <b>Status:</b> Active
2	FUEL STATIONS	Alco #33 8385 Cliffdale Road	SW 184 Feet	<b>Status:</b> Active <b>Fuel:</b> Gasoline and Diesel Fuel

Based on the current regulatory status and absence of reported releases, spills, or contamination incidents, the above-referenced facilities are not considered RECs in connection with the Property.

### 3.1.2 Regulatory Agency File and Records Review

Regulatory agency files obtained for purposes of this assessment and if deemed necessary to determine RECs, HRECs, CRECs, or a *de minimis* condition in connection with the Property, are summarized in the State and Federal Regulatory Review section.

Given that the Property, as well as adjoining or nearby properties were not listed with an active/open release in the regulatory database report reviewed for this assessment, no additional file reviews were warranted at the time of this assessment.

### 3.1.3 Activity Use Limitations and Environmental Liens

Inquiry related to activity use limitations (AULs) and environmental liens (ELs) were included on the Pre-Survey Questionnaire provided to the KSM during the preparation of this ESA.

No reference to AULs or ELs were included in the written or verbal responses to Nova during the preparation of this ESA. In addition, ELs, deed restrictions, or AULs were not reported/indicated within Cumberland County Assessor/Tax information.

### 3.1.4 Interviews with State/Local Government Officials

The following agencies, as indicated, were contacted to obtain information regarding the presence of USTs, the use or storage of hazardous materials/petroleum products, current violations, emergency response actions, or any documentation relative to environmental matters at the Property. Correspondence records, if any, are provided in the Appendix, and specific information regarding individuals/agencies contacted is summarized in the interview section of this report. Should information be received from agencies that were unresponsive to information requests within the time frame of this report, if any, that alters the conclusions of this report an addendum will be forwarded to the Client.

Interviews with State/Local Government Officials				
Local/Regional Agency	Source Name	Date Contacted or Response Received	Phone Number / Email	Comment
Fire Officials	City of Fayetteville Fire Prevention Division	10/14/2021	KarenJackson@FayettevilleNC.gov	Response not received within the time frame of this report.
Health or Environmental Department	Cumberland County Department of Public Health	10/14/2021	envhealth@co.cumberland.nc.us	Response not received within the time frame of this report.
Building or Planning Department	City of Fayetteville Code Enforcement Division	10/14/2021	CodeEnforcement@fayettevillenc.gov	Response not received within the time frame of this report.
State Historic Preservation Office (SHPO)	Renee Gledhill-Earley of NC SHPO	10/15/2021	Environmental.Review@ncdcr.gov	Response not received within the time frame of this report.

## 3.2 Physical Setting Sources

### 3.2.1 Topography

The United States Geological Survey (USGS), Cliffdale, NC Quadrangle 7.5-minute series topographic map, published in 2016 was reviewed for this ESA and is summarized below.

Physiography	
Topographic Property Elevation	250 feet above mean sea level.
Topographic Considerations	Gently sloped / Slopes downward toward the southwest
Other Significant Surface Features	Production wells or other significant surface features are not depicted.

### 3.2.2 Soils / Geology

Soil and geologic information were obtained based on a review of published information as detailed below and within the Reference section of this report. The following table summarizes the geologic characteristics in the area of the Property:

Soils / Geology	
Near Surface Soils	
Soil Name	Blaney loamy sand, McColl loam, Norfolk loamy sand, and Wagram loamy sand
Description	Soil data for the Property were obtained from the United States Department of Agriculture, Natural Resources Conservation Service Web Soil Survey (USDA 2021) and the published soil surveys for Cumberland County (Hudson 1984). There are four soil types present at the Property. Blaney loamy sand is a well-drained soil that is found on the side slopes and narrow ridges of uplands. McColl loam is a poorly drained soil that is found in shallow, oval depressions of uplands. The majority of the Property contains Norfolk loamy sand, which is a well-drained soil found on broad, smooth flats on uplands. Wagram loamy sand is another well drained soil also formed on broad, smooth flats and the side slopes of uplands.
Geologic Formation	
Formation Name	Cape Fear Formation
Description	The Property is underlain primarily by the Cape Fear Formation. This formation is the product of a non-marine delta formation during the Upper Cretaceous period. It is comprised of bedded sand, sandstone, and mudstone (Sohl and Owens 1991). The lithic material present in the project vicinity, as in much of the Coastal Plain, likely originates in the Carolina Slate Belt in the Piedmont. Rivers flowing out of the Piedmont transported the material, including metavolcanics and quartz, into the Coastal Plain where it was deposited as gravels and formed cobble bars.



### 3.2.3 Hydrology

The following information was obtained based on a review of published information as detailed within the Reference section of this report:

Hydrology	
Primary Aquifer	Upper Cape Fear Aquifer
Aquifer Description	This aquifer is present in the western portions of the coastal plain at elevations of 295 to -2,394 feet, averaging -387 feet. The Upper Cape Fear aquifer ranges from 3 to 3,892 feet thick and averages 185 feet thick. The aquifer is composed of very fine to coarse sands and occasional gravels. Wells typically yield 200-400 gallons per minute.
Depth to Groundwater	Approximately 25 feet below the ground surface.
On-Property Water Bodies	Settling ponds, lagoons, surface impoundments, or natural catch basins were not observed at the Property during this investigation.
Closest off-Property Water Body	An unnamed stream is located approximately 1,400 feet west of the Property.
Shallow Groundwater Flow Direction	Nova considered the topography of the general Property area and inferred that the most likely hydrogeologic gradient would be to the southwest.

### 3.2.4 Other Physical Settings Sources

Other Physical Setting Sources	
Flood Plain Information	
Flood Zone Panel Number and Date	Zone X (unshaded) according to Panel Number 3710948700J, dated January 5, 2007.
Flood Zone	Flood Zone X regions consist of areas outside the 0.2% annual chance floodplain.
Distance to Closest Flood Hazard	Approximately one mile to the east.
Oil and Gas Exploration (current or historic), Pipelines	

<b>Other Physical Setting Sources</b>	
Oil or Gas Wells	Historical/current oil or gas exploration was not identified within the Property limits or within immediately surrounding properties.
Pipelines	Pipelines/pipeline easements were not identified within the Property limits or within immediately surrounding properties.
<b>Protected Waters and Wetlands</b>	
Wetland Areas	According to the US Fish and Wildlife Service Wetlands Mapper website, a Freshwater Forested/Shrub Wetland is mapped in the central portion of the Property. This portion of the Property is currently a wooded area. The Wetlands Mapper is based on aerial photograph interpretation and is not field verified. Nova Group, GBC understands that the surveyor did not identify any wetlands at the Property. Prior to any future redevelopment and/or land disturbance of the Property, a preliminary wetlands assessment is suggested to determine whether there are actually any wetlands present within the limits of the Property.
<b>Well Records</b>	
Well Log Records / Well Mapping Program	No water wells and/or groundwater monitoring wells were recorded on file for the Property and/or adjoining/nearby land.

### 3.2.4.1 Endangered Species

The Endangered Species Act of 1973 was passed by Congress to ensure that all federal agencies protect species, preserve their habitats, and consider the effects that their actions may have on threatened and endangered species. The law also requires that Federal agencies coordinate with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service to prevent or modify those projects that will jeopardize the continued existence of any threatened or endangered species, or that will result in the destruction or adverse modification of a designated critical habitat.

Similarly, according to Section F - "Endangered Species" in Chapter 9 of the HUD-MAP Environmental Review:

"Under Section 7 of the Endangered Species Act, HUD must consult with the U.S. Fish and Wildlife Service, or, where applicable with the National Oceanic and Atmospheric Administration whenever a proposal may affect an endangered or threatened species or its habitat. A required consultation should be assumed for any site within the critical habitat of a listed species. In areas where impacts on endangered or threatened species are a concern, all appropriate information regarding possible impacts of the project should be provided to HUD as early as possible. Consultation under Section 7 may result in more stringent conservation measures than would otherwise be imposed."

The Property is located within USFWS Region 2. According to the USFWS Information for Planning and Consultation (IPaC) tool, Federally Threatened, Endangered, and Proposed Species within the Property area included in the table below.

Name	Type	Status
Red-cockaded Woodpecker	Bird	Endangered
American Alligator	Reptile	Similarity of Appearance, Threatened
Monarch Butterfly	Insect	Candidate
Saint Francis' Satyr Butterfl y	Insect	Endangered
American Chaffseed	Flowering Plants	Endangered
Michaux's Sumac	Flowering Plants	Endangered
Pondberry	Flowering Plants	Endangered
Rough-leaved Loosestrife	Flowering Plants	Endangered

Since the Property is currently developed, it is unlikely that critical habitats, threatened species, or endangered species are present. Based on this information, threatened species, endangered species, and critical habitats are not considered an environmental concern at the Property.

### 3.2.4.2 Sole Source Aquifers

For projects utilizing municipal water and sewer and with the appropriate local drainage and runoff, approval does not require review for Sole Source Aquifers. Properties located within recharge area boundaries of designated sole source aquifers must be reviewed by the Environmental Protection Agency (EPA) for their effect on the sole source aquifer.

Review of the EPA online mapping, no sole source aquifers are located in the area of the Property.

### 3.2.4.3 Coastal Barrier Resources

Under the Coastal Barrier Resources Act, HUD is prohibited from insuring a project located within designated coastal barriers of the Atlantic Ocean, Gulf of Mexico, or the Great Lakes.

Based on the location of the Property, coastal barrier resources are not considered an environmental concern.

### 3.2.4.4 Coastal Zone Management

Properties located within a state's coastal management zone must comply with the approved state Coastal Management Program.

As the Property is not located within the State of NC coastal management zone, coastal zone management is not considered an environmental concern at the Property.

### 3.3 Historical Use Information

The purpose of obtaining and reviewing "*historical sources is to develop a history of the previous uses of the Property and surrounding area, in order to help identify the likelihood of past uses having led to RECs in connection with the Property.*" Nova attempted to research all obvious Property use from the present, back to the Property's first developed use; or back to 1940, whichever is earlier. Copies of below pertinent sources reviewed, such that establish Property uses or changes in use, are included in the Appendix of this report.

Historical Sources		
Historical Resource	Checked if Reviewed	Years Reviewed
Aerials	✓	1940, 1950, 1961, 1964, 1976, 1983, 1987, 1993, 1999, 2005, 2006, 2008, 2010, 2012, 2014, and 2020
Fire Insurance Maps	✓	No coverage letter is appended.
Topographic Maps	✓	1948, 1950, 1951, 1971, 1976, 1982, and 2016
Local City Directories	✓	1937, 1941, 1946, 1951, 1954, 1960, 1965, 1969, 1973, 1977, 1981, 1987, 1991, 1997, 2002, 2006, 2008, 2012, 2016, and 2020
Tax Files	✓	2021
Recorded Land Title Records		Not reasonably ascertainable or considered to be useful.
Building Department Records		Records were not available as of the date of issue of this report.
Zoning/Land Use Records	✓	2019
Other Historical Sources		Not reasonably ascertainable or considered to be useful.

### 3.3.1 Summary of Historical Property Uses

The following is a summary of historical Property use based on the review of available historical resources:

Property	
Time Period	Historical Summary
1937 to Present	Undeveloped land or vacant land utilized for agricultural purposes.

Based on the review of the information discussed above, the historical research has not identified prior uses that are expected to have resulted in a REC in connection with the Property.

#### 3.3.1.1 Aerial Photographs

Historical Property Uses - Aerial Photographs	
Year(s)	Description
1940, 1950, 1961, 1964, 1976, and 1983	The Property consists of wooded land in the northern portion and agricultural land in the southern portion.
1987	The previously identified agricultural land appears fallow and overgrown.
1993, 1999, 2005, 2006, 2008, 2010, 2012, 2014, and 2020	The previously identified agricultural land has been replaced with wooded land.

#### 3.3.1.2 USGS Topographic Maps

Historical Property Uses - USGS Topographic Maps	
Year(s)	Description
1948, 1950, and 1951	The Property is depicted as unimproved land.
1971, 1976, and 1982	A dirt driveway is depicted in the southern portion of the Property.

Historical Property Uses - USGS Topographic Maps	
Year(s)	Description
2016	Structures or improvements are not depicted on this map.

### 3.3.1.3 Local City Directories

Historical Property Uses - Local City Directories	
Year(s)	Description
1937 - 2020	The Property address was not listed in any of the local city directories reviewed.

### 3.3.2 Summary of Historical Adjoining/Adjacent Property Uses

The following are summaries of each adjoining property based on review of available historical resources:

Adjoining/Adjacent Property	
Time Period	Historical Summary
<b>North</b>	
1937 to 1983	Undeveloped land or vacant land utilized for agricultural purposes.
1987 to Present	Developed with three single-family residences.
<b>East</b>	
1937 to 2006	Undeveloped land or vacant land utilized for agricultural purposes.
2008 to Present	Developed with a multi-family residential apartment complex.
<b>South</b>	
1937 to 1940	Developed with two single-family residences. One residence razed between 1940 to 1950.
1950 to 1999	Developed with one single-family residence. Residence was razed between 1999 and 2005.
2005 to Present	Developed with a new single-family residence.

Adjoining/Adjacent Property	
Time Period	Historical Summary
West	
1937 to 1964	Undeveloped land or vacant land utilized for agricultural purposes.
1976 to Present	Developed with single-family residences. Additional residences added in subsequent years.

Based on the information discussed above, the historical research has not identified prior adjacent/adjoining property uses that are expected to have resulted in REC in connection with the Property.

### 3.3.3 Additional Environmental Record Sources

Although requested, no previously prepared environmental reports such as Phase I or II ESAs, lead-based paint surveys, lead-in-water surveys, asbestos surveys, or geotechnical reports were provided for Nova's review.

### 3.3.4 Historic Preservation

Applications for HUD must comply with the National Historic Preservation Act (54 U.S.C. 300101 et seq.) and its implementing regulations at 36 CFR Part 800, which require Federal agencies to take into account the effects of their undertakings on historic properties, consult with the State Historic Preservation Officer (SHPO) and/or Tribal Historic Preservation Officer as appropriate, and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment. The process is known as Section 106 review. There are three exceptions (if applicable, a statement identifying the exception and supporting documentation must be included in the application)

1. Categorical exclusions not subject to related laws and authorities (CENST) under 24 CFR 50.19(b)(21)
2. HUD has determined that some undertakings have No Potential to Cause Effects under 36 CFR 800.3(a)(1) because there is no physical impact beyond maintenance. These determinations are made by HUD's Office of Environment and Energy and include certain Rental Assistance Demonstration (RAD) transactions and certain 223(f) refinance transactions with no site work beyond maintenance, as defined in HUD Notice CPD-16-0240. In order to use this exception, a project must meet the conditions in an applicable No Potential to Cause Effects Memo that is found on HUD's website. For such transactions, there is no requirement to contact the State Historic Preservation Officer (SHPO), and historic preservation responsibilities are limited to documenting this determination in HEROS by marking No Potential to Cause Effects on the Historic Preservation Screen and uploading a copy of the relevant Memo. Only projects that meet the conditions of one of the posted Memos can use this finding.

3. Some states may have a Programmatic Agreement (PA) with HUD and the proposal may be part of a class of actions that do not require Section 106 consultation under the PA. Historic preservation responsibilities of HUD staff are limited to documenting this determination in HEROS by marking Programmatic Agreement on the Historic Preservation screen, uploading the Programmatic Agreement into HEROS, and copying the applicable part of the PA agreement into HEROS.

Nova emailed a letter to the North Carolina State Historic Preservation Office (SHPO) on October 15, 2021, regarding the Historical Preservation at the Property. As of the issuance of this report, a response had not been received. Nova will forward any response received to the Client.



## 4.0 PROPERTY RECONNAISSANCE

Nova conducted a reconnaissance visit to the Property on September 27 and 28, 2021. The Property visit was performed by Michael O'Neal, Nova Field Associate. Nova was not accompanied at the time of the Property visit.

The following table summarizes current Property operations observed at the time of the assessment. Specific information/details regarding such features (if any) are discussed in detail below.

	<b>Checked if Present/ Observed</b>
<b>Interior and Exterior Observations</b>	
Hazardous Substances and Petroleum Products	
Hazardous Substance and Petroleum Products Containers (Not Necessarily in Connection With Identified Uses)	
Drums	
Unidentified Substance Containers	
Storage Tanks	
Odors	
Pools of Liquid	
PCBs (electrical or hydraulic equipment)	✓
Past Use(s) of the Property	
Additional Observations	
<b>Exterior Observations</b>	
Evidence of a Release (i.e. stained soil/pavement or stressed vegetation)	
Solid Waste	
Pits, Ponds, or Lagoons	
Wastewater	
Wells	

	<b>Checked if Present/ Observed</b>
Septic Systems (current or historical)	
Landfills / Fill of Unknown Origin	
<b>Interior Observations</b>	
Stains or Corrosion	
Drains, Sumps and/or Catch Basins	

## 4.1 Hazardous Substances / Petroleum Products

Current use and the likelihood of use, treatment, storage, disposal, or generation of hazardous substances or petroleum products found in connection with the Property, if any, are discussed in the following sections.

### 4.1.1 Storage

Evidence of hazardous substances and/or petroleum products, associated with current Property operations (use, treat, storage, disposal or generation), was not observed at the time of the assessment.

### 4.1.2 Management and Disposal

Management or disposal of hazardous substances and/or petroleum products was not observed during the Property reconnaissance or reported during interviews.

### 4.1.3 Equipment

Operations or equipment/materials involving the use of hazardous substances and/or petroleum products were not observed during the Property reconnaissance or reported during interviews.

## 4.2 Drums

Drums were not observed at the time of the assessment within the limits of the Property.

## 4.3 Unidentified Substance Containers

Unidentified substance containers suspected of containing hazardous substances or petroleum products were not observed during the Property reconnaissance.

#### 4.4 Storage Tanks

No evidence of aboveground or underground storage tanks was observed during the Property reconnaissance or reported during interviews.

#### 4.5 Odors

Strong, pungent, or noxious odors were not noted at the time of the assessment or reported by Property sources.

#### 4.6 Catch Basins, Sumps and Pools of Liquid

No evidence of on-site sumps or catch basins were observed or reported during the site reconnaissance. Additionally, pools of liquids/standing surface water containing liquid likely to be a hazardous substance or petroleum product were not observed at the time of the site visit or identified during interviews.

#### 4.7 PCBs

Transformers and other electrical/hydraulic equipment (i.e., oil-filled switches, balers, hoists, vehicle lifts, dock levelers, hydraulic elevators, etc.) manufactured prior to 1979 could contain PCBs at a level that subjects them to regulation by the USEPA. In 1979, the USEPA issued a final rule, banning the manufacturing, processing, distribution of PCBs in commerce and use (44 Federal Register 31514). PCBs in electrical equipment are controlled by USEPA regulations 40 CFR, Part 761. The following table summarizes electrical or hydraulic equipment located within the limits of the Property (if any) that has the potential to contain PCBs.

<b>Quantity / Type of Equipment</b>	<b>Installation Date</b>	<b>Non-PCB Labels Present</b>	<b>Potentially Contains PCBs</b>	<b>Responsible Party/ Third Party Contractor</b>	<b>Evidence of a Release/ Physical Damage</b>
Two pole-mounted transformers	Unknown	No	Yes	Electric Provider	No

Given that evidence of a release was not observed at the time of the assessment associated with the above-referenced equipment, as well as management by the identified responsible party, the presence of such equipment is not considered a REC in connection to the Property.

## 4.8 Past Use(s) of the Property

Past uses of the Property were not observed during the Property reconnaissance that was likely to have involved the use, treatment, storage, disposal, or generation of hazardous substances or petroleum products.

## 4.9 Additional Observations

No additional relevant general Property characteristics were observed.

## 4.10 Evidence of a Release

No obvious indication of hazardous material or petroleum product or hazardous waste releases, such as stained areas or stressed vegetation, was observed during the Property reconnaissance or reported to Nova during interviews.

## 4.11 Solid Waste

To the extent visually and/or physically observed or identified from interviews or records review, the following is a summary of solid waste observed at the time of the assessment:

Solid Waste Disposal	
None observed	None observed

## 4.12 Pits, Ponds or Lagoons

No evidence of on-Property pits, ponds, or lagoons was observed or reported during the Property reconnaissance.

## 4.13 Wastewater

No indication of industrial wastewater disposal or treatment systems were observed during the Property reconnaissance or reported to Nova.

## 4.14 Wells

Wells (i.e. dry wells, irrigation wells, injection wells, abandoned wells or other wells), were not observed during the Property reconnaissance or reported during interviews.

## 4.15 Septic Systems (Current or Historical)

Indication of a Property septic system or cesspool was not observed at the Property during the reconnaissance and/or review of publicly available resources.

## 4.16 Landfills / Fill of Unknown Origin

No evidence of on-Property landfilling was observed or reported during the Property reconnaissance. In addition, areas that appeared to have been filled/graded by non-natural causes and/or the presence of fill of unknown origin that would suggest the presence/disposal of hazardous substances and/or petroleum product was not observed and/or reported at the time of the assessment.

## 4.17 Vapor Migration

Per HUD requirements an initial vapor intrusion screen is required to be performed using Tier 1 “non-invasive” screening pursuant to ASTM E2600-08 “Standard Practice for Assessment of Vapor Intrusion into Structures on Property Involved in Real Estate Transactions.”

Nova conducted a Tier I Vapor Intrusion Assessment for the Property. According to historical data and the Environmental Risk Information Services database search, no chemicals of concern are currently or have historically been in use at the Property. The Property is not located adjacent to any releases. Based on the Tier I plume test, chemicals of concern test, and search distance test, no potential vapor intrusion conditions were identified.

## 4.18 Non-Scope Considerations (NSCs)/Business Environmental Risks (BERs)

### 4.18.1 Lead-Based Paint (LBP)

Lead-based paint, as defined by HUD, is any paint, varnish, stain, or other applied coating that has 0.5% weight or more of lead (5,000 mg/kg). The use of LBP was banned in residential and consumer applications in 1978.

Since the Property currently consists of undeveloped land, lead-based paint is not considered a concern at the Property.

### 4.18.2 Radon

The USEPA has prepared a map to assist national, state, and local organizations to target their resources and to implement radon-resistant building codes. The map divides the country into three Radon Zones, with Zone 1 being those areas with the average predicted indoor radon concentration in residential dwellings exceeding the USEPA Action limit of 4.0 picoCuries per liter of air (pCi/L). It is important to note that the USEPA has found homes with elevated levels of radon in all three zones, and the USEPA recommends Property-specific testing in order to determine radon levels at a specific location. However, the map does give a valuable indication of the propensity of radon gas accumulation in structures.

A review of the EPA Map of Radon Zones places the Property in Zone 3, where the average predicted radon levels are less than 2.0 pCi/L.

Based on the radon propensity and absence of structures at the Property, radon is not considered a concern at the Property.

### 4.18.3 Asbestos-Containing Materials (ACMs)

HUDs environmental policy articulated at 24 CFR 50.3(i), that all properties proposed for use in HUD programs be free of hazardous materials, contamination, toxic chemicals and gasses, and radioactive substances, where a hazard could affect the health and safety of occupants or conflict with the intended utilization of the property.

For any structures or ancillary facilities built before 1989 that are planned to be demolished or planned to undergo rehabilitation above the level of repair as defined in HUD MAP Guide Chapter 5, Section 5.1.3, an asbestos survey by a qualified asbestos inspector must be performed pursuant to the "Pre-Construction Survey" requirements of ASTM E 2356-18, "Standard Practice for Comprehensive Building Asbestos Surveys", or stricter standards if applicable in the jurisdiction.

Other than for structures to be demolished, any building built before 1989, a qualified asbestos inspector must perform an ASTM E2356-18 Baseline Survey. The presence of asbestos in suspect materials may be assumed or presumed in some cases without bulk samples being taken or analyzed.

If there is damaged asbestos materials or friable materials in good condition, HUD requires that it be removed. If ACM or suspected ACM is identified at a facility, HUD requires a response action to address the risk. Response actions may include complete removal, limited removal/repair, encapsulation, enclosure, or management of the ACM under an O&M Program, or a combination of these, as recommended by an accredited asbestos professional. If ACM or suspected ACM remains after the initial identification and, if applicable, response actions, an asbestos O&M program shall be implemented.

Since the Property currently consists of undeveloped land, asbestos is not considered a concern at the Property.

### 4.18.4 Additional Nuisances and Hazards

Commonly found or Observed Additional Nuisances and Hazards (applicable to all transaction types except those categorically excluded from all environmental review, as discussed at 9.1A.5 above).

- 1) Operating or planned drilling site: No residential structures may be within 300 feet of the boundary of the drilling site.
- 2) Operating well: No residential structures may be within 75 feet of an operating well unless the following mitigating measures are taken:
  - a) Controls on nuisances;

- b) Controls on noise caused by pumping; and
  - c) Spill controls to reduce the risk of contamination.
- 3) Abandoned wells.
- a) Confirmation by the State government that the well is safely and permanently abandoned, and no residential structures are within 10 feet must be obtained.
  - b) If there is no confirmation letter, no residential structures may be located within 300 feet of an abandoned well.
- 4) Sour gas (hydrogen sulfide bi-product) wells: Separation distance must be determined by a Petroleum Engineer, with concurrence by the State government.
- 5) Slush pits (used for drilling mud mixes for well lubrication):
- a) If on-site, hazards analysis is required to be performed pursuant to Section 9.3 above. Mitigation must include, but not necessarily be limited to, removal of all drilling mud from the site and backfilling with clean compacted material.
  - b) If offsite, hazards analysis must be performed pursuant to Section 9.3.

None of the above referenced additional nuisances and hazards were observed at the Property.

#### 4.18.5 Mold

As part of this assessment, Nova performed a limited visual inspection for the significant presence of mold. A class of fungi, molds have been found to cause a variety of health problems in humans, including allergic, toxicological, and infectious responses. Molds are decomposers of organic materials, and thrive in humid environments, and produce tiny spores to reproduce, just as plants produce seeds. When mold spores land on a damp spot indoors, they may begin growing and digesting whatever they are growing on in order to survive. When excessive moisture or water accumulates indoors, mold growth will often occur, particularly if the moisture problem remains undiscovered or unaddressed. As such, interior areas of buildings characterized by poor ventilation and high humidity are the most common locations of mold growth. Building materials including drywall, wallpaper, baseboards, wood framing, insulation, and carpeting often play host to such growth.

Since the Property currently consists of undeveloped land, mold is not considered a concern at the Property.

#### 4.18.6 Lead in Drinking Water / Overall Drinking Water Quality

Since the Property currently consists of undeveloped land and no drinking water wells are present, lead in drinking water is not considered a concern at the Property.

#### 4.18.7 Airport Clear Zones or Accident Prone Zones

Airport Clear Zones and Accident Prone Zones are those areas located within 2,500 feet from the end of a runway at a civil airport and/or 2.5 miles from the end of a runway at a military airfield. Construction or major rehabilitation of any project located within such zones is prohibited. Acquisition, refinance, and minor rehabilitation of projects within Clear Zones are permitted with restrictions.

The Property is not within 15,000 feet of a military airport or 2,500 feet of a civilian airport. Consequently, airport clear zones and accident-prone zones are not expected to represent an environmental concern at the Property.

#### 4.18.8 Electromagnetic Fields (EMFs) and High Voltage Transmission Lines

Scientific studies related to EMFs and high voltage transmission lines conducted to date neither confirm nor negate that exposures have not been, and cannot be proven to be absolutely safe. The scientific community indicates that if there is a human health hazard, it is either very small or is restricted to small subgroups, thus reducing the possibility of a large and general health hazard. Concurrently, HUD requires that no structure shall be constructed within an easement of overhead high voltage transmission lines.

HUD also requires that all structures shall be located outside the engineered fall distance of any support structure for high voltage transmission lines, satellite towers, and radio antennae. Local electrical service lines and poles are exempt from this requirement.

The Property is not located within an easement of overhead high voltage transmission lines or the engineered fall zones of utility support structures. Consequently, EMFs and high voltage transmission lines are not considered an environmental concern at the Property.

#### 4.18.9 Noise Analysis

HUD MAP guidelines state that a noise analysis conducted by HUD is required to determine if sound levels will be within acceptable limits if the Property is located within 15 miles of an airport, within 1,000 feet of a major road, or within 3,000 feet of a railroad. The predicted ground level and interior sound levels should be within the HUD guideline of LDN = 45dBA and exterior levels should be within 65dBA for all modeled receptor locations.

The Property is not situated within 1,000 feet of a significant road or within 3,000 feet of a railroad. The Property is situated within 15 miles of an airport (Pope AAF is approximately 9.18 miles away, P K Airpark is approximately 9.58 miles away and the Fayetteville Regional Airport is approximately 13.10 miles away). DNL calculations for the Airport Noise Contour Map from the National Transportation Atlas online mapper indicate that the Property is not within the 65dBA zone for any of the noise sources.

Per guidelines, the project is considered to be in compliance as no development, construction, or rehabilitation that will increase the residential densities at the Property is planned. No further action appears warranted regarding this factor.



#### 4.18.10 Explosive Hazards

No USTs or ASTs are currently present at the Property and no explosive materials are stored at the Property.

Since the Property currently consists of undeveloped land, explosive and flammable facilities are not a concern.

## 5.0 FINDINGS, OPINIONS AND CONCLUSIONS

### 5.1 Findings and Opinions

Evidence of RECs, CRECs, HRECs or other environmental issues in connection with the Property or off-Property facilities, if any, are detailed within the table below.

Finding(s)	Opinion(s)
<b>Property - RECs</b>	
None	None
<b>Property - CRECs</b>	
None	None
<b>Property - HRECs</b>	
None	None
<b>Off-Property - RECs</b>	
None	None
<b>De Minimis Environmental Conditions</b>	
None	None

### 5.2 Conclusions and Recommendations

Nova has performed a Phase I ESA in conformance with the scope and limitations of ASTM E1527-13 of Cliffdale Crossing at 8368 Cliffdale Road, Fayetteville, NC. Any exceptions to or deletions from this practice are described in the Introduction Section of this report.

Conclusion(s)	Recommendation(s)
This assessment has revealed no evidence of RECs in connection with the Property.	Based on the information available during the course of this assessment, Nova does not recommend further assessment of the Property at this time.

### 5.2.1 Non-Scope Considerations (NSCs)/Business Environmental Risks (BERs)

Environmental issues with regard to NSCs or BERs, if any, identified in connection with the Property at the time of the Property assessment are detailed below.

<b>Finding</b>	<b>Recommendation</b>
None	None

### 5.3 Deletions and Deviations

Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for RECs in connection with the Property based on reasonably ascertainable information, as well as reasonable constraints with regard to time and cost. All limiting conditions, deletions, and deviations from the ASTM E1527-13 (if any) is listed individually and in detail, including Client imposed constraints, and all additions, within the Introduction section of this report.

## 6.0 CONSULTANTS CERTIFICATION

I understand that my (appraisal, market study, or architectural, cost, environmental, or other specialized reports) will be used by Smith Duggins Developers, LLC to document to the U.S. Department of Housing and Urban Development that the MAPS Lender's application for FHA multifamily mortgage insurance was prepared and reviewed in accordance with HUD requirements. I certify that my review was in accordance with the HUD requirements applicable on the date of my review and that I have no financial interest or family relationship with the officers, directors, stockholders, members or partners of the lender or affiliated entities, Borrower or affiliated entities, the general contractor, any subcontractors, the buyer or seller of the proposed property or engage in any business that might present a conflict of interest.

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental professional as defined in §312.10 of 40 CFR 312. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Property. I have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

### **NOVA GROUP, GBC**

#### **Prepared By:**

Signature for Robert J. Atzl

Robert J. Atzl  
SPM, Telecom Due Diligence  
Environmental Professional

#### **Reviewed By:**

Signature for Dave Akerblom

Dave Akerblom  
Director, Telecom NEPA

Signature for Robert S. Hird, PG, CPG

Kristin Tate  
SVP - Chief Operations Officer

I hereby certify under penalty of perjury that all of the information that I have provided on this form and in any accompanying documentation is true and accurate. I acknowledge that if I knowingly have made any false, fictitious, or fraudulent statement, representation, or certification on this form or any accompanying documents. I may be subject to criminal, civil, and/or administrative sanctions, including fines, penalties, and/or imprisonment under applicable federal law, including but not limited to 12 U.S.C. §1833A; 18 U.S.C. §§1001, 1006, 1010, 1012 AND 1014; 12 U.S.C. §1708 AND 1735F-14; and 31 U.S.C. §§3729 AND 3802.

## 7.0 INTERVIEWS

Pursuant to ASTM E1527-13, the following interviews were conducted during this assessment in order to obtain information indicating RECs in connection with the Property. Findings from these interviews are discussed in the appropriate sections in this report.

### 7.1 Present Owner, Occupants and Key Site Manager

Nova made reasonable attempts to interview occupants of the Property who possessed knowledge of its current and past use history. However, individuals with good knowledge of the uses and physical characteristics of the Property were not available for interview during the course of this assessment.

### 7.2 Past Owners, Operators and Occupants

Interviews with past owners, operators, and occupants that are likely to have material information regarding the potential for contamination at the Property were not considered reasonably ascertainable during the course of this assessment.

### 7.3 State and/or Local Government Officials

The following state and/or local agencies that serve the area in which the Property is located were contacted in an effort to obtain information indicating RECs in connection with the Property. Interview content is discussed in detail within the Records Review section.

Interviews with State/Local Government Officials				
Local/Regional Agency	Source Name	Date Contacted or Response Received	Phone Number / Email	Comment
Fire Officials	City of Fayetteville Fire Prevention Division	10/14/2021	KarenJackson@FayettevilleNC.gov	Response not received within the time frame of this report.
Health or Environmental Department	Cumberland County Department of Public Health	10/14/2021	envhealth@co.cumberland.nc.us	Response not received within the time frame of this report.

Interviews with State/Local Government Officials				
Local/Regional Agency	Source Name	Date Contacted or Response Received	Phone Number / Email	Comment
Building or Planning Department	City of Fayetteville Code Enforcement Division	10/14/2021	CodeEnforcement@fayettevillenc.gov	Response not received within the time frame of this report.
State Historic Preservation Office (SHPO)	Renee Gledhill-Earley of NC SHPO	10/15/2021	Environmental.Review@ncdcr.gov	Response not received within the time frame of this report.

## 7.4 Others

Information obtained during interviews with other local government officials is incorporated into the appropriate segments of this section.

## 8.0 REFERENCES

Type	Source
Aerial Photographs	Environmental Risk Information Services (ERIS)
City Directories	ERIS
Coastal Barriers Resource System Mapper	<a href="https://www.fws.gov/cbra/maps/Mapper.html">https://www.fws.gov/cbra/maps/Mapper.html</a>
Coastal Zone Management	<a href="https://coast.noaa.gov/czm/mystate/">https://coast.noaa.gov/czm/mystate/</a>
Endangered Species	<a href="https://ecos.fws.gov/ipac/location/index">https://ecos.fws.gov/ipac/location/index</a>
EPA's NEPassit Tool Interactive Map	<a href="https://nepassisttool.epa.gov/nepassist/nepamap.aspx">https://nepassisttool.epa.gov/nepassist/nepamap.aspx</a>
EPA Current Nonattainment Counties for All Criteria Pollutants	<a href="https://www3.epa.gov/airquality/greenbook/ancl.html">https://www3.epa.gov/airquality/greenbook/ancl.html</a>
Farmland / Urban Areas	<a href="https://www.arcgis.com/home/webmap/viewer.html?url=https%3A%2F%2Ftigerweb.geo.census.gov%2Farcgis%2Frest%2Fservices%2FTIGERweb%2FtigerWMS_Census2010%2FMapServer&amp;source=sd">https://www.arcgis.com/home/webmap/viewer.html?url=https%3A%2F%2Ftigerweb.geo.census.gov%2Farcgis%2Frest%2Fservices%2FTIGERweb%2FtigerWMS_Census2010%2FMapServer&amp;source=sd</a>
Federal Aviation Administration Circle Search	<a href="https://oeaaa.faa.gov/oeaaa/external/searchAction.jsp?action=showCircleSearchAirportsForm">https://oeaaa.faa.gov/oeaaa/external/searchAction.jsp?action=showCircleSearchAirportsForm</a>
Federal Emergency Management Agency (FEMA)	Federal Emergency Management Agency, Federal Insurance Administration, National Flood Insurance Program, 3710948700J, January 5, 2007
Federal Railroad Administration Map	<a href="https://www.fra.dot.gov/Page/P0053">https://www.fra.dot.gov/Page/P0053</a>
Geology	United States Geological Survey (USGS) and the NC Geologic Survey
Hydrology	North Carolina Department of Environmental and Natural Resources - Division of Water Resources, <a href="http://geodata.lib.ncsu.edu/stategov/gws/2010/Aquifer%20Characteristics.htm">http://geodata.lib.ncsu.edu/stategov/gws/2010/Aquifer%20Characteristics.htm</a>

Type	Source
National Register of Historic Places Interactive Map	<a href="https://www.nps.gov/maps/full.html?mapId=7ad17cc9-b808-4ff8-a2f9-a99909164466">https://www.nps.gov/maps/full.html?mapId=7ad17cc9-b808-4ff8-a2f9-a99909164466</a>
Nationwide Rivers Inventory	<a href="https://www.nps.gov/maps/full.html?mapId=8adb798-0d7e-40fb-bd48-225513d64977">https://www.nps.gov/maps/full.html?mapId=8adb798-0d7e-40fb-bd48-225513d64977</a>
Oil/Gas Exploration	North Carolina Environmental Quality - Oil & Gas Program (online source), <a href="https://deq.nc.gov/about/divisions/energy-mineral-land-resources/energy-group/oil-gas-program">https://deq.nc.gov/about/divisions/energy-mineral-land-resources/energy-group/oil-gas-program</a> .
Radon	United States Environmental Protection Agency (EPA) Map of Radon Zones (online resource) <a href="http://www.epa.gov/radon/pdfs/zonemapcolor.pdf">http://www.epa.gov/radon/pdfs/zonemapcolor.pdf</a>
Regulatory Database Information	ERIS, 8368 Cliffdale Road, Fayetteville, NC, Inquiry No. 21101400310, October 18, 2021
Sanborn Maps	ERIS
Sole Source Aquifers Interactive Map	<a href="https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b">https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b</a>
Soils	United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), Web Soil Survey (online resource), <a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>
Topographic Map	United States Geological Survey – 7.5 Minute Topographic Quadrangle of Cliffdale, NC, 2016.
Transmission line Online Mapper	<a href="https://www.arcgis.com/home/webmap/viewer.html?panel=gallery&amp;suggestField=true&amp;url=https%3A%2F%2Fservices1.arcgis.com%2FHp6G80Pky0om7Qv0%2Farcgis%2Frest%2Fservices%2FElect ric_Power_Transmission_Lines%2FFeatureServer%2F0">https://www.arcgis.com/home/webmap/viewer.html?panel=gallery&amp;suggestField=true&amp;url=https%3A%2F%2Fservices1.arcgis.com%2FHp6G80Pky0om7Qv0%2Farcgis%2Frest%2Fservices%2FElect ric_Power_Transmission_Lines%2FFeatureServer%2F0</a>
United States Bureau of Transportation Statistics Geospatial Applications – National Transportation Atlas	<a href="https://maps.bts.dot.gov/AppGallery/">https://maps.bts.dot.gov/AppGallery/</a>

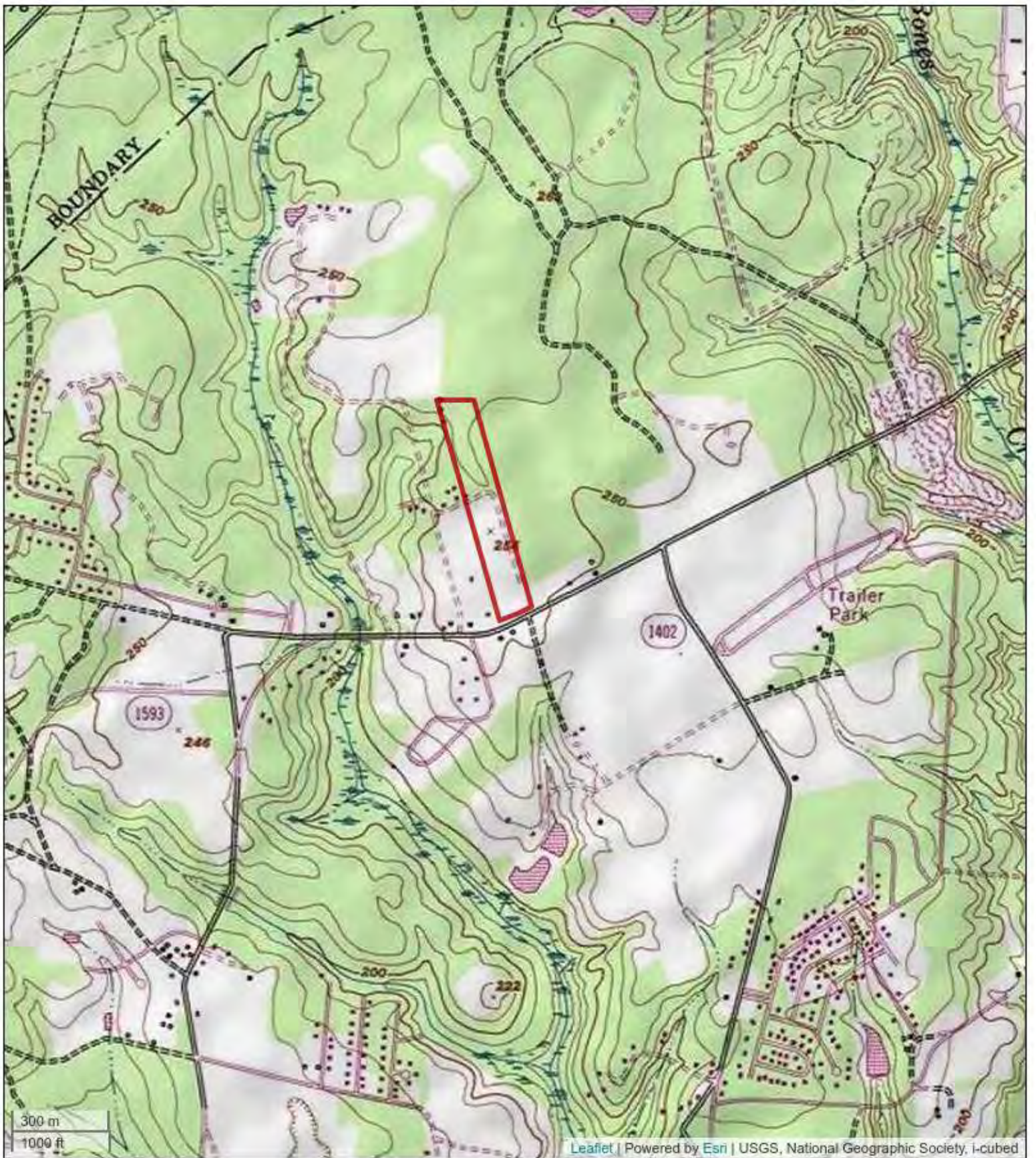


Type	Source
United States Bureau of Transportation Statistics Geospatial Applications - National Aviation Noise Map	<a href="https://maps.bts.dot.gov/AppGallery/">https://maps.bts.dot.gov/AppGallery/</a>
Vapor Screening Tool	ERIS
Water Wells	NC DENR Water Well Inventory (online source), <a href="https://deq.nc.gov/groundwater-facility-maps">https://deq.nc.gov/groundwater-facility-maps</a> .
Wetlands	U.S. Department of the Interior National Wetlands Inventory Geotrack Mapping System - <a href="http://www.fws.gov/wetlands/Data/Mapper.html">www.fws.gov/wetlands/Data/Mapper.html</a>

## ACRONYMS/ABBREVIATIONS

AAI	All Appropriate Inquiries
ACM	Asbestos Containing Material
AMSD	Approximate Minimum Search Distance
APN	Assessor Parcel Number
ASTM	American Society of Testing and Materials
AULs	Activity and Use Limitations
BFE	Base Flood Elevation
BER	Business Environmental Risk
COC	Chemical of Concern
CERCLA	Comprehensive Environmental Response, Compensation & Liability Act
CREC	Controlled Recognized Environmental Condition
ERIS	Environmental Risk Information Services
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
FBG	Feet Below Grade
FINDS	Facility Index System
FOIA	Freedom of Information Act
HREC	Historical Recognized Environmental Condition
HVAC	Heating, Ventilation and Air Conditioning
IC	Institutional Controls
LBP	Lead Based Paint
LQG	Large Quantity Generator
LUST	Leaking Underground Storage Tank
NFA	No Further Action
Non-Gen	Non-Generator
Nova	Nova Group, GBC
NPL	National Priorities Listing
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
ROC	Records of Communication
SHWS	State Hazardous Waste Sites
SQG	Small Quantity Generator
TSDF	Hazardous Waste Treatment, Storage or Disposal Facility
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	Underground Storage Tank
VCP	Voluntary Cleanup Program

## **FIGURES: Property Maps**



**Topographic Map**  
Cliffdale Crossing  
8368 Cliffdale Road  
Fayetteville, NC 28314  
Project #: CK21-8848

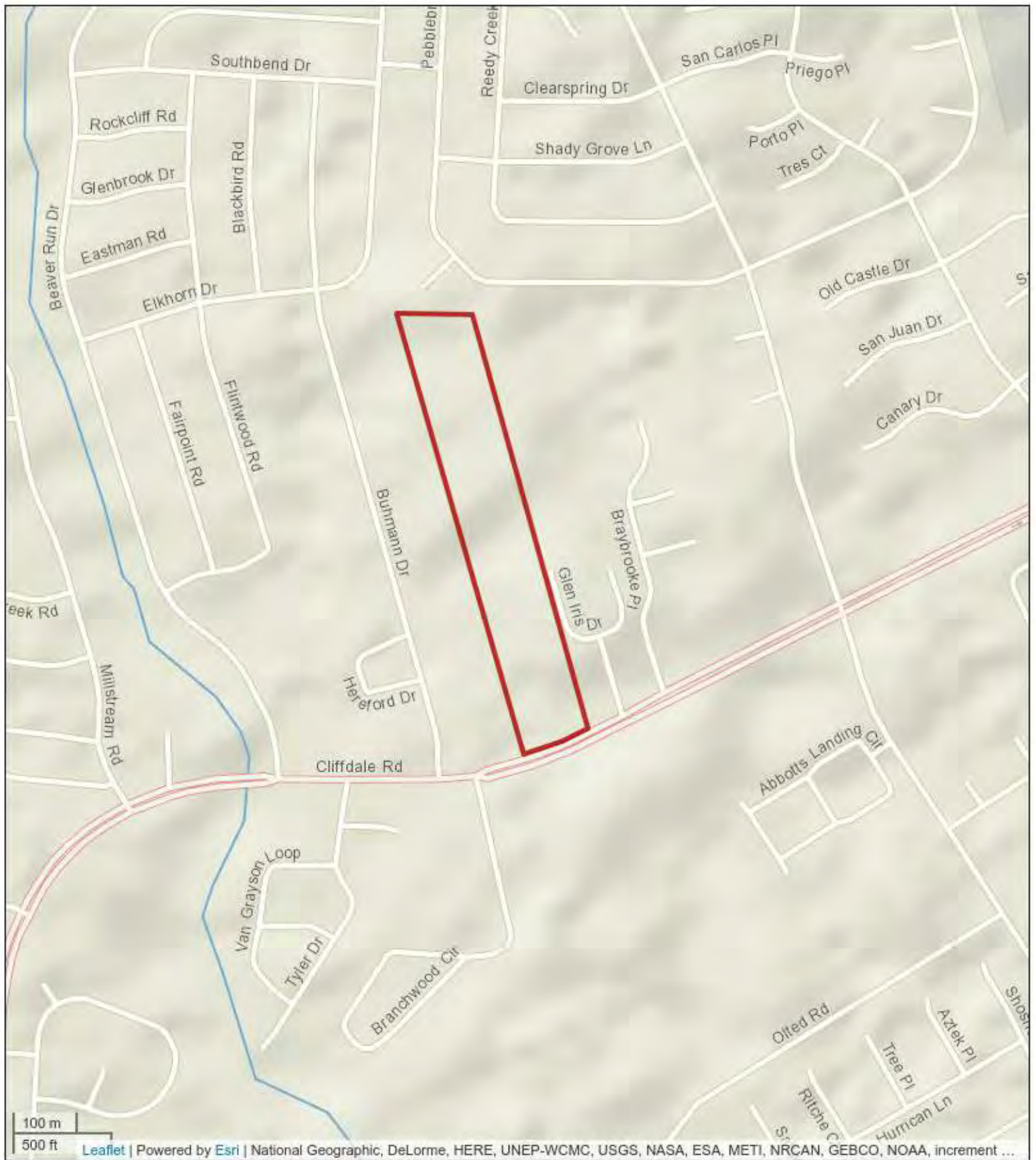




### Property Details Map

Cliffdale Crossing  
 8368 Cliffdale Road  
 Fayetteville, NC 28314  
 Project#: CK21-8848

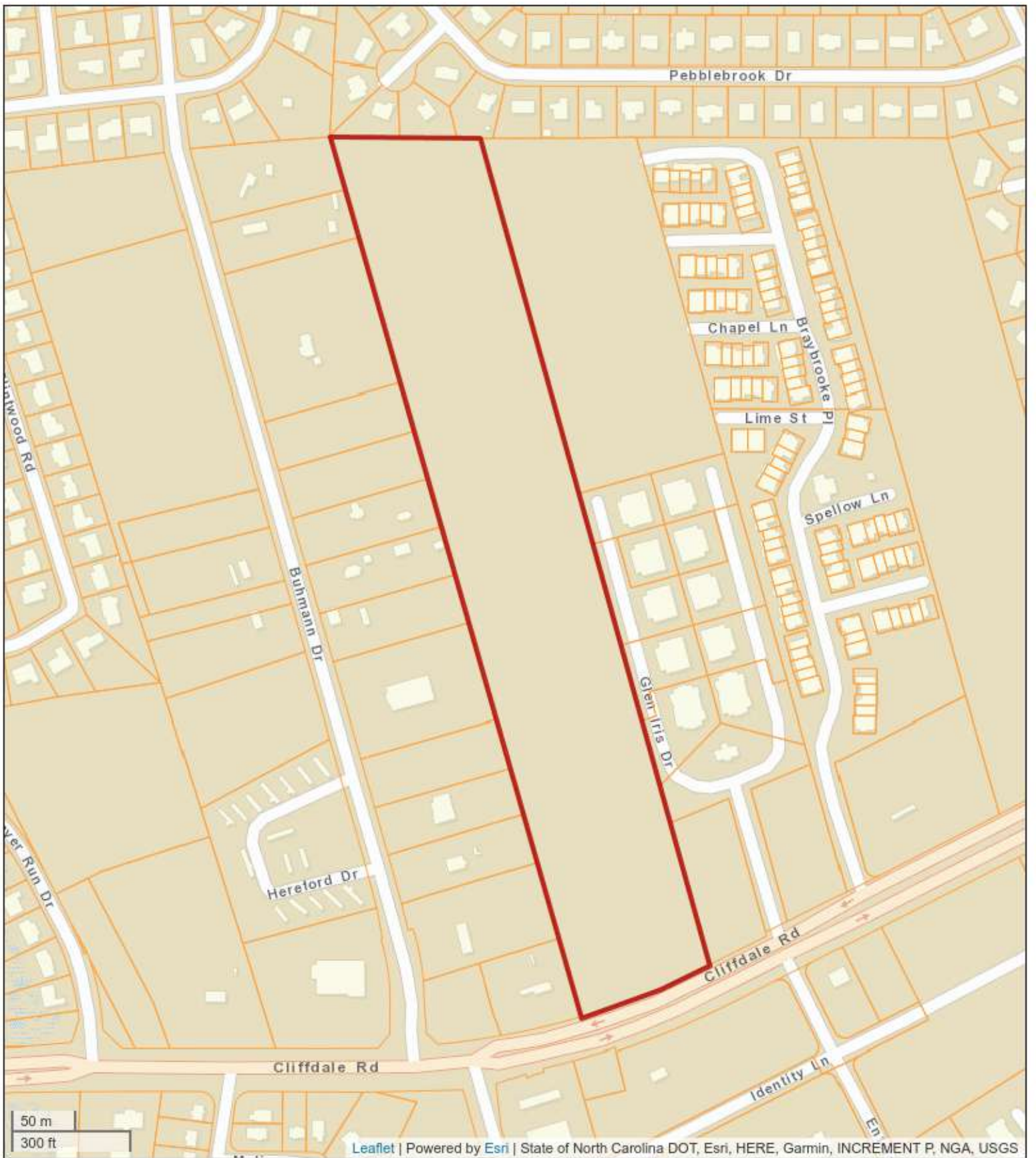




### Property Vicinity Map

Cliffdale Crossing  
8368 Cliffdale Road  
Fayetteville, NC 28314  
Project #: CK21-8848





**Property Plat/Parcel Map**

Cliffdale Crossing  
8368 Cliffdale Road  
Fayetteville, NC 28314  
Project #: CK21-8848



# **APPENDIX A: Property Photographs**



# Photographs



**APE-VE Map for Visual Effects and Photo Key**

Source: Google Earth 2021

— Undertaking



**Applicant's Name:** Smith Duggins Developers, LLC  
**Project Name:** Cliffdale Crossing  
**Nova Project Number:** CK21-8848

The following photographs were taken on September 27 and 28, 2021 unless otherwise noted.

1. View looking north from the center of the Subject Property.



2. View looking east from the center of the Subject Property.



3. View looking south from the center of the Subject Property.



4. View looking west from the center of the Subject Property.



5. View looking north from the southern portion of the Subject Property.



6. View looking east from the southern portion of the Subject Property.



7. View looking south from the southern portion of the Subject Property.



8. View looking west from the southern portion of the Subject Property.



9. View looking northwest from Cliffdale Road.



10. View looking west from Cliffdale Road.



11. View looking northwest to the Subject Property from Enforcement Drive.



12. View looking west-northwest to the Subject Property from Cliffdale Road at the edge of the APE.



13. View looking southeast to the Subject Property from Buhmann Drive at the edge of the APE.



14. View looking east-southeast to the Subject Property from Buhmann Drive.





15. View looking east to the Subject Property from Buhmann Drive.



16. View looking east-northeast to the Subject Property from Cliffdale Road from the edge of the APE.



17. View looking southwest to the Subject Property from Glen Iris Drive.



# **APPENDIX B-1: Aerial Photographs**



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# HISTORICAL AERIALS

**Project Property:** Cliffdale Crossing  
8368 Cliffdale Road  
Fayetteville NC 28314

**Project No:** CK21-8848

**Requested By:** Nova Group, GBC

**Order No:** 21101400310

**Date Completed:** October 18, 2021

Aerial Maps included in this report are produced by the sources listed above and are to be used for research purposes including a phase I report. Maps are not to be resold as commercial property. ERIS provides no warranty of accuracy or liability. The information contained in this report has been produced using aerial photos listed in above sources by ERIS Information Inc. (in the US) and ERIS Information Limited Partnership (in Canada), both doing business as 'ERIS'. The maps contained in this report do not purport to be and do not constitute a guarantee of the accuracy of the information contained herein. Although ERIS has endeavored to present information that is accurate, ERIS disclaims, any and all liability for any errors, omissions, or inaccuracies in such information and data, whether attributable to inadvertence, negligence or otherwise, and for any consequences arising therefrom. Liability on the part of ERIS is limited to the monetary value paid for this report.

**Environmental Risk Information Services**  
*A division of Glacier Media Inc.*  
1.866.517.5204 | [info@erisinfo.com](mailto:info@erisinfo.com) | [erisinfo.com](http://erisinfo.com)

<b>Date</b>	<b>Source</b>	<b>Scale</b>	<b>Comments</b>
1940	United States Air Force	1" = 500'	
1950	Army Mapping Service	1" = 500'	
1961	United States Air Force	1" = 500'	
1964	United States Air Force	1" = 500'	
1976	US Geological Survey	1" = 500'	
1983	National High Altitude Photography	1" = 500'	
1987	US Geological Survey	1" = 500'	
1993	US Geological Survey	1" = 500'	
1999	US Geological Survey	1" = 500'	
2005	National Agriculture Information Program	1" = 500'	
2006	National Agriculture Information Program	1" = 500'	
2008	National Agriculture Information Program	1" = 500'	
2010	National Agriculture Information Program	1" = 500'	
2012	National Agriculture Information Program	1" = 500'	
2014	National Agriculture Information Program	1" = 500'	
2020	National Agriculture Information Program	1" = 500'	

**Environmental Risk Information Services**

*A division of Glacier Media Inc.*

1.866.517.5204 | [info@erisinfo.com](mailto:info@erisinfo.com) | [erisinfo.com](http://erisinfo.com)

one inch



Order No:21101400310

**1940**

Project No.CK21-8848

Site Name.Cliffdale Crossing,8368 Cliffdale Road,Fayetteville,28314

Source:USAF

Scale:1" = 500'

Comment:



one inch



Order No:21101400310

**1950**

Project No.CK21-8848

Site Name.Cliffdale Crossing,8368 Cliffdale Road,Fayetteville,28314

Source:AMS

Scale:1" = 500'

Comment:



one inch



Order No:21101400310

**1961**

Project No.CK21-8848

Site Name.Cliffdale Crossing,8368 Cliffdale Road,Fayetteville,28314

Source:USAF

Scale:1" = 500'

Comment:





one inch



Order No:21101400310

**1964**

Project No CK21-8848

Site Name.Cliffdale Crossing,8368 Cliffdale Road,Fayetteville,28314

Source:USAF

Scale:1" = 500'

Comment:



one inch



Order No:21101400310

**1976**

Project No.CK21-8848

Site Name.Cliffdale Crossing,8368 Cliffdale Road,Fayetteville,28314

Source:USGS

Scale:1" = 500'

Comment:



one inch



Order No:21101400310

**1983**

Project No.CK21-8848

Site Name.Cliffdale Crossing,8368 Cliffdale Road,Fayetteville,28314

Source:NHAP

Scale:1" = 500'

Comment:



one inch



Order No:21101400310

**1987**

Project No.CK21-8848

Site Name.Cliffdale Crossing,8368 Cliffdale Road,Fayetteville,28314

Source:USGS

Scale:1" = 500'

Comment:





Order No:21101400310

**1993**

Project No.CK21-8848

Site Name.Cliffdale Crossing,8368 Cliffdale Road,Fayetteville,28314

Source:USGS

Scale:1" = 500'

Comment:

one inch



Order No:21101400310

**1999**

Project No.CK21-8848

Site Name.Cliffdale Crossing,8368 Cliffdale Road,Fayetteville,28314

Source:USGS

Scale:1" = 500'

Comment:



one inch



Order No:21101400310

**2005**

Project No.CK21-8848

Site Name.Cliffdale Crossing,8368 Cliffdale Road,Fayetteville,28314

Source:NAIP

Scale:1" = 500'

Comment:



one inch



Order No:21101400310

**2006**

Project No.CK21-8848

Site Name.Cliffdale Crossing,8368 Cliffdale Road,Fayetteville,28314

Source:NAIP

Scale:1" = 500'

Comment:





one inch



Order No:21101400310

**2008**

Project No.CK21-8848

Site Name.Cliffdale Crossing,8368 Cliffdale Road,Fayetteville,28314

Source:NALP

Scale:1" = 500'

Comment:



one inch



Order No:21101400310

**2010**

Project No.CK21-8848

Site Name.Cliffdale Crossing,8368 Cliffdale Road,Fayetteville,28314

Source:NAIP

Scale:1" = 500'

Comment:



one inch



Order No:21101400310

2012

Project No.CK21-8848

Site Name.Cliffdale Crossing,8368 Cliffdale Road,Fayetteville,28314

Source:NALP

Scale:1" = 500'

Comment:



one inch



Order No:21101400310

**2014**

Project No.CK21-8848

Site Name.Cliffdale Crossing,8368 Cliffdale Road,Fayetteville,28314

Source:NAIP

Scale:1" = 500'

Comment:



one inch



Order No:21101400310

**2020**

Project No.CK21-8848

Site Name.Cliffdale Crossing,8368 Cliffdale Road,Fayetteville,28314

Source:NALP

Scale:1" = 500'

Comment:



# APPENDIX B-2: Fire Insurance Maps



—  
FIRE  
INSURANCE  
**MAPS**

**Project Property:** Cliffdale Crossing  
8368 Cliffdale Road  
Fayetteville NC 28314

**Project No:** CK21-8848

**Requested By:** Nova Group, GBC

**Order No:** 21101400310

**Date Completed:** October 15, 2021

---

**Please note that no information was found for your site or adjacent properties.**

# APPENDIX B-3: City Directories





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CITY  
**DIRECTORY**

**Project Property:** *Cliffdale Crossing  
8368 Cliffdale Road  
Fayetteville, NC 28314*

**Project No:** *CK21-8848*

**Requested By:** *Nova Group, GBC*

**Order No:** *21101400310*

**Date Completed:** *October 15, 2021*

October 15, 2021  
RE: CITY DIRECTORY RESEARCH  
Cliffdale Crossing  
8368 Cliffdale Road Fayetteville, NC

Thank you for contacting ERIS for an City Directory Search for the site described above. Our staff has conducted a reverse listing City Directory search to determine prior occupants of the subject site and adjacent properties. We have provided the nearest addresses(s) when adjacent addresses are not listed. If we have searched a range of addresses, all addresses in that range found in the Directory are included.

Note: Reverse Listing Directories generally are focused on more highly developed areas. Newly developed areas may be covered in the more recent years, but the older directories will tend to cover only the "central" parts of the city. To complete the search, we have either utilized the ACPL, Library of Congress, State Archives, and/or a regional library or history center as well as multiple digitized directories. These do not claim to be a complete collection of all reverse listing city directories produced.

ERIS has made every effort to provide accurate and complete information but shall not be held liable for missing, incomplete or inaccurate information. To complete this search we used the general range(s) below to search for relevant findings. If you believe there are additional addresses or streets that require searching please contact us at 866-517-5204.

**Search Criteria:**

8200-8400 of Cliffdale Road  
all of Buhmann Drive

**Search Results Summary**

Date	Source	Comment
2020	DIGITAL BUSINESS DIRECTORY	
2016	DIGITAL BUSINESS DIRECTORY	
2012	DIGITAL BUSINESS DIRECTORY	
2008	DIGITAL BUSINESS DIRECTORY	
2006	POLKS	
2002	POLKS	
1997	POLKS	
1991	POLKS	
1987	POLKS	
1981	HILLS	
1977	HILLS	
1973	HILLS	
1969	HILLS	
1965	HILLS	
1960	HILLS	
1954	HILLS	
1951	HILLS	
1946	HILLS	
1941	HILLS	
1937	HILLS	

239 CAROLINA PET CARE SVC INC...*Pet Shops*

8200 CHUBB'S NEARLY NEW APPLIANCES...*Appliances-household-small-wholesale*  
8200 CLIFFDALE MART & TOBACCO...*Cigar Cigarette & Tobacco Dealers-retail*  
8200 EXPERIENCE BEAUTY WELLNESS...*Barbers*  
8200 HAIR I AM NATURAL HAIR CARE SA...*Beauty Salons*  
8200 HAIR I AM NATURAL HAIR CARE SA...*Beauty Salons*  
8200 NITA'S GRILL DELI...*Restaurants*  
8215 BUDGET TRUCK RENTAL...*Truck Renting & Leasing*  
8215 U-HAUL NEIGHBORHOOD DEALER...*Truck Renting & Leasing*  
8385 ALBEMARLE OIL CO...*Oil & Gas Producers*  
8385 DAIRY QUEEN...*Ice Cream Parlors*

NO LISTING FOUND FOR THIS YEAR...

- 8200 **BERNIE'S MODEST APPAREL**...Apparel & Garments-retail
- 8200 **CHUBB'S NEARLY NEW APPL RPR**...Household Appls Elctrc Hswrs/cnsmr Elctro Whlsrs
- 8200 **CLIFFDALE MART & TOBACCO**...Cigar Cigarette & Tobacco Dealers-retail
- 8200 **HAIR I AM NATURAL HAIR CARE SA**...Beauty Salons
- 8200 **OLD LARRY'S IRISH PUB**...Bars
- 8200 **YONG BEAUTY SUPPLY**...Beauty Salons-equipment & Supls (whls)
- 8215 **ATM**...Automated Teller Machines
- 8215 **BUDGET TRUCK RENTAL**...Truck Renting & Leasing
- 8215 **U-HAUL NEIGHBORHOOD DEALER**...Truck Renting & Leasing
- 8215 **V P C OF FAYETTEVILLE**...Truck Renting & Leasing
- 8385 **DAIRY QUEEN**...Ice Cream Parlors
- 8385 **DAIRY QUEEN**...Oil & Gas Producers

NO LISTING FOUND FOR THIS YEAR...

- 8200 CLIFFDALE MART & TOBACCO...*Cigar Cigarette & Tobacco Dealers-retail*
- 8200 KEY WEST TANNING SALON...*Tanning Salons*
- 8200 OLD LARRY'S IRISH PUB...*Bars*
- 8200 VISION OF COMICS & CARDS...*Comic Books*
- 8200 YONG BEAUTY SUPPLY...*Beauty Salons-equipment & Supls (whls)*
- 8215 US MINI MART...*Convenience Stores*

NO LISTING FOUND FOR THIS YEAR...

8200 **EDGE IT UP INC...***Barber Shop*  
8200 **MUNCHIES...***Restaurants*  
8200 **TIGER TANNING...***Tanning Salons*  
8200 **TIGER VIDEO 2...***Video Tapes Discs & Cassettes*  
8200 **YONG BEAUTY SUPPLY...***Beauty Salons-equipment & Supls (whol)*  
8215 **PANTRY...***Convenience Stores*  
8215 **QUICK STOP...***Ret Groceries Gasoline Service Station*  
8215 **SEI ENVIRONMENTAL...***Environmental & Ecological Services*

Fayetteville, NC (2830, )

**BUHMANN DR Cont'd**  
 238 Scott Rodney L & Anna L [11]▲  
 .....910-860-4792  
 239 Wagnon Gregory D [4]▲  
 .....910-868-2709  
 Wagnon Jennifer R .....910-868-2709  
 242 Lyons Donovan J Sr & Darlena V [11]▲  
 .....910-868-4157  
 243 Bailing Timothy J & Colleen M [8]▲  
 .....910-868-8762  
 246 Calhoun Larry B & Bianca A  
 .....910-487-5266  
 247 Usnick Robert S & Kristen [4]▲  
 .....910-868-4157  
 250 Woolfolk Larry P & Angela [12]▲  
 251 Gungley Raymond E▲  
 .....910-864-1789  
 254 Galloway Cyrus L [11]▲  
 Galloway Angela J  
 255 McGuire Bardrick L & Judy K [11]▲  
 .....910-860-4973  
 258 Foltum Susan H [8]▲  
 .....910-867-9402  
 Foltum Shawn A .....910-867-9402  
 259 Swill Melissa R [2]▲ .....910-867-8480  
 262 Horton Manton Jr [10]▲  
 Horton Chalet D  
 263 Dillard Yvonne E [10]▲  
 266 White James E [11]▲ .....910-487-5168  
 White Imelda C .....910-487-5168  
 267 Jackson Christopher C [8]▲  
 .....910-826-4999  
 270 Booker Willa M  
 Covington Melody & Larry D [8]▲  
 271 Ratcliffe Robert W [2]▲  
 .....910-868-1460  
 Ratcliffe Jennifer A .....910-868-1460  
 274 Yarbrough Lashawn A [2]▲  
 .....910-867-8663  
 278 Snefield Geraldine A [7]▲  
 .....910-864-2383  
 279 Vanyo Keith S [2]▲  
 Vanyo Tina A  
**+ HERFORD DR BEGINS**  
 375 Hemingway Herman B Jr [20]▲  
 .....910-868-6156  
 385 Edington Sarah [2]▲  
 Edington Lei L  
 385 Hemingway H B [8]▲  
 386 Taylor Kevin C [7]▲ .....910-860-5460  
 397 Carver Geraldine H [21]▲  
 .....910-867-9006  
 400 K & K MOBILE HOME MOVERS  
 mobile homes- transporting  
 McCabe Cecil E [10]▲  
 .....910-868-5400  
 McCabe Ines T .....910-868-5400  
 405 Cook Mary A [10]▲  
**+ ELKHORN DR INTERSECTS**  
 415 Farmer Roy [8]▲ .....910-867-7664  
 485 Wagner Eric J [8]▲  
 487 Anderson Johnathan A [7]▲  
 Sinckland Natalie A [6]▲  
 494 Anderson Jonathan A [27]▲  
**+ SOUTHBEND DR ENDS**  
**BUSINESSES 1 HOUSEHOLDS 35**

**BUJE AVE (HOPE MILLS)-FROM 451 LEGION  
 RD NORTHWEST**  
**\* ZIP CODE 28348 CAR-RT R005**  
 806 Simmons Odis B & Rachel R [7]▲  
 807 Jackson Grady F [8]▲  
**+ WOOLARD DR BEGINS**  
**HOUSEHOLDS 2**

**BUJE CT (FAYETTEVILLE)-FROM 3211  
 PLAYER AVE SOUTH**  
**\* ZIP CODE 28304 CAR-RT C023**  
 404 Mabe Larry E & Eva W [20]▲  
 405 No Current Listing  
 406 Harley Natasha  
 407 Core Florid J [4]▲ .....910-484-3523  
 408 Larocca Salvatore [2]▲  
 .....910-484-8865  
 Larocca Sam .....910-484-8865  
 409 Overman John B & Mavis W [13]▲  
 .....910-323-1758  
**OVERMANN SERVICE CO heating  
 contractors** .....910-323-4946  
 410 Harris Leila C & Robert M [23]▲  
 .....910-484-0372  
 411 Bertini Nancy C  
 Bertini John C  
 Nelson Troy W & Peggy S [4]▲  
 .....910-484-6651  
 412 Shoemaker Walter F & Margaret L  
 [20]▲ .....910-484-9742  
 413 Spillman James A Jr [30]▲  
 .....910-485-6473  
 414 Spears Kennia L [8]▲  
 .....910-484-1342

**BUFF CIR Cont'd**  
 100 Green Kimberly S [8]▲ .....910-960-1818  
 102 Kuhnert David J & Cynthia E [2]▲  
 .....910-436-1159  
 104 Pilz Rochelle  
 106 Gerbing Andreas & Kristina C [8]▲  
 .....910-436-6958  
 108 Martinez David [2]▲ .....910-436-2953  
 110 Cummings Colin E [2]▲  
 .....910-436-0195  
 Cummings Desiree .....910-436-0195  
 112 Liran Gerson R .....910-436-0195  
**+ LE BLANC ST ENDS**  
**+ N LUCAS DR BEGINS**

**HOUSEHOLDS 7**

**BUFFALO ST (FAYETTEVILLE)-FROM 5559  
 BRAGG BLVD WEST**  
**\* ZIP CODE 28303 CAR-RT C054**  
 102 Duckworth Eric R [30]▲  
 Duckworth Charles B  
 109 Gill Vallis .....910-487-9951  
 110 No Current Listing  
 111 Burrows Adrain .....910-213-2654  
 Sincell Robbie K  
**+ RAILROAD CROSSES**  
 116 Sumes Latasha M▲  
**HOUSEHOLDS 6**

**BUFFALOBERRY PL (FAYETTEVILLE)-FROM  
 5851 PEPPERBUSH DR**  
**\* ZIP CODE 28304 CAR-RT R008**  
 2200 Singleton Richard & Valerie F [13]▲  
 .....910-717-6313  
 2201 Alf Janet M [2]▲  
 2204 Johnson Ronald M & Gloria M [8]▲  
 .....910-426-3823  
 2205 Baxendale Michael B Jr [8]▲  
 Baxendale Katrina  
 2208 Lewis Paulette G [8]▲  
 .....910-424-1614  
**HOUSEHOLDS 5**

**BUFORD CT (FAYETTEVILLE)**  
**\* ZIP CODE 28314 CAR-RT R011**  
 1415 Souza Mary E  
 1419 Powell Bonita G [2]▲  
 1424 Holt Gloria  
 Holt Martin Albert W  
 Means Chang S  
 1425 Pena Jesus▲  
**HOUSEHOLDS 6**

**BUGLE CALL DR (FAYETTEVILLE)-FROM 8403  
 ENGLISH SADDLE DR SOUTHEAST**  
**\* ZIP CODE 28314 CAR-RT R029**  
 902 Pugh Anthony C Jr & Pertina D [8]▲  
 904 Wyatt Valerie D [8]▲ .....910-868-3922  
 908 Lawson Joyce A [3]▲ .....910-860-8885  
 912 Rosas Jorge E [8]▲  
 Rosas Patricia M  
 913 Edmundson Mearthur & Shirley D [8]▲  
 .....910-864-8767  
 916 Ellis Stanley A [7]▲  
 Ellis Stanisha E  
 917 Harris Venesslea [8]▲  
 .....910-860-9717  
**+ JUDY DR ENDS**  
**+ FRENCH HORN DR ENDS**  
 1000 Covington William D & Diana M [2]▲  
 .....910-867-1908  
 1004 Turner Alphonse Jr & Robert T [8]▲  
 .....910-487-0100  
 1008 Rush Dale J [8]▲ .....910-864-4983  
 1009 Copes Timothy M & Toni L [8]▲  
 .....910-864-1278  
 1012 Drake Zebede J Jr [2]▲  
 Drake Sharon L  
 1013 Dupont John H [2]▲ .....910-858-1394  
 1016 Miles Brian T & Yvonne [8]▲  
 .....910-867-5674  
 1017 - 1020 No Current Listing (2 Hses)  
 1021 Brockman John F [2]▲  
 Brockman Jill  
 1024 Adams Christopher T & Kristina A  
 [4]▲ .....910-867-0713  
 1025 King Ernest & Estelle▲  
 .....910-426-2222  
 1028 Carswell Earnest J Jr & Gwendolyn  
 B [8]▲ .....910-487-5450  
**+ DEERTROT DR INTERSECTS**  
**HOUSEHOLDS 20**

**BUHMANN DR (FAYETTEVILLE)-FROM 7499  
 BEAVER RUN DR**  
**+ CLIFFDALE RD CONTINUES**  
**\* ZIP CODE 28314 CAR-RT R028**  
 225 McGovern Mark T [4]▲ .....910-867-6303  
 McGovern Monique .....910-867-6303

**CLIFFDALE RD Cont'd**  
 122 LIBERTY INCOME TAX tax  
 return preparation/filing  
 .....910-487-8377  
**\* ZIP CODE 28314 CAR-RT R041**  
 8191 KANGAROO EXPRESS  
 convenience stores ..910-867-1465  
**\* ZIP CODE 28314 CAR-RT R045**  
 8200 MUNCHIES restaurants  
 .....910-864-6455  
 TIGER TANNING tanning salons  
 .....910-867-3105  
 YONG BEAUTY SUPPLY beauty  
 salons- equip/supl ..910-487-4510  
 8215 SEI ENVIRONMENTAL envmntl &  
 ecolgcl serv .....910-864-7466  
 8270 - 8292 Pate Stephen V (2 Hses)  
 [38]▲  
**+ RIM RD INTERSECTS**  
 8363 Pate Ethel E [16]▲ .....910-868-1443  
 8383 Eaty Preston  
 8384 Sessoms Horace G Jr [20]▲  
 Sessoms Homes G  
 8464 Warren Margaret C [14]▲  
 .....910-867-1593  
 8489 Joseph Jeffrey R [11]▲  
 .....910-864-4691  
 Joseph Jeanette B ..910-864-4691  
**+ BRANCHWOOD CIR INTERSECTS**  
**+ BUHMANN DR INTERSECTS**  
 8555 Kang Tae W [4] .....910-868-4533  
 Kang Yoon .....910-868-4533  
 8581 Zagaschtoko Markus H [4]▲  
 Zagaschtoko Gabriele  
**+ TYLER DR INTERSECTS**  
 8615 Askew Malcolm H Jr & Florence G  
 [24]▲ .....910-867-4523  
**+ BEAVER RUN DR BEGINS**  
 8621 No Current Listing  
**+ BEAVER RUN DR BEGINS**  
 8643 Jackson Zeb D & Mary W [13]▲  
 .....910-867-8430

**TRUCK & TRAILER**

**BUFFALO ST Cont'd**  
 110 Sherman William H [H] ..910-867-0356  
 111 Ruiz George P Jr [H] ..910-487-0942  
 \*RAILROAD CROSSES  
 116 Not Verified HOUSEHOLDS 6

**BUFFALO GERRY PL (FAYETTEVILLE)-FROM**  
 5851 PEPPERBUSH DR  
 \*BP CODE 28304 CAR-RT R008  
 2200 Singleton Richard & Valerie F [H] [H] ..910-425-8248  
 ..910-425-9157  
 2201 [H] Stone William ..910-426-3623  
 2204 Johnson Ronald M & Gloria [H] [H]  
 2205 Deheer Jonathan B [H] ..910-423-7772  
 2208 Lewis Charmaine M ..910-424-1614  
 Lewis Paulette G [H] ..910-424-1614  
 HOUSEHOLDS 5

**BUOLE CALL DR (FAYETTEVILLE)-FROM 6595**  
 ENGLISH SADDLE DR SOUTHEAST  
 \*ZIP CODE 28314 CAR-RT R045  
 902 Pugh Althea D  
 Pugh Anthony C Jr [H] [H] ..910-764-1020  
 904 Peterson Will & Wilburn A [H] [H]  
 908 Skidman Arthur [H] [H] ..910-860-8885  
 Skidman J A ..910-860-8885  
 912 [H] Rosas Jorge E ..910-860-8885  
 Rosas Patricia M  
 913 Jackson Kenneth L & Tanya S [H] [H]  
 917 Harris Vanessa ..910-860-9717  
 [H] Masade Archibald G  
 \*JUDY DR ENDS  
 \*FRENCH HORN DR ENDS  
 1004 [H] Tamer Alphonse ..910-487-0100  
 1008 [H] Rush Dale ..910-864-4983  
 1016 [H] Miles Brian & Yvonne ..910-867-5674  
 1017 [H] Jimenez Edgardo & Yolanda ..910-867-7292  
 1028 Carswell Earnest J Jr & Gwendolyn B [H] [H] ..910-487-5450  
 \*DETROIT DR INTERSECTS  
 HOUSEHOLDS 12

**BIRMAN DR (FAYETTEVILLE)-FROM 8401**  
 HEREFORD DR NORTH  
 \*CLIFFDALE RD CONTINUES  
 \*ZIP CODE 28314 CAR-RT R028  
 225 Sadowski Linda A [H] [H]  
 238 Scott Rodney L & Anna L [H] [H] ..910-860-4792  
 239 Duane Michael R & Cindy L [H] [H] ..910-860-2908  
 242 Lyons Donovan J Sr & Darlene V [H] [H]  
 243 Thomas T ..910-764-2186  
 Thomas Vicky [H] [H] ..910-764-2186  
 246 Scuggs Pamela H [H] [H] ..910-860-3076  
 247 Not Verified  
 250 Woolfox Larry P & Frances P [H] [H]  
 251 Not Verified  
 254 Gatloway Angela J [H] [H]  
 255 McGuire Bardrick L & Judy K [H] [H] ..910-860-4973  
 256 [H] Folum Shawn A ..910-867-9402  
 Folum Susan ..910-867-9402  
 259 Not Verified  
 262 [H] Horton Mantlon ..910-867-9402  
 Horton Tangle  
 263 Dilard Yvonne E [H] [H]  
 266 White Imelda C ..910-487-5168  
 White James E [H] [H] ..910-487-5168  
 267 Jackson Christophe C [H] [H] ..910-826-4999  
 270 Not Verified  
 271 Rachtke Jennifer A ..910-868-1460  
 [H] Rachtke Robert W ..910-868-1460  
 274 [H] Fred M [H] [H] ..910-860-7070  
 Hill Kelley M ..910-860-7070  
 278 Not Verified  
 279 Thompson James D & Dawn K [H] [H] ..910-860-2290  
 \*HEREFORD DR INTERSECTS  
 305 Hemingway Harman B Jr [H] [H]  
 306 McCabe Cecil E [H] [H] ..910-868-6156  
 307 Carver Sam P [H] [H] ..910-868-5400  
 400 K & K MOBILE HOME MOVERS  
 mobile homes-transporting  
 McCabe Ines T [H] [H] ..910-425-2955  
 405 Not Verified  
 415 [H] Farmer Roy ..910-867-7684  
 \*ELKHORN DR INTERSECTS  
 485 [H] Ward Chris ..910-867-6242  
 487 - 494 Not Verified (2 Hses)

**BUHMAN DR Cont'd**  
 \*SOUTHBEND DR INTERSECTS  
 BUSINESSES 1 HOUSEHOLDS 31

**BUIE AVE (HOPE MILLS)-FROM 451 LEGION**  
 RD NORTHWEST  
 \*ZIP CODE 28348 CAR-RT R002  
 807 Jackson James R [H] [H] \*  
 \*WOOLARD DR BEGINS  
 HOUSEHOLDS 1

**BUIE CT (FAYETTEVILLE)-FROM 3209**  
 PLAYER AVE SOUTH  
 \*ZIP CODE 28304 CAR-RT C023  
 404 Mabe Larry E & Eva W [H] [H]  
 405 Young David A [H] [H] ..910-433-2822  
 Young L ..910-433-2822  
 406 Not Verified  
 407 Core Charles M & Floried J [H] [H] ..910-484-3523  
 408 Larocca Salvatore ..910-484-8865  
 Larocca Sam [H] [H] ..910-484-8865  
 409 Overmann John B & Mavis C [H] [H] ..910-323-1758  
 410 Harris Robert M Jr & Lella C [H] [H]  
 411 Nelson Troy W & Peggy S [H] [H] ..910-484-6651  
 412 Shoemaker Walter F & Margaret L [H] [H] ..910-484-9742  
 413 Spittman James A Jr & Carolina L [H] [H] ..910-485-6473  
 414 Not Verified  
 415 Cahoon Floyd N & Marjona L [H] [H] ..910-484-7018  
 HOUSEHOLDS 12

**BUIE DR (LINDEN)-FROM 8783 RAMSEY ST**  
 EAST  
 \*ZIP CODE 28356 CAR-RT R002  
 108 Thompson Walter A [H] [H] ..910-488-7163  
 109 Johnson Emma B [H] [H]  
 124 [H] Williams Edna  
 125 - 133 Not Verified (2 Hses)  
 139 Jones Johnnie J [H] [H] ..910-822-1941  
 Jones Torrian E ..910-822-1941  
 146 King Robert L [H] [H] ..910-822-5255  
 206 [H] King Dwight & Gladys  
 HOUSEHOLDS 8

**BUIE RD (FAYETTEVILLE)-FROM 4601 NIX RD**  
 SOUTH  
 \*CAMPGROUND RD CONTINUES  
 \*NIX RD BEGINS

**BUKER ST (FORT BRAGG)-FROM 1349 9TH**  
 INFANTRY ST WEST  
 \*9TH INFANTRY ST ENDS  
 \*HETZLER ST ENDS  
 \*13TH ST BEGINS  
 \*14TH ST INTERSECTS

**BULITTLE DR (LINDEN)-FROM 8185**  
 GALWOOD DR  
 \*RAMSEY ST CONTINUES  
 \*ZIP CODE 28356 CAR-RT R003  
 144 Honeycutt Foy M ..910-488-2470  
 Honeycutt Haywood E [H] [H] ..910-488-2470  
 145 Pamell Larry M Sr & Barbara N [H] [H]  
 HOUSEHOLDS 2

**BULL RUN ST (FAYETTEVILLE)-FROM 1727**  
 SHILOH DR SOUTHWEST  
 \*ZIP CODE 28304 CAR-RT C077  
 200 A White Pamela T [H] [H] ..910-423-7011  
 B Nichols Donald L Jr [H] [H] ..910-426-9007  
 C Chavis Jerry [H] [H] ..910-426-3308  
 204 Graves Henry W [H] [H] ..910-426-9537  
 D [H] Redding Tabitha ..910-423-8968  
 208 Leonard Tiffany [H] [H] ..910-423-8968  
 A [H] Sanders Karen K  
 B [H] Gibson Krystal J  
 HOUSEHOLDS 8

**BULLARD CIR (FAYETTEVILLE)-FROM 201**  
 DIAMOND POINT TRL NORTHWEST  
 \*RAMSEY ST CONTINUES  
 \*ZIP CODE 28311 CAR-RT R017  
 155 - 173 Not Verified (2 Hses)  
 181 Tew S J [H] [H] ..910-482-3393  
 186 Not Verified  
 200 Nettles Kenneth L Jr [H] [H] ..910-488-1346  
 Nettles Kristin R ..910-488-1346  
 210 [H] Raduziner Paul B & Monique R ..910-822-3235  
 215 Anderson Gwendolyn M [H] [H] ..910-480-9982  
 220 Not Verified  
 225 Johnson Margareta K [H] [H] ..910-822-5413  
 \*VANN ST BEGINS  
 237 Not Verified

**8175 C & J SEWING & CLEANERS**  
 alterations-clothing ..910-868-4627  
**CHIC HAIR INC** beauty salons  
 ..910-868-7161  
**FOOD LION INC** grocers-retail  
 ..910-864-1393  
**RUGRAT'S PLAYHOUSE** child  
 care serv ..910-487-8540  
**106 HERBERT TOWNES**  
**INSURANCE** insurance  
 ..910-487-4663  
**110 MING WEN LIN** restaurants  
 ..910-860-2288  
**113 DANCE CONNECTION**  
 dancing instruction ..910-487-6773  
**116 BASKET OF ROSES BY**  
**KAREN** florists-retail 910-868-7688  
**120 FANTASTIC NAILS** manicuring  
 ..910-867-9242  
**8191 PANTRY** convenience stores  
 ..910-867-1465  
**8270 Pate Prior P [H] [H]** ..910-867-1637  
**8292 Pate Stephen V [H] [H]** ..910-868-2259  
 \*RIM RD INTERSECTS  
**8363 Pate Ethel E [H] [H]** ..910-868-1443  
**8383 CLIFFDALE COMMUNITY**  
**CHURCH** churches ..910-860-3559  
**8384 Sessoms Horace G Jr [H] [H]**  
 Sessoms Homes G  
**8464 Warren Margaret C [H] [H]**  
 ..910-867-1593  
**8489 Joseph Jeanette B [H] [H]**  
 ..910-864-6974  
 Joseph Jeffrey R ..910-864-6974  
 B Santiago Joseph J [H] [H]  
 \*BRANCHWOOD CIR BEGINS  
**8533 Wallace Henry L Jr & Marie E [H] [H]**  
 ..910-867-8730  
 \*BUHMAN DR INTERSECTS  
**8555 Lee Jin A** ..910-868-1575  
 Lee Man H [H] [H] ..910-868-1575  
**8565 Not Verified**  
**8581 King Floyd E & Jennifer M [H] [H]**  
 ..910-867-0657  
 \*TYLER DR INTERSECTS  
**8615 Askew Malcolm H Jr & Florence G**  
 [H] [H] ..910-867-0622  
**8619 Not Verified**  
**8621 Askew Christopher S** 910-764-9360  
 Askew Katie [H] [H] ..910-764-9360  
 \*BEAVER RUN DR BEGINS  
**8643 Jackson Zeb D & Mary W [H] [H]**  
 ..910-867-8430



STREET NOT LISTED

**CLIFFDALE RD** *cont'd*

206 GLAMOUR NAILS manicure  
 ..... 860-0700  
 207 CLIFFDALE ANIMAL HOSPITAL  
 ..... 487-5013  
 212 KERR DRUGS ..... 867-8666  
 220 TAE KWON DO ..... 487-3522  
 221 BENEFICIAL NC INC financial servs  
 ..... 864-3177  
 222-224 VIDEO HUT ..... 868-7139  
 225 HAIR TOUCH BEAUTY SUPPLY  
 beauty sup ..... 487-5445  
 306 SMUGGLERS PIZZA & PASTA  
 ..... 867-9600  
 307 MINER PETS pet stores..... 867-1680  
 6900 Vacant  
 6910 WENDY'S OLD FASHIONED  
 HAMBURGERS ..... 487-6022  
 6916 Vacant  
 6920 PRUDENTIAL JOHN KOENIG RLTRS  
 ..... 868-1976  
 CAROLINA MORTGAGE CO OF  
 FAYETTEVILLE ..... 868-4300  
 8926 Poister Chaumi ..... 487-3403  
 BUSINESSES 56 HOUSEHOLDS 35

STREET NOT LISTED

NO LISTINGS IN RANGE

STREET NOT LISTED

NO LISTINGS IN RANGE

STREET NOT LISTED

NO LISTINGS IN RANGE

STREET NOT LISTED

NO LISTINGS IN RANGE

STREET NOT LISTED

NO LISTINGS IN RANGE

STREET NOT LISTED

NO LISTINGS IN RANGE

STREET NOT LISTED

NO LISTINGS IN RANGE



STREET NOT LISTED

NO LISTINGS IN RANGE

STREET NOT LISTED

STREET NOT LISTED

STREET NOT LISTED

STREET NOT LISTED

1946

SOURCE: HILLS

BUHMANN DRIVE

1946

SOURCE: HILLS

CLIFFDALE ROAD

STREET NOT LISTED

STREET NOT LISTED

STREET NOT LISTED

STREET NOT LISTED

STREET NOT LISTED

STREET NOT LISTED



# **APPENDIX B-4: Historical Topographic Maps**





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# TOPOGRAPHIC MAPS

**Project Property:** Cliffdale Crossing  
8368 Cliffdale Road  
Fayetteville NC 28314

**Project No:** CK21-8848

**Requested By:** Nova Group, GBC

**Order No:** 21101400310

**Date Completed:** October 15, 2021

We have searched USGS collections of current topographic maps and historical topographic maps for the project property. Below is a list of maps found for the project property and adjacent area. Maps are from 7.5 and 15 minute topographic map series, if available.

Year	Map Series
2016	7.5
1982	7.5
1976	7.5
1971	7.5
1950	7.5
1951	15
1948	15

**Topographic Map Symbology for the maps may be available in the following documents:**

*Pre-1947*

[Page 223 of 1918 Topographic Instructions](#)

[Page 130 of 1928 Topographic Instructions](#)

*1947-2009*

[Topographic Map Symbols](#)

*2009-present*

[US Topo Map Symbols](#)

Topographic Maps included in this report are produced by the USGS and are to be used for research purposes including a phase I report. Maps are not to be resold as commercial property.

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Order No. 21101400310

**2016**

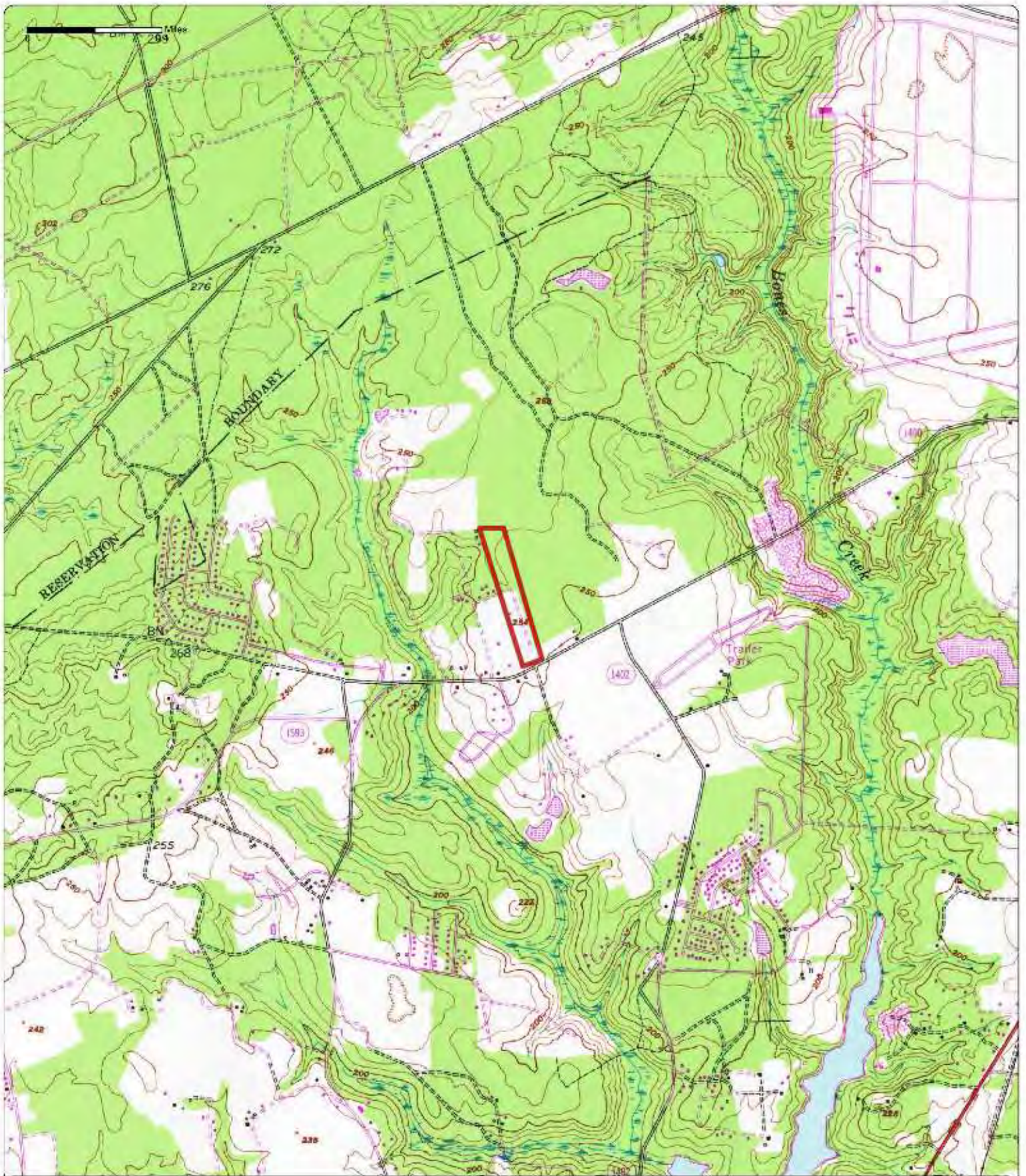
**Quadrangle(s): Cliffdale, NC**

Project No: CK21-8848

Site Name: Cliffdale Crossing, 8368 Cliffdale Road

Source: USGS 7.5 Minute Topographic Map





Order No. 21101400310

**1982**

(1)  
Aerial Photo Year: 1981  
Photo Revision Year: 1982

**Quadrangle(s): Clifdale, NC(1)**

Project No: CK21-8848

Site Name: Clifdale Crossing, 8368 Clifdale Road

Source: USGS 7.5 Minute Topographic Map





Order No. 21101400310

**1976** (1)  
Aerial Photo Year: 1976

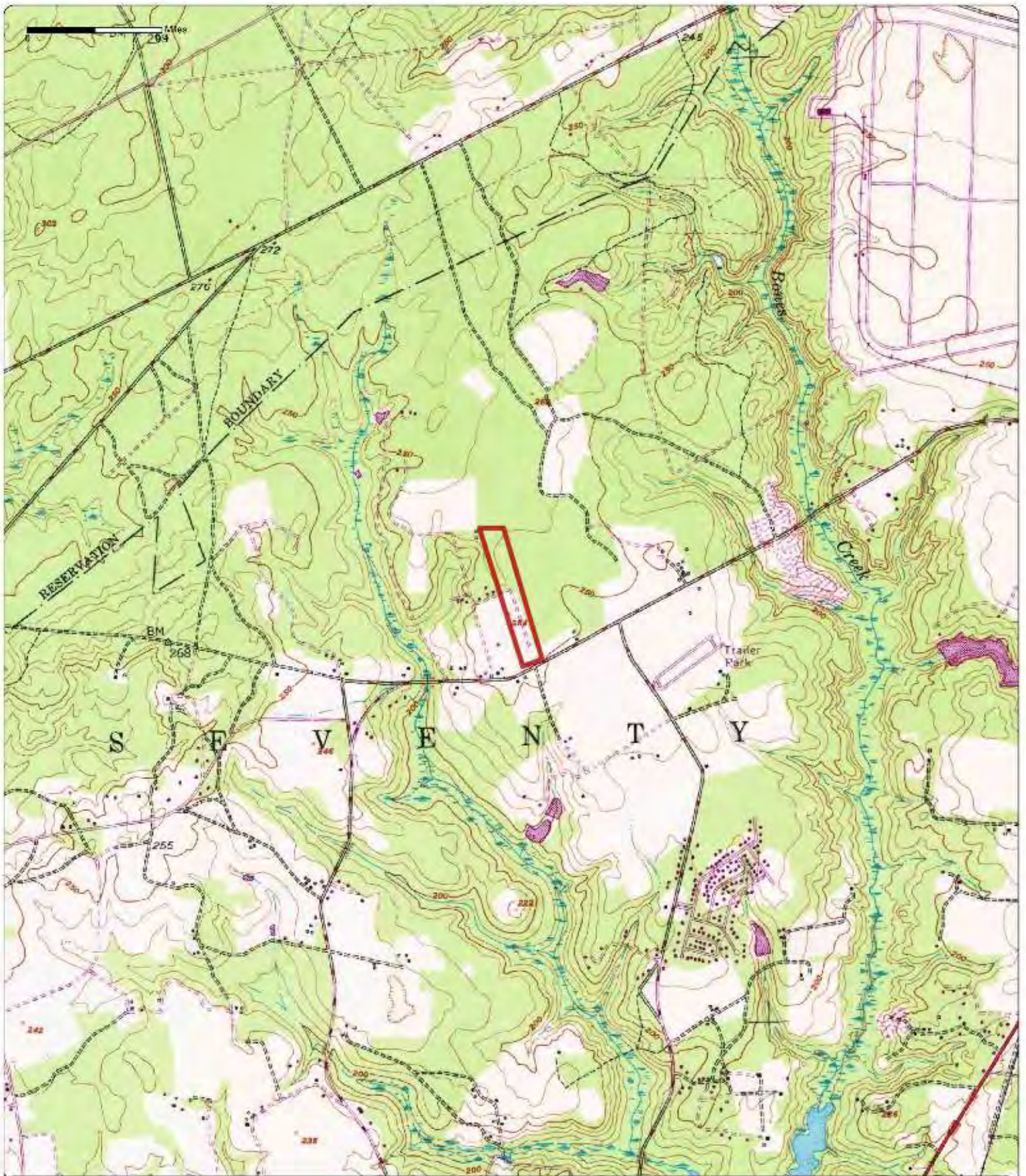
**Quadrangle(s): Clifdale, NC(1)**

Project No: CK21-8848

Site Name: Clifdale Crossing, 8368 Clifdale Road

Source: USGS 7.5 Minute Topographic Map





Order No. 21101400310

**1971**

<sup>(1)</sup>  
Aerial Photo Year: 1971  
Photo Revision Year: 1971

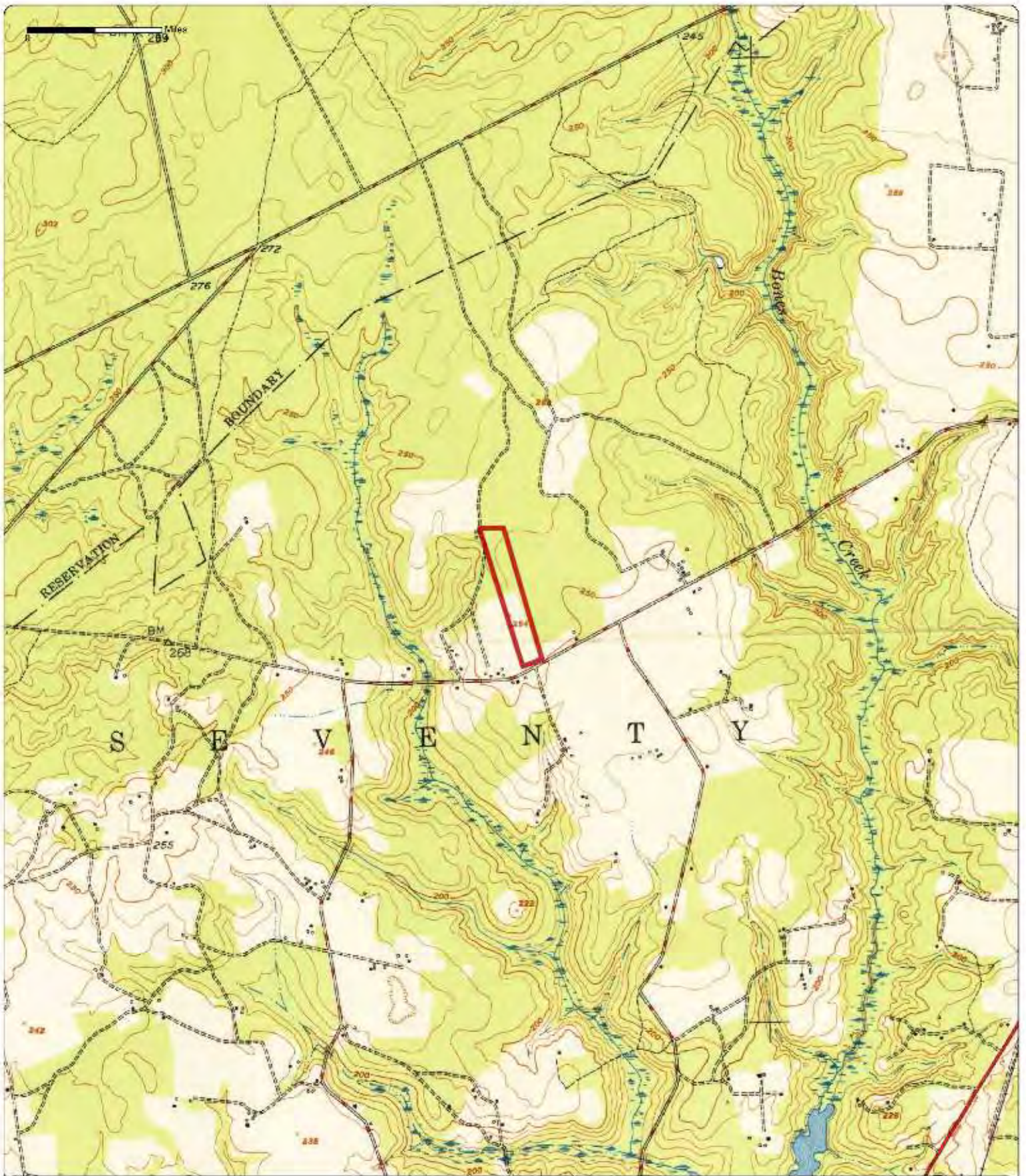
**Quadrangle(s): Clifdale, NC(1)**

Project No: CK21-8848

Site Name: Clifdale Crossing, 8368 Clifdale Road

Source: USGS 7.5 Minute Topographic Map





Order No. 21101400310

**1950**

<sup>(1)</sup>  
Aerial Photo Year: 1947

**Quadrangle(s): Clifdale, NC(1)**

Project No: CK21-8848

Site Name: Clifdale Crossing, 8368 Clifdale Road

Source: USGS 7.5 Minute Topographic Map





Order No. 21101400310

**1951**

<sup>(1)</sup>  
Aerial Photo Year: 1947

**Quadrangle(s): Clifdale, NC(1)**

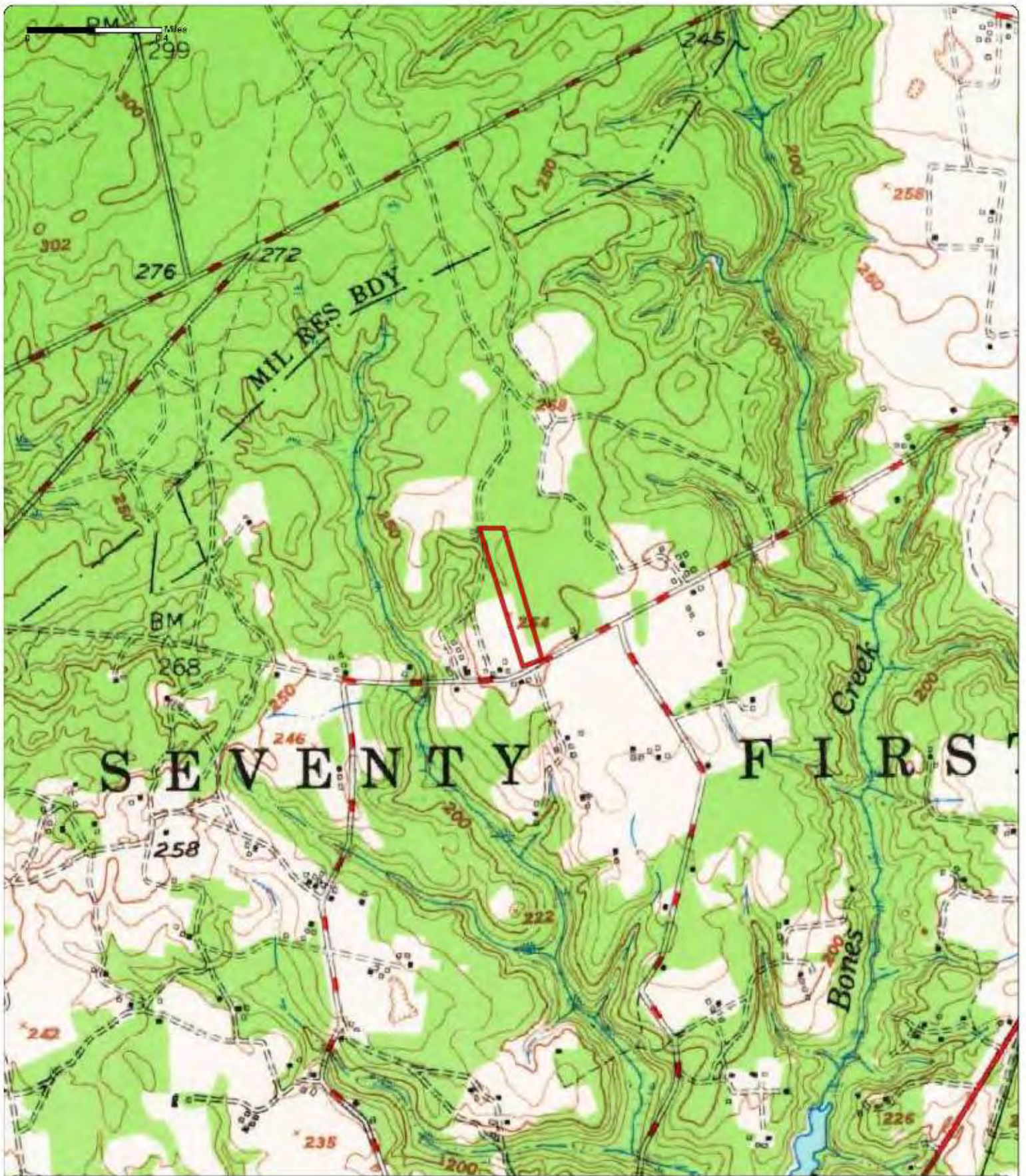
Project No: CK21-8848

Site Name: Clifdale Crossing, 8368 Clifdale Road

Source: USGS 15 Minute Topographic Map







Order No. 21101400310

**1948** <sup>(1)</sup>  
Aerial Photo Year: 1947

**Quadrangle(s):** Clifdale, NC(1)

Project No: CK21-8848

Site Name: Clifdale Crossing, 8368 Clifdale Road

Source: USGS 15 Minute Topographic Map



# **APPENDIX C-1: Regulatory Records - Mapped Database**



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# DATABASE REPORT

**Project Property:** *Cliffdale Crossing  
8368 Cliffdale Road  
Fayetteville NC 28314*

**Project No:** *CK21-8848*

**Report Type:** *Database Report*

**Order No:** *21101400310*

**Requested by:** *Nova Group, GBC*

**Date Completed:** *October 18, 2021*

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# Executive Summary

## Property Information:

**Project Property:** *Cliffdale Crossing  
8368 Cliffdale Road Fayetteville NC 28314*

**Project No:** *CK21-8848*

### **Coordinates:**

**Latitude:** *35.06032051*  
**Longitude:** *-79.0547604*  
**UTM Northing:** *3,881,462.57*  
**UTM Easting:** *677,387.66*  
**UTM Zone:** *UTM Zone 17S*

**Elevation:** *252 FT*

## Order Information:

**Order No:** *21101400310*  
**Date Requested:** *October 14, 2021*  
**Requested by:** *Nova Group, GBC*  
**Report Type:** *Database Report*

## Historicals/Products:

**Aerial Photographs** *Historical Aerials Photographs*  
**City Directory Search** *CD - 2 Street Search*  
**ERIS Xplorer** [\*ERIS Xplorer\*](#)  
**Excel Add-On** *Excel Add-On*  
**Fire Insurance Maps** *US Fire Insurance Maps*  
**Physical Setting Report (PSR)** *Physical Setting Report (PSR)*  
**Topographic Map** *Topographic Maps*  
**Vapor Screening Tool** *Vapor Screening Tool*

# Executive Summary: Report Summary

Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
<b>Standard Environmental Records</b>								
<b>Federal</b>								
DOE FUSRAP	Y	1	0	0	0	0	0	0
NPL	Y	1	0	0	0	0	0	0
PROPOSED NPL	Y	1	0	0	0	0	0	0
DELETED NPL	Y	0.5	0	0	0	0	-	0
SEMS	Y	0.5	0	0	0	0	-	0
ODI	Y	0.5	0	0	0	0	-	0
SEMS ARCHIVE	Y	0.5	0	0	0	0	-	0
CERCLIS	Y	0.5	0	0	0	0	-	0
IODI	Y	0.5	0	0	0	0	-	0
CERCLIS NFRAP	Y	0.5	0	0	0	0	-	0
CERCLIS LIENS	Y	PO	0	-	-	-	-	0
RCRA CORRACTS	Y	1	0	0	0	0	0	0
RCRA TSD	Y	0.5	0	0	0	0	-	0
RCRA LQG	Y	0.25	0	0	0	-	-	0
RCRA SQG	Y	0.25	0	0	0	-	-	0
RCRA VSQG	Y	0.25	0	0	0	-	-	0
RCRA NON GEN	Y	0.25	0	0	0	-	-	0
FED ENG	Y	0.5	0	0	0	0	-	0
FED INST	Y	0.5	0	0	0	0	-	0
LUCIS	Y	0.5	0	0	0	0	-	0
ERNS 1982 TO 1986	Y	PO	0	-	-	-	-	0
ERNS 1987 TO 1989	Y	PO	0	-	-	-	-	0
ERNS	Y	PO	0	-	-	-	-	0
FED BROWNFIELDS	Y	0.5	0	0	0	0	-	0
FEMA UST	Y	0.25	0	0	0	-	-	0
FRP	Y	0.25	0	0	0	-	-	0
HIST GAS STATIONS	Y	0.25	0	0	0	-	-	0

<b>Database</b>	<b>Searched</b>	<b>Search Radius</b>	<b>Project Property</b>	<b>Within 0.12mi</b>	<b>0.125mi to 0.25mi</b>	<b>0.25mi to 0.50mi</b>	<b>0.50mi to 1.00mi</b>	<b>Total</b>
REFN	Y	0.25	0	0	0	-	-	0
BULK TERMINAL	Y	0.25	0	0	0	-	-	0
SEMS LIEN	Y	PO	0	-	-	-	-	0
SUPERFUND ROD	Y	1	0	0	0	0	0	0
<b>State</b>								
SHWS	Y	1	0	0	0	0	0	0
LUST TRUST	Y	0.5	0	0	1	0	-	1
DELISTED SHWS	Y	1	0	0	0	0	0	0
SWF/LF	Y	0.5	0	2	0	0	-	2
OLD LF	Y	0.5	0	0	0	0	-	0
COAL ASH LF	Y	0.5	0	0	0	0	-	0
LUST	Y	0.5	0	0	1	1	-	2
HSDS	Y	1	0	0	0	0	0	0
LAST	Y	0.5	0	0	0	0	-	0
DELISTED LST	Y	0.5	0	0	0	0	-	0
UST	Y	0.25	0	1	1	-	-	2
AST	Y	0.25	0	0	0	-	-	0
TANK	Y	0.25	0	0	0	-	-	0
DTNK	Y	0.25	0	0	0	-	-	0
SOIL REM PERMITS	Y	0.25	0	0	0	-	-	0
INST	Y	0.5	0	0	0	0	-	0
LUR	Y	0.5	0	0	1	0	-	1
FUEL STATIONS	Y	0.25	0	1	0	-	-	1
DELISTED FSS	Y	0.25	0	0	0	-	-	0
VCP	Y	0.5	0	0	0	0	-	0
BROWNFIELDS	Y	0.5	0	0	0	0	-	0
<b>Tribal</b>								
INDIAN LUST	Y	0.5	0	0	0	0	-	0
INDIAN UST	Y	0.25	0	0	0	-	-	0
DELISTED ILST	Y	0.5	0	0	0	0	-	0
DELISTED IUST	Y	0.25	0	0	0	-	-	0

**County**

**No County standard environmental record sources available for this State.**

**Additional Environmental Records**

<i>Database</i>	<i>Searched</i>	<i>Search Radius</i>	<i>Project Property</i>	<i>Within 0.12mi</i>	<i>0.125mi to 0.25mi</i>	<i>0.25mi to 0.50mi</i>	<i>0.50mi to 1.00mi</i>	<i>Total</i>
<b>Federal</b>								
PFAS NPL	Y	0.5	0	0	0	0	-	0
FINDS/FRS	Y	PO	0	-	-	-	-	0
TRIS	Y	PO	0	-	-	-	-	0
PFAS TRI	Y	0.5	0	0	0	0	-	0
PFAS WATER	Y	0.5	0	0	0	0	-	0
HMIRS	Y	0.125	0	0	-	-	-	0
NCDL	Y	0.125	0	0	-	-	-	0
TSCA	Y	0.125	0	0	-	-	-	0
HIST TSCA	Y	0.125	0	0	-	-	-	0
FTTS ADMIN	Y	PO	0	-	-	-	-	0
FTTS INSP	Y	PO	0	-	-	-	-	0
PRP	Y	PO	0	-	-	-	-	0
SCRD DRYCLEANER	Y	0.5	0	0	0	0	-	0
ICIS	Y	PO	0	-	-	-	-	0
FED DRYCLEANERS	Y	0.25	0	0	0	-	-	0
DELISTED FED DRY	Y	0.25	0	0	0	-	-	0
FUDS	Y	1	0	0	0	0	0	0
FORMER NIKE	Y	1	0	0	0	0	0	0
PIPELINE INCIDENT	Y	PO	0	-	-	-	-	0
MLTS	Y	PO	0	-	-	-	-	0
HIST MLTS	Y	PO	0	-	-	-	-	0
MINES	Y	0.25	0	0	0	-	-	0
SMCRA	Y	1	0	0	0	0	0	0
MRDS	Y	1	0	0	0	0	1	1
URANIUM	Y	1	0	0	0	0	0	0
ALT FUELS	Y	0.25	0	0	0	-	-	0
SSTS	Y	0.25	0	0	0	-	-	0
PCB	Y	0.5	0	0	0	0	-	0
<b>State</b>								
DRYC CLEANUP	Y	0.5	0	0	0	2	-	2
DRYCLEANERS	Y	0.25	0	0	0	-	-	0
DELISTED DRYCLEANERS	Y	0.25	0	0	0	-	-	0
SPILLS	Y	0.125	0	0	-	-	-	0
MGP	Y	1	0	0	0	0	0	0



Database	Searched	Search Radius	Project Property	Within 0.12mi	0.125mi to 0.25mi	0.25mi to 0.50mi	0.50mi to 1.00mi	Total
PFAS	Y	0.5	0	0	0	0	-	0
SWRCY	Y	0.5	0	0	0	0	-	0
HAZ	Y	0.25	0	0	0	-	-	0
SDTF	Y	0.125	0	0	-	-	-	0
TIER 2	Y	0.125	0	0	-	-	-	0
UIC	Y	PO	0	-	-	-	-	0
FEEDLOTS	Y	0.5	0	0	0	0	-	0
AIR PERMIT	Y	0.25	0	0	0	-	-	0

**Tribal** *No Tribal additional environmental record sources available for this State.*

**County** *No County additional environmental record sources available for this State.*

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**Total:** 0 4 4 3 1 12

\* PO – Property Only

\* 'Property and adjoining properties' database search radii are set at 0.25 miles.

## Executive Summary: Site Report Summary - Project Property

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Direction</i>	<i>Distance (mi/ft)</i>	<i>Elev Diff (ft)</i>	<i>Page Number</i>
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No records found in the selected databases for the project property.

## Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Elev Diff (ft)	Page Number
<a href="#">1</a>	SWF/LF	D.C. Carter Septic Tank Services	708 Mayflower Court NC	NNW	0.03 / 143.13	4	<a href="#">19</a>
<a href="#">1</a>	SWF/LF	D.C. Carter Septic Tank Service	708 Mayflower Court; Fayetteville NC	NNW	0.03 / 143.13	4	<a href="#">19</a>
<a href="#">2</a>	UST	ALCO FOOD STORE #33	8385 CLIFFDALE ROAD FAYETTEVILLE NC 28314  <i>Facility ID:</i> 00-0-0000037127 <i>Tank ID   Tank Status:</i> 2B   Current, 2A   Current, 1   Current	S	0.03 / 184.43	-4	<a href="#">20</a>
<a href="#">2</a>	FUEL STATIONS	Alco #33	8385 Cliffdale Rd. Fayetteville NC 28314	S	0.03 / 184.43	-4	<a href="#">21</a>
<a href="#">3</a>	LUST	THE PANTRY 3031 (DBA QUICK STOP)	8215 CLIFFDALE ROAD FAYETTEVILLE NC 283145851 <i>Incident No:</i> 22150 <i>Incid Phase Desc:</i> Close Out	ESE	0.23 / 1,237.30	-7	<a href="#">21</a>
<a href="#">3</a>	LUST TRUST	Pantry #3031	8215 Cliffdale Road Fayetteville NC  <i>Incident No   Facility ID:</i> 22150   0-028888	ESE	0.23 / 1,237.30	-7	<a href="#">27</a>
<a href="#">3</a>	UST	PANTRY 3031 DBA QUICK STOP	8215 CLIFFDALE FAYETTEVILLE NC 28303  <i>Facility ID:</i> 00-0-0000028888 <i>Tank ID   Tank Status:</i> 2   Removed, 3   Removed, 1   Removed	ESE	0.23 / 1,237.30	-7	<a href="#">27</a>
<a href="#">3</a>	LUR	THE PANTRY 3031 (DBA QUICK STOP)	8215 CLIFFDALE ROAD FAYETTEVILLE NC	ESE	0.23 / 1,237.30	-7	<a href="#">29</a>
<a href="#">4</a>	LUST	PANTRY 456	8191 CLIFFDALE ROAD FAYETTEVILLE NC 28301  <i>Incident No:</i> 19702 <i>Incid Phase Desc:</i> Close Out	ESE	0.27 / 1,448.89	-8	<a href="#">29</a>
<a href="#">5</a>	DRYC CLEANUP	ANDERSONS CLEANERS	8126 CLIFFDALE RD STE 707, FAYETTEVILLE, NC 28314 NC 28314	E	0.39 / 2,059.43	-8	<a href="#">31</a>
<a href="#">6</a>	DRYC CLEANUP	Anderson Cleaners	8122-A Cliffdale Rd. NC	E	0.40 / 2,105.85	-8	<a href="#">31</a>
<a href="#">7</a>	MRDS	NUNN MOUNTAIN PROSPECT	CUMBERLAND COUNTY FAYETTEVILLE NC 28314	SE	0.72 / 3,824.35	-21	<a href="#">32</a>

<i>Map Key</i>	<i>DB</i>	<i>Company/Site Name</i>	<i>Address</i>	<i>Direction</i>	<i>Distance (mi/ft)</i>	<i>Elev Diff (ft)</i>	<i>Page Number</i>
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*Dep ID:* 10055249

## Executive Summary: Summary by Data Source

### Standard

#### State

##### LUST TRUST - State Trust Funds Database

A search of the LUST TRUST database, dated Jul 2, 2021 has found that there are 1 LUST TRUST site(s) within approximately 0.50 miles of the project property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
Pantry #3031	8215 Cliffdale Road Fayetteville NC	ESE	0.23 / 1,237.30	<a href="#">3</a>

*Incident No | Facility ID: 22150 | 0-028888*

##### SWF/LF - Solid Waste Facilities and Landfills

A search of the SWF/LF database, dated May 6, 2021 has found that there are 2 SWF/LF site(s) within approximately 0.50 miles of the project property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
D.C. Carter Septic Tank Services	708 Mayflower Court NC	NNW	0.03 / 143.13	<a href="#">1</a>
D.C. Carter Septic Tank Service	708 Mayflower Court; Fayetteville NC	NNW	0.03 / 143.13	<a href="#">1</a>

##### LUST - Incident Management Database (Regional Underground Storage Tanks)

A search of the LUST database, dated Jul 30, 2021 has found that there are 2 LUST site(s) within approximately 0.50 miles of the project property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
THE PANTRY 3031 (DBA QUICK STOP)	8215 CLIFFDALE ROAD FAYETTEVILLE NC 283145851	ESE	0.23 / 1,237.30	<a href="#">3</a>
	<i>Incident No: 22150 Incid Phase Desc: Close Out</i>			
PANTRY 456	8191 CLIFFDALE ROAD FAYETTEVILLE NC 28301	ESE	0.27 / 1,448.89	<a href="#">4</a>

*Incident No: 19702  
Incid Phase Desc: Close Out*

##### UST - Registered Tanks Database

A search of the UST database, dated Jul 30, 2021 has found that there are 2 UST site(s) within approximately 0.25 miles of the project property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
ALCO FOOD STORE #33	8385 CLIFFDALE ROAD FAYETTEVILLE NC 28314	S	0.03 / 184.43	<a href="#">2</a>
	<i>Facility ID: 00-0-0000037127</i> <i>Tank ID   Tank Status: 2B   Current, 2A   Current, 1   Current</i>			
PANTRY 3031 DBA QUICK STOP	8215 CLIFFDALE FAYETTEVILLE NC 28303	ESE	0.23 / 1,237.30	<a href="#">3</a>
	<i>Facility ID: 00-0-0000028888</i> <i>Tank ID   Tank Status: 2   Removed, 3   Removed, 1   Removed</i>			

### **LUR - Land Use Restriction and/or Notices**

A search of the LUR database, dated Mar 26, 2020 has found that there are 1 LUR site(s) within approximately 0.50 miles of the project property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
THE PANTRY 3031 (DBA QUICK STOP)	8215 CLIFFDALE ROAD FAYETTEVILLE NC	ESE	0.23 / 1,237.30	<a href="#">3</a>

### **FUEL STATIONS - Fuel Service Stations**

A search of the FUEL STATIONS database, dated Jun 3, 2021 has found that there are 1 FUEL STATIONS site(s) within approximately 0.25 miles of the project property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
Alco #33	8385 Cliffdale Rd. Fayetteville NC 28314	S	0.03 / 184.43	<a href="#">2</a>

### **Non Standard**

#### **Federal**

#### **MRDS - Mineral Resource Data System**

A search of the MRDS database, dated Mar 15, 2006 has found that there are 1 MRDS site(s) within approximately 1.00 miles of the project property.

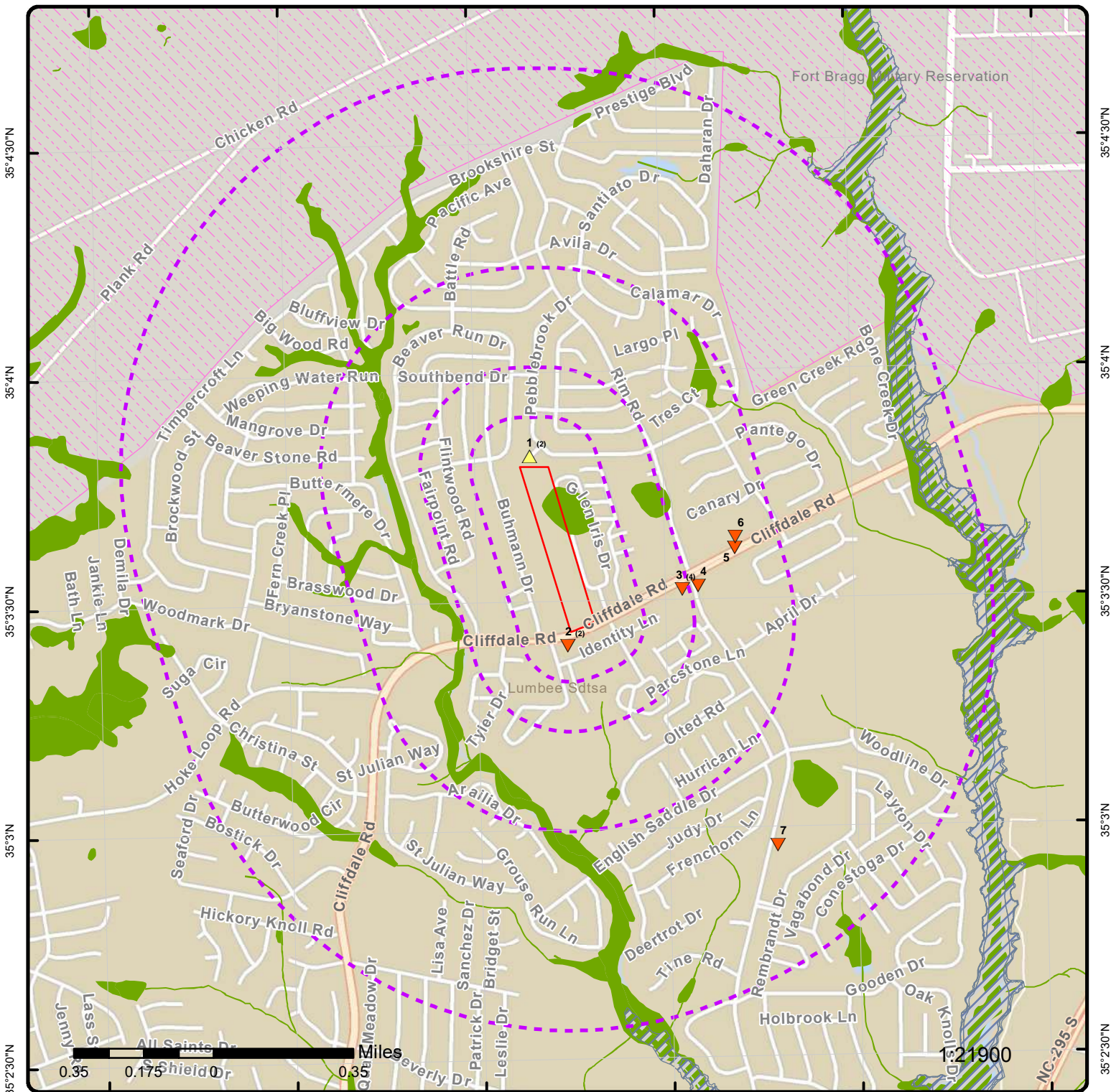
<u>Lower Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
NUNN MOUNTAIN PROSPECT	CUMBERLAND COUNTY FAYETTEVILLE NC 28314	SE	0.72 / 3,824.35	<a href="#">7</a>
	<i>Dep ID: 10055249</i>			

#### **State**

#### **DRYC CLEANUP - Dry Cleaning Contamination and Solvent Cleanup Act (DSCA) Program**

A search of the DRYC CLEANUP database, dated Mar 18, 2021 has found that there are 2 DRYC CLEANUP site(s) within approximately 0.50 miles of the project property.

<u>Lower Elevation</u>	<u>Address</u>	<u>Direction</u>	<u>Distance (mi/ft)</u>	<u>Map Key</u>
ANDERSONS CLEANERS	8126 CLIFFDALE RD STE 707, FAYETTEVILLE, NC 28314 NC 28314	E	0.39 / 2,059.43	<a href="#">5</a>
Anderson Cleaners	8122-A Cliffdale Rd. NC	E	0.40 / 2,105.85	<a href="#">6</a>



### Map: 1.0 Mile Radius

Order Number: 21101400310

Address: 8368 Cliffdale Road, Fayetteville, NC



Project Property	Buffer Outline	State	FWS Special Designation Areas
Eris Sites with Higher Elevation	Freeways; Highways	Country	State Brownfield Sites
Eris Sites with Same Elevation	Traffic Circle; Ramp	National Priority List Sites	State Brownfield Areas
Eris Sites with Lower Elevation	Major & Minor Arterial	National Wetland	State Superfund Areas: Dept. of Defense
Eris Sites with Unknown Elevation	Traffic Circle; Ramp	Indian Reserve Land	State Superfund Areas: NPL
Eris Areas with Higher Elevation	Local Road	Historic Fill	WQARF Areas
Eris Areas with Same Elevation	Rail	100 Year Flood Zone	Federal Lands: Dept. of Defense (owned/administered areas)
Eris Areas with Lower Elevation		500 Year Flood Zone	Plume
Eris Areas with Unknown Elevation			



79°4'W

79°3'30"W

79°3'W

79°2'30"W

35°4'N

35°4'N

35°3'30"N

35°3'30"N

35°3'N

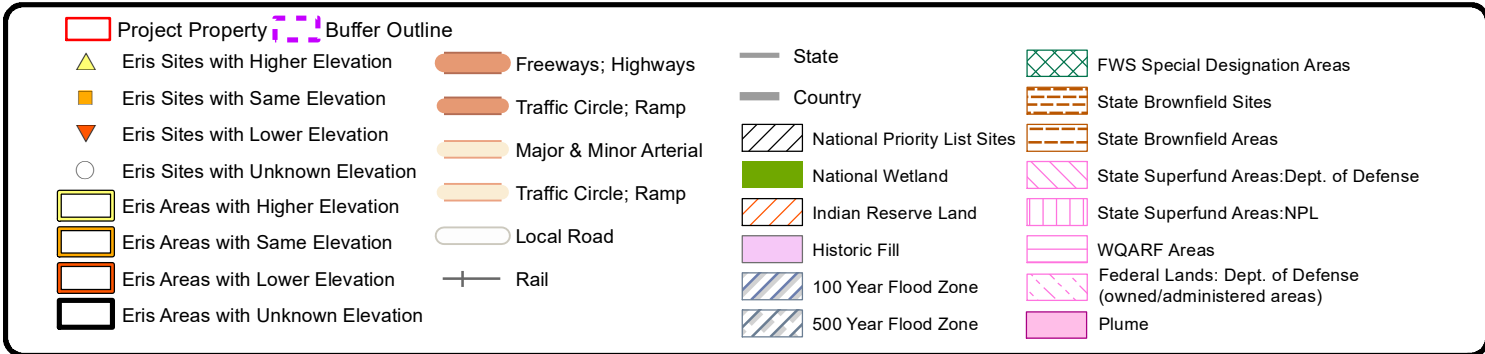
35°3'N

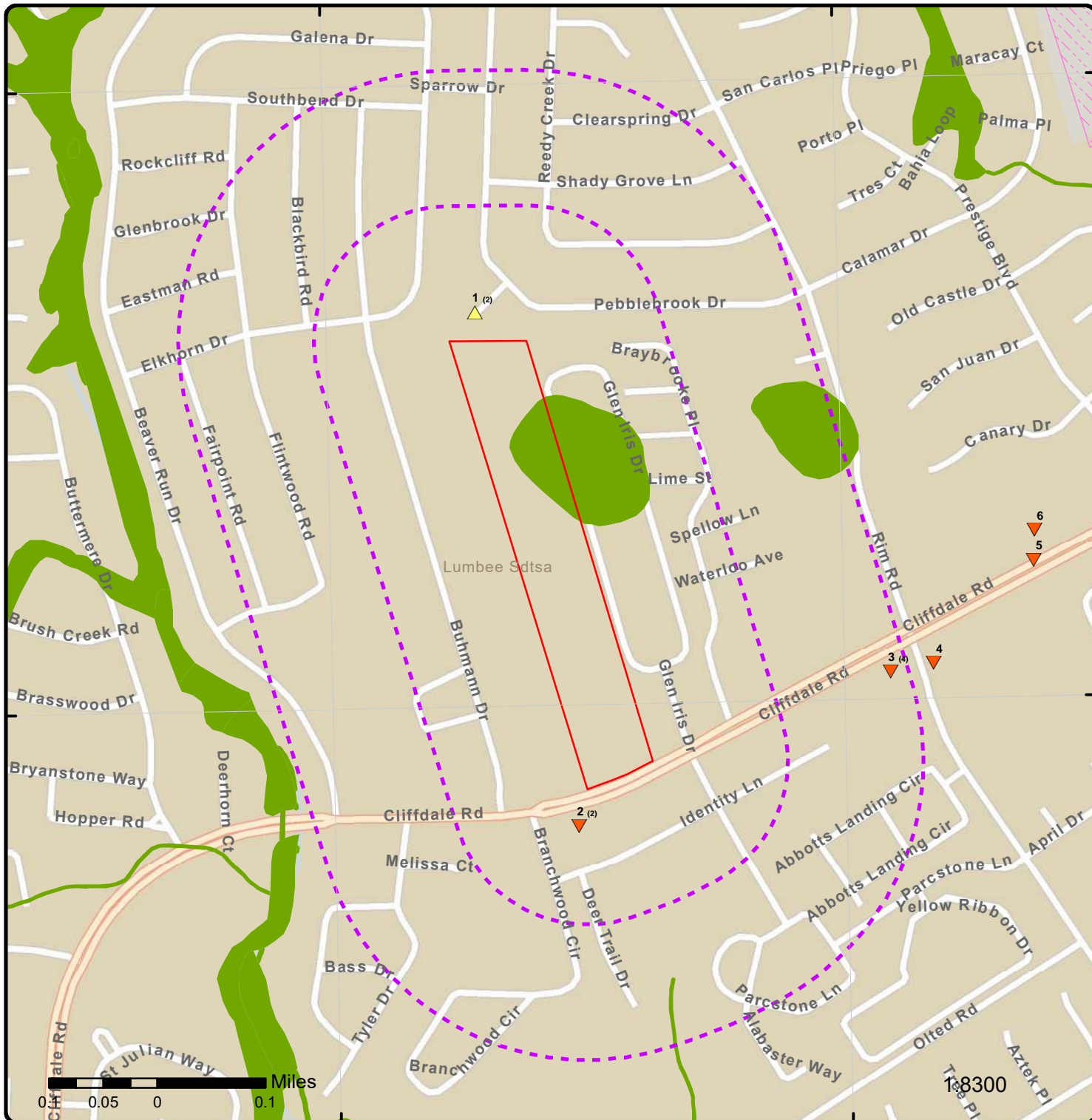


### Map: 0.5 Mile Radius

Order Number: 21101400310

Address: 8368 Cliffdale Road, Fayetteville, NC

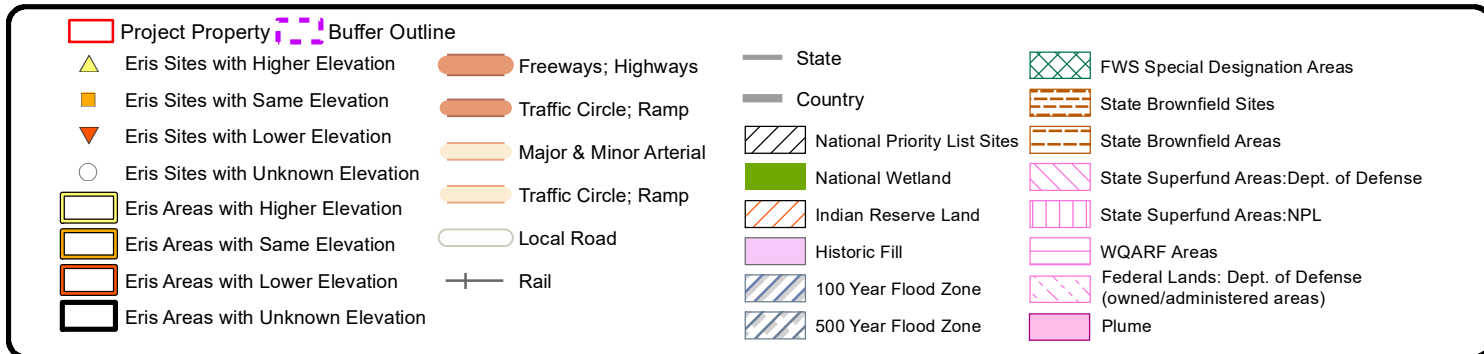


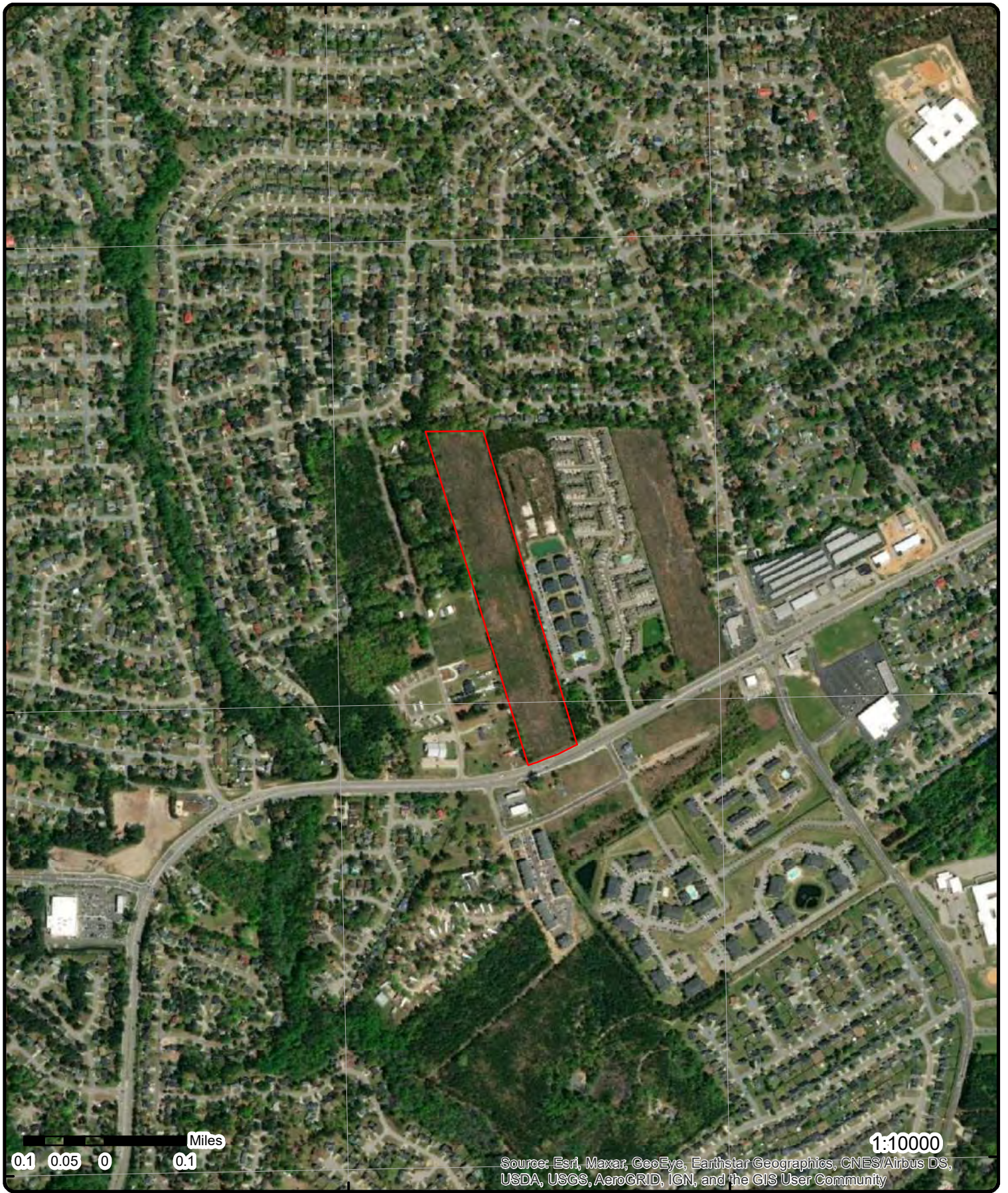


### Map: 0.25 Mile Radius

Order Number: 21101400310

Address: 8368 Cliffdale Road, Fayetteville, NC





Miles  
0.1 0.05 0 0.1

1:10000

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**Aerial** Year: 2020

Address: 8368 Cliffdale Road, Fayetteville, NC

Source: ESRI World Imagery

Order Number: 21101400310



© ERIS Information Inc.

79°4'30"W

79°4'W

79°3'30"W

79°3'W

79°2'30"W

79°2'W

35°5'N

35°4'30"N

35°4'N

35°3'30"N

35°3'N

35°2'30"N

35°5'N

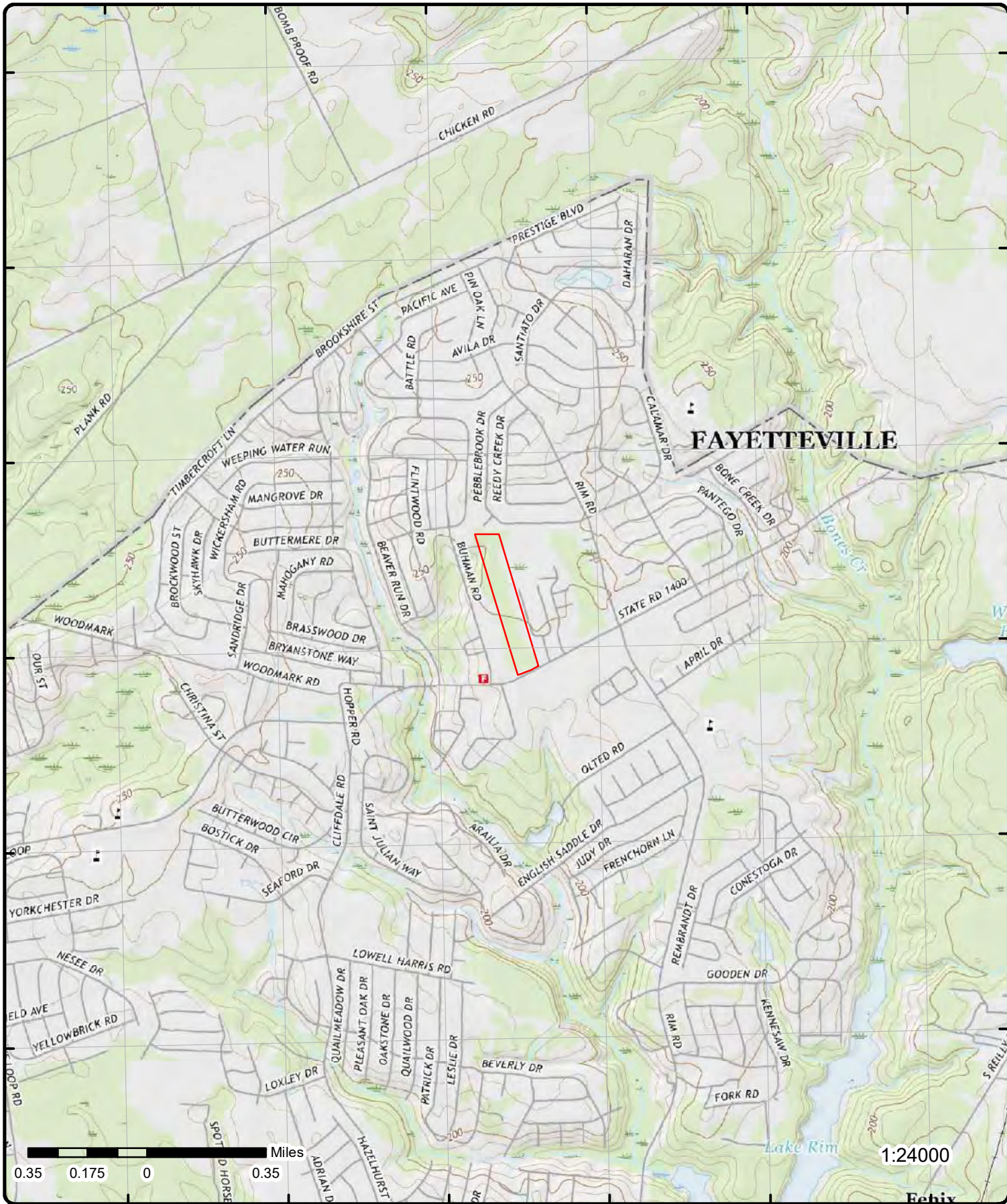
35°4'30"N

35°4'N

35°3'30"N

35°3'N

35°2'30"N



# Topographic Map

Year: 2016

Order Number: 21101400310

Address: 8368 Cliffdale Road, NC



Quadrangle(s): Cliffdale, NC

© ERIS Information Inc.

Source: USGS Topographic Map

# Detail Report

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
<p><a href="#">1</a></p> <p><b>Permit:</b>  <b>NCS No:</b>  <b>Status:</b>  <b>Permit Status:</b>  <b>Permit Expire Date:</b>  <b>Date Orig Permitted:</b>  <b>Date Issued:</b>  <b>Date Expir:</b>  <b>Date Received:</b>  <b>Date Approved:</b>  <b>Date Expires:</b>  <b>Primary Waste Type:</b>  <b>Primary Oper Type:</b>  <b>Activity Code:</b>  <b>Capacity:</b>  <b>Capacity D:</b>  <b>Other Wa 1:</b>  <b>Owns?:</b>  <b>Domestic?:</b>  <b>Portable Toilet?:</b>  <b>Acres:</b>  <b>Gallons:</b>  <b>Grease?:</b>  <b>Primary Waste Desc:</b>  <b>Primary Oper Desc:</b>  <b>Waste Desc:</b>  <b>Activity Desc:</b>  <b>Contact:</b>  <b>Note:</b></p>	<p>1 of 2</p> <p>NCS-01161</p> <p>Open</p> <p>Hauler</p>	<p>NNW</p>	<p>0.03 / 143.13</p>	<p>256.62 / 4</p>	<p><b>D.C. Carter Septic Tank Services</b>  <b>708 Mayflower Court</b>  <b>NC</b></p> <p><b>Other Waste?:</b>  <b>Start Date:</b>  <b>Address2:</b>  <b>City:</b> Fayetteville  <b>Zip:</b> 28314  <b>State:</b> NC  <b>County:</b>  <b>Latitude:</b>  <b>Longitude:</b>  <b>X:</b>  <b>Y:</b>  <b>Country:</b>  <b>Contact First Name:</b>  <b>Contact Last Name:</b>  <b>Phone:</b> (910) 867-5388  <b>Creation Date:</b>  <b>Creator:</b>  <b>Edit Date:</b>  <b>Editor:</b>  <b>Global ID:</b>  <b>Location ID:</b>  <b>Object ID:</b></p> <p>Darryl Carter</p> <p>Documents related to facilities in NC can be searched on the NC DEQ LaserFiche WebLink: <a href="https://edocs.deq.nc.gov/WasteManagement/Search.aspx">https://edocs.deq.nc.gov/WasteManagement/Search.aspx</a></p>	<p>SWF/LF</p>
<p><b>Data Source(s):</b> North Carolina Department of Environment Quality (NCDEQ) - Solid Waste Facility Lists - Septage Firms</p>						

<p><a href="#">1</a></p> <p><b>Permit:</b>  <b>NCS No:</b>  <b>Status:</b>  <b>Permit Status:</b>  <b>Permit Expire Date:</b>  <b>Date Orig Permitted:</b>  <b>Date Issued:</b>  <b>Date Expir:</b>  <b>Date Received:</b>  <b>Date Approved:</b>  <b>Date Expires:</b>  <b>Primary Waste Type:</b>  <b>Primary Oper Type:</b>  <b>Activity Code:</b>  <b>Capacity:</b>  <b>Capacity D:</b>  <b>Other Wa 1:</b>  <b>Owns?:</b></p>	<p>2 of 2</p> <p>NCS-01161</p>	<p>NNW</p>	<p>0.03 / 143.13</p>	<p>256.62 / 4</p>	<p><b>D.C. Carter Septic Tank Service</b>  <b>708 Mayflower Court; Fayetteville</b>  <b>NC</b></p> <p><b>Other Waste?:</b>  <b>Start Date:</b>  <b>Address2:</b>  <b>City:</b>  <b>Zip:</b>  <b>State:</b>  <b>County:</b> Cumberland  <b>Latitude:</b>  <b>Longitude:</b>  <b>X:</b>  <b>Y:</b>  <b>Country:</b>  <b>Contact First Name:</b>  <b>Contact Last Name:</b>  <b>Phone:</b> 910-867-5388  <b>Creation Date:</b>  <b>Creator:</b>  <b>Edit Date:</b></p>	<p>SWF/LF</p>
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Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB	
<b>Domestic?:</b> <b>Portable Toilet?:</b> <b>Acres:</b> <b>Gallons:</b> <b>Grease?:</b> <b>Primary Waste Desc:</b> <b>Primary Oper Desc:</b> <b>Waste Desc:</b> <b>Activity Desc:</b> <b>Contact:</b> <b>Note:</b>				<b>Editor:</b> <b>Global ID:</b> <b>Location ID:</b> <b>Object ID:</b>			
		Septage Waste					
		Haul					
		Darryl Carter					
		Documents related to facilities in NC can be searched on the NC DEQ LaserFiche WebLink: <a href="https://edocs.deq.nc.gov/WasteManagement/Search.aspx">https://edocs.deq.nc.gov/WasteManagement/Search.aspx</a>					
<b>Data Source(s):</b>		North Carolina Department of Environment Quality (NCDEQ) - Solid Waste Facility Lists - Permitted Facilities					

<u>2</u>	1 of 2	S	0.03 / 184.43	248.39 / -4	ALCO FOOD STORE #33 8385 CLIFFDALE ROAD FAYETTEVILLE NC 28314	UST
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<b>Facility ID:</b>	00-0-0000037127	<b>Contact:</b>	ALBEMARLE OIL COMPANY
<b>No Reg Tanks:</b>	3	<b>Contact Address 1:</b>	PO BOX 1059
<b>No Non-Reg Tanks:</b>	0	<b>Contact Address 2:</b>	
<b>Non-Reg/Com Tanks:</b>	0	<b>Contact City:</b>	ALBEMARLE
<b>Fac Owner Type:</b>	Private/Corporate	<b>Contact State:</b>	NC
<b>Fac Name (Report):</b>	ALCO FOOD STORE #33	<b>Contact Zip:</b>	28001-1059
<b>Address1 (Report):</b>	8385 CLIFFDALE ROAD	<b>Fac Name (Map):</b>	ALCO FOOD STORE #33
<b>Address2 (Report):</b>		<b>Fac Address (Map):</b>	8385 CLIFFDALE ROAD
<b>City (Report):</b>	FAYETTEVILLE	<b>Facility City (Map):</b>	FAYETTEVILLE
<b>State (Report):</b>	NC	<b>Facility Zip (Map):</b>	28314
<b>Zip (Report):</b>	28314	<b>Facility Phone (Map) :</b>	(910) 223-0800
<b>Latitude (Report):</b>	35.056708	<b>X (Map):</b>	-8800297.3341
<b>Longitude (Report):</b>	-79.054416	<b>Y (Map):</b>	4171590.2076
<b>ObjectID (Map):</b>	8260		
<b>Facility Name (PST):</b>	ALCO FOOD STORE #33		
<b>Address (PST):</b>	8385 CLIFFDALE ROAD		
<b>City (PST):</b>	FAYETTEVILLE		
<b>Latitude:</b>	35.056708		
<b>Longitude:</b>	-79.054416		
<b>Source:</b>	North Carolina Environmental Quality - UST Databases and Reports; Division of Waste Management Site Locator Tool - UST Active Facilities (Map); Petroleum Storage Tanks Mapper (PST)		
<b>Note:</b>	Documents related to facilities in NC can be searched on the NC DEQ LaserFiche WebLink: <a href="https://edocs.deq.nc.gov/WasteManagement/Search.aspx">https://edocs.deq.nc.gov/WasteManagement/Search.aspx</a>		

**Tank Info (UST Databases and Reports)**

<b>Tank ID:</b>	2B	<b>Overfill Protection:</b>	Unknown
<b>Tank Status:</b>	Current	<b>Leak Detection:</b>	
<b>Compartment Tank:</b>	YES	<b>Spill Protection:</b>	Unknown
<b>Manifold Tank:</b>		<b>Piping Constr:</b>	Unknown
<b>Main Tank:</b>	NO	<b>Tank Constr:</b>	Unknown
<b>Root Tank ID:</b>	234560	<b>Other CP Tank:</b>	
<b>Tank Cert No:</b>		<b>Other CP Name:</b>	
<b>Cert No:</b>		<b>Piping System:</b>	Unknown
<b>Installation Date:</b>	12/31/2010 0:00:00	<b>FIPS County Desc:</b>	Cumberland
<b>Perm Close Date:</b>		<b>FR Bus Name:</b>	Albemarle Oil Company, Inc.
<b>Capacity:</b>	10000	<b>FR Amt:</b>	222000
<b>Commercial:</b>	NO	<b>FR Desc:</b>	Self-Insurance
<b>Regulated:</b>	NO	<b>Last Update Date:</b>	
<b>Product:</b>	Diesel		

**Tank Info (UST Databases and Reports)**

<b>Tank ID:</b>	2A	<b>Overfill Protection:</b>	Ball Float Valve
<b>Tank Status:</b>	Current	<b>Leak Detection:</b>	ELLD
<b>Compartment Tank:</b>	YES	<b>Spill Protection:</b>	Catchment Basin
<b>Manifold Tank:</b>	NO	<b>Piping Constr:</b>	Double Wall FRP

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
<b>Main Tank:</b>	YES				<b>Tank Constr:</b> Double Wall FRP	
<b>Root Tank ID:</b>	234560				<b>Other CP Tank:</b>	
<b>Tank Cert No:</b>					<b>Other CP Name:</b>	
<b>Cert No:</b>	201204417O1				<b>Piping System:</b> Pressurized System	
<b>Installation Date:</b>	4/4/2011 0:00:00				<b>FIPS County Desc:</b> Cumberland	
<b>Perm Close Date:</b>					<b>FR Bus Name:</b> Albemarle Oil Company, Inc.	
<b>Capacity:</b>	10000				<b>FR Amt:</b> 222000	
<b>Commercial:</b>	YES				<b>FR Desc:</b> Self-Insurance	
<b>Regulated:</b>	YES				<b>Last Update Date:</b>	
<b>Product:</b>	Diesel					

**Tank Info (UST Databases and Reports)**

<b>Tank ID:</b>	1				<b>Overfill Protection:</b> Unknown	
<b>Tank Status:</b>	Current				<b>Leak Detection:</b>	
<b>Compartment Tank:</b>	NO				<b>Spill Protection:</b> Unknown	
<b>Manifold Tank:</b>					<b>Piping Constr:</b> Unknown	
<b>Main Tank:</b>	NO				<b>Tank Constr:</b> Unknown	
<b>Root Tank ID:</b>					<b>Other CP Tank:</b>	
<b>Tank Cert No:</b>					<b>Other CP Name:</b>	
<b>Cert No:</b>					<b>Piping System:</b> Unknown	
<b>Installation Date:</b>	12/31/2010 0:00:00				<b>FIPS County Desc:</b> Cumberland	
<b>Perm Close Date:</b>					<b>FR Bus Name:</b> Albemarle Oil Company, Inc.	
<b>Capacity:</b>	20000				<b>FR Amt:</b> 222000	
<b>Commercial:</b>	NO				<b>FR Desc:</b> Self-Insurance	
<b>Regulated:</b>	NO				<b>Last Update Date:</b>	
<b>Product:</b>	Gasoline, Gas Mix					

**Owner Information**

<b>Contact Key:</b>	718.00				<b>Phone:</b> (704) 982-2181	
<b>Facility Key:</b>	115464				<b>Affiliate Type:</b> Owner	
<b>FIPS County Desc:</b>	Cumberland				<b>End Date:</b>	

**PST Details**

<b>ObjectID:</b>	5637				<b>Total Tanks:</b> 3	
<b>Products:</b>	Gasoline and Diesel				<b>Total Gasmix Tanks:</b> 2	
<b>Other Products:</b>					<b>Total Diesel Tanks:</b> 1	
<b>Total Gasmix:</b>	30000				<b>Total Other Tanks:</b> 0	
<b>Total Diesel:</b>	10000				<b>Contact:</b> ALBEMARLE OIL COMPANY	
<b>Total Other:</b>	0				<b>Phone:</b> (704) 982-2181	

<b>2</b>	2 of 2	S	0.03 / 184.43	248.39 / -4	Alco #33 8385 Cliffdale Rd. Fayetteville NC 28314	FUEL STATIONS
<b>Status:</b>	Active				<b>DEF:</b> 0	
<b>Gasoline:</b>	30				<b>Commercial:</b> TRUE	
<b>Diesel:</b>	2				<b>County:</b> Cumberland	
<b>HV Diesel:</b>	0				<b>Latitude:</b> 0	
<b>Kerosene:</b>	0				<b>Longitude:</b> 0	
<b>Non Hwy:</b>	0				<b>Phone:</b> 9102230800	

<b>3</b>	1 of 4	ESE	0.23 / 1,237.30	245.07 / -7	THE PANTRY 3031 (DBA QUICK STOP) 8215 CLIFFDALE ROAD FAYETTEVILLE NC 283145851	LUST
<b>Incdnt No (DWM Map):</b>	22150				<b>Incident No:</b> 22150	
<b>Fac ID (DWM Map):</b>	00-0-0000028888				<b>Facility ID:</b> 00-0-0000028888	
<b>UST No (DWM Map):</b>	FA-1176				<b>UST No:</b> FA-1176	

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
<b>Curr Stat (DWM Map):</b>	Archived				<b>Current Status:</b>	A
<b>Close Out(DWMMMap):</b>	2016/12/24 00:00:00+00				<b>Status Title:</b>	Archived
<b>Dt Occur (DWM Map):</b>	1998/04/30 00:00:00+00				<b>Close Out:</b>	12/23/2016
<b>Incident (DWM Map):</b>	THE PANTRY 3031 (DBA QUICK STOP)				<b>Date Occurred:</b>	4/29/1998
<b>Address (DWM Map):</b>	8215 CLIFFDALE ROAD				<b>Contam Type:</b>	Groundwater/Both
<b>County (DWM Map):</b>	CUMBE				<b>Cleanup:</b>	4/29/1998
<b>City (DWM Map):</b>	FAYETTEVILLE				<b>County:</b>	CUMBE
<b>Zip Code (DWM Map):</b>	283145851				<b>Latitude:</b>	35.0587
<b>Latitude (DWM Map):</b>	35.0587				<b>Longitude:</b>	-79.0493
<b>Long (DWM Map):</b>	-79.0493					
<b>Note:</b>	Documents related to facilities in NC can be searched on the NC DEQ LaserFiche WebLink: <a href="https://edocs.deq.nc.gov/WasteManagement/Search.aspx">https://edocs.deq.nc.gov/WasteManagement/Search.aspx</a>					
<b>Data Source:</b>	Division of Waste Management Site Locator Tool - UST Incidents; RUST Incident Management Database (UST DB); RUST Incident Management Database (RPTS); RUST Incident Management Database (RRA); RUST Incident Management Database (STATUS)					

**Incident Report**

<b>Report Type:</b>	RMR	<b>Approved Date:</b>	5/5/2003
<b>Request Date:</b>		<b>Implement Date:</b>	
<b>Received Date:</b>	5/5/2003	<b>Due Date:</b>	
<b>Reviewed Date:</b>	5/5/2003		
<b>PRT ID:</b>	1025896		
<b>Report Type Description:</b>	Remediation Monitoring Report		
<b>Comment:</b>			
<b>Report Type:</b>	RMR	<b>Approved Date:</b>	11/12/2008
<b>Request Date:</b>		<b>Implement Date:</b>	
<b>Received Date:</b>	10/28/2008	<b>Due Date:</b>	
<b>Reviewed Date:</b>	11/12/2008		
<b>PRT ID:</b>	1030569		
<b>Report Type Description:</b>	Remediation Monitoring Report		
<b>Comment:</b>			
<b>Report Type:</b>	RMR	<b>Approved Date:</b>	8/1/2010
<b>Request Date:</b>		<b>Implement Date:</b>	
<b>Received Date:</b>	7/30/2010	<b>Due Date:</b>	
<b>Reviewed Date:</b>	8/1/2010		
<b>PRT ID:</b>	1033354		
<b>Report Type Description:</b>	Remediation Monitoring Report		
<b>Comment:</b>			
<b>Report Type:</b>	DR	<b>Approved Date:</b>	9/12/2016
<b>Request Date:</b>		<b>Implement Date:</b>	
<b>Received Date:</b>	9/6/2016	<b>Due Date:</b>	
<b>Reviewed Date:</b>	9/12/2016		
<b>PRT ID:</b>	1035063		
<b>Report Type Description:</b>	Deed Recordation		
<b>Comment:</b>			

Waiting on PN before issuing NFA \*\*Note: Many records provided by the department have a truncated [Comment] field.

<b>Report Type:</b>	RMR	<b>Approved Date:</b>	2/9/2012
<b>Request Date:</b>		<b>Implement Date:</b>	
<b>Received Date:</b>	2/3/2012	<b>Due Date:</b>	
<b>Reviewed Date:</b>			
<b>PRT ID:</b>	1033478		
<b>Report Type Description:</b>	Remediation Monitoring Report		
<b>Comment:</b>			

Mechanical problems with the remediation system. Should now be fixed.

<b>Report Type:</b>	RMR	<b>Approved Date:</b>	7/15/2012
<b>Request Date:</b>		<b>Implement Date:</b>	



<b>Map Key</b>	<b>Number of Records</b>	<b>Direction</b>	<b>Distance (mi/ft)</b>	<b>Elev/Diff (ft)</b>	<b>Site</b>	<b>DB</b>
<hr/>						
<b>Received Date:</b>	6/28/2012				<b>Due Date:</b>	
<b>Reviewed Date:</b>						
<b>PRT ID:</b>		1034263				
<b>Report Type Description:</b>		Remediation Monitoring Report				
<b>Comment:</b>						
<b>Report Type:</b>	RMR				<b>Approved Date:</b>	8/27/2008
<b>Request Date:</b>	3/13/2008				<b>Implement Date:</b>	
<b>Received Date:</b>	8/4/2008				<b>Due Date:</b>	5/13/2008
<b>Reviewed Date:</b>	8/4/2008					
<b>PRT ID:</b>		1032243				
<b>Report Type Description:</b>		Remediation Monitoring Report				
<b>Comment:</b>						
<b>Report Type:</b>	RMR				<b>Approved Date:</b>	9/10/2009
<b>Request Date:</b>					<b>Implement Date:</b>	
<b>Received Date:</b>	9/9/2009				<b>Due Date:</b>	
<b>Reviewed Date:</b>	9/10/2009					
<b>PRT ID:</b>		1030943				
<b>Report Type Description:</b>		Remediation Monitoring Report				
<b>Comment:</b>						
<b>Report Type:</b>	RMR				<b>Approved Date:</b>	7/31/2014
<b>Request Date:</b>					<b>Implement Date:</b>	
<b>Received Date:</b>	7/3/2014				<b>Due Date:</b>	
<b>Reviewed Date:</b>	7/10/2014					
<b>PRT ID:</b>		1034363				
<b>Report Type Description:</b>		Remediation Monitoring Report				
<b>Comment:</b>						
System is off line (machinacal issues) will leave off line for now and do some sampling events to see if contamination will rebound before spending the funds to repair the system.						
<b>Report Type:</b>	RMR				<b>Approved Date:</b>	3/7/2014
<b>Request Date:</b>					<b>Implement Date:</b>	
<b>Received Date:</b>	2/3/2014				<b>Due Date:</b>	
<b>Reviewed Date:</b>	3/7/2014					
<b>PRT ID:</b>		1034741				
<b>Report Type Description:</b>		Remediation Monitoring Report				
<b>Comment:</b>						
<b>Report Type:</b>	RMR				<b>Approved Date:</b>	7/24/2013
<b>Request Date:</b>					<b>Implement Date:</b>	
<b>Received Date:</b>	7/1/2013				<b>Due Date:</b>	
<b>Reviewed Date:</b>						
<b>PRT ID:</b>		1034449				
<b>Report Type Description:</b>		Remediation Monitoring Report				
<b>Comment:</b>						
System is reduceing contaminate concentrations in comparison to previous monitoring event. Recommendations are made for some additonal wells.						
<b>Report Type:</b>	CLO				<b>Approved Date:</b>	5/4/2005
<b>Request Date:</b>					<b>Implement Date:</b>	
<b>Received Date:</b>	5/4/2005				<b>Due Date:</b>	
<b>Reviewed Date:</b>	5/4/2005					
<b>PRT ID:</b>		1031800				
<b>Report Type Description:</b>		Closure Report				
<b>Comment:</b>						
<b>Report Type:</b>	MRPI				<b>Approved Date:</b>	1/22/2002
<b>Request Date:</b>					<b>Implement Date:</b>	
<b>Received Date:</b>	1/22/2002				<b>Due Date:</b>	
<b>Reviewed Date:</b>	1/22/2002					

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction</b>	<b>Distance (mi/ft)</b>	<b>Elev/Diff (ft)</b>	<b>Site</b>	<b>DB</b>
<b>PRT ID:</b>		1031801				
<b>Report Type Description:</b>		Monitoring Report (Pre-CAP) Initial				
<b>Comment:</b>						
<b>Report Type:</b>	RMR				<b>Approved Date:</b>	7/18/2003
<b>Request Date:</b>					<b>Implement Date:</b>	
<b>Received Date:</b>	7/18/2003				<b>Due Date:</b>	
<b>Reviewed Date:</b>	7/18/2003					
<b>PRT ID:</b>		1031802				
<b>Report Type Description:</b>		Remediation Monitoring Report				
<b>Comment:</b>						
<b>Report Type:</b>	RMR				<b>Approved Date:</b>	11/10/2002
<b>Request Date:</b>					<b>Implement Date:</b>	
<b>Received Date:</b>	11/10/2003				<b>Due Date:</b>	
<b>Reviewed Date:</b>	11/10/2003					
<b>PRT ID:</b>		1031803				
<b>Report Type Description:</b>		Remediation Monitoring Report				
<b>Comment:</b>						
<b>Report Type:</b>	RMR				<b>Approved Date:</b>	2/5/2003
<b>Request Date:</b>					<b>Implement Date:</b>	
<b>Received Date:</b>	2/5/2003				<b>Due Date:</b>	
<b>Reviewed Date:</b>	2/5/2003					
<b>PRT ID:</b>		1031804				
<b>Report Type Description:</b>		Remediation Monitoring Report				
<b>Comment:</b>						
<b>Report Type:</b>	RMR				<b>Approved Date:</b>	10/29/2004
<b>Request Date:</b>					<b>Implement Date:</b>	
<b>Received Date:</b>	10/29/2004				<b>Due Date:</b>	
<b>Reviewed Date:</b>	10/29/2004					
<b>PRT ID:</b>		1031805				
<b>Report Type Description:</b>		Remediation Monitoring Report				
<b>Comment:</b>						
<b>Report Type:</b>	RMR				<b>Approved Date:</b>	5/13/2004
<b>Request Date:</b>					<b>Implement Date:</b>	
<b>Received Date:</b>	5/13/2004				<b>Due Date:</b>	
<b>Reviewed Date:</b>	6/7/2004					
<b>PRT ID:</b>		1032818				
<b>Report Type Description:</b>		Remediation Monitoring Report				
<b>Comment:</b>						
<b>Report Type:</b>	RMR				<b>Approved Date:</b>	2/23/2011
<b>Request Date:</b>					<b>Implement Date:</b>	
<b>Received Date:</b>	1/31/2011				<b>Due Date:</b>	
<b>Reviewed Date:</b>	2/23/2011					
<b>PRT ID:</b>		1033884				
<b>Report Type Description:</b>		Remediation Monitoring Report				
<b>Comment:</b>						
<b>Report Type:</b>	CSA				<b>Approved Date:</b>	1/13/2003
<b>Request Date:</b>					<b>Implement Date:</b>	
<b>Received Date:</b>	5/19/1999				<b>Due Date:</b>	
<b>Reviewed Date:</b>	5/20/1999					
<b>PRT ID:</b>		1032573				
<b>Report Type Description:</b>						
<b>Comment:</b>						
<b>Report Type:</b>	RMR				<b>Approved Date:</b>	4/4/2009
<b>Request Date:</b>					<b>Implement Date:</b>	

<b>Map Key</b>	<b>Number of Records</b>	<b>Direction</b>	<b>Distance (mi/ft)</b>	<b>Elev/Diff (ft)</b>	<b>Site</b>	<b>DB</b>
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**Received Date:** 4/2/2009  
**Reviewed Date:** 4/4/2009  
**PRT ID:** 1031374  
**Report Type Description:** Remediation Monitoring Report  
**Comment:**

**Due Date:**  
**Approved Date:** 8/10/2000  
**Implement Date:**  
**Due Date:**

**Report Type:** CAP  
**Request Date:**  
**Received Date:** 2/15/2000  
**Reviewed Date:** 7/25/2000  
**PRT ID:** 1032087  
**Report Type Description:** Corrective Action Plan - Soil & GW  
**Comment:**

**Approved Date:** 8/25/2005  
**Implement Date:**  
**Due Date:**

**Report Type:** CLO  
**Request Date:**  
**Received Date:** 12/7/2004  
**Reviewed Date:** 12/7/2004  
**PRT ID:** 1031256  
**Report Type Description:** Closure Report  
**Comment:**

Closure of UST's at Pantry 456 - contamination from adjacent store Pantry 3031 \*\*Note: Many records provided by the department have a truncated [Comment] field.

**Report Type:** RMR  
**Request Date:**  
**Received Date:** 7/8/2011  
**Reviewed Date:**  
**PRT ID:** 1024469  
**Report Type Description:** Remediation Monitoring Report  
**Comment:**

**Approved Date:** 7/12/2011  
**Implement Date:**  
**Due Date:**

**Report Type:** RMR  
**Request Date:**  
**Received Date:** 7/29/2015  
**Reviewed Date:** 9/10/2015  
**PRT ID:** 1034916  
**Report Type Description:** Remediation Monitoring Report  
**Comment:**

**Approved Date:** 9/10/2015  
**Implement Date:**  
**Due Date:**

System has been shut down since May 2014. Contaminaton has not rebound - the contaminates continue degrading and WSW are no longer threaten. Site will be reranked and a NRP will be requested for closure.

**Report Type:** RMR  
**Request Date:**  
**Received Date:** 1/30/2015  
**Reviewed Date:** 3/9/2015  
**PRT ID:** 1034562  
**Report Type Description:** Remediation Monitoring Report  
**Comment:**

**Approved Date:** 3/9/2015  
**Implement Date:**  
**Due Date:**

continue with monitoring and leaving system off to evaluate contamination levels \*\*Note: Many records provided by the department have a truncated [Comment] field.

**RRA**

**RRA Date:** 13-Mar-2008 00:00:00  
**RRA Init:** JWB  
**RRA Risk:** H  
**RRA ID:** 36786

**RRA Rank:** 0160  
**RRA Abate:** D

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
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**Incident Status**

<b>Last Modified:</b>	23-Dec-2016 00:00:00	<b>Public Meeting Held:</b>	
<b>Incident Phase:</b>	CO	<b>Corrective Act Plan:</b>	
<b>Incid Phase Desc:</b>	Close Out	<b>SOC Signed:</b>	
<b>NOV Issued:</b>		<b>Reclassification Rep:</b>	
<b>NORR Issued:</b>		<b>RS Designation:</b>	
<b>45 Day Report:</b>		<b>Closure Req Date:</b>	

**UST Incidents**

<b>RO Code:</b>	FAY	<b>Reg:</b>	R
<b>CD No:</b>	0	<b>Conf Risk:</b>	L
<b>Date Reported:</b>	1998/08/12 00:00:00+00	<b>RRA Date:</b>	2008/03/14 00:00:00+00
<b>Land Use:</b>	RES	<b>RRA Risk:</b>	H
<b>LUR Filed:</b>	2016/08/30 00:00:00+00	<b>RRA Rank Curr:</b>	160
<b>LUR Resc:</b>		<b>RRA Abate:</b>	D
<b>LUR State:</b>		<b>Risk:</b>	H
<b>X:</b>	1985247.74481547	<b>RRA Rank:</b>	0160
<b>Y:</b>	476293.172934726	<b>MGR:</b>	JWB
<b>Comm:</b>	C		
<b>Docs Link:</b>	<a href="http://edocs.deq.nc.gov/WasteManagement/Search.aspx?dbid=0&amp;searchcommand=%7B%5BWM%5D%3A%5BProgram_ID%5D%3D%22%2AFA-1176%2A%22%7D">http://edocs.deq.nc.gov/WasteManagement/Search.aspx?dbid=0&amp;searchcommand=%7B%5BWM%5D%3A%5BProgram_ID%5D%3D%22%2AFA-1176%2A%22%7D</a>		
<b>Object ID:</b>	25026		

**RUST Data**

<b>MGR:</b>	JWB	<b>LUR Resc:</b>	
<b>RO Code:</b>	FAY	<b>LUR State:</b>	
<b>Date Reported:</b>	1998/08/12 00:00:00+00	<b>SL MGR:</b>	
<b>Date Reported FY:</b>	1998	<b>SL Cleanup Strt Dt:</b>	
<b>Date Occured FY:</b>	1998	<b>SL Cleanup End Dt:</b>	
<b>Comm:</b>	C	<b>SL Site Stat:</b>	
<b>Reg:</b>	R	<b>SL Ftfrecdte:</b>	
<b>Perccomfndelig:</b>	100	<b>CD NO:</b>	0
<b>TOT Paid:</b>	864508.61	<b>RRA Date:</b>	2008/03/14 00:00:00+00
<b>Conf Risk:</b>	L	<b>RRA Risk:</b>	H
<b>Risk:</b>	H	<b>RRA Rank Curr:</b>	160
<b>Landuse:</b>	RES	<b>RRA Abate:</b>	D
<b>Inc Stat:</b>	Closed	<b>RRA Rank:</b>	0160
<b>Closeout FY:</b>	2017	<b>X:</b>	1985247.74483315
<b>LUR Filed:</b>	2016/08/30 00:00:00+00	<b>Y:</b>	476293.172995018
<b>Docs Link:</b>	<a href="http://edocs.deq.nc.gov/WasteManagement/Search.aspx?dbid=0&amp;searchcommand=%7B%5BWM%5D%3A%5BProgram_ID%5D%3D%22%2AFA-1176%2A%22%7D">http://edocs.deq.nc.gov/WasteManagement/Search.aspx?dbid=0&amp;searchcommand=%7B%5BWM%5D%3A%5BProgram_ID%5D%3D%22%2AFA-1176%2A%22%7D</a>		
<b>Comment:</b>	A CAP Addendum was needed due to the widening of the DOT ROW at the intersection of Rim Road and Cliffdale Road. The CAPA was received 2/6/2002. The delay of the implementation of the CAP was due to the adjacent property owners concerns. WATER IS AVAIL **Note: Many records provided by the department have a truncated [Comment] field.		

**LUST Database**

<b>MGR:</b>	JWB	<b>Contact:</b>	BRENT PUZAK
<b>Regional Office Cd:</b>	FAY	<b>Telephone:</b>	9197746700
<b>Date Reported:</b>	8/11/1998	<b>RP Address:</b>	1100 SITUS COURT, STE 100
<b>Release Code:</b>	0	<b>RP City:</b>	RALEIGH
<b>Release Code Desc:</b>		<b>RP State:</b>	NC
<b>Source:</b>	3	<b>RP Zip Code:</b>	27606
<b>Source Desc:</b>	LEAK, UST	<b>RP County:</b>	LEE
<b>Site Priority:</b>		<b>RP Email:</b>	
<b>Pollutant Type:</b>	3	<b>RP Email1:</b>	
<b>Pollutant Desc:</b>	GASOLINE/DIESEL/KEROSENE	<b>RP Owner:</b>	FALSE
<b>Petroleum Type:</b>	P	<b>RP Operator:</b>	FALSE
<b>Petrol Type Desc:</b>	PETROLEUM	<b>RP Land Owner:</b>	FALSE
<b>COMM:</b>	C	<b>Lur Status:</b>	
<b>COMM Desc:</b>	COMMERCIAL	<b>LUR Filed:</b>	8/29/2016

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
<b>Regulated Code:</b>	R				<b>LUR Resc:</b>	
<b>Reg Code Desc:</b>	REGULATED				<b>LUR State:</b>	
<b>Notice Rg Rq Issd:</b>					<b>GPS Conf:</b>	31
<b>Notice Violtn Issd:</b>					<b>RBCA GW:</b>	G2
<b>Contamination:</b>	GW				<b>RBCA GW Desc:</b>	Cleanups to alternate standards
<b>Cleanup:</b>	4/29/1998				<b>RBCA:</b>	S3
<b>Conf Risk:</b>	L				<b>RBCA Desc:</b>	Soil to Groundwater
<b>Risk:</b>	H				<b>CD No:</b>	0
<b>Land Use:</b>	RES				<b>Reel No:</b>	0
<b>Land Use Desc:</b>	Residential				<b>ERR CD:</b>	NO
<b>Phase Reqr:</b>					<b>Valid:</b>	FALSE
<b>Intrmdt Cndition:</b>					<b>Cat Code:</b>	
<b>Corr Act Plan Cd:</b>	A				<b>HCS Res:</b>	1:24000
<b>CAP Desc:</b>	Air Sparging & Soil Vapor Extraction				<b>Reliability:</b>	
<b>Clos Reqs:</b>					<b>Supply Well:</b>	1
<b>MTBE:</b>	0				<b>New Source:</b>	
<b>MTBE 1:</b>	Y				<b>Book:</b>	
<b>RP Company:</b>	CIRCLE K STORES, INC.				<b>Page:</b>	
<b>HCS Ref:</b>	USGS 7.5 Minute					
<b>Comment:</b>						

A CAP Addendum was needed due to the widening of the DOT ROW at the intersection of Rim Road and Cliffdale Road. The CAPA was received 2/6/2002. The delay of the implementation of the CAP was due to the adjacent property owners concerns. WATER IS AVAILIBLE FOR THE AREA WELLS NOT HOOKED UP NO INTERCONS Incident number 21263 was deleted and incorporated in to 22150 after it was determined that the Pantry 3031 was the source of the release. Complaint received via AP Section of a water spout from the system. Notified Ty Colwell of the situation on 4/26/2011 @ 3:30 PM.

<a href="#">3</a>	2 of 4	ESE	0.23 / 1,237.30	245.07 / -7	<b>Pantry #3031</b> 8215 Cliffdale Road Fayetteville NC	LUST TRUST
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**Incident No:** 22150  
**Facility ID:** 0-028888  
**Site County:** Cumberland  
**Note:** Documents related to facilities in NC can be searched on the NC DEQ LaserFiche WebLink: <https://edocs.deq.nc.gov/WasteManagement/Search.aspx>

**Details**

<b>Archive Submit No:</b>	NA	<b>3rd Party Deduct:</b>	\$0.00
<b>CD No:</b>	NA	<b>Sum 3rd Party Amts:</b>	\$0.00
<b>UST No:</b>		<b>Deduct Determine:</b>	5
<b>Priority Rank:</b>		<b>Deductible Amount:</b>	\$20,000.00
<b>Priority Rank Desc:</b>		<b>Deductible Reason1:</b>	flat 20 k
<b>Site Eligible?:</b>	TRUE	<b>Deductible Reason2:</b>	94B(b)(3)
<b>% Commercial Fund:</b>	1.0	<b>Inel App:</b>	
<b>Reimbursement</b>	TRUE		
<b>Form:</b>			
<b>Site Note:</b>			

<a href="#">3</a>	3 of 4	ESE	0.23 / 1,237.30	245.07 / -7	<b>PANTRY 3031 DBA QUICK STOP</b> 8215 CLIFFDALE FAYETTEVILLE NC 28303	UST
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<b>Facility ID:</b>	00-0-0000028888	<b>Contact:</b>	THE PANTRY, INC.
<b>No Reg Tanks:</b>		<b>Contact Address 1:</b>	PO BOX 1410/1801 DOUGLAS DRIVE
<b>No Non-Reg Tanks:</b>		<b>Contact Address 2:</b>	
<b>Non-Reg/Com Tanks:</b>		<b>Contact City:</b>	SANFORD
<b>Fac Owner Type:</b>		<b>Contact State:</b>	NC
<b>Fac Name (Report):</b>	PANTRY 3031 DBA QUICK STOP	<b>Contact Zip:</b>	27330-1410
<b>Address1 (Report):</b>	8215 CLIFFDALE	<b>Fac Name (Map):</b>	
<b>Address2 (Report):</b>		<b>Fac Address (Map):</b>	
<b>City (Report):</b>	FAYETTEVILLE	<b>Facility City (Map):</b>	
<b>State (Report):</b>	NC	<b>Facility Zip (Map):</b>	
<b>Zip (Report):</b>	28303	<b>Facility Phone (Map):</b>	

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
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**Latitude (Report):** 35.05869 **X (Map):**  
**Longitude (Report):** -79.04909 **Y (Map):**  
**ObjectID (Map):**  
**Facility Name (PST):**  
**Address (PST):**  
**City (PST):**  
**Latitude:**  
**Longitude:**  
**Source:** North Carolina Environmental Quality - UST Databases and Reports  
**Note:** Documents related to facilities in NC can be searched on the NC DEQ LaserFiche  
 WebLink: <https://edocs.deq.nc.gov/WasteManagement/Search.aspx>

**Tank Info (UST Databases and Reports)**

<b>Tank ID:</b>	2	<b>Overfill Protection:</b>	Auto Shutoff Device
<b>Tank Status:</b>	Removed	<b>Leak Detection:</b>	Unknown
<b>Compartment Tank:</b>	NO	<b>Spill Protection:</b>	Catchment Basin
<b>Manifold Tank:</b>		<b>Piping Constr:</b>	Single Wall FRP
<b>Main Tank:</b>	NO	<b>Tank Constr:</b>	Single Wall Steel/FRP
<b>Root Tank ID:</b>		<b>Other CP Tank:</b>	
<b>Tank Cert No:</b>		<b>Other CP Name:</b>	
<b>Cert No:</b>	2004082780	<b>Piping System:</b>	Unknown
<b>Installation Date:</b>	2/2/1987 0:00:00	<b>FIPS County Desc:</b>	Cumberland
<b>Perm Close Date:</b>	4/12/2005 0:00:00	<b>FR Bus Name:</b>	Wells Fargo Bank, N.A.
<b>Capacity:</b>	12000	<b>FR Amt:</b>	957000
<b>Commercial:</b>	YES	<b>FR Desc:</b>	Letter of Credit
<b>Regulated:</b>	YES	<b>Last Update Date:</b>	
<b>Product:</b>	Gasoline, Gas Mix		

**Tank Info (UST Databases and Reports)**

<b>Tank ID:</b>	3	<b>Overfill Protection:</b>	Auto Shutoff Device
<b>Tank Status:</b>	Removed	<b>Leak Detection:</b>	Unknown
<b>Compartment Tank:</b>	NO	<b>Spill Protection:</b>	Catchment Basin
<b>Manifold Tank:</b>		<b>Piping Constr:</b>	Single Wall FRP
<b>Main Tank:</b>	NO	<b>Tank Constr:</b>	Single Wall Steel/FRP
<b>Root Tank ID:</b>		<b>Other CP Tank:</b>	
<b>Tank Cert No:</b>		<b>Other CP Name:</b>	
<b>Cert No:</b>	2004082780	<b>Piping System:</b>	Unknown
<b>Installation Date:</b>	2/2/1987 0:00:00	<b>FIPS County Desc:</b>	Cumberland
<b>Perm Close Date:</b>	4/12/2005 0:00:00	<b>FR Bus Name:</b>	Wells Fargo Bank, N.A.
<b>Capacity:</b>	12000	<b>FR Amt:</b>	957000
<b>Commercial:</b>	YES	<b>FR Desc:</b>	Letter of Credit
<b>Regulated:</b>	YES	<b>Last Update Date:</b>	
<b>Product:</b>	Gasoline, Gas Mix		

**Tank Info (UST Databases and Reports)**

<b>Tank ID:</b>	1	<b>Overfill Protection:</b>	Auto Shutoff Device
<b>Tank Status:</b>	Removed	<b>Leak Detection:</b>	Unknown
<b>Compartment Tank:</b>	NO	<b>Spill Protection:</b>	Catchment Basin
<b>Manifold Tank:</b>		<b>Piping Constr:</b>	Single Wall FRP
<b>Main Tank:</b>	NO	<b>Tank Constr:</b>	Single Wall Steel/FRP
<b>Root Tank ID:</b>		<b>Other CP Tank:</b>	
<b>Tank Cert No:</b>		<b>Other CP Name:</b>	
<b>Cert No:</b>	2004082780	<b>Piping System:</b>	Unknown
<b>Installation Date:</b>	2/2/1987 0:00:00	<b>FIPS County Desc:</b>	Cumberland
<b>Perm Close Date:</b>	4/12/2005 0:00:00	<b>FR Bus Name:</b>	Wells Fargo Bank, N.A.
<b>Capacity:</b>	12000	<b>FR Amt:</b>	957000
<b>Commercial:</b>	YES	<b>FR Desc:</b>	Letter of Credit
<b>Regulated:</b>	YES	<b>Last Update Date:</b>	
<b>Product:</b>	Gasoline, Gas Mix		

**Owner Information**

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
<b>Contact Key:</b>	69134.00				<b>Phone:</b> (919) 774-6700	
<b>Facility Key:</b>	107610				<b>Affiliate Type:</b> Owner	
<b>FIPS County Desc:</b>	Cumberland				<b>End Date:</b>	

<a href="#">3</a>	4 of 4	ESE	0.23 / 1,237.30	245.07 / -7	THE PANTRY 3031 (DBA QUICK STOP) 8215 CLIFFDALE ROAD FAYETTEVILLE NC	LUR
<b>Prj No:</b>	FA-1176				<b>Certification:</b> None	
<b>Prj Status:</b>	No Further Action				<b>Deed Bk:</b>	
<b>Contam Src:</b>	UST System				<b>Deed Pg:</b>	
<b>Instrument Status:</b>	Effective				<b>Plat Bk:</b>	
<b>Instrument:</b>	Notice and Restriction				<b>Plat Pg:</b>	
<b>Rec Date:</b>	8/28/2016				<b>Plat Link 1:</b>	
<b>Plat Rec Date:</b>					<b>Deed Link 1:</b> Recorded Document Link	
<b>Deed Date:</b>	Recorded 8-28-2016				<b>Prj County:</b> Cumberland	
<b>Plat Date:</b>					<b>X:</b> 1985246.939	
<b>Restricted Media:</b>	Multi-Media				<b>Y:</b> 476295.6877	
<b>Allowed Use:</b>	Media Restrictions Only					
<b>COC:</b>	Multi COC					
<b>DWM Program:</b>	Underground Storage Tank Section					
<b>Deed:</b>						
<b>Plat:</b>						
<b>DWM Contact:</b>	Fayetteville Regional Office (910) 433-3300					
<b>Deed Link:</b>	<a href="https://edocs.deq.nc.gov/WasteManagement/Search.aspx?dbid=0&amp;searchcommand=%7B%5BWM%5D%3A%5BProgram_ID%5D%3D%22%2AFA-1176%2A%22%7D">https://edocs.deq.nc.gov/WasteManagement/Search.aspx?dbid=0&amp;searchcommand=%7B%5BWM%5D%3A%5BProgram_ID%5D%3D%22%2AFA-1176%2A%22%7D</a>					
<b>Plat Link URL:</b>						
<b>Note:</b>	Documents related to facilities in NC can be searched on the NC DEQ LaserFiche WebLink: <a href="https://edocs.deq.nc.gov/WasteManagement/Search.aspx">https://edocs.deq.nc.gov/WasteManagement/Search.aspx</a>					

<a href="#">4</a>	1 of 1	ESE	0.27 / 1,448.89	244.42 / -8	PANTRY 456 8191 CLIFFDALE ROAD FAYETTEVILLE NC 28301	LUST
<b>Incdnt No (DWM Map):</b>	19702				<b>Incident No:</b> 19702	
<b>Fac ID (DWM Map):</b>	00-0-0000012310				<b>Facility ID:</b> 00-0-0000012310	
<b>UST No (DWM Map):</b>	FA-1045				<b>UST No:</b> FA-1045	
<b>Curr Stat (DWM Map):</b>	Archived				<b>Current Status:</b> A	
<b>Close Out(DWMMMap):</b>	2001/09/01 00:00:00+00				<b>Status Title:</b> Archived	
<b>Dt Occur (DWM Map):</b>	1998/08/15 00:00:00+00				<b>Close Out:</b> 8/31/2001	
<b>Incident (DWM Map):</b>	PANTRY 456				<b>Date Occurred:</b> 8/14/1998	
<b>Address (DWM Map):</b>	8191 CLIFFDALE ROAD				<b>Contam Type:</b> Groundwater/Both	
<b>County (DWM Map):</b>	CUMBE				<b>Cleanup:</b> 8/14/1998	
<b>City (DWM Map):</b>	FAYETTEVILLE				<b>County:</b> CUMBE	
<b>Zip Code (DWM Map):</b>	28301				<b>Latitude:</b> 35.0588	
<b>Latitude (DWM Map):</b>	35.0588				<b>Longitude:</b> -79.0486	
<b>Long (DWM Map):</b>	-79.0486					
<b>Note:</b>	Documents related to facilities in NC can be searched on the NC DEQ LaserFiche WebLink: <a href="https://edocs.deq.nc.gov/WasteManagement/Search.aspx">https://edocs.deq.nc.gov/WasteManagement/Search.aspx</a>					
<b>Data Source:</b>	Division of Waste Management Site Locator Tool - UST Incidents; RUST Incident Management Database (UST DB); RUST Incident Management Database (STATUS)					

<b>Incident Status</b>						
<b>Last Modified:</b>	12-Sep-2001 00:00:00				<b>Public Meeting Held:</b>	
<b>Incident Phase:</b>	CO				<b>Corrective Act Plan:</b>	
<b>Incid Phase Desc:</b>	Close Out				<b>SOC Signed:</b>	
<b>NOV Issued:</b>					<b>Reclassification Rep:</b>	
<b>NORR Issued:</b>					<b>RS Designation:</b>	
<b>45 Day Report:</b>					<b>Closure Req Date:</b>	

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
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**UST Incidents**

<b>RO Code:</b>	FAY	<b>Reg:</b>	R
<b>CD No:</b>	242	<b>Conf Risk:</b>	L
<b>Date Reported:</b>	1998/08/15 00:00:00+00	<b>RRA Date:</b>	
<b>Land Use:</b>	RES	<b>RRA Risk:</b>	
<b>LUR Filed:</b>		<b>RRA Rank Curr:</b>	0
<b>LUR Resc:</b>		<b>RRA Abate:</b>	
<b>LUR State:</b>		<b>Risk:</b>	H
<b>X:</b>	1985457.23816289	<b>RRA Rank:</b>	
<b>Y:</b>	476329.463216484	<b>MGR:</b>	JWB
<b>Comm:</b>	C		
<b>Docs Link:</b>	<a href="http://edocs.deq.nc.gov/WasteManagement/Search.aspx?dbid=0&amp;searchcommand=%7B%5BWM%5D%3A%5BProgram_ID%5D%3D%22%2AFA-1045%2A%22%7D23118">http://edocs.deq.nc.gov/WasteManagement/Search.aspx?dbid=0&amp;searchcommand=%7B%5BWM%5D%3A%5BProgram_ID%5D%3D%22%2AFA-1045%2A%22%7D23118</a>		
<b>Object ID:</b>	23118		

**RUST Data**

<b>MGR:</b>	JWB	<b>LUR Resc:</b>	
<b>RO Code:</b>	FAY	<b>LUR State:</b>	
<b>Date Reported:</b>	1998/08/15 00:00:00+00	<b>SL MGR:</b>	
<b>Date Reported FY:</b>	1998	<b>SL Cleanup Strt Dt:</b>	
<b>Date Occured FY:</b>	1998	<b>SL Cleanup End Dt:</b>	
<b>Comm:</b>	C	<b>SL Site Stat:</b>	
<b>Reg:</b>	R	<b>SL Ftfrecdte:</b>	
<b>Perccomfndelig:</b>		<b>CD NO:</b>	242
<b>TOT Paid:</b>		<b>RRA Date:</b>	
<b>Conf Risk:</b>	L	<b>RRA Risk:</b>	
<b>Risk:</b>	H	<b>RRA Rank Curr:</b>	0
<b>Landuse:</b>	RES	<b>RRA Abate:</b>	
<b>Inc Stat:</b>	Closed	<b>RRA Rank:</b>	
<b>Closeout FY:</b>	2001	<b>X:</b>	1985457.2381298
<b>LUR Filed:</b>		<b>Y:</b>	476329.46336203
<b>Docs Link:</b>	<a href="http://edocs.deq.nc.gov/WasteManagement/Search.aspx?dbid=0&amp;searchcommand=%7B%5BWM%5D%3A%5BProgram_ID%5D%3D%22%2AFA-1045%2A%22%7D04/05/2001">http://edocs.deq.nc.gov/WasteManagement/Search.aspx?dbid=0&amp;searchcommand=%7B%5BWM%5D%3A%5BProgram_ID%5D%3D%22%2AFA-1045%2A%22%7D04/05/2001</a> Thomas called he is coming for a meeting about 9am Friday the 6th. I looked in the file and he had requested finicial help but never return it to this office.		

**Comment:**  
Marsh Smith  
695-0800

I receive a copy of the letter sent to RCO for finicial NFA \*\*Note: Many records provided by the department have a truncated [Comment] field.

**LUST Database**

<b>MGR:</b>	JWB	<b>Contact:</b>	BRENT PUZAK
<b>Regional Office Cd:</b>	FAY	<b>Telephone:</b>	
<b>Date Reported:</b>	8/14/1998	<b>RP Address:</b>	1100 SITUS COURT, STE 100
<b>Release Code:</b>	0	<b>RP City:</b>	RALEIGH
<b>Release Code Desc:</b>		<b>RP State:</b>	NC
<b>Source:</b>	3	<b>RP Zip Code:</b>	27606
<b>Source Desc:</b>	LEAK, UST	<b>RP County:</b>	
<b>Site Priority:</b>		<b>RP Email:</b>	
<b>Pollutant Type:</b>	3	<b>RP Email1:</b>	
<b>Pollutant Desc:</b>	GASOLINE/DIESEL/KEROSENE	<b>RP Owner:</b>	FALSE
<b>Petroleum Type:</b>	P	<b>RP Operator:</b>	FALSE
<b>Petrol Type Desc:</b>	PETROLEUM	<b>RP Land Owner:</b>	FALSE
<b>COMM:</b>	C	<b>Lur Status:</b>	
<b>COMM Desc:</b>	COMMERCIAL	<b>LUR Filed:</b>	
<b>Regulated Code:</b>	R	<b>LUR Resc:</b>	
<b>Reg Code Desc:</b>	REGULATED	<b>LUR State:</b>	
<b>Notice Rg Rq Issd:</b>	6/4/2001	<b>GPS Conf:</b>	31
<b>Notice Violtn Issd:</b>		<b>RBCA GW:</b>	
<b>Contamination:</b>	GW	<b>RBCA GW Desc:</b>	
<b>Cleanup:</b>	8/14/1998	<b>RBCA:</b>	
<b>Conf Risk:</b>	L	<b>RBCA Desc:</b>	



Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
<b>Risk:</b>	H				<b>CD No:</b> 242	
<b>Land Use:</b>	RES				<b>Reel No:</b> 0	
<b>Land Use Desc:</b>	Residential				<b>ERR CD:</b> NO	
<b>Phase Reqr:</b>					<b>Valid:</b> FALSE	
<b>Intrmdt Cndition:</b>					<b>Cat Code:</b>	
<b>Corr Act Plan Cd:</b>					<b>HCS Res:</b> 1:24000	
<b>CAP Desc:</b>					<b>Reliability:</b>	
<b>Clos Reqs:</b>					<b>Supply Well:</b> 1	
<b>MTBE:</b>					<b>New Source:</b>	
<b>MTBE 1:</b>	U				<b>Book:</b>	
<b>RP Company:</b>	CIRCLE K STORES, INC.				<b>Page:</b>	
<b>HCS Ref:</b>	USGS 7.5 Minute					
<b>Comment:</b>						

04/05/2001 Thomas called he is coming for a meeting about 9am Friday the 6th. I looked in the file and he had requested finicial help but never return it to this office.

Marsh Smith  
695-0800

I receive a copy of the letter sent to RCO for finicial NFA issued by RRO.

<a href="#">5</a>	1 of 1	E	0.39 / 2,059.43	244.58 / -8	ANDERSONS CLEANERS 8126 CLIFFDALE RD STE 707, FAYETTEVILLE, NC 28314 NC 28314	DRYC CLEANUP
-------------------	--------	---	--------------------	----------------	--	-----------------

**Site ID:**   
**Latitude:** 35.0604786003 **Longitude:** -79.0472029  
**Y:** 35.0604786003072  
**X:** -79.0472028999938  
**Site Description:** List of Dry Cleaning sites  
**Note:** Documents related to facilities in NC can be searched on the NC DEQ LaserFiche WebLink: <https://edocs.deq.nc.gov/WasteManagement/Search.aspx>

**NC DEQ Online GIS – Drycleaning Details**

**Rank:**   
**Status:** NCDOL **Project Mgr Name:**   
**Priority:** **Phone:**   
**Comment:** NC Dept of Labor Drycleaner Boiler Inspection list. Date of Inspection 6/23/1997

**Certified:**   
**PType:** NCDOL   
**Status Description:**   
**Priority Description:**   
**Rank Description:**

<a href="#">6</a>	1 of 1	E	0.40 / 2,105.85	244.45 / -8	Anderson Cleaners 8122-A Cliffdale Rd. NC	DRYC CLEANUP
-------------------	--------	---	--------------------	----------------	---	-----------------

**Site ID:** 260006C **Longitude:** -79.0470200004  
**Latitude:** 35.0603999996  
**Y:** 35.0603999995604  
**X:** -79.0470200003727  
**Site Description:** List of Dry Cleaning sites  
**Note:** Documents related to facilities in NC can be searched on the NC DEQ LaserFiche WebLink: <https://edocs.deq.nc.gov/WasteManagement/Search.aspx>

**NC DEQ Online GIS – Drycleaning Details**

**Rank:**   
**Status:** Compliance Insp **Project Mgr Name:** John Stauber  
**Priority:** **Phone:** 919-707-8357  
**Comment:** Full Service (Active)  
Date Established: 1/1/2006

Map Key	Number of Records	Direction	Distance (mi/ft)	Elev/Diff (ft)	Site	DB
---------	-------------------	-----------	------------------	----------------	------	----

**Certified:**  
**PType:** Compliance Inspections  
**Status Description:**  
**Priority Description:**  
**Rank Description:**

<a href="#">7</a>	1 of 1	SE	0.72 / 3,824.35	230.77 / -21	NUNN MOUNTAIN PROSPECT CUMBERLAND COUNTY FAYETTEVILLE NC 28314	MRDS
-------------------	--------	----	--------------------	-----------------	--	------

<b>Dep ID:</b>	10055249	<b>I1:</b>	23
<b>Dev Status:</b>	OCCURRENCE	<b>Latitude:</b>	35.049316
<b>Code List:</b>	AU	<b>Longitude:</b>	-79.045288
<b>Url:</b>	http://mrddata.usgs.gov/mrds/show-mrds.php?dep_id=10055249		

**Commodity**

<b>I1:</b>	18	<b>Line:</b>	1
<b>Code:</b>	AU	<b>Inserted By:</b>	MRDS migration
<b>Commodity:</b>	Gold	<b>Insert Date:</b>	29-OCT-2002 09:00:24
<b>Commodity Type:</b>	Metallic	<b>Updated By:</b>	USGS
<b>Commodity Group:</b>	Gold	<b>Update Date:</b>	29-OCT-2002 09:00:52
<b>Importance:</b>	Primary		

**Names**

<b>I1:</b>	29	<b>Inserted By:</b>	MRDS migration
<b>Status:</b>	Current	<b>Insert Date:</b>	29-OCT-02
<b>Site Name:</b>	Nunn Mountain Prospect	<b>Updated By:</b>	USGS
<b>Line:</b>	1	<b>Update Date:</b>	29-OCT-02

# Unplottable Summary

Total: 0 Unplottable sites

DB	Company Name/Site Name	Address	City	Zip	ERIS ID
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No unplottable records were found that may be relevant for the search criteria.

# Unplottable Report

No unplottable records were found that may be relevant for the search criteria.

# Appendix: Database Descriptions

*Environmental Risk Information Services (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. ERIS updates databases as set out in ASTM Standard E1527-13, Section 8.1.8 Sources of Standard Source Information:*

*"Government information from nongovernmental sources may be considered current if the source updates the information at least every 90 days, or, for information that is updated less frequently than quarterly by the government agency, within 90 days of the date the government agency makes the information available to the public."*

## **Standard Environmental Record Sources**

### **Federal**

#### **Formerly Utilized Sites Remedial Action Program:**

[DOE FUSRAP](#)

The U.S. Department of Energy (DOE) established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from the Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations. The DOE Office of Legacy Management (LM) established long-term surveillance and maintenance (LTS&M) requirements for remediated FUSRAP sites. DOE evaluates the final site conditions of a remediated site on the basis of risk for different future uses. DOE then confirms that LTS&M requirements will maintain protectiveness.

**Government Publication Date: Mar 4, 2017**

#### **National Priority List:**

[NPL](#)

National Priorities List (Superfund)-NPL: EPA's (United States Environmental Protection Agency) list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under the Superfund program. The NPL, which EPA is required to update at least once a year, is based primarily on the score a site receives from EPA's Hazard Ranking System. A site must be on the NPL to receive money from the Superfund Trust Fund for remedial action.

**Government Publication Date: Aug 25, 2021**

#### **National Priority List - Proposed:**

[PROPOSED NPL](#)

Includes sites proposed (by the EPA, the state, or concerned citizens) for addition to the NPL due to contamination by hazardous waste and identified by the Environmental Protection Agency (EPA) as a candidate for cleanup because it poses a risk to human health and/or the environment.

**Government Publication Date: Aug 25, 2021**

#### **Deleted NPL:**

[DELETED NPL](#)

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

**Government Publication Date: Aug 25, 2021**

#### **SEMS List 8R Active Site Inventory:**

[SEMS](#)

The Superfund Program has deployed the Superfund Enterprise Management System (SEMS), which integrates multiple legacy systems into a comprehensive tracking and reporting tool. This inventory contains active sites evaluated by the Superfund program that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The Active Site Inventory Report displays site and location information at active SEMS sites. An active site is one at which site assessment, removal, remedial, enforcement, cost recovery, or oversight activities are being planned or conducted.

**Government Publication Date: Jul 29, 2021**

#### **Inventory of Open Dumps, June 1985:**

[ODI](#)

The Resource Conservation and Recovery Act (RCRA) provides for publication of an inventory of open dumps. The Act defines "open dumps" as facilities which do not comply with EPA's "Criteria for Classification of Solid Waste Disposal Facilities and Practices" (40 CFR 257).

**Government Publication Date: Jun 1985**

**SEMS List 8R Archive Sites:**

[SEMS ARCHIVE](#)

The Superfund Enterprise Management System (SEMS) Archived Site Inventory displays site and location information at sites archived from SEMS. An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time.

**Government Publication Date: Jul 29, 2021**

**Comprehensive Environmental Response, Compensation and Liability Information System -**

[CERCLIS](#)

**CERCLIS:**

Superfund is a program administered by the United States Environmental Protection Agency (EPA) to locate, investigate, and clean up the worst hazardous waste sites throughout the United States. CERCLIS is a database of potential and confirmed hazardous waste sites at which the EPA Superfund program has some involvement. It contains sites that are either proposed to be or are on the National Priorities List (NPL) as well as sites that are in the screening and assessment phase for possible inclusion on the NPL. The EPA administers the Superfund program in cooperation with individual states and tribal governments; this database is made available by the EPA.

**Government Publication Date: Oct 25, 2013**

**EPA Report on the Status of Open Dumps on Indian Lands:**

[IODI](#)

Public Law 103-399, The Indian Lands Open Dump Cleanup Act of 1994, enacted October 22, 1994, identified congressional concerns that solid waste open dump sites located on American Indian or Alaska Native (AI/AN) lands threaten the health and safety of residents of those lands and contiguous areas. The purpose of the Act is to identify the location of open dumps on Indian lands, assess the relative health and environment hazards posed by those sites, and provide financial and technical assistance to Indian tribal governments to close such dumps in compliance with Federal standards and regulations or standards promulgated by Indian Tribal governments or Alaska Native entities.

**Government Publication Date: Dec 31, 1998**

**CERCLIS - No Further Remedial Action Planned:**

[CERCLIS NFRAP](#)

An archived site is one at which EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program at this time. The Archive designation means that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

**Government Publication Date: Oct 25, 2013**

**CERCLIS Liens:**

[CERCLIS LIENS](#)

A Federal Superfund lien exists at any property where EPA has incurred Superfund costs to address contamination ("Superfund site") and has provided notice of liability to the property owner. A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. This database is made available by the United States Environmental Protection Agency (EPA).

**Government Publication Date: Jan 30, 2014**

**RCRA CORRACTS-Corrective Action:**

[RCRA CORRACTS](#)

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. At these sites, the Corrective Action Program ensures that cleanups occur. EPA and state regulators work with facilities and communities to design remedies based on the contamination, geology, and anticipated use unique to each site.

**Government Publication Date: Jun 14, 2021**

**RCRA non-CORRACTS TSD Facilities:**

[RCRA TSD](#)

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. This database includes Non-Corrective Action sites listed as treatment, storage and/or disposal facilities of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

**Government Publication Date: Jun 14, 2021**

**RCRA Generator List:**

[RCRA LQG](#)

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Large Quantity Generators (LQGs) generate 1,000 kilograms per month or more of hazardous waste or more than one kilogram per month of acutely hazardous waste.

**Government Publication Date: Jun 14, 2021**

**RCRA Small Quantity Generators List:**

[RCRA SQG](#)

RCRA Info is the EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Small Quantity Generators (SQGs) generate more than 100 kilograms, but less than 1,000 kilograms, of hazardous waste per month.

**Government Publication Date: Jun 14, 2021**

**RCRA Very Small Quantity Generators List:**

[RCRA VSQG](#)

RCRA Info is the EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Very Small Quantity Generators (VSQG) generate 100 kilograms or less per month of hazardous waste, or one kilogram or less per month of acutely hazardous waste. Additionally, VSQG may not accumulate more than 1,000 kilograms of hazardous waste at any time.

**Government Publication Date: Jun 14, 2021**

**RCRA Non-Generators:**

[RCRA NON GEN](#)

RCRA Info is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA Info replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS) and the Biennial Reporting System (BRS). A hazardous waste generator is any person or site whose processes and actions create hazardous waste (see 40 CFR 260.10). Non-Generators do not presently generate hazardous waste.

**Government Publication Date: Jun 14, 2021**

**Federal Engineering Controls-ECs:**

[FED ENG](#)

Engineering controls (ECs) encompass a variety of engineered and constructed physical barriers (e.g., soil capping, sub-surface venting systems, mitigation barriers, fences) to contain and/or prevent exposure to contamination on a property. This database is made available by the United States Environmental Protection Agency (EPA).

**Government Publication Date: Feb 23, 2021**

**Federal Institutional Controls- ICs:**

[FED INST](#)

Institutional controls are non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy. Although it is EPA's (United States Environmental Protection Agency) expectation that treatment or engineering controls will be used to address principal threat wastes and that groundwater will be returned to its beneficial use whenever practicable, ICs play an important role in site remedies because they reduce exposure to contamination by limiting land or resource use and guide human behavior at a site.

**Government Publication Date: Feb 23, 2021**

**Land Use Control Information System:**

[LUCIS](#)

The LUCIS database is maintained by the U.S. Department of the Navy and contains information for former Base Realignment and Closure (BRAC) properties across the United States.

**Government Publication Date: Sep 1, 2006**

**Emergency Response Notification System:**

[ERNS 1982 TO 1986](#)

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

**Government Publication Date: 1982-1986**

**Emergency Response Notification System:**

[ERNS 1987 TO 1989](#)

Database of oil and hazardous substances spill reports controlled by the National Response Center. The primary function of the National Response Center is to serve as the sole national point of contact for reporting oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories.

**Government Publication Date: 1987-1989**

**Emergency Response Notification System:**

[ERNS](#)

Database of oil and hazardous substances spill reports made available by the United States Coast Guard National Response Center (NRC). The NRC fields initial reports for pollution and railroad incidents and forwards that information to appropriate federal/state agencies for response. These data contain initial incident data that has not been validated or investigated by a federal/state response agency.

**Government Publication Date: Jul 26, 2021**

**The Assessment, Cleanup and Redevelopment Exchange System (ACRES) Brownfield Database:**

[FED BROWNFIELDS](#)

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties protects the environment, reduces blight, and takes development pressures off greenspaces and working lands. This database is made available by the United States Environmental Protection Agency (EPA).

**Government Publication Date:** Aug 20, 2021

**FEMA Underground Storage Tank Listing:**

[FEMA UST](#)

The Federal Emergency Management Agency (FEMA) of the Department of Homeland Security maintains a list of FEMA owned underground storage tanks.

**Government Publication Date:** Dec 31, 2017

**Facility Response Plan:**

[FRP](#)

List of facilities that have submitted Facility Response Plans (FRP) to EPA. Facilities that could reasonably be expected to cause "substantial harm" to the environment by discharging oil into or on navigable waters are required to prepare and submit Facility Response Plans (FRPs). Harm is determined based on total oil storage capacity, secondary containment and age of tanks, oil transfer activities, history of discharges, proximity to a public drinking water intake or sensitive environments.

**Government Publication Date:** Dec 2, 2020

**Historical Gas Stations:**

[HIST GAS STATIONS](#)

This historic directory of service stations is provided by the Cities Service Company. The directory includes Cities Service filling stations that were located throughout the United States in 1930.

**Government Publication Date:** Jul 1, 1930

**Petroleum Refineries:**

[REFN](#)

List of petroleum refineries from the U.S. Energy Information Administration (EIA) Refinery Capacity Report. Includes operating and idle petroleum refineries (including new refineries under construction) and refineries shut down during the previous year located in the 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, Guam, and other U.S. possessions. Survey locations adjusted using public data.

**Government Publication Date:** Jul 10, 2020

**Petroleum Product and Crude Oil Rail Terminals:**

[BULK TERMINAL](#)

List of petroleum product and crude oil rail terminals made available by the U.S. Energy Information Administration (EIA). Includes operable bulk petroleum product terminals located in the 50 States and the District of Columbia with a total bulk shell storage capacity of 50,000 barrels or more, and/or the ability to receive volumes from tanker, barge, or pipeline; also rail terminals handling the loading and unloading of crude oil that were active between 2017 and 2018. Petroleum product terminals comes from the EIA-815 Bulk Terminal and Blender Report, which includes working, shell in operation, and shell idle for several major product groupings. Survey locations adjusted using public data.

**Government Publication Date:** Apr 28, 2020

**LIEN on Property:**

[SEMS LIEN](#)

The EPA Superfund Enterprise Management System (SEMS) provides LIEN information on properties under the EPA Superfund Program.

**Government Publication Date:** Jul 29, 2021

**Superfund Decision Documents:**

[SUPERFUND ROD](#)

This database contains a listing of decision documents for Superfund sites. Decision documents serve to provide the reasoning for the choice of (or) changes to a Superfund Site cleanup plan. The decision documents include Records of Decision (ROD), ROD Amendments, Explanations of Significant Differences (ESD), along with other associated memos and files. This information is maintained and made available by the US EPA (Environmental Protection Agency).

**Government Publication Date:** Jun 28, 2021

**State**

**Inactive Hazardous Sites and Federal Remediation Branch Sites:**

[SHWS](#)



Sites on the Inactive Hazardous Sites Inventory and Federal Remediation Branch sites made available by the Division of Waste Management in the North Carolina Department of Environmental Quality (DEQ). "Inactive Hazardous Sites" by definition are any areas where a hazardous substance release has come to be located and would include active and inactive facilities and a variety of property types. The term "inactive" refers to the fact that cleanup was inactive at large numbers of sites at the time of program enactment. The Federal Remediation Branch works cooperatively with the US Environmental Protection Agency (EPA) to implement the federal Superfund program under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) as amended.

**Government Publication Date: Aug 31, 2021**

**State Trust Funds Database:**

**LUST TRUST**

The Trust Fund Branch administers the Leaking Petroleum Underground Storage Tank Cleanup Funds and Environmental Protection Agency (EPA) grants. The Underground Storage Tank (UST) funds provide reimbursement for costs incurred during the cleanup of soil and groundwater contamination resulting from a release of petroleum from an underground storage tank. Two funds, the Commercial Trust Fund and the Non-Commercial Trust Fund, have been established to reimburse tank owners, operators, and landowners for costs associated with cleanups. This was made available by the Division of Waste Management in the Department of Environmental Quality (DEQ).

**Government Publication Date: Jul 2, 2021**

**Delisted Inactive Hazardous Sites Inventory:**

**DELISTED SHWS**

This list is comprised of sites that were once included in the inventory of Inactive Hazardous Sites, but have been removed from the Division of Waste Management in the North Carolina Department of Environmental Quality (DEQ). This database is state equivalent CERCLIS.

**Government Publication Date: Aug 31, 2021**

**Solid Waste Facilities and Landfills:**

**SWF/LF**

List of permitted solid waste facilities, landfills, and septage waste sites made available by the Division of Waste Management in the North Carolina Department of Environmental Quality (DEQ).

**Government Publication Date: May 6, 2021**

**Old Landfill Inventory:**

**OLD LF**

The Old Landfill Inventory, made available by the Division of Waste Management in the North Carolina Department of Environment and Natural Resources (NCDENR), lists locations of non-permitted landfills that were closed prior to January 1, 1983 when waste disposal permitting regulations commenced. Legislation in 2007 (SB1492) resulted in adding new provisions to the Inactive Hazardous Sites Response Act for addressing these landfills. The Old Landfill Inventory is managed by the Pre-Regulatory Landfill Unit within the Inactive Hazardous Sites Branch.

**Government Publication Date: Nov 13, 2020**

**Coal Ash Disposal Sites:**

**COAL ASH LF**

The Department of Environmental Quality (DEQ) Division of Waste Management's Solid Waste Program regulates coal combustion residuals (CCR) from coal-fired electric power plants that are disposed of on land in accordance with North Carolina General Statute 130a, which includes the Coal Ash Management Act of 2014 (SL 2014-122 on August 20, 2014). CCRs primarily consist of coal bottom and fly ash, and flue gas desulfurization residuals.

**Government Publication Date: Aug 1, 2020**

**Incident Management Database (Regional Underground Storage Tanks):**

**LUST**

List of sites where there has been a release of petroleum to the soil and/or groundwater, from an Underground Storage Tank (UST) system. Data is extracted from the Regional Underground Storage Tank (RUST) database made available by the Division of Waste Management in the North Carolina Department of Environmental Quality (DEQ).

**Government Publication Date: Jul 30, 2021**

**Hazard Substance Disposal Sites:**

**HSDS**

A list of Hazard Substance Disposal Sites that are maintained by North Carolina Center for Geographic Information and Analysis. This list monitors the locations of unregulated and uncontrolled hazard waste sites. This list is the state equivalent of National Priority List (NPL).

**Government Publication Date: Dec 31, 1998**

**Aboveground Incident Management Database (Regional Aboveground Storage Tanks):**

**LAST**

Sites where there has been a discharge of petroleum to the soil and/or groundwater, from a source other than an Underground Storage Tank (UST) system (i.e., Aboveground Storage Tank (AST) system, spills, dumping, etc.). The Aboveground Incident Management database is made available by the Division of Waste Management in the North Carolina Department of Environmental Quality (DEQ).

**Government Publication Date: Aug 6, 2021**

**Delisted Leaking Storage Tanks:**

**DELISTED LST**

List of leaking storage tank sites which were once included, but have since been removed from the Incident Management Databases made available by the North Carolina Department of Environmental Quality (DEQ)'s Division of Waste Management.

*Government Publication Date: Aug 6, 2021*

**Registered Tanks Database:**

[UST](#)

List of registered underground storage tanks made available by the Division of Waste Management in North Carolina's Department of Environmental Quality (DEQ).

*Government Publication Date: Jul 30, 2021*

**Aboveground Storage Tanks:**

[AST](#)

A listing of registered Aboveground Storage Tank sites made available by the North Carolina Department of Environmental Quality (DEQ). Note that aboveground storage tanks are only required to be registered with NC DEQ if they meet the definition of an Oil Terminal Facility.

*Government Publication Date: Feb 17, 2021*

**Petroleum Storage Tanks:**

[TANK](#)

A list of petroleum storage tanks made available by the Division of Waste Management in the North Carolina Department of Environmental Quality (DEQ).

*Government Publication Date: Jul 30, 2021*

**Delisted Storage Tanks:**

[DTNK](#)

List of sites which were once included, but have since been removed from the Underground or Aboveground Storage Tank databases made available by the Division of Waste Management in the North Carolina Department of Environmental Quality (DEQ).

*Government Publication Date: Jul 30, 2021*

**Petroleum Contaminated Soil Remediation Permits:**

[SOIL REM PERMITS](#)

A list of sites that have received a permit or Certificate of Approval from the North Carolina Underground Storage Tank Section, under the Petroleum Contaminated Soil Remediation Permit Program. This list is made available by the North Carolina Department of Environmental Quality (NCDEQ), Division of Waste Management (DWM).

*Government Publication Date: Sep 15, 2021*

**No Further Action Sites with Land Use Restrictions Monitoring:**

[INST](#)

List of No Further Action Sites with Land Use Restrictions made available by the Division of Waste Management in the North Carolina Department of Environmental Quality (DEQ).

*Government Publication Date: Aug 31, 2021*

**Land Use Restriction and/or Notices:**

[LUR](#)

Locations of sites or projects managed by the NCDEQ, Division of Waste Management (DWM) having a Notice and/or Land Use Restrictions recorded at a local register of deeds office. The location data is a combined collection from eight (8) sections or programs operating within the DWM. The Notice and/or Land Use Restrictions are allowed based on the following North Carolina General Statutes: Notice of Open Dump; G.S. §130A-301(f); Notice of Inactive Hazardous Substance or Waste Disposal Site; G.S. §130A-310.8; Notice of Brownfields Property; G.S. §130A-310.35; Notice of Oil or Hazardous Substance Discharge Site; G.S. §143-215.85A; Notice of Dry-Cleaning Solvent Remediation; G.S. §143-215.104M; Notice of Contaminated Site; G.S. §143B-279.10; Notice of Residual Petroleum; G.S. §143B-279.11; Notice of Residual Contamination; G.S. §130A-310.71(e).

*Government Publication Date: Mar 26, 2020*

**Fuel Service Stations:**

[FUEL STATIONS](#)

List of active fuel service stations made available by the North Carolina Department of Agriculture & Consumer Services (NCDA&CS). The NCDA&CS have responsibilities in regulatory and service areas covering agronomy including weights and measures and gas and oil inspection.

*Government Publication Date: Jun 3, 2021*

**Delisted Fuel Service Stations:**

[DELISTED FSS](#)

A list of Fuel Service Stations that has been delisted from the active fuel service stations list which is made available by the North Carolina Department of Agriculture & Consumer Services (NCDA&CS).

*Government Publication Date: Jun 3, 2021*

**Responsible Party Voluntary Action Sites:**

[VCP](#)

List of Responsible Party Voluntary Action Sites administered by the Inactive Hazardous Sites Branch. This list is made available by the North Carolina Department of Environmental Quality (DEQ).

*Government Publication Date: Aug 31, 2021*

**Brownfields Projects Inventory:**

BROWNFIELDS

A "brownfields site" is an abandoned, idled or underused property where the threat of environmental contamination has hindered redevelopment. The North Carolina Brownfields Program, which is administered by the Division of Waste Management in the North Carolina Department of Environmental Quality (DEQ), is the state's effort to break this barrier to the redevelopment of these sites.

**Government Publication Date: Sep 1, 2021**

**Tribal**

**Leaking Underground Storage Tanks (LUSTs) on Indian Lands:**

INDIAN LUST

LUSTs on Tribal/Indian Lands in Region 4, which includes North Carolina.

**Government Publication Date: Apr 14, 2020**

**Underground Storage Tanks (USTs) on Indian Lands:**

INDIAN UST

USTs on Tribal/Indian Lands in Region 4, which includes North Carolina.

**Government Publication Date: Apr 14, 2020**

**Delisted Tribal Leaking Storage Tanks:**

DELISTED ILST

Leaking Underground Storage Tank facilities which have been removed from the Regional Tribal LUST lists made available by the EPA.

**Government Publication Date: Apr 14, 2020**

**Delisted Tribal Underground Storage Tanks:**

DELISTED IUST

Underground Storage Tank facilities which have been removed from the Regional Tribal UST lists made available by the EPA.

**Government Publication Date: Apr 14, 2020**

**County**

**No County standard environmental record sources available for this State.**

**Additional Environmental Record Sources**

**Federal**

**PFOA/PFOS Contaminated Sites:**

PFAS NPL

List of sites where PFOA or PFOS contaminants have been found in drinking water or soil. Made available by the Federal Environmental Protection Agency (EPA).

**Government Publication Date: Sep 17, 2021**

**Facility Registry Service/Facility Index:**

FINDS/FRS

The Facility Registry Service (FRS) is a centrally managed database that identifies facilities, sites, or places subject to environmental regulations or of environmental interest. FRS creates high-quality, accurate, and authoritative facility identification records through rigorous verification and management procedures that incorporate information from program national systems, state master facility records, and data collected from EPA's Central Data Exchange registrations and data management personnel. This list is made available by the Environmental Protection Agency (US EPA).

**Government Publication Date: Nov 2, 2020**

**Toxics Release Inventory (TRI) Program:**

TRIS

The EPA's Toxics Release Inventory (TRI) is a database containing data on disposal or other releases of over 650 toxic chemicals from thousands of U.S. facilities and information about how facilities manage those chemicals through recycling, energy recovery, and treatment. One of TRI's primary purposes is to inform communities about toxic chemical releases to the environment.

**Government Publication Date: Aug 24, 2021**

**Perfluorinated Alkyl Substances (PFAS) Releases:**

PFAS TRI

List of Toxics Release Inventory (TRI) facilities at which the reported chemical is a Per- or polyfluorinated alkyl substance (PFAS) included in the Environmental Protection Agency (EPA)'s consolidated PFAS Master List of PFAS Substances. The EPA's Toxics Release Inventory (TRI) is a database containing data on disposal or other releases of over 650 toxic chemicals from thousands of U.S. facilities and information about how facilities manage those chemicals through recycling, energy recovery, and treatment.

**Perfluorinated Alkyl Substances (PFAS) Water Quality:**

[PFAS WATER](#)

The Water Quality Portal (WQP) is a cooperative service sponsored by the United States Geological Survey (USGS), the Environmental Protection Agency (EPA), and the National Water Quality Monitoring Council (NWQMC). This listing includes records from the Water Quality Portal where the characteristic (environmental measurement) is in the Environmental Protection Agency (EPA)'s consolidated PFAS Master List of PFAS Substances.

Government Publication Date: Jul 20, 2020

**Hazardous Materials Information Reporting System:**

[HMIRS](#)

US DOT - Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) Incidents Reports Database taken from Hazmat Intelligence Portal, U.S. Department of Transportation.

Government Publication Date: Sep 1, 2020

**National Clandestine Drug Labs:**

[NCDL](#)

The U.S. Department of Justice ("the Department") provides this data as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy.

Government Publication Date: Oct 5, 2020

**Toxic Substances Control Act:**

[TSCA](#)

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.

The CDR enables EPA to collect and publish information on the manufacturing, processing, and use of commercial chemical substances and mixtures (referred to hereafter as chemical substances) on the TSCA Chemical Substance Inventory (TSCA Inventory). This includes current information on chemical substance production volumes, manufacturing sites, and how the chemical substances are used. This information helps the Agency determine whether people or the environment are potentially exposed to reported chemical substances. EPA publishes submitted CDR data that is not Confidential Business Information (CBI).

Government Publication Date: Apr 11, 2019

**Hist TSCA:**

[HIST TSCA](#)

The Environmental Protection Agency (EPA) is amending the Toxic Substances Control Act (TSCA) section 8(a) Inventory Update Reporting (IUR) rule and changing its name to the Chemical Data Reporting (CDR) rule.

The 2006 IUR data summary report includes information about chemicals manufactured or imported in quantities of 25,000 pounds or more at a single site during calendar year 2005. In addition to the basic manufacturing information collected in previous reporting cycles, the 2006 cycle is the first time EPA collected information to characterize exposure during manufacturing, processing and use of organic chemicals. The 2006 cycle also is the first time manufacturers of inorganic chemicals were required to report basic manufacturing information.

Government Publication Date: Dec 31, 2006

**FTTS Administrative Case Listing:**

[FTTS ADMIN](#)

An administrative case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.

Government Publication Date: Jan 19, 2007

**FTTS Inspection Case Listing:**

[FTTS INSP](#)

An inspection case listing from the Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA), together known as FTTS. This database was obtained from the Environmental Protection Agency's (EPA) National Compliance Database (NCDB). The FTTS and NCDB was shut down in 2006.

Government Publication Date: Jan 19, 2007

**Potentially Responsible Parties List:**

[PRP](#)

Early in the cleanup process, the Environmental Protection Agency (EPA) conducts a search to find the potentially responsible parties (PRPs). EPA looks for evidence to determine liability by matching wastes found at the site with parties that may have contributed wastes to the site.

Government Publication Date: Jun 25, 2021

**State Coalition for Remediation of Drycleaners Listing:**

[SCRD DRYCLEANER](#)

The State Coalition for Remediation of Drycleaners (SCRD) was established in 1998, with support from the U.S. Environmental Protection Agency (EPA) Office of Superfund Remediation and Technology Innovation. Coalition members are states with mandated programs and funding for drycleaner site remediation. Current members are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

**Government Publication Date: Nov 08, 2017**

**Integrated Compliance Information System (ICIS):**

[ICIS](#)

The Integrated Compliance Information System (ICIS) is a system that provides information for the Federal Enforcement and Compliance (FE&C) and the National Pollutant Discharge Elimination System (NPDES) programs. The FE&C component supports the Environmental Protection Agency's (EPA) Civil Enforcement and Compliance program activities. These activities include Compliance Assistance, Compliance Monitoring and Enforcement. The NPDES program supports tracking of NPDES permits, limits, discharge monitoring data and other program reports.

**Government Publication Date: Jun 14, 2021**

**Drycleaner Facilities:**

[FED DRYCLEANERS](#)

A list of drycleaner facilities from Enforcement and Compliance History Online (ECHO) online search. The Environmental Protection Agency (EPA) tracks facilities that possess NAIC and SIC codes that classify businesses as drycleaner establishments.

**Government Publication Date: May 5, 2021**

**Delisted Drycleaner Facilities:**

[DELISTED FED DRY](#)

List of sites removed from the list of Drycleaner Facilities (sites in the EPA's Integrated Compliance Information System (ICIS) with NAIC or SIC codes identifying the business as a drycleaner establishment).

**Government Publication Date: May 5, 2021**

**Formerly Used Defense Sites:**

[FUDS](#)

Formerly Used Defense Sites (FUDS) are properties that were formerly owned by, leased to, or otherwise possessed by and under the jurisdiction of the Secretary of Defense prior to October 1986, where the Department of Defense (DoD) is responsible for an environmental restoration. This list is published by the U.S. Army Corps of Engineers.

**Government Publication Date: May 26, 2021**

**Former Military Nike Missile Sites:**

[FORMER NIKE](#)

This information was taken from report DRXTH-AS-IA-83A016 (Historical Overview of the Nike Missile System, 12/1984) which was performed by Environmental Science and Engineering, Inc. for the U.S. Army Toxic and Hazardous Materials Agency Assessment Division. The Nike system was deployed between 1954 and the mid-1970's. Among the substances used or stored on Nike sites were liquid missile fuel (JP-4); starter fluids (UDKH, aniline, and furfuryl alcohol); oxidizer (IRFNA); hydrocarbons (motor oil, hydraulic fluid, diesel fuel, gasoline, heating oil); solvents (carbon tetrachloride, trichloroethylene, trichloroethane, stoddard solvent); and battery electrolyte. The quantities of material a disposed of and procedures for disposal are not documented in published reports. Virtually all information concerning the potential for contamination at Nike sites is confined to personnel who were assigned to Nike sites. During deactivation most hardware was shipped to depot-level supply points. There were reportedly instances where excess materials were disposed of on or near the site itself at closure. There was reportedly no routine site decontamination.

**Government Publication Date: Dec 2, 1984**

**PHMSA Pipeline Safety Flagged Incidents:**

[PIPELINE INCIDENT](#)

A list of flagged pipeline incidents made available by the U.S. Department of Transportation (US DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA). PHMSA regulations require incident and accident reports for five different pipeline system types.

**Government Publication Date: Jul 7, 2020**

**Material Licensing Tracking System (MLTS):**

[MLTS](#)

A list of sites that store radioactive material subject to the Nuclear Regulatory Commission (NRC) licensing requirements. This list is maintained by the NRC. As of September 2016, the NRC no longer releases location information for sites. Site locations were last received in July 2016.

**Government Publication Date: May 11, 2021**

**Historic Material Licensing Tracking System (MLTS) sites:**

[HIST MLTS](#)

A historic list of sites that have inactive licenses and/or removed from the Material Licensing Tracking System (MLTS). In some cases, a site is removed from the MLTS when the state becomes an "Agreement State". An Agreement State is a State that has signed an agreement with the Nuclear Regulatory Commission (NRC) authorizing the State to regulate certain uses of radioactive materials within the State.

**Government Publication Date: Jan 31, 2010**

**Mines Master Index File:**

[MINES](#)

The Master Index File (MIF) contains mine identification numbers issued by the Department of Labor Mine Safety and Health Administration (MSHA) for mines active or opened since 1971. Note that addresses may or may not correspond with the physical location of the mine itself.

**Surface Mining Control and Reclamation Act Sites:**

SMCRA

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by the Office of Surface Mining Reclamation and Enforcement (OSMRE) to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of Abandoned Mine Land (AML) impacts, as well as information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Government Publication Date: Dec 18, 2020

**Mineral Resource Data System:**

MRDS

The Mineral Resource Data System (MRDS) is a collection of reports describing metallic and nonmetallic mineral resources throughout the world. Included are deposit name, location, commodity, deposit description, geologic characteristics, production, reserves, resources, and references. This database contains the records previously provided in the Mineral Resource Data System (MRDS) of USGS and the Mineral Availability System/Mineral Industry Locator System (MAS/MILS) originated in the U.S. Bureau of Mines, which is now part of USGS. The USGS has ceased systematic updates of the MRDS database with their focus more recently on deposits of critical minerals while providing a well-documented baseline of historical mine locations from USGS topographic maps.

Government Publication Date: Mar 15, 2006

**Uranium Mill Tailings Radiation Control Act Sites:**

URANIUM

The Legacy Management Office of the Department of Energy (DOE) manages radioactive and chemical waste, environmental contamination, and hazardous material at over 100 sites across the U.S. The L.M. Office manages this database of sites registered under the Uranium Mill Tailings Control Act (UMTRCA).

Government Publication Date: Mar 4, 2017

**Alternative Fueling Stations:**

ALT FUELS

List of alternative fueling stations made available by the US Department of Energy's Office of Energy Efficiency & Renewable Energy. Includes Biodiesel stations, Ethanol (E85) stations, Liquefied Petroleum Gas (Propane) stations, Ethanol (E85) stations, Natural Gas stations, Hydrogen stations, and Electric Vehicle Supply Equipment (EVSE). The National Renewable Energy Laboratory (NREL) obtains information about new stations from trade media, Clean Cities coordinators, a Submit New Station form on the Station Locator website, and through collaborating with infrastructure equipment and fuel providers, original equipment manufacturers (OEMs), and industry groups.

Government Publication Date: Jul 12, 2021

**Registered Pesticide Establishments:**

SSTS

List of active EPA-registered foreign and domestic pesticide-producing and device-producing establishments based on data from the Section Seven Tracking System (SSTS). The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Section 7 requires that facilities producing pesticides, active ingredients, or devices be registered. The list of establishments is made available by the EPA.

Government Publication Date: Apr 13, 2021

**Polychlorinated Biphenyl (PCB) Notifiers:**

PCB

Facilities included in the national list of facilities that have notified the United States Environmental Protection Agency (EPA) of Polychlorinated Biphenyl (PCB) activities. Any company or person storing, transporting or disposing of PCBs or conducting PCB research and development must notify the EPA and receive an identification number.

Government Publication Date: Nov 19, 2020

**State**

**Dry Cleaning Contamination and Solvent Cleanup Act (DSCA) Program:**

DRYC CLEANUP

List of Dry Cleaning sites known to the Division of Waste Management in the Department of Environmental Quality (DEQ), including: sites that have been certified into the Dry-Cleaning Solvent Cleanup Act Program (DSCA) Program; sites that are being investigated by the DSCA Program for dry-cleaning solvent contamination; sites that have been investigated and determined not to have been contaminated by dry-cleaning solvent contamination; locations where the North Carolina Department of Labor has conducted boiler inspections at drycleaners prior to 1986; and historical addresses of drycleaners and laundry businesses from city directories. Made available by the North Carolina Department of Environmental Quality.

Government Publication Date: Mar 18, 2021

**Dry Cleaning Facilities:**

DRYCLEANERS

A list of dry cleaners made available by the North Carolina Department of Environmental Quality (DEQ), Division of Waste Management.

Government Publication Date: May 31, 2020

**Delisted Dry Cleaning Facilities:**

[DELISTED DRYCLEANERS](#)

List of dry cleaner locations which were once included, but no longer appear on, the list of dry cleaner locations made available by the Division of the Waste Management of North Carolina Department of Environmental Quality (DEQ).

**Government Publication Date: Mar 18, 2021**

**Incident Management Database (Spills):**

[SPILLS](#)

The Incident Management Database (IMD) tracks spills, hazardous material releases, sanitary sewer overflows and wastewater treatment plant bypasses. This database is managed by the Pretreatment, Emergency Response and Collection Systems (PERCS) unit of the Department of Environmental Quality (DEQ).

**Government Publication Date: Feb 8, 2021**

**Manufactured Gas Plant (MGP) Sites:**

[MGP](#)

A list of Manufactured Gas Plant (MGP) sites participating in the MGP Assessment and Remediation Program as described in the Administrative Order on Consent 00-SF-192. This list is made available by the North Carolina Environmental Quality (NCDEQ) Division of Waste Management.

**Government Publication Date: Dec 12, 2019**

**Per- and Polyfluoroalkyl Substances (PFAS):**

[PFAS](#)

A list of sites where Per- and Polyfluoroalkyl Substances (PFAS) has been identified, made available by the North Carolina Department of Environment Quality.

**Government Publication Date: Aug 27, 2020**

**Recycling Markets Directory:**

[SWRCY](#)

List of recycling facilities made available by the Division of Environmental Assistance and Customer Service (DEACS) of the NC Department of Environmental Quality. Information is based on data supplied by the listed organizations to DEACS. DEACS is a non-regulatory state agency, does not regularly inspect facilities, and does not represent that the companies are, or are not, in compliance with applicable federal, state and local laws.

**Government Publication Date: May 27, 2021**

**Hazardous Waste Sites:**

[HAZ](#)

A list of sites within North Carolina that are regulated by the hazardous waste portions of the Resource Conservation and Recovery Act (RCRA). This list is provided by the North Carolina Department of Environmental Quality (NC DEQ), Division of Waste Management.

**Government Publication Date: Feb 21, 2019**

**Permitted Septage Sites:**

[SDTF](#)

List of active and permitted Septage Detention and Treatment Facility (SDTF) sites in North Carolina, made available by the North Carolina Department of Environmental Quality.

**Government Publication Date: Sep 21, 2018**

**Tier 2 Report:**

[TIER 2](#)

A list of Tier 2 facilities in North Carolina. This list is made available by the North Carolina Department of Environmental Quality (NC DEQ).

**Government Publication Date: Oct 30, 2020**

**Underground Injection Control Wells:**

[UIC](#)

This list of Underground Injection Control Wells is made available by the North Carolina Department of Environment and Natural Resources.

**Government Publication Date: Oct 26, 2020**

**Animal Feeding Operation Permits:**

[FEEDLOTS](#)

This list of animal feeding operation permits is made available by the Water Quality Division of the North Carolina Department of Environment and Natural Resources.

**Government Publication Date: Apr 1, 2020**

**Air Permitted Facilities:**

[AIR PERMIT](#)

This list of facilities with air quality permits is made available by the Air Quality Division of the North Carolina Department of Environment and Natural Resources.

**Government Publication Date: Jul 21, 2020**

**Tribal**

*No Tribal additional environmental record sources available for this State.*

**County**

*No County additional environmental record sources available for this State.*



# Definitions

**Database Descriptions:** This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

**Detail Report:** This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

**Distance:** The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

**Direction:** The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

**Elevation:** The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

**Executive Summary:** This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

**Map Key:** The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

**Unplottables:** These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and are included as reference.

# **APPENDIX C-2: Regulatory Records - General Public Records**

October 15, 2021

Renee Gledhill-Earley  
State Historic Preservation Office  
4617 Mail Service Center  
Raleigh, NC 27699-4617  
[Environmental.Review@ncdcr.gov](mailto:Environmental.Review@ncdcr.gov)

Re: Proposed Housing Development  
Cliffdale Crossing  
8368 Cliffdale Road  
Fayetteville, NC 28314  
Nova Project No.: CK21-8848

Dear Ms. Gledhill-Earley:

Nova Group, GBC (Nova) is writing on behalf of Smith Duggins Developers, LLC to solicit your comments on a proposed development project at the above referenced address. As the Project is a federal undertaking regulated by the Department of Housing and Urban Development (HUD), it is being reviewed under Section 106 of the National Historic Preservation Act for its impacts to historic architectural and archaeological resources.

The Subject Property consists of a vacant 18.18-acre parcel located on the north side of Cliffdale Road between Glen Iris Drive and Buhmann Drive. Smith Duggins Developers, LLC proposes to construct six two-story residential structures and a leasing/community building on the southern portion of the property. The site will be accessed via Cliffdale Road with a driveway and parking located at the center of the parcel and the buildings on the exterior. The development will consist of 80 housing units: 12 one-bedroom, one bath units; 40 two-bedroom, one bath units; and 28 three-bedroom, two bath units.

An Invitation to consult letter was submitted to the Fayetteville Certified Local Government on September 24, 2021. A public notice was posted in the Fayetteville Observer on September 30, 2021. As of the date of this report, no response has been received. Should a response be received, a copy will be sent to you under separate cover.

Based on the height and size of the proposed development as well as neighborhood context, Nova has determined that the visual Area of Potential Effects (APE) for this project is an area 1,500 feet from the Subject Property.

Based on research completed by Laura L. Mancuso, a Secretary of the Interior Qualified Architectural Historian, no properties over 50 years old are located within the APEs. In addition, a review of properties listed on or eligible for listing on the National Register of Historic Places was completed on September 23, 2021, by Ms. Mancuso. No properties were identified on the property or within the 1,500-foot visual APE; therefore, no historic properties will be affected by the proposed undertaking. Nova is requesting your concurrence with the determination that there are *No Historic Properties in APE* for both direct and visual effects.



A Phase I Archaeological Review was completed by the Archaeological Consultants of the Carolinas, Inc. Please see the attached Report which concludes that no cultural resources were identified, and no further archaeological investigations are recommended.

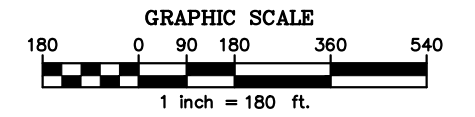
Should you have any questions, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink that reads "Laura L. Mancuso".

Laura L. Mancuso  
National Practice Leader-Cultural Resources  
203.240.0077  
laura.mancuso@novagroupgbc.com

# CLIFFDALE CROSSING SITE PLAN



**PROJECT DATA**  
 PROJECT: CLIFFDALE DEVELOPMENT  
 PROJECT PIN: 9487-36-6817  
 DEED BOOK/PAGE: 8868/0899  
 PROJECT ADDRESS: CLIFFDALE RD. FAYETTEVILLE, NC  
 DEVELOPER / FINANCIALLY RESPONSIBLE PARTY: SMITH DUGGINS DEVELOPERS, LLC  
 2929 BREEZEWOOD AVENUE SUITE 102 FAYETTEVILLE, NC 28303

**SITE DATA**  
 DEVELOPMENT SITE= 8.00 AC± (OF 18.18 AC. SITE)  
 ZONING = MR-5 (MIXED RESIDENTIAL)  
 SETBACKS: FRONT= 25 FT  
 SIDE= 10 FT  
 REAR= 30 FT  
 LATITUDE / LONGITUDE..... 35° 3' 30.18" N, 79° 3' 14.75" W  
 PROPOSED DENSITY= 80 DU = 9.6 DU/AC.  
 NO. OF UNITS: 80 DU (12-1 BR, 40-2 BR, 28-3 BR)  
 8 ADA UNITS INCLUDED: 2-1 BR, 4- 2 BR, 2  
 PARKING SPACES REQUIRED (COF):  
 1.8 SP/DU UNIT= 1.8x80 DU=144 SPACES  
 (1 ADA SPACES PER 25 INCL=6 ADA SPACES)  
 PARKING SPACES PROVIDED:  
 1.8 SP/DU UNIT= 1.8x80 DU= 144 SPACES  
 4 COMMON AREA SPACES (PLAYGROUND)  
 TOTAL SPACES PROVIDED = 148 SPACES  
 (13 ADA SPACES INCL.)  
 BUILT UPON AREA (BUILDINGS-PARKING -WALKWAYS)= 5.53 AC±  
 OPEN SPACE SET-ASIDE AREAS =2.2.47 AC±=30.8%± (10% REQ'D)  
 IMPERVIOUS AREA:  
 EXISTING: 0 AC ±  
 PROPOSED ROADS & SIDEWALKS: 92,268 SF  
 PROPOSED BUILDINGS: 48,705 SF (1.12 AC±)  
 TOTAL PROPOSED IMP: 3.24 AC±

TOTAL DISTURBED AREA= 5.61± AC.  
**SITE AMENITIES**  
 THE FOLLOWING ITEMS HAVE BEEN NOTED ON THE SITE PLAN TO BE PROVIDED WITH THE PROJECT:  
 (1)PLAY GROUNDS W/ EQUIPMENT & BENCHES  
 (1) TOT LOTS W/ EQUIPMENT & BENCHES  
 (1) COVERED PICNIC AREA W/ TWO TABLES & GRILL (150 SF)  
 (3) OUTDOOR SITTING AREAS W/BENCHES  
 COVERED POSTAL FACILITY  
 LANDSCAPED ENTRY + ENTRANCE SIGNS  
 IRRIGATED LAWNS  
**SHARED COMMUNITY BUILDING WITH THE FOLLOWING:**  
 OFFICE W/ STORAGE AND HC TOILETS  
 LAUNDRY ROOM W/ 4 WASHERS & 4 DRYERS  
 COMPUTER CENTER W/ HIGH SPEED INTERNET (2 STATIONS)  
 PLUS 2 NEW STATIONS  
 COMMUNITY ROOM W/ KITCHENETTE



# Cliffdale Crossing

Smith Duggins Developers, LLC  
CK21-8848  
USGST Cliffdale NC 1983





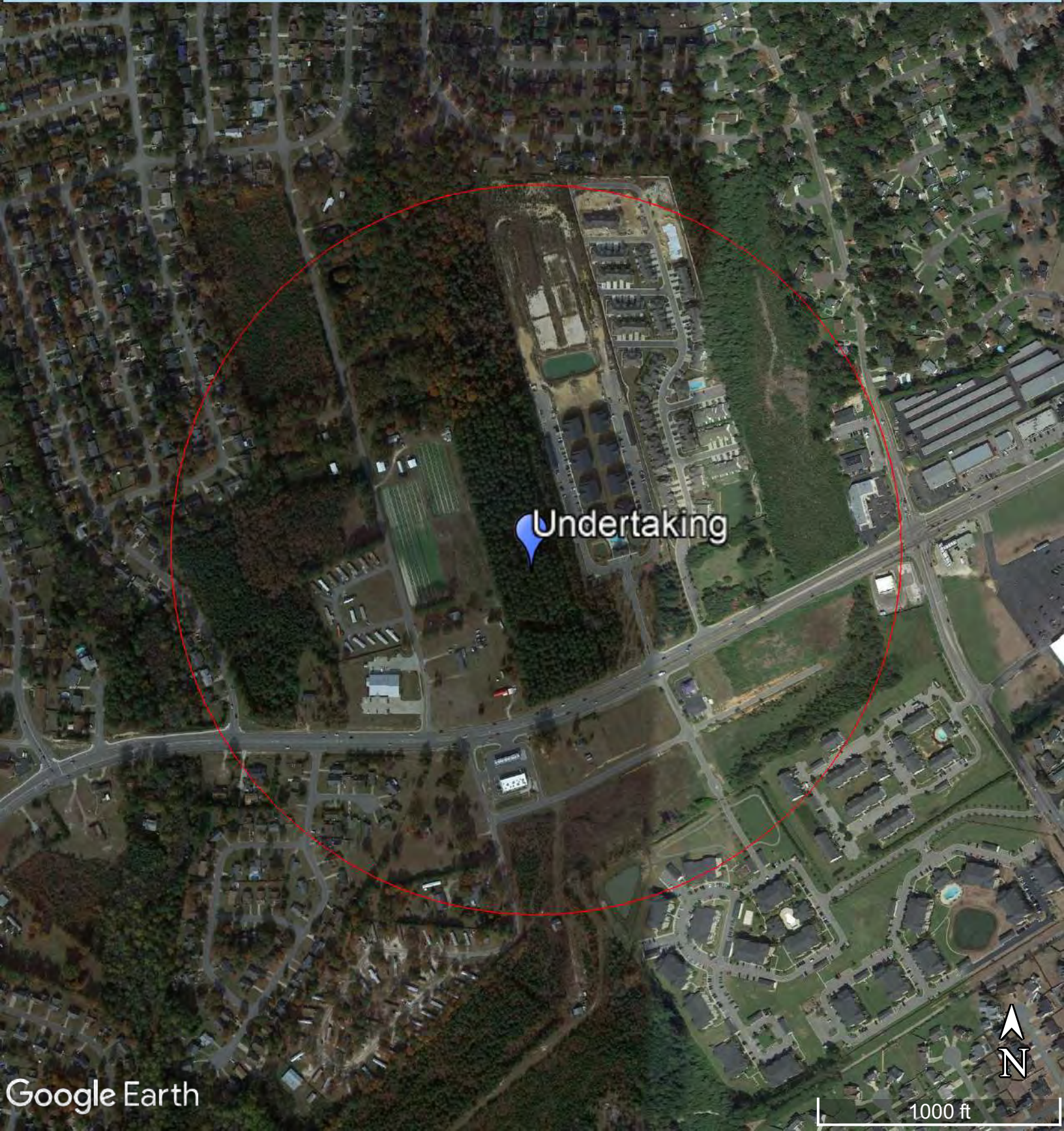
Nova  
Group

Aerial Photograph

Source: Google Earth

## Legend

-  1,500-foot APE
-  Undertaking



# Cliffdale Crossing

Smith Duggins Developers, LLC  
CK21-8848  
USGST Cliffdale NC 1983





Nova  
Group

Aerial Photograph

Source: Google Earth

## Legend

-  1,500-foot APE
-  Undertaking



Undertaking

Google Earth



700 ft

# Cliffdale Crossing

Smith Duggins Developers, LLC  
CK21-8848  
USGST Cliffdale NC 1983





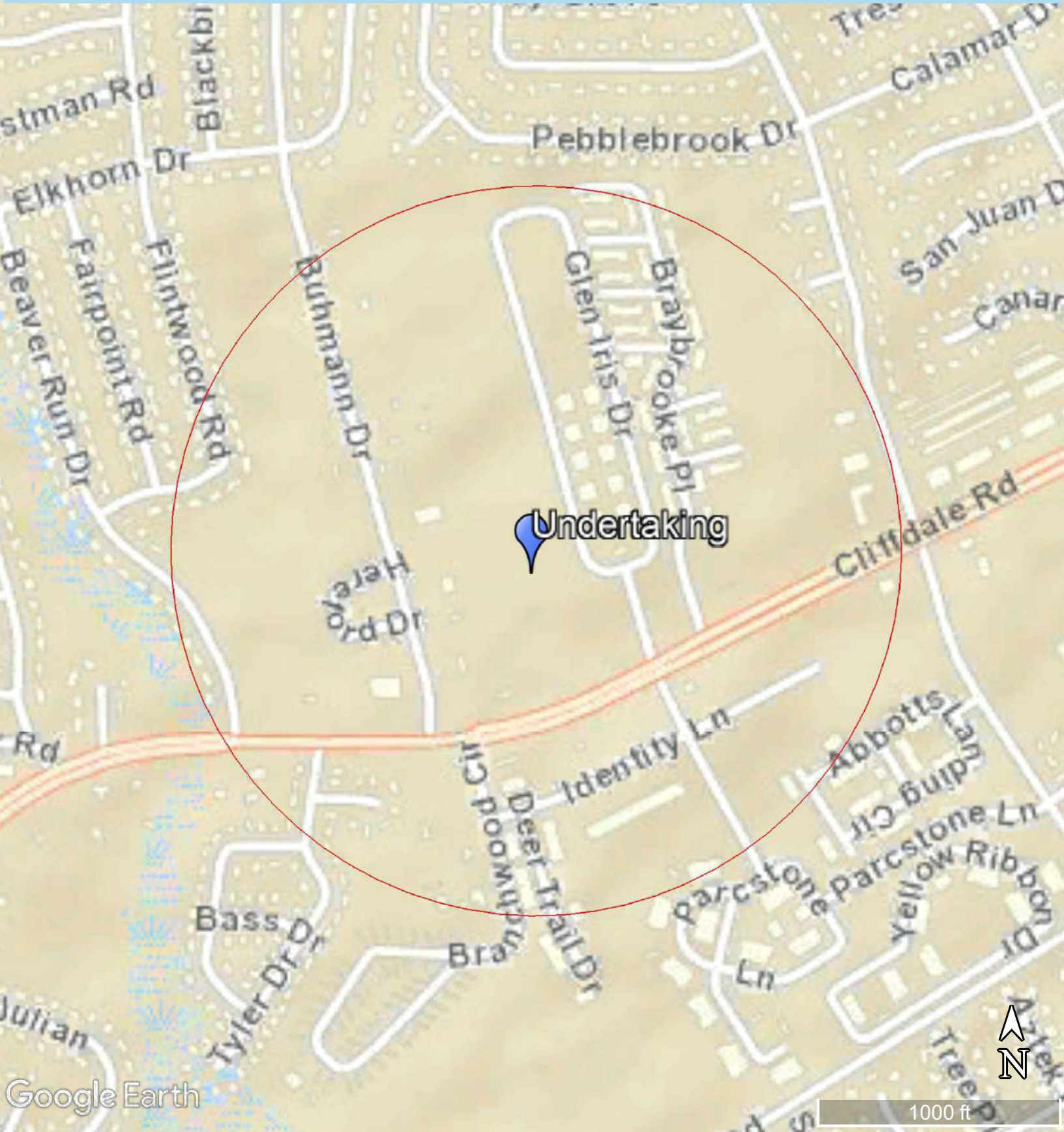
# Nova Group

## Street Map

Sources: ESRI, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, METI, NGCC, OpenStreetMap contributors, and the GIS User Community

### Legend

-  1,500-foot APE
-  Undertaking





# Cliffdale Crossing

Smith Duggins Developers, LLC  
CK21-8848  
USGST Cliffdale NC 1983





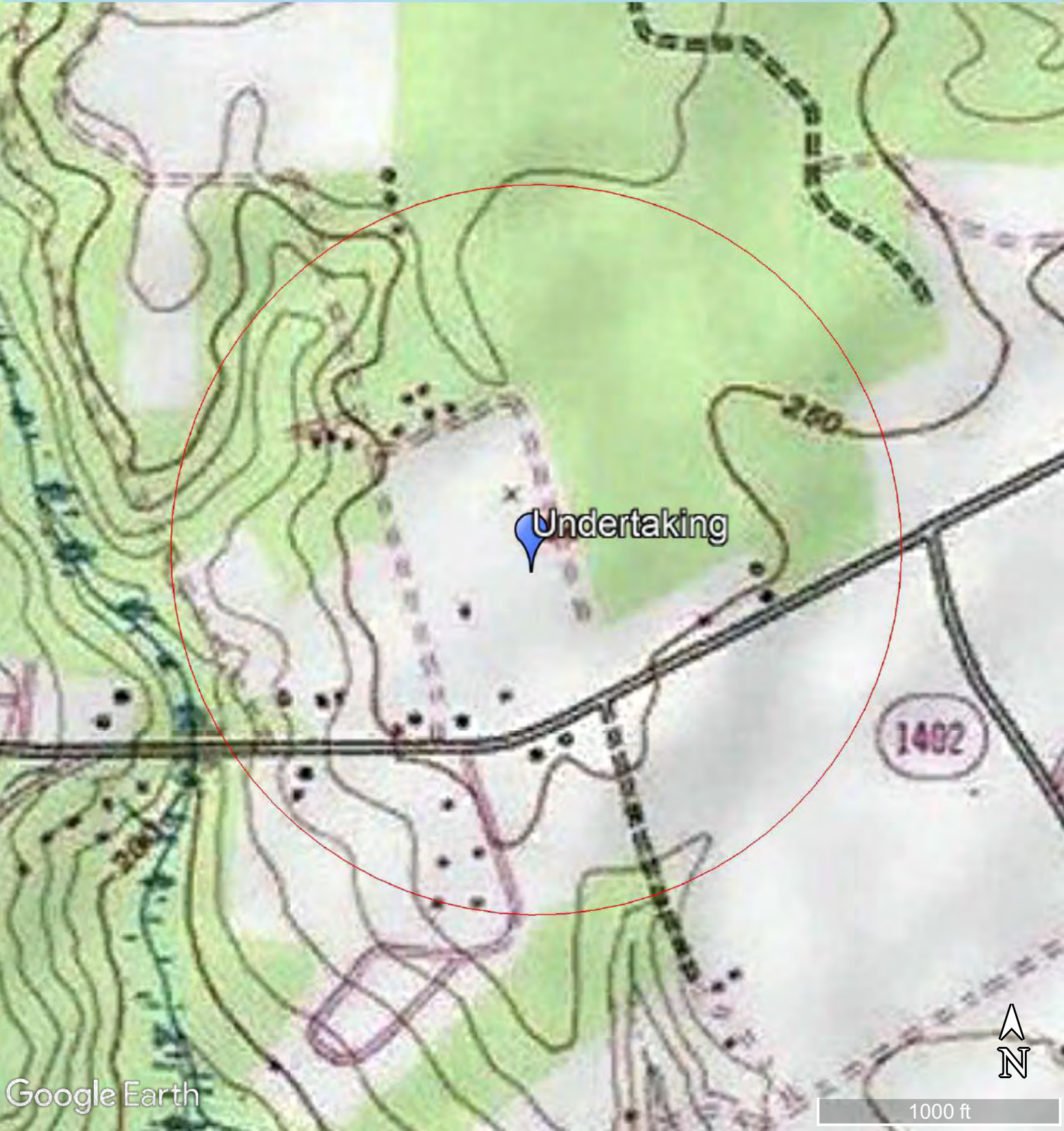
Nova  
Group

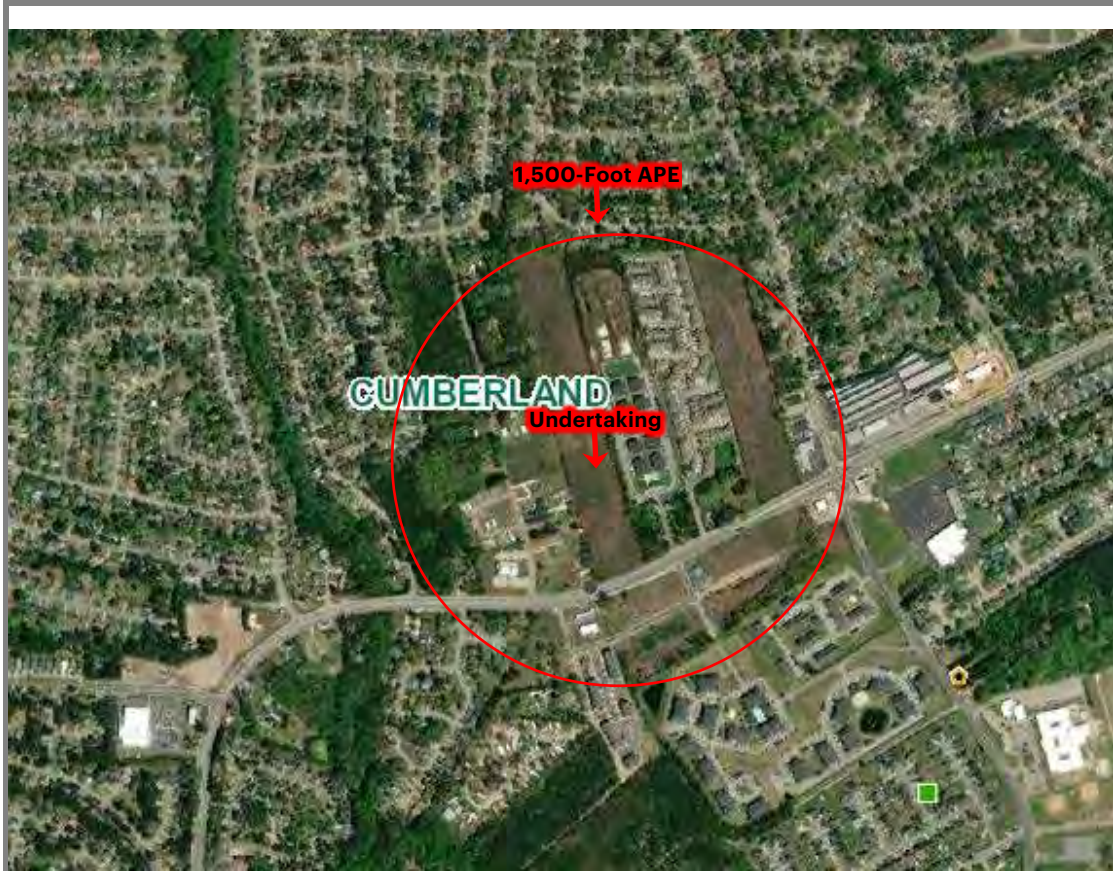
USGS 7.5 Minute Quadrangle Map

Sources: 2013 National Geographic Society, i-cubed

## Legend

-  1,500-foot APE
-  Undertaking





## Historic Properties Map

Source: HPOWEB 2.0



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**Applicant's Name:** Smith Duggins  
Developers, LLC  
**Project Name:** Cliffdale Crossing  
**Nova Project Number:** CK21-8848

# Photographs



**APE-VE Map for Visual Effects and Photo Key**

Source: Google Earth 2021

— Undertaking



**Applicant's Name:** Smith Duggins Developers, LLC  
**Project Name:** Cliffdale Crossing  
**Nova Project Number:** CK21-8848

The following photographs were taken on September 27 and 28, 2021 unless otherwise noted.

1. View looking north from the center of the Subject Property.



2. View looking east from the center of the Subject Property.



3. View looking south from the center of the Subject Property.



4. View looking west from the center of the Subject Property.



5. View looking north from the southern portion of the Subject Property.



6. View looking east from the southern portion of the Subject Property.



7. View looking south from the southern portion of the Subject Property.



8. View looking west from the southern portion of the Subject Property.



9. View looking northwest from Cliffdale Road.



10. View looking west from Cliffdale Road.





11. View looking northwest to the Subject Property from Enforcement Drive.



12. View looking west-northwest to the Subject Property from Cliffdale Road at the edge of the APE.



13. View looking southeast to the Subject Property from Buhmann Drive at the edge of the APE.



14. View looking east-southeast to the Subject Property from Buhmann Drive.



15. View looking east to the Subject Property from Buhmann Drive.



16. View looking east-northeast to the Subject Property from Cliffdale Road from the edge of the APE.



17. View looking southwest to the Subject Property from Glen Iris Drive.



**Archaeological Survey of the  
Cliffdale Crossing Tract  
Cumberland County, North Carolina**

**DRAFT REPORT**



**Archaeological Consultants of the Carolinas, Inc.  
October 2021**

**Archaeological Survey of the  
Cliffdale Crossing Tract,  
Cumberland County, North Carolina**

Prepared for  
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New Orleans, Louisiana

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**Archaeological Consultants of the Carolinas, Inc.  
October 2021**

## Management Summary

Between September 27 and 28, 2021, Archaeological Consultants of the Carolinas (ACC), Inc., conducted an intensive archaeological survey of the 18-acre (7.3-ha) Cliffdale Crossing tract in Cumberland County, North Carolina. This survey was undertaken on behalf of Nova Group, GBC as due diligence in anticipation of Housing and Urban Development (HUD) funding requirements for the completion of an archaeological survey. The goals of this investigation were to identify all archaeological resources located within the project tract, assess those resources for eligibility for the National Register of Historic Places (NRHP), and advance management recommendations, as appropriate.

Cultural and environmental background research was conducted prior to the field visit. No previously recorded archaeological sites are located within a 1.6-kilometer radius of the project tract. Five historic resources are recorded within 1.6 kilometers of the project tract. Four of these resources have been determined to be not eligible for the NRHP. One resource, the Angus McGill House (CD0694), was placed on the Study List in 1980. None will be impacted by the proposed development.

Prior to conducting the field investigation, approximately 16.3 acres (6.6 ha) of the tract were determined to have high potential for the presence of archaeological sites. The survey in these areas consisted of excavating shovel tests at 30-meter intervals along parallel transects 30-meters apart. Low potential areas totaled 1.7 acres (0.7 ha) and were examined using pedestrian survey and judgmentally placed shovel tests. All areas of exposed ground surface were visually inspected for cultural remains. No archaeological deposits were identified during the survey, and no further work is recommended within the project tract.



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# Chapter 1. Introduction

Between September 27 and 28, 2021, Archaeological Consultants of the Carolinas (ACC), Inc., conducted an intensive archaeological survey of the 18-acre (7.3-ha) Cliffdale Crossing tract in Cumberland County, North Carolina. This survey was undertaken on behalf of Nova Group, GBC as due diligence in anticipation of Housing and Urban Development (HUD) funding requirements for the completion of an archaeological survey. The goals of this investigation were to identify all archaeological resources located within the project tract, assess those resources for eligibility for the National Register of Historic Places (NRHP), and advance management recommendations, as appropriate. Mr. Michael O’Neal served as Principal Investigator and Field Director. He was assisted in the field by Mr. Robert Jordan. The field investigation required a total of four person days to complete.

## Project Area

The project tract encompasses 18 acres (7.3 ha) located west of the city of Fayetteville, in Cumberland County, North Carolina (Figure 1.1). The tract boundaries are comprised primarily of property lines (Figure 1.2 and Figure 1.3). The tract is bound on the north, east, and west by residential areas. Cliffdale Road borders the tract on the south.

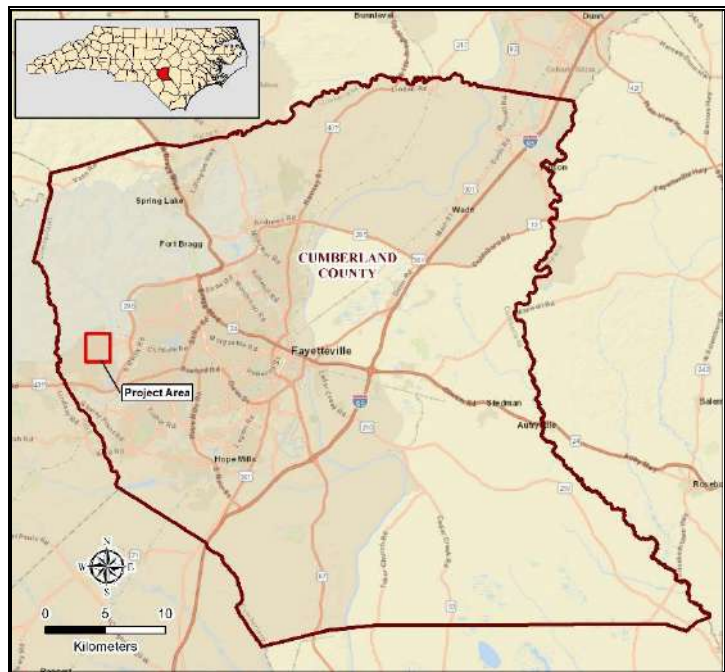
The project tract is characterized primarily by young pines and hardwoods and dense briars and other secondary growth (Figure 1.4). The western portion of a Carolina Bay is located in the northern portion of the project tract. Vegetation in the Carolina Bay was very dense (Figure 1.5).

## Methods of Investigation

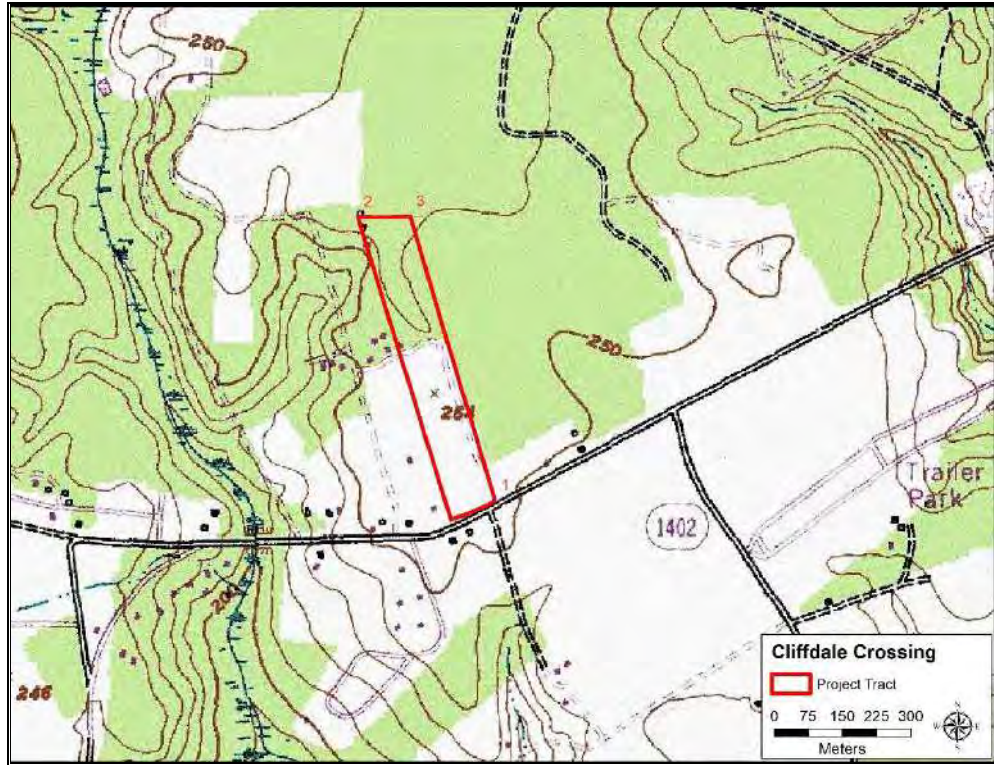
This investigation consisted of four separate tasks: Archival Research, Field Survey, Laboratory Analysis, and Report Production. Each of these tasks is discussed in detail below.

## Archival Research

Archival research began with a review of archaeological site forms, maps, and reports on file at the North Carolina Office of State Archaeology (OSA) in Raleigh, as well as a review of historic resources mapped on the Department of Natural and Cultural Resources (DNCR) Survey and Planning Division’s mapping application website (HPOWEB). This review served to identify previously recorded resources in the project vicinity and provided data on the prehistoric and historic context of the project area. Historic



**Figure 1.1.** Map showing the location of the project tract in Cumberland County, North Carolina.



**Figure 1.2.** Topographic map showing the project tract (1950 *Cliffdale NC* 7.5-minute USGS topographic quadrangle [photorevised 1971]).



**Figure 1.3.** Aerial view of the project tract.





**Figure 1.4.** View of mixed hardwoods and pines in the project tract.



**Figure 1.5.** View of planted pine area in the project tract.

maps of Cumberland County and the project vicinity were obtained from a wide variety of published and online sources. Maps reviewed for this project include the 1922 Cumberland County soil map, the 1938 county highway map, and topographic maps dating from 1948 to 1997. The maps were used to determine past land use, the possible presence of structural remains or historic landscape features and known Native American occupations. Aerial images dating back to 1993 were also examined. The United States Department of Agriculture (USDA) Web Soil Survey, the published soil survey of Cumberland County, and LiDAR imagery were consulted to determine the environmental characteristics of the project vicinity.

## Field Survey

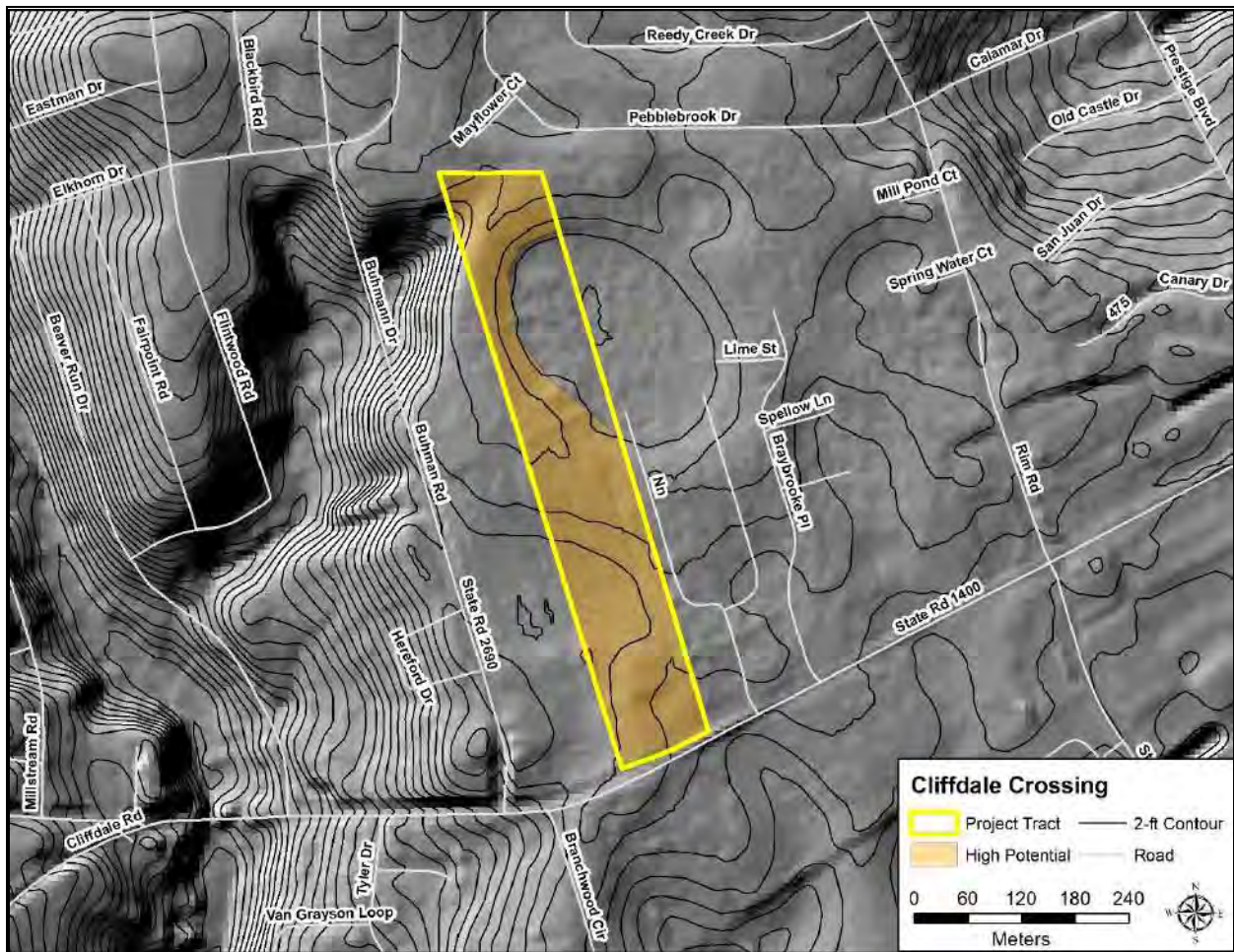
Close-interval contour topographic maps, Light Detecting and Ranging (LiDAR) images, and soil survey data were consulted prior to the field survey to identify portions of the tract with high potential for the presence of archaeological remains. High probability areas were determined based on the presence of well- and moderately well drained soils and the proximity to wetlands and/or drainage frontage. Approximately 16.3 acres (6.6 ha) in the project tract were determined to have a high potential for the presence of archaeological sites (Figure 1.6). These areas were shovel tested at 30-meter intervals along transects spaced 30 meters apart. The remaining 1.7 acres (0.6 ha) were defined as having low potential for the presence of archaeological deposits. These areas were subjected to pedestrian walkover with judgmentally placed shovel tests. This survey strategy was approved by Dr. David Cranford, Assistant State Archaeologist.

Shovel tests measured approximately 30 centimeters in diameter and were excavated to 10 centimeters into subsoil or to the water table. Shovel test fill was screened through ¼ inch wire mesh. Details of artifacts and soils for each shovel test were recorded in field notebooks. No artifacts were identified during this investigation. However, when artifacts are collected, they are placed in plastic bags labeled with the date, field site number, grid point locations (i.e., shovel test/transect or north/east coordinate), depth of artifacts, and initials of the excavator.

A site is defined as an area containing one or more artifacts within a 30-meter or less diameter of surface exposure or where surface or subsurface cultural features are present. Artifacts and/or features less than 50 years in age are not considered a site without a specific research or management reason. At sites where good surface visibility is available, site boundaries are determined based on both close interval surface examination and selective shovel testing. At sites where the ground surface is obscured, site boundaries are established by excavating shovel tests at 15-meter intervals across the site area. Site settings are photographed with a digital camera. Sketch maps are produced in the field showing the locations of shovel tests and surface finds. The locations of all archaeological sites as well as the surface collection transects are recorded using a Trimble Pathfinder Geo 7x Global Positioning System (GPS) unit capable of sub-meter accuracy. These GPS data are then relayed onto project maps.

Site significance is based on the site's ability to contribute to our understanding of past lifeways, and its subsequent eligibility for listing on the NRHP. Department of Interior regulations (36 CFR Part 60) established criteria that must be met for an archaeological site or historic resource to be considered significant, or eligible for the NRHP (Townsend et al. 1993). Under these criteria, a site can be defined as significant if it retains integrity of "location, design, setting, materials, workmanship, feeling, and association" and if it *A*) is associated with events that have made a significant contribution to the broad pattern of history; *B*) is associated with the lives of persons significant in the past; *C*) embodies distinctive characteristics of a type, period, or method of construction, or represents work of a master, possesses high artistic values or represents a significant and distinguishable entity whose components may lack individual distinction; or *D*) has yielded, or is likely to yield, information important in history or prehistory. Archaeological sites are most frequently evaluated pursuant to Criterion D. However, all archaeological sites can be considered under all four criteria.





**Figure 1.6** LiDAR map showing high potential areas in the project tract.

The primary goals of this field investigation were to identify archaeological resources and evaluate their potential research value or significance. Although the determination of the site significance is made by the State Historic Preservation Office, whenever possible, sufficient data are gathered to allow us to make a significance recommendation. Sites that exhibit little or no further research potential are recommended *not eligible* for the NRHP, and no further investigation is proposed. Sites for which insufficient data could be obtained at the survey level are considered *unassessed* and preservation or more in-depth investigation is advocated. It is rare for ample data to be recovered at the survey level of investigation to definitively determine that a site meets NRHP eligibility criteria. However, when this occurs, the site is recommended *eligible* for the NRHP. Again, preservation of the resource is advocated. If preservation is not possible, mitigation options (e.g., data recovery) would need to be considered.

### Laboratory Analysis

Had artifacts been recovered, they would have been processed in the Clayton laboratory facilities of ACC. All artifacts would be washed in warm soapy water and allowed to thoroughly air dry. A provenience number, based on artifact contexts (i.e., grid coordinate, depth, etc.), would be assigned to each positive excavation location. Within each provenience, individual artifacts or artifact classes would then be

assigned a catalog number. Artifacts would be cataloged based on specific morphological characteristics and would be compared to such as raw material in the case of lithics, and decoration and temper type in the case of prehistoric ceramics. Historic artifacts would have been identified by color, material of manufacture (e.g., ceramics), type (e.g., slipware), form (e.g., bowl, plate), method of manufacture (e.g., molded), period of manufacture (e.g., 1780-1820), and intended function (e.g., tableware). Historic artifacts with established manufacture date ranges would have been categorized using published sources.

Upon acceptance of the final project report, all analysis sheets, field notes, photographs, and maps, will be prepared according to federal guidelines and transferred to OSA for final curation.

### **Project Documentation**

Data compiled during this investigation was used to produce this document with details of the tasks undertaken. Chapter 2 presents environmental and cultural overviews of the project region. Chapter 3 present the results of the archival research. The results of field investigation and management recommendations, as appropriate, are presented in Chapter 4.

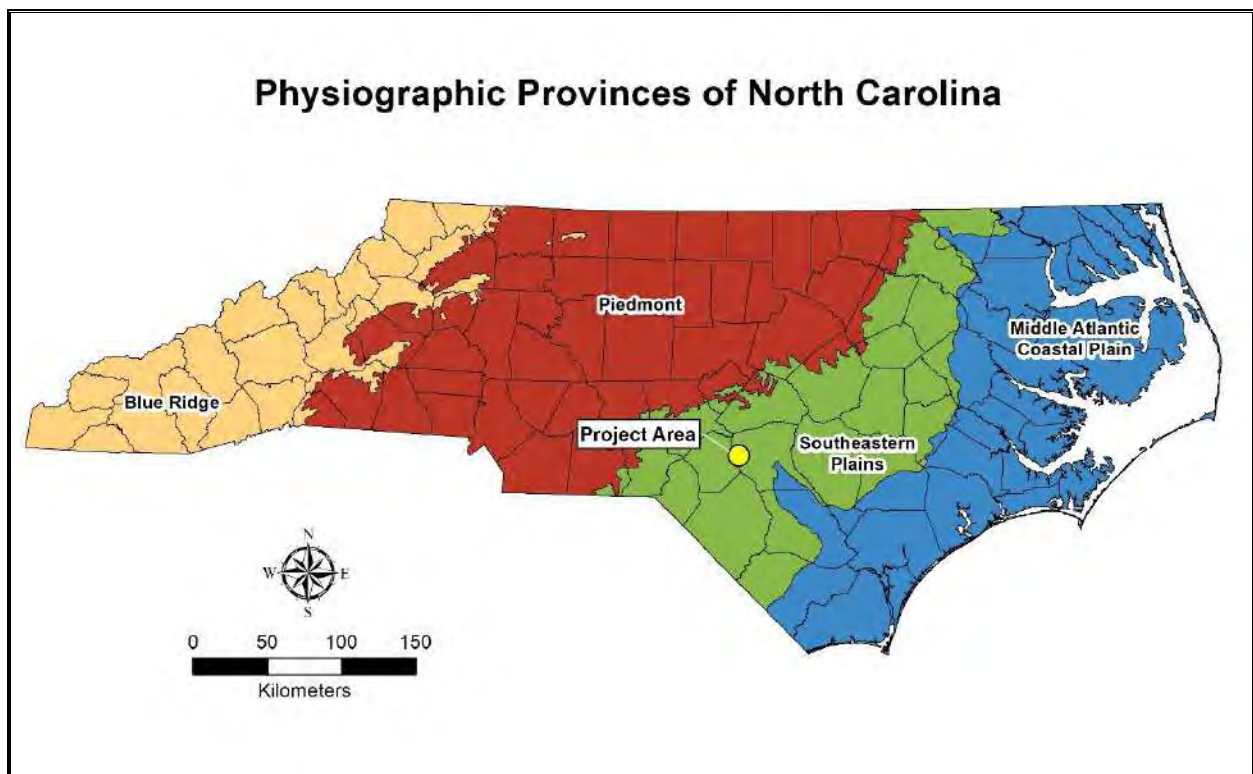


## Chapter 2. Environmental and Cultural Overview

To be able to comprehensively examine the archaeological resources identified during this survey, it is necessary to understand the larger context within which they occur. The natural environment, technological development, and ideological values are all intertwined in shaping the way humans live. In this chapter, details about the local environment and cultural development in the region are presented to provide a context within which these archaeological resources can be assessed. This basic framework is an important tool in evaluating the National Register of Historic Places (NRHP) eligibility of these resources.

### Environmental Overview

Cumberland County is in the southwestern portion of the upper Coastal Plain of North Carolina (Figure 3.1). The Coastal Plain is comprised of broad, relatively flat terraces of unconsolidated sediments and carbonate rocks that were deposited in shallow seas by rivers draining the Blue Ridge and Piedmont provinces during the Cretaceous through Quaternary period (Rogers 1999). The western portion of Cumberland County falls within the Sandhills region. The Sandhills are a strip of remnant beach dunes that extend from Georgia to North Carolina and loosely form the boundary between the Coastal Plain and the Piedmont provinces.



**Figure 2.1.** Physiographic map of the North Carolina showing the location of the project area.

Elevations in the tract range between approximately 75.6 and 77.4 meters above mean sea level. The project tract contains relatively little topographic relief. Slight rises are present in the northern and southern portion of the tract and gradual slope is also present in the southern portion of the tract. The northeastern portion of the tract consists of the western half of a small Carolina Bay and its southwestern rim.

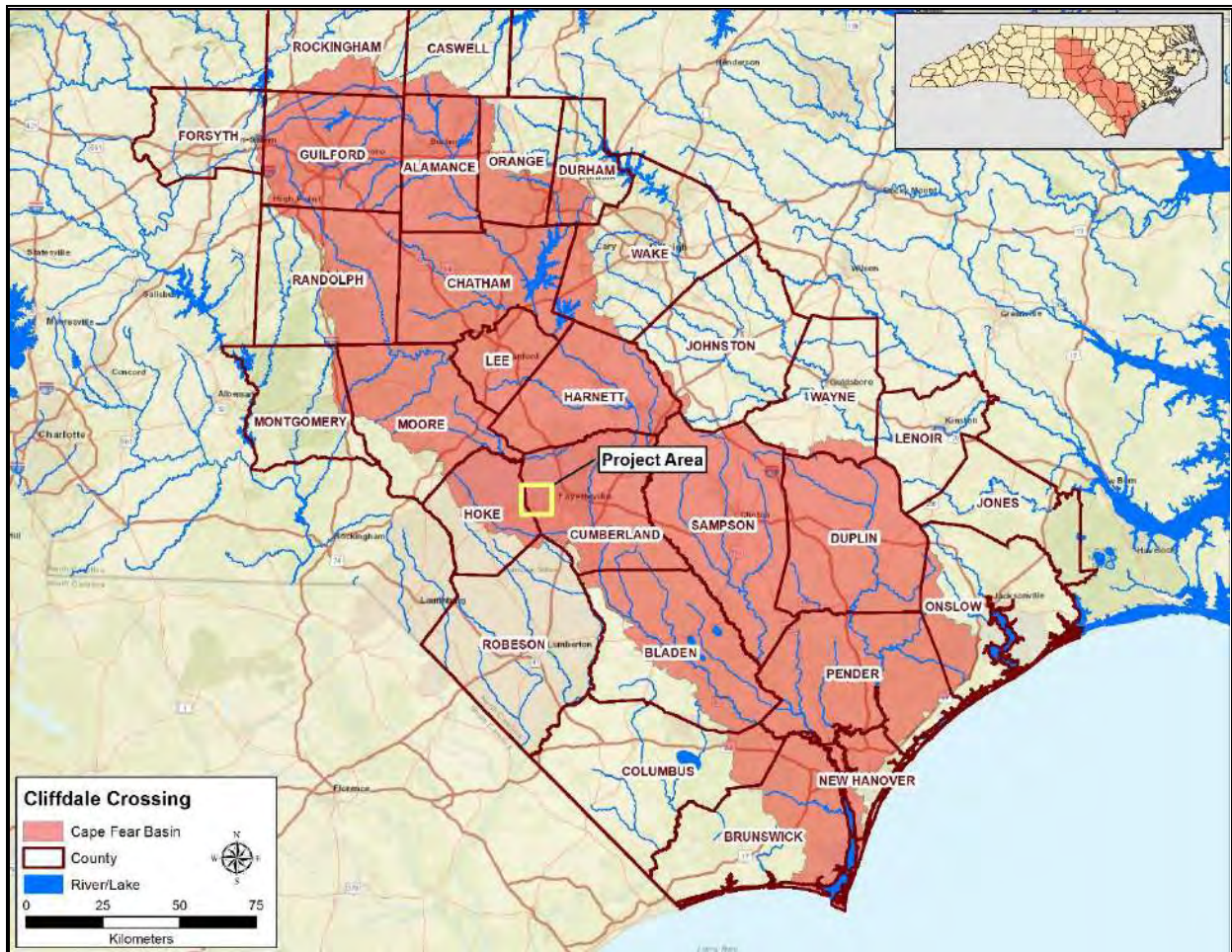




Carolina Bays are common landscape features in the Coastal Plain of North and South Carolina. Carolina Bays are oval depressions especially prevalent in the Coastal plain near the North Carolina and South Carolina border. They tend to be oriented northwest-southeast, with an elevated sand rim on the southeastern margin. Sizes vary from 60 meters to 19.3 kilometers long. Some of the large ones are lakes (e.g., Lake Waccamaw, White Lake, Little Singletary Lake), others are bogs or pocosins, and still others are drained and used as agricultural fields. The peat in the bogs can be between 3.0 to 15.2 meters thick. Origin theories once linked the creation of Carolina Bays to extraterrestrial impacts (with a comet being perhaps the most likely); however, more recent research conducted by Moore et al. (2016) suggests that they are formed by long term climatological and hydrological processes. They are likely wind-oriented lakes with nearly identical patterns of shape, orientation, and sand rim composition. They can become more active during periods of climatic instability.

### Drainage

The project area falls within the Cape Fear River Basin, the largest river basin within North Carolina (Figure 2.2). The project tract is drained by a small, unnamed tributary of Bones Creek. Bones Creek converges with Little Rockfish Creek southeast of the tract. Little Rockfish Creek converges with Rockfish Creek before draining into the Cape Fear River south of Fayetteville, North Carolina. The Cape Fear River is approximately 200 miles long, flowing from Jordan lake into the Atlantic Ocean (City of Fayetteville 2015).



**Figure 2.2.** Map showing the project location within the Cape Fear River basin.

## Climate

The climate in Cumberland County includes hot and humid summers and moderately cold winters. Summer temperatures average 78 degrees Fahrenheit (F), with the highest temperatures around 89 degrees F. Winter temperatures average 44 degrees F, with lows around 31 degrees F. Yearly rainfall totals 109 to 117 centimeters and is evenly distributed throughout the year (Hudson 1984).

## Geology

The project area is underlain primarily by the Cape Fear Formation. This formation is the product of non-marine delta formation during the Upper Cretaceous period. It is comprised of bedded sand, sandstone, and mudstone (Sohl and Owens 1991). The lithic material present in the project vicinity, as in much of the Coastal Plain, likely originates in the Carolina Slate Belt in the Piedmont. Rivers flowing out of the Piedmont transported the material, including metavolcanics and quartz, into the Coastal Plain where it was deposited as gravels and formed cobble bars.

## Soils

Soil data for the project tract were obtained from the United States Department of Agriculture, Natural Resources Conservation Service Web Soil Survey (USDA 2021) and the published soil surveys for Cumberland County (Hudson 1984). There are four soil types present in the project tract (Figure 2.3, Table 2.1). Blaney loamy sand is a well-drained soil that is found on the side slopes and narrow ridges of uplands. McColl loam is a poorly drained soil that is found in shallow, oval depressions of uplands. The majority of the tract contains Norfolk loamy sand, which is a well-drained soil found on broad, smooth flats on uplands. Wagram loamy sand is another well drained soil also formed on broad, smooth flats and the side slopes of uplands.

## Cultural Overview

The following discussion summarizes the various occupations in southeastern North Carolina, emphasizing technological change, settlement, and site function throughout prehistory. Table 2.2 presents an archaeological chronology of Native American occupation in the southern Upper Coastal Plain of North Carolina.

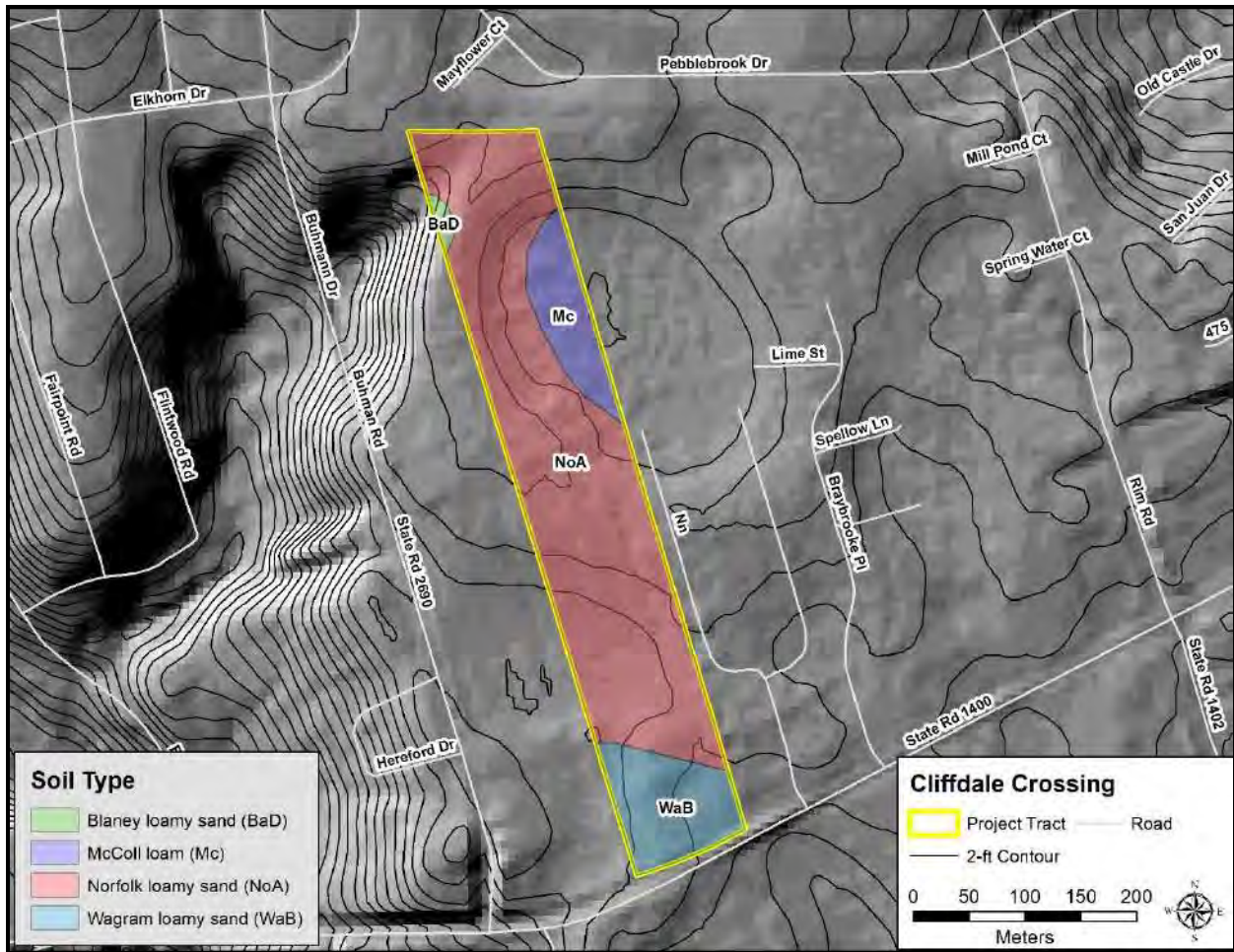
### Prehistoric Cultural Overview

#### *Paleoindian Period (12,000 - 8,000 BC).*

The Paleoindian Period refers to the earliest human occupations of the New World, the origins and age of which remain a subject of debate. The most accepted theory dates the influx of migrant bands of hunter-gatherers to approximately 12,000 years ago. This time period corresponds to the exposure of a land bridge connecting Siberia to the North American continent during the last ice age (Driver 1998; Jackson et al. 1997). Research conducted over the past few decades has begun to cast doubt on this theory.

Investigations at Paleoindian sites have produced radiocarbon dates predating 12,000 years. The Monte Verde site in South America has been dated to 10,500 BC (Dillehay 1997; Meltzer et al. 1997). In North America, the Meadowcroft Rockshelter in Pennsylvania had deposits dating to 9,500 BC. Current research conducted at the Topper Site indicates occupations dating between 15,000 to 19,000 (or more) years ago (Goodyear 2006). Two sites, 44SM37 and Cactus Hill, in Virginia have yielded similar dates.





**Figure 2.3.** Map showing the soils present in the APE.

**Table 2.1.** Summary of Soils Present in the Project Tract (USDA 2021).

Soil Type	Description	Percent Coverage (Acres)
Blaney loamy sand (BaD)	Well-drained, 8-15% slope	0.9
McColl loam (Mc)	Poorly drained	9.7
Norfolk loamy sand (NoA)	Well-drained, 0-2% slope	75.9
Wagram loamy sand (WaB)	Well-drained, 0-6% slope	13.5

One contentious point about these early sites is that the occupations predate what has been recognized as the earliest New World culture, Clovis. Artifacts identified at pre-Clovis sites include flake tools and blades, prismatic blades, bifaces, and lanceolate-like points (Adovasio and Page 2002; Goodyear 2006; Johnson 1997; McAvoy and McAvoy 1997; and McDonald 2000).

The major artifact marker for the Clovis period is the Clovis lanceolate fluted point (Gardner 1974, 1989; Griffin 1967). First identified in New Mexico, Clovis fluted points have been recovered throughout the United States. However, most of the identified Clovis points have been found in the eastern United States (Ward and Davis 1999). Most Clovis points have been recovered from surface contexts, although some sites (e.g., Cactus Hill and Topper sites) have contained well-defined subsurface Clovis contexts.

**Table 2.2.** Native American Archaeological Chronology for the Southern North Carolina Coastal Plain and Sandhills.

	<b>Phase</b>	<b>Diagnostic Artifacts</b>	<b>Settlement</b>	<b>Subsistence</b>
Paleoindian 12,000-8,000 BC	Clovis	large, triangular, fluted or side-notched projectile points	small, seasonal camps	intensive foraging, focus on large fauna
	Dalton			
Archaic 8,000-1,000 BC	Kirk Palmer	side-notched projectile points corner-notched projectile points	larger, seasonal camps; base camps	intensive foraging
	Stanly Morrow Mtn. Guilford	stemmed points		
	Savannah River	large Savannah River points Stallings Island fiber tempered and Thom's Creek and New River sand tempered ceramics		
Woodland 1,000 BC-1584 AD	New River	large triangular points sand (New River) and limestone (Hamps Landing) tempered pottery cord marked surface treatments	small, dispersed villages; focus on flood plain areas	intensive foraging supplemented by horticulture; agriculture; continued focus on shellfish
	Cape Fear	grog tempered (Hanover) and sand tempered (Cape Fear) ceramics small triangular points		
	White Oak	shell tempered ceramics		

Moore et al. (2003), Phelps (1983), and Ward and Davis (1999)

In the southeastern United States, Clovis was followed by smaller fluted and nonfluted lanceolate spear points, such as Dalton and Hardaway point types, that are characteristic of the later Paleoindian Period (Goodyear 1982). The Hardaway point, first described by Coe (1964), is seen as a regional variant of Dalton (Oliver 1985; Ward 1983). Most Paleoindian materials occur as isolated surface finds in the eastern United States (Ward and Davis 1999); this indicates to many scholars that population density was extremely low during this period and that groups were small and highly mobile (Meltzer 1988). It has been noted that group movements were probably well-scheduled, and that some semblance of territories was probably maintained to ensure adequate arrangements for procuring mates and maintaining population levels (Anderson and Hanson 1988).

O'Steen (1996) analyzed Paleoindian settlement patterns in the Oconee River valley in northeastern Georgia and noted a pattern of decreasing mobility throughout the Paleoindian period. Sites of the earliest portion of the period seem to be restricted to the floodplains, while later sites were distributed widely in the uplands, showing an exploitation of a wider range of environmental resources. If this pattern holds true for



the Southeast in general, it may be a result of changing environments trending toward increased deciduous forest and decreasing availability of Pleistocene megafauna and the consequent increased reliance on smaller mammals for subsistence; population growth may have also been a factor.

### ***Archaic Period (8,000 - 1,000 BC)***

The Archaic Period has been the focus of considerable research in the Southeast. Hunter-gatherer groups of this period are considered to have been highly mobile, focusing on game animals such as deer and on seasonally available wild plant resources such as nuts. Archaic sites are common in the North Carolina Upper Coastal Plain, and their sheer number suggests substantial population increase from the Paleoindian Period. Soil conditions in the Coastal Plain frequently impede preservation of all traces of settlement save lithic artifacts. Variations in lithic tool styles are used to delineate three subperiods within the Archaic Period.

*Early Archaic (8,000 - 6,000 BC).* The Early Archaic subperiod is marked by a shift from a boreal forest to more northern hardwoods. Southern pines became the dominant species as the Oak-Hickory forest retreated to the Piedmont (Delcourt and Delcourt 1981; Delcourt and Delcourt 1985). Based on site distribution data for Fort Bragg, Early Archaic site locations are extremely diverse indicating adaptation and exploitation of a wide variety of settings (Irwin and Culpepper 2000). Site types generally fall into three categories: base camps (often at stream confluences), specialized resource procurement sites located in areas with seasonally variable resources, and specialized use sites (Cable and Cantley 2006). In the Southeast, the smaller temporary procurement camps and the larger base camps are found at a ratio of ten to one (Ward and Davis 1999).

A number of settlement models have been advanced for the Early Archaic. Anderson and Hanson (1988) theorize that group movement focused on a single drainage with inter-drainage movement being sporadic and directly tied to macroband aggregations. Based on this view, it could be interpreted that individual groups had established territories within which they remained most of the time. Daniel (1998) speculates that Early Archaic groups moved freely between drainages but were tethered to quality lithic sources in the Piedmont. This view assumes that good quality lithic material would not have been available outside of the Piedmont, although abundant lithic sources are present in the Coastal Plain, most in the form of gravel bars and cobble beds. Both views have their proponents. Regardless, it is generally agreed upon that band-sized groups moved across the landscape utilizing a broad range of resources.

As noted, subsistence data for this time period in the Upper Coastal Plain is sparse. However, remains recovered from Early Archaic sites in the Southeast have included deer, a variety of small mammals, turtles, fish, wild birds. Evidence of plant remains exploited includes acorns, hickory nuts, maygrass, and goosefoot (Goodyear et al. 1979; Smith 1987). There is some debate on the prevalence of groundstone tools at Early Archaic sites, although their presence is used as evidence of the processing of plant remains.

Lithic tools diagnostic of the Early Archaic include Hardaway side-notched, Palmer and Kirk corner-notched, and bifurcated spear points are diagnostic of the time period. End and side scrapers are also attributed to the Early Archaic, as are adzes, graters, drills, and perforators (Daniel 1998).

*Middle Archaic (6,000-3,000 BC).* There is a noted increase in site frequency through the Middle Archaic. This increase may reflect continued mobility with the associated decrease in band territory that many researchers speculate occurred during this subperiod (Custer 1990; Smith 1987). With reduced territories, it may have been necessary to establish more permanent settlements. This trend is reflected in the increased presence of storage facilities (Chapman 1977; Griffin 1967; and Wetmore 1986). Middle Archaic sites in the Coastal Plain have exhibited site layouts consistent with residential camps of some



duration with huts, exterior hearths, prepared clay floors, and discrete artifact scatters (Cable and Cantley 1998; Cantley and Cable 2002; Cable et al. 2005, and Smith 1987).

Stanly Stemmed, Morrow Mountain Stemmed, and Guilford Lanceolate spear points are the primary diagnostic artifacts of this time period. Morrow Mountain and Guilford phases are believed to have been introduced from the west (Coe 1964). Phelps (1964) referred to this as the “Western Intrusive horizon.” Halifax projectile points have also been found in the north Coastal Plain of North Carolina. These points date to approximately 4000 BC and were introduced from peoples living to the north (Coe 1964). Middle Archaic tools also include scrapers, graters, and spokeshaves and there is a decided preference for expediently available raw lithic material. There is some debate regarding the apparent increase in groundstone tools during the Middle Archaic. Although some researchers have noted a marked increase in the presence of groundstone tools, Bruce Smith (1986) cites a large assemblage of groundstone tools recovered from Early Archaic deposits at the Rose Island site in Tennessee as evidence of a continuation of the same level of groundstone tool use rather than an increase.

*Late Archaic (3,000 - 1,000 BC).* The Late Archaic subperiod is characterized by population growth and further decreases in mobility. Longer term habitation of sites is reflected by the presence of large dense middens, evidence of structures, and abundant storage features. There were also innovations in technology and subsistence strategies. Plant cultivation intensified, leading to the early stages of formal agriculture (Sassaman et al. 2002). Steatite slabs and bowls were produced, presumably for cooking purposes, and were widely in use from about 2000 to 1500 BC (Gray 2010). The predominant spear type of the Late Archaic is the Savannah River spear point. Other tools associated with Late Archaic sites include grinding stones, scrapers, drills, and grooved axes.

Fiber-tempered Stallings ceramics begin being produced as early as 2500 BC (Anderson et al. 1982). Stallings ceramics have been recovered from sites on Fort Bragg but are not generally found above the Fall Line (Culpepper et al. 2000; Griffin et al. 2001). The use of sand for clay temper gradually replaced the use of fiber through the Late Archaic. Sand tempered Thoms Creek wares are found in the southern Coastal region (Ward and Davis 1999), and more recently, radiocarbon and thermoluminescence dates place the early production of New River wares in this same time frame (Dr. Joseph Herbert, personal communication). Surface treatments on New River ceramics include cord marking, net impressions, and simple stamping.

### ***Woodland Period (1,000 BC - 1584 AD)***

*Early Woodland (1,500 - 200 BC).* Along the North Carolina coast, Early Woodland sites consist of shell middens near tidal marshes and ceramic and/or lithic scatters in different environmental zones. Site type categories established by Trinkley (1990) for this portion of the state include seasonal camps located in upland settings at springs or stream confluences, small seasonal campsites located on swamp edges, and large semi-permanent camps on swamp edges. Site location patterns suggest a dispersed, highly mobile lifeway that continued from the Late Archaic into the Woodland. Two ceramic types are associated with the Early Woodland along the southern coast of North Carolina. New River ceramics are tempered with dense coarse sand, and exhibit surface treatments that are dominated by cord marking, but also include fabric impressing, net impressing, and simple stamping (Lofffield 1975; Mathis 1999; Ward and Davis 1999). Hamps Landing ceramics are characterized by limestone or marl temper and have plain, faint thong marked, cord marked, fabric impressed, and simple stamped surfaces (Ward and Davis 1999).

*Middle Woodland (200 BC - AD 1000).* Sites dating to this period include small single house shell middens, more significant shell middens, and shell-less sites in the interior that vary in size and artifact density. Trinkley (1990) notes that the site types from Early Woodland continue into the Middle Woodland but with the addition of sand burial mounds. The low, sand burial mounds have been identified at several



archaeological sites in the region. Estuarine resources made a significant contribution to the subsistence of Middle Woodland peoples (Drucker and Jackson 1984; Espenshade and Brockington 1989; Trinkley 1976, 1980). The two ceramic series associated with the Middle Woodland in the southern coastal plain are the grog tempered Hanover wares and the sand tempered Cape Fear wares. Hanover wares are typically cord marked or fabric impressed (Ward and Davis 1999). Cape Fear have similar decorations, although South (1976) observed rare net impressing on these wares (Ward and Davis 1999).

*Late Woodland (AD 1000 - 1584).* Sand burials continued to be used during the Late Woodland with burials generally being secondary and bundled. Cremations or charred remains are common (Jones et al. 1997). House structures include both circular and rectangular outlines, but it is unclear whether the two house styles indicate seasonal differences or the presence of Algonquin speakers in the area (Loftfield 1990). The Late Woodland in the southern Coastal Plain of North Carolina is characterized by the White Oak Phase. South (1976), working in Brunswick and New Hanover Counties, described the “Oak Island” series as being shell tempered pottery that included cord marked, net impressed, fabric impressed, and plain surface treatments. Working near the White Oak River, South (1962) identified shell tempered fabric impressed sherds which he defined as White Oak fabric impressed. Loftfield (1976) expanded the definition of White Oak to include simple stamped and smoothed surfaces based on work conducted in Onslow and Carteret County. Few researchers, today, distinguish between South’s “Oak Island” and Loftfield’s “White Oak” ceramic series (Ward and Davis 1999). However, it is believed by some that many of the shell tempered Oak Island sherds identified by South (1976) are actually limestone tempered and part of the Early Woodland Hamps Landing series, and that the term White Oak should be used to define the shell tempered Oak Island ceramics (Ward and Davis 1999).

### **Historic Overview**

In the decades following the expedition of Christopher Columbus, the coast and interior portions of what would become North Carolina were explored. Much of this activity was initiated by Spain in the hope of preserving its hegemony over North America. Hernando de Soto (1539-1543) and Juan Pardo (1566-1568) led military expeditions into the western Piedmont and mountains of North Carolina during the mid-sixteenth century (Hudson 1990, 1994). Despite these military incursions and the establishment of minor outposts, the Spanish presence in the Carolinas could not be sustained. Mounting pressure from hostile Native Americans and English privateers resulted in the withdrawal of Spanish forces to St. Augustine in 1587 (South 1980).

England’s interest in the New World was heavily promoted by Walter Raleigh. A courtier in the court of Queen Elizabeth I, Raleigh secured the financial and political support necessary to attempt the first permanent settlement of the New World by English colonists in 1585 (Powell 1989). Although his efforts failed, Raleigh’s single-minded ambition ultimately led to the establishment of the Jamestown colony in 1607 (Noël Hume 1994).

The disastrous mismanagement and resulting loss of life in Virginia during the first two decades of the colony’s existence resulted in the revocation of the Virginia Company’s charter in 1624 (Noël Hume 1994). Preoccupied with the civil war between Royalist and Parliamentary forces in the 1640s, the authorities in Virginia showed little interest in North Carolina until the 1650s. During this period the area around the Albemarle Sound in northeastern North Carolina was inhabited by traders, hunters, trappers, rogues, and tax evaders (Powell 1989). Even then, North Carolina was becoming notorious as a refuge for the independent and self-reliant.

In 1662, Captain William Hilton was searching for a favorable location for a Puritan colony when he encountered a cape and inlet which he named “Cape Fear.” Settlers from New England followed Hilton



to the area but soon left. A sign was left attached to a post at the point of the cape warning others to avoid the area.

The restoration of Charles II to the throne in 1660 resulted in the distribution of rewards to those who had supported the Royalist cause during the upheaval (Powell 1989). This initiated the Proprietary colonial period in the Carolinas, which lasted from 1663 until 1729. During the rule of the Lords and Proprietors, Charlestown was established north of the mouth of the Cape Fear River. The town was abandoned in 1667 for several factors including political problems abroad and local Native American populations turning violent due to abuse by the English (Lee 1971).

Years of turmoil brought about by an unstable system of government culminated in war with the Tuscarora Indians. Severe fighting broke out in 1711, triggered by the death of the colony's Surveyor General (John Lawson) at the hands of the Tuscarora (Powell 1989). The war ended in 1712, leaving the Carolina colonies in dire financial straits. These conditions persisted until the Lords and Proprietors were forced to sell their holdings in the Carolinas to the Crown in 1729 (Powell 1989).

The acquisition of North Carolina by the Crown initiated a period of relatively stable government. During this time, immigration into North Carolina was along three major routes (Powell 1989): western North Carolina was settled by German and Scots-Irish immigrants arriving from Pennsylvania and Virginia via the Great Wagon Road; new arrivals at the important towns of New Bern and Brunswick pushed west up the Cape Fear and Neuse river valleys; and colonists from South Carolina advanced up the Pee Dee and Catawba rivers in search of new land.

The European settlers to the area, mostly comprised of Highland Scots, encountered several Native American tribes including the Tuscarora, Cherokee, Cheraw, and Croatan (Swanton 1979). In 1725, surveyors for the Wineau Company documented a village of "Waccamaw Indians on the Lumber River. At that time, the waterway was called Drowning Creek for its swift currents and dark water. The tribe now known as the Lumbee have been known as the Croatan and/or Cherokee of Robeson County, and they comprise the ninth largest Native American tribe in the United States (Blu 2004). The Lumbee territory includes Scotland, Hoke, Cumberland, and Robeson counties.

The Lumbee Indians are descendants of the Cheraw Indians, and other groups who merged with them. In the late 1600s, the Cheraw were settled near Danville, Virginia. In the early 1700s they moved to the area of present-day Cheraw, South Carolina, along the Pee Dee River. By 1725 they were living near the North Carolina/South Carolina border, along the Pee Dee River near Cheraw, and along Drowning Creek in North Carolina. In the 1750s, Royal Governor Rowan called Drowning Creek the "frontier to the Indians" where about 50 families lived. The South Carolina Gazette documented the Cheraw settlement on Drowning Creek in 1771. The 1790 United States Census lists prominent family names under the heading "All other free persons" including Locklear, Oxendine, Chavis, Lowry, Hammonds, Brooks, Brayboy, Cumbo, Revels, Carter, and Kursey (Lumbee Tribe of North Carolina 2019).

In 1754, Cumberland and Robeson Counties were created from parts of Bladen County. Cumberland county was made up principally of Scotch Highlanders who came to America following the Battle of Culloden in 1745 (Meyer 1961). The county was named in honor of William Augustus, Duke of Cumberland, who was their commander during the battle. The name changed to Fayette County in early 1784 before reverting back to Cumberland later that year. The county seat was first called Cumberland Court House and was later changed to Campbelton in 1762. The town's name was later changed to Fayetteville after Revolutionary War hero, Lafayette (Corbitt 2000).

During the Revolutionary War, many of Cumberland County's residents were staunch loyalists, although few joined the fighting on either side of the war. Fighting in Cumberland County was generally





limited to violence perpetrated between loyalists and patriot factions within the county. Several hundred men of the county served either side throughout the war. No major battles took place in the county. However, in 1781, Lord Cornwallis marched through the county in route to Guilford Courthouse, where the British would suffer a pyrrhic victory.

During the antebellum period, farming was the chief occupation of in the region. There were few large landowners and hundreds of small farmers. Tobacco began as the dominant cash crop following the colonial period but was quickly overtaken by cotton. The population of Cumberland County also nearly doubled from 8,671 to 16,369 people between 1790 and 1860 (Parker 1990:27). The slave population also increased from 26.1 percent to 41.6 percent of the population (Parker 1990:28). Aside from farming, other major economic drivers included textiles, banking, and the naval stores industries.

Cumberland County also became an arsenal during this period, a foreshadowing of its later military importance. In 1790 a small federal arsenal was established in Fayetteville. By the end of the War of 1812, the arsenal housed 150 guns, tents, canteens, knapsacks and powder (Parker 1990:50). In 1820, a state arsenal was erected. The United States Arsenal was built in 1838, as one of four facilities authorized by the United States Congress (Parker 1990).

Although it took place in Virginia, the Nat Turner slave rebellion in 1831 sent shock waves through the South. In 1835, North Carolina enacted a new constitution prohibiting “persons of color” from voting, serving on juries, testifying against whites, bearing arms, and learning to read and write. Although having previously been allowed all rights of citizenship, the new constitutional restrictions were applied to the Lumbees. During the Civil War, a number of companies were formed from Richmond and neighboring Robeson County residents. These included Battery E of the 3<sup>rd</sup> North Carolina Artillery and the 1<sup>st</sup> Company D of the 12<sup>th</sup> North Carolina State Troops. The Lumbees were excluded from military service under the new state constitution, but they were conscripted to work on various work projects for the Confederates, including the construction of Fort Fisher. Resentments about the forced labor led many Lumbee men to flee into the swamps. In 1864, Henry Berry Lowry, a 16-year old Lumbee, and his brothers began a series of ambushes on local planters and conscription officials. Lowry and his band became local legends as they stole from the wealthy landowners and distributed the goods to the poor in Robeson County (Perdue and Oakley 2014).

As agriculture, naval stores, and timber industries helped improve the economy, attempts to improve transportation were made. In 1849, construction on the first plank-covered road in North Carolina began. Completed in 1854, Plank Road was 129 miles long, connecting Fayetteville with Salem. By the time of the Civil War, five plank roads radiated from Fayetteville.

At the onset of the Civil War, Cumberland County supplied eight companies to the Confederate Army (Parker 1990). These included the Fayetteville Independent Light Infantry of the 1<sup>st</sup> North Carolina Regiment, the Lafayette Light Infantry of the 1<sup>st</sup> North Carolina Regiment (later changed to Artillery with the 13<sup>th</sup> North Carolina Battalion), the Cumberland Plowboys of the 24th North Carolina Regiment, the Manchester Guardians of the 8th North Carolina Regiment, and the Carolina Boys of the 38<sup>th</sup> North Carolina Regiment. The Confederate States also took charge of the U.S. Arsenal and named it the Fayetteville Arsenal and Armory. It provided rifles, pistol carbines, ammunition, knapsacks, and artillery carriages to the Confederate Army. This service was provided throughout the war until it was seized by the Union Army in 1865 when much of the compound was burned during General Sherman’s Carolina campaign (Parker 1990).

As Union sympathizers, the Lumbee looked forward to the end of the Civil War. Unfortunately, their lot remained largely unchanged. Due to political pressure, Lumbee rights were not reinstated. Lowry and his gang were pursued by the newly established Home Guard. In February 1872, Lowry robbed a store



in Lumberton of a safe containing \$22,000.00. Over the next several years, members of his band disappeared or were captured and killed, but Lowry was never seen again (Perdue and Oakley 2014).

Following the Civil War, agriculture continued to be the primary economic contributor to the area. Tobacco and cotton were the principal money-making crops. Other important agricultural products included corn used for fodder, hogs, and sheep. Many former slaves, who had previously been relied upon as the primary source of labor, became tenant farmers on the former plantations where they continued to live. The majority of farms were small with few having more than one or two tenants (Parker 1990).

Perhaps the most important economic and social change to Cumberland and other surrounding counties began during World War I, when the War Department announced the creation of Camp Bragg in the North Carolina Sandhills. The camp was completed in 1919 and could house 16,000 soldiers (Parker 1990:115). Although almost closed in 1921, Camp Bragg began to grow and was renamed Fort Bragg. Pope Field, named after an army pilot, later became Pope Air Force Base, before being subsumed back into Fort Bragg. Its importance and stature grew during World War II housing 67,000 soldiers, becoming the largest Army camp (Parker 1990:134).

Fort Bragg produced more than 50 artillery battalions that fought in all theaters of the war. The most notable of units to come from Fort Bragg are the Ninth Infantry Division and the 82<sup>nd</sup> and 101<sup>st</sup> Airborne. These units fought in North Africa, Utah Beach during D-Day, and the Battle of the Bulge. Fort Bragg is the most intensively used training facility and several Army Reserve and National Guard Divisions train at Fort Bragg annually.

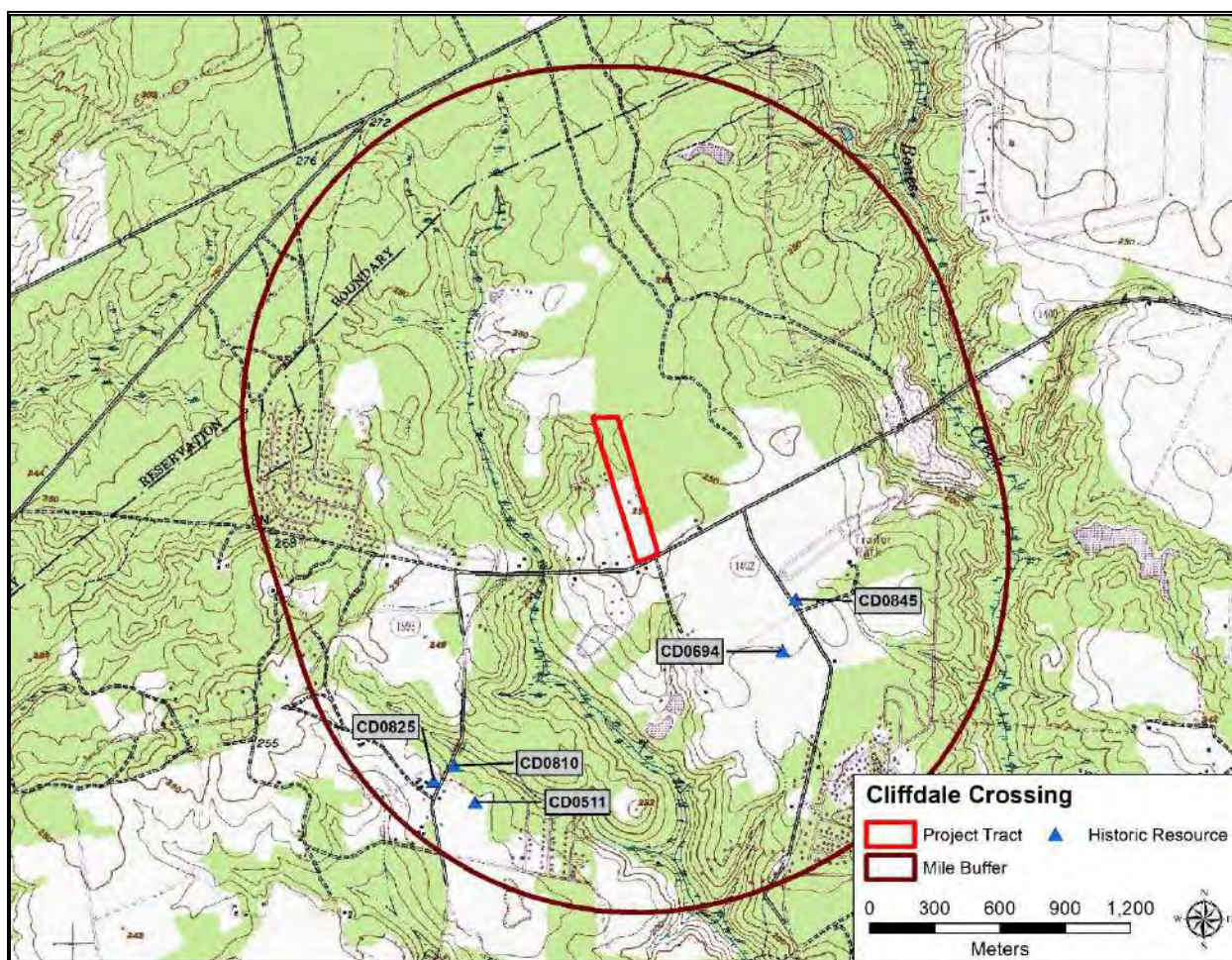
Presently, Cumberland County contains more than 326,000 residents (Cumberland County 2017). Its economy is less dependent now on agriculture. Textiles and Fort Bragg remain important economic forces within the county, although manufacturing and merchandising have come to play an important role as well (Parker 1990).



## Chapter 3. Results of Archival Research

### Previously Recorded Cultural Resources in the Project Vicinity

Cultural and environmental background research was conducted prior to the field visit. No archaeological sites have been recorded within the project tract or within a 1.6-kilometer radius of the tract. Five historic resources are recorded within 1.6 kilometers of the project tract (Figure 3.1, Table 3.1). Resource CD0511 is the approximate site of the Raymount Schoolhouse, a 1-story front-gabled school with a shed porch; it was surveyed in 1979. Its National Register of Historic Places (NHRP) status is listed as Survey Only (SO). The Angus McGill House (CD0694) was placed on the Study List in 1980. Three resources (CD0810, CD0825, and CD0845), all houses, have been destroyed.



**Figure 3.1.** Map showing the locations of historic resources in the project vicinity (1950 *Cliffdale NC* 7.5-minute USGS topographic quadrangle [photorevised 1971]).

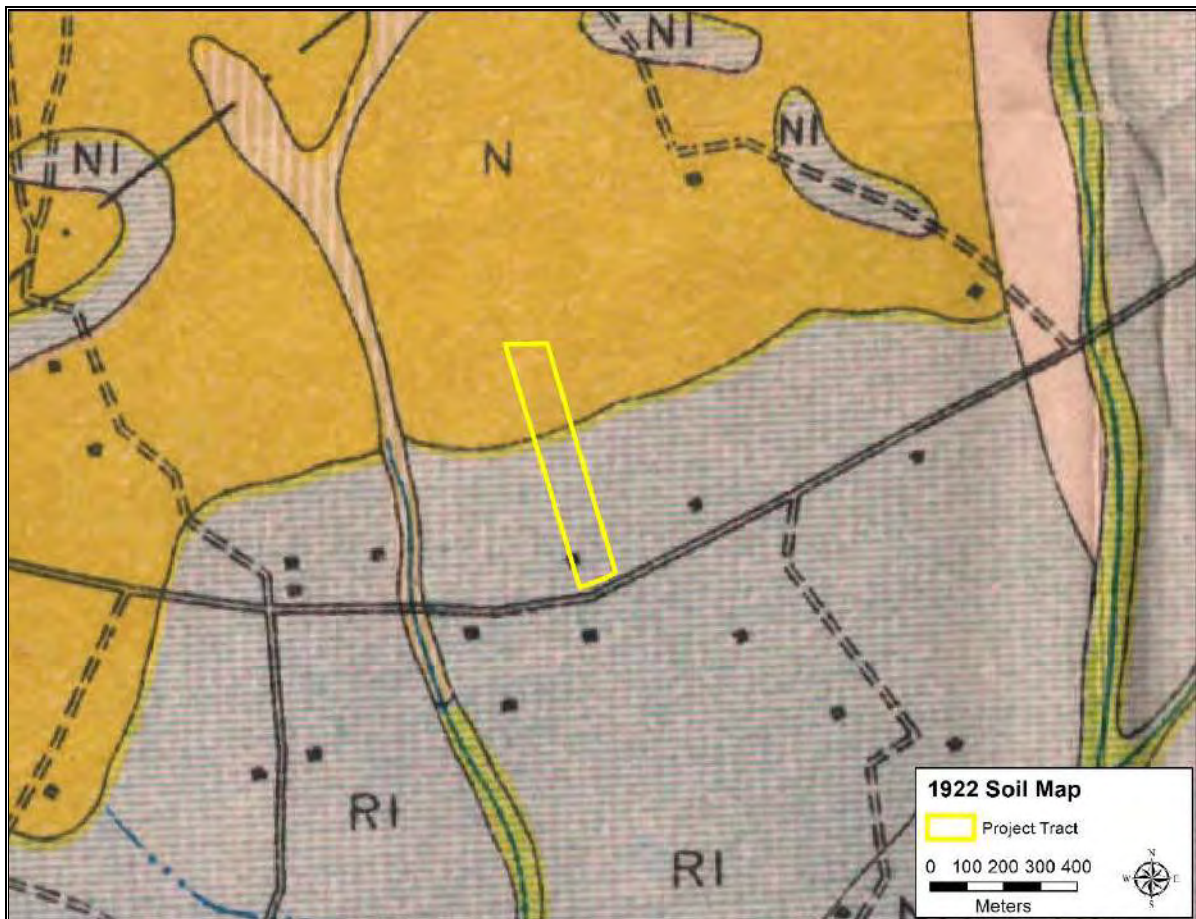
**Table 3.1.** Historic Resources Recorded Within a 1.6-Kilometer Radius of the Project Tract.

Resource Number	Description	NRHP Status
CD0511	c. 1884 Raymount Schoolhouse (approximate site)	SO
CD0694	Angus McGill House	SL
CD0810	Kennedy House (Gone)	SD
CD0825	McGougan House (Gone)	SD
CD0845	R.A. Pate House (Gone)	SD

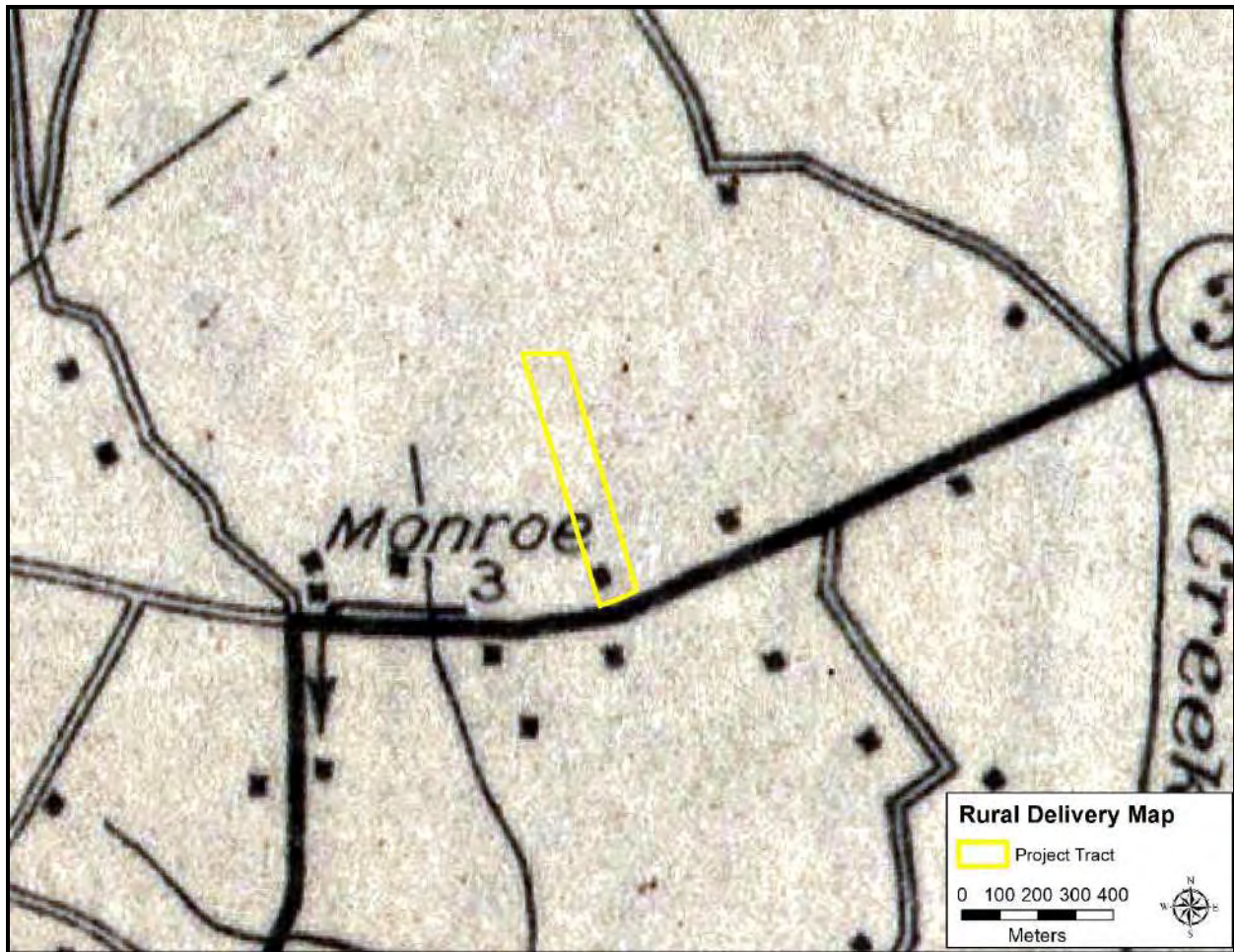
### Historic Map and Aerial Image Review

Maps reviewed for this project include the 1922 Cumberland County soil map, the 1938 county highway map, and topographic maps dating from 1948 to 1997. The maps were used to determine past land use, the possible presence of structural remains or historic landscape features and known Native American occupations. Aerial images dating back to 1993 were also examined.

The 1922 county soil map (Figure 3.2) and rural delivery map dating circa 1910 to 1920 (Figure 3.3) show one building in the southwestern portion of the project tract. The 1938 county highway map does not show any buildings present within the tract, suggesting the house in the southern portion of the tract was destroyed by late 1930s. The 1948, 1950, and 1974 topographic maps show no buildings present in the project tract.

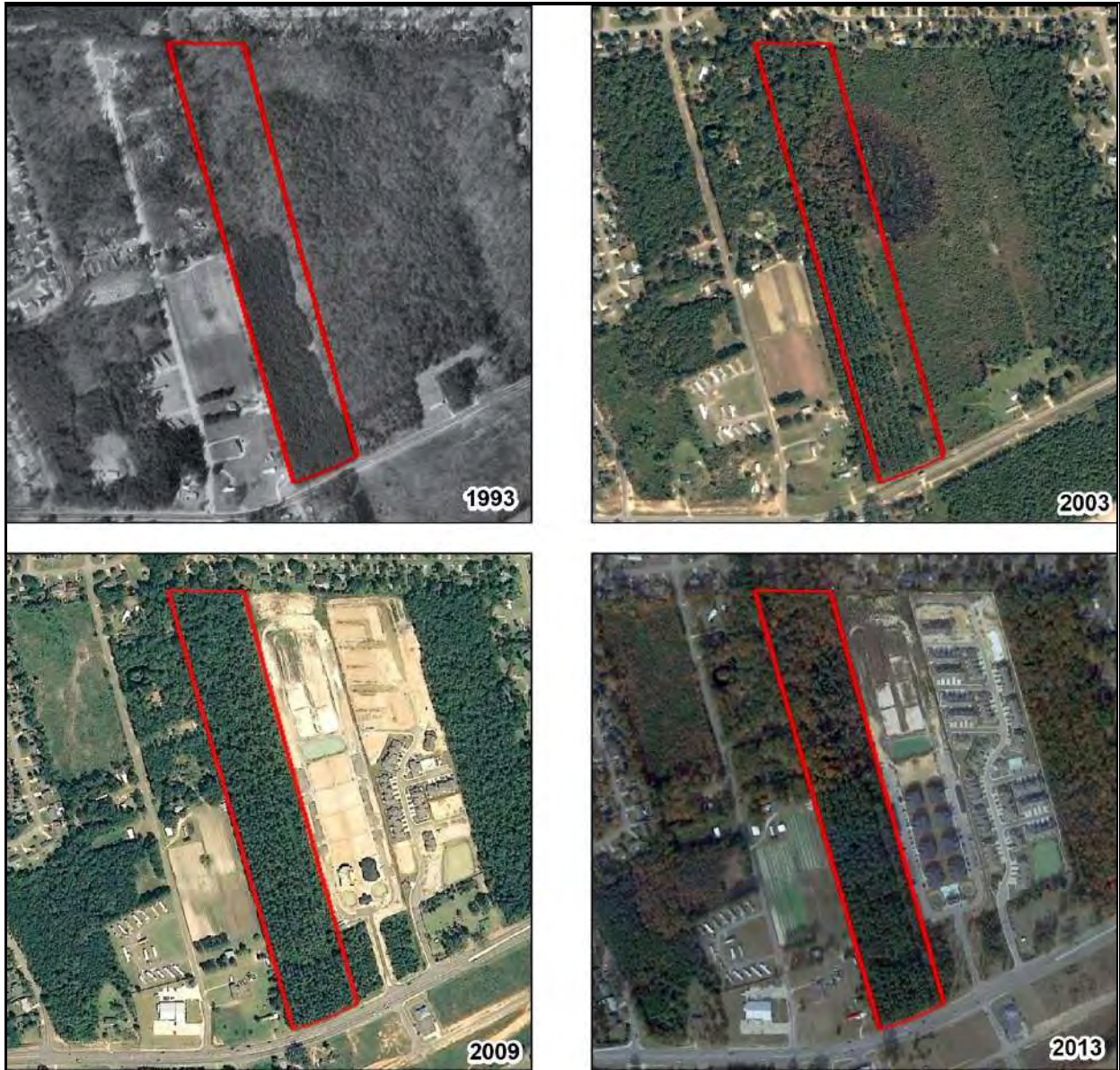


**Figure 3.2.** 1922 soil map showing one building in the project tract.



**Figure 3.3.** Rural delivery map showing buildings in the project tract circa 1910-1920.

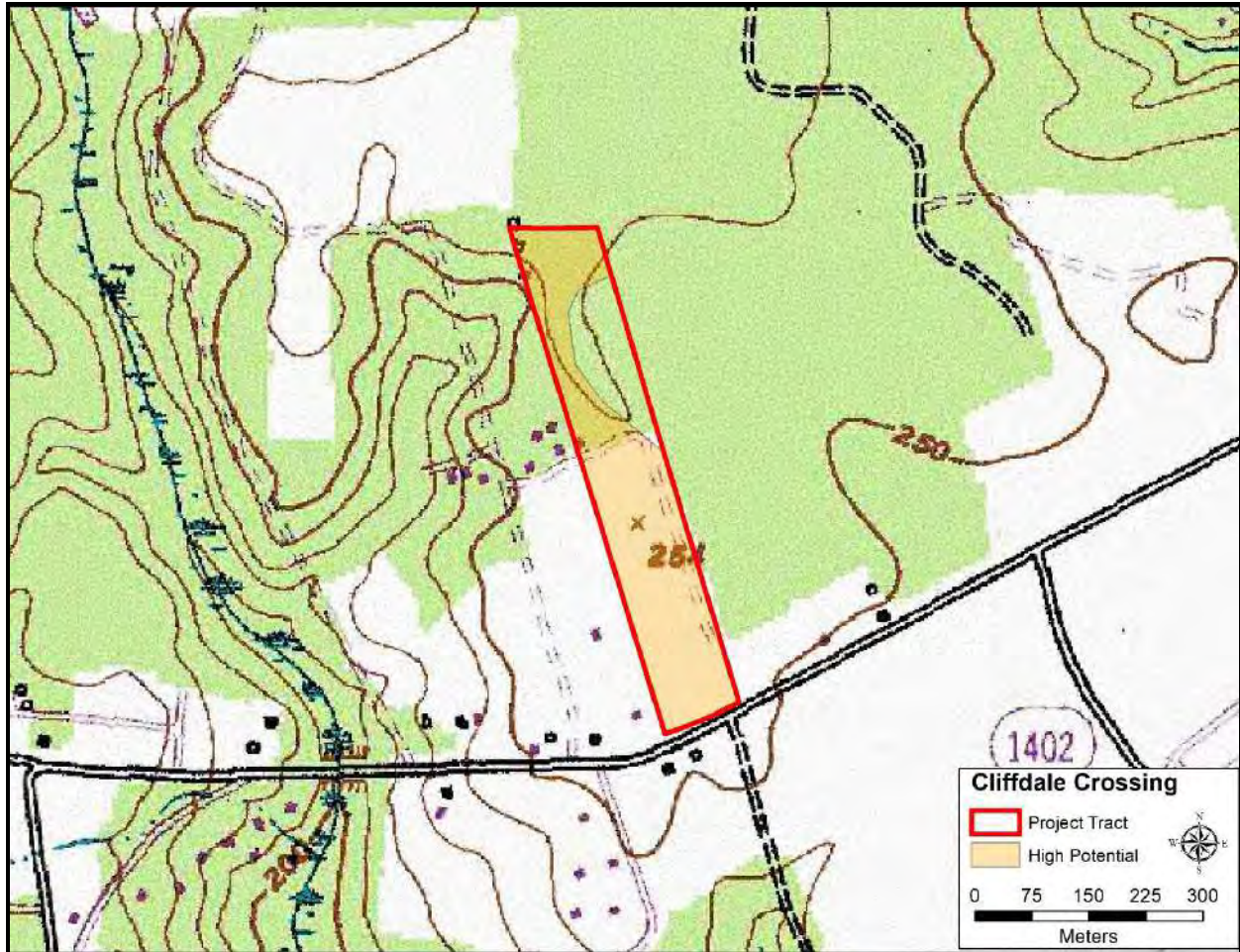
Aerial photographs available through Google Earth show the project tract as wooded since at least 1993 (Figure 3.4). The southern portion of the tract extending from Cliffdale Road to the Carolina Bay appears to be in planted pines. The forest in the Carolina Bay north to the property line appears to be a mixed pine and hardwood forest. The most recent aerial that clearly shows the project tract dates to 2013 when the tract was still wooded. The tract was clear-cut sometime after 2014 (see Figure 1.3). The project tract is currently characterized by young, planted pines and very dense secondary growth.



**Figure 3.4.** Aerial images of the project tract from 1993 to 2013.

## Chapter 4. Results of the Field Investigation

The Cliffdale Crossing tract encompasses 18 acres (7.3 ha; Figure 4.1) with approximately 16.3 acres (6.6 ha) determined to have a high potential for the presence of archaeological sites. Field survey focused intensively on high potential areas. For these high potential areas, 30-meter interval shovel testing was used as the primary site discovery method. Areas with low potential for the presence of archaeological sites (1.7 acres [0.7 ha]) were given a reconnaissance level examination with shovel tests being excavated at judgmentally determined locations. A total of 86 shovel tests were excavated during this investigation (Figure 4.2).



**Figure 4.1.** Map showing the project tract (1950 *Clifdale NC* 7.5-minute USGS topographic quadrangle [photorevised 1971]).

Soil profiles exposed in shovel tests excavated in the southern portion of the project tract consisted of brown (10YR5/3) sand to a depth of 20 centimeters overlying 10 centimeters of light yellowish brown (10YR6/4) loamy sand. Beneath this zone was pale yellowish brown (10YR7/4) sand. Subsoil of strong brown (7.5YR5/8) clayey sand was encountered at depths ranging from 60 to 90 centimeters. Shovel tests excavated on the Carolina Bay rim and northern portion of the project tract were shallower, exhibiting 8 centimeters of very dark gray (10YR3/2) sand overlying yellowish brown (10YR5/4) sand to a depth of 20 centimeters. Yellowish brown (10YR5/6) sand was present below a depth of 20 centimeters and graded







**Figure 4.3.** View of soil profiles in the project tract.

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## **Appendix A. Resume of Principal Investigator**



**Michael Keith O’Neal**  
**Archaeological Consultants of the Carolinas, Inc.**  
121 East First Street  
Clayton, NC 27520  
Voice (919) 553-9007; Fax (919) 553-9077  
michaeloneal@archcon.org

**EDUCATION**

M.A. in Anthropology, University of Arkansas, Fayetteville, 2001.  
B.A. in Anthropology, Appalachian State University, Boone, NC, 1999.

**PROFESSIONAL MEMBERSHIPS**

Register of Professional Archaeologists	North Carolina Archaeological Council
Society for American Archaeology	-Secretary/Treasurer 2013-2015
Southeastern Archaeological Conference	-Chair 2016-2019
Council of South Carolina Professional Archaeologists	-Vice Chair 2019-present

**AREAS OF SPECIALIZATION**

Ground Stone Technology  
Lithic Technology  
Geographic Information Systems (GIS)

**EMPLOYMENT HISTORY**

July 2020-Present	Vice President/Principal Investigator. Archaeological Consultants of the Carolinas, Inc. Clayton, NC
April 2006-Present	Senior Archaeologist/Principal Investigator. Archaeological Consultants of the Carolinas, Inc., Clayton, NC.
August 2004-March 2006	Archaeologist/Project Manager. Archaeological Consultants of the Carolinas, Inc., Clayton, NC.
June 2002-August 2004	Archaeologist/Project Manager. Brockington and Associates, Inc., Raleigh, NC.
July 2001-May 2002	Archaeological Technician. Brockington and Associates, Inc., Raleigh, NC.
August 2000-May 2001	Archaeological Research Assistant, Department of Anthropology, University of Arkansas, Fayetteville.
August 2000-September 2000	Archaeological Technician, Department of Anthropology, University of Arkansas, Fayetteville.
July 2000	Archaeological Field Technician, SPEARS Inc., West Fork, Arkansas.

**Cultural Resource Surveys (Phase I) and Archaeological Site Testing (Phase II)**

- **Utility Corridors** for Duke Energy (Charlotte), FPS (Charlotte), SCE&G (Columbia), and others – serving in all capacities including Principal Investigator



**Cliffdale Crossing Tract**  
**Cumberland County, North Carolina**

- **Transportation Corridors** for South Carolina Department of Transportation (Columbia) – serving as archaeological technician
- **Development Tracts** for numerous independent developers, engineering firms, and local and county governments throughout North Carolina, South Carolina, and Virginia, and federal agencies including the USFS (South Carolina) and the USACE (Wilmington District) – serving in all capacities including Principal Investigator

### **Archaeological Data Recovery (Phase III) - Representative Examples**

- Prehistoric Camp (38HR496) and 19<sup>th</sup> century saw mill (38HR490) in Horry County, South Carolina – serving as Archaeological Technician
- Civil War encampment (44IW0204) for Isle of Wight County, Isle of Wight, VA – serving as Field Director
- Prehistoric village (31ON1578) and late 18<sup>th</sup>/early 19<sup>th</sup> century plantation (31ON1582) for R.A. Management, Charlotte, NC – serving as Field Director/Crew Chief

### **FEDERAL ENERGY REGULATORY COMMISSION RELATED INVESTIGATIONS**

Duke Energy - Lake James and Lake Norman, North Carolina- serving as Field Director/Crew Chief

### **PUBLICATIONS AND PAPERS PRESENTED**

2008 Michael Keith O'Neal

*Putting the Tar in Tar Heels: The Naval Stores Industry and Plantations in North Carolina.* Paper presented at the 65<sup>th</sup> annual Southeastern Archaeological Conference, Charlotte, North Carolina.

2005 Michael K. O'Neal and Dawn Reid

*Who Says There Aren't Rocks in the Coastal Plain?: Local Lithic Resources and Bipolar Reduction Strategies in Horry County, South Carolina.* Paper presented at the 62<sup>nd</sup> annual Southeastern Archaeological Conference, Columbia, South Carolina.

1999 Cheryl Claassen, Michael O'Neal, Tamara Wilson, Elizabeth Arnold, and Brent Lansdell

*Hearing and Reading Southeastern Archaeology: A Review of the Annual Meetings of SEAC from 1983 through 1995 and the Journal Southeastern Archaeology.* *Southeastern Archaeology* 18(2): 85-97.

1998 Cheryl Claassen, Michael O'Neal, Tamara Wilson, Elizabeth Arnold, and Brent Lansdell

*Hearing and Reading Southeastern Archaeology: A Review of the Annual Meetings of SEAC from 1983 through 1995 and the Journal Southeastern Archaeology.* Paper presented at the 55<sup>th</sup> annual Southeastern Archaeological Conference, Greenville, South Carolina.

\*\* A full listing of projects and authored reports available upon request



September 24, 2021

Mr. Taurus Freeman  
Planning Director  
City of Fayetteville  
433 Hay Street  
Fayetteville, NC 28301  
910-433-10437  
[tfreeman@ci.fay.nc.us](mailto:tfreeman@ci.fay.nc.us)

Re: Section 106 Public Outreach  
Cliffdale Crossing  
8368 Cliffdale Road  
Fayetteville, NC 28314  
Nova Project No.: CK21-8848

Dear Mr. Freeman:

Nova Group, GBC (Nova) is writing on behalf of the U.S. Department of Housing and Urban Development (HUD) to solicit your input concerning a proposed development at the above-referenced address.

Smith Duggins Developers, LLC is proposing to construct six two-story buildings with a total of 80 residential units on 8 acres of land.

HUD is identifying organizations with an interest in the project and its potential to affect historic resources. The purpose of this letter is to find out whether you wish to become a consulting party for this project. Consulting parties have certain rights and obligations under the National historic Preservation Act and its implementing regulations at 36 CFR Part 800. The review process, known as Section 106 review, is described at <http://www.achp.gov/citizensguide.html> and at <https://www.onecpd.info/environmental-review/historic-preservation/>. By becoming a consulting party, you will be actively informed of steps in the Section 106 process, including public meetings, and your view will be actively sought.

If you are interested in becoming a consulting party and have any comments or concerns regarding the proposed project, please contact me in writing at Nova, 5320 West 23<sup>rd</sup> Street, Suite 270, St. Louis Park, Minnesota 55416 or at [culturalresources@novagrouppbc.com](mailto:culturalresources@novagrouppbc.com). Please reference the project name and address in your comments. Any responses must be received within 30 days of receipt of this letter. If you do not respond within this time frame, you may request consulting party status in the future; however, the project may advance without your input and you will not have an opportunity to comment on the current steps. If you are requesting consulting party status, we do ask that your organization nominate one



representative and an alternate to participate on behalf of the group. People may also participate in the Section 106 process as members of the public.

Thank you for your time and attention to this matter.

Sincerely,

A handwritten signature in black ink that reads "Laura L. Mancuso".

Laura L. Mancuso  
National Practice Leader-Cultural Resources

Site Drawings sent with the Invitation to Consult Letter(s)  
are not included for clarity.

Publication Date

**2021-09-30**

Subcategory

**Miscellaneous Notices**

PUBLIC NOTICE: Cliffdale Crossing The U.S. Department of Housing and Urban Development is proposing to construct 6 2-story buildings at 8368 Cliffdale Road, Fayetteville, Cumberland County, NC 28314. Public comments regarding the potential effects from this site on historic properties may be submitted within 30-days from the date of this publication to: Laura Mancuso - Nova Group, GBC, 5320 West 23rd Street, Suite 270, St. Louis Park, MN 55416, [culturalresources@novagroupgbc.com](mailto:culturalresources@novagroupgbc.com) or 203.240.0077, 9/30 5252956

**From:** [Fayetteville NC Public Records](#)  
**To:** [Dave Akerblom](#)  
**Subject:** [External Message Added] Fayetteville, NC public records request #21-1347  
**Date:** Thursday, October 14, 2021 1:14:22 PM

---

-- Attach a non-image file and/or reply ABOVE THIS LINE with a message, and it will be sent to staff on this request. --

## Fayetteville, NC Public Records

A message was sent to you regarding  
record request #21-1347:

We have received your public records request and will provide you with the documents in a timely manner. This email serves as confirmation that we have received your request.

[View Request 21-1347](#)

<https://fayettevillenc.nextrequest.com/requests/21-1347>



**POWERED BY NEXTREQUEST**

*The All in One Records Requests Platform*

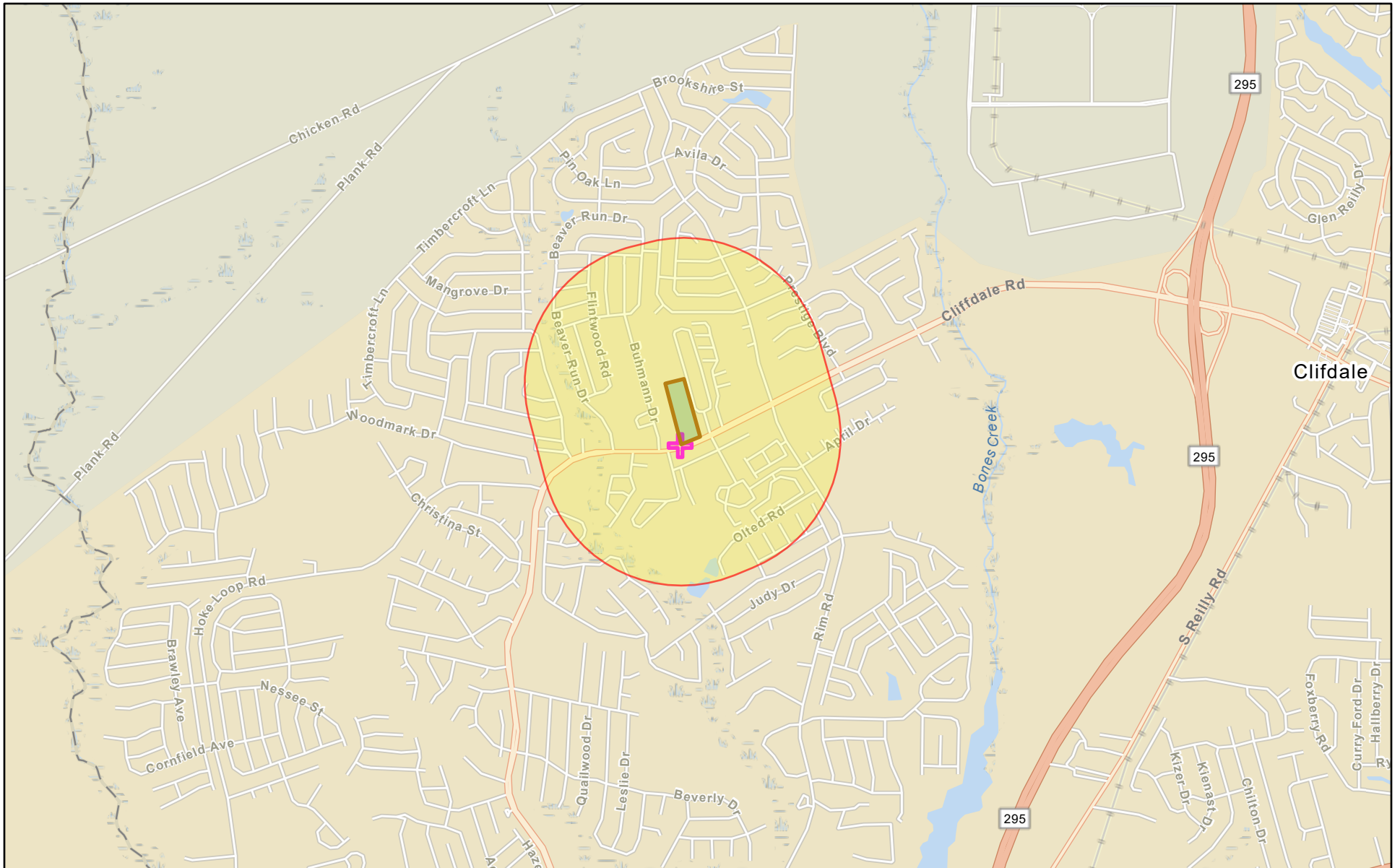
Questions about your request? Reply to this email or sign in to contact staff at Fayetteville, NC.

Technical support: See our [help page](#)








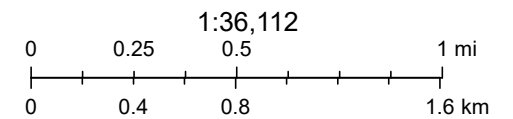
# APPENDIX D: HEROS Forms

# HEROS 01 Civilian Airports 2500 ft.



October 22, 2021

-  Project Buffer
-  Search Result (point)
-  Airport Polygons
-  Cliffdale
-  Airport Points



Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, EPA OEI



### Circle Search For Airports Results

Records 1 to 5 of 5

Page 1 of 1

Locator Id	Name	Site Type	City	State	Latitude	Longitude	Distance(NM)	Azimuth
<a href="#">POB</a>	POPE AAF	Airport	FAYETTEVILLE	NC	35° 10' 15.20" N	79° 0' 52.19" W	7.07	195.88°
<a href="#">5W4</a>	P K AIRPARK	Airport	RAEFORD	NC	35° 1' 11.50" N	79° 11' 27.61" W	7.11	71.62°
<a href="#">FBG</a>	SIMMONS AAF	Airport	FORT BRAGG	NC	35° 7' 55.45" N	78° 56' 10.35" W	7.32	232.29°
<a href="#">FAY</a>	FAYETTEVILLE RGNL/GRANNIS FLD	Airport	FAYETTEVILLE	NC	34° 59' 28.40" N	78° 52' 49.00" W	9.42	294.86°
<a href="#">2GC</a>	GRAYS CREEK	Airport	FAYETTEVILLE	NC	34° 53' 37.29" N	78° 50' 36.71" W	14.26	313.43°

Rows per Page:  ▼

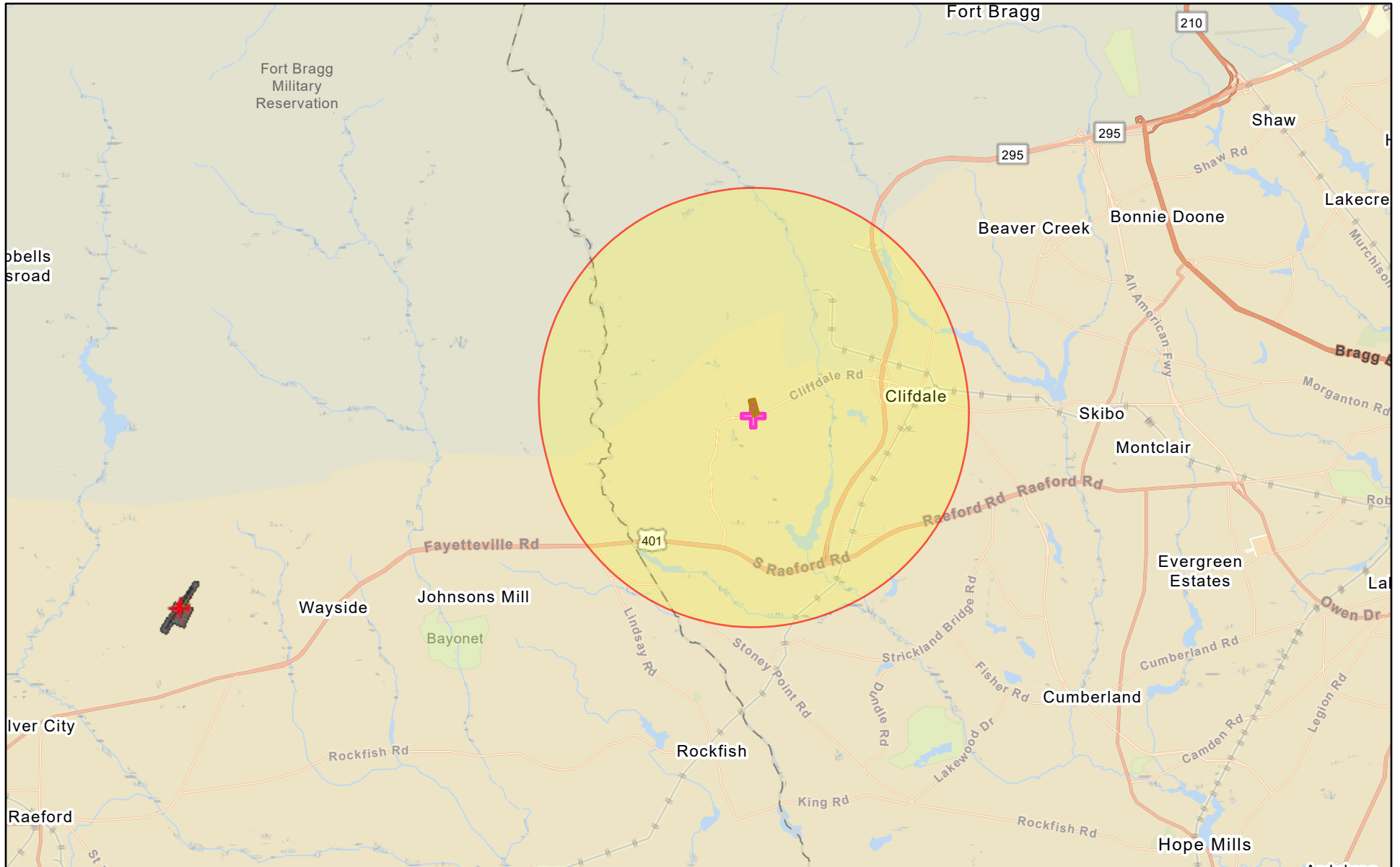
Records 1 to 5 of 5

Page: [1](#)






Page 1 of 1

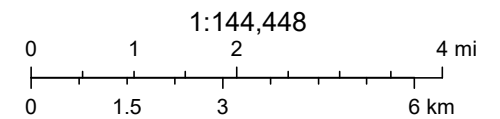


# HEROS 01 Military Airports 15000 ft.



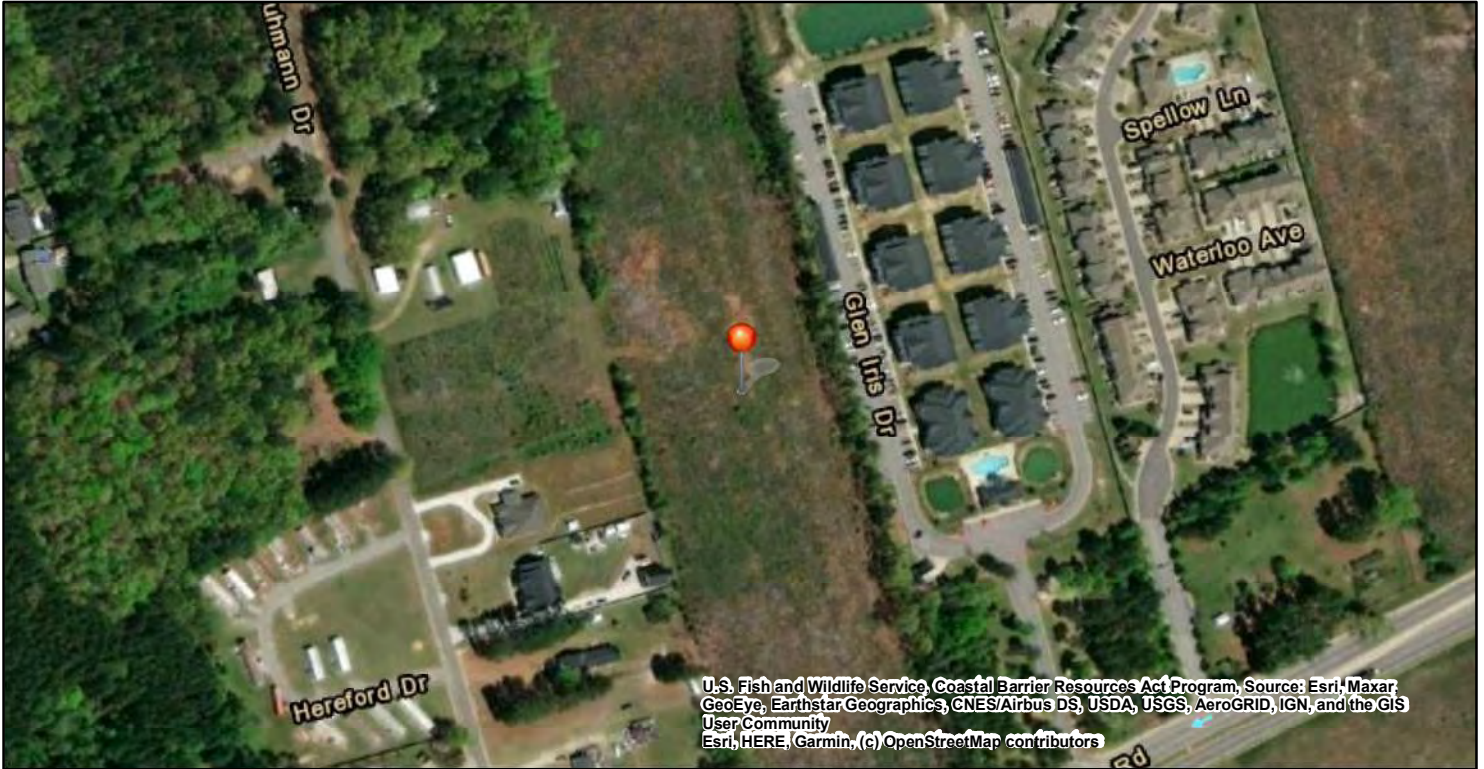
October 22, 2021

-  Project Buffer
-  Search Result (point)
-  Airport Polygons
-  Cliffdale
-  Airport Points



Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, EPA OEI


Coastal Barrier Resources System Mapper Documentation



CBRS Units

- Otherwise Protected Area
- System Unit
-  CBRS Buffer Zone
-  -79.054468, 35.059491

0 65 130 260 390 ft 1:4,514

 The pin location displayed on the map is a point selected by the user. Failure of the user to ensure that the pin location displayed on this map correctly corresponds with the user supplied address/location description below may result in an invalid federal flood insurance policy. **The U.S. Fish and Wildlife Service (Service) has not validated the pin location with respect to the user supplied address/location description below. The Service recommends that all pin locations be verified by federal agencies prior to use of this map for the provision or denial of federal funding or financial assistance .** Please note that a structure bisected by the Coastal Barrier Resources System (CBRS) boundary (i.e., both "partially in" and "partially out") is within the CBRS and therefore affected by CBRA's restrictions on federal flood insurance. A pin placed on a bisected structure must be placed on the portion of the structure within the unit (including any attached features such as a deck or stairs).

**User Name:** Chris Bond  
**User Organization:** Nova Group, GBC  
**User Supplied Address/Location Description:** 8368 Cliffdale Road, Fayetteville, NC 28314  
**Pin Location:** Outside CBRS  
**Pin Flood Insurance Prohibition Date:** N/A  
**Pin System Unit Establishment Date:** N/A

The user placed pin location is not within the CBRS. The official CBRS maps are accessible at <https://www.fws.gov/cbra/maps/index.html> .

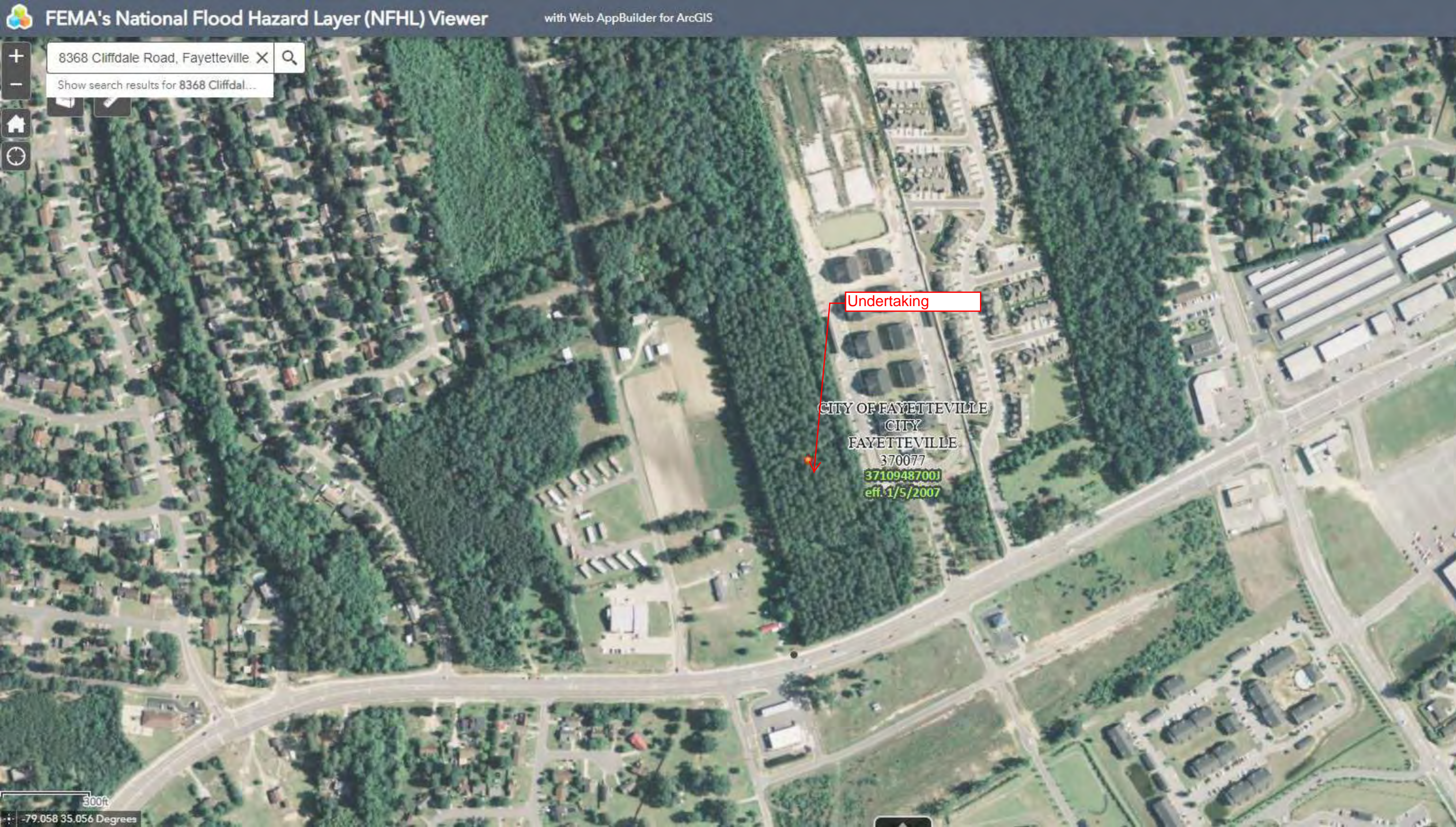
The CBRS information is derived directly from the CBRS web service provided by the Service. This map was exported on 10/13/2021 and does not reflect changes or amendments subsequent to this date. The CBRS boundaries on this map may become superseded by new boundaries over time.

This map image may be void if one or more of the following map elements do not appear: basemap imagery, CBRS unit labels, prohibition date labels, legend, scale bar, map creation date. For additional information about flood insurance and the CBRS, visit: <https://www.fws.gov/cbra/Flood-Insurance.html> .



8368 Cliffdale Road, Fayetteville X

Show search results for 8368 Cliffdal...

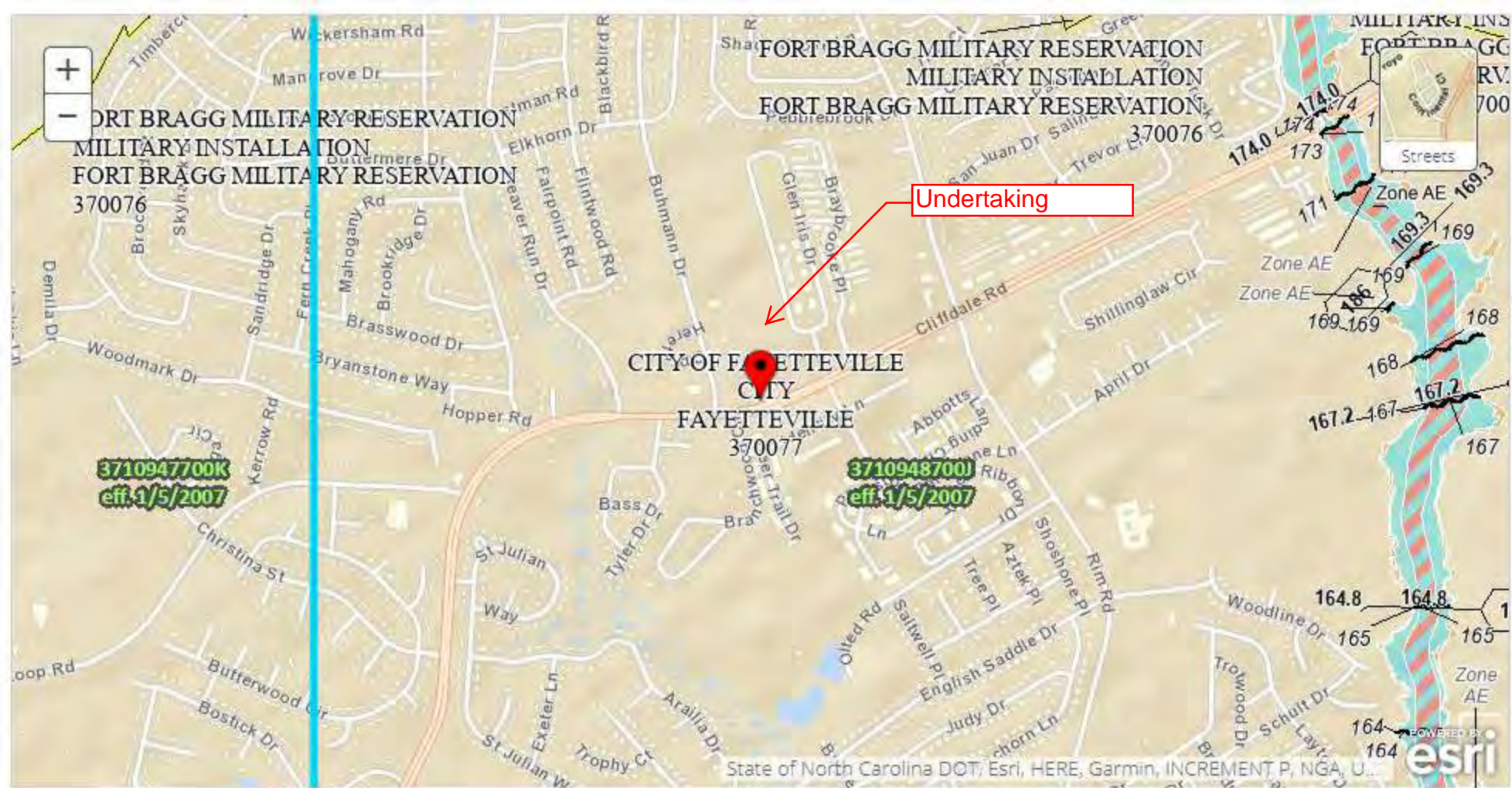


Undertaking

CITY OF FAYETTEVILLE  
CITY  
FAYETTEVILLE  
370077  
[3710948700]  
eff. 1/5/2007

### Legend

- Effective FIRM Panels**
  - GeoIndex
    - No Digital Data Available
    - Digital Data Available
    - Unmapped
- NFHL**
  - LOMRs
    - Effective
  - Political Jurisdictions
  - Profile Baselines
  - Cross-Sections
  - Base Flood Elevations
  - Levees
  - Coastal Transects
  - Transect Baselines
  - General Structures
    - Flood Structure
    - Bridge
    - Dam, Weir, Jetty
    - Other Structures
  - River Mile Markers
  - Limit of Moderate Wave Action
  - Flood Hazard Boundaries
    - Limit Lines



PIN



Approximate location based on user input and does not represent an authoritative property location



Selected FloodMap Boundary



Digital Data Available

**SPECIAL FLOOD HAZARD AREAS**



Without Base Flood Elevation (BFE)  
Zone A, V, X99



With BFE or Depth



Regulatory Floodway Zone AE, AO, AH, VE, AR



0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average



**20.2** Cross Sections with 1% Annual Chance Water Surface Elevation



**17.5** Coastal Transect



--- Base Flood Elevation Line (BFE)



— Limit of Study



— Jurisdiction Boundary



# NEPAssist Report

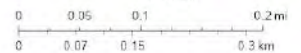
## Cliffdale Crossing



October 13, 2021

- Cliffdale Crossing
- + Search Result (point)

1:5,733



Sources: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Input Coordinates: 35.060560,-79.054352,35.058619,-79.053665,35.057565,-79.053236,35.057398,-79.053612,35.057223,-79.054298,35.060358,-79.055414,35.060560,-79.054352

Project Area	0.01 sq mi
Within an Ozone 8-hr (1997 standard) Non-Attainment/Maintenance Area?	no
Within an Ozone 8-hr (2008 standard) Non-Attainment/Maintenance Area?	no
Within a Lead (2008 standard) Non-Attainment/Maintenance Area?	no
Within a SO2 1-hr (2010 standard) Non-Attainment/Maintenance Area?	no
Within a PM2.5 24hr (2006 standard) Non-Attainment/Maintenance Area?	no
Within a PM2.5 Annual (1997 standard) Non-Attainment/Maintenance Area?	no
Within a PM2.5 Annual (2012 standard) Non-Attainment/Maintenance Area?	no
Within a PM10 (1987 standard) Non-Attainment/Maintenance Area?	no
Within a Federal Land?	no
Within an impaired stream?	no
Within an impaired waterbody?	no
Within a waterbody?	no
Within a stream?	no
Within an NWI wetland?	Available Online
Within a Brownfields site?	no
Within a Superfund site?	no
Within a Toxic Release Inventory (TRI) site?	no
Within a water discharger (NPDES)?	no
Within a hazardous waste (RCRA) facility?	no

Within an air emission facility?	no
Within a school?	no
Within an airport?	no
Within a hospital?	no
Within a designated sole source aquifer?	no
Within a historic property on the National Register of Historic Places?	no
Within a Toxic Substances Control Act (TSCA) site?	no
Within a Land Cession Boundary?	no
Within a tribal area (lower 48 states)?	no
Within the service area of a mitigation or conservation bank?	yes
Within the service area of an In-Lieu-Fee Program?	yes

Created on: 10/13/2021 1:18:58 PM



**You are here:** EPA Home > Green Book > Current Nonattainment Counties for All Criteria Pollutants

## Current Nonattainment Counties for All Criteria Pollutants

Data is current as of September 30, 2021

The 8-hour Ozone (1997) standard was revoked on April 6, 2015 and the 1-hour Ozone (1979) standard was revoked on June 15, 2005.

The asterisk (\*) indicates only a portion of the county is included in the designated nonattainment area (NA).

Download National Dataset of all designated areas (currently nonattainment, maintenance, revoked):

[dbf](#) | [xls](#) | [Data dictionary \(PDF\)](#)

---

Listed by State, County, NAAQS \* Part County NA NA Area Name  
(Classification, if applicable)

---

### ALASKA

Fairbanks North Star Borough

*PM-2.5 (2006)* \*Fairbanks, AK - (Serious)

### ARIZONA

Cochise County

*PM-10 (1987)* \*Paul Spur/Douglas (Cochise County), AZ - (Moderate)

Gila County

*Lead (2008)* \*Hayden, AZ

*PM-10 (1987)* \*Hayden, AZ - (Moderate)

*PM-10 (1987)* \*Miami, AZ - (Moderate)

*Sulfur Dioxide (2010)* \*Hayden, AZ

*Sulfur Dioxide (2010)* \*Miami, AZ

*8-Hour Ozone (2015)* \*Phoenix-Mesa, AZ - (Marginal)

Maricopa County

*PM-10 (1987)* \*Phoenix, AZ - (Serious)

*8-Hour Ozone (2008)* \*Phoenix-Mesa, AZ - (Moderate)

*8-Hour Ozone (2015)* \*Phoenix-Mesa, AZ - (Marginal)

Pima County

*PM-10 (1987)* \*Rillito, AZ - (Moderate)

Pinal County

*Lead (2008)* \*Hayden, AZ

*PM-10 (1987)* \*Hayden, AZ - (Moderate)

*PM-10 (1987)* \*Miami, AZ - (Moderate)

*PM-10 (1987)* \*Phoenix, AZ - (Serious)

*PM-10 (1987)* \*West Pinal, AZ - (Serious)

*PM-2.5 (2006)* \*West Central Pinal, AZ - (Moderate)

*Sulfur Dioxide (1971)* \*Hayden (Pinal County), AZ

*Sulfur Dioxide (2010)* \*Hayden, AZ

*8-Hour Ozone (2008)* \*Phoenix-Mesa, AZ - (Moderate)

*8-Hour Ozone (2015)* \*Phoenix-Mesa, AZ - (Marginal)

Santa Cruz County

	<i>PM-10 (1987)</i>	*Nogales, AZ - (Moderate)
	<i>PM-2.5 (2006)</i>	*Nogales, AZ - (Moderate)
Yuma County		
	<i>PM-10 (1987)</i>	*Yuma, AZ - (Moderate)
	<i>8-Hour Ozone (2015)</i>	*Yuma, AZ - (Marginal)
<b>CALIFORNIA</b>		
Alameda County		
	<i>PM-2.5 (2006)</i>	San Francisco Bay Area, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	San Francisco Bay Area, CA - (Marginal)
	<i>8-Hour Ozone (2015)</i>	San Francisco Bay Area, CA - (Marginal)
Amador County		
	<i>8-Hour Ozone (2015)</i>	Amador County, CA - (Marginal)
Butte County		
	<i>8-Hour Ozone (2008)</i>	Chico (Butte County), CA - (Marginal)
	<i>8-Hour Ozone (2015)</i>	Butte County, CA - (Marginal)
Calaveras County		
	<i>8-Hour Ozone (2008)</i>	Calaveras County, CA - (Marginal)
	<i>8-Hour Ozone (2015)</i>	Calaveras County, CA - (Marginal)
Contra Costa County		
	<i>PM-2.5 (2006)</i>	San Francisco Bay Area, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	San Francisco Bay Area, CA - (Marginal)
	<i>8-Hour Ozone (2015)</i>	San Francisco Bay Area, CA - (Marginal)
El Dorado County		
	<i>PM-2.5 (2006)</i>	*Sacramento, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	*Sacramento Metro, CA - (Severe 15)
	<i>8-Hour Ozone (2015)</i>	*Sacramento Metro, CA - (Moderate)
Fresno County		
	<i>PM-2.5 (1997)</i>	San Joaquin Valley, CA - (Serious)
	<i>PM-2.5 (2006)</i>	San Joaquin Valley, CA - (Serious)
	<i>PM-2.5 (2012)</i>	San Joaquin Valley, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	San Joaquin Valley, CA - (Extreme)
	<i>8-Hour Ozone (2015)</i>	San Joaquin Valley, CA - (Extreme)
Imperial County		
	<i>PM-2.5 (2006)</i>	*Imperial Co, CA - (Moderate)
	<i>PM-2.5 (2012)</i>	*Imperial County, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	Imperial County, CA - (Moderate)
	<i>8-Hour Ozone (2015)</i>	Imperial County, CA - (Marginal)
Inyo County		
	<i>PM-10 (1987)</i>	*Owens Valley, CA - (Serious)
Kern County		
	<i>PM-10 (1987)</i>	*East Kern Co, CA - (Serious)
	<i>PM-2.5 (1997)</i>	*San Joaquin Valley, CA - (Serious)
	<i>PM-2.5 (2006)</i>	*San Joaquin Valley, CA - (Serious)
	<i>PM-2.5 (2012)</i>	*San Joaquin Valley, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	*Kern Co (Eastern Kern), CA - (Severe 15)
	<i>8-Hour Ozone (2008)</i>	*San Joaquin Valley, CA - (Extreme)
	<i>8-Hour Ozone (2015)</i>	*Kern County (Eastern Kern), CA - (Moderate)
	<i>8-Hour Ozone (2015)</i>	*San Joaquin Valley, CA - (Extreme)
Kings County		
	<i>PM-2.5 (1997)</i>	San Joaquin Valley, CA - (Serious)
	<i>PM-2.5 (2006)</i>	San Joaquin Valley, CA - (Serious)
	<i>PM-2.5 (2012)</i>	San Joaquin Valley, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	San Joaquin Valley, CA - (Extreme)
	<i>8-Hour Ozone (2015)</i>	San Joaquin Valley, CA - (Extreme)
Los Angeles County		
	<i>Lead (2008)</i>	*Los Angeles County-South Coast Air Basin, CA
	<i>PM-2.5 (1997)</i>	*Los Angeles-South Coast Air Basin, CA - (Moderate)
	<i>PM-2.5 (2006)</i>	*Los Angeles-South Coast Air Basin, CA - (Serious)

<i>PM-2.5 (2012)</i>	*Los Angeles-South Coast Air Basin, CA - (Serious)
<i>8-Hour Ozone (2008)</i>	*Los Angeles-San Bernardino Counties (West Mojave Desert), CA - (Severe 15)
<i>8-Hour Ozone (2008)</i>	*Los Angeles-South Coast Air Basin, CA - (Extreme)
<i>8-Hour Ozone (2015)</i>	*Los Angeles-San Bernardino Counties (West Mojave Desert), CA - (Severe 15)
<i>8-Hour Ozone (2015)</i>	*Los Angeles-South Coast Air Basin, CA - (Extreme)
<b>Madera County</b>	
<i>PM-2.5 (1997)</i>	San Joaquin Valley, CA - (Serious)
<i>PM-2.5 (2006)</i>	San Joaquin Valley, CA - (Serious)
<i>PM-2.5 (2012)</i>	San Joaquin Valley, CA - (Moderate)
<i>8-Hour Ozone (2008)</i>	San Joaquin Valley, CA - (Extreme)
<i>8-Hour Ozone (2015)</i>	San Joaquin Valley, CA - (Extreme)
<b>Marin County</b>	
<i>PM-2.5 (2006)</i>	San Francisco Bay Area, CA - (Moderate)
<i>8-Hour Ozone (2008)</i>	San Francisco Bay Area, CA - (Marginal)
<i>8-Hour Ozone (2015)</i>	San Francisco Bay Area, CA - (Marginal)
<b>Mariposa County</b>	
<i>8-Hour Ozone (2008)</i>	Mariposa County, CA - (Moderate)
<i>8-Hour Ozone (2015)</i>	Mariposa County, CA - (Marginal)
<b>Merced County</b>	
<i>PM-2.5 (1997)</i>	San Joaquin Valley, CA - (Serious)
<i>PM-2.5 (2006)</i>	San Joaquin Valley, CA - (Serious)
<i>PM-2.5 (2012)</i>	San Joaquin Valley, CA - (Moderate)
<i>8-Hour Ozone (2008)</i>	San Joaquin Valley, CA - (Extreme)
<i>8-Hour Ozone (2015)</i>	San Joaquin Valley, CA - (Extreme)
<b>Mono County</b>	
<i>PM-10 (1987)</i>	*Mono Basin, CA - (Moderate)
<b>Napa County</b>	
<i>PM-2.5 (2006)</i>	San Francisco Bay Area, CA - (Moderate)
<i>8-Hour Ozone (2008)</i>	San Francisco Bay Area, CA - (Marginal)
<i>8-Hour Ozone (2015)</i>	San Francisco Bay Area, CA - (Marginal)
<b>Nevada County</b>	
<i>8-Hour Ozone (2008)</i>	*Nevada Co. (Western part), CA - (Serious)
<i>8-Hour Ozone (2015)</i>	*Nevada County (Western part), CA - (Moderate)
<b>Orange County</b>	
<i>PM-2.5 (1997)</i>	Los Angeles-South Coast Air Basin, CA - (Moderate)
<i>PM-2.5 (2006)</i>	Los Angeles-South Coast Air Basin, CA - (Serious)
<i>PM-2.5 (2012)</i>	Los Angeles-South Coast Air Basin, CA - (Serious)
<i>8-Hour Ozone (2008)</i>	Los Angeles-South Coast Air Basin, CA - (Extreme)
<i>8-Hour Ozone (2015)</i>	Los Angeles-South Coast Air Basin, CA - (Extreme)
<b>Placer County</b>	
<i>PM-2.5 (2006)</i>	*Sacramento, CA - (Moderate)
<i>8-Hour Ozone (2008)</i>	*Sacramento Metro, CA - (Severe 15)
<i>8-Hour Ozone (2015)</i>	*Sacramento Metro, CA - (Moderate)
<b>Plumas County</b>	
<i>PM-2.5 (2012)</i>	*Plumas County, CA - (Moderate)
<b>Riverside County</b>	
<i>PM-10 (1987)</i>	*Coachella Valley, CA - (Serious)
<i>PM-2.5 (1997)</i>	*Los Angeles-South Coast Air Basin, CA - (Moderate)
<i>PM-2.5 (2006)</i>	*Los Angeles-South Coast Air Basin, CA - (Serious)

<i>PM-2.5 (2012)</i>	*Los Angeles-South Coast Air Basin, CA - (Serious)
<i>8-Hour Ozone (2008)</i>	*Los Angeles-South Coast Air Basin, CA - (Extreme)
<i>8-Hour Ozone (2008)</i>	*Morongo Band of Mission Indians - (Serious)
<i>8-Hour Ozone (2008)</i>	*Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation - (Moderate)
<i>8-Hour Ozone (2008)</i>	*Riverside Co, (Coachella Valley), CA - (Severe 15)
<i>8-Hour Ozone (2015)</i>	*Los Angeles-South Coast Air Basin, CA - (Extreme)
<i>8-Hour Ozone (2015)</i>	*Morongo Band of Mission Indians, CA - (Serious)
<i>8-Hour Ozone (2015)</i>	*Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA - (Marginal)
<i>8-Hour Ozone (2015)</i>	*Riverside County (Coachella Valley), CA - (Severe 15)
<b>Sacramento County</b>	
<i>PM-2.5 (2006)</i>	Sacramento, CA - (Moderate)
<i>8-Hour Ozone (2008)</i>	Sacramento Metro, CA - (Severe 15)
<i>8-Hour Ozone (2015)</i>	Sacramento Metro, CA - (Moderate)
<b>San Bernardino County</b>	
<i>PM-10 (1987)</i>	*San Bernardino Co, CA - (Moderate)
<i>PM-10 (1987)</i>	*Trona, CA - (Moderate)
<i>PM-2.5 (1997)</i>	*Los Angeles-South Coast Air Basin, CA - (Moderate)
<i>PM-2.5 (2006)</i>	*Los Angeles-South Coast Air Basin, CA - (Serious)
<i>PM-2.5 (2012)</i>	*Los Angeles-South Coast Air Basin, CA - (Serious)
<i>8-Hour Ozone (2008)</i>	*Los Angeles-San Bernardino Counties (West Mojave Desert), CA - (Severe 15)
<i>8-Hour Ozone (2008)</i>	*Los Angeles-South Coast Air Basin, CA - (Extreme)
<i>8-Hour Ozone (2015)</i>	*Los Angeles-San Bernardino Counties (West Mojave Desert), CA - (Severe 15)
<i>8-Hour Ozone (2015)</i>	*Los Angeles-South Coast Air Basin, CA - (Extreme)
<b>San Diego County</b>	
<i>8-Hour Ozone (2008)</i>	*Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation - (Moderate)
<i>8-Hour Ozone (2008)</i>	*San Diego County, CA - (Severe 15)
<i>8-Hour Ozone (2015)</i>	*Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA - (Marginal)
<i>8-Hour Ozone (2015)</i>	*San Diego County, CA - (Severe 15)
<b>San Francisco County</b>	
<i>PM-2.5 (2006)</i>	San Francisco Bay Area, CA - (Moderate)
<i>8-Hour Ozone (2008)</i>	San Francisco Bay Area, CA - (Marginal)
<i>8-Hour Ozone (2015)</i>	San Francisco Bay Area, CA - (Marginal)
<b>San Joaquin County</b>	
<i>PM-2.5 (1997)</i>	San Joaquin Valley, CA - (Serious)
<i>PM-2.5 (2006)</i>	San Joaquin Valley, CA - (Serious)
<i>PM-2.5 (2012)</i>	San Joaquin Valley, CA - (Moderate)
<i>8-Hour Ozone (2008)</i>	San Joaquin Valley, CA - (Extreme)
<i>8-Hour Ozone (2015)</i>	San Joaquin Valley, CA - (Extreme)
<b>San Luis Obispo County</b>	
<i>8-Hour Ozone (2008)</i>	*San Luis Obispo (Eastern San Luis Obispo), CA - (Marginal)
<i>8-Hour Ozone (2015)</i>	*San Luis Obispo (Eastern part), CA - (Marginal)
<b>San Mateo County</b>	
<i>PM-2.5 (2006)</i>	San Francisco Bay Area, CA - (Moderate)

	<i>8-Hour Ozone (2008)</i>	San Francisco Bay Area, CA - (Marginal)
	<i>8-Hour Ozone (2015)</i>	San Francisco Bay Area, CA - (Marginal)
Santa Clara County		
	<i>PM-2.5 (2006)</i>	San Francisco Bay Area, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	San Francisco Bay Area, CA - (Marginal)
	<i>8-Hour Ozone (2015)</i>	San Francisco Bay Area, CA - (Marginal)
Solano County		
	<i>PM-2.5 (2006)</i>	*Sacramento, CA - (Moderate)
	<i>PM-2.5 (2006)</i>	*San Francisco Bay Area, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	*Sacramento Metro, CA - (Severe 15)
	<i>8-Hour Ozone (2008)</i>	*San Francisco Bay Area, CA - (Marginal)
	<i>8-Hour Ozone (2015)</i>	*Sacramento Metro, CA - (Moderate)
	<i>8-Hour Ozone (2015)</i>	*San Francisco Bay Area, CA - (Marginal)
Sonoma County		
	<i>PM-2.5 (2006)</i>	*San Francisco Bay Area, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	*San Francisco Bay Area, CA - (Marginal)
	<i>8-Hour Ozone (2015)</i>	*San Francisco Bay Area, CA - (Marginal)
Stanislaus County		
	<i>PM-2.5 (1997)</i>	San Joaquin Valley, CA - (Serious)
	<i>PM-2.5 (2006)</i>	San Joaquin Valley, CA - (Serious)
	<i>PM-2.5 (2012)</i>	San Joaquin Valley, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	San Joaquin Valley, CA - (Extreme)
	<i>8-Hour Ozone (2015)</i>	San Joaquin Valley, CA - (Extreme)
Sutter County		
	<i>8-Hour Ozone (2008)</i>	*Sacramento Metro, CA - (Severe 15)
	<i>8-Hour Ozone (2015)</i>	*Sacramento Metro, CA - (Moderate)
	<i>8-Hour Ozone (2015)</i>	*Sutter Buttes, CA - (Marginal)
Tehama County		
	<i>8-Hour Ozone (2008)</i>	*Tuscan Buttes, CA - (Marginal)
	<i>8-Hour Ozone (2015)</i>	*Tuscan Buttes, CA - (Marginal (Rural Transport))
Tulare County		
	<i>PM-2.5 (1997)</i>	San Joaquin Valley, CA - (Serious)
	<i>PM-2.5 (2006)</i>	San Joaquin Valley, CA - (Serious)
	<i>PM-2.5 (2012)</i>	San Joaquin Valley, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	San Joaquin Valley, CA - (Extreme)
	<i>8-Hour Ozone (2015)</i>	San Joaquin Valley, CA - (Extreme)
Tuolumne County		
	<i>8-Hour Ozone (2015)</i>	Tuolumne County, CA - (Marginal)
Ventura County		
	<i>8-Hour Ozone (2008)</i>	*Ventura County, CA - (Serious)
	<i>8-Hour Ozone (2015)</i>	*Ventura County, CA - (Serious)
Yolo County		
	<i>PM-2.5 (2006)</i>	*Sacramento, CA - (Moderate)
	<i>8-Hour Ozone (2008)</i>	Sacramento Metro, CA - (Severe 15)
	<i>8-Hour Ozone (2015)</i>	Sacramento Metro, CA - (Moderate)
<b>COLORADO</b>		
Adams County		
	<i>8-Hour Ozone (2008)</i>	Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Serious)
	<i>8-Hour Ozone (2015)</i>	Denver Metro/North Front Range, CO - (Marginal)
Arapahoe County		
	<i>8-Hour Ozone (2008)</i>	Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Serious)
	<i>8-Hour Ozone (2015)</i>	Denver Metro/North Front Range, CO - (Marginal)
Boulder County		
	<i>8-Hour Ozone (2008)</i>	Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Serious)
	<i>8-Hour Ozone (2015)</i>	Denver Metro/North Front Range, CO - (Marginal)

<b>Broomfield County</b>	
<i>8-Hour Ozone (2008)</i>	Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Serious)
<i>8-Hour Ozone (2015)</i>	Denver Metro/North Front Range, CO - (Marginal)
<b>Denver County</b>	
<i>8-Hour Ozone (2008)</i>	Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Serious)
<i>8-Hour Ozone (2015)</i>	Denver Metro/North Front Range, CO - (Marginal)
<b>Douglas County</b>	
<i>8-Hour Ozone (2008)</i>	Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Serious)
<i>8-Hour Ozone (2015)</i>	Denver Metro/North Front Range, CO - (Marginal)
<b>Jefferson County</b>	
<i>8-Hour Ozone (2008)</i>	Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Serious)
<i>8-Hour Ozone (2015)</i>	Denver Metro/North Front Range, CO - (Marginal)
<b>Larimer County</b>	
<i>8-Hour Ozone (2008)</i> *	Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Serious)
<i>8-Hour Ozone (2015)</i> *	Denver Metro/North Front Range, CO - (Marginal)
<b>Weld County</b>	
<i>8-Hour Ozone (2008)</i> *	Denver-Boulder-Greeley-Ft. Collins-Loveland, CO - (Serious)
<i>8-Hour Ozone (2015)</i> *	Denver Metro/North Front Range, CO - (Marginal)
<b>CONNECTICUT</b>	
<b>Fairfield County</b>	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
<b>Hartford County</b>	
<i>8-Hour Ozone (2008)</i>	Greater Connecticut, CT - (Serious)
<i>8-Hour Ozone (2015)</i>	Greater Connecticut, CT - (Marginal)
<b>Litchfield County</b>	
<i>8-Hour Ozone (2008)</i>	Greater Connecticut, CT - (Serious)
<i>8-Hour Ozone (2015)</i>	Greater Connecticut, CT - (Marginal)
<b>Middlesex County</b>	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
<b>New Haven County</b>	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
<b>New London County</b>	
<i>8-Hour Ozone (2008)</i>	Greater Connecticut, CT - (Serious)
<i>8-Hour Ozone (2015)</i>	Greater Connecticut, CT - (Marginal)
<b>Tolland County</b>	
<i>8-Hour Ozone (2008)</i>	Greater Connecticut, CT - (Serious)
<i>8-Hour Ozone (2015)</i>	Greater Connecticut, CT - (Marginal)
<b>Windham County</b>	
<i>8-Hour Ozone (2008)</i>	Greater Connecticut, CT - (Serious)
<i>8-Hour Ozone (2015)</i>	Greater Connecticut, CT - (Marginal)



**DELAWARE**

## New Castle County

- 8-Hour Ozone (2008)* Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)  
*8-Hour Ozone (2015)* Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)

## Sussex County

- 8-Hour Ozone (2008)* Seaford, DE - (Marginal)

**DISTRICT OF COLUMBIA**

## District of Columbia

- 8-Hour Ozone (2015)* Washington, DC-MD-VA - (Marginal)

**GEORGIA**

## Bartow County

- 8-Hour Ozone (2015)* Atlanta, GA - (Marginal)

## Clayton County

- 8-Hour Ozone (2015)* Atlanta, GA - (Marginal)

## Cobb County

- 8-Hour Ozone (2015)* Atlanta, GA - (Marginal)

## DeKalb County

- 8-Hour Ozone (2015)* Atlanta, GA - (Marginal)

## Fulton County

- 8-Hour Ozone (2015)* Atlanta, GA - (Marginal)

## Gwinnett County

- 8-Hour Ozone (2015)* Atlanta, GA - (Marginal)

## Henry County

- 8-Hour Ozone (2015)* Atlanta, GA - (Marginal)

**GUAM**

## Guam

- Sulfur Dioxide (1971)\*Piti, GU*  
*Sulfur Dioxide (1971)\*Tanguisson, GU*  
*Sulfur Dioxide (2010)\*Piti-Cabras, GU*

**IDAHO**

## Bannock County

- PM-10 (1987)* \*Fort Hall Indian Reservation - (Moderate)

## Power County

- PM-10 (1987)* \*Fort Hall Indian Reservation - (Moderate)

## Shoshone County

- PM-2.5 (2012)* \*West Silver Valley, ID - (Moderate)

**ILLINOIS**

## Cook County

- 8-Hour Ozone (2008)* Chicago-Naperville, IL-IN-WI - (Serious)  
*8-Hour Ozone (2015)* Chicago, IL-IN-WI - (Marginal)

## DuPage County

- 8-Hour Ozone (2008)* Chicago-Naperville, IL-IN-WI - (Serious)  
*8-Hour Ozone (2015)* Chicago, IL-IN-WI - (Marginal)

## Grundy County

- 8-Hour Ozone (2008)* \*Chicago-Naperville, IL-IN-WI - (Serious)  
*8-Hour Ozone (2015)* \*Chicago, IL-IN-WI - (Marginal)

## Kane County

- 8-Hour Ozone (2008)* Chicago-Naperville, IL-IN-WI - (Serious)  
*8-Hour Ozone (2015)* Chicago, IL-IN-WI - (Marginal)

## Kendall County

- 8-Hour Ozone (2008)* \*Chicago-Naperville, IL-IN-WI - (Serious)  
*8-Hour Ozone (2015)* \*Chicago, IL-IN-WI - (Marginal)

## Lake County

- 8-Hour Ozone (2008)* Chicago-Naperville, IL-IN-WI - (Serious)  
*8-Hour Ozone (2015)* Chicago, IL-IN-WI - (Marginal)

## Madison County

- Sulfur Dioxide (2010)\*Alton Township, IL*  
*8-Hour Ozone (2015)* St. Louis, MO-IL - (Marginal)

## McHenry County

*8-Hour Ozone (2008)* Chicago-Naperville, IL-IN-WI - (Serious)

*8-Hour Ozone (2015)* Chicago, IL-IN-WI - (Marginal)

Monroe County

*8-Hour Ozone (2015)* St. Louis, MO-IL - (Marginal)

St. Clair County

*8-Hour Ozone (2015)* St. Louis, MO-IL - (Marginal)

Will County

*8-Hour Ozone (2008)* Chicago-Naperville, IL-IN-WI - (Serious)

*8-Hour Ozone (2015)* Chicago, IL-IN-WI - (Marginal)

## INDIANA

Clark County

*8-Hour Ozone (2015)* Louisville, KY-IN - (Marginal)

Floyd County

*8-Hour Ozone (2015)* Louisville, KY-IN - (Marginal)

Huntington County

*Sulfur Dioxide (2010)\**Huntington, IN

Lake County

*8-Hour Ozone (2008)* Chicago-Naperville, IL-IN-WI - (Serious)

*8-Hour Ozone (2015)\**Chicago, IL-IN-WI - (Marginal)

Porter County

*8-Hour Ozone (2008)* Chicago-Naperville, IL-IN-WI - (Serious)

*8-Hour Ozone (2015)\**Chicago, IL-IN-WI - (Marginal)

## IOWA

Muscatine County

*Sulfur Dioxide (2010)\**Muscatine, IA

## KANSAS

Saline County

*Lead (2008)* \*Saline County, KS

## KENTUCKY

Boone County

*8-Hour Ozone (2015)\**Cincinnati, OH-KY - (Marginal)

Bullitt County

*8-Hour Ozone (2015)* Louisville, KY-IN - (Marginal)

Campbell County

*8-Hour Ozone (2015)\**Cincinnati, OH-KY - (Marginal)

Henderson County

*Sulfur Dioxide (2010)\**Henderson-Webster Counties, KY

Jefferson County

*8-Hour Ozone (2015)* Louisville, KY-IN - (Marginal)

Kenton County

*8-Hour Ozone (2015)\**Cincinnati, OH-KY - (Marginal)

Oldham County

*8-Hour Ozone (2015)* Louisville, KY-IN - (Marginal)

Webster County

*Sulfur Dioxide (2010)\**Henderson-Webster Counties, KY

## LOUISIANA

Evangeline Parish

*Sulfur Dioxide (2010)\**Evangeline Parish (Partial), LA

St. Bernard Parish

*Sulfur Dioxide (2010)* St. Bernard Parish, LA

## MARYLAND

Anne Arundel County

*Sulfur Dioxide (2010)\**Anne Arundel County and Baltimore County, MD

*8-Hour Ozone (2008)* Baltimore, MD - (Moderate)

*8-Hour Ozone (2015)* Baltimore, MD - (Marginal)

Baltimore County

*Sulfur Dioxide (2010)\**Anne Arundel County and Baltimore County, MD

*8-Hour Ozone (2008)* Baltimore, MD - (Moderate)

*8-Hour Ozone (2015)* Baltimore, MD - (Marginal)

Baltimore city

*8-Hour Ozone (2008)* Baltimore, MD - (Moderate)

	<i>8-Hour Ozone (2015)</i>	Baltimore, MD - (Marginal)
Calvert County		
	<i>8-Hour Ozone (2015)</i>	Washington, DC-MD-VA - (Marginal)
Carroll County		
	<i>8-Hour Ozone (2008)</i>	Baltimore, MD - (Moderate)
	<i>8-Hour Ozone (2015)</i>	Baltimore, MD - (Marginal)
Cecil County		
	<i>8-Hour Ozone (2008)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
	<i>8-Hour Ozone (2015)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Charles County		
	<i>8-Hour Ozone (2015)</i>	Washington, DC-MD-VA - (Marginal)
Frederick County		
	<i>8-Hour Ozone (2015)</i>	Washington, DC-MD-VA - (Marginal)
Harford County		
	<i>8-Hour Ozone (2008)</i>	Baltimore, MD - (Moderate)
	<i>8-Hour Ozone (2015)</i>	Baltimore, MD - (Marginal)
Howard County		
	<i>8-Hour Ozone (2008)</i>	Baltimore, MD - (Moderate)
	<i>8-Hour Ozone (2015)</i>	Baltimore, MD - (Marginal)
Montgomery County		
	<i>8-Hour Ozone (2015)</i>	Washington, DC-MD-VA - (Marginal)
Prince George's County		
	<i>8-Hour Ozone (2015)</i>	Washington, DC-MD-VA - (Marginal)
<b>MASSACHUSETTS</b>		
Dukes County		
	<i>8-Hour Ozone (2008)</i>	Dukes County, MA - (Marginal)
<b>MICHIGAN</b>		
Allegan County		
	<i>8-Hour Ozone (2015)</i>	*Allegan County, MI - (Marginal)
Berrien County		
	<i>8-Hour Ozone (2015)</i>	Berrien County, MI - (Marginal)
Livingston County		
	<i>8-Hour Ozone (2015)</i>	Detroit, MI - (Marginal)
Macomb County		
	<i>8-Hour Ozone (2015)</i>	Detroit, MI - (Marginal)
Monroe County		
	<i>8-Hour Ozone (2015)</i>	Detroit, MI - (Marginal)
Muskegon County		
	<i>8-Hour Ozone (2015)</i>	*Muskegon County, MI - (Marginal)
Oakland County		
	<i>8-Hour Ozone (2015)</i>	Detroit, MI - (Marginal)
St. Clair County		
	<i>Sulfur Dioxide (2010)</i>	*St. Clair, MI
	<i>8-Hour Ozone (2015)</i>	Detroit, MI - (Marginal)
Washtenaw County		
	<i>8-Hour Ozone (2015)</i>	Detroit, MI - (Marginal)
Wayne County		
	<i>Sulfur Dioxide (2010)</i>	*Detroit, MI
	<i>8-Hour Ozone (2015)</i>	Detroit, MI - (Marginal)
<b>MINNESOTA</b>		
Dakota County		
	<i>Lead (2008)</i>	*Eagan, MN
<b>MISSOURI</b>		
Dent County		
	<i>Lead (2008)</i>	*Iron, Dent, and Reynolds Counties, MO
Franklin County		
	<i>8-Hour Ozone (2015)</i>	*St. Louis, MO-IL - (Marginal)
Iron County		
	<i>Lead (2008)</i>	*Iron, Dent, and Reynolds Counties, MO

Jackson County	
<i>Sulfur Dioxide (2010)</i>	*Jackson County, MO
Jefferson County	
<i>Lead (1978)</i>	*Jefferson County (part); Herculaneum, MO
<i>Lead (2008)</i>	*Jefferson County, MO
<i>Sulfur Dioxide (2010)</i>	*Jefferson County, MO
<i>8-Hour Ozone (2015)</i>	St. Louis, MO-IL - (Marginal)
New Madrid County	
<i>Sulfur Dioxide (2010)</i>	*New Madrid County, MO
Reynolds County	
<i>Lead (2008)</i>	*Iron, Dent, and Reynolds Counties, MO
St. Charles County	
<i>8-Hour Ozone (2015)</i>	St. Louis, MO-IL - (Marginal)
St. Louis County	
<i>8-Hour Ozone (2015)</i>	St. Louis, MO-IL - (Marginal)
St. Louis city	
<i>8-Hour Ozone (2015)</i>	St. Louis, MO-IL - (Marginal)
<b>MONTANA</b>	
Flathead County	
<i>PM-10 (1987)</i>	*Flathead County; Whitefish and vicinity, MT - (Moderate)
Lake County	
<i>PM-10 (1987)</i>	*Polson, MT - (Moderate)
<i>PM-10 (1987)</i>	*Ronan, MT - (Moderate)
Lincoln County	
<i>PM-2.5 (1997)</i>	*Libby, MT - (Moderate)
Rosebud County	
<i>PM-10 (1987)</i>	*Lame Deer, MT - (Moderate)
Sanders County	
<i>PM-10 (1987)</i>	*Sanders County (part); Thompson Falls and vicinity, MT - (Moderate)
Yellowstone County	
<i>Sulfur Dioxide (1971)</i>	*Laurel Area (Yellowstone County), MT
<b>NEVADA</b>	
Clark County	
<i>8-Hour Ozone (2015)</i>	*Las Vegas, NV - (Marginal)
<b>NEW JERSEY</b>	
Atlantic County	
<i>8-Hour Ozone (2008)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
<i>8-Hour Ozone (2015)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Bergen County	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Burlington County	
<i>8-Hour Ozone (2008)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
<i>8-Hour Ozone (2015)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Camden County	
<i>8-Hour Ozone (2008)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
<i>8-Hour Ozone (2015)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Cape May County	
<i>8-Hour Ozone (2008)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)

	<i>8-Hour Ozone (2015)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Cumberland County	<i>8-Hour Ozone (2008)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
	<i>8-Hour Ozone (2015)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Essex County	<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
	<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Gloucester County	<i>8-Hour Ozone (2008)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
	<i>8-Hour Ozone (2015)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Hudson County	<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
	<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Hunterdon County	<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
	<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Mercer County	<i>8-Hour Ozone (2008)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
	<i>8-Hour Ozone (2015)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Middlesex County	<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
	<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Monmouth County	<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
	<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Morris County	<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
	<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Ocean County	<i>8-Hour Ozone (2008)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
	<i>8-Hour Ozone (2015)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Passaic County	<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
	<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Salem County	<i>8-Hour Ozone (2008)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)

<i>8-Hour Ozone (2015)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Somerset County	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Sussex County	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Union County	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Warren County	
<i>Sulfur Dioxide (1971)</i>	*Warren Co, NJ
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
<b>NEW MEXICO</b>	
Dona Ana County	
<i>PM-10 (1987)</i>	*Anthony, NM - (Moderate)
<i>8-Hour Ozone (2015)</i>	*Dona Ana County (Sunland Park Area), NM - (Marginal)
<b>NEW YORK</b>	
Bronx County	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Chautauqua County	
<i>8-Hour Ozone (2008)</i>	Jamestown, NY - (Marginal)
Kings County	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Nassau County	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
New York County	
<i>PM-10 (1987)</i>	New York Co, NY - (Moderate)
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Queens County	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Richmond County	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)

<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Rockland County	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
St. Lawrence County	
<i>Sulfur Dioxide (2010)*</i>	St. Lawrence County, NY
Suffolk County	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)
Westchester County	
<i>8-Hour Ozone (2008)</i>	New York-N. New Jersey-Long Island, NY-NJ-CT - (Serious)
<i>8-Hour Ozone (2015)</i>	New York-Northern New Jersey-Long Island, NY-NJ-CT - (Moderate)

**OHIO**

Butler County	
<i>8-Hour Ozone (2015)</i>	Cincinnati, OH-KY - (Marginal)
Clermont County	
<i>8-Hour Ozone (2015)</i>	Cincinnati, OH-KY - (Marginal)
Cuyahoga County	
<i>8-Hour Ozone (2015)</i>	Cleveland, OH - (Marginal)
Geauga County	
<i>8-Hour Ozone (2015)</i>	Cleveland, OH - (Marginal)
Hamilton County	
<i>8-Hour Ozone (2015)</i>	Cincinnati, OH-KY - (Marginal)
Lake County	
<i>8-Hour Ozone (2015)</i>	Cleveland, OH - (Marginal)
Lorain County	
<i>8-Hour Ozone (2015)</i>	Cleveland, OH - (Marginal)
Medina County	
<i>8-Hour Ozone (2015)</i>	Cleveland, OH - (Marginal)
Morgan County	
<i>Sulfur Dioxide (2010)*</i>	Muskingum River, OH
Portage County	
<i>8-Hour Ozone (2015)</i>	Cleveland, OH - (Marginal)
Summit County	
<i>8-Hour Ozone (2015)</i>	Cleveland, OH - (Marginal)
Warren County	
<i>8-Hour Ozone (2015)</i>	Cincinnati, OH-KY - (Marginal)
Washington County	
<i>Sulfur Dioxide (2010)*</i>	Muskingum River, OH

**OREGON**

Klamath County	
<i>PM-2.5 (2006)</i>	*Klamath Falls, OR - (Moderate)
Lane County	
<i>PM-10 (1987)</i>	*Lane Co, OR - (Moderate)
<i>PM-2.5 (2006)</i>	*Oakridge, OR - (Moderate)

**PENNSYLVANIA**

Allegheny County	
<i>PM-2.5 (1997)</i>	*Liberty-Clairton, PA - (Moderate)
<i>PM-2.5 (2006)</i>	*Liberty-Clairton, PA - (Moderate)
<i>PM-2.5 (2012)</i>	Allegheny County, PA - (Moderate)
<i>Sulfur Dioxide (2010)*</i>	Allegheny, PA
<i>8-Hour Ozone (2008)</i>	Pittsburgh-Beaver Valley, PA - (Marginal)
Armstrong County	
<i>Sulfur Dioxide (1971)*</i>	Armstrong Co, PA

	<i>Sulfur Dioxide (2010)</i>	*Indiana, PA
	<i>8-Hour Ozone (2008)</i>	Pittsburgh-Beaver Valley, PA - (Marginal)
Beaver County	<i>Lead (2008)</i>	*Lower Beaver Valley, PA
	<i>Sulfur Dioxide (2010)</i>	*Beaver, PA
	<i>8-Hour Ozone (2008)</i>	Pittsburgh-Beaver Valley, PA - (Marginal)
Berks County	<i>Lead (2008)</i>	*Lyons, PA
	<i>Lead (2008)</i>	*North Reading, PA
	<i>8-Hour Ozone (2008)</i>	Reading, PA - (Marginal)
Bucks County	<i>8-Hour Ozone (2008)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
	<i>8-Hour Ozone (2015)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Butler County	<i>8-Hour Ozone (2008)</i>	Pittsburgh-Beaver Valley, PA - (Marginal)
Carbon County	<i>8-Hour Ozone (2008)</i>	Allentown-Bethlehem-Easton, PA - (Marginal)
Chester County	<i>8-Hour Ozone (2008)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
	<i>8-Hour Ozone (2015)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Delaware County	<i>8-Hour Ozone (2008)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
	<i>8-Hour Ozone (2015)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Fayette County	<i>8-Hour Ozone (2008)</i>	Pittsburgh-Beaver Valley, PA - (Marginal)
Indiana County	<i>Sulfur Dioxide (2010)</i>	Indiana, PA
Lancaster County	<i>8-Hour Ozone (2008)</i>	Lancaster, PA - (Marginal)
Lehigh County	<i>8-Hour Ozone (2008)</i>	Allentown-Bethlehem-Easton, PA - (Marginal)
Montgomery County	<i>8-Hour Ozone (2008)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
	<i>8-Hour Ozone (2015)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Northampton County	<i>8-Hour Ozone (2008)</i>	Allentown-Bethlehem-Easton, PA - (Marginal)
Philadelphia County	<i>8-Hour Ozone (2008)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
	<i>8-Hour Ozone (2015)</i>	Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE - (Marginal)
Warren County	<i>Sulfur Dioxide (2010)</i>	*Warren, PA
Washington County	<i>8-Hour Ozone (2008)</i>	Pittsburgh-Beaver Valley, PA - (Marginal)
Westmoreland County	<i>8-Hour Ozone (2008)</i>	Pittsburgh-Beaver Valley, PA - (Marginal)
<b>PUERTO RICO</b>		
Arecibo Municipio	<i>Lead (2008)</i>	*Arecibo, PR
Bayamon Municipio	<i>Sulfur Dioxide (2010)</i>	*San Juan, PR
Catano Municipio		



*Sulfur Dioxide (2010)* San Juan, PR  
 Guaynabo Municipio  
*Sulfur Dioxide (2010)\**San Juan, PR  
 Salinas Municipio  
*Sulfur Dioxide (2010)\**Guayama-Salinas, PR  
 San Juan Municipio  
*Sulfur Dioxide (2010)\**San Juan, PR  
 Toa Baja Municipio  
*Sulfur Dioxide (2010)\**San Juan, PR

**TENNESSEE**

Sullivan County  
*Sulfur Dioxide (2010)\**Sullivan County, TN

**TEXAS**

Anderson County  
*Sulfur Dioxide (2010)\**Freestone and Anderson Counties, TX  
 Bexar County  
*8-Hour Ozone (2015)* San Antonio, TX - (Marginal)  
 Brazoria County  
*8-Hour Ozone (2008)* Houston-Galveston-Brazoria, TX - (Serious)  
*8-Hour Ozone (2015)* Houston-Galveston-Brazoria, TX - (Marginal)  
 Chambers County  
*8-Hour Ozone (2008)* Houston-Galveston-Brazoria, TX - (Serious)  
*8-Hour Ozone (2015)* Houston-Galveston-Brazoria, TX - (Marginal)  
 Collin County  
*8-Hour Ozone (2008)* Dallas-Fort Worth, TX - (Serious)  
*8-Hour Ozone (2015)* Dallas-Fort Worth, TX - (Marginal)  
 Dallas County  
*8-Hour Ozone (2008)* Dallas-Fort Worth, TX - (Serious)  
*8-Hour Ozone (2015)* Dallas-Fort Worth, TX - (Marginal)  
 Denton County  
*8-Hour Ozone (2008)* Dallas-Fort Worth, TX - (Serious)  
*8-Hour Ozone (2015)* Dallas-Fort Worth, TX - (Marginal)  
 El Paso County  
*PM-10 (1987)* \*El Paso Co, TX - (Moderate)  
 Ellis County  
*8-Hour Ozone (2008)* Dallas-Fort Worth, TX - (Serious)  
*8-Hour Ozone (2015)* Dallas-Fort Worth, TX - (Marginal)  
 Fort Bend County  
*8-Hour Ozone (2008)* Houston-Galveston-Brazoria, TX - (Serious)  
*8-Hour Ozone (2015)* Houston-Galveston-Brazoria, TX - (Marginal)  
 Freestone County  
*Sulfur Dioxide (2010)\**Freestone and Anderson Counties, TX  
 Galveston County  
*8-Hour Ozone (2008)* Houston-Galveston-Brazoria, TX - (Serious)  
*8-Hour Ozone (2015)* Houston-Galveston-Brazoria, TX - (Marginal)  
 Harris County  
*8-Hour Ozone (2008)* Houston-Galveston-Brazoria, TX - (Serious)  
*8-Hour Ozone (2015)* Houston-Galveston-Brazoria, TX - (Marginal)  
 Howard County  
*Sulfur Dioxide (2010)\**Howard County, TX  
 Hutchinson County  
*Sulfur Dioxide (2010)\**Hutchinson County, TX  
 Johnson County  
*8-Hour Ozone (2008)* Dallas-Fort Worth, TX - (Serious)  
*8-Hour Ozone (2015)* Dallas-Fort Worth, TX - (Marginal)  
 Kaufman County  
*8-Hour Ozone (2008)* Dallas-Fort Worth, TX - (Serious)  
*8-Hour Ozone (2015)* Dallas-Fort Worth, TX - (Marginal)  
 Liberty County  
*8-Hour Ozone (2008)* Houston-Galveston-Brazoria, TX - (Serious)  
 Montgomery County

*8-Hour Ozone (2008)* Houston-Galveston-Brazoria, TX - (Serious)  
*8-Hour Ozone (2015)* Houston-Galveston-Brazoria, TX - (Marginal)

Navarro County

*Sulfur Dioxide (2010)\**Navarro County, TX

Panola County

*Sulfur Dioxide (2010)\**Rusk and Panola Counties, TX

Parker County

*8-Hour Ozone (2008)* Dallas-Fort Worth, TX - (Serious)

*8-Hour Ozone (2015)* Dallas-Fort Worth, TX - (Marginal)

Rockwall County

*8-Hour Ozone (2008)* Dallas-Fort Worth, TX - (Serious)

Rusk County

*Sulfur Dioxide (2010)\**Rusk and Panola Counties, TX

Tarrant County

*8-Hour Ozone (2008)* Dallas-Fort Worth, TX - (Serious)

*8-Hour Ozone (2015)* Dallas-Fort Worth, TX - (Marginal)

Titus County

*Sulfur Dioxide (2010)\**Titus County, TX

Waller County

*8-Hour Ozone (2008)* Houston-Galveston-Brazoria, TX - (Serious)

Wise County

*8-Hour Ozone (2008)* Dallas-Fort Worth, TX - (Serious)

*8-Hour Ozone (2015)* Dallas-Fort Worth, TX - (Marginal)

## UTAH

Box Elder County

*PM-2.5 (2006)* \*Salt Lake City, UT - (Serious)

Davis County

*PM-2.5 (2006)* Salt Lake City, UT - (Serious)

*8-Hour Ozone (2015)* Northern Wasatch Front, UT - (Marginal)

Duchesne County

*8-Hour Ozone (2015)* \*Uinta Basin, UT - (Marginal)

Salt Lake County

*PM-2.5 (2006)* Salt Lake City, UT - (Serious)

*Sulfur Dioxide (1971)* Salt Lake Co, UT

*8-Hour Ozone (2015)* Northern Wasatch Front, UT - (Marginal)

Tooele County

*PM-2.5 (2006)* \*Salt Lake City, UT - (Serious)

*Sulfur Dioxide (1971)\**Tooele Co, UT

*8-Hour Ozone (2015)* \*Northern Wasatch Front, UT - (Marginal)

Uintah County

*8-Hour Ozone (2015)* \*Uinta Basin, UT - (Marginal)

Utah County

*PM-2.5 (2006)* \*Provo, UT - (Serious)

*8-Hour Ozone (2015)* \*Southern Wasatch Front, UT - (Marginal)

Weber County

*PM-2.5 (2006)* \*Salt Lake City, UT - (Serious)

*8-Hour Ozone (2015)* \*Northern Wasatch Front, UT - (Marginal)

## VIRGINIA

Alexandria city

*8-Hour Ozone (2015)* Washington, DC-MD-VA - (Marginal)

Arlington County

*8-Hour Ozone (2015)* Washington, DC-MD-VA - (Marginal)

Fairfax County

*8-Hour Ozone (2015)* Washington, DC-MD-VA - (Marginal)

Fairfax city

*8-Hour Ozone (2015)* Washington, DC-MD-VA - (Marginal)

Falls Church city

*8-Hour Ozone (2015)* Washington, DC-MD-VA - (Marginal)

Giles County

*Sulfur Dioxide (2010)\**Giles County, VA

Loudoun County

*8-Hour Ozone (2015)* Washington, DC-MD-VA - (Marginal)

Manassas Park city

*8-Hour Ozone (2015)* Washington, DC-MD-VA - (Marginal)

Manassas city

*8-Hour Ozone (2015)* Washington, DC-MD-VA - (Marginal)

Prince William County

*8-Hour Ozone (2015)* Washington, DC-MD-VA - (Marginal)

## WASHINGTON

Whatcom County

*Sulfur Dioxide (2010)*\*Whatcom County, WA

## WISCONSIN

Door County

*8-Hour Ozone (2015)* \*Door County-Revised, WI - (Marginal (Rural Transport))

Kenosha County

*8-Hour Ozone (2008)* \*Chicago-Naperville, IL-IN-WI - (Serious)

*8-Hour Ozone (2015)* \*Chicago, IL-IN-WI - (Marginal)

Manitowoc County

*8-Hour Ozone (2015)* \*Manitowoc County, WI - (Marginal)

Milwaukee County

*8-Hour Ozone (2015)* Milwaukee, WI - (Marginal)

Oneida County

*Sulfur Dioxide (2010)*\*Rhineland, WI

Ozaukee County

*8-Hour Ozone (2015)* Milwaukee, WI - (Marginal)

Racine County

*8-Hour Ozone (2015)* \*Milwaukee, WI - (Marginal)

Sheboygan County

*8-Hour Ozone (2015)* \*Sheboygan County, WI - (Marginal)

Washington County

*8-Hour Ozone (2015)* \*Milwaukee, WI - (Marginal)

Waukesha County

*8-Hour Ozone (2015)* \*Milwaukee, WI - (Marginal)

## WYOMING

Lincoln County

*8-Hour Ozone (2008)* \*Upper Green River Basin Area, WY - (Marginal)

Sublette County

*8-Hour Ozone (2008)* Upper Green River Basin Area, WY - (Marginal)

Sweetwater County

*8-Hour Ozone (2008)* \*Upper Green River Basin Area, WY - (Marginal)

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# Coastal Zone Management Programs

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Washington [#washington]	Wisconsin [#wisconsin]	

\* All 35 coastal and Great Lakes states and territories (with the exception of Alaska) participate in the National Coastal Zone Management Program.

## ALABAMA

The Alabama Coastal Management Program [<http://www.adem.state.al.us/programs/coastal/default.cnt>], approved by NOAA in 1979, is administered by two state agencies:

- The Alabama Department of Conservation and Natural Resources [<https://www.outdooralabama.com/coastal-programs/alabama-coastal-area-management-program>] is responsible for planning, fiscal management, public education, and research management; and the
- Alabama Department of Environmental Management [<http://adem.alabama.gov/programs/coastal/default.cnt>] carries out permitting, regulatory, and enforcement functions.

The primary authority for the coastal management program is the Alabama Coastal Area Act of 1976 (Act 534). The Alabama coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] extends inland to the continuous 10-foot contour in Mobile and Baldwin Counties.

## ALASKA

Alaska withdrew from the voluntary National Coastal Zone Management Program [[/czm/about/](#)] on July 1, 2011. Contact NOAA's Office for Coastal Management for additional information.

## AMERICAN SAMOA

The American Samoa Coastal Management Program [<http://doc.as/resource-management/ascmp/>], approved by NOAA in 1980, is led by the American Samoa Department of Commerce. The coastal program has developed a unique approach that incorporates both western and traditional systems of management. The American Samoa Coastal Management Act provides the primary authority for the program. American Samoa's coastal zone boundary [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] consists of seven islands, totaling roughly 77 square miles, with a coastline of 126 miles.

## CALIFORNIA

The California Coastal Management Program, approved by NOAA in 1978, is administered by three state agencies:

- The California Coastal Commission [<https://www.coastal.ca.gov/>] manages development along the California coast except San Francisco Bay, where the
- San Francisco Bay Conservation and Development Commission [<https://www.bcdc.ca.gov/>] oversees development.
- The California Coastal Conservancy [<https://scc.ca.gov/>] purchases, protects, restores, and enhances coastal resources, and provides access to the shore.

The primary authorities for the California Coastal Management Program are the California Coastal Act, McAteer-Petris Act, and Suisan Marsh Preservation Act. The California coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] generally extends 1,000 yards inland from the mean high tide line. The coastal zone for the San Francisco Bay Conservation and Development Commission includes the open water, marshes, and mudflats of greater San Francisco Bay, and areas 100 feet inland from the line of highest tidal action.

## CONNECTICUT

The Connecticut Coastal Management Program [<https://portal.ct.gov/DEEP>], approved in 1980, is administered by the Office of Long Island Sound Programs within the Department of Energy and Environmental Protection. The primary authority for the coastal management program is the Connecticut Coastal Management Act of 1980. Connecticut has a two-tiered coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>]. The first tier, the "coastal boundary," generally extends inland 1,000 feet from the shore. The second tier, the "coastal area," includes all of the state's 36 coastal municipalities.

## **DELAWARE**

The Delaware Coastal Management Program [<https://dnrec.alpha.delaware.gov/coastal-programs/coastal-management/>] was approved by NOAA in 1979. The coastal management program's lead agency is the Division of Climate, Coastal, and Energy, Department of Natural Resources and Environmental Control. The program coordinates across nearly every state agency to ensure the effective implementation of policies, state laws, regulations and executive orders that affect coastal resources. Because the goals of the coastal management program are to balance the use, preservation, and development of coastal resources, these policies cover a surprising range of coastal issues.

The whole state of Delaware is designated as a coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] due to its small size and is divided into two tiers: the "coastal strip" and the rest of the state. The coastal strip, averaging four miles in width, receives special zoning protection from industrial development, while the second tier only falls under general program provisions.

## **FLORIDA**

The Florida Coastal Management Program [<https://floridadep.gov/fcmp>] was approved by NOAA in 1981, with the Florida Department of Environmental Protection serving as the lead agency. A network of nine state agencies and five water management districts together enforce 23 separate statutes. The Florida coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] is the entire state but is divided into two tiers. Only coastal cities and counties that include or are contiguous to state water bodies are eligible to receive coastal management funds.

## **GEORGIA**

The Georgia Coastal Management Program [<https://coastalgadnr.org/CoastalManagement>] was approved by NOAA in 1998, with Georgia's Department of Natural Resources, Coastal Resources Division, serving as the lead agency. The Georgia Coastal Management Act authorized the creation of the Georgia Coastal Management Program. The Georgia coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] includes the state's six coastal counties and five "inland tier" counties, which include Chatham, Effingham, Bryan, Liberty, McIntosh, Long, Glynn, Wayne, Brantley, Camden, and Charlton counties.

## **GUAM**

The Guam Coastal Management Program [<http://bsp.guam.gov/guam-coastal-management-program/>] was approved in 1979, and is overseen by the Bureau of Statistics and Plans. The coastal management program guides the use, protection, and development of land and ocean resources within Guam's coastal zone.

Guam's comprehensive planning enabling legislation, Seashore Protection Act, and several executive orders are among the key legislation for the coastal management program. Because Guam is a small island, the entire land area is included within its coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>].

## **HAWAII**

The Hawaii Coastal Management Program [<http://planning.hawaii.gov/czm/>], approved by NOAA in 1978, is led by the Hawaii Office of Planning. The coastal management program is a network of authorities and partnerships collectively implementing the objectives and policies of Hawaii's Coastal Zone Management Statutes (Chapter 205A, HRS). The entire state of Hawaii falls within Hawaii's coastal zone boundary [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>].

## **ILLINOIS**

The Illinois Coastal Management Program [<http://www.dnr.illinois.gov/cmp/Pages/default.aspx>] is the newest state partner in the National Coastal Zone Management Program, gaining approval in 2012. Illinois' program, under the direction of the Illinois Department of Natural Resources, Office of Coastal Management, focuses on several priority issues in the Illinois coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>], a 63-mile stretch along Lake Michigan. The program manages impacts to its Lake Michigan shoreline through the Rivers, Lakes, and Streams Act, Lake Michigan Shore Line Act, and a network of other authorities.

## **INDIANA**

The Indiana Coastal Management Program [<https://www.in.gov/dnr/lake-michigan-coastal-program/>], approved by NOAA in 2002, is led by the Indiana Department of Natural Resources. The coastal management program is a networked program built upon a framework of state laws and authorities addressing key coastal priorities. The Coastal Advisory Board, which represents various stakeholder groups, determines the priorities for each grant funding cycle and provides a forum for public input on regional issues affecting Lake Michigan coastal resources. The Indiana coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] is based on watershed boundaries and varies from a little less than two miles to 17 miles from the shore.

## **LOUISIANA**

The Louisiana Coastal Management Program [<http://www.dnr.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=85&ngid=5>], approved by NOAA in 1980, is administered by the Department of Natural Resources through the Office of Coastal Management. The primary authority for the coastal management program is the State and Local Coastal Resources Management Act of 1978. The Louisiana coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>], which varies from 16 to 32 miles inland from the Gulf coast, is a 10 million-acre area that includes 40 percent of the nation's coastal wetlands.

## **MAINE**

The Maine Coastal Management Program [<https://www.maine.gov/dmr/mcp/index.htm>], approved in 1978, is led by the Maine Department of Agriculture, Conservation, and Forestry. The coastal management program consists of a network of 19 state laws with four state agencies working in cooperation with local governments, nonprofit organizations, private businesses, and the public to improve management of coastal resources. Maine's coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] extends to the inland boundary of all towns bordering tidal waters and includes all coastal islands.

## **MARYLAND**

The Maryland Coastal Management Program [<https://dnr.maryland.gov/ccs/Pages/funding/czma.aspx>] was approved by NOAA in 1978, with the Department of Natural Resources acting as the lead agency. The coastal management program is a networked program composed of several state planning and regulatory programs implementing a suite of enforceable policies to protect coastal resources and manage coastal uses, including the Chesapeake Bays Critical Areas Protection Program. Maryland's coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] follows the inland boundary of the counties (and Baltimore City) bordering the Atlantic Ocean, Chesapeake Bay, and the Potomac River (as far as the municipal limits of Washington, D.C.).

### **MASSACHUSETTS**

The Massachusetts Coastal Management Program [<https://www.mass.gov/orgs/massachusetts-office-of-coastal-zone-management>], approved by NOAA in 1978, is administered by the Office of Coastal Zone Management within the Executive Office of Environmental Affairs and serves as the lead for coastal policy and technical assistance in the state.

The Executive Office of Environmental Affairs enforces 20 program policies and nine management principles governing activities within the coastal zone. The Massachusetts coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] roughly includes all land within a half-mile of coastal waters and salt marshes, as well as all islands.

### **MICHIGAN**

The Michigan Coastal Management Program [[http://www.michigan.gov/deq/0,4561,7-135-3313\\_3677\\_3696-11188--,00.html](http://www.michigan.gov/deq/0,4561,7-135-3313_3677_3696-11188--,00.html)] was approved by NOAA in 1978, and is administered by the Department of Environmental Quality. Key management authorities of the coastal management program include several parts of the Natural Resources and Environmental Protection Act pertaining to Shorelands Protection and Management (Part 323), Great Lakes Submerged Lands (Part 325), and Sand Dunes Protection and Management (Part 353).

Boasting the world's largest freshwater coastline, Michigan's coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] generally extends a minimum of 1,000 feet inland from the ordinary high water mark, with the boundary extending further inland in some locations to encompass important coastal features.

### **MINNESOTA**

The Minnesota Coastal Management Program [<http://www.dnr.state.mn.us/waters/lakesuperior/index.html>] was approved by NOAA in 1999 and consists of a network of agencies and programs led by the Department of Natural Resources.

Key legislation includes the Shoreland Management Act and the North Shore Management Plan. Minnesota's coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] includes the area approximately six miles inland from Lake Superior, following the nearest township boundaries along the shore.

### **MISSISSIPPI**

The Mississippi Coastal Management Program [<https://dmr.ms.gov/coastal-resources-management-2/>], approved by NOAA in 1980, consists of a network of agencies with authority in the coastal zone. The Department of Marine Resources, through the Office of Coastal Ecology, serves as the lead agency.

The primary authority guiding the coastal management program is the Coastal Wetlands Protection Act. The Mississippi coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] includes the three coastal counties, as well as all adjacent coastal waters and the barrier islands of the coast.

### **NEW HAMPSHIRE**

The New Hampshire Department of Environmental Services leads the implementation of the state's coastal program. The New Hampshire Coastal Management Program [<http://des.nh.gov/organization/divisions/water/wmb/coastal/index.htm>], approved by NOAA in 1982, is a networked program where several state agencies help enforce the coastal management program's 16 coastal policies. The New Hampshire coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] covers areas next to the Atlantic Ocean and the lower Piscataqua River, along with areas bordering the Great Bay and tidal rivers, and all 17 municipalities along tidal waters.

### **NEW JERSEY**

The New Jersey Coastal Management Program [<https://www.state.nj.us/dep/cmp/>] was approved by NOAA in 1978 and is directly administered by its lead agency, the New Jersey Department of Environmental Protection, in partnership with the New Jersey Meadowlands Commission, as the lead planning agency for the Hackensack Meadowlands District.

The coastal management program is based on three major laws: the Coastal Area Facility Review Act, the Wetlands Act of 1970, and the Waterfront Development Law. New Jersey's coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] encompasses approximately 1,800 miles of tidal coastline and ranges in width from 100 feet to 24 miles inland.

### **NEW YORK**

The New York Coastal Management Program [<https://dos.ny.gov/state-coastal-management-program>] was approved by NOAA in 1982, with the New York Department of State serving as the lead agency. The Executive Law Article 42, Waterfront Revitalization of Coastal Areas and Inland Waterways, provides the state with the authority to establish a coastal program, develop coastal policies, define the coastal boundaries, and establish state consistency requirements.

The inland New York coastal zone boundary [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] is variable but generally is 1,000 feet from the shoreline in non-urbanized areas. In urbanized areas and other developed locations along the coastline, the inland boundary is usually 500 feet or less from the shoreline, with the boundary possibly extending inland up to 10,000 feet to encompass significant coastal resources.

## **NORTH CAROLINA**

The North Carolina Coastal Management Program [<https://deq.nc.gov/about/divisions/coastal-management>] , approved by NOAA in 1978, is administered by the Division of Coastal Management within the Department of Environment and Natural Resources. The primary authority for the coastal management program is the Coastal Area Management Act.

North Carolina's coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] includes 20 coastal counties that in whole or in part are adjacent to, adjoining, intersected, or bounded by the Atlantic Ocean or any coastal sound.

## **NORTHERN MARIANA ISLANDS**

The Commonwealth of the Northern Mariana Islands is made up of 14 islands that span 440 miles of the western Pacific Ocean, with the Division of Coastal Resources Management [<https://dcrm.gov.mp/>] serving as the lead agency for the Northern Mariana Islands Coastal Management Program. NOAA approved the commonwealth's coastal management program in 1980. Since the islands are small, the entire land and water area of the commonwealth is included within the coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] .

## **OHIO**

The Ohio Coastal Management Program [<https://ohiodnr.gov/wps/portal/gov/odnr/discover-and-learn/safety-conservation/about-odnr/coastal-management>] was approved by NOAA in 1997, with the Ohio Department of Natural Resources serving as the lead agency for the networked program. The coastal management program incorporates state laws, regulations, and programs within 41 management policies that are organized around nine issue areas [<https://ohiodnr.gov/wps/portal/gov/odnr/discover-and-learn/safety-conservation/about-odnr/coastal-managementcmp>] . Ohio's coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] is quite varied and runs through the nine counties bordering Lake Erie and its tributaries. The boundary width ranges from about one-eighth of a mile to 15 miles depending on features, such as coastal wetlands and bluffs.

## **OREGON**

The Oregon Coastal Management Program [<https://www.oregon.gov/LCD/OCMP/pages/index.aspx>] , approved by NOAA in 1977, consists of a network of agencies with authority in the coastal zone. The Oregon Department of Land Conservation and Development serves as the lead agency. The primary authority for the coastal management program is the Oregon Land Use Planning Act and the 19 statewide planning goals. The Oregon coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] includes the state's coastal watersheds and extends inland to the crest of the coast range, with a few minor exceptions.

## **PENNSYLVANIA**

The Pennsylvania Coastal Management Program [<https://www.dep.pa.gov/Business/Water/Compacts%20and%20Commissions/Coastal%20Resources%20Management%20Program/Pages/default.aspx>] , approved in 1980, is administered by the Department of Environmental Protection. The coastal management program comprises two widely separated coastal areas: the 63-mile Lake Erie shoreline and the 57-mile stretch of coastline along the Delaware Estuary.

The program relies on a network of state authorities. The Pennsylvania coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] along Lake Erie varies from 900 feet in urban areas to over three miles in rural areas, and the Delaware River Estuary boundary extends inland from 660 feet in urbanized areas to 3.5 miles in rural areas.

## **PUERTO RICO**

Puerto Rico's Coastal Management Program [<https://www.drna.pr.gov/tag/zona-costanera/>] was approved by NOAA in 1978 and comprises a network of state agencies led by the Department of Natural and Environmental Resources. The program encompasses 40 statutes.

Puerto Rico's coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] generally extends 1,000 meters (one kilometer) inland, but extends further inland in places to include important coastal resources.

## **RHODE ISLAND**

The Rhode Island Coastal Management Program [<http://www.crmc.ri.gov/>] , approved by NOAA in 1978, is administered by the Rhode Island Coastal Resources Management Council. The primary authority for the coastal management program is the Coastal Resources Management Act of 1971. Rhode Island's coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] encompasses the entire state, although the inland extent of the coastal management program's regulatory authority is generally 200 feet inland from any coastal feature.

## **SOUTH CAROLINA**

The South Carolina Coastal Management Program [<https://scdhec.gov/environment/your-water-coast/ocean-coastal-resource-management/coastal-zone-management/south>] was approved by NOAA in 1979, and the lead agency is the Department of Health and Environmental Control. The primary authority for the coastal management program is the 1977 Coastal Tidelands and Wetlands Act. The South Carolina coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] includes all lands and waters in the counties of the state that contain any one or more "critical areas," which are defined as coastal waters, tidelands, beaches, and beach/dune system.

## **TEXAS**

The Texas Coastal Management Program [<https://www.glo.texas.gov/coast/grant-projects/cmp/index.html>] , approved by NOAA in 1996, is administered by the Texas General Land Office in conjunction with the Coastal Coordination Advisory Committee. The Coastal Coordination Act is the primary authority for the Texas Coastal Management Program. The Texas coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] is generally the area seaward of the Texas coastal facility designation line, up to three marine leagues into the Gulf of Mexico.

## **VIRGIN ISLANDS**

The U.S. Virgin Islands Coastal Management Program was approved by NOAA in 1979. The lead agency is the Department of Planning and Natural Resources. The primary authority for the coastal management program is the U.S. Virgin Islands Coastal Zone Management Act, and the coastal zone

[<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] includes the entire territory.

## **VIRGINIA**

The Virginia Coastal Management Program [<http://www.deq.state.va.us/Programs/CoastalZoneManagement.aspx>] was approved by NOAA in 1986, and the Department of Environmental Quality serves as the lead agency. Authorized by a commonwealth executive order, the coastal management program is structured as a network of agencies that have authority for implementing nine core policies and a set of advisory policies covering wetlands, fisheries, water quality, dunes and beaches, subaqueous lands, and other coastal resources in the Virginia coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>]. The coastal zone includes the state's 29 coastal counties, 17 cities, and 42 incorporated towns.

## **WASHINGTON**

The Washington Coastal Management Program [<https://ecology.wa.gov/Water-Shorelines/Shoreline-coastal-management/Coastal-zone-management>], approved by NOAA in 1976, was the first approved program in the nation. The Department of Ecology serves as the lead coastal management agency. The primary authority for the coastal management program is the Shoreline Management Act of 1971. The Washington coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] includes the state's 15 coastal counties that front saltwater.

## **WISCONSIN**

The Wisconsin Coastal Management Program [<https://doa.wi.gov/Pages/LocalGovtsGrants/CoastalManagement.aspx>], approved by NOAA in 1978, is administered by the Department of Administration, Bureau of Intergovernmental Relations. The coastal management program is a networked program implemented in partnership with the Wisconsin Coastal Management Council, with representatives from local governments, state agencies, Native American tribes, and interest groups. The council sets the policy direction for the program. The Wisconsin coastal zone [<https://coast.noaa.gov/data/czm/media/StateCZBoundaries.pdf>] comprises the 15 counties fronting Lake Superior, Lake Michigan, and Green Bay.

For more information, contact us [<https://coast.noaa.gov/contactform/>].

[About the National Program \[/czm/about/\]](/czm/about/)

[Coastal Management Fellowship \[https://coast.noaa.gov/fellowship/coastalmanagement.html\]](https://coast.noaa.gov/fellowship/coastalmanagement.html)

[Coastal Zone Management Act \[/czm/act/\]](/czm/act/)

[Evaluations \[/czm/evaluations/\]](/czm/evaluations/)

[National Program Funding Summary \[https://coast.noaa.gov/data/czm/media/funding-summary.pdf\]](https://coast.noaa.gov/data/czm/media/funding-summary.pdf)

[National Program Publications \[/czm/publications/\]](/czm/publications/)

[Performance Measures \[/czm/performance/\]](/czm/performance/)

[Program Change Website \[https://coast.noaa.gov/czmprogramchange/\]](https://coast.noaa.gov/czmprogramchange/)

[Program Guidance \[/czm/guidance/\]](/czm/guidance/)

[Regulations \[https://www.ecfr.gov/cgi-bin/text-idx?SID=73fa77136a5eecb25a52b3ef02368ecb&tpl=/ecfrbrowse/Title15/15cfr923\\_main\\_02.tpl\]](https://www.ecfr.gov/cgi-bin/text-idx?SID=73fa77136a5eecb25a52b3ef02368ecb&tpl=/ecfrbrowse/Title15/15cfr923_main_02.tpl)

[States and Territories \[/czm/mystate/\]](/czm/mystate/)



Taxonomic	Scientific Name	Common Name	NC Status	Federal Status	State Rank	Global Rank	County	County Status	Habitat	Comment
Vascular Plant	<i>Acmispon</i>	Carolina Bit	T	none	S3	G5T3	Cabarrus	Current	woodlands and openings, generally on clayey	
Vascular Plant	<i>Agave virgata</i>	Eastern Agave	W1	none	S3	G5	Cabarrus	Current	granite flatrocks, mafic glades, dry outcrops, c	
Bird	<i>Ammodramus</i>	Grasshopper	W1, W5	none	S3B, S1N	G5	Cabarrus	Current	pastures and other grasslands [breeding seas	
Vascular Plant	<i>Baptisia alba</i>	Prairie Blue	E	none	S2	G5T2	Cabarrus	Historical	glades and open forests on basic soils	
Vascular Plant	<i>Baptisia alba</i>	Thick-pod	T	none	S2	G5	Cabarrus	Current	open woodlands, clearings	
Natural Community	Basic Mesic Forest (Piedmont Sub			none	S3S4	G3G4	Cabarrus	Current	null	
Sawfly, <i>Wa</i>	<i>Bombus ferrugineus</i>	Yellow Bumblebee	W3	none	S3S4	G3G4	Cabarrus	Current	fields and other open habitats	
Sawfly, <i>Wa</i>	<i>Bombus pennsylvanicus</i>	American Bumblebee	W3	none	S3S4	G3G4	Cabarrus	Current	open habitats, fields	
Vascular Plant	<i>Carex bushii</i>	Bush's Sedge	SR-P	none	S1	G4	Cabarrus	Current	open wet areas	
Vascular Plant	<i>Carex pellita</i>	Woolly Sedge	SR-P	none	S1	G5	Cabarrus	Current	wet meadows	
Vascular Plant	<i>Carex tenella</i>	Quill Sedge	W7	none	S1?	G5T5	Cabarrus	Current	low woods	
Reptile	<i>Cnemidophorus</i>	Scarlet Snake	W1, W5	none	S3	G5	Cabarrus	Current	sandhills, sandy woods, and other dry woods	
Vascular Plant	<i>Cirsium carolinianum</i>	Carolina Thistle	E	none	S2	G5	Cabarrus	Historical	forests and disturbed areas, mostly on basic s	
Reptile	<i>Crotalus horridus</i>	Timber Rattlesnake	SC	none	S3	G4	Cabarrus	Historical	wetland forests in the Coastal Plain; rocky, up	
Vascular Plant	<i>Cyperus graniticus</i>	Granite Flatrock	T	none	S2	G3G4Q	Cabarrus	Current	granite flatrocks, other rock outcrops	
Crustacean	<i>Dactylocythara</i>	Pee Dee Crayfish	W3	none	S2?	GNR	Cabarrus	Current	symbiotic on crayfish in Pee Dee drainage (en	
Reptile	<i>Deirochelys</i>	Eastern Chelonia	SC	none	S2S3	G5T5	Cabarrus	Historical	quiet waters of ponds, ditches, and sluggish s	
Vascular Plant	<i>Desmodium sessile</i>	Tick	SC-H	none	SH	G5	Cabarrus	Historical	open woodlands	
Natural Community	Dry Basic Oak--Hickory Forest			none	S2S3	G2G3	Cabarrus	Current	null	
Natural Community	Dry Oak--Hickory Forest (Piedmon			none	S4	G4G5	Cabarrus	Current	null	
Natural Community	Dry-Mesic Basic Oak--Hickory For			none	S3	G3G4	Cabarrus	Current	null	
Natural Community	Dry-Mesic Oak--Hickory Forest (Pi			none	S4	G4G5	Cabarrus	Current	null	
Vascular Plant	<i>Dryopteris spinulosa</i>	Spinulose	W7	none	S2	G5	Cabarrus	Historical	swampy woods	
Vascular Plant	<i>Eleocharis tripartita</i>	Three-angled	W1	none	S2S3	G4	Cabarrus	Current	bogs and savannas	
Vascular Plant	<i>Eleocharis wolffii</i>	Wolf's Spike	SR-T	none	S1	G3G5	Cabarrus	Current	oak flatwoods, wet meadows	
Freshwater	<i>Elliptio prostratus</i>	Atlantic Spirogon	W3, W5	none	SU	G3Q	Cabarrus	Current	many Atlantic drainages; very difficult to iden	
Bird	<i>Empidonax</i>	Willow Flycatcher	W2	none	S3B	G5	Cabarrus	Current	wet thickets in open country, often along stre	
Freshwater	<i>Etheostoma</i>	Carolina Darter	SC	none	S3	G3	Cabarrus	Current	Roanoke, Tar, Neuse, Cape Fear, Yadkin-Pee I	
Vascular Plant	<i>Eupatorium</i>	Tall Boneset	W1	none	S2	G5	Cabarrus	Current	woodlands, openings, and old fields over maf	
Vascular Plant	<i>Eurybia speciosa</i>	Showy Aster	SR-O	none	S2?	G5	Cabarrus	Historical	pine barrens and woodland borders	
Vascular Plant	<i>Frangula caroliniana</i>	Carolina Buckeye	W1	none	S3	G5	Cabarrus	Current	rich bottomlands and slopes	
Vascular Plant	<i>Gillenia stipitata</i>	Indian Physalis	T	none	S2	G5	Cabarrus	Historical	forests and open woods, mainly over mafic ro	
Natural Community	Granitic Flatrock (Annual Herb Suk			none	S2	G3	Cabarrus	Current	null	
Natural Community	Granitic Flatrock (Perennial Herb			none	S2	G3	Cabarrus	Current	null	

Natural Coi	Granitic Flatrock Border Woodlan	none	S2	G3?	Cabarrus	Current	null
Bird	Haliaeetus Bald Eagle T	BGPA	S3B,S3N	G5	Cabarrus	Current	mature forests near large bodies of water (ne
Vascular PI	Helianthus Smooth Su SC-V	none	S3	G4	Cabarrus	Current	shaly open woods and roadsides
Vascular PI	Helianthus Schweinitz' E	E	S3	G3	Cabarrus	Current	open woods, roadsides, and other rights-of-w
Vascular PI	Heuchera c Carolina Al W7	none	S3	G3	Cabarrus	Historical	rich, rocky woods
Vascular PI	Hexalectris Crested Co SR-P	none	S2	G5	Cabarrus	Current	dry or mesic woods on basic soils
Dragonfly c	Hylogompl Banner Clu W3	none	S3	G3G4	Cabarrus	Current	spring-fed streams
Moth	Idea scint Diminutive W3	none	SU	GNR	Cabarrus	Current	unknown habitats
Moth	Ipimorpha Even-lined W3	none	SU	G5	Cabarrus	Current	no habitat information
Vascular PI	Juncus brai Whiteroot W7	none	S2?	G4G5	Cabarrus	Current	wet sandy soil
Freshwater	Lampsilis r; Eastern Lar T	none	S3	G5	Cabarrus	Current	Chowan, Roanoke, Tar, Neuse, Cape Fear, Yac
Bird	Lanius ludc Loggerhear SC, W2	none	S2S3B,S3N	G4	Cabarrus	Current	fields and pastures [breeding season only]
Freshwater	Lasmigona Carolina Hc E	E	S1	G1	Cabarrus	Historical	Catawba and Pee Dee drainages (endemic to
Vascular PI	Lilium cana Canada Lily E	none	S1	G5	Cabarrus	Current	bogs, wet meadows
Natural Coi	Low Elevation Seep (Floodplain Su	none	S2	G4	Cabarrus	Current	null
Natural Coi	Low Elevation Seep (Typic Subtypc	none	S3	G3?	Cabarrus	Current	null
Natural Coi	Mesic Mixed Hardwood Forest (Pi	none	S4	G3G4	Cabarrus	Current	null
Natural Coi	Mixed Moisture Hardpan Forest	none	S2	G2?	Cabarrus	Historical	null
Mammal	Mustela frc Long-tailed W3	none	S3	G5	Cabarrus	Current	forests, brushy areas
Vascular PI	Oenothera Perennial S SC-V	none	S2	G5	Cabarrus	Current	wet meadows and bogs
Moth	Oligia chlora Brocade I W3	none	SU	G4	Cabarrus	Current	no habitat information
Vascular PI	Oligoneuro Southeaste SR-P	none	S2	G5T4	Cabarrus	Current	glades, barrens, other open sites over mafic o
Dragonfly c	Ophiogoml Appalachia W2	none	S3	G3	Cabarrus	Current	small to medium streams
Mammal	Perimyotis Tricolored SR	none	S3	G2G3	Cabarrus	Current	roosts in clumps of leaves (mainly in summer)
Vascular PI	Philadelphu Scentless N W1	none	S3	G4G5	Cabarrus	Historical	bluffs, cliffs, and rocky woods, mainly over m;
Natural Coi	Piedmont Alluvial Forest	none	S4	G4	Cabarrus	Current	null
Natural Coi	Piedmont Levee Forest (Typic Sub	none	S3S4	G3G4	Cabarrus	Current	null
Natural Coi	Piedmont Monadnock Forest (Typ	none	S3	G3G4	Cabarrus	Current	null
Natural Coi	Piedmont/Mountain Semiperman	none	S4	G4G5	Cabarrus	Current	null
Natural Coi	Piedmont/Mountain Semiperman	none	S4	G4?	Cabarrus	Current	null
Natural Coi	Piedmont/Mountain Semiperman	none	S4	G4	Cabarrus	Current	null
Vascular PI	Platantherc Southern R W6	none	SNR	G4?T4?Q	Cabarrus	Historical	shaded wet places, such as swampy forests
Butterfly	Pontia prot Checkered SR	none	S1S2	G5	Cabarrus	Current	fields, pastures; host plants -- mustard specie
Vascular PI	Portulaca s Small's Por T	none	S2	G3	Cabarrus	Current	granite flatrocks and diabase glades
Vascular PI	Prunus um Hog Plum W7	none	S2	G4G5	Cabarrus	Historical	rocky or sandy woodlands

Vascular PI Pseudogna Heller's Ral E	none	S2S3	G4G5T3T4	Cabarrus	Current	dry woodlands and openings (especially over
Vascular PI Quercus m Chinquapir W1	none	S2	G5	Cabarrus	Historical	calcareous forsts and bluffs
Vascular PI Scirpus per Rufous Buli SR-O	none	S1	G5	Cabarrus	Current	wet places over mafic rocks
Moss Scopelophi Agoyan Cat SR-D	none	S1	G3	Cabarrus	Current	copper-rich soils
Moss Scopelophi Copper Mc SR-O	none	S1	G5?	Cabarrus	Current	copper-rich soils and rock faces
Vascular PI Sideroxylor Buckthorn W1	none	S2S3	G5	Cabarrus	Current	maritime forests, bluffs or forests over calcare
Vascular PI Silphium p Northern C T	none	S1	G5	Cabarrus	Current	floodplains
Vascular PI Silphium te Prairie Doc SR-P	none	S2	G4G5	Cabarrus	Current	diabase glades, other open or semi-open sites
Vascular PI Sium suave Hemlock W W6	none	S3S4	G5	Cabarrus	Historical	fresh or brackish marshes, swamps and creek
Vascular PI Solidago pt Downy Gol W7	none	S2	G5T4T5	Cabarrus	Historical	habitat not well known
Vascular PI Sphenophc Slender W W7	none	S2	G5	Cabarrus	Historical	moist nutrient-rich forests, barrens, meadow:
Moth Sphinx fran Franck's Sp W3	none	SU	G4G5	Cabarrus	Current	basic-mesic hardwoods and other habitats wi
Freshwater Strophitus Creeper T	none	S3	G5	Cabarrus	Current	Roanoke, Tar, Neuse, Cape Fear, Yadkin-Pee L
Vascular PI Thermopsi: Appalachia SR-T	none	S2	G3G4	Cabarrus	Historical	dry ridges and open woodlands
Vascular PI Triosteum : Smooth Le: W7	none	S2	G5	Cabarrus	Historical	mesic forests, bluffs, outcrops, especially over
Natural Co: Upland Depression Swamp Forest	none	S2S3	G2G3	Cabarrus	Current	null
Freshwater Villosa con: Notched R: T	none	S3	G3	Cabarrus	Current	Roanoke, Tar, Neuse, Yadkin-Pee Dee, and Ca
Freshwater Villosa del: Eastern Cr: SR	none	S4	G4	Cabarrus	Current	Cape Fear, Lumber, Yadkin-Pee Dee, and Cata
Freshwater Villosa vau: Carolina Cr E	none	S3	G2G3	Cabarrus	Current	Cape Fear, Yadkin-Pee Dee, and Catawba drai
Animal Ass Waterbird Waterbird Colony	none	S3	GNR	Cabarrus	Current	null
Natural Co: Xeric Hardpan Forest (Basic Hardp	none	S2	G2G3	Cabarrus	Current	null
Lichen Acanthoth: a script lich W7	none	S1	GNR	Camden	Current	null
Freshwater Acipenser l Shortnose : E	E	S1	G3	Camden	Historical	brackish water of large rivers and estuaries; s
Freshwater Acipenser c Atlantic St: E	E	S2	G3T3	Camden	Current	coastal waters, estuaries, large rivers
Lichen Anzia ornata Black-foa SR-T	none	S2	G1G3	Camden	Current	on bark of deciduous trees where humidity is
Vascular PI Boltonia as White Doll' SR-O	none	S2	G5TNR	Camden	Historical	clay-based Carolina bays, marshes, savannas
Moss Brachythec Rota's Feat SR-D	none	S1	G5	Camden	Historical	on bark or rock in cove forests
Butterfly Callophrys Hessel's Ha SR	none	S3	G3	Camden	Current	Atlantic white cedar swamps; host plant -- wh
Moth Callosamia Sweetbay S W3	none	SU	G4	Camden	Current	pocosins and other wetlands with sweetbay
Vascular PI Carex deco Cypress Kn SR-O	none	S2	G3G4	Camden	Current	beaver ponds, old millponds; often on Taxodi
Reptile Clemmys g Spotted Tu W1	none	S4	G5	Camden	Current	shallow water of pools, marshes, wet pasture
Natural Co: Coastal Plain Semipermanent Imp	none	S4	G4G5	Camden	Current	null
Mammal Corynorhin Eastern Big SC	none	S3	G3G4T3	Camden	Current	roosts in hollow trees, old buildings, and bene
Reptile Crotalus hc Timber Rat SC	none	S3	G4	Camden	Current	wetland forests in the Coastal Plain; rocky, up
Vascular PI Dryopteris Spinulose W W7	none	S2	G5	Camden	Historical	swampy woods

Vascular PI	Dryopteris Crested W	W1	none	S3	G5	Camden	Historical	bogs, wet woods
Vascular PI	Eleocharis Beaked Spi	SR-O	none	S2	G5	Camden	Current	brackish marshes
Moss	Elodium pa Pond Fern	W7	none	S2?	G3G5	Camden	Current	on soil, humus, trees, or logs in swamps, mar
Freshwater	Enneacantl Banded Sui	SR	none	S3	G5	Camden	Current	most Atlantic drainages
Natural Coi	Estuarine Fringe Pine Forest (Lobl		none	S3	G3	Camden	Obscure	null
Natural Coi	Estuarine Fringe Pine Forest (Ponc		none	S2	G2?	Camden	Current	null
Reptile	Farancia er Rainbow Sr	SR	none	S3	G4	Camden	Historical	swamps, lakes, rivers, and other sluggish wate
Moth	Franclemoi Franclemoi	SR	none	S3?	G3G4	Camden	Current	canebrakes
Bird	Haliaeetus Bald Eagle	T	BGPA	S3B,S3N	G5	Camden	Current	mature forests near large bodies of water (ne
Bird	Helmitherc Worm-eati	W5	none	S3B	G5TNR	Camden	Current	nonriverine wet hardwoods, pocosins [breedi
Natural Coi	High Pocosin (Evergreen Subtype)		none	S3S4	G3	Camden	Current	null
Moth	Iridopsis cy Small Cypr	SR	none	S2S3	GU	Camden	Current	cypress swamps
Vascular PI	Iris prismat Slender Bl	SR-T	none	S1S2	G4G5	Camden	Historical	bogs, marshes, and wet powerline clearings
Mammal	Lasiurus se Seminole B	W2	none	S3	G5	Camden	Current	forages over open areas, often over water (su
Vascular PI	Lilaeopsis c Carolina Gr	SR-O	none	S2	G3G5	Camden	Current	freshwater marshes, pools, tidal marshes
Moth	Lithophane Cypress Pir	W3	none	SU	G4	Camden	Current	cypress swamps
Bird	Lophodyte: Hooded M	W3	none	S1B,S4N	G5	Camden	Current	lakes and ponds, with dead trees for nesting [
Vascular PI	Ludwigia al Winged Se	SR-P	none	S2	G3G5	Camden	Current	interdune ponds, marshes
Natural Coi	Mesic Mixed Hardwood Forest (C		none	S3	G3	Camden	Current	null
Mammal	Myotis aus Southeaste	SC	none	S2	G4	Camden	Current	roosts in buildings, hollow trees; forages near
Mammal	Myotis luci Little Brow	SR	none	S2	G3	Camden	Current	roosts in buildings (summer), in caves and mi
Mammal	Myotis sep Northern L	T	T	S2	G1G2	Camden	Current	roosts in hollow trees and buildings (warmer i
Natural Coi	Nonriverine Swamp Forest (Cypre		none	S2	G2G3	Camden	Current	null
Natural Coi	Nonriverine Swamp Forest (Mixed		none	S3	G3	Camden	Current	null
Natural Coi	Nonriverine Swamp Forest (Popla		none	S1	G2	Camden	Current	null
Natural Coi	Nonriverine Wet Hardwood Fores		none	S1	G2	Camden	Current	null
Vascular PI	Oenothera Riverbank I	SR-L	none	S2S3	G2G3	Camden	Current	Freshwater tidal marshes and freshwater tida
Natural Coi	Peatland Atlantic White Cedar For		none	S1	G2	Camden	Current	null
Natural Coi	Peatland Canebrake		none	S1	G1	Camden	Historical	null
Mammal	Perimyotis Tricolored	SR	none	S3	G2G3	Camden	Current	roosts in clumps of leaves (mainly in summer)
Bird	Picoides bc Red-cockac	E	E	S2	G3	Camden	Current	mature open pine forests, mainly in longleaf p
Natural Coi	Pond Pine Woodland (Northern S		none	S1	G2?	Camden	Current	null
Amphibian	Rana kauffi Atlantic Co	W3	none	S3	G3G4	Camden	Current	freshwater wetlands, such as marshes and po
Moth	Rivula step a Noctuid	W3	none	SU	GNR	Camden	Current	no habitat information
Butterfly	Satyrium f Northern C	SR	none	S2S3	G4G5T4	Camden	Historical	oak-dominated woods, usually in dry sites; hc

Moth	Scopula ca	Frosted Tai W3	none	S2S3	G4	Camden	Current	sandhills and other dry forests
Bird	Setophaga	Wayne's Bl E	none	S2B	G5T1	Camden	Current	nonriverine wetland forests, especially where
Mammal	Sorex hoyi	American F W2	none	S3	G5	Camden	Current	montane deciduous forests; old fields and for
Natural Coi	Tidal Freshwater Marsh (Broadlea	none	S2	G4G5	Camden	Current	null	
Natural Coi	Tidal Freshwater Marsh (Cattail Su	none	S3	G4G5	Camden	Current	null	
Natural Coi	Tidal Freshwater Marsh (Giant Coi	none	S4	G4	Camden	Current	null	
Natural Coi	Tidal Freshwater Marsh (Needleru	none	S2	G2G3	Camden	Current	null	
Natural Coi	Tidal Freshwater Marsh (Oligohali	none	S1	G1	Camden	Current	null	
Natural Coi	Tidal Freshwater Marsh (Sawgrass	none	S4	G4?	Camden	Current	null	
Natural Coi	Tidal Freshwater Marsh (Shrub Su	none	S4	G4	Camden	Current	null	
Natural Coi	Tidal Freshwater Marsh (Threesqu	none	S2S3	G2G3	Camden	Current	null	
Natural Coi	Tidal Swamp (Cypress--Gum Subty	none	S4	G3G4	Camden	Current	null	
Vascular Pl	Trillium pu	Virginia Le: E	none	S1	G3T2	Camden	Historical	mesic to swampy hardwood forests
Animal Ass	Waterbird	Waterbird Colony	none	S3	GNR	Camden	Current	null
Vascular Pl	Actaea pac	White Ban: W6	none	S4	G5	Durham	Historical	rich cove forests and slopes
Vascular Pl	Agalinis de	Piedmont C W1	none	S3	G3G4	Durham	Current	dry, open sites
Vascular Pl	Agastache	Yellow Giar SR-P	none	S1	G5	Durham	Current	oak--hickory forests, especially over mafic roc
Freshwater	Alasmidont	Triangle Fl: T	none	S3	G4	Durham	Current	Roanoke, Chowan, Tar, Neuse, Cape Fear drai
Freshwater	Ambloplite	Roanoke B: SR	none	S2	G3	Durham	Current	streams in Neuse and Tar systems
Moss	Amblystegi A	Thin-net W7	none	S2?	G5T5	Durham	Current	wet substrates
Bird	Ammodran	Grasshopp: W1,W5	none	S3B,S1N	G5	Durham	Current	pastures and other grasslands [breeding seas
Moss	Anacamptc	Knothole N W7	none	S2?	G3G5	Durham	Historical	bark of trees
Liverwort	Aneura sha A	Liverwort SR-T	none	S1	GNR	Durham	Historical	in spray zones of waterfalls
Moss	Aphanorrh A	Moss SR-O	none	SH	G4G5	Durham	Historical	soil or clay in places subject to inundation
Moss	Archidium	Tokyo Soil W7	none	SH	G4G5	Durham	Historical	open ground of old fields or meadows
Vascular Pl	Asclepias p	Purple Milk SR-T	none	S1?	G5?	Durham	Current	swamps, bottomlands, edges of moist woods
Hornwort	Aspiromitu A	Hornwor W7	none	S2?	G3?	Durham	Historical	old fields
Vascular Pl	Baptisia ab	Prairie Blue: E	none	S2	G5T2	Durham	Current	glades and open forests on basic soils
Natural Coi	Basic Mesic Forest (Piedmont Sub	none	S3S4	G3G4	Durham	Current	null	
Vascular Pl	Berberis ca	American E SC-V	none	S2	G3G4	Durham	Current	open forests and glades on basic soils
Sawfly, Wa	Bombus afi	Rusty-patch SR	E	S1	G2	Durham	Historical	nests in abandoned mammal burrows, gather
Sawfly, Wa	Bombus pe	American E W3	none	S3S4	G3G4	Durham	Current	open habitats, fields
Moss	Brachythec	Rota's Feat SR-D	none	S1	G5	Durham	Historical	on bark or rock in cove forests
Moss	Brachythec	Rough-stall W7	none	S2?	G5	Durham	Historical	trees, humus, rocks in wet forests
Moss	Bruchia tex	Texas Bruc W7	none	SH	G3G5	Durham	Historical	moist clay or sandy soil in open areas

Vascular Pl	Buchnera a American E E	none	S1	G5?	Durham	Historical	glades, open forests, streambanks, probably p
Crustacean	Cambarus ( Carolina La SR	none	S3	G3	Durham	Current	Neuse and Cape Fear drainages (endemic to N
Vascular Pl	Campanula Tall Bellflo\ W6	none	S4	G5	Durham	Historical	moist to dry forests, especially over mafic or c
Vascular Pl	Cardamine Dissected TSC-V	none	S2	G4?	Durham	Current	rich woods, cove forests, bottomlands
Vascular Pl	Cardamine Douglass's SR-P	none	S2	G5	Durham	Current	bottomlands, rich lower slopes
Vascular Pl	Carex bush Bush's Sed; SR-P	none	S1	G4	Durham	Historical	open wet areas
Vascular Pl	Carex crus- Crowfoot S SR-P	none	S1	G5	Durham	Current	swamp forests
Vascular Pl	Carex gran Limestone W7	none	S1?	G5	Durham	Historical	piedmont bottomlands, coastal plain marl for
Vascular Pl	Carex jame James's Ser SC-V	none	S2	G5	Durham	Current	rich woods, especially over mafic rocks
Vascular Pl	Carex leav€ Leavenwor W7	none	S1?	G5	Durham	Historical	dry woods
Vascular Pl	Carex mea Mead's Sec E	none	S1	G4G5	Durham	Historical	low wet places over diabase
Vascular Pl	Carex tene Quill Sedge W7	none	S1?	G5T5	Durham	Historical	low woods
Vascular Pl	Carex vesti Velvet Sed; T	none	S1	G5	Durham	Historical	low woods
Vascular Pl	Carya lacin Big Shellba T	none	S1	G5	Durham	Current	brownwater river levees
Butterfly	Cecropteru Confused C W3	none	S3S4	G4	Durham	Current	dry woodland borders and openings, brushy f
Vascular Pl	Celtis occid Mountain I W7	none	S2	G5	Durham	Current	rocky woodlands and mafic cliffs
Reptile	Cemophor€ Scarlet Sna W1,W5	none	S3	G5	Durham	Current	sandhills, sandy woods, and other dry woods
Reptile	Clemmys g Spotted Tu W1	none	S4	G5	Durham	Current	shallow water of pools, marshes, wet pasture
Vascular Pl	Corallorhiz Spring Cor€ SR-O	none	S1	G5	Durham	Historical	nutrient-rich forests, especially over limeston
Dragonfly	c Coryphaes€ Regal Darn SR	none	S2?	G5	Durham	Current	lakes and ponds
Reptile	Crotalus hc Timber Rat SC	none	S3	G4	Durham	Current	wetland forests in the Coastal Plain; rocky, up
Moss	Cryphaea r A Thread C W7	none	S2?	G3?	Durham	Historical	on bark of trees
Vascular Pl	Cyperus hy Bristly Flat; W7	none	SH	G4	Durham	Historical	dry woodlands and forests
Vascular Pl	Cyperus sq Awned Flat W7	none	S2	G5	Durham	Historical	granite flatrocks, other rock outcrops
Vascular Pl	Delphinium Tall Larkspi T	none	S2	G3	Durham	Current	grassy balds, glades, woodlands, mostly over
Caddisfly	Dibusa ang Angulated SR	none	S2	G5	Durham	Historical	larger streams and rivers in Tar, Neuse, and Y:
Vascular Pl	Dicentra c Dutchman' W6	none	S4	G5	Durham	Historical	rich, moist forests
Vascular Pl	Dichanthe Ringed Wit E	none	S1	G4	Durham	Current	dry sandy or rocky open woods and borders o
Vascular Pl	Dichanthe Low White W7	none	S1?	G5	Durham	Historical	dry open woods and rock outcrops
Moss	Dicranella I Red Fork IV SR-O	none	S1?	G5?	Durham	Historical	wet soil on banks of roads and streams
Moss	Dicranella \ Variable Fc SR-O	none	S1?	G5	Durham	Historical	wet, calcareous soil, in open, disturbed places
Vascular Pl	Dirca palus Leatherwo; W1	none	S3	G4	Durham	Current	rich woods, either alluvial or over mafic or cal
Natural Co	Dry Basic Oak--Hickory Forest	none	S2S3	G2G3	Durham	Current	null
Natural Co	Dry Oak--Hickory Forest (Piedmon	none	S4	G4G5	Durham	Current	null
Natural Co	Dry-Mesic Basic Oak--Hickory For€	none	S3	G3G4	Durham	Current	null

Natural Co	Dry-Mesic Oak--Hickory Forest (Pi	none	S4	G4G5	Durham	Current	null
Vascular Pl	Dryopteris Crested W	W1 none	S3	G5	Durham	Historical	bogs, wet woods
Vascular Pl	Dryopteris Evergreen ' W6	none	S5	G5	Durham	Historical	woods and shaded rock slopes
Vascular Pl	Duravia sp. Glade Knot W7	none	S2?	G5	Durham	Historical	glades and other thin soil over mafic rock
Vascular Pl	Echinacea   Smooth Co E	E	S1S2	G2G3	Durham	Current	glades, woodlands, and open areas over mafic
Freshwater	Elliptio roa Roanoke SI SC	none	S3	G3	Durham	Current	Roanoke, Tar, Neuse, White Oak, Cape Fear, L
Moss	Elodium pa Pond Fern W7	none	S2?	G3G5	Durham	Historical	on soil, humus, trees, or logs in swamps, mar
Vascular Pl	Enemion bi Eastern Iso SC-V	none	S2	G5	Durham	Current	rich bottomlands, levees, and lower slopes
Moss	Entosthoda A Cord Mo: W7	none	SH	G4G5	Durham	Historical	primarily sandy soils of disturbed, often wet a
Moss	Ephemerur Northern S SR-T	none	SH	G4G5	Durham	Historical	moist or drying disturbed soil
Moss	Ephemerur Emerald Dε W7	none	S2?	G4G5	Durham	Current	moist or drying soil in disturbed, partly sunny
Butterfly	Erynnis ma Mottled Dε SR	none	S2	G3	Durham	Historical	upland woods and wooded edges; host plant
Freshwater	Etheostom Carolina Dε SC	none	S3	G3	Durham	Historical	Roanoke, Tar, Neuse, Cape Fear, Yadkin-Pee L
Freshwater	Etheostom Fantail Dar W5	none	S3	G5	Durham	Current	Cape Fear, Neuse, and Tar drainage populatio
Freshwater	Etheostom Glassy Dart W5	none	S3	G4G5	Durham	Current	Chowan, Roanoke, Tar, and Neuse drainages
Vascular Pl	Eupatoriun Godfrey's T W1	none	S3	G4	Durham	Current	woodlands, especially over mafic rocks
Vascular Pl	Eurybia spε Showy Astε SR-O	none	S2?	G5	Durham	Current	pine barrens and woodland borders
Moss	Fissidens a Maiden Ha W7	none	S1	G5	Durham	Historical	wet areas on soil, around bases of trees, on d
Moss	Fissidens e A Plume M W7	none	S2?	G5	Durham	Current	sandy and clayey soils along roadsides and str
Moss	Fissidens e: Small Pock W4	none	SNA	G3G4	Durham	Current	stream banks
Moss	Fissidens fc Water Pock W7	none	S2?	G5	Durham	Historical	attached to various substrata in stagnant and
Vascular Pl	Fleischman Pink Thoro SR-O	none	S2	G5	Durham	Current	rich woods and thin woodlands over diabase,
Natural Co	Floodplain Pool	none	S2	G3	Durham	Current	null
Liverwort	Frullania pl A Liverwort W7	none	S1	G4	Durham	Historical	on rock outcrops in gorges or near rivers
Moss	Funaria ser A Cord Mo: W7	none	SH	G4	Durham	Historical	on soil of disturbed places, near streams or di
Freshwater	Fusconaia   Atlantic Pig E	PT	S3	G1	Durham	Current	Roanoke, Tar, Neuse, Cape Fear, Yadkin-Pee L
Vascular Pl	Gaylussacia Box Huckle E	none	S1	G3	Durham	Current	dry ridges and slopes
Vascular Pl	Gillenia sti Indian Phys: T	none	S2	G5	Durham	Current	forests and open woods, mainly over mafic ro
Dragonfly c	Gomphuru Splendid C SR	none	S2	G4	Durham	Current	rocky rivers
Dragonfly c	Gomphuru Septima's C SR	none	S3	G3	Durham	Historical	rocky rivers
Bird	Haliaeetus Bald Eagle T	BGPA	S3B,S3N	G5	Durham	Current	mature forests near large bodies of water (ne
Amphibian	Hemidactyl Four-toed ! SC	none	S3	G5	Durham	Current	pools, bogs, and other wetlands in hardwood
Butterfly	Hesperia le Leonard's S W2	none	S2S3	G4	Durham	Current	wooded borders and openings, brushy fields;
Vascular Pl	Heteranthε Atlantic M SR-P	none	S1	G3?	Durham	Current	open pools in brownwater or blackwater river
Vascular Pl	Hexalectris Crested Co SR-P	none	S2	G5	Durham	Current	dry or mesic woods on basic soils

Vascular Pl Hexastylis l Lewis's Hea	W1	none	S3	G3	Durham	Current	mesic mixed hardwood forests, streamhead p
Grasshopp Hubbellia r Pine Katydi	W3	none	S3?	GNR	Durham	Current	pinewoods
Vascular Pl Hydrastis c Goldenseal	SC-V	none	S3	G3G4	Durham	Current	cove forests, other rich deciduous forests
Vascular Pl Juglans cin Butternut	W5	none	S2S3	G3	Durham	Historical	cove forests, rich woods
Vascular Pl Juncus bra Whiteroot	W7	none	S2?	G4G5	Durham	Historical	wet sandy soil
Freshwater Lampsilis c Yellow Lar	E	none	S3	G3G4	Durham	Current	Chowan, Roanoke, Neuse, Tar, Cape Fear, Lur
Freshwater Lampsilis r Eastern Lar	T	none	S3	G5	Durham	Current	Chowan, Roanoke, Tar, Neuse, Cape Fear, Yac
Freshwater Lampsilis s Chameleor	SR	none	S2	G2	Durham	Current	Tar, Neuse, Cape Fear, and Yadkin-Pee Dee dr
Freshwater Lasmigona Green Floa	E	none	S2	G3	Durham	Current	New, Watauga, Roanoke, Tar, Neuse and Yadd
Vascular Pl Lathyrus v Smooth Pe	W1	none	S3	G5	Durham	Current	rich bottomlands and rocky slopes, generally i
Freshwater Lepomis m Dollar Sunf	W2	none	S3	G5	Durham	Current	streams and rivers of Sandhills and Coastal Pl
Dragonfly c Lestes euri Amber-win	W2	none	S3	G5	Durham	Current	lakes and ponds with emergent vegetation
Dragonfly c Lestes forc Sweetflag	SR	none	S1S2	G5	Durham	Historical	vegetated ponds
Vascular Pl Liatris squa Earle's Blaz	SR-P	none	S2	G4G5	Durham	Current	diabase glades, open woods especially over m
Vascular Pl Linum sulc Glade Flax	SC-H	none	SH	G5T5	Durham	Historical	diabase barrens
Vascular Pl Lithosperm Hoary Pucc	T	none	S2	G5	Durham	Current	diabase glades, open woods over diabase
Vascular Pl Lithosperm Virginia M	W1	none	S3	G4	Durham	Historical	sandhill woodlands, shell middens, barrens, g
Bird Lophodyte Hooded M	W3	none	S1B,S4N	G5	Durham	Current	lakes and ponds, with dead trees for nesting [
Natural Co Low Elevation Seep (Floodplain Su	none	none	S2	G4	Durham	Current	null
Natural Co Low Elevation Seep (Typic Subtyp	none	none	S3	G3?	Durham	Current	null
Vascular Pl Luzula mul Heath Woc	W7	none	S2?	G5T5	Durham	Current	moist woods
Freshwater Lythrus r Pinewoods	W5	none	S3	G3G4	Durham	Current	Tar and Neuse drainages (endemic to North C
Vascular Pl Matelea de Glade Milk	W1	none	S3	G5	Durham	Current	thin woodlands over mafic or calcareous rock
Natural Co Mesic Mixed Hardwood Forest (Pi	none	none	S4	G3G4	Durham	Current	null
Moss Micromitri A Moss	W7	none	S2?	G4	Durham	Historical	unfertilized bare soil, in sun or partial shade
Moss Micromitri A Moss	SR-O	none	S1?	G4	Durham	Current	drying or dried ponds, edges of lakes or strea
Natural Co Mixed Moisture Hardpan Forest	none	none	S2	G2?	Durham	Current	null
Vascular Pl Monotrops Sweet Pine	SR-O	none	S3	G3	Durham	Current	dry forests and bluffs
Vascular Pl Muhlenber Clay-pan M	W7	none	SH	G4?	Durham	Historical	clay soils
Vascular Pl Muhlenber Woodland	W7	none	S1S2	G5	Durham	Historical	rich alluvial forests
Mammal Mustela fr Long-tailed	W3	none	S3	G5	Durham	Current	forests, brushy areas
Vascular Pl Nanopana Dwarf Gins	W1	none	S3	G5	Durham	Current	cove forests, northern hardwoods, other rich
Amphibian Necturus le Neuse Rive	SC	T	S2	G2	Durham	Current	rivers and large streams in Neuse and Tar dra
Butterfly Neonymph Georgia Sa	SR	none	S2	G3G4	Durham	Historical	savannas, wet powerline clearings, other darr
Butterfly Neonymph Helicta Sa	SR	none	S1?	G3G4	Durham	Historical	sedgy wetlands, including sandhill seeps, poc



Dragonfly c	Neurocord Cinnamon	W3	none	S2?	G4	Durham	Current	large rivers	
Freshwater	Notropis v	Mimic Shin T	none	S2	G5	Durham	Historical	New, French Broad, Little Tennessee, Tar, and	
Freshwater	Noturus fu	Carolina M T	E	S2	G2	Durham	Historical	Tar and Neuse drainages (endemic to North C	
Bird	Nyctanassa	Yellow-cro	SR	none	S2B	G5	Durham	Current	inland swamps; woods or thickets on maritim
Vascular PI	Oligoneuro	Southeaste	SR-P	none	S2	G5T4	Durham	Current	glades, barrens, other open sites over mafic o
Reptile	Ophisaurus	Slender Gl	SR	none	S1	G5	Durham	Historical	old fields, wooded edges, open woods
Vascular PI	Orbexilum	Sampson's	E	none	S1	G5T5?	Durham	Historical	open woodlands
Vascular PI	Panax quin	Ginseng	W1	none	S3S4	G3G4	Durham	Current	cove forests, other rich forests
Vascular PI	Panicum fl	Wiry Panic	T	none	S1	G5	Durham	Current	glades and openings over mafic rocks
Vascular PI	Partheniun	Glade Wild	SR-T	none	S3	G3G4	Durham	Current	glades and openings over mafic rocks
Vascular PI	Persicaria	c Dense-flow	W1	none	S3	G5	Durham	Current	Swamp forests
Vascular PI	Philadelphu	Scentless N	W1	none	S3	G4G5	Durham	Current	bluffs, cliffs, and rocky woods, mainly over m
Natural Co	Piedmont	Acidic Glade		none	S2	G2	Durham	Current	null
Natural Co	Piedmont	Alluvial Forest		none	S4	G4	Durham	Current	null
Natural Co	Piedmont	Bottomland Forest (Hig		none	S2	G3G4	Durham	Current	null
Natural Co	Piedmont	Bottomland Forest (Typ		none	S2	G2?	Durham	Current	null
Natural Co	Piedmont	Headwater Stream Fore		none	S3S4	G3G4	Durham	Current	null
Natural Co	Piedmont	Levee Forest (Beech Sul		none	S2	G3?	Durham	Current	null
Natural Co	Piedmont	Levee Forest (Typic Sub		none	S3S4	G3G4	Durham	Current	null
Natural Co	Piedmont	Monadnock Forest (Pin		none	S2	G2	Durham	Current	null
Natural Co	Piedmont	Swamp Forest		none	S2	G3G4	Durham	Current	null
Natural Co	Piedmont/Coastal Plain	Heath Blu		none	S3	G3	Durham	Current	null
Natural Co	Piedmont/Mountain	Semiperman		none	S4	G4G5	Durham	Current	null
Natural Co	Piedmont/Mountain	Semiperman		none	S4	G4?	Durham	Current	null
Natural Co	Piedmont/Mountain	Semiperman		none	S4	G4	Durham	Current	null
Liverwort	Plagiochila	A Liverwort	W2	none	SH	GHQ	Durham	Historical	on thin soil over boulders on floodplains
Liverwort	Plagiochila	A Liverwort	SR-P	none	S1	G5	Durham	Historical	on bark or moist rock in swamps and mountai
Liverwort	Plagiochila	A Liverwort	W7	none	S2	G4G5	Durham	Historical	on rocks or bark
Vascular PI	Platanther	Purple Frin	T	none	S2	G5	Durham	Current	bogs, forests
Moss	Platydictya	A Moss	W7	none	S2?	G5	Durham	Historical	bark at base of hardwoods, rarely on logs
Moss	Pleurochae	Spring-leav	SR-O	none	S1?	GNR	Durham	Current	exposed clay or sandy soil over calcareous roc
Moss	Pohlia mel	Pink-fruiter	SR-D	none	S1?	G4?	Durham	Current	moist, clay soils
Vascular PI	Polygala se	Seneca Sna	SC-V	none	S2	G4G5	Durham	Current	woodlands and in thin soil around outcrops, u
Butterfly	Pontia prot	Checkered	SR	none	S1S2	G5	Durham	Current	fields, pastures; host plants -- mustard specie
Vascular PI	Prunus sus	Susquehan	SR-P	none	SH	G5T4T5	Durham	Historical	rocky forests

Amphibian	Pseudacris Southern C SR	none	S2	G5	Durham	Historical	ditches, Carolina bays, and other temporary s
Vascular Pl	Pseudogna Small Rabb SR-T	none	S1	G4G5T3?	Durham	Historical	dry woodlands
Vascular Pl	Pyrola ame American S W1	none	S2S3	G5	Durham	Historical	forests
Vascular Pl	Quercus bi Swamp Wf W1	none	S2	G5	Durham	Current	upland swamp forests
Vascular Pl	Quercus pæ Pin Oak W1	none	S2	G5	Durham	Current	swamps
Vascular Pl	Ranunculu: Rock Butte SR-P	none	S1	G5	Durham	Current	rich woods on circumneutral soil
Vascular Pl	Rhododenc Catawba RI W6	none	S5	G5	Durham	Historical	rocky slopes, ridges and balds, usually over 3C
Vascular Pl	Rhus michæ Michaux's ! E	E	S2	G2G3	Durham	Current	sandhills, sandy forests, woodland, woodland
Liverwort	Riccia beyr A Liverwort W7	none	S1S2	G5	Durham	Historical	moist soil and gravel
Natural Coi	Rocky Bar and Shore (Mixed Bar S	none	S3	G4	Durham	Current	null
Natural Coi	Rocky Bar and Shore (Water Willo	none	S4	G4G5	Durham	Current	null
Vascular Pl	Ruellia hun Low Wild-p T	none	S1	G5	Durham	Current	diabase glades
Vascular Pl	Ruellia pur: Pursh's Wil SC-V	none	S2	G3	Durham	Current	glades and woodlands, mostly over mafic or c
Vascular Pl	Rumex alti: Pale Dock W7	none	S2?	G5	Durham	Historical	low wet places
Vascular Pl	Sabatia quæ Four-angle W7	none	S2	G4G5	Durham	Historical	moist to mesic grassy glades, woodland borde
Vascular Pl	Salix humil Tall Prairie W6	none	S3	G5	Durham	Historical	balds, roadsides and ditches
Butterfly	Satyrium fæ Northern C SR	none	S2S3	G4G5T4	Durham	Current	oak-dominated woods, usually in dry sites; hc
Vascular Pl	Scirpus per Rufous Buli SR-O	none	S1	G5	Durham	Historical	wet places over mafic rocks
Vascular Pl	Scutellaria Shale-barræ E	none	S2	G4T4	Durham	Current	diabase glades
Vascular Pl	Scutellaria Veined Sku E	none	S1	G5	Durham	Historical	alluvial forests
Vascular Pl	Scutellaria Showy Skul W1	none	S2S3	G4G5	Durham	Historical	deciduous forests
Vascular Pl	Senna hebæ Wild Senna W7	none	S2S3	G5	Durham	Current	forests
Vascular Pl	Silphium te Prairie Doc SR-P	none	S2	G4G5	Durham	Current	diabase glades, other open or semi-open sites
Vascular Pl	Sium suave Hemlock V W6	none	S3S4	G5	Durham	Historical	fresh or brachish marshes, swamps and creek
Vascular Pl	Solidago ul Elm-leaf Gc SR-O	none	S1?	G5T5	Durham	Historical	rocky forests and woodlands, especially on m
Dragonfly c	Somatochli: Coppery Er SR	none	S1?	G3G4	Durham	Historical	creeks and other slow-moving acidic streams,
Freshwater	Somatogyr Panhandle SR	none	S2S3	G2G3	Durham	Current	Eno River
Moth	Sphingicarr Honey Locu W3	none	S3?	G5	Durham	Historical	on honey locust (Gleditsia)
Vascular Pl	Stachys ma Yadkin Hed E	none	S1	G1G2	Durham	Historical	sandy edges of forested floodplains
Freshwater	Strophitus Creeper T	none	S3	G5	Durham	Current	Roanoke, Tar, Neuse, Cape Fear, Yadkin-Pee I
Dragonfly c	Stylurus lat Laura's Clu W1	none	S2S3	G4	Durham	Current	medium-size streams with clean sandy substr
Vascular Pl	Swida race Gray Dogw SR-P	none	S1	G5	Durham	Current	moist soil in riparian zones, roadsides, and thi
Vascular Pl	Symphyotr Narrow-lea E	none	S2	G5T4	Durham	Current	forests, woodland borders especially over ma
Vascular Pl	Thermopsi: Appalachia SR-T	none	S2	G3G4	Durham	Historical	dry ridges and open woodlands
Moss	Thuidium a Fernmoss W7	none	S2?	G3G5	Durham	Historical	on soil, logs, exposed roots, and tree bases in

Vascular Pl	Trepocarpus White-Nyrs	W7	none	S1	G4G5	Durham	Current	rich moist forests, bottomlands	
Vascular Pl	Trifolium repens	Buffalo Clo T	none	S1S2	G3G4	Durham	Historical	open woods and clearings	
Vascular Pl	Triosteum	Smooth Leaf	W7	none	S2	G5	Durham	Current	mesic forests, bluffs, outcrops, especially over
Liverwort	Tritomania	A Liverwort	W7	none	S1	G4	Durham	Historical	in moist depressions in savannas or on clay-pa
Mayfly	Tsalia	bernardia mayfly	SR	none	S3	G4	Durham	Historical	probably widespread in clean streams and riv
Natural Coi	Upland Depression Swamp Forest		none	S2S3	G2G3	Durham	Current	null	
Natural Coi	Upland Pool (Typic Piedmont Subt		none	S1	G1	Durham	Current	null	
Vascular Pl	Veronicastrum	Culver's-root	W7	none	S2?	G4	Durham	Historical	bogs, wet meadows, dry soils over mafic rock
Freshwater	Villosa con	Notched R	T	none	S3	G3	Durham	Current	Roanoke, Tar, Neuse, Yadkin-Pee Dee, and Ca
Reptile	Virginia val	Smooth Ea	W2	none	S3	G5	Durham	Current	deciduous or mixed woods, usually in mesic s
Animal Ass	Waterbird	Waterbird Colony		none	S3	GNR	Durham	Current	null
Moss	Weissia lucida	A Moss	SR-T	none	S1?	G3G4	Durham	Historical	moist soil, fields, among grasses, roadside bar
Moss	Weissia m	A Moss	W7	none	S2?	G5	Durham	Historical	soil among grasses, roadsides
Natural Coi	Xeric Hardpan Forest (Acidic Hard		none	S1	G2	Durham	Current	null	
Natural Coi	Xeric Hardpan Forest (Basic Hardp		none	S2	G2G3	Durham	Current	null	
Natural Coi	Xeric Hardpan Forest (Northern Pi		none	S1	G1	Durham	Current	null	
Vascular Pl	Actaea pacifica	White Bark	W6	none	S4	G5	Franklin	Historical	rich cove forests and slopes
Freshwater	Alasmidont	Dwarf Wee	E		S1	G1G2	Franklin	Current	Tar and Neuse drainages, mainly near Fall Lin
Freshwater	Alasmidont	Triangle Fl	T	none	S3	G4	Franklin	Current	Roanoke, Chowan, Tar, Neuse, Cape Fear drai
Freshwater	Ambloplites	Roanoke B	SR	none	S2	G3	Franklin	Current	streams in Neuse and Tar systems
Butterfly	Amblyscirtus	Carolina R	W2	none	S3S4	G3G4	Franklin	Current	moist woods (mainly hardwoods) near cane; l
Butterfly	Amblyscirtus	Reversed R	SR	none	S3	G3G4	Franklin	Current	flatwoods, savannas, pocosin borders, near ca
Bird	Ammodramus	Grasshopp	W1,W5	none	S3B,S1N	G5	Franklin	Current	pastures and other grasslands [breeding seas
Moss	Atrichum c	A Catherin	W7	none	S2?	G5	Franklin	Historical	moist soils of ditches and stream banks in bot
Natural Coi	Basic Mesic Forest (Piedmont Sub		none	S3S4	G3G4	Franklin	Current	null	
Butterfly	Callophrys	Frosted Elf	SR	none	S2	G2G3	Franklin	Current	open woods and borders, usually in dry situat
Vascular Pl	Camassia s	Wild Hyaci	T	none	S1	G4G5	Franklin	Current	rich levees, slopes, and bottomlands
Crustacean	Cambarus	Carolina La	SR	none	S3	G3	Franklin	Current	Neuse and Cape Fear drainages (endemic to N
Freshwater	Carychium	Obese Tho	W3	none	S3?	G5	Franklin	Historical	mesic forests
Reptile	Clemmys g	Spotted Tu	W1	none	S4	G5	Franklin	Current	shallow water of pools, marshes, wet pasture
Natural Coi	Coastal Plain Small Stream Swamp		none	S4	G4?	Franklin	Current	null	
Vascular Pl	Corallorhiza	Autumn C	W1	none	S4?	G5	Franklin	Historical	forests
Vascular Pl	Cyperus gr	Granite Fla	T	none	S2	G3G4Q	Franklin	Current	granite flatrocks, other rock outcrops
Vascular Pl	Cyperus sq	Awmed Flat	W7	none	S2	G5	Franklin	Historical	granite flatrocks, other rock outcrops
Vascular Pl	Diamorpha	Elf Orpine	W1	none	S3	G4	Franklin	Current	granite flatrocks

Moss	Dicranum s	Rusty Fork W7	none	S2?	G5	Franklin	Historical	sandy soil, decayed logs, acidic rock, humus o
Vascular Pl	Dryopteris	Crested Wc W1	none	S3	G5	Franklin	Current	bogs, wet woods
Freshwater	Elliptio cist	Box Spike W3,W5	none	SU	G4	Franklin	Current	Neuse, Lumber, Pee Dee drainages; Lake Wac
Freshwater	Elliptio con	Carolina Sl; W2,W5	none	S3	G3	Franklin	Current	drainages north to the White Oak drainage
Freshwater	Elliptio fish	Northern L SR	none	S3	G4	Franklin	Current	Atlantic Slope drainages
Freshwater	Elliptio lan	Yellow Lan; E	T	S2	G2	Franklin	Current	Tar and Neuse drainages
Freshwater	Elliptio roa	Roanoke Sl SC	none	S3	G3	Franklin	Current	Roanoke, Tar, Neuse, White Oak, Cape Fear, L
Freshwater	Elliptio stei	Tar River Sj E	E	S1	G1	Franklin	Historical	Tar drainage, very rare in Neuse drainage (en
Vascular Pl	Elodea nut	Nuttall's El; W7	none	S2?	G5	Franklin	Historical	lakes, ponds, and streams
Vascular Pl	Enemion bi	Eastern Iso SC-V	none	S2	G5	Franklin	Current	rich bottomlands, levees, and lower slopes
Freshwater	Enneacantl	Banded Su; SR	none	S3	G5	Franklin	Current	most Atlantic drainages
Butterfly	Erynnis ma	Mottled D; SR	none	S2	G3	Franklin	Current	upland woods and wooded edges; host plant
Freshwater	Etheostom	Glassy Dart W5	none	S3	G4G5	Franklin	Current	Chowan, Roanoke, Tar, and Neuse drainages
Vascular Pl	Euonymus	Eastern W; W7	none	S2	G5	Franklin	Current	levee forests and rich forests with circumneut
Moss	Fissidens fc	Water Pocl W7	none	S2?	G5	Franklin	Historical	attached to various substrata in stagnant and
Natural Co	Floodplain	Pool	none	S2	G3	Franklin	Current	null
Freshwater	Fusconaia	Atlantic Pig E	PT	S3	G1	Franklin	Current	Roanoke, Tar, Neuse, Cape Fear, Yadkin-Pee L
Dragonfly	Gomphuru	Skillet Club SR	none	S1	G3	Franklin	Current	rivers
Natural Co	Granitic Flatrock	(Annual Herb Su; none	none	S2	G3	Franklin	Current	null
Natural Co	Granitic Flatrock	(Perennial Herb S; none	none	S2	G3	Franklin	Current	null
Natural Co	Granitic Flatrock	Border Woodlan; none	none	S2	G3?	Franklin	Current	null
Bird	Haliaeetus	Bald Eagle T	BGPA	S3B,S3N	G5	Franklin	Current	mature forests near large bodies of water (ne
Amphibian	Hemidacty	Four-toed S; SC	none	S3	G5	Franklin	Current	pools, bogs, and other wetlands in hardwood
Vascular Pl	Heteranth	Kidneyleaf W7	none	S2?	G5	Franklin	Historical	muddy shores, bars, pools
Vascular Pl	Hexalectris	Crested Co SR-P	none	S2	G5	Franklin	Historical	dry or mesic woods on basic soils
Vascular Pl	Isoetes pie	Piedmont C T	none	S2	G4	Franklin	Current	granite flatrocks and diabase glades
Vascular Pl	Juncus geo	Georgia Ru W7	none	S1?	G4	Franklin	Historical	shallow depressions in granitic flatrocks and c
Vascular Pl	Juncus sect	Nodding R; W7	none	S1S2	G5?	Franklin	Historical	rock outcrops and glades
Reptile	Kinosterno	Striped Mu W3	none	S3S4	G5	Franklin	Current	various shallow wet places; ponds, pools, ditc
Freshwater	Lampetra a	Least Brool T	none	S2	G5	Franklin	Historical	Tar and Neuse drainages
Freshwater	Lampsilis c;	Yellow Lar; E	none	S3	G3G4	Franklin	Current	Chowan, Roanoke, Neuse, Tar, Cape Fear, Lur
Freshwater	Lampsilis r;	Eastern Lar T	none	S3	G5	Franklin	Current	Chowan, Roanoke, Tar, Neuse, Cape Fear, Yac
Freshwater	Lampsilis sj	Chameleor SR	none	S2	G2	Franklin	Historical	Tar, Neuse, Cape Fear, and Yadkin-Pee Dee dr
Bird	Lanius ludc	Loggerhear SC, W2	none	S2S3B,S3N	G4	Franklin	Current	fields and pastures [breeding season only]
Freshwater	Lasmigona	Green Floa E	none	S2	G3	Franklin	Current	New, Watauga, Roanoke, Tar, Neuse and Yadi

Vascular PI Lindernia n Flatrock Pir W1	none	S2	G4	Franklin	Current	seepages on granitic flatrocks and other rock
Freshwater Lioplax sub Ridged Lioꝛ SC	none	S3	G4G5	Franklin	Historical	streams and rivers, well documented in Lake 1
Freshwater Lythrus r Pinewoods W5	none	S3	G3G4	Franklin	Current	Tar and Neuse drainages (endemic to North C
Dragonfly c Macromia Mountain f SR	none	S2?	G3	Franklin	Historical	rivers
Vascular PI Matelea de Glade Milk W1	none	S3	G5	Franklin	Current	thin woodlands over mafic or calcareous rock
Natural Coi Mesic Mixed Hardwood Forest (Pi none	none	S4	G3G4	Franklin	Current	null
Vascular PI Muhlenber Woodland W7	none	S1S2	G5	Franklin	Historical	rich alluvial forests
Amphibian Necturus le Neuse Rive SC	T	S2	G2	Franklin	Current	rivers and large streams in Neuse and Tar dra
Freshwater Notropis vc Mimic Shin T	none	S2	G5	Franklin	Current	New, French Broad, Little Tennessee, Tar, anc
Freshwater Noturus fu Carolina M T	E	S2	G2	Franklin	Current	Tar and Neuse drainages (endemic to North C
Crustacean Orconectes North Caro SC	none	S3	G3	Franklin	Current	rivers and streams in the Chowan, Roanoke, N
Vascular PI Partheniun Glade Wild SR-T	none	S3	G3G4	Franklin	Current	glades and openings over mafic rocks
Vascular PI Phacelia co Buttercup l SR-T	none	S3	G3	Franklin	Current	bottomlands, rich lower slopes
Moss Philonotis r An Apple N W7	none	S2?	G5	Franklin	Historical	rocks and soil in wet places, roadsides, spring
Natural Coi Piedmont Alluvial Forest	none	S4	G4	Franklin	Current	null
Natural Coi Piedmont Bottomland Forest (Hig none	none	S2	G3G4	Franklin	Current	null
Natural Coi Piedmont Bottomland Forest (Typ none	none	S2	G2?	Franklin	Current	null
Natural Coi Piedmont Levee Forest (Typic Sub none	none	S3S4	G3G4	Franklin	Current	null
Natural Coi Piedmont/Coastal Plain Heath Blu none	none	S3	G3	Franklin	Current	null
Natural Coi Piedmont/Mountain Semiperman none	none	S4	G4G5	Franklin	Current	null
Natural Coi Piedmont/Mountain Semiperman none	none	S4	G4?	Franklin	Current	null
Natural Coi Piedmont/Mountain Semiperman none	none	S4	G4	Franklin	Current	null
Vascular PI Platanthera Purple Frin T	none	S2	G5	Franklin	Current	bogs, forests
Vascular PI Portulaca s Small's Por T	none	S2	G3	Franklin	Current	granite flatrocks and diabase glades
Vascular PI Pseudogna Heller's Ral E	none	S2S3	G4G5T3T4	Franklin	Historical	dry woodlands and openings (especially over
Vascular PI Rhus micha Michaux's ! E	E	S2	G2G3	Franklin	Current	sandhills, sandy forests, woodland, woodland
Vascular PI Silene caro Sticky Catcl W7	none	S1S2	G5T4T5	Franklin	Historical	open woodlands with sandy or sandy-loamy s
Dragonfly c Somatochl Coppery Er SR	none	S1?	G3G4	Franklin	Historical	creeks and other slow-moving acidic streams,
Freshwater Sphaerium Grooved Fi W3	none	SU	G5	Franklin	Current	White Oak River
Freshwater Strophitus Creeper T	none	S3	G5	Franklin	Current	Roanoke, Tar, Neuse, Cape Fear, Yadkin-Pee l
Dragonfly c Stylurus lat Laura's Clu W1	none	S2S3	G4	Franklin	Historical	medium-size streams with clean sandy substr
Vascular PI Thermopsis: Appalachia SR-T	none	S2	G3G4	Franklin	Historical	dry ridges and open woodlands
Mayfly Tortopsis pa a mayfly SR	none	S1	G5	Franklin	Historical	only one NC specimen known, from Tar River
Vascular PI Utricularia Horned Bla T	none	S1S2	G5	Franklin	Current	bogs, limesink ponds
Freshwater Villosa con: Notched R: T	none	S3	G3	Franklin	Current	Roanoke, Tar, Neuse, Yadkin-Pee Dee, and Ca

Reptile	Virginia val Smooth Ea W2	none	S3	G5	Franklin	Current	deciduous or mixed woods, usually in mesic s
Animal Ass	Waterbird Waterbird Colony	none	S3	GNR	Franklin	Current	null
Freshwater	Acipenser c Atlantic Stu E	E	S2	G3T3	Gates	Current	coastal waters, estuaries, large rivers
Freshwater	Alasmidont Triangle Flc T	none	S3	G4	Gates	Current	Roanoke, Chowan, Tar, Neuse, Cape Fear drai
Reptile	Alligator m American f T	T(S/A)	S3	G5	Gates	Current	fresh to slightly brackish lakes, ponds, rivers, ;
Butterfly	Amblyscirt Carolina Rc W2	none	S3S4	G3G4	Gates	Current	moist woods (mainly hardwoods) near cane; l
Bird	Ammodran Henslow's : E	none	S1B,S1N	G4	Gates	Historical	clearcut pocosins and other damp weedy field
Amphibian	Anaxyrus q Oak Toad SR	none	S2	G5	Gates	Current	pine flatwoods and savannas, pine sandhills w
Vascular Pl	Andropogo Tracy's Blu W7	none	S2	G4?	Gates	Historical	sandhills, other dry soils
Freshwater	Anodonta i Alewife Flo T	none	S2	G5	Gates	Current	Chowan, Roanoke, Cape Fear, and Pee Dee dr
Lichen	Anzia orna A Black-foa SR-T	none	S2	G1G3	Gates	Current	on bark of deciduous trees where humidity is
Vascular Pl	Bartonia p Twining Sci W1	none	S2S3	G5T5	Gates	Historical	bogs, wet savannas, sandhill seeps, other ope
Butterfly	Callophrys Hessel's Ha SR	none	S3	G3	Gates	Current	Atlantic white cedar swamps; host plant -- wh
Butterfly	Callophrys Frosted Elfi SR	none	S2	G2G3	Gates	Current	open woods and borders, usually in dry situat
Moth	Callosamia Sweetbay s W3	none	SU	G4	Gates	Current	pocosins and other wetlands with sweetbay
Vascular Pl	Carex chap Chapman's W1	none	S3	G3	Gates	Current	moist bottomlands and slopes, perhaps assoc
Vascular Pl	Carex deco Cypress Kn SR-O	none	S2	G3G4	Gates	Current	beaver ponds, old millponds; often on Taxodi
Freshwater	Carychium Obese Tho W3	none	S3?	G5	Gates	Historical	mesic forests
Vascular Pl	Chelone ok Purple Turt SR-T	none	S2	G4T3T4Q	Gates	Current	streambanks, swamp forests, ecotones of fres
Reptile	Clemmys g Spotted Tu W1	none	S4	G5	Gates	Current	shallow water of pools, marshes, wet pasture
Natural Coi	Coastal Plain Depression Swamp (	none	S3?	G3	Gates	Current	null
Natural Coi	Coastal Plain Semipermanent Imp	none	S4	G4G5	Gates	Current	null
Natural Coi	Coastal Plain Semipermanent Imp	none	S4	G5	Gates	Current	null
Natural Coi	Coastal Plain Small Stream Swamp	none	S4	G4?	Gates	Current	null
Mammal	Corynorhin Eastern Big SC	none	S3	G3G4T3	Gates	Current	roosts in hollow trees, old buildings, and bene
Dragonfly c	Coryphaes Regal Darn SR	none	S2?	G5	Gates	Current	lakes and ponds
Natural Coi	Cypress--Gum Swamp (Intermedia	none	S3S4	G4	Gates	Current	null
Vascular Pl	Desmodiur Fernald's T SR-P	none	S1	G4	Gates	Historical	dry to mesic hardwood-pine woodlands
Vascular Pl	Dichanthe Spindle-fru SR-P	none	S1	G5?	Gates	Current	Dry to moist sand of open pine and pine-oak v
Vascular Pl	Dichanthe Elliott's W W1	none	S2S3	G5T5	Gates	Historical	dry to damp, sandy pinelands
Vascular Pl	Dryopteris Spinulose \ W7	none	S2	G5	Gates	Current	swampy woods
Vascular Pl	Dryopteris Crested W W1	none	S3	G5	Gates	Historical	bogs, wet woods
Freshwater	Elliptio cist Box Spike W3,W5	none	SU	G4	Gates	Current	Neuse, Lumber, Pee Dee drainages; Lake Wac
Freshwater	Elliptio fish Northern L SR	none	S3	G4	Gates	Current	Atlantic Slope drainages
Freshwater	Elliptio pro Atlantic Spi W3,W5	none	SU	G3Q	Gates	Current	many Atlantic drainages; very difficult to iden

Vascular PI	Elodea can	Canada W	W7	none	S1?	G5	Gates	Current	lakes, ponds, and stagnant waters of streams
Moss	Elodium pa	Pond Fern	W7	none	S2?	G3G5	Gates	Historical	on soil, humus, trees, or logs in swamps, mar
Freshwater	Enneacantl	Blackband	SR	none	S3	G3G4	Gates	Current	many drainages, particularly Lumber and Wac
Freshwater	Enneacantl	Banded Sui	SR	none	S3	G5	Gates	Current	most Atlantic drainages
Freshwater	Euglandina	Rosy Wolfs	W3	none	S3?	G5	Gates	Current	habitats poorly known
Butterfly	Euphyes bi	Two-spott	SR	none	S1S2	G4	Gates	Current	wet savannas, bogs, sedgy areas near wet wo
Vascular PI	Eurybia sp	Showy Ast	SR-O	none	S2?	G5	Gates	Historical	pine barrens and woodland borders
Reptile	Farancia er	Rainbow Sr	SR	none	S3	G4	Gates	Current	swamps, lakes, rivers, and other sluggish wat
Moss	Fissidens fc	Water Pocl	W7	none	S2?	G5	Gates	Historical	attached to various substrata in stagnant and
Moss	Fontinalis s	A Water M	W7	none	S2?	G3G5	Gates	Historical	rocks or trees in pools or streams
Vascular PI	Gratiola lut	Golden Her	SC-V	none	S1	G5	Gates	Historical	drawdown zones of blackwater rivers
Bird	Haliaeetus	Bald Eagle	T	BGPA	S3B,S3N	G5	Gates	Current	mature forests near large bodies of water (ne
Moth	Heliomata	Rare Spring	W3	none	S2S3	G3G4	Gates	Current	forests or woodlands with shrubby locusts
Bird	Helmitherc	Worm-eati	W5	none	S3B	G5TNR	Gates	Current	nonriverine wet hardwoods, pocosins [breedi
Amphibian	Hemidacty	Four-toed	SC	none	S3	G5	Gates	Current	pools, bogs, and other wetlands in hardwood
Vascular PI	Heteranth	Kidneyleaf	W7	none	S2?	G5	Gates	Historical	muddy shores, bars, pools
Vascular PI	Hottonia in	Featherfoil	SC-V	none	S1?	G4	Gates	Current	pools in blackwater or brownwater swamps, i
Grasshopp	Inscudder	Eastern Cy	W3	none	SU	GNR	Gates	Current	cypress swamps and savannas
Vascular PI	Iris prismat	Slender Bl	SR-T	none	S1S2	G4G5	Gates	Historical	bogs, marshes, and wet powerline clearings
Vascular PI	Isotria vert	Large Who	W1	none	S2S3	G5	Gates	Historical	forests
Vascular PI	Kalmia ang	Sheep-laur	T	none	S1	G5	Gates	Current	sandy, xeric to mesic hillsides
Reptile	Kinosterno	Striped Mu	W3	none	S3S4	G5	Gates	Current	various shallow wet places; ponds, pools, ditc
Freshwater	Lampsilis c	Yellow Lar	E	none	S3	G3G4	Gates	Current	Chowan, Roanoke, Neuse, Tar, Cape Fear, Lur
Freshwater	Lampsilis r	Eastern Lar	T	none	S3	G5	Gates	Current	Chowan, Roanoke, Tar, Neuse, Cape Fear, Yac
Mammal	Lasiurus cir	Hoary Bat	W2	none	S3S4	G3G4	Gates	Current	mostly mid elevation to high elevation forests
Mammal	Lasiurus se	Seminole B	W2	none	S3	G5	Gates	Current	forages over open areas, often over water (su
Freshwater	Leptodea o	Tidewater	T	none	S2	G3G4	Gates	Current	Chowan, Roanoke, and Tar drainages, and abi
Freshwater	Ligumia na	Eastern Poi	T	none	S2	G4	Gates	Current	Chowan, Roanoke, Neuse, Tar, Cape Fear, anc
Freshwater	Lioplax sub	Ridged Lio	SC	none	S3	G4G5	Gates	Current	streams and rivers, well documented in Lake
Vascular PI	Litsea aesti	Pondspice	SC-V	none	S2S3	G3?	Gates	Current	limesink ponds, other pools
Natural Co	Low Elevation	Seep (Typic	Subtyp	none	S3	G3?	Gates	Current	null
Vascular PI	Ludwigia b	Long Beach	SR-T	none	S1	G2	Gates	Historical	natural lake shores, blackwater stream shores
Vascular PI	Ludwigia r	Raven's Se	T	none	S1	G1G2	Gates	Historical	savannas, swamps, marshes, wet open places
Natural Co	Mesic Mixed	Hardwood Forest	(C	none	S3	G3	Gates	Current	null
Liverwort	Metzgeria	A Liverwor	W7	none	S1	G3	Gates	Historical	on bark in maritime forests or on rhododendr

Mammal	<i>Mustela f</i>	Long-tailed W3	none	S3	G5	Gates	Current	forests, brushy areas
Mammal	<i>Myotis aus</i>	Southeaste SC	none	S2	G4	Gates	Current	roosts in buildings, hollow trees; forages near
Mammal	<i>Myotis luci</i>	Little Brow SR	none	S2	G3	Gates	Current	roosts in buildings (summer), in caves and mi
Mammal	<i>Myotis sep</i>	Northern L T	T	S2	G1G2	Gates	Current	roosts in hollow trees and buildings (warmer i
Butterfly	<i>Neonymph Helicta Sat</i>	SR	none	S1?	G3G4	Gates	Historical	sedgy wetlands, including sandhill seeps, pocc
Vascular PI	<i>Neottia bif</i>	Southern T W1	none	S3	G4	Gates	Current	moist hardwood forest, swamps, wet woods v
Natural Coi	Nonriverine Swamp Forest (Cypre		none	S2	G2G3	Gates	Current	null
Natural Coi	Nonriverine Swamp Forest (Mixed		none	S3	G3	Gates	Current	null
Natural Coi	Nonriverine Wet Hardwood Fores		none	S1	G2	Gates	Current	null
Reptile	<i>Ophisaurus</i>	Slender Gl SR	none	S1	G5	Gates	Historical	old fields, wooded edges, open woods
Crustacean	<i>Orconecte</i>	North Caro SC	none	S3	G3	Gates	Current	rivers and streams in the Chowan, Roanoke, N
Crustacean	<i>Orconecte</i>	Chowanok SC	none	S3	G3	Gates	Current	streams and rivers in the Chowan and Roanok
Freshwater	<i>Oxyloma e</i>	Coastal-pla W3	none	SU	G3	Gates	Historical	wetlands with <i>Sagittaria</i> ; very little locality inf
Mammal	<i>Perimyotis</i>	Tricolored SR	none	S3	G2G3	Gates	Current	roosts in clumps of leaves (mainly in summer)
Bird	<i>Picoides bc</i>	Red-cockac E	E	S2	G3	Gates	Current	mature open pine forests, mainly in longleaf p
Natural Coi	Pine/Scrub Oak Sandhill (Northerr		none	S1	G1	Gates	Current	null
Vascular PI	<i>Platanther</i>	White-frin W1	none	S3?	G5	Gates	Historical	bogs or depressions
Vascular PI	<i>Polygonell</i>	Coast Joint SC-H	none	SH	G5	Gates	Current	sandhills
Butterfly	<i>Pontia prot</i>	Checkered SR	none	S1S2	G5	Gates	Historical	fields, pastures; host plants -- mustard specie
Vascular PI	<i>Potamoget</i>	Conferva P SR-D	none	S2	G5	Gates	Historical	beaverponds and old millponds on blackwater
Vascular PI	<i>Potamoget</i>	Leafy Pond W1	none	S2	G5T5	Gates	Historical	lakes, streams, and ponds
Freshwater	<i>Promenetu</i>	Sharp Sprit W3	none	S2S3	G5	Gates	Current	ponds and streams
Vascular PI	<i>Pycnanthe</i>	Awned Mo SR-T	none	S2	G4	Gates	Current	blackwater swamps
Amphibian	<i>Rana kauff</i>	Atlantic Co W3	none	S3	G3G4	Gates	Current	freshwater wetlands, such as marshes and po
Vascular PI	<i>Ranunculu</i>	Yellow Wat SR-P	none	S1	G5	Gates	Historical	pools in blackwater swamps
Vascular PI	<i>Sagittaria v</i>	Grassleaf A E	none	S2	G5T3T4	Gates	Historical	fresh to slightly brackish marshes, streams, sv
Moth	<i>Scopula ca</i>	Frosted Tai W3	none	S2S3	G4	Gates	Current	sandhills and other dry forests
Bird	<i>Setophaga</i>	Wayne's BI E	none	S2B	G5T1	Gates	Current	nonriverine wetland forests, especially where
Natural Coi	Small Depression Drawdown Mea		none	S1	G2	Gates	Current	null
Natural Coi	Small Depression Pocosin (Bluebe		none	S2	G3?	Gates	Current	null
Natural Coi	Small Depression Shrub Border		none	S3	G3?	Gates	Current	null
Vascular PI	<i>Smilax pse</i>	Long-stalk W1	none	S3?	G4G5	Gates	Historical	streamheads, ecotones, borders of blackwater
Mammal	<i>Sorex hoyi</i>	American F W2	none	S3	G5	Gates	Current	montane deciduous forests; old fields and for
Moss	<i>Sphagnum</i>	Peatmoss W1	none	S2S3	G4?	Gates	Historical	bogs
Vascular PI	<i>Spirodela p</i>	Common V W7	none	S4	G5	Gates	Current	pools, stagnant waters



Mammal	Synaptomy Dismal Sw	SR	none	S2S3	G5T3	Gates	Historical	low pocosins, early succession wetlands
Vascular Pl	Thalictrum Small-leave	SC-V	none	S2	G3G4	Gates	Current	bogs and wet woods
Moss	Thuidium a Fernmoss	W7	none	S2?	G3G5	Gates	Historical	on soil, logs, exposed roots, and tree bases in
Natural Coi	Tidal Freshwater Marsh (Mixed Fr		none	S1	G2?	Gates	Current	null
Natural Coi	Tidal Swamp (Cypress--Gum Subty		none	S4	G3G4	Gates	Current	null
Vascular Pl	Torreyochl Pale Mann:	SR-P	none	S1	G5	Gates	Current	Bogs, mucky wetlands such as old beaver-pon
Vascular Pl	Trillium pu: Virginia Le	E	none	S1	G3T2	Gates	Current	mesic to swampy hardwood forests
Freshwater	Vertigo tes Swamp Ve	W3	none	S3	G5	Gates	Current	margins of swamps and ponds
Vascular Pl	Viola britto Northern C	W7	none	S2?	G4G5	Gates	Current	moist slopes and low wet places
Reptile	Virginia val Smooth Ea	W2	none	S3	G5	Gates	Current	deciduous or mixed woods, usually in mesic s
Animal Ass	Waterbird Waterbird Colony		none	S3	GNR	Gates	Current	null
Vascular Pl	Zizania aqu Indian Wilc	W7	none	S2	G5T5	Gates	Current	freshwater marshes
Vascular Pl	Acmispon f Carolina Bi	T	none	S3	G5T3	Iredell	Historical	woodlands and openings, generally on clayey
Vascular Pl	Agave virgi Eastern Ag	W1	none	S3	G5	Iredell	Historical	granite flatrocks, mafic glades, dry outcrops, c
Bird	Ammodran Grasshopp	W1,W5	none	S3B,S1N	G5	Iredell	Current	pastures and other grasslands [breeding seas
Vascular Pl	Amorpha s Piedmont I	W1	none	S3	G3G4	Iredell	Historical	dry forests
Reptile	Apalone sp Gulf Coast	W2	none	S3	G5T5	Iredell	Current	large streams, ponds, and lakes with sandy bc
Vascular Pl	Baptisia alk Thin-pod	W1	none	S3	G4	Iredell	Historical	open woodlands, clearings
Natural Coi	Basic Mesic Forest (Piedmont Sub		none	S3S4	G3G4	Iredell	Current	null
Vascular Pl	Berberis ca American E	SC-V	none	S2	G3G4	Iredell	Historical	open forests and glades on basic soils
Crustacean	Cambarus j Carolina Fo	SR	none	S3	G3	Iredell	Current	headwater streams in the Yadkin-Pee Dee, Ca
Vascular Pl	Carex cono Cone-shap	T	none	S1	G5	Iredell	Historical	bogs
Vascular Pl	Carex mitcl Mitchell's	W1	none	S2	G4	Iredell	Historical	swampy woodlands and forests
Vascular Pl	Carex proje Necklace S	SR-P	none	S1	G5	Iredell	Historical	bogs, marshes, swamps, brownwater floodpl
Freshwater	Carpiodes c Quillback	SR	none	S2	G5	Iredell	Historical	native to French Broad drainage, introduced p
Freshwater	Carpiodes c Carolina"	C SR	none	S2	GNR	Iredell	Historical	Yadkin-Pee Dee, Catawba, Broad, and Roanok
Freshwater	Carpiodes c Atlantic Hi	SC	none	S1	GNR	Iredell	Historical	Catawba, Pee Dee, and Cape Fear rivers
Vascular Pl	Carya lacin Big Shellba	T	none	S1	G5	Iredell	Current	brownwater river levees
Reptile	Cemophor; Scarlet Sna	W1,W5	none	S3	G5	Iredell	Current	sandhills, sandy woods, and other dry woods
Natural Coi	Chestnut Oak Forest (Dry Heath S		none	S5	G5	Iredell	Current	null
Natural Coi	Chestnut Oak Forest (Herb Subtyp		none	S4	G4G5	Iredell	Current	null
Vascular Pl	Corallorhiz Autumn Cc	W1	none	S4?	G5	Iredell	Historical	forests
Vascular Pl	Coreopsis f Blue Ridge	W7	none	S2?	G5?T3T5	Iredell	Historical	rich woodlands, glades, outcrops
Freshwater	Cyprinella l Thicklip Ch	W5	none	S3	G4	Iredell	Current	Yadkin, Catawba, and Broad drainages
Freshwater	Cyprinella r Santee Chu	W5	none	S3	G4	Iredell	Current	Catawba and Broad drainages

Vascular Pl	Diamorpha Elf Orpine	W1	none	S3	G4	Iredell	Historical	granite flatrocks
Natural Coi	Dry Oak--Hickory Forest (Piedmon		none	S4	G4G5	Iredell	Current	null
Natural Coi	Dry-Mesic Oak--Hickory Forest (Pi		none	S4	G4G5	Iredell	Current	null
Vascular Pl	Eryngium i Blue-flowe	W6	none	S4	G5	Iredell	Historical	Wet pinelands, meadows and savannas
Vascular Pl	Fallopia cri. Crested Cli	W7	none	S2?	G5T5	Iredell	Historical	moist forests, especially alluvial forests
Vascular Pl	Frangula c Carolina B	W1	none	S3	G5	Iredell	Historical	rich bottomlands and slopes
Reptile	Glyptemys Bog Turtle	T	T(S/A)	S2	G2G3	Iredell	Historical	bogs, wet pastures, wet thickets
Bird	Haliaeetus Bald Eagle	T	BGPA	S3B,S3N	G5	Iredell	Current	mature forests near large bodies of water (ne
Vascular Pl	Helenium k Littleleaf Sr	E	none	S1	G4	Iredell	Current	bogs, seeps, riverbanks, other wet sites
Vascular Pl	Heuchera c Carolina Al	W7	none	S3	G3	Iredell	Historical	rich, rocky woods
Vascular Pl	Hexalectris Crested Co	SR-P	none	S2	G5	Iredell	Current	dry or mesic woods on basic soils
Vascular Pl	Hexastylis i Dwarf-flow	T	T	S3	G3	Iredell	Current	rich deciduous forests, bluffs, and ravines
Natural Coi	Hillside Seepage Bog		none	S1	G2	Iredell	Current	null
Mayfly	Homoeone Cahaba Sar	SR	none	S2	G3	Iredell	Historical	South Fork Yadkin River (Davie), South Fork C
Vascular Pl	Ilex longipe Georgia Ho	SR-P	none	S1	G5	Iredell	Current	upland forests and woodlands
Vascular Pl	Juncus brai Whiteroot	W7	none	S2?	G4G5	Iredell	Historical	wet sandy soil
Vascular Pl	Juncus lon Long's Rusl	W7	none	S1S2	G3Q	Iredell	Historical	wet, clayey soil
Vascular Pl	Lachnocaul Bog-butto	W6	none	S4	G5	Iredell	Historical	bogs, ditches, savannas, and low pinelands
Freshwater	Lampsilis sj Rayed Pink	SR	none	S1	G3	Iredell	Current	Lake Waccamaw and Waccamaw River, Yadki
Bird	Lanius ludc Loggerhear	SC, W2	none	S2S3B,S3N	G4	Iredell	Current	fields and pastures [breeding season only]
Freshwater	Ligumia na Eastern Poi	T	none	S2	G4	Iredell	Current	Chowan, Roanoke, Neuse, Tar, Cape Fear, anc
Natural Coi	Low Elevation Seep (Floodplain Su		none	S2	G4	Iredell	Current	null
Natural Coi	Low Elevation Seep (Piedmont/M		none	S1	G2	Iredell	Current	null
Mayfly	Macdunno a mayfly	SR	none	S2	G3G4	Iredell	Historical	French Broad River, Mills River, Hunting Creel
Dragonfly c	Macromia Mountain f	SR	none	S2?	G3	Iredell	Historical	rivers
Vascular Pl	Magnolia n Bigleaf Ma	SC-V	none	S2	G5	Iredell	Current	rich deciduous forests
Natural Coi	Mesic Mixed Hardwood Forest (Pi		none	S4	G3G4	Iredell	Current	null
Natural Coi	Montane Oak--Hickory Forest (Ba		none	S3	G3	Iredell	Current	null
Freshwater	Moxostom Robust Rec	E	none	S1	G1	Iredell	Historical	Pee Dee River; formerly in tributaries of this r
Vascular Pl	Najas graci Slender W	W7	none	S2	G5?	Iredell	Historical	pools and lakes
Mammal	Neotoma fl Southern A	W2	none	S3S4	G5T4Q	Iredell	Current	rocky places in deciduous or mixed forests, in
Mammal	Neotoma n Allegheny \	SC	none	S2S3	G3G4	Iredell	Historical	rocky places and abandoned buildings in deci
Vascular Pl	Oenothera Perennial S	SC-V	none	S2	G5	Iredell	Historical	wet meadows and bogs
Dragonfly c	Ophiogom Appalachia	W2	none	S3	G3	Iredell	Current	small to medium streams
Reptile	Ophisauru Slender Gl	SR	none	S1	G5	Iredell	Historical	old fields, wooded edges, open woods

Vascular Pl	Philadelphia Scentless N W1	none	S3	G4G5	Iredell	Historical	bluffs, cliffs, and rocky woods, mainly over ma
Natural Coi	Piedmont Alluvial Forest	none	S4	G4	Iredell	Current	null
Natural Coi	Piedmont Cliff (Acidic Subtype)	none	S2	G2?	Iredell	Current	null
Natural Coi	Piedmont Monadnock Forest (Typ	none	S3	G3G4	Iredell	Current	null
Natural Coi	Piedmont/Coastal Plain Heath Blu	none	S3	G3	Iredell	Current	null
Vascular Pl	Pinus strob Eastern Wf W6	none	S5	G5	Iredell	Historical	dry to moist woods and old fields
Vascular Pl	Pogonia op Rose Pogor W6	none	S3	G5	Iredell	Historical	open bogs and seepage slopes.
Vascular Pl	Polemoniu Jacob's Lad T	none	S1	G5T5	Iredell	Current	moist, nutrient-rich forests such as bottomlar
Vascular Pl	Primula mε Shooting-st SC-V	none	S2S3	G5	Iredell	Historical	mafic cliffs, dry coniferous woodlands, and as
Mayfly	Pseudiron i White Sanc SR	none	S2	G5	Iredell	Historical	Iredell County
Vascular Pl	Pseudogna Heller's Ra E	none	S2S3	G4G5T3T4	Iredell	Historical	dry woodlands and openings (especially over
Vascular Pl	Pyrola ame American S W1	none	S2S3	G5	Iredell	Historical	forests
Vascular Pl	Quercus pr Dwarf Chin E	none	S1	G5	Iredell	Historical	dry, rocky slopes
Moss	Rhachithec Budding Tc SR-D	none	S1S2	G4G5	Iredell	Historical	bark of hardwoods
Vascular Pl	Rumex alti: Pale Dock W7	none	S2?	G5	Iredell	Historical	low wet places
Vascular Pl	Sarracenia Northern P W6	none	S3	G5	Iredell	Historical	sphagnum bogs, moist savannahs and isolate
Butterfly	Satyrium fε Northern C SR	none	S2S3	G4G5T4	Iredell	Current	oak-dominated woods, usually in dry sites; hc
Vascular Pl	Sceptridiur Alabama G SC-V	none	S2	G3G4	Iredell	Historical	moist to dryish forests and disturbed areas
Vascular Pl	Sida eliotti Coastal Pla SR-P	none	S1	G4G5TNR	Iredell	Current	stream banks, sandy woodlands
Vascular Pl	Silphium cc Virginia Cu SC-V	none	S2	G5T3T4	Iredell	Current	floodplains, rich alluvial woods
Vascular Pl	Silphium pε Northern C T	none	S1	G5	Iredell	Historical	floodplains
Vascular Pl	Sium suave Hemlock V W6	none	S3S4	G5	Iredell	Historical	fresh or brachish marshes, swamps and creek
Butterfly	Speyeria di Diana Fritil W2	none	S3S4	G2G3	Iredell	Current	montane and foothill forest edges and openir
Moss	Sphagnum Peatmoss W1	none	S2S3	G4?	Iredell	Historical	bogs
Natural Coi	Spray Cliff	none	S2	G2	Iredell	Current	null
Beetle	Stenelmis ε Gammon's SR	none	S2	G2G3	Iredell	Current	South Fork New River, upper Yadkin River bas
Vascular Pl	Symphyotr Narrow-lea E	none	S2	G5T4	Iredell	Historical	forests, woodland borders especially over ma
Vascular Pl	Thermopsi: Appalachia SR-T	none	S2	G3G4	Iredell	Historical	dry ridges and open woodlands
Vascular Pl	Trifolium rε Buffalo Clo T	none	S1S2	G3G4	Iredell	Current	open woods and clearings
Mayfly	Tsalia bern a mayfly SR	none	S3	G4	Iredell	Current	probably widespread in clean streams and riv
Natural Coi	Upland Depression Swamp Forest	none	S2S3	G2G3	Iredell	Current	null
Bird	Vermivora Golden-wir SC	none	S2S3B	G4	Iredell	Historical	old fields and successional hardwoods [breed
Freshwater	Villosa delu Eastern Crε SR	none	S4	G4	Iredell	Current	Cape Fear, Lumber, Yadkin-Pee Dee, and Cata
Vascular Pl	Viola labra: Alpine Viol W7	none	S2?	G5	Iredell	Current	rich cove forests, bottomlands and seepage sl
Vascular Pl	Viola tripar Three-part W7	none	S2?	G5	Iredell	Historical	forests associated with basic soils

Reptile	Virginia val Smooth Ea W2	none	S3	G5	Iredell	Current	deciduous or mixed woods, usually in mesic s
Animal Ass	Waterbird Waterbird Colony	none	S3	GNR	Iredell	Current	null
Vascular Pl	Xyris jupica Richards Y€ W6	none	S3S4	G5	Iredell	Historical	ditches and various wet habitats
Freshwater	Acipenser l Shortnose : E	E	S1	G3	New Hano\	Current	brackish water of large rivers and estuaries; s
Freshwater	Acipenser c Atlantic Stu E	E	S2	G3T3	New Hano\	Current	coastal waters, estuaries, large rivers
Moth	Afrida ydat Dyar's Lich W3	none	S1S3	G5	New Hano\	Current	maritime forest and scrub?
Vascular Pl	Agalinis ap Scale-leaf C W1	none	S3	G3G4	New Hano\	Historical	wet savannas and Sandhills streamhead poco
Vascular Pl	Agalinis lini Flaxleaf Ge W1	none	S3	G4?	New Hano\	Current	savannas, clay-based Carolina bays, depressio
Vascular Pl	Agalinis viri Branched C T	none	S2	G3G4Q	New Hano\	Current	savannas and depression pond shores
Reptile	Alligator m American A T	T(S/A)	S3	G5	New Hano\	Current	fresh to slightly brackish lakes, ponds, rivers, ;
Vascular Pl	Amaranthu Seabeach A T	T	S1	G2	New Hano\	Current	ocean beaches and island-end flats
Butterfly	Amblyscirtu Dusky Roac SR	none	S2	G2G3	New Hano\	Current	open pine woods, savannas; host plants -- unl
Butterfly	Amblyscirtu Carolina Rc W2	none	S3S4	G3G4	New Hano\	Current	moist woods (mainly hardwoods) near cane; l
Amphibian	Ambystom Mabee's S€ T	none	S2	G4	New Hano\	Historical	shallow ephemeral wetlands, such as Carolina
Bird	Ammodran Grasshopp W1,W5	none	S3B,S1N	G5	New Hano\	Current	pastures and other grasslands [breeding seas
Bird	Ammospizc Saltmarsh ! SR	none	SUB,S2N	G2	New Hano\	Current	tidal marshes [wintering sites]
Vascular Pl	Amorpha c Savanna In T	none	S3	G3T3	New Hano\	Historical	wet savannas
Amphibian	Anaxyrus q Oak Toad SR	none	S2	G5	New Hano\	Current	pine flatwoods and savannas, pine sandhills w
Bird	Anhinga an Anhinga W2	none	S3B	G5	New Hano\	Current	wooded lakes or ponds, or open swamps (for
Moth	Anicla lubri Slippery Da W3	none	S3?	G4G5	New Hano\	Current	savannas and flatwoods
Freshwater	Anodonta c Barrel Floa E	none	S1	G4	New Hano\	Historical	Cape Fear drainage
Vascular Pl	Anthenanti Purple Silky W1	none	S2	G5	New Hano\	Historical	savannas
Moth	Argyrostro! Four-lined SR	none	S3	G4	New Hano\	Historical	pocosins and flatwoods
Vascular Pl	Aristida coi Big Three-€ T	none	S2	G4?	New Hano\	Current	bay rims with xeric pine-oak scrub
Vascular Pl	Aristida ter Hillsboro TI SR-P	none	S1	G5T5	New Hano\	Current	xeric sandhill scrub
Vascular Pl	Asclepias p Savanna M SC-V	none	S3	G4	New Hano\	Current	dry savannas and moist flatwoods
Vascular Pl	Astragalus Sandhills M SC-V	none	S3	G3	New Hano\	Historical	dry to xeric longleaf pine-oak woodlands and
Butterfly	Atrytone a! Eastern Arc SR	none	SH	G2G3T1T2	New Hano\	Historical	savannas, open pinewoods, and other relative
Butterfly	Atrytonops Loammi Sk SR	none	SH	G2	New Hano\	Historical	grassy areas near the coast; host plants presu
Vascular Pl	Baccharis a Saltwater F W1	none	S2	G4	New Hano\	Current	brackish marshes, shrubby marsh edges
Vascular Pl	Baccharis g Silverling E	none	S1	G4	New Hano\	Historical	shrubby areas on margins of brackish marshe
Vascular Pl	Bacopa car Blue Water T	none	S1	G4G5	New Hano\	Current	Shallow ponds, marshes, natural lakes, and ti
Vascular Pl	Bacopa inn Tropical W: SC-H	none	SH	G3G5	New Hano\	Historical	tidal freshwater marshes
Moss	Barbula inc Small Twist W7	none	S2?	G5?T5?	New Hano\	Historical	soil, clay, limestone, cement, walls
Vascular Pl	Bartonia p€ Twining Sci W1	none	S2S3	G5T5	New Hano\	Current	bogs, wet savannas, sandhill seeps, other ope

Vascular Pl	Bartonia ve White Scre	W1	none	S2	G5?	New Hano\	Historical	savannas, limesink ponds	
Vascular Pl	Boltonia as White Doll'	SR-O	none	S2	G5TNR	New Hano\	Current	clay-based Carolina bays, marshes, savannas	
Sawfly,	Wa Bombus fræ	Southern P	W3	none	S2S3	G2G4	New Hano\	Current	prairie remnants and urban gardens
Natural Coi	Brackish Marsh (Needlerush Subt)		none	S5	G5	New Hano\	Current	null	
Natural Coi	Brackish Marsh (Smooth Cordgras		none	S1	G3G4	New Hano\	Current	null	
Vascular Pl	Burmattia Northern B	W1	none	S2S3	G4G5	New Hano\	Historical	limesinks, cypress savannas, and sandhill seep	
Moth	Cabera quæ Four-lined	W3	none	SU	GNR	New Hano\	Current	unknown habitats	
Vascular Pl	Calamovilfæ Pinebarren	W1	none	S3	G4	New Hano\	Current	savannas, sandhill seeps	
Butterfly	Calephelis ' Little Meta	SR	none	S2	G4	New Hano\	Current	savannas and pine flatwoods; host plants -- væ	
Bird	Calidris car Red Knot -	T	T	SUB,S2N	G4T2	New Hano\	Current	beaches and sand flats [wintering sites]	
Vascular Pl	Cardamine Long's Bittæ	SC-V	none	S2	G3?	New Hano\	Current	tidal marshes and tidal cypress-gum forests	
Reptile	Caretta car Loggerhear	T	T	S2B	G3	New Hano\	Current	nests on beaches; forages in ocean and sounc	
Vascular Pl	Carex chap Chapman's	W1	none	S3	G3	New Hano\	Historical	moist bottomlands and slopes, perhaps assoc	
Vascular Pl	Carex deco Cypress Kn	SR-O	none	S2	G3G4	New Hano\	Historical	beaver ponds, old millponds; often on Taxodi	
Vascular Pl	Carex hyali Shoreline S	W1	none	S2	G4G5	New Hano\	Current	marshes	
Vascular Pl	Carex mitcl Mitchell's	W1	none	S2	G4	New Hano\	Current	swampy woodlands and forests	
Vascular Pl	Carex verræ Warty Sedæ	SR-P	none	S2	G4	New Hano\	Current	savannas and pinelands	
Moth	Caripeta ar Southern P	W3	none	S3S4	G4	New Hano\	Current	pine forests	
Moth	Catocala ar Three-staff	W3	none	SU	G4	New Hano\	Current	sand ridges and flatwoods with leadplant (Am	
Moth	Catocala ja Jair Underv	SR	none	S2	G4?	New Hano\	Current	xeric pine-oak sandhills	
Moth	Catocala m Marbled Uæ	SR	none	S1S3	G3G4	New Hano\	Current	forests with cottonwoods or willows, especial	
Moth	Catocala m Messalina	SR	none	S2?	G4?	New Hano\	Current	maritime forests and xeric sandhills	
Butterfly	Cecropteru Confused C	W3	none	S3S4	G4	New Hano\	Current	dry woodland borders and openings, brushy f	
Reptile	Cemophoræ Scarlet Sna	W1,W5	none	S3	G5	New Hano\	Current	sandhills, sandy woods, and other dry woods	
Moth	Cerastis fis a Dart Mot	W3	none	SU	G4	New Hano\	Current	heath thickets	
Moth	Cerma coræ Owl-eyed E	SR	none	S2S3	G3G4	New Hano\	Historical	levee forests with hawthorn	
Moth	Chaetaglae Ferguson's	SR	none	S1S2	G3G4	New Hano\	Current	sandhills	
Bird	Charadrius Piping Plov	T	T	S1B,S1N	G3T3	New Hano\	Current	ocean beaches and island-end flats [breeding	
Bird	Charadrius Wilson's Plæ	SC	none	S2B	G5	New Hano\	Current	beaches, island-end flats, estuarine islands [b	
Reptile	Chelonia m Green Seat	T	T	S1B	G3	New Hano\	Current	nests on beaches; forages in ocean and sounc	
Vascular Pl	Chrysopogræ Goldenbea	W4	none	S1	G4G5	New Hano\	Historical	sandhills	
Vascular Pl	Chrysopsis Naked Gola	W1	none	S2	G5T5	New Hano\	Current	xeric sandhills and sandhill scrub	
Moth	Chytonix sæ Barrens Mæ	W3	none	S3?	G4	New Hano\	Current	sandhills and flatwoods	
Lichen	Cladina evæ Powder-pu	W7	none	S2	G3G5	New Hano\	Current	sandhills (primarily near the coast) usually ass	
Vascular Pl	Cleistesiop Small Spreæ	W1	none	S3	G4?	New Hano\	Current	savannas, dry meadows	

Vascular PI	Cleistesiope Small Coast	W7	none	S2	G3?	New Hano	Current	Savannas
Reptile	Clemmys g Spotted Tu	W1	none	S4	G5	New Hano	Current	shallow water of pools, marshes, wet pasture
Natural Coi	Coastal Fringe Evergreen Forest (S		none	S1	G1G3	New Hano	Current	null
Natural Coi	Coastal Fringe Evergreen Forest (T		none	S2	G2	New Hano	Current	null
Natural Coi	Coastal Plain Depression Swamp (		none	S2	G3	New Hano	Current	null
Natural Coi	Coastal Plain Depression Swamp (		none	S3?	G3	New Hano	Current	null
Natural Coi	Coastal Plain Semipermanent Imp		none	S4	G4G5	New Hano	Current	null
Natural Coi	Coastal Plain Semipermanent Imp		none	S4	G5	New Hano	Current	null
Natural Coi	Coastal Plain Small Stream Swamp		none	S4	G4?	New Hano	Current	null
Vascular PI	Coelorachis Wrinkled Jr	W1	none	S3	G5	New Hano	Current	limesink ponds, clay-based Carolina bays, wet
Bird	Columbina Common	GSR	none	SXB	G5	New Hano	Historical	dunes, sandy fields, margins of maritime woo
Mammal	Condylura Star-nosed	SC	none	S2	G5T2Q	New Hano	Historical	moist meadows, bogs, swamps, bottomlands
Vascular PI	Corallorhiza Spring Cor	SR-O	none	S1	G5	New Hano	Current	nutrient-rich forests, especially over limeston
Mammal	Corynorhin Eastern Big	SC	none	S3	G3G4T3	New Hano	Current	roosts in hollow trees, old buildings, and bene
Vascular PI	Crataegus Neat Hawt	W7	none	S3?	G4G5TNR	New Hano	Historical	Longleaf pine sandhills, other xeric or subxeri
Vascular PI	Crinum am Swamp-lily	SC-H	none	SH	G5T5	New Hano	Historical	tidal swamp forests, tidal marshes
Vascular PI	Crocather Carolina	Su E	none	S1	G4	New Hano	Current	sandhills, pinelands, dry savannas
Vascular PI	Crocather Georgia	Su E	none	S1	G4	New Hano	Current	maritime forests
Vascular PI	Crocather Florida Scr	E	none	S1	G3?	New Hano	Current	coastal fringe sandhill
Reptile	Crotalus ac Eastern Dia	E	none	S1	G3	New Hano	Historical	pine flatwoods, savannas, pine-oak sandhills
Reptile	Crotalus hc Timber Rat	SC	none	S3	G4	New Hano	Current	wetland forests in the Coastal Plain; rocky, up
Moth	Cyclophora Sand-myrtle	SR	none	S1	G3	New Hano	Historical	flatwoods with sand-myrtle (Kalmia buxifolia)
Vascular PI	Cyperus di A Flatsedge	W4	none	SH	G5	New Hano	Historical	marshes
Vascular PI	Cyperus en Engelmann	W7	none	S1?	G4Q	New Hano	Current	alluvial and other damp to wet soils
Vascular PI	Cyperus lex Leconte's	FT	none	S2	G4?	New Hano	Historical	limesink ponds
Vascular PI	Cyperus tel Four-angle	SC-V	none	S2	G4?	New Hano	Historical	maritime forests and barrier island grasslands
Vascular PI	Cyperus vir Green Flats	SC-V	none	S1	G5	New Hano	Current	and ditches
Crustacean	Cytheridell Backwater	W3	none	S2?	GNR	New Hano	Current	quiet backwaters associated with large coasta
Moth	Dasychira l a Tussock	SR	none	S2S3	G4	New Hano	Historical	habitat not known
Moth	Datana ran Post-burn	SR	none	S2S3	G3G4	New Hano	Historical	recently burned flatwoods and sandhills
Reptile	Deirochelys Eastern Chi	SC	none	S2S3	G5T5	New Hano	Current	quiet waters of ponds, ditches, and sluggish s
Reptile	Dermochelys Leatherbac	E	E	S1B,SUN	G2	New Hano	Current	nests on beaches; forages in oceans, rarely in
Vascular PI	Dichanthe Hidden-flow	SR-T	none	S2	G3G4Q	New Hano	Historical	wet streamhead pocosin openings, including i
Vascular PI	Dichanthe Erectleaf	W1	none	S2	G4	New Hano	Current	pond shores
Vascular PI	Dichanthe Dehiscent	W7	none	S1?	G3	New Hano	Historical	dry pine/scrub oak woodlands

Vascular Pl	Dichanthe	Nerved Wil	SR-D	none	S1S2	G5T3	New Hano	Historical	Maritime wet grasslands, Piedmont barrens
Vascular Pl	Dichanthe	Webber's	W1	none	S3	GNR	New Hano	Current	moist pine savannas and flatwoods
Vascular Pl	Dionaea m	Venus Flytr	T	none	S2	G2	New Hano	Current	savannas, seepage bogs, pocosin edges
Moth	Doryodes k	Double-line	W3	none	SU	G4	New Hano	Current	marshes
Moth	Doryodes s	Wiregrass	I W3	none	S3S4	G3G4	New Hano	Current	savannas, flatwoods, and sandhills
Moth	Drasteria g	Graphic M	SR	none	S1S2	G4	New Hano	Historical	maritime shrub thickets
Vascular Pl	Drosera fili	Threadleaf	SC-V	none	S2	G4	New Hano	Current	depression ponds, wet borrow pits, and ditch
Natural Co	Dry-Mesic Oak--Hickory Forest (C			none	S3	G3G4	New Hano	Current	null
Vascular Pl	Dryopteris	Southern V	W1	none	S2	G4	New Hano	Historical	acid swamps
Natural Co	Dune Grass (Southern Subtype)			none	S2	G3	New Hano	Current	null
Bird	Egretta cae	Little Blue	I SC	none	S3B,S3N	G5	New Hano	Current	forests or thickets on maritime islands, rarely
Bird	Egretta thu	Snowy Egr	SC	none	S2S3B,S3N	G5	New Hano	Current	forests or thickets on maritime islands, rarely
Bird	Egretta tric	Tricolored	SC	none	S3B,S3N	G5	New Hano	Current	forests or thickets on maritime islands [breed
Freshwater	Elassoma e	Everglades	W3	none	S3	G5	New Hano	Current	southern Coastal Plain, mainly Waccamaw dr:
Vascular Pl	Eleocharis	Florida Spil	E	none	S1	G5?	New Hano	Current	limesink ponds
Vascular Pl	Eleocharis	Horsetail S	W1	none	S3	G4	New Hano	Historical	limesink ponds, lakes, borrow pits, ditches
Vascular Pl	Eleocharis	Robbins' S	SC-V	none	S2S3	G4G5	New Hano	Current	limesink ponds, clay-based Carolina bays, pea
Vascular Pl	Eleocharis	Three-angl	W1	none	S2S3	G4	New Hano	Current	bogs and savannas
Vascular Pl	Eleocharis	Viviparous	T	none	S1	G5	New Hano	Current	bogs and pools
Beetle	Ellipsopter	Sandbar Ti	W3	none	S2S3	G3G4	New Hano	Current	sandy floodplains and white sand bars along t
Freshwater	Elliptio ma	Cape Fear	SC	none	S2	G3Q	New Hano	Historical	Cape Fear and Neuse drainages (endemic to N
Freshwater	Enneacantl	Blackband	SR	none	S3	G3G4	New Hano	Current	many drainages, particularly Lumber and Wac
Freshwater	Enneacantl	Banded Sui	SR	none	S3	G5	New Hano	Current	most Atlantic drainages
Vascular Pl	Epidendrur	Green Fly	CT	none	S1S2	G4	New Hano	Current	epiphytic on trees in blackwater river swamps
Vascular Pl	Eriocaulon	Seven-angl	SC-V	none	S2	G5	New Hano	Current	blackwater creeks, natural lakes, tidal freshw:
Vascular Pl	Erythrina h	Coralbean	E	none	S2	G5	New Hano	Current	maritime forests
Moth	Eucoptocn	a Dart Mot	SR	none	S2S3	G4	New Hano	Historical	habitat not known
Bird	Eudocimus	White Ibis	W2	none	S3B,S3N	G5	New Hano	Current	forests or thickets on maritime islands, rarely
Freshwater	Euglandina	Rosy Wolfs	W3	none	S3?	G5	New Hano	Current	habitats poorly known
Vascular Pl	Eupatoriun	Limesink D	E	none	S2	G4G5	New Hano	Current	limesink ponds and clay-based Carolina bays
Vascular Pl	Euphorbia	Southern S	SR-T	none	S2?	G4G5	New Hano	Current	seabeaches
Butterfly	Euphyes d	Dukes' Skip	SR	none	S1S2	G3G4	New Hano	Current	ecotones of brackish or fresh marshes with sv
Moth	Eupithecia	Peck's Pug	W3	none	S3?	G4	New Hano	Current	sandhills and flatwoods
Reptile	Farancia er	Rainbow Sr	SR	none	S3	G4	New Hano	Current	swamps, lakes, rivers, and other sluggish wat
Moss	Fissidens e	A Plume M	W7	none	S2?	G5	New Hano	Historical	sandy and clayey soils along roadsides and str

Moss	<i>Fissidens fc</i>	Water Pool	W7	none	S2?	G5	New Hanover	Historical	attached to various substrata in stagnant and
Freshwater	<i>Fundulus l</i>	Spotfin Killifish	W2	none	S3	G4	New Hanover	Current	ponds and pools along coast
Liverwort	<i>Fuscocephala</i>	A Liverwort	SR-T	none	S1	G5T1Q	New Hanover	Historical	moist riverbank
Moth	<i>Gabara pul</i>	an Erebid	W3	none	S3?	G4	New Hanover	Current	habitats poorly known
Bird	<i>Gallinula g</i>	Common Grebe	W2	none	S3B,S2N	G5	New Hanover	Current	freshwater ponds and impoundments with m
Vascular Plant	<i>Gaylussacia</i>	Confederate	E	none	S1	G4	New Hanover	Current	coastal fringe sandhill
Bird	<i>Gelochelidon</i>	Gull-billed	T	none	S1S2B	G5	New Hanover	Current	sand flats on maritime islands [breeding evidence]
Vascular Plant	<i>Gelsemium</i>	Swamp	Jes SC-V	none	S1S2	G5	New Hanover	Current	floodplains of blackwater rivers and streams
Vascular Plant	<i>Habenaria</i>	Water-spider	W1	none	S2	G5	New Hanover	Historical	in stagnant, blackwater pools and impoundments
Bird	<i>Haematopus</i>	American Coot	SC	none	S2S3B,S3N	G5	New Hanover	Current	estuaries, oyster beds, mudflats [breeding evidence]
Bird	<i>Haliaeetus</i>	Bald Eagle	T	BGPA	S3B,S3N	G5	New Hanover	Current	mature forests near large bodies of water (near
Vascular Plant	<i>Helenium</i>	Dissected	SR-P	none	S2	G4	New Hanover	Historical	savannas and open, wet, mucky sites
Freshwater	<i>Helisoma</i>	Greenfield	E	none	S1	G1Q	New Hanover	Historical	Greenfield Lake (formerly), Town Creek in Brunswick
Bird	<i>Helmitherophilus</i>	Worm-eater	W5	none	S3B	G5TNR	New Hanover	Current	nonriverine wet hardwoods, pocosins [breeding evidence]
Butterfly	<i>Heraclides</i>	Eastern Giant	SR	none	S2S3	G5	New Hanover	Current	primarily coastal in maritime forests or thick
Grasshopper	<i>Hesperotettix</i>	Meadow	W3	none	SU	G5	New Hanover	Historical	sandhill seeps and wet pine savannas
Freshwater	<i>Heterandria</i>	Least Killifish	SC	none	S2	G5	New Hanover	Current	streams and lakes near Wilmington
Reptile	<i>Heterodon</i>	Southern	HT	none	S1S2	G2	New Hanover	Current	sandy woods, particularly pine-oak sandhills
Vascular Plant	<i>Hibiscus</i>	Comfort	T	none	S1	G4G5	New Hanover	Current	bay forests, sand ridges, and roadsides
Bird	<i>Himantopus</i>	Black-neck	SR	none	S1B	G5	New Hanover	Historical	fresh or brackish ponds and impoundments [
Vascular Plant	<i>Hypericum</i>	Coastal	SC-V	none	S1S2	G5	New Hanover	Current	wet pine savannas
Vascular Plant	<i>Hypericum</i>	Peelbark	St E	none	S1	G5	New Hanover	Historical	beaver ponds, low pinelands, pools
Moth	<i>Idaea</i>	ostreata	SR	none	S2S3	GNR	New Hanover	Current	sandhills
Moth	<i>Idaea</i>	prodigiosa	W3	none	SU	G4	New Hanover	Current	sandhills
Vascular Plant	<i>Ilex</i>	cassine	W1	none	S2	G5	New Hanover	Current	blackwater swamps and pocosins
Vascular Plant	<i>Iresine</i>	rhizantha	W1	none	S2S3	G5	New Hanover	Current	low wet places, interdune swales, damp woods
Moth	<i>Iridopsis</i>	cyathella	SR	none	S2S3	GU	New Hanover	Historical	cypress swamps
Vascular Plant	<i>Iris</i>	prismatica	SR-T	none	S1S2	G4G5	New Hanover	Current	bogs, marshes, and wet powerline clearings
Bird	<i>Ixobrychus</i>	Least Bittern	SC	none	S2S3B	G4G5	New Hanover	Current	fresh or brackish marshes [breeding evidence]
Reptile	<i>Kinosternon</i>	Striped	W3	none	S3S4	G5	New Hanover	Current	various shallow wet places; ponds, pools, ditches
Vascular Plant	<i>Lachnocaulon</i>	Brown Bog	T	none	S2	G3G4	New Hanover	Current	depression ponds and ditches
Bird	<i>Lanius ludovicianus</i>	Loggerhead	SC, W2	none	S2S3B,S3N	G4	New Hanover	Current	fields and pastures [breeding season only]
Mammal	<i>Lasiurus</i>	inlet	SC	none	S1	G5T4	New Hanover	Current	roosts in Spanish moss and other thick vegetation
Mammal	<i>Lasiurus</i>	seminole	W2	none	S3	G5	New Hanover	Current	forages over open areas, often over water (usually
Bird	<i>Laterallus j</i>	Black Rail	SC	T	S1	G3	New Hanover	Current	brackish marshes, rarely fresh marshes [breeding



Reptile	Lepidocheilus Kemp's Ridge	E	S1B,SUN	G1	New Hanover Current	nests on beaches, forages in ocean and sound
Freshwater	Lepomis punctatus Spotted Sunfish	none	S3	G5	New Hanover Current	most drainages in southern Coastal Plain
Dragonfly	Lestes viduus Carolina Spotted	none	S3	G5	New Hanover Current	ponds and pools
Vascular Plant	Liatris scariosa Sandhill Bluet	none	S2	G4G5	New Hanover Current	sandhills
Vascular Plant	Lilaeopsis carolinensis Carolina Grass	none	S2	G3G5	New Hanover Current	freshwater marshes, pools, tidal marshes
Reptile	Liodytes rigida Glossy Crayfish	none	S2	G5	New Hanover Current	marshes, cypress ponds, other wetlands
Moth	Lithophane pinionum Pinion Moth	none	SU	G4	New Hanover Current	sites dominated by xerophytic oaks
Moth	Litoprosopon palmettoe Palmetto Moth	none	SU	G4	New Hanover Current	palmettos
Vascular Plant	Litsea aestiviflora Pondspice	none	S2S3	G3?	New Hanover Current	limesink ponds, other pools
Vascular Plant	Lophiola alba Golden-creep	none	S2	G4	New Hanover Current	very wet, mucky habitats in pine savannas
Vascular Plant	Ludwigia alata Winged Spiderwort	none	S2	G3G5	New Hanover Historical	interdune ponds, marshes
Vascular Plant	Ludwigia lanceolata Lanceleaf Spiderwort	none	S1	G3	New Hanover Current	interdune ponds, open wet areas
Vascular Plant	Ludwigia linearifolia Flaxleaf Spiderwort	none	S2	G4	New Hanover Current	limesink ponds
Vascular Plant	Ludwigia racemosa Raven's Spiderwort	none	S1	G1G2	New Hanover Historical	savannas, swamps, marshes, wet open places
Vascular Plant	Ludwigia serotina Globe-fruit Spiderwort	none	S1	G5	New Hanover Current	bogs, pools, and lake shores
Vascular Plant	Ludwigia straminea Shrubby Spiderwort	none	S2	G5	New Hanover Current	limesink ponds, clay-based Carolina bays
Crustacean	Lynceus gracilis Graceful Copepod	none	S2	G5	New Hanover Historical	temporary ponds, pools, and ditches
Vascular Plant	Lysimachia aspera Rough-leaf	E	S3	G3	New Hanover Current	pocosin/savanna ecotones, pocosins
Vascular Plant	Lythrum latifolium Southern Lythrum	none	S1	G5T5	New Hanover Historical	marshes and low, wet places
Moth	Macrochilichneumon owlet Moth	none	SU	G3G4	New Hanover Current	brackish marshes
Dragonfly	Macrodiplax marlensis Marl Pennant	none	S2S3	G5	New Hanover Current	ponds and lakes near the coast, usually brackish
Vascular Plant	Magnolia grandifolia Southern Magnolia	none	S2?	G5	New Hanover Historical	mainland forests with maritime influence on interior
Reptile	Malaclemys terrapin Diamondback	none	S3	G4	New Hanover Current	salt or brackish marshes, estuaries
Natural Community	Maritime Dry Grassland (Typical)	none	S2	G2G3	New Hanover Current	null
Natural Community	Maritime Shrub (Stunted Tree)	none	S2	G3	New Hanover Obscure	null
Natural Community	Marsh Hammock	none	S2	G3?	New Hanover Historical	null
Reptile	Masticophis lateralis Coachwhip	none	S2	G5	New Hanover Current	dry and sandy woods, mainly in pine/oak sanctuaries
Sawfly, Wasp	Megachile albiflora leafcutter	none	SH	G1G3	New Hanover Historical	nectaring on Galactia and Erigeron
Sawfly, Wasp	Megachile albiflora leafcutter	none	SH	G2	New Hanover Historical	no habitat preferences currently known
Sawfly, Wasp	Megachile albiflora leafcutter	none	SH	G2G3	New Hanover Historical	no habitat preferences currently known (Bladder)
Sawfly, Wasp	Megachile albiflora leafcutter	none	S1S2	G1G2	New Hanover Current	nectaring on Hypericum and Oxydendrum
Sawfly, Wasp	Megachile albiflora leafcutter	none	SH	G1G3	New Hanover Historical	dunes, xeric pine savannas, disturbed areas (Coastal)
Sawfly, Wasp	Megachile albiflora leafcutter	none	SH	G4G5	New Hanover Historical	documented on Actinella, Chrysopsis, Helianthus
Butterfly	Megathymus yuccae Yucca Giant	none	S3S4	G5	New Hanover Current	dunes, flatwoods, old fields, and other places
Grasshopper	Mermiria bimaculata Two-stripe	none	S2S3	G5	New Hanover Current	dune grasslands and other grassy areas in or near

Grasshopper	Mermiria p Lively Merr	W3	none	S3?	G5	New Hano\ Historical	longleaf pine savannas and flatwoods
Moth	Metalectra White-line	SR	none	S2S3	GNR	New Hano\ Historical	no habitat information
Moth	Metarrantl Mid-Atlant	W3	none	S3S4	G3G4	New Hano\ Current	pocosins
Liverwort	Metzgeria l A Liverwort	W7	none	S1	G3	New Hano\ Historical	on bark in maritime forests or on rhododendr
Reptile	Micrurus fl Eastern Co	E	none	S1	G5	New Hano\ Current	pine-oak sandhills, sandy flatwoods, maritime
Mammal	Myotis aus Southeaste	SC	none	S2	G4	New Hano\ Historical	roosts in buildings, hollow trees; forages near
Mammal	Myotis sep Northern L	T	T	S2	G1G2	New Hano\ Historical	roosts in hollow trees and buildings (warmer i
Moth	Nemoria bi White-barr	W3	none	S3?	G4	New Hano\ Current	sandhills and sandy forests
Butterfly	Neonymph Georgia Sa	SR	none	S2	G3G4	New Hano\ Historical	savannas, wet powerline clearings, other dam
Moth	Neoplynes a Wasp Mc	W3	none	S2S3	G5	New Hano\ Current	unknown
Mammal	Neotoma fl Eastern Wc	T	none	S1	G5T5	New Hano\ Current	forests, mainly in moist areas
Natural Coi	Nonriverine Swamp Forest (Mixed		none	S3	G3	New Hano\ Current	null
Freshwater	Notropis cl Ironcolor S	SR	none	S2S3	G4	New Hano\ Historical	coastal plain rivers and creeks
Freshwater	Noturus sp Broadtail N	SC	none	S1	G2	New Hano\ Historical	Cape Fear, Waccamaw, and Lumber drainage:
Vascular Pl	Nuphar sag Cape Fear	W1	none	S3	G5T2	New Hano\ Current	blackwater streams, rivers, and lakes
Bird	Nycticorax Black-crow	W1	none	S3B,S3N	G5	New Hano\ Current	maritime thickets or forests, almost always or
Vascular Pl	Oenothera Riverbank I	SR-L	none	S2S3	G2G3	New Hano\ Current	Freshwater tidal marshes and freshwater tida
Animal Ass	Onslow Bay Intertidal Rock Outcro		none	S1	G1?	New Hano\ Current	null
Animal Ass	Onslow Bay Marine Rock Outcrop		none	S3?	G1?	New Hano\ Current	null
Reptile	Ophisaurus Mimic Glas	SC	none	S1	G3	New Hano\ Historical	pine flatwoods, savannas, pine/oak sandhills
Grasshopper	Orchelimum Bradley's N	W3	none	SU	GNR	New Hano\ Historical	maidencane and sawgrass marshes
Vascular Pl	Orthochilus Spiked Mex	E	none	S1	G2G3	New Hano\ Current	Mesic pinelands with blackjack oak,Â sandhill:
Freshwater	Oxyloma el Coastal-pla	W3	none	SU	G3	New Hano\ Historical	wetlands with Sagittaria; very little locality inf
Vascular Pl	Panicum te Southeaste	W1	none	S3	G4	New Hano\ Current	wet savannas, sandhill seeps, limesink ponds
Vascular Pl	Parietaria f Florida Pell	W4	none	S1	G5	New Hano\ Historical	shell middens, disturbed sites, maritime fores
Vascular Pl	Parietaria ç Large-seed	SR-P	none	S1	G3G4	New Hano\ Historical	shell middens, disturbed sites, maritime fores
Vascular Pl	Paspalum ç Early Crow	W1	none	S2S3	G4	New Hano\ Current	limesink ponds and savannas
Bird	Passerina c Painted Bu	SC	none	S2B	G5	New Hano\ Current	maritime shrub thickets and forest edges [bre
Natural Coi	Peatland Atlantic White Cedar For		none	S1	G2	New Hano\ Current	null
Bird	Pelecanus l Brown Peli	SR	none	S3B,S4N	G4	New Hano\ Current	maritime islands [breeding evidence only]
Vascular Pl	Peltandra s Spoonflow	SR-P	none	S2S3	G3G4	New Hano\ Current	pocosins, other wet, peaty sites
Mammal	Perimyotis Tricolored	SR	none	S3	G2G3	New Hano\ Historical	roosts in clumps of leaves (mainly in summer)
Vascular Pl	Persea bor Upland Rec	W7	none	S2	G5	New Hano\ Current	sandy upland soils in maritime forests
Vascular Pl	Persicaria c Dense-flow	W1	none	S3	G5	New Hano\ Current	Swamp forests
Bird	Peucaea ae Bachman's	SC	none	S3B,S2N	G3	New Hano\ Current	open longleaf pine forests, old fields [breedin

Dragonfly c	Phanogom	Clearlake C SR	none	S2	G4	New Hano\	Historical	lakes and ponds
Butterfly	Phyciodes j	Phaon Cres W5	none	S2S3	G5	New Hano\	Current	open, often dry areas, mainly on barrier island
Vascular PI	Physalis lar	Sandhill Gr W1	none	S2?	G3Q	New Hano\	Historical	sandhills
Vascular PI	Phytolacca	Maritime P W7	none	S2	G5T5	New Hano\	Current	dunes, edges of brackish or salt marshes
Bird	Picoides bc	Red-cockac E	E	S2	G3	New Hano\	Current	mature open pine forests, mainly in longleaf p
Natural Coi	Pine/Scrub Oak	Sandhill (Coastal F	none	S2	G2	New Hano\	Current	null
Natural Coi	Pine/Scrub Oak	Sandhill (Mixed O	none	S3	G3?	New Hano\	Current	null
Vascular PI	Pinguicula	Yellow Butl SC-V	none	S1	G4G5	New Hano\	Current	savannas
Reptile	Pituophis n	Northern P T	none	S2	G4T4	New Hano\	Historical	dry and sandy woods, mainly in pine/oak sanc
Freshwater	Planorbella	Magnificen E	C	S1	G1	New Hano\	Historical	Orton Pond and pond on Sand Hill Creek; for
Vascular PI	Platantherc	Snowy Orcl E	none	SH	G5	New Hano\	Historical	wet savannas
Bird	Plegadis fal	Glossy Ibis SC	none	S1S2B	G5	New Hano\	Current	forests or thickets on maritime islands [breed
Bird	Podilymbu:	Pied-billed W2	none	S3B,S5N	G5	New Hano\	Current	fresh to slightly brackish ponds and impoundr
Vascular PI	Polygala hc	Hooker's M SC-V	none	S2S3	G3	New Hano\	Current	savannas
Vascular PI	Polygonum	Seabeach k E	none	S1	G3	New Hano\	Historical	ocean and sound beaches
Natural Coi	Pond Pine	Woodland (Typic Subty	none	S3	G3	New Hano\	Current	null
Moth	Ponometia a	Bird-drop W3	none	S2S3	GNR	New Hano\	Current	cypress swamps?
Butterfly	Problema k	Rare Skippi SR	none	S1	G3	New Hano\	Current	fresh to brackish marshes with tall grasses in '
Crustacean	Procambar	Coastal Pla W2	none	S3	G4G5	New Hano\	Current	ditches, streams, and lakes in the southeaster
Crustacean	Procambar	Carolina Sa W2	none	S3S4	G4	New Hano\	Current	still-water habitats and burrows in the Cape F
Amphibian	Pseudacris	Ornate Chc E	none	S2	G4	New Hano\	Historical	swamps, savannas, wooded ponds and pools
Vascular PI	Ptilimnium	Carolina Bi: SR-T	none	S1	G1	New Hano\	Current	tidal freshwater marshes
Vascular PI	Ptilimnium	Ribbed Bisl T	none	S1	GNR	New Hano\	Current	tidal swamps or marshes
Moth	Pyrrhia aur	Orange Sal SR	none	S1S3	G3G4	New Hano\	Historical	dry woods with false-foxfloves (Aureolaria)
Vascular PI	Quercus ell	Running O: E	none	S2	G3G5	New Hano\	Historical	mesic pine flatwoods and dry, silty sites
Vascular PI	Quercus m	Dwarf Live E	none	S1	G5	New Hano\	Current	pine flatwoods, coastal fringe sandhills
Bird	Rallus eleg:	King Rail W1,W3	none	S3B,S3N	G4	New Hano\	Current	fresh to slightly brackish marshes [breeding e
Amphibian	Rana capitc	Carolina Gc E	none	S2	G2G3	New Hano\	Historical	breeds in temporary fish-free pools; forages i
Reptile	Rhadinaea	Pine Wood W2	none	S3	G4	New Hano\	Current	pine flatwoods and other damp woodlands
Vascular PI	Rhexia cub	West Indie: W1	none	S3	G4G5	New Hano\	Current	limesink ponds
Vascular PI	Rhynchosp	Carey's Be: W1	none	S2	G4?Q	New Hano\	Current	limesink ponds, clay-based bays
Vascular PI	Rhynchosp	Narrowfrui W1	none	S3	G4?	New Hano\	Current	limesink ponds, clay-based Carolina bays
Vascular PI	Rhynchosp	Pale Beaks W1	none	S3	G3	New Hano\	Current	savannas, sandhill seeps, and pocosins
Vascular PI	Rhynchosp	Coastal Be: T	none	S2	G2G3	New Hano\	Current	limesink ponds
Vascular PI	Rhynchosp	Long-beak W1	none	S3	G4	New Hano\	Current	beaver ponds, limesink ponds, wet savannas

Vascular PI Rhynchospora Tracy's Beach	none	S2	G4	New Hanover Current	clay-based Carolina bays, limesink ponds
Vascular PI Rhynchospora Wright's Beach W1	none	S3	G5	New Hanover Current	savannas
Bird Rynchops r Black Skimmer SC	none	S2B,S3N	G5	New Hanover Current	sand flats on maritime islands [breeding evidence]
Vascular PI Sabal palm Cabbage Palm T	none	S1	G5	New Hanover Current	maritime forests on the southeastern coast
Vascular PI Sabatia douglasii Large Marsh W1	none	S3?	G5?	New Hanover Historical	tidal, brackish, and freshwater marshes
Vascular PI Sagittaria arifolia Quillwort AT	none	S2	G4?	New Hanover Current	limesink ponds, clay-based Carolina bays, beaches
Vascular PI Sagittaria virginica Grassleaf A E	none	S2	G5T3T4	New Hanover Current	fresh to slightly brackish marshes, streams, swamps
Natural Community Salt Flat	none	S4	G5	New Hanover Current	null
Natural Community Salt Marsh (Carolinian Subtype)	none	S4	G5	New Hanover Current	null
Natural Community Salt Shrub (High Subtype)	none	S4?	G5	New Hanover Current	null
Natural Community Salt Shrub (Low Subtype)	none	S4?	G4	New Hanover Current	null
Vascular PI Salvia azurea Azure Sage SR-P	none	S2	G4G5T4?Q	New Hanover Historical	sandhills
Natural Community Sand Barren (Typical Subtype)	none	S2	G2	New Hanover Current	null
Natural Community Sandy Pine Savanna (Typical Subtype)	none	S1	G3	New Hanover Current	null
Vascular PI Sarracenia hooded Hooded Pitcher Plant E	none	S2	G4T4	New Hanover Current	savannas
Butterfly Satyrium fedora Southern C SR	none	S1	G4G5T4	New Hanover Current	maritime forests along southern coast; host plants
Moth Schinia sanguinalis Bleeding Flower W3	none	S2S3	G4	New Hanover Historical	pine barrens, prairies, dunes and dry open areas
Moth Schinia scissura Divided Flower W3	none	S2S3	GNR	New Hanover Current	open areas
Moth Schinia sepulchralis Northern Flower SR	none	SH	G3G4	New Hanover Historical	sandhills
Moth Schinia sirens Alluring Scissor W3	none	SU	GNR	New Hanover Current	open hardwood forests
Moth Schinia sordida Sordid Flower W3	none	S2S3	G4?	New Hanover Current	savannas
Vascular PI Schizachyria Seaside Litter W1	none	S2S3	G5T5	New Hanover Current	coastal dunes and maritime dry grasslands
Moth Schizura apicalis Plain Schizura SR	none	S1S2	G3G4	New Hanover Historical	dry woodland and scrub habitats
Vascular PI Schoenoplectus Olney Thresh W7	none	S1?	G5	New Hanover Current	tidal marshes
Vascular PI Schoenoplectus California E W3	none	SH	G5	New Hanover Historical	tidal marshes
Vascular PI Scirpus lineare Drooping B T	none	S2	G4	New Hanover Current	low rich woods over marl
Mammal Sciurus niger Eastern Fox W2	none	S3	G5	New Hanover Current	open forests, mainly longleaf pine/scrub oak
Vascular PI Scleria georgiana Georgia Nut W1	none	S3	G4	New Hanover Current	savannas
Vascular PI Scleria reticularis Netted Nut SC-V	none	S2	G4	New Hanover Current	clay-based Carolina bays, limesink ponds
Vascular PI Scleria verticillata Savanna Nut SR-P	none	S2	G5	New Hanover Historical	calcareous wet savannas, maritime wet grasslands
Vascular PI Sclerolepis One-flowered SR-T	none	S2	G4	New Hanover Historical	clay-based Carolina bays, blackwater river floodplains
Moth Scopula aequalis Diminutive W3	none	SU	GNR	New Hanover Current	on Trillium
Reptile Seminatrix Carolina Snake SC	none	S2	G5T4	New Hanover Historical	in lush vegetation of ponds, ditches, or sluggish streams
Vascular PI Sesuvium portulacastrum Slender Sea Purslane SR-O	none	S1	G5	New Hanover Current	seabeaches, marshes
Vascular PI Sesuvium portulacastrum Shoreline Sea Purslane SR-P	none	S1	G5	New Hanover Current	seabeaches

Vascular PI Sideroxylon Buckthorn	W1	none	S2S3	G5	New Hano\ Current	maritime forests, bluffs or forests over calcareous
Vascular PI Sideroxylon Tough Burr	T	none	S1	G3?	New Hano\ Current	maritime forests and scrub
Amphibian Siren lacert Greater Sir	W3	none	S3	G5	New Hano\ Current	lakes, ponds, and streams, especially where near
Reptile Sistrurus m Carolina Pi	SC	none	S2	G5T4T5	New Hano\ Current	pine flatwoods, pine/oak sandhills, other pine
Natural Coi Small Depression Drawdown	Mea	none	S2S3	G2?	New Hano\ Current	null
Natural Coi Small Depression Pocosin (Typic S		none	S2S3	G2G3	New Hano\ Current	null
Natural Coi Small Depression Pond (Open Lily		none	S3	G3?	New Hano\ Current	null
Natural Coi Small Depression Pond (Typic Mar		none	S3	G3?	New Hano\ Current	null
Natural Coi Small Depression Shrub Border		none	S3	G3?	New Hano\ Current	null
Vascular PI Solanum p Graceful Ni	SR-T	none	S1	GNR	New Hano\ Historical	dunes
Vascular PI Solidago p Carolina G	W1	none	S3	G3	New Hano\ Historical	savannas
Vascular PI Solidago to Twisted-lea	E	none	S1	G4G5	New Hano\ Historical	dry savannas and and mesic flats
Vascular PI Solidago ve Spring-flow	T	none	S3	G3	New Hano\ Current	mesic to moist pinelands, pocosin ecotones
Vascular PI Solidago vi Coastal Go	E	none	S1	G1	New Hano\ Historical	edges and openings in maritime upland forest
Moth Spilosoma Dubious Ti	W3	none	S3?	G5	New Hano\ Current	acidic wetlands
Vascular PI Spiranthes Lace-lip La	SC-V	none	S2	G4G5	New Hano\ Current	moist wet habitats
Amphibian Stereochilus Many-linec	W5	none	S3S4	G5	New Hano\ Current	swamps, shallow wooded ponds in savannas
Bird Sterna hiru Common T	E	none	S2B	G5	New Hano\ Current	sand flats on maritime islands [breeding evidence]
Bird Sternula ar Least Tern	SC	none	S3B	G4	New Hano\ Current	beaches, sand flats, open dunes, gravel rooftops
Vascular PI Stylisma pi Pickering's	SC-V	none	S3	G4T3	New Hano\ Current	sandhills
Natural Coi Swamp Island Evergreen Forest		none	S2S3	G2G3	New Hano\ Current	null
Vascular PI Symphyotri Elliott's Ast	W1	none	S2S3	G4	New Hano\ Historical	freshwater to brackish marshes, swamps, and
Vascular PI Symphyotri Simmonds'	W1	none	S2S3	G4G5	New Hano\ Historical	wet ditches
Moth Sympistis p Scribbled S	W3	none	SU	G4	New Hano\ Current	on toadflax
Vascular PI Syngonanth Yellow Hat	W1	none	S3	G5	New Hano\ Historical	ditches, pocosin ecotones, savannas
Vascular PI Thalictrum Cooley's M	E	E	S1	G1	New Hano\ Current	wet savannas
Vascular PI Thalictrum Small-leave	SC-V	none	S2	G3G4	New Hano\ Current	bogs and wet woods
Natural Coi Tidal Freshwater Marsh (Cattail Su		none	S3	G4G5	New Hano\ Current	null
Natural Coi Tidal Freshwater Marsh (Giant Coi		none	S4	G4	New Hano\ Current	null
Natural Coi Tidal Freshwater Marsh (Mixed Fr		none	S1	G2?	New Hano\ Current	null
Natural Coi Tidal Freshwater Marsh (Narrowle		none	S1S2	G1G2	New Hano\ Current	null
Natural Coi Tidal Freshwater Marsh (Sawgrass		none	S4	G4?	New Hano\ Current	null
Natural Coi Tidal Freshwater Marsh (Shrub Su		none	S4	G4	New Hano\ Current	null
Natural Coi Tidal Freshwater Marsh (Southern		none	S4	G3G5	New Hano\ Current	null
Natural Coi Tidal Freshwater Marsh (Threesqu		none	S2S3	G2G3	New Hano\ Current	null

Natural Coi	Tidal Swamp (Cypress--Gum Subty	none	S4	G3G4	New Hano\	Current	null	
Mammal	Trichechus West Indiai	T	T	S1N	G2G3	New Hano\	Current	warm waters of estuaries and river mouths
Vascular Pl	Trichostem Dune Bluec	SC-V	none	S2	G2	New Hano\	Current	dunes, openings in maritime forest and scrub
Vascular Pl	Trifolium c: Carolina Cl	SC-H	none	SH	G5	New Hano\	Historical	savannas, sandy open areas
Freshwater	Triodopsis Cape Fear	T	none	S2S3	G2	New Hano\	Current	swampy habitats in the southeastern portion
Bird	Tyto alba Barn Owl	SC	none	S2S3B,S3N	G5	New Hano\	Current	extensive open country, nesting in old buildin
Vascular Pl	Utricularia Horned Bla	T	none	S1S2	G5	New Hano\	Current	bogs, limesink ponds
Vascular Pl	Utricularia Dwarf Blad	T	none	S2	G4	New Hano\	Current	limesink ponds, beaver ponds
Vascular Pl	Verbena sc Sandpaper	W7	none	S2?	G5	New Hano\	Historical	marsh edges, shell middens
Natural Coi	Vernal Pool (Typic Subtype)	none	S2S3	G2?	New Hano\	Current	null	
Freshwater	Vertigo rug Striate Veri	W3	none	S2S3	G4	New Hano\	Current	primarily in thatch of grasses and sedges in o
Vascular Pl	Vigna lutec Wild Cowp	W4	none	S1?	G5	New Hano\	Historical	marsh edges, wet open areas
Vascular Pl	Viola villos: Carolina Vi	W7	none	S2	G5	New Hano\	Historical	moist places, especially pocosin edges
Reptile	Virginia val Smooth Ea	W2	none	S3	G5	New Hano\	Current	deciduous or mixed woods, usually in mesic s
Animal Ass	Waterbird Waterbird Colony	none	S3	GNR	New Hano\	Current	null	
Moss	Weissia m: A Moss	W7	none	S2?	G5	New Hano\	Historical	soil among grasses, roadsides
Natural Coi	Wet Loamy Pine Savanna	none	S1	G1	New Hano\	Current	null	
Natural Coi	Wet Pine Flatwoods (Typic Subtyp	none	S3	G3	New Hano\	Current	null	
Natural Coi	Xeric Sandhill Scrub (Coastal Fring	none	S2	G2?	New Hano\	Current	null	
Natural Coi	Xeric Sandhill Scrub (Typic Subtyp	none	S3S4	G3?	New Hano\	Current	null	
Moth	Xestia your Young's Da	W3	none	S3S4	G5	New Hano\	Current	peatlands
Vascular Pl	Xyris smalli Small's Yell	W1	none	S3	G5	New Hano\	Current	pineland pools, limesink ponds, shores
Vascular Pl	Yucca aloifi Aloe Yucca	W1	none	S2?	G5	New Hano\	Current	dunes
Vascular Pl	Yucca glori Moundlily	SR-P	none	S2?	G4?	New Hano\	Current	dunes
Moth	Zale declar Dixie Zale	SR	none	S2S3	G5	New Hano\	Historical	maritime forests with live oak
Moth	Zale sp. 3 nan Owlet	W3	none	S2S3	G3G4	New Hano\	Current	pine forests
Vascular Pl	Zizania aqu Indian Wilc	W7	none	S2	G5T5	New Hano\	Current	freshwater marshes
Bird	Accipiter st Sharp-shini	SR	none	S1B,S4N	G5	Orange	Historical	forests and woodlands (for nesting) [breeding
Vascular Pl	Agalinis de Piedmont	W1	none	S3	G3G4	Orange	Current	dry, open sites
Vascular Pl	Agastache Yellow Giar	SR-P	none	S1	G5	Orange	Current	oak--hickory forests, especially over mafic roc
Freshwater	Alasmidont Dwarf Wec	E	E	S1	G1G2	Orange	Historical	Tar and Neuse drainages, mainly near Fall Lin
Freshwater	Ambloplite Roanoke B:	SR	none	S2	G3	Orange	Current	streams in Neuse and Tar systems
Bird	Ammodran Henslow's	: E	none	S1B,S1N	G4	Orange	Historical	clearcut pocosins and other damp weedy field
Bird	Ammodran Grasshopp	W1,W5	none	S3B,S1N	G5	Orange	Current	pastures and other grasslands [breeding seas
Vascular Pl	Aralia racei American S	W6	none	S4	G5	Orange	Historical	rich woods

Vascular Pl	Asplenium Bradley's S	SR-P	none	S2	G4	Orange	Current	acidic rock outcrops and cliffs	
Vascular Pl	Asplenium Mountain	W6	none	S4	G5	Orange	Historical	acidic rocks	
Vascular Pl	Buchnera American	E E	none	S1	G5?	Orange	Historical	glades, open forests, streambanks, probably	
Vascular Pl	Carex grandis	Limestone W7	none	S1?	G5	Orange	Historical	piedmont bottomlands, coastal plain marl for	
Vascular Pl	Carex torta	Twisted Se	W6	none	S3	G5	Orange	Historical	rocky streambeds
Vascular Pl	Crataegus Fleshy Haw	SR-P	none	S1S2	G5T5	Orange	Historical	high elevation rocky summits, mesic forests,	
Vascular Pl	Cystopteris Bulblet	Bl	W7	none	S1S2	G5	Orange	Current	calcareous rocks
Vascular Pl	Desmodium Creamy Tic	SC-H	none	SH	G2G3	Orange	Historical	sandy or rocky woodland openings	
Crustacean	Diatom	Carolina W	SC	none	SH	G3G4T1T2	Orange	Historical	well in Orange County (endemic to North Car
Freshwater	Etheostom	Carolina D	SC	none	S3	G3	Orange	Current	Roanoke, Tar, Neuse, Cape Fear, Yadkin-Pee L
Freshwater	Etheostom	Fantail Dar	W5	none	S3	G5	Orange	Current	Cape Fear, Neuse, and Tar drainage populatio
Butterfly	Heraclides	Eastern Gi	SR	none	S2S3	G5	Orange	Historical	primarily coastal in maritime forests or thicke
Freshwater	Lampsilis r	Eastern Lar	T	none	S3	G5	Orange	Current	Chowan, Roanoke, Tar, Neuse, Cape Fear, Yac
Freshwater	Lasmigona	Green Floa	E	none	S2	G3	Orange	Current	New, Watauga, Roanoke, Tar, Neuse and Yadd
Dragonfly	Lestes forc	Sweetflag	SR	none	S1S2	G5	Orange	Historical	vegetated ponds
Vascular Pl	Lindera me	Pondberry	E	E	S1	G3	Orange	Historical	Carolina bays and seasonally wet depressions
Freshwater	Moxostom	Robust Rec	E	none	S1	G1	Orange	Historical	Pee Dee River; formerly in tributaries of this r
Mammal	Mustela fr	Long-tailed	W3	none	S3	G5	Orange	Current	forests, brushy areas
Vascular Pl	Nanopana	Dwarf Gins	W1	none	S3	G5	Orange	Current	cove forests, northern hardwoods, other rich
Amphibian	Necturus l	Neuse Rive	SC	T	S2	G2	Orange	Current	rivers and large streams in Neuse and Tar dra
Vascular Pl	Orbexilum	Sampson's	E	none	S1	G5T5?	Orange	Current	open woodlands
Vascular Pl	Primula m	Shooting-st	SC-V	none	S2S3	G5	Orange	Historical	mafic cliffs, dry coniferous woodlands, and as
Vascular Pl	Pyrola ame	American	SW1	none	S2S3	G5	Orange	Current	forests
Vascular Pl	Sabatia qu	Four-angle	W7	none	S2	G4G5	Orange	Historical	moist to mesic grassy glades, woodland borde
Vascular Pl	Scutellaria	Shale-barr	E	none	S2	G4T4	Orange	Historical	diabase glades
Dragonfly	Somatochl	Coppery Er	SR	none	S1?	G3G4	Orange	Historical	creeks and other slow-moving acidic streams,
Vascular Pl	Steironem	Appalachia	SR-P	none	S2	G4	Orange	Historical	Moist to dry upland forests, especially over ca
Freshwater	Strophitus	Creeper	T	none	S3	G5	Orange	Current	Roanoke, Tar, Neuse, Cape Fear, Yadkin-Pee L
Vascular Pl	Symphyotr	Smooth Bl	SR-P	none	S1S2	G5	Orange	Historical	forests, woodland borders especially over ma
Vascular Pl	Tradescant	Virginia Spi	T	none	S2S3	G5	Orange	Current	rich woods on circumneutral soils
Liverwort	Tritomaria	A Liverwort	W7	none	S1	G4	Orange	Historical	in moist depressions in savannas or on clay-p
Bird	Tyrannus fr	Scissor-tail	W3	none	SUB	G5	Orange	Historical	extensive pastures and fields with scattered t
Freshwater	Villosa del	Eastern Cr	SR	none	S4	G4	Orange	Current	Cape Fear, Lumber, Yadkin-Pee Dee, and Cata
Bird	Vireo gilvu	Warbling V	SR	none	S2B	G5	Orange	Current	groves of hardwoods along rivers and stream
Reptile	Virginia val	Smooth Ea	W2	none	S3	G5	Orange	Current	deciduous or mixed woods, usually in mesic s

Freshwater Acipenser l Shortnose	E	S1	G3	Pender	Current	brackish water of large rivers and estuaries; s	
Freshwater Acipenser c Atlantic St	E	S2	G3T3	Pender	Current	coastal waters, estuaries, large rivers	
Moth Acronicta l Narrow-wi	W3	none	S3?	G4	Pender	Current	flatwoods
Moth Acronicta s a Dagger	MSR	none	S1S2	G3G4	Pender	Historical	savannas and flatwoods
Vascular Pl Agalinis ap Scale-leaf	C W1	none	S3	G3G4	Pender	Current	wet savannas and Sandhills streamhead poco
Vascular Pl Agalinis lini Flaxleaf	Ge W1	none	S3	G4?	Pender	Current	savannas, clay-based Carolina bays, depressio
Vascular Pl Agalinis ob Blunt-leaf	f W1	none	S2S3	G4	Pender	Current	savannas, seepage bogs, and wet ecotones
Vascular Pl Agalinis viri Branched	C T	none	S2	G3G4Q	Pender	Current	savannas and depression pond shores
Vascular Pl Agrostis alt Tall Bentgr.	SR-T	none	S2	G4	Pender	Current	wet savannas
Moth Agrotis caria Dart Mot	SR	none	S2S3	G2G3Q	Pender	Historical	flatwoods with pyxie-moss (Pyxidantha) (en
Vascular Pl Aletris lute Yellow Coli	T	none	S1	G4G5	Pender	Current	pine savannas
Reptile Alligator m American	A T	T(S/A)	S3	G5	Pender	Current	fresh to slightly brackish lakes, ponds, rivers, i
Vascular Pl Allium sp. 1 Savanna O	SR-L	none	S1S2	G1G2	Pender	Current	wet savannas
Vascular Pl Amaranthu Seabeach	A T	T	S1	G2	Pender	Current	ocean beaches and island-end flats
Butterfly Amblyscirta Dusky Roac	SR	none	S2	G2G3	Pender	Historical	open pine woods, savannas; host plants -- unl
Butterfly Amblyscirta Reversed	R SR	none	S3	G3G4	Pender	Historical	flatwoods, savannas, pocosin borders, near c
Amphibian Ambystom Mabee's	S T	none	S2	G4	Pender	Historical	shallow ephemeral wetlands, such as Carolina
Mayfly Amercaeni a mayfly	SR	none	S1	G3	Pender	Historical	River, Pee Dee River
Bird Ammodran Henslow's	E	none	S1B,S1N	G4	Pender	Historical	clearcut pocosins and other damp weedy field
Bird Ammospiza Saltmarsh	S SR	none	SUB,S2N	G2	Pender	Current	tidal marshes [wintering sites]
Vascular Pl Amorpha g Georgia Inc	E	none	S2	G3T2	Pender	Current	mesic to moist terraces along blackwater stre
Vascular Pl Amphicarp Pinebarren	W1	none	S3	G4	Pender	Current	pine savannas, pocosins, shallow peat burns i
Amphibian Anaxyrus q Oak Toad	SR	none	S2	G5	Pender	Current	pine flatwoods and savannas, pine sandhills w
Sawfly, Wa Andrena ac Two-spott	W3	none	SH	GNR	Pender	Historical	savanna habitat with Asteraceae, especially H
Vascular Pl Andropogo Bog Bluest	SC-V	none	S2	G4?	Pender	Current	wet savannas
Vascular Pl Andropogo Narrowleaf	W1	none	S2S3	G5T4	Pender	Current	clay-based Carolina bays, upland depressions
Vascular Pl Andropogo Deceptive	I W7	none	S1S2	G5T4	Pender	Current	pinelands and disturbed areas
Moth Anicla lubri Slippery	D W3	none	S3?	G4G5	Pender	Current	savannas and flatwoods
Vascular Pl Anthenanti Purple Silky	W1	none	S2	G5	Pender	Current	savannas
Lichen Anzia ornata Black-foa	SR-T	none	S2	G1G3	Pender	Current	on bark of deciduous trees where humidity is
Vascular Pl Arenaria la Spreading	S SR-P	none	S1	G5T5	Pender	Historical	maritime grasslands and forests, other sandy
Moth Argyrostro Four-lined	SR	none	S3	G4	Pender	Current	pocosins and flatwoods
Dragonfly c Arigomphu Gray-green	SR	none	S2	G5	Pender	Historical	ponds, lakes, and streams
Vascular Pl Aristida coi Big Three	a T	none	S2	G4?	Pender	Current	bay rims with xeric pine-oak scrub
Vascular Pl Aristida sin Chapman's	E	none	S1S2	G3G4	Pender	Current	wet savannas



Vascular Pl	Aristida ter Hillsboro Tl SR-P	none	S1	G5T5	Pender	Current	xeric sandhill scrub
Vascular Pl	Arnoglossu Savanna In E	none	S2	G4G5TNR	Pender	Current	wet savannas
Grasshopp	Arphia grar Southern Y SR	none	S2S3	G5	Pender	Current	flatwoods, sandhills
Vascular Pl	Asclepias lc Longleaf M W1	none	S2S3	G4G5	Pender	Current	savannas and sandhill seeps
Vascular Pl	Asclepias p Savanna M SC-V	none	S3	G4	Pender	Current	dry savannas and moist flatwoods
Vascular Pl	Asclepias p Purple Milk SR-T	none	S1?	G5?	Pender	Current	swamps, bottomlands, edges of moist woods
Vascular Pl	Astragalus Sandhills M SC-V	none	S3	G3	Pender	Current	dry to xeric longleaf pine-oak woodlands and
Vascular Pl	Baccharis a Saltwater F W1	none	S2	G4	Pender	Current	brackish marshes, shrubby marsh edges
Vascular Pl	Baccharis g Silverling E	none	S1	G4	Pender	Current	shrubby areas on margins of brackish marshe
Vascular Pl	Bacopa car Blue Water T	none	S1	G4G5	Pender	Current	Shallow ponds, marshes, natural lakes, and tic
Vascular Pl	Bacopa inn Tropical W SC-H	none	SH	G3G5	Pender	Historical	tidal freshwater marshes
Vascular Pl	Bacopa rot Round-leaf SR-D	none	S1	G5	Pender	Current	natural lakes
Moss	Barbula inc Small Twist W7	none	S2?	G5?T5?	Pender	Historical	soil, clay, limestone, cement, walls
Vascular Pl	Bartonia p Twining Sci W1	none	S2S3	G5T5	Pender	Current	bogs, wet savannas, sandhill seeps, other ope
Vascular Pl	Bartonia v White Scre W1	none	S2	G5?	Pender	Current	savannas, limesink ponds
Natural Co	Blackwater Bottomland Hardwooc	none	S2S3	G3G4	Pender	Current	null
Natural Co	Blackwater Bottomland Hardwooc	none	S3	G4?	Pender	Current	null
Natural Co	Blackwater Bottomland Hardwooc	none	S3	G3G5	Pender	Current	null
Natural Co	Brackish Marsh (Needlerush Subt)	none	S5	G5	Pender	Current	null
Natural Co	Brownwater Bottomland Hardwooc	none	S3	G3G4	Pender	Current	null
Natural Co	Brownwater Levee Forest (High Le	none	S3	G3G5	Pender	Current	null
Natural Co	Brownwater Levee Forest (Low Le	none	S3S4	G3G4	Pender	Current	null
Moss	Bruchia br A Pygmy M SR-T	none	S1?	G3G4	Pender	Historical	soil of disturbed habitats
Moss	Bruchia hal A Pygmy M SR-T	none	SH	G2	Pender	Historical	sandy soil in open places
Moss	Bruchia tex Texas Bruc W7	none	SH	G3G5	Pender	Historical	moist clay or sandy soil in open areas
Vascular Pl	Burmanna Northern B W1	none	S2S3	G4G5	Pender	Current	limesinks, cypress savannas, and sandhill seeq
Moth	Cabera qu Four-lined W3	none	SU	GNR	Pender	Current	unknown habitats
Vascular Pl	Calamovilf Pinebarren W1	none	S3	G4	Pender	Current	savannas, sandhill seeps
Butterfly	Calephelis Little Meta SR	none	S2	G4	Pender	Current	savannas and pine flatwoods; host plants -- v
Bird	Calidris car Red Knot - T	T	SUB,S2N	G4T2	Pender	Current	beaches and sand flats [wintering sites]
Butterfly	Callophrys Hessel's Ha SR	none	S3	G3	Pender	Historical	Atlantic white cedar swamps; host plant -- wh
Butterfly	Callophrys Frosted Elf SR	none	S2	G2G3	Pender	Current	open woods and borders, usually in dry situat
Moth	Callosamia Sweetbay S W3	none	SU	G4	Pender	Current	pocosins and other wetlands with sweetbay
Vascular Pl	Calopogon Many-flow E	none	S1	G2G3	Pender	Current	savannas
Vascular Pl	Cardamine Long's Bitt SC-V	none	S2	G3?	Pender	Current	tidal marshes and tidal cypress-gum forests

Reptile	Caretta car	Loggerhead T	T	S2B	G3	Pender	Current	nests on beaches; forages in ocean and sound
Vascular PI	Carex austr	Canebrake SR-L	none	S3	G3G4	Pender	Current	streamhead pocosins and floodplains of small
Vascular PI	Carex basi	Widow Sed E	none	S1	G5	Pender	Current	mesic forests, bottomlands, and lower slopes,
Vascular PI	Carex chap	Chapman's W1	none	S3	G3	Pender	Current	moist bottomlands and slopes, perhaps assoc
Vascular PI	Carex cher	Cherokee ST	none	S1	G4G5	Pender	Current	floodplains
Vascular PI	Carex emm	Emmons's SR-O	none	S2	G5T5	Pender	Current	moist woods and stream banks
Vascular PI	Carex ghol	Gholson's W7	none	S1S2	G4G5	Pender	Current	along creeks and springs
Vascular PI	Carex gran	Limestone W7	none	S1?	G5	Pender	Current	piedmont bottomlands, coastal plain marl for
Vascular PI	Carex lutea	Golden Sed E	E	S2	G2	Pender	Current	ecotones between very wet clay savannas and
Vascular PI	Carex mitcl	Mitchell's W1	none	S2	G4	Pender	Current	swampy woodlands and forests
Vascular PI	Carex renif	Kidney Sed T	none	S1	G4?	Pender	Current	swamps, open wet areas
Vascular PI	Carex socia	Social Sedg SR-P	none	S1	G4	Pender	Current	streambeds and riverbanks
Vascular PI	Carex verr	Warty Sedg SR-P	none	S2	G4	Pender	Current	savannas and pinelands
Moth	Caripeta ar	Southern P W3	none	S3S4	G4	Pender	Current	pine forests
Vascular PI	Carya myri	Nutmeg Hi E	none	S1	G4	Pender	Current	wet marl forests
Vascular PI	Castilleja cr	Scarlet Indi W6	none	S3	G5	Pender	Historical	meadows, roadsides and woodland margins
Moth	Catocala lir	Lincoln Ur SR	none	S2S3	G3G4	Pender	Current	wooded areas with hawthorns
Moth	Catocala m	Nutmeg Ur SR	none	S1	G3G4	Pender	Current	Marl outcrop with Nutmeg Hickory (Carya my
Butterfly	Cecropteru	Confused C W3	none	S3S4	G4	Pender	Current	dry woodland borders and openings, brushy f
Reptile	Cemophor	Scarlet Sna W1,W5	none	S3	G5	Pender	Current	sandhills, sandy woods, and other dry woods
Bird	Charadrius	Piping Plov T	T	S1B,S1N	G3T3	Pender	Current	ocean beaches and island-end flats [breeding
Bird	Charadrius	Wilson's Pl SC	none	S2B	G5	Pender	Current	beaches, island-end flats, estuarine islands [b
Vascular PI	Chasmanth A	Spangleg T	none	S1	G3G4	Pender	Historical	blackwater bottomlands over marl
Reptile	Chelonia m	Green Seat T	T	S1B	G3	Pender	Current	nests on beaches; forages in ocean and sound
Vascular PI	Chrysopsis	Naked Golc W1	none	S2	G5T5	Pender	Current	xeric sandhills and sandhill scrub
Moth	Chytonix se	Barrens M W3	none	S3?	G4	Pender	Current	sandhills and flatwoods
Vascular PI	Cirsium lec	Leconte's T SC-V	none	S2	G3	Pender	Current	savannas
Vascular PI	Cirsium nu	Nuttall's T SR-P	none	S1	G5	Pender	Current	pine savannas, roadsides, pastures
Moth	Cisthene k	Kentucky L W3	none	SU	GU	Pender	Current	wet to mesic forests
Lichen	Cladina ev	Powder-pu W7	none	S2	G3G5	Pender	Current	sandhills (primarily near the coast) usually ass
Vascular PI	Cleistesiop	Spreading IW1	none	S3	G4	Pender	Current	pine savannas
Vascular PI	Cleistesiop	Small Coas W7	none	S2	G3?	Pender	Current	Savannas
Vascular PI	Clematis or	Curly-head W6	none	S3	G4	Pender	Historical	dry woods, mostly over basic rock
Reptile	Clemmys g	Spotted Tu W1	none	S4	G5	Pender	Current	shallow water of pools, marshes, wet pasture
Vascular PI	Clinopodiu	Georgia Ca E	none	S1	G5	Pender	Current	rock ledges near blackwater streams and disti

Natural Coi	Coastal Plain Cliff	none	S1	G2?	Pender	Current	null
Natural Coi	Coastal Plain Depression Swamp (	none	S3?	G3	Pender	Current	null
Natural Coi	Coastal Plain Depression Swamp (	none	S2	G2	Pender	Current	null
Natural Coi	Coastal Plain Small Stream Swamp	none	S4	G4?	Pender	Current	null
Vascular PI	Coelorachis Wrinkled Jc W1	none	S3	G5	Pender	Current	limesink ponds, clay-based Carolina bays, wet
Bird	Columbina Common GSR	none	SXB	G5	Pender	Historical	dunes, sandy fields, margins of maritime woo
Mammal	Condylura Star-nosed SC	none	S2	G5T2Q	Pender	Current	moist meadows, bogs, swamps, bottomlands
Vascular PI	Coreopsis Short-awned T	none	S1	G1	Pender	Current	wet savanna with calcareous influence
Vascular PI	Coreopsis Beadle's Cc SR-P	none	S1S2	G3G4Q	Pender	Current	swamp forests and swamp edges
Mammal	Corynorhin Eastern Big SC	none	S3	G3G4T3	Pender	Current	roosts in hollow trees, old buildings, and bene
Dragonfly c	Coryphaea Regal Darn SR	none	S2?	G5	Pender	Current	lakes and ponds
Vascular PI	Crataegus May Hawth W1	none	S2	G5	Pender	Current	swamp forests
Vascular PI	Crocather Carolina Su E	none	S1	G4	Pender	Current	sandhills, pinelands, dry savannas
Reptile	Crotalus ad Eastern Dia E	none	S1	G3	Pender	Current	pine flatwoods, savannas, pine-oak sandhills
Reptile	Crotalus hc Timber Rat SC	none	S3	G4	Pender	Current	wetland forests in the Coastal Plain; rocky, up
Vascular PI	Cyperus tet Four-angle SC-V	none	S2	G4?	Pender	Current	maritime forests and barrier island grasslands
Natural Coi	Cypress--Gum Swamp (Blackwater)	none	S4	G4?	Pender	Current	null
Vascular PI	Dalea pinn Eastern Pr W1	none	S2	G5	Pender	Current	sandhills and dryish pinelands
Moth	Dasychira a Tussock W3	none	S3?	G4	Pender	Current	hardwood forests
Reptile	Deirochelys Eastern Chi SC	none	S2S3	G5T5	Pender	Current	quiet waters of ponds, ditches, and sluggish s
Vascular PI	Dichanthe Blue Witch T	none	S2	G2G3	Pender	Current	Marshes, swamps, wet pinelands, maritime g
Vascular PI	Dichanthe Hidden-flow SR-T	none	S2	G3G4Q	Pender	Current	wet streamhead pocosin openings, including i
Vascular PI	Dichanthe Roanoke V W1	none	S2	G5T4?	Pender	Current	savannas, open swampy woods, wet peaty m
Vascular PI	Dichanthe Dehiscent W7	none	S1?	G3	Pender	Current	dry pine/scrub oak woodlands
Vascular PI	Dichanthe Elliott's W W1	none	S2S3	G5T5	Pender	Current	dry to damp, sandy pinelands
Vascular PI	Dichanthe Eaton's W E	none	S1	G5	Pender	Current	wet sands and peats of bogs, savannas, mead
Moth	Digrammia Amorpha A SR	none	S2S3	GNR	Pender	Current	sandhills, mainly near the coast
Vascular PI	Dionaea m Venus Flytr T	none	S2	G2	Pender	Current	savannas, seepage bogs, pocosin edges
Vascular PI	Ditrysinia f Sebastian-l SR-P	none	S2	G5	Pender	Historical	swamp forests
Moth	Doryodes k Double-line W3	none	SU	G4	Pender	Current	marshes
Moth	Doryodes s Wiregrass W3	none	S3S4	G3G4	Pender	Current	savannas, flatwoods, and sandhills
Natural Coi	Dry-Mesic Oak--Hickory Forest (C	none	S3	G3G4	Pender	Current	null
Vascular PI	Dryopteris Southern V W1	none	S2	G4	Pender	Current	acid swamps
Natural Coi	Dune Grass (Southern Subtype)	none	S2	G3	Pender	Current	null
Bird	Egretta cae Little Blue I SC	none	S3B,S3N	G5	Pender	Current	forests or thickets on maritime islands, rarely

Bird	<i>Egretta tricolor</i>	SC	none	S3B,S3N	G5	Pender	Current	forests or thickets on maritime islands [breed
Bird	<i>Elanoides forficatus</i>	SR	none	S1B	G5	Pender	Current	swamps and bottomlands near lower Cape Fe
Vascular Pl	<i>Eleocharis acicularis</i>	W1	none	S3	G4	Pender	Current	limesink ponds, lakes, borrow pits, ditches
Vascular Pl	<i>Eleocharis viviparous</i>	T	none	S1	G5	Pender	Current	bogs and pools
Freshwater	<i>Elliptio cistifolius</i>	W3,W5	none	SU	G4	Pender	Current	Neuse, Lumber, Pee Dee drainages; Lake Wac
Freshwater	<i>Elliptio carolinensis</i>	W2,W5	none	S3	G3	Pender	Current	drainages north to the White Oak drainage
Freshwater	<i>Elliptio foliolosus</i>	SC	none	S2	G2G3	Pender	Historical	Cape Fear, Lumber, and Yadkin-Pee Dee drain
Freshwater	<i>Elliptio maculatus</i>	SC	none	S2	G3Q	Pender	Current	Cape Fear and Neuse drainages (endemic to N
Freshwater	<i>Enneacanthus blackbandus</i>	SR	none	S3	G3G4	Pender	Current	many drainages, particularly Lumber and Wac
Freshwater	<i>Enneacanthus banded</i>	SR	none	S3	G5	Pender	Historical	most Atlantic drainages
Moss	<i>Entosthodon cordatus</i>	W7	none	SH	G4G5	Pender	Historical	primarily sandy soils of disturbed, often wet a
Grasshopper	<i>Eotettix tenellus</i>	SR	none	S2?	G2G3	Pender	Current	sandhill seeps and wet pine savannas
Vascular Pl	<i>Epidendrum greenii</i>	T	none	S1S2	G4	Pender	Current	epiphytic on trees in blackwater river swamps
Vascular Pl	<i>Eryngium aquaticum</i>	SR-P	none	S1	G4T2T3	Pender	Current	wet flatwoods with a calcareous influence, dit
Vascular Pl	<i>Eryngium yuccifolium</i>	W2	none	S2	G5T5	Pender	Current	wet savannas
Moth	<i>Eubaphe minor</i>	SR	none	S2S3	G4	Pender	Current	savannas
Bird	<i>Eudocimus albus</i>	W2	none	S3B,S3N	G5	Pender	Current	forests or thickets on maritime islands, rarely
Vascular Pl	<i>Eupatorium floridanum</i>	W3	none	S1?	G2G3	Pender	Current	moist savannas, pondshores, moist interdune
Vascular Pl	<i>Eupatorium recurvum</i>	W7	none	S1?	G3G4Q	Pender	Current	wet savannas
Butterfly	<i>Euphyes basilinna</i>	SR	none	S1S2	G4	Pender	Historical	wet savannas, bogs, sedgy areas near wet wo
Moth	<i>Eupithecia peckii</i>	W3	none	S3?	G4	Pender	Current	sandhills and flatwoods
Amphibian	<i>Eurycea quadrivittata</i>	SC	none	S1	G5	Pender	Current	pocosins, Carolina bays, pine flatwoods, savar
Moth	<i>Exyra ridingsii</i>	SR	none	S2	G2G4	Pender	Current	wetlands with yellow pitcher-plants
Moth	<i>Exyra semiaurata</i>	SR	none	S2S3	G3G4	Pender	Current	wetlands with pitcher-plants
Reptile	<i>Farancia erythemelia</i>	SR	none	S3	G4	Pender	Current	swamps, lakes, rivers, and other sluggish wat
Moss	<i>Fissidens eboracensis</i>	W7	none	S2?	G5	Pender	Historical	sandy and clayey soils along roadsides and str
Liverwort	<i>Fuscocephalus lunulatus</i>	SR-T	none	S1	G5T1Q	Pender	Historical	moist riverbank
Freshwater	<i>Fusconaia flammula</i>	E	PT	S3	G1	Pender	Historical	Roanoke, Tar, Neuse, Cape Fear, Yadkin-Pee L
Moth	<i>Gabara pulchra</i>	W3	none	S3?	G4	Pender	Current	habitats poorly known
Moth	<i>Gabara sp.</i>	SR	none	S1S2	G1G3	Pender	Historical	savannas and flatwoods
Bird	<i>Gallinula galeata</i>	W2	none	S3B,S2N	G5	Pender	Current	freshwater ponds and impoundments with m
Vascular Pl	<i>Gaylussacia floridana</i>	W7	none	S2	G4G5	Pender	Current	pocosins
Vascular Pl	<i>Gelsemium sempervirens</i>	SC-V	none	S1S2	G5	Pender	Current	floodplains of blackwater rivers and streams
Dragonfly	<i>Gomphurus sp.</i>	W3	none	S3	G4	Pender	Current	large or medium rivers with silty or sandy bot
Moth	<i>Gondysia sordida</i>	W3	none	S2S3	G3G4	Pender	Current	pocosins and bay forests

Vascular PI	Gratiola lut	Golden He	SC-V	none	S1	G5	Pender	Current	drawdown zones of blackwater rivers
Vascular PI	Habenaria	Water-spid	W1	none	S2	G5	Pender	Historical	in stagnant, blackwater pools and impoundm
Bird	Haematop	American C	SC	none	S2S3B,S3N	G5	Pender	Current	estuaries, oyster beds, mudflats [breeding evi
Bird	Haliaeetus	Bald Eagle	T	BGPA	S3B,S3N	G5	Pender	Current	mature forests near large bodies of water (ne
Vascular PI	Helenium	Dissected	SR-P	none	S2	G4	Pender	Current	savannas and open, wet, mucky sites
Bird	Helmitherc	Worm-eati	W5	none	S3B	G5TNR	Pender	Current	nonriverine wet hardwoods, pocosins [breedi
Amphibian	Hemidacty	Four-toed	SC	none	S3	G5	Pender	Current	pools, bogs, and other wetlands in hardwood
Moth	Hemipachr	Venus Flytr	SR	none	S1?	G1	Pender	Current	savannas with Venus flytraps (endemic to Noi
Butterfly	Heraclides	Eastern Gi	SR	none	S2S3	G5	Pender	Current	primarily coastal in maritime forests or thicke
Butterfly	Hesperia at	Dotted Ski	SR	none	S1	G3G4	Pender	Historical	pine/oak sandhills, flatwoods, mainly in Sandl
Grasshopp	Hesperotet	Meadow Pi	W3	none	SU	G5	Pender	Historical	sandhill seeps and wet pine savannas
Freshwater	Heterandri	Least Killif	SC	none	S2	G5	Pender	Current	streams and lakes near Wilmington
Reptile	Heterodon	Southern H	T	none	S1S2	G2	Pender	Current	sandy woods, particularly pine-oak sandhills
Vascular PI	Hexastylis	Lewis's He	W1	none	S3	G3	Pender	Current	mesic mixed hardwood forests, streamhead p
Natural Co	High Pocosin	(Evergreen Subtype)		none	S3S4	G3	Pender	Current	null
Bird	Hydroprog	Caspian Te	T	none	S1B,S2N	G5	Pender	Current	sand flats on maritime islands [breeding evide
Amphibian	Hyla ander	Pine Barrer	SR	none	S2	G4	Pender	Current	pocosins, bay forests, boggy areas
Vascular PI	Hymenocal	Waccamaw	SC-V	none	S1	G2Q	Pender	Current	banks of blackwater rivers
Moth	Hypagyrtis	Brenda's H	SR	none	S2S3	G4	Pender	Current	Atlantic white cedar forests
Vascular PI	Hypericum	Coastal Pla	SC-V	none	S1S2	G5	Pender	Current	wet pine savannas
Moth	Hypomecis	Broadly Pe	W3	none	S3S4	G3G4	Pender	Current	hardwood stands
Vascular PI	Hypoxis jur	Fringed Yel	SR-P	none	S1	G4?	Pender	Current	savannas
Vascular PI	Hypoxis se	Sessile Yell	SR-P	none	S1	G4	Pender	Current	savannas, pinelands
Moth	Idea erem	Straw Wav	W3	none	S3S4	G4	Pender	Current	sandhills
Moth	Idea prod	a Wave	W3	none	SU	G4	Pender	Current	sandhills
Vascular PI	Ilex amelar	Sarvis Holly	W1	none	S3	G4	Pender	Current	blackwater swamps and riverbanks, clay-base
Vascular PI	Iresine rhiz	Rootstock	W1	none	S2S3	G5	Pender	Historical	low wet places, interdune swales, damp woo
Moth	Iridopsis cy	Small Cypr	SR	none	S2S3	GU	Pender	Historical	cypress swamps
Vascular PI	Isoetes hye	Wintergree	W7	none	S2S3	G2G3	Pender	Current	beds of blackwater and other streams
Vascular PI	Isoetes mic	Thin-wall	CT	none	S1	G1	Pender	Current	emergent riverbanks, calcareous influenced ri
Vascular PI	Isolepis car	Keeled Bea	SR-P	none	S1	G5	Pender	Current	wet places, granitic flatrocks
Bird	Ixobrychus	Least Bitter	SC	none	S2S3B	G4G5	Pender	Current	fresh or brackish marshes [breeding evidence
Vascular PI	Kalmia cun	White Wicl	W1	none	S3	G3	Pender	Current	low and high pocosins, streamhead pocosins,
Reptile	Kinosterno	Striped Mu	W3	none	S3S4	G5	Pender	Current	various shallow wet places; ponds, pools, ditc
Vascular PI	Lachnocaul	Brown Bog	T	none	S2	G3G4	Pender	Current	depression ponds and ditches

Moth	Lagoa pyxicephala Yellow Flare	SR	none	S2S3	G4G5	Pender	Obscure	savannas, flatwoods, and sandhills
Freshwater	Lampsilis cincta Yellow Larva	E	none	S3	G3G4	Pender	Historical	Chowan, Roanoke, Neuse, Tar, Cape Fear, Lur
Freshwater	Lampsilis radiosa Eastern Larva	T	none	S3	G5	Pender	Current	Chowan, Roanoke, Tar, Neuse, Cape Fear, Yac
Mammal	Lasiurus semperi Seminole Bat	W2	none	S3	G5	Pender	Current	forages over open areas, often over water (su
Vascular Pl	Lechea torreyi Torrey's Pine	E	none	S1	G4TNR	Pender	Current	longleaf pine sandhills and pine flatwoods
Reptile	Lepidocheilus Kemp's Ridges	E	E	S1B,SUN	G1	Pender	Current	nests on beaches, forages in ocean and sound
Freshwater	Lepomis punctatus Spotted Sunfish	W2	none	S3	G5	Pender	Current	most drainages in southern Coastal Plain
Dragonfly	Lestes viduus Carolina Spotted	W2	none	S3	G5	Pender	Current	ponds and pools
Vascular Pl	Liatris scariosa Sandhill Bluet	W7	none	S2	G4G5	Pender	Current	sandhills
Vascular Pl	Linum floridense Yellow-fruit	T	none	S1S2	G5?T3?	Pender	Current	pine savannas
Reptile	Liodytes rigida Glossy Crayfish	SR	none	S2	G5	Pender	Current	marshes, cypress ponds, other wetlands
Freshwater	Lioplax submarginata Ridged Lionfish	SC	none	S3	G4G5	Pender	Historical	streams and rivers, well documented in Lake
Moth	Lithophane cypress Pine	W3	none	SU	G4	Pender	Current	cypress swamps
Vascular Pl	Litsea aestivata Pondspice	SC-V	none	S2S3	G3?	Pender	Current	limesink ponds, other pools
Natural Community	Low Pocosin (Titi Subtype)		none	S2S3	G2G3	Pender	Current	null
Vascular Pl	Ludwigia maritima Seaside Sea	W7	none	S2S3	G5	Pender	Current	savannas, dunes, and ditches
Vascular Pl	Lupinus varius Lady Lupine	E	none	S1	G5	Pender	Current	sandhills and other dry sandy woods
Vascular Pl	Luziola fluitans Southern Vase	SR-T	none	S2	G4G5TNR	Pender	Current	pools, lakes, streams
Vascular Pl	Lycopodium complanatum Featherstem	W7	none	S2?	G5	Pender	Current	wet savannas
Vascular Pl	Lycopus americanus Claspingleaf	W1	none	S3	G5	Pender	Current	clay-based Carolina bays, cypress savannas
Vascular Pl	Lysimachia aspera Rough-leaf	E	E	S3	G3	Pender	Current	pocosin/savanna ecotones, pocosins
Vascular Pl	Lysimachia loomisii Loomis's	W1	none	S3	G3?	Pender	Current	savannas and pocosins
Vascular Pl	Lythrum latifolium Southern Vase	SR-T	none	S1	G5T5	Pender	Current	marshes and low, wet places
Vascular Pl	Macbridea carolinensis Carolina	Bc E	none	S2	G2G3	Pender	Current	blackwater swamps, savanna/pocosin ecoton
Moth	Macrochilois Louisiana	C W3	none	S3?	G4	Pender	Current	sedgy wetlands
Vascular Pl	Magnolia grandiflora Southern	N W1	none	S2?	G5	Pender	Obscure	mainland forests with maritime influence on t
Vascular Pl	Magnolia umbellata Umbrella	N W6	none	S5	G5	Pender	Historical	rich woods
Reptile	Malaclemys flaviventralis Diamond	Bc SC	none	S3	G4	Pender	Current	salt or brackish marshes, estuaries
Vascular Pl	Malaxis spiralis Florida Adonis	SC-V	none	S1	G4?	Pender	Historical	maritime swamp forests, calcareous but mucl
Natural Community	Maritime Dry Grassland (Typical)	Suk	none	S2	G2G3	Pender	Current	null
Natural Community	Maritime Evergreen Forest (Mid)	A	none	S2	G2	Pender	Current	null
Natural Community	Maritime Shrub (Stunted Tree)	Suk	none	S2	G3	Pender	Current	null
Natural Community	Marsh Hammock		none	S2	G3?	Pender	Current	null
Reptile	Masticophis lateralis Coachwhip	SR	none	S2	G5	Pender	Current	dry and sandy woods, mainly in pine/oak sanc
Sawfly, Wasp	Megachile laevis leafcutter	SR	none	SH	G2G3	Pender	Historical	no habitat preferences currently known (Blad

Sawfly, Wa	Megachile a leafcutter	W3	none	S2S3	G3	Pender	Historical	documented on Crataegus, Rubus, and Seneci
Sawfly, Wa	Megachile a leafcutter	W3	none	SH	G2G3	Pender	Historical	hosts include Baptisia tinctoria, Cracca virginia;
Butterfly	Megathym Yucca Gian	W2	none	S3S4	G5	Pender	Current	dunes, flatwoods, old fields, and other places
Grasshopp	Melanoplu Decorated	SR	none	S2S3	G2G3	Pender	Current	savannas, flatwoods, low pocosins (endemic t
Grasshopp	Melanoplu Noss' Short	SR	none	S1S2	GNR	Pender	Historical	wet to mesic hardwood forests with rich soils
Grasshopp	Mermiria p Lively Merr	W3	none	S3?	G5	Pender	Current	longleaf pine savannas and flatwoods
Natural Coi	Mesic Mixed Hardwood Forest (Co		none	S3	G3	Pender	Current	null
Natural Coi	Mesic Pine Savanna (Coastal Plain		none	S2	G2G3	Pender	Current	null
Moth	Metarrantl a Geometri	W3	none	SU	G3G4	Pender	Current	flatwoods and pocosins
Moth	Metarrantl Mid-Atlant	W3	none	S3S4	G3G4	Pender	Current	pocosins
Reptile	Micurus fl Eastern Co	E	none	S1	G5	Pender	Current	pine-oak sandhills, sandy flatwoods, maritime
Grasshopp	Montezum Modest Ka	W3	none	SU	GU	Pender	Historical	pinewoods and other habitats
Vascular PI	Muhlenber Pinebarren	SC-V	none	S2	G3	Pender	Current	cypress savannas
Mammal	Myotis aus Southeaste	SC	none	S2	G4	Pender	Current	roosts in buildings, hollow trees; forages near
Mammal	Myotis sep Northern L	T	T	S2	G1G2	Pender	Current	roosts in hollow trees and buildings (warmer i
Moth	Nematocar Baggett's	N SR	none	S1S2	G2G4	Pender	Historical	unknown habitat
Moth	Nemoria bi White-barr	W3	none	S3?	G4	Pender	Current	sandhills and sandy forests
Butterfly	Neonymph Georgia Sa	SR	none	S2	G3G4	Pender	Current	savannas, wet powerline clearings, other dam
Mammal	Neotoma fl Eastern Wc	T	none	S1	G5T5	Pender	Historical	forests, mainly in moist areas
Vascular PI	Neottia bif Southern T	W1	none	S3	G4	Pender	Current	moist hardwood forest, swamps, wet woods \
Dragonfly c	Neurocord Alabama SI	W3	none	S3?	G5	Pender	Current	small creeks in forested regions, often where
Natural Coi	Nonriverine Swamp Forest (Cypre		none	S2	G2G3	Pender	Current	null
Moth	Notodontic a new Pron	W3	none	S2S3	G3G4	Pender	Current	bottomland hardwoods
Freshwater	Notropis cl Ironcolor S	SR	none	S2S3	G4	Pender	Historical	coastal plain rivers and creeks
Freshwater	Notropis m Taillight Sh	W2	none	S2	G5	Pender	Current	southern Coastal Plain drainages
Freshwater	Noturus sp Broadtail N	SC	none	S1	G2	Pender	Historical	Cape Fear, Waccamaw, and Lumber drainage:
Vascular PI	Nuphar sag Cape Fear	W1	none	S3	G5T2	Pender	Current	blackwater streams, rivers, and lakes
Bird	Nycticorax Black-crow	W1	none	S3B,S3N	G5	Pender	Current	maritime thickets or forests, almost always or
Vascular PI	Oenothera Riverbank I	SR-L	none	S2S3	G2G3	Pender	Current	Freshwater tidal marshes and freshwater tida
Vascular PI	Oenothera Southern S	SR-T	none	S1S2	G5T2T3	Pender	Current	wet clay savannas (Carteret*, Dare, Jones, Ne
Reptile	Ophisaurus Slender Gl	SR	none	S1	G5	Pender	Current	old fields, wooded edges, open woods
Reptile	Ophisaurus Mimic Glas	SC	none	S1	G3	Pender	Current	pine flatwoods, savannas, pine/oak sandhills
Vascular PI	Oplismenu: Shortleaf B	SR-P	none	S1	G5T5	Pender	Current	maritime forests, bottomlands
Moth	Orgyia detr a tussock n	W3	none	S2S3	G3G4	Pender	Current	hardwood forests
Vascular PI	Packera cr Bog Ragwo	E	none	S1	G2	Pender	Current	bogs, fens, and wet savannas

Vascular PI	Panicum di Puritan Par SR-P	none	S1	G5T4	Pender	Current	wet sands and peats of seasonally exposed pe
Moth	Papaipema Pitcher-pla SR	none	S2S3	G4	Pender	Current	wetlands with pitcher-plants
Moth	Papaipema Rattlesnak SR	C	SH	G1G2	Pender	Historical	savannas with Eryngium yuccifolium (known f
Vascular PI	Parnassia c Carolina Gr T	none	S2	G3	Pender	Current	wet savannas
Vascular PI	Parnassia g Bigleaf Gra T	none	S2	G3	Pender	Current	fens and seeps over calcareous or mafic rocks
Vascular PI	Paspalum c Mudbank C E	none	S2	G4?	Pender	Current	mudflats, other open wet areas
Vascular PI	Paspalum r Early Crow W1	none	S2S3	G4	Pender	Current	limesink ponds and savannas
Bird	Passerina c Painted Bu SC	none	S2B	G5	Pender	Current	maritime shrub thickets and forest edges [bre
Natural Coi	Peatland Atlantic White Cedar For none	none	S1	G2	Pender	Current	null
Liverwort	Pellia appa A Liverwort W7	none	S1	G4	Pender	Historical	on moist rock outcrops, usually near waterfall
Vascular PI	Peltandra s Spoonflow SR-P	none	S2S3	G3G4	Pender	Current	pocosins, other wet, peaty sites
Mammal	Perimyotis Tricolored SR	none	S3	G2G3	Pender	Current	roosts in clumps of leaves (mainly in summer)
Vascular PI	Persea bor Upland Rec W7	none	S2	G5	Pender	Current	sandy upland soils in maritime forests
Bird	Peucaea ae Bachman's SC	none	S3B,S2N	G3	Pender	Current	open longleaf pine forests, old fields [breedin
Vascular PI	Phanopyru Swamp Par SR-O	none	S2	G5	Pender	Current	tidal and blackwater cypress-gum swamps
Moth	Photedes c Carter's No SR	none	S2S3	G2G3	Pender	Historical	savannas and sandhills with pinebarrens sand
Butterfly	Phyciodes j Phaon Cres W5	none	S2S3	G5	Pender	Current	open, often dry areas, mainly on barrier island
Vascular PI	Phytolacca Maritime P W7	none	S2	G5T5	Pender	Current	dunes, edges of brackish or salt marshes
Bird	Picoides bc Red-cockac E	E	S2	G3	Pender	Current	mature open pine forests, mainly in longleaf r
Natural Coi	Pine/Scrub Oak Sandhill (Coastal F none	none	S2	G2	Pender	Current	null
Natural Coi	Pine/Scrub Oak Sandhill (Mixed O none	none	S3	G3?	Pender	Current	null
Vascular PI	Pinguicula Yellow But SC-V	none	S1	G4G5	Pender	Current	savannas
Vascular PI	Pinguicula Small Butte T	none	S2	G4	Pender	Current	savannas
Vascular PI	Plantago s Pineland PI T	none	S1S2	G3	Pender	Current	wet savannas
Vascular PI	Platanther White-frin W1	none	S3?	G5	Pender	Current	bogs or depressions
Vascular PI	Platanther Yellow Frin SC-V	none	S2	G3G4	Pender	Current	savannas
Vascular PI	Platanther Green-frin W6	none	S3	G5	Pender	Historical	bogs, marshes, wet meadows and thickets
Vascular PI	Platanther Snowy Orcl E	none	SH	G5	Pender	Historical	wet savannas
Natural Coi	Pocosin Opening (Pitcher Plant Su none	none	S1?	G1	Pender	Current	null
Natural Coi	Pocosin Opening (Sedge-Fern Sub none	none	S1S2	G1G2	Pender	Current	null
Bird	Podilymbu Pied-billed W2	none	S3B,S5N	G5	Pender	Current	fresh to slightly brackish ponds and impoundr
Vascular PI	Polygala hc Hooker's M SC-V	none	S2S3	G3	Pender	Current	savannas
Natural Coi	Pond Pine Woodland (Typic Subty none	none	S3	G3	Pender	Current	null
Vascular PI	Ponthieva Shadow-wi T	none	S2	G4G5	Pender	Current	blackwater forests and swamps, especially ov
Crustacean	Procambar Coastal Pla W2	none	S3	G4G5	Pender	Current	ditches, streams, and lakes in the southeaster



Crustacean	Procambar Carolina Sa	W2	none	S3S4	G4	Pender	Current	still-water habitats and burrows in the Cape F
Moth	Properigea a Noctuid	W3	none	SU	GNR	Pender	Current	bottomlands?
Moth	Psamatode Dot-lined A	W3	none	SU	GNR	Pender	Current	unknown habitats; possibly a migrant
Amphibian	Pseudacris Southern C	SR	none	S2	G5	Pender	Current	ditches, Carolina bays, and other temporary s
Vascular PI	Pycnanthei Awned Mo	SR-T	none	S2	G4	Pender	Current	blackwater swamps
Moth	Pygarctia a Yellow-edg	SR	none	S2S3	G3	Pender	Historical	xeric sandhills
Vascular PI	Quercus ell Running O	E	none	S2	G3G5	Pender	Historical	mesic pine flatwoods and dry, silty sites
Bird	Rallus eleg; King Rail	W1,W3	none	S3B,S3N	G4	Pender	Current	fresh to slightly brackish marshes [breeding e
Amphibian	Rana capit; Carolina G	E	none	S2	G2G3	Pender	Current	breeds in temporary fish-free pools; forages ii
Reptile	Rhadinaea Pine Wood	W2	none	S3	G4	Pender	Current	pine flatwoods and other damp woodlands
Vascular PI	Rhexia cub West Indie	W1	none	S3	G4G5	Pender	Current	limesink ponds
Vascular PI	Rhynchos Northern V	SR-P	none	S2	G5	Pender	Historical	fens, bogs, pocosin openings, limesink ponds
Vascular PI	Rhynchos Swamp For	T	none	S1S2	G3G4	Pender	Current	swamp forests
Vascular PI	Rhynchos White-seec	SR-P	none	S2	G4	Pender	Current	wet savannas
Vascular PI	Rhynchos Short-bristl	SR-P	none	S2S3	G3?	Pender	Current	savannas
Vascular PI	Rhynchos Narrowfrui	W1	none	S3	G4?	Pender	Current	limesink ponds, clay-based Carolina bays
Vascular PI	Rhynchos Southern B	T	none	S2	G5	Pender	Current	maritime wet grasslands, clay-based Carolina
Vascular PI	Rhynchos Shortbeak	W1	none	S3	G4?	Pender	Current	savannas, limesinks, other wet open places
Vascular PI	Rhynchos Fragrant B	SC-V	none	S1	G4	Pender	Historical	maritime wet grasslands
Vascular PI	Rhynchos Feather-bri	W1	none	S3	G4	Pender	Current	savannas, seepage bogs
Vascular PI	Rhynchos Pale Beaks	W1	none	S3	G3	Pender	Current	savannas, sandhill seeps, and pocosins
Vascular PI	Rhynchos Small's Bea	SR-T	none	S2	G5?T3T4	Pender	Current	wet savannas, maritime wet grasslands
Vascular PI	Rhynchos Littleleaf B	W1	none	S3	G4	Pender	Historical	savannas, seepage bogs
Vascular PI	Rhynchos Thorne's B	SC-V	none	S2	G3	Pender	Current	wet savannas
Vascular PI	Rhynchos Wright's B	W1	none	S3	G5	Pender	Current	savannas
Vascular PI	Ruellia stre Limestone	E	none	S1	G4G5	Pender	Current	low woods over marl
Bird	Rynchops r Black Skim	SC	none	S2B,S3N	G5	Pender	Current	sand flats on maritime islands [breeding eide
Vascular PI	Sageretia n Small-flow	T	none	S1	G4	Pender	Current	shell middens
Vascular PI	Sagittaria f Water Arrc	SR-P	none	SH	G4G5	Pender	Current	blackwater streams, rivers, and lakes
Vascular PI	Sagittaria v Grassleaf A	E	none	S2	G5T3T4	Pender	Current	fresh to slightly brackish marshes, streams, sv
Natural Co	Salt Flat		none	S4	G5	Pender	Current	null
Natural Co	Salt Marsh (Carolinian Subtype)		none	S4	G5	Pender	Current	null
Natural Co	Sand Barren (Coastal Fringe Subty		none	S1	G2	Pender	Current	null
Natural Co	Sand Barren (Typic Subtype)		none	S2	G2	Pender	Current	null
Natural Co	Sandy Pine Savanna (Rush Feathe		none	S1	G1	Pender	Current	null

Natural Co	Sandy Pine Savanna (Typic Subtyp	none	S1	G3	Pender	Current	null
Butterfly	Satyrium fæ Northern C SR	none	S2S3	G4G5T4	Pender	Historical	oak-dominated woods, usually in dry sites; hc
Butterfly	Satyrium ki King's Hair: W2	none	S3S4	G3G4	Pender	Historical	forests, often moist, usually near sweetleaf; h
Moth	Schinia car Carolina Sc SR	none	S2S3	G3	Pender	Historical	savannas and sandhill seeps
Moth	Schinia jag Jaguar Flov SR	none	S1S3	G4	Pender	Current	savannas and sandhills
Moth	Schinia san Bleeding Fl W3	none	S2S3	G4	Pender	Historical	pine barrens, prairies, dunes and dry open are
Moth	Schinia sire Alluring Sci W3	none	SU	GNR	Pender	Current	open hardwood forests
Moth	Schinia sor Sordid Flov W3	none	S2S3	G4?	Pender	Current	savannas
Vascular Pl	Schizachyri Seaside Litl W1	none	S2S3	G5T5	Pender	Current	coastal dunes and maritime dry grasslands
Vascular Pl	Schoenoplæ Canby's Bu SR-P	none	S3	G3G4	Pender	Historical	blackwater creeks
Vascular Pl	Schwalbea Chaffseed E	E	S1	G2	Pender	Historical	savannas and moist to dryish pinelands with f
Vascular Pl	Scirpus line Drooping B T	none	S2	G4	Pender	Current	low rich woods over marl
Mammal	Sciurus nig Eastern Fo: W2	none	S3	G5	Pender	Current	open forests, mainly longleaf pine/scrub oak
Vascular Pl	Scleria balc Baldwin's NT	none	S2	G4	Pender	Current	wet savannas
Vascular Pl	Scleria bell Smooth-se SR-L	none	S1	G2G3	Pender	Current	pine savannas over limestone, diabase glades
Vascular Pl	Scleria geo Georgia Nu W1	none	S3	G4	Pender	Current	savannas
Vascular Pl	Scleria vert Savanna Ni SR-P	none	S2	G5	Pender	Current	calcareous wet savannas, maritime wet grassl
Moth	Scopula pu Chalky Wa: W3	none	S2S3	G4	Pender	Current	acidic wetlands
Reptile	Seminatrix Carolina Sv SC	none	S2	G5T4	Pender	Current	in lush vegetation of ponds, ditches, or sluggi:
Vascular Pl	Sideroxylor Buckthorn W1	none	S2S3	G5	Pender	Current	maritime forests, bluffs or forests over calcare
Reptile	Sistrurus m Carolina Pi: SC	none	S2	G5T4T5	Pender	Current	pine flatwoods, pine/oak sandhills, other pine
Natural Co	Small Depression Drawdown Mea	none	S1	G2	Pender	Current	null
Natural Co	Small Depression Drawdown Mea	none	S2S3	G2?	Pender	Current	null
Natural Co	Small Depression Pocosin (Typic S	none	S2S3	G2G3	Pender	Current	null
Natural Co	Small Depression Pond (Open Lily	none	S3	G3?	Pender	Current	null
Natural Co	Small Depression Shrub Border	none	S3	G3?	Pender	Current	null
Vascular Pl	Solidago gr Graceful Gr W1	none	S3	G4?	Pender	Current	savannas, boggy sites, peaty places
Vascular Pl	Solidago pu Carolina Gr W1	none	S3	G3	Pender	Current	savannas
Vascular Pl	Solidago to Twisted-leæ E	none	S1	G4G5	Pender	Current	dry savannas and and mesic flats
Vascular Pl	Solidago ve Spring-flow T	none	S3	G3	Pender	Current	mesic to moist pinelands, pocosin ecotones
Vascular Pl	Solidago vi Coastal Go E	none	S1	G1	Pender	Current	edges and openings in maritime upland forest
Dragonfly c	Somatochlæ Coppery Er SR	none	S1?	G3G4	Pender	Historical	creeks and other slow-moving acidic streams,
Moss	Sphagnum Fitzgerald's W1	none	S2S3	G3	Pender	Current	pocosins and savannas
Moss	Sphagnum Peatmoss W1	none	S2S3	G4?	Pender	Historical	bogs
Moth	Spilosoma Dubious Ti: W3	none	S3?	G5	Pender	Current	acidic wetlands

Vascular PI	Spiranthes Eaton's Lac E	none	S2	G3Q	Pender	Current	pine savannas and pine-oak sandhills
Vascular PI	Spiranthes Florida Lad SR-P	none	S1	G1	Pender	Historical	wet savannas and other moist sites
Vascular PI	Spiranthes Lace-lip Lac SC-V	none	S2	G4G5	Pender	Current	moist wet habitats
Vascular PI	Spiranthes Giant Spira E	none	S1	G3	Pender	Current	savannas
Vascular PI	Spirodela p Common V W7	none	S4	G5	Pender	Current	pools, stagnant waters
Vascular PI	Sporobolus Carolina Dr W1	none	S3	G3	Pender	Current	wet savannas
Vascular PI	Steironema Lowland Lc SR-P	none	S2?	G5	Pender	Current	bottomlands
Sawfly, Wa	Stelis vernae Spring Cucl W3	none	SH	GNR	Pender	Historical	no habitat preferences available
Amphibian	Stereochilus Many-linec W5	none	S3S4	G5	Pender	Current	swamps, shallow wooded ponds in savannas
Bird	Sterna hiru Common T E	none	S2B	G5	Pender	Current	sand flats on maritime islands [breeding evidence]
Bird	Sternula ar Least Tern SC	none	S3B	G4	Pender	Current	beaches, sand flats, open dunes, gravel rooftops
Grasshopper	Stethophyr Broad-wing SR	none	S1S2	G4	Pender	Current	wet savannas, seepage bogs
Natural Col	Streamhead Atlantic White Cedar	none	S2	G2	Pender	Current	null
Natural Col	Streamhead Pocosin	none	S4	G4	Pender	Current	null
Dragonfly c	Stylurus ivae Shining Clu SR	none	S1?	G4	Pender	Historical	sandy creeks or small rivers, where waters are
Vascular PI	Swida aspe Eastern Ro E	none	S1	G4	Pender	Current	mesic calcareous forests and thickets
Vascular PI	Symphyotri Elliott's Ast W1	none	S2S3	G4	Pender	Current	freshwater to brackish marshes, swamps, and
Vascular PI	Symphyotri Simmonds' W1	none	S2S3	G4G5	Pender	Current	wet ditches
Vascular PI	Syngonanthus Yellow Hat W1	none	S3	G5	Pender	Current	ditches, pocosin ecotones, savannas
Vascular PI	Thalictrum Cooley's M E	E	S1	G1	Pender	Current	wet savannas
Vascular PI	Thalictrum Small-leave SC-V	none	S2	G3G4	Pender	Current	bogs and wet woods
Moss	Thuidium a Fernmoss W7	none	S2?	G3G5	Pender	Historical	on soil, logs, exposed roots, and tree bases in
Natural Col	Tidal Freshwater Marsh (Narrowleaf)	none	S1S2	G1G2	Pender	Current	null
Natural Col	Tidal Freshwater Marsh (Southern)	none	S4	G3G5	Pender	Current	null
Natural Col	Tidal Swamp (Cypress--Gum Subtype)	none	S4	G3G4	Pender	Current	null
Moth	Tornos abjecta Tornos M W3	none	S2S3	GNR	Pender	Current	freshwater shorelines, savanna
Moth	Tornos cincata Tornos M W3	none	SU	GNR	Pender	Current	savannas and sandhills
Dragonfly c	Triacantha Phantom D SR	none	SH	G5	Pender	Historical	slow-flowing streams
Mammal	Trichechus West India T	T	S1N	G2G3	Pender	Current	warm waters of estuaries and river mouths
Vascular PI	Tridens chrysanthus Chapman's T	none	S1S2	G5T3	Pender	Current	dry pine and oak woods, sandy roadsides
Vascular PI	Tridens striatus Spike Triod SC-H	none	SH	G5	Pender	Historical	pine flatwoods
Vascular PI	Trillium pugetianum Carolina Le E	none	S2	G4T3	Pender	Current	ecotones between savannas and nonriverine
Moth	Ulonche Modest Qu W3	none	SU	G5	Pender	Current	pine-oak-heath communities
Vascular PI	Utricularia Two-flower SC-V	none	S1	G4G5	Pender	Current	seepage areas on Suffolk Scarp, beaver ponds
Vascular PI	Utricularia Dwarf Blad T	none	S2	G4	Pender	Current	limesink ponds, beaver ponds

Vascular Pl	Vaccinium	Small-flow	W7	none	S1S2	G4	Pender	Current	pocosins, blackwater swamps, mesic pine flat		
Vascular Pl	Verbena	sc	Sandpaper	W7	none	S2?	G5	Pender	Current	marsh edges, shell middens	
Natural Coi	Vernal Pool	(Typic	Subtype)	none	S2S3	G2?	Pender	Current	null		
Freshwater	Vertigo	osc	Capital Ver	W3	none	S3?	G4	Pender	Current	mixed woods in the Coastal Plain; ravines and	
Freshwater	Vertigo	rug	Striate Ver	W3	none	S2S3	G4	Pender	Current	primarily in thatch of grasses and sedges in o	
Natural Coi	Very Wet	Loamy Pine	Savanna	none	S1	G1	Pender	Current	null		
Freshwater	Villosa	del	Eastern Cr	SR	none	S4	G4	Pender	Current	Cape Fear, Lumber, Yadkin-Pee Dee, and Cata	
Vascular Pl	Viola	britto	Northern C	W7	none	S2?	G4G5	Pender	Current	moist slopes and low wet places	
Vascular Pl	Viola	villos	Carolina Vi	W7	none	S2	G5	Pender	Current	moist places, especially pocosin edges	
Reptile	Virginia	val	Smooth Ea	W2	none	S3	G5	Pender	Current	deciduous or mixed woods, usually in mesic s	
Animal Ass	Waterbird	Waterbird	Colony	none	S3	GNR	Pender	Current	null		
Moss	Weissia	m	A Moss	W7	none	S2?	G5	Pender	Historical	soil among grasses, roadsides	
Natural Coi	Wet	Loamy Pine	Savanna	none	S1	G1	Pender	Current	null		
Natural Coi	Wet	Marl	Forest	none	S1	G1	Pender	Current	null		
Natural Coi	Wet	Pine	Flatwoods	(Depression	none	S1?	G1G2Q	Pender	Current	null	
Natural Coi	Wet	Pine	Flatwoods	(Typic Subtyp	none	S3	G3	Pender	Current	null	
Natural Coi	Xeric	Sandhill	Scrub	(Coastal Fring	none	S2	G2?	Pender	Current	null	
Natural Coi	Xeric	Sandhill	Scrub	(Typic Subtyp	none	S3S4	G3?	Pender	Current	null	
Moth	Xestia	your	Young's Da	W3	none	S3S4	G5	Pender	Current	peatlands	
Vascular Pl	Xyris	brevif	Shortleaf Y	W1	none	S3	G4G5	Pender	Current	savannas, other low wet areas	
Vascular Pl	Xyris	label	Savanna Y	W1	none	S3	G4	Pender	Current	savannas, streamhead pocosins	
Vascular Pl	Xyris	florid	Florida Yell	SC-V	none	S1	G5T4T5	Pender	Current	savannas	
Vascular Pl	Xyris	iridifo	Iris-leaf Yel	W7	none	S2	G4G5T4T5	Pender	Current	limesink ponds, pineland pools, marshes	
Vascular Pl	Xyris	scabri	Harper's Y	SC-V	none	S2	G3	Pender	Current	sandhill seeps and bogs	
Vascular Pl	Xyris	strict	Pineland Y	E	none	S1	G4	Pender	Historical	savannas	
Vascular Pl	Yucca	aloif	Aloe Yucca	W1	none	S2?	G5	Pender	Current	dunes	
Vascular Pl	Yucca	glori	Moundlily	SR-P	none	S2?	G4?	Pender	Current	dunes	
Moth	Zale	sp. 3	nan	Owlet N	W3	none	S2S3	G3G4	Pender	Current	pine forests
Vascular Pl	Zizania	aqu	Indian Wilc	W7	none	S2	G5T5	Pender	Current	freshwater marshes	
Vascular Pl	Acmispon	l	Carolina Bi	T	none	S3	G5T3	Union	Current	woodlands and openings, generally on clayey	
Vascular Pl	Agave	virgi	Eastern Ag	W1	none	S3	G5	Union	Current	granite flatrocks, mafic glades, dry outcrops, c	
Amphibian	Ambystom	Mole	Salan	SC	none	S2S3	G5	Union	Current	breeds in fish-free semipermanent woodland	
Bird	Ammodran	Grasshopp	W1,W5	none	S3B,S1N	G5	Union	Current	pastures and other grasslands [breeding seas		
Vascular Pl	Anemone	l	Southern A	E	none	S2	G4?	Union	Current	thin soils around rock outcrops, usually on ba	
Reptile	Apalone	sp	Gulf Coast	W2	none	S3	G5T5	Union	Current	large streams, ponds, and lakes with sandy bc	

Vascular Pl	Asclepias p Purple Milk SR-T	none	S1?	G5?	Union	Current	swamps, bottomlands, edges of moist woods
Mayfly	Asioplax dc a mayfly SR	none	S2	G4	Union	Current	Neuse River
Vascular Pl	Baptisia alk Thick-pod \ T	none	S2	G5	Union	Current	open woodlands, clearings
Vascular Pl	Baptisia alk Thin-pod \ W1	none	S3	G4	Union	Current	open woodlands, clearings
Vascular Pl	Berchemia Supple-jack W6	none	S5	G5	Union	Historical	moist sandy woods, swamp forests and stream
Vascular Pl	Borodinia r Missouri R SR-D	none	S1S2	G5	Union	Current	thin soils around basic rock outcrops
Vascular Pl	Buchnera a American E E	none	S1	G5?	Union	Current	glades, open forests, streambanks, probably p
Vascular Pl	Callitriche t Terrestrial SR-O	none	S2?	G5	Union	Current	low, wet places
Vascular Pl	Cardamine Dissected T SC-V	none	S2	G4?	Union	Current	rich woods, cove forests, bottomlands
Vascular Pl	Carex impr Ravine Sed SC-V	none	S2	G2	Union	Current	rich alluvial forests
Caddisfly	Ceraclea ta Dot-footed W3	none	S3	G5	Union	Current	Cane Creek, Yadkin River, Long Creek
Mayfly	Choroterpe a mayfly SR	none	S2	G5	Union	Historical	Waccamaw River, Drowning Creek, Bear Cree
Reptile	Crotalus hc Timber Rat SC	none	S3	G4	Union	Current	wetland forests in the Coastal Plain; rocky, up
Crustacean	Dactylocytl Pee Dee Cr W3	none	S2?	GNR	Union	Current	symbiotic on crayfish in Pee Dee drainage (en
Vascular Pl	Dichanthe Bicknell's V SR-P	none	S2	G4?Q	Union	Current	shaded to open woodlands
Vascular Pl	Dichanthe Nerved W SR-D	none	S1S2	G5T3	Union	Current	Maritime wet grasslands, Piedmont barrens
Natural Coi	Dry Basic Oak--Hickory Forest	none	S2S3	G2G3	Union	Current	null
Natural Coi	Dry Oak--Hickory Forest (Piedmon	none	S4	G4G5	Union	Current	null
Natural Coi	Dry-Mesic Basic Oak--Hickory For	none	S3	G3G4	Union	Current	null
Natural Coi	Dry-Mesic Oak--Hickory Forest (Pi	none	S4	G4G5	Union	Current	null
Freshwater	Elliptio con Carolina Sl; W2,W5	none	S3	G3	Union	Current	drainages north to the White Oak drainage
Freshwater	Etheostom Carolina D SC	none	S3	G3	Union	Current	Roanoke, Tar, Neuse, Cape Fear, Yadkin-Pee I
Vascular Pl	Eurybia mii Piedmont / SR-T	none	S3	G3	Union	Current	rich slopes and bottomlands
Vascular Pl	Frangula c Carolina B W1	none	S3	G5	Union	Current	rich bottomlands and slopes
Freshwater	Fusconaia i Atlantic Pig E	PT	S3	G1	Union	Current	Roanoke, Tar, Neuse, Cape Fear, Yadkin-Pee I
Vascular Pl	Gillenia sti Indian Phy: T	none	S2	G5	Union	Current	forests and open woods, mainly over mafic ro
Dragonfly	Gomphuru Septima's C SR	none	S3	G3	Union	Current	rocky rivers
Bird	Haliaeetus Bald Eagle T	BGPA	S3B,S3N	G5	Union	Current	mature forests near large bodies of water (ne
Vascular Pl	Helianthus Smooth Su SC-V	none	S3	G4	Union	Current	shaly open woods and roadsides
Vascular Pl	Helianthus Schweinitz' E	E	S3	G3	Union	Current	open woods, roadsides, and other rights-of-w
Butterfly	Hesperia le Leonard's S W2	none	S2S3	G4	Union	Current	wooded borders and openings, brushy fields;
Vascular Pl	Heuchera c Carolina Al W7	none	S3	G3	Union	Historical	rich, rocky woods
Vascular Pl	Ilex longipe Georgia Ho SR-P	none	S1	G5	Union	Current	upland forests and woodlands
Vascular Pl	Isoetes virg Virginia Qu SR-L	none	S1	G1	Union	Historical	upland depression swamp forests, clayey soil
Vascular Pl	Isolepis car Keeled Bea SR-P	none	S1	G5	Union	Current	wet places, granitic flatrocks

Vascular PI	Juncus bracteatus	Whiteroot	W7	none	S2?	G4G5	Union	Current	wet sandy soil
Vascular PI	Juncus longiflorus	Long's Rust	W7	none	S1S2	G3Q	Union	Historical	wet, clayey soil
Vascular PI	Juncus sectus	Nodding Rust	W7	none	S1S2	G5?	Union	Current	rock outcrops and glades
Freshwater	Lampsilis radiata	Eastern Larva	T	none	S3	G5	Union	Current	Chowan, Roanoke, Tar, Neuse, Cape Fear, Yadkin
Bird	Lanius ludovicianus	Loggerhead	SC, W2	none	S2S3B,S3N	G4	Union	Current	fields and pastures [breeding season only]
Freshwater	Lasmigona carolinensis	Carolina Helix	E	E	S1	G1	Union	Current	Catawba and Pee Dee drainages (endemic to South Carolina)
Bird	Lophodytes cucullatus	Hooded Merganser	W3	none	S1B,S4N	G5	Union	Current	lakes and ponds, with dead trees for nesting [breeding season only]
Reptile	Masticophis lateralis	Coachwhip	SR	none	S2	G5	Union	Historical	dry and sandy woods, mainly in pine/oak sanctuaries
Natural Community	Mesic Mixed Hardwood Forest	(Piedmont)		none	S4	G3G4	Union	Current	null
Vascular PI	Mnesithea carolinensis	Carolina Junco	SC-H	none	SH	G4G5	Union	Current	open woodlands and roadsides
Freshwater	Moxostoma valenciennesi	Robust Rock Bass	E	none	S1	G1	Union	Historical	Pee Dee River; formerly in tributaries of this river
Mammal	Mustela floricollis	Long-tailed Squirrel	W3	none	S3	G5	Union	Current	forests, brushy areas
Vascular PI	Oligoneurus	Southeastern	SR-P	none	S2	G5T4	Union	Current	glades, barrens, other open sites over mafic outcrops
Dragonfly	Ophiogomphus	Appalachian	W2	none	S3	G3	Union	Current	small to medium streams
Moss	Orthotrichum	Small Woolly	SR-O	none	SH	G3?	Union	Historical	base of trees or on tree trunks
Vascular PI	Parthenium	Mabry's Weed	W1	none	S3	G5T3	Union	Current	savannas, pocosin edges, upland pine-oak woodlands
Vascular PI	Paspalum conjugatum	Mudbank Cane	E	none	S2	G4?	Union	Historical	mudflats, other open wet areas
Vascular PI	Pellaea wrightii	Wright's Cliff Fern	E	none	S1	G5	Union	Current	rock outcrops, mafic or with nutrient-rich soil
Natural Community	Piedmont Alluvial Forest			none	S4	G4	Union	Current	null
Natural Community	Piedmont Basic Glade	(Typical Subtype)		none	S2	G2	Union	Current	null
Natural Community	Piedmont Bottomland Forest	(Typical Subtype)		none	S2	G2?	Union	Current	null
Natural Community	Piedmont Cliff	(Basic Subtype)		none	S1	G2?	Union	Current	null
Natural Community	Piedmont Levee Forest	(Typical Subtype)		none	S3S4	G3G4	Union	Current	null
Vascular PI	Primula maritima	Shooting-star	SC-V	none	S2S3	G5	Union	Current	mafic cliffs, dry coniferous woodlands, and as a shrub
Vascular PI	Prunus umbrinervis	Hog Plum	W7	none	S2	G4G5	Union	Historical	rocky or sandy woodlands
Vascular PI	Pseudognaphalium	Heller's Ragwort	E	none	S2S3	G4G5T3T4	Union	Current	dry woodlands and openings (especially over mafic outcrops)
Vascular PI	Rhus michauxii	Michaux's Sycamore	E	E	S2	G2G3	Union	Historical	sandhills, sandy forests, woodland, woodland
Vascular PI	Sagittaria arifolia	Delta Arrowhead	W4	none	SH	G5	Union	Historical	marshes
Vascular PI	Schoenoplectus	Three-square	W6	none	S3S4	G5	Union	Historical	marshes and rocky river bottoms
Mammal	Sciurus nigrescens	Eastern Fox Squirrel	W2	none	S3	G5	Union	Current	open forests, mainly longleaf pine/scrub oak
Vascular PI	Scutellaria americana	Heartleaf	W7	none	S2?	G5T3T5	Union	Current	rich woods on circumneutral soil
Vascular PI	Silene carolinensis	Rock Catch	W7	none	S2S3	G5T4	Union	Current	open, rocky slopes
Vascular PI	Silphium laciniatum	Prairie Dock	SR-P	none	S2	G4G5	Union	Current	diabase glades, other open or semi-open sites
Freshwater	Strophitus	Creeper	T	none	S3	G5	Union	Current	Roanoke, Tar, Neuse, Cape Fear, Yadkin-Pee Dee
Vascular PI	Symphytotrichum	Narrow-leaf	E	none	S2	G5T4	Union	Current	forests, woodland borders especially over mafic outcrops

Vascular Pl	Symphyotr Georgia As	T	C	S3	G3	Union	Current	open woods, roadsides, and other rights-of-w	
Freshwater	Toxolasma Savannah	L E	none	S2	G2	Union	Current	Cape Fear, Lumber, and Yadkin-Pee Dee drain	
Bird	Tyrannus fr	Scissor-tail	W3	none	SUB	G5	Union	Historical	extensive pastures and fields with scattered t
Freshwater	Villosa con	Notched R	T	none	S3	G3	Union	Current	Roanoke, Tar, Neuse, Yadkin-Pee Dee, and Ca
Freshwater	Villosa del	Eastern Cr	SR	none	S4	G4	Union	Current	Cape Fear, Lumber, Yadkin-Pee Dee, and Cata
Freshwater	Villosa vau	Carolina Cr	E	none	S3	G2G3	Union	Current	Cape Fear, Yadkin-Pee Dee, and Catawba drai
Reptile	Virginia val	Smooth Ea	W2	none	S3	G5	Union	Current	deciduous or mixed woods, usually in mesic s
Animal Ass	Waterbird	Waterbird Colony	none	none	S3	GNR	Union	Current	null
Natural Coi	Xeric Hardpan Forest (Acidic Hard	none	none	S1	G2	Union	Current	null	
Freshwater	Xolotrema Blunt Wed	W3	none	S3?	G4	Union	Current	wooded floodplains and slopes, mainly near t	
Vascular Pl	Acmele re	Creeping S	SR-D	none	S1	G5T5	Wake	Current	low wet areas and floating mats in alluvial for
Vascular Pl	Acmispon l	Carolina Bi	T	none	S3	G5T3	Wake	Current	woodlands and openings, generally on clayey
Moth	Acrapex re	Relict Cane	W3	none	S3	G4	Wake	Current	canebrakes
Moth	Acronicta a	Barrens Da	SR	none	S1S2	G3G4	Wake	Historical	oak glades and barrens
Vascular Pl	Actaea pac	White Ban	W6	none	S4	G5	Wake	Current	rich cove forests and slopes
Vascular Pl	Agalinis de	Piedmont C	W1	none	S3	G3G4	Wake	Current	dry, open sites
Vascular Pl	Agastache	Yellow Giar	SR-P	none	S1	G5	Wake	Historical	oak--hickory forests, especially over mafic roc
Freshwater	Alasmidont	Dwarf Wec	E	E	S1	G1G2	Wake	Current	Tar and Neuse drainages, mainly near Fall Lin
Freshwater	Alasmidont	Triangle Fl	T	none	S3	G4	Wake	Current	Roanoke, Chowan, Tar, Neuse, Cape Fear drai
Butterfly	Amblyscirt	Carolina R	W2	none	S3S4	G3G4	Wake	Current	moist woods (mainly hardwoods) near cane; l
Amphibian	Ambystom	Mole Salan	SC	none	S2S3	G5	Wake	Historical	breeds in fish-free semipermanent woodland
Amphibian	Ambystom	Eastern Tig	T	none	S2	G5	Wake	Current	breeds in fish-free semipermanent ponds; for
Bird	Ammodran	Henslow's	E	none	S1B,S1N	G4	Wake	Historical	clearcut pocosins and other damp weedy fiel
Bird	Ammodran	Grasshopp	W1,W5	none	S3B,S1N	G5	Wake	Current	pastures and other grasslands [breeding seas
Vascular Pl	Ampelopsi	Heartleaf P	W7	none	S2	G5	Wake	Current	floodplain forests
Sawfly, Wa	Andrena ar	Mustard M	W3	none	SH	GNR	Wake	Historical	Arabis and Cardamine specialist
Sawfly, Wa	Andrena ca	an andreni	W3	none	SH	GNR	Wake	Historical	collected on Vicia caroliniana, a pea species fr
Sawfly, Wa	Andrena ru	an andreni	W3	none	SH	GNR	Wake	Historical	coneflower specialist, including Rudbeckia
Moth	Anicla lubri	Slippery Da	W3	none	S3?	G4G5	Wake	Current	savannas and flatwoods
Moss	Archidium	Donnell's A	SR-O	none	S1	G3G5	Wake	Current	sandy or gravelly soil along roadsides, in field
Moth	Arugisa lati	Watson's A	W3	none	S3?	G4	Wake	Current	sedgy glades
Vascular Pl	Bartonia p	Twining Sci	W1	none	S2S3	G5T5	Wake	Historical	bogs, wet savannas, sandhill seeps, other ope
Natural Coi	Basic Mesic Forest (Piedmont Sub	none	none	S3S4	G3G4	Wake	Current	null	
Sawfly, Wa	Bombus afl	Rusty-pat	SR	E	S1	G2	Wake	Historical	nests in abandoned mammal burrows, gather
Sawfly, Wa	Bombus fr	Southern P	W3	none	S2S3	G2G4	Wake	Current	prairie remnants and urban gardens

Sawfly, Wa	Bombus va	Variable C	SR	none	SH	G1G2	Wake	Historical	open habitats, fields
Moss	Bruchia rav	A Pygmy M	W7	none	SH	G3?	Wake	Historical	sandy soil of old fields and open woods
Vascular PI	Buchnera a	American E	E	none	S1	G5?	Wake	Historical	glades, open forests, streambanks, probably p
Crustacean	Cambarus c	Carolina La	SR	none	S3	G3	Wake	Current	Neuse and Cape Fear drainages (endemic to N
Moss	Campylopu	Oersted's C	SR-D	none	S1	G2G3	Wake	Historical	granite flatrocks
Vascular PI	Cardamine	Douglass's	SR-P	none	S2	G5	Wake	Current	bottomlands, rich lower slopes
Vascular PI	Carex mea	Mead's Sec	E	none	S1	G4G5	Wake	Historical	low wet places over diabase
Vascular PI	Carex renif	Kidney Sed	T	none	S1	G4?	Wake	Historical	swamps, open wet areas
Moth	Catocala m	Marbled U	SR	none	S1S3	G3G4	Wake	Current	forests with cottonwoods or willows, especial
Butterfly	Cecropteru	Confused C	W3	none	S3S4	G4	Wake	Current	dry woodland borders and openings, brushy f
Vascular PI	Celtis occid	Mountain I	W7	none	S2	G5	Wake	Current	rocky woodlands and mafic cliffs
Reptile	Cemophor	Scarlet Sna	W1,W5	none	S3	G5	Wake	Current	sandhills, sandy woods, and other dry woods
Vascular PI	Cirsium car	Carolina Th	E	none	S2	G5	Wake	Historical	forests and disturbed areas, mostly on basic s
Moth	Cisthene k	Kentucky L	W3	none	SU	GU	Wake	Current	wet to mesic forests
Moss	Cleistocarp	Phascum r	SR-D	none	S1	G5?	Wake	Current	wet soil, sandy swamps
Vascular PI	Clematis c	Coastal Vir	SR-P	none	S2	G4G5	Wake	Historical	dunes, edges of maritime forests, or over dol
Reptile	Clemmys g	Spotted Tu	W1	none	S4	G5	Wake	Current	shallow water of pools, marshes, wet pasture
Natural Coi	Coastal Plain	Semipermanent	Imp	none	S4	G4G5	Wake	Current	null
Natural Coi	Coastal Plain	Semipermanent	Imp	none	S4	G5	Wake	Current	null
Natural Coi	Coastal Plain	Semipermanent	Imp	none	S4	G4?	Wake	Current	null
Natural Coi	Coastal Plain	Small Stream	Swamp	none	S4	G4?	Wake	Current	null
Vascular PI	Comptonia	Sweet Fern	W1	none	S3	G5	Wake	Historical	open dry sites, often fire-maintained
Mammal	Condylura	Star-nosed	SC	none	S2	G5T2Q	Wake	Historical	moist meadows, bogs, swamps, bottomlands
Vascular PI	Corallorhiz	Autumn C	W1	none	S4?	G5	Wake	Current	forests
Dragonfly c	Coryphaes	Regal Darn	SR	none	S2?	G5	Wake	Historical	lakes and ponds
Vascular PI	Crataegus	Batesburg	SR-T	none	S2?	G4G5TNR	Wake	Current	xeric or subxeric forests, scrublands, disturbe
Reptile	Crotalus hc	Timber Rat	SC	none	S3	G4	Wake	Historical	wetland forests in the Coastal Plain; rocky, up
Vascular PI	Cyperus gr	Granite Fla	T	none	S2	G3G4Q	Wake	Current	granite flatrocks, other rock outcrops
Vascular PI	Cyperus vir	Green Flats	SC-V	none	S1	G5	Wake	Historical	and ditches
Vascular PI	Diamorpha	Elf Orpine	W1	none	S3	G4	Wake	Current	granite flatrocks
Caddisfly	Dibusa ang	Angulated	SR	none	S2	G5	Wake	Historical	larger streams and rivers in Tar, Neuse, and Y
Vascular PI	Dichanthe	Ringed Wit	E	none	S1	G4	Wake	Historical	dry sandy or rocky open woods and borders o
Vascular PI	Dichanthe	Hidden-flo	SR-T	none	S2	G3G4Q	Wake	Historical	wet streamhead pocosin openings, including i
Vascular PI	Didiplis dia	Water Purs	SR-P	none	S1	G5	Wake	Current	sluggish streams and ponds
Vascular PI	Diphasiastr	Deep-root	W6	none	S3	G5	Wake	Historical	dry forests, glades, barrens and forest openin



Vascular Pl	Dirca palus Leatherwo	W1	none	S3	G4	Wake	Current	rich woods, either alluvial or over mafic or cal	
Natural Coi	Dry Basic Oak--Hickory Forest		none	S2S3	G2G3	Wake	Current	null	
Natural Coi	Dry Oak--Hickory Forest (Piedmon		none	S4	G4G5	Wake	Current	null	
Natural Coi	Dry Piedmont Longleaf Pine Fores		none	S2	G2	Wake	Current	null	
Natural Coi	Dry-Mesic Oak--Hickory Forest (Pi		none	S4	G4G5	Wake	Current	null	
Vascular Pl	Dryopteris Crested W	W1	none	S3	G5	Wake	Current	bogs, wet woods	
Vascular Pl	Eleocharis Horsetail S	W1	none	S3	G4	Wake	Current	limesink ponds, lakes, borrow pits, ditches	
Vascular Pl	Eleocharis Small-fruit	W6	none	S5	G5	Wake	Historical	bogs, wet pine savannas and ditches	
Freshwater	Elliptio cist Box Spike	W3,W5	none	SU	G4	Wake	Current	Neuse, Lumber, Pee Dee drainages; Lake Wac	
Freshwater	Elliptio con Carolina Sl	W2,W5	none	S3	G3	Wake	Current	drainages north to the White Oak drainage	
Freshwater	Elliptio fish Northern L	SR	none	S3	G4	Wake	Current	Atlantic Slope drainages	
Freshwater	Elliptio lan	Yellow Lan	E	T	S2	G2	Wake	Current	Tar and Neuse drainages
Freshwater	Elliptio pro Atlantic Spi	W3,W5	none	SU	G3Q	Wake	Current	many Atlantic drainages; very difficult to iden	
Freshwater	Elliptio roa Roanoke SI	SC	none	S3	G3	Wake	Current	Roanoke, Tar, Neuse, White Oak, Cape Fear, L	
Vascular Pl	Elodea can Canada W	W7	none	S1?	G5	Wake	Historical	lakes, ponds, and stagnant waters of streams	
Vascular Pl	Elodea nut Nuttall's El	W7	none	S2?	G5	Wake	Historical	lakes, ponds, and streams	
Bird	Empidonax Willow Flyc	W2	none	S3B	G5	Wake	Historical	wet thickets in open country, often along stre	
Freshwater	Enneacantl Banded Su	SR	none	S3	G5	Wake	Historical	most Atlantic drainages	
Vascular Pl	Eriocaulon Flattened F	W6	none	S3?	G5	Wake	Historical	bogs and shallow pools	
Butterfly	Erynnis ma Mottled D	SR	none	S2	G3	Wake	Historical	upland woods and wooded edges; host plant	
Freshwater	Etheostom Fantail Dar	W5	none	S3	G5	Wake	Current	Cape Fear, Neuse, and Tar drainage populatio	
Freshwater	Etheostom Glassy Dart	W5	none	S3	G4G5	Wake	Current	Chowan, Roanoke, Tar, and Neuse drainages	
Vascular Pl	Eupatoriun Tall Bones	W1	none	S2	G5	Wake	Historical	woodlands, openings, and old fields over maf	
Vascular Pl	Eupatoriun Godfrey's T	W1	none	S3	G4	Wake	Historical	woodlands, especially over mafic rocks	
Amphibian	Eurycea qu Dwarf Sala	SC	none	S1	G5	Wake	Historical	pocosins, Carolina bays, pine flatwoods, savar	
Vascular Pl	Fallopia cri Crested Cli	W7	none	S2?	G5T5	Wake	Historical	moist forests, especially alluvial forests	
Lichen	Fellhanera Piedmont	W7	none	S2?	G2?	Wake	Current	shaded siliceous rock and bases of trees	
Natural Coi	Floodplain Pool		none	S2	G3	Wake	Current	null	
Moss	Fontinalis f A Water M	W7	none	S2?	G4G5	Wake	Historical	bases of trees in brooks or swamps, submerg	
Vascular Pl	Fothergilla Large Witcl	SR-T	none	S3	G3	Wake	Current	dry ridgetop or bluff forests, seepage wetlanc	
Freshwater	Fusconaia Atlantic Pig	E	PT	S3	G1	Wake	Current	Roanoke, Tar, Neuse, Cape Fear, Yadkin-Pee L	
Vascular Pl	Gillenia sti Indian Phy	T	none	S2	G5	Wake	Historical	forests and open woods, mainly over mafic ro	
Dragonfly	Gomphuru Septima's	SR	none	S3	G3	Wake	Current	rocky rivers	
Dragonfly	Gomphuru Skillet Club	SR	none	S1	G3	Wake	Current	rivers	
Moth	Grammia d Doris Tiger	SR	none	S1S3	G4?	Wake	Current	rich forests?	

Moth	Grammia p Phyllira Tig W2	none	S3	G4	Wake	Current	sandhills
Natural Coi	Granitic Flatrock (Annual Herb S) none	none	S2	G3	Wake	Current	null
Natural Coi	Granitic Flatrock (Perennial Herb S) none	none	S2	G3	Wake	Current	null
Natural Coi	Granitic Flatrock Border Woodland none	none	S2	G3?	Wake	Current	null
Bird	Haliaeetus Bald Eagle T	BGPA	S3B,S3N	G5	Wake	Current	mature forests near large bodies of water (ne
Vascular Pl	Helenium k Littleleaf Sr E	none	S1	G4	Wake	Historical	bogs, seeps, riverbanks, other wet sites
Moth	Heliomata Rare Spring W3	none	S2S3	G3G4	Wake	Current	forests or woodlands with shrubby locusts
Amphibian	Hemidactyl Four-toed SC	none	S3	G5	Wake	Current	pools, bogs, and other wetlands in hardwood
Butterfly	Heraclides Eastern Giant SR	none	S2S3	G5	Wake	Current	primarily coastal in maritime forests or thicke
Butterfly	Hesperia le Leonard's S W2	none	S2S3	G4	Wake	Current	wooded borders and openings, brushy fields;
Vascular Pl	Heteranthe Atlantic Mt SR-P	none	S1	G3?	Wake	Current	open pools in brownwater or blackwater river
Vascular Pl	Heteranthe Kidneyleaf W7	none	S2?	G5	Wake	Current	muddy shores, bars, pools
Reptile	Heterodon Southern HT	none	S1S2	G2	Wake	Historical	sandy woods, particularly pine-oak sandhills
Vascular Pl	Hexastylis I Lewis's Her W1	none	S3	G3	Wake	Current	mesic mixed hardwood forests, streamhead p
Grasshopp	Hubbellia r Pine Katydi W3	none	S3?	GNR	Wake	Current	pinewoods
Vascular Pl	Humulus lu Hops W7	none	S1?	G5T5	Wake	Historical	alluvial forests and bottomlands
Moth	Hydriomen Black-dash W3	none	S2S3	G5	Wake	Current	no habitat information
Vascular Pl	Hydrophyll Blunt-leaf W6	none	S4	G5	Wake	Historical	by streams or springs in rich woods or clearin
Vascular Pl	Hydrophyll John's Cabl W6	none	S4	G5	Wake	Historical	rich wooded slopes, stream banks and alluvia
Moss	Hygroambly Brookside I W7	none	S2?	G5	Wake	Current	wet, calcareous rocks
Dragonfly c	Hylogomph Banner Clu W3	none	S3	G3G4	Wake	Current	spring-fed streams
Dragonfly c	Hylogomph Piedmont C W2	none	S3	G4	Wake	Current	small woodland streams with sandy bottoms
Moth	Idea scint Diminutive W3	none	SU	GNR	Wake	Current	unknown habitats
Vascular Pl	Isoetes pie Piedmont C T	none	S2	G4	Wake	Current	granite flatrocks and diabase glades
Vascular Pl	Juncus brai Whiteroot W7	none	S2?	G4G5	Wake	Historical	wet sandy soil
Vascular Pl	Juncus sect Nodding R W7	none	S1S2	G5?	Wake	Historical	rock outcrops and glades
Reptile	Kinosterno Striped Mu W3	none	S3S4	G5	Wake	Current	various shallow wet places; ponds, pools, ditc
Vascular Pl	Lachnocaul Bog-butto W6	none	S4	G5	Wake	Historical	bogs, ditches, savannas, and low pinelands
Freshwater	Lampetra a Least Brool T	none	S2	G5	Wake	Current	Tar and Neuse drainages
Freshwater	Lampsilis r Eastern Lar T	none	S3	G5	Wake	Current	Chowan, Roanoke, Tar, Neuse, Cape Fear, Yac
Bird	Lanius ludc Loggerhear SC, W2	none	S2S3B,S3N	G4	Wake	Current	fields and pastures [breeding season only]
Mammal	Lasiurus se Seminole B W2	none	S3	G5	Wake	Current	forages over open areas, often over water (su
Freshwater	Lasmigona Green Floa E	none	S2	G3	Wake	Current	New, Watauga, Roanoke, Tar, Neuse and Yadl
Vascular Pl	Lathyrus ve Smooth Pe W1	none	S3	G5	Wake	Historical	rich bottomlands and rocky slopes, generally
Vascular Pl	Liatris secu Sandhill Bl W7	none	S2	G4G5	Wake	Current	sandhills

Vascular PI	<i>Liatris squarosa</i>	Earle's Blaz	SR-P	none	S2	G4G5	Wake	Current	diabase glades, open woods especially over m
Vascular PI	<i>Lindera sulcatifolia</i>	Bog Spiceb	SR-T	none	S2	G3	Wake	Current	streamhead pocosins, white cedar swamps, s
Vascular PI	<i>Lindernia linearis</i>	Flatrock Pir	W1	none	S2	G4	Wake	Current	seepages on granitic flatrocks and other rock
Moth	<i>Lithophane</i>	Lemmer's	FW3	none	S1S3	G3G4	Wake	Current	cedar glades and Atlantic white cedar forests
Vascular PI	<i>Lithospermum</i>	Virginia M	W1	none	S3	G4	Wake	Historical	sandhill woodlands, shell middens, barrens, g
Bird	<i>Lophodytes cucullatus</i>	Hooded M	W3	none	S1B,S4N	G5	Wake	Current	lakes and ponds, with dead trees for nesting [
Natural Coi	Low Elevation Seep (Floodplain Su			none	S2	G4	Wake	Current	null
Natural Coi	Low Elevation Seep (Typic Subtyp			none	S3	G3?	Wake	Current	null
Bird	<i>Loxia curvirostris</i>	Red Crossb	SC	none	S2	G5	Wake	Historical	coniferous forests, preferably spruce-fir
Freshwater	<i>Lythrurus</i>	r Pinewoods	W5	none	S3	G3G4	Wake	Current	Tar and Neuse drainages (endemic to North C
Vascular PI	<i>Magnolia grandiflora</i>	n Bigleaf Ma	SC-V	none	S2	G5	Wake	Current	rich deciduous forests
Vascular PI	<i>Matelea dieckmannii</i>	Glade Milk	W1	none	S3	G5	Wake	Current	thin woodlands over mafic or calcareous rock
Sawfly, Wa	<i>Megachile albipennis</i>	a leafcutter	SR	none	SH	G2?	Wake	Historical	xeric sand habitats
Sawfly, Wa	<i>Megachile albipennis</i>	a leafcutter	SR	none	SH	G2G3	Wake	Historical	no habitat preferences currently known (Blad
Sawfly, Wa	<i>Megachile albipennis</i>	a leafcutter	SR	none	SH	G1G3	Wake	Historical	dunes, xeric pine savannas, disturbed areas (C
Sawfly, Wa	<i>Megachile albipennis</i>	a leafcutter	W3	none	S2S3	G3	Wake	Historical	documented on <i>Crataegus</i> , <i>Rubus</i> , and <i>Seneci</i>
Natural Coi	Mesic Mixed Hardwood Forest (Pi			none	S4	G3G4	Wake	Current	null
Vascular PI	<i>Micranthes</i>	Swamp Sax	E	none	S1	G5	Wake	Historical	bogs, seeps
Vascular PI	<i>Monotropa</i>	Sweet Pine	SR-O	none	S3	G3	Wake	Current	dry forests and bluffs
Grasshopp	<i>Montezuma</i>	Modest Ka	W3	none	SU	GU	Wake	Historical	pinewoods and other habitats
Mammal	<i>Mustela floricollis</i>	Long-tailed	W3	none	S3	G5	Wake	Current	forests, brushy areas
Mammal	<i>Myotis austroriparius</i>	Southeaste	SC	none	S2	G4	Wake	Current	roosts in buildings, hollow trees; forages near
Mammal	<i>Myotis lucifugus</i>	Little Brow	SR	none	S2	G3	Wake	Historical	roosts in buildings (summer), in caves and mi
Vascular PI	<i>Najas gracilissima</i>	Slender W	W7	none	S2	G5?	Wake	Historical	pools and lakes
Vascular PI	<i>Nanopanax</i>	Dwarf Gins	W1	none	S3	G5	Wake	Current	cove forests, northern hardwoods, other rich
Amphibian	<i>Necturus lewisi</i>	Neuse Rive	SC	T	S2	G2	Wake	Current	rivers and large streams in Neuse and Tar dra
Vascular PI	<i>Nelumbo lutea</i>	American L	W7	none	S2	G4	Wake	Current	ponds, slow streams, natural lakes, estuarine
Vascular PI	<i>Neottia bicolor</i>	Southern T	W1	none	S3	G4	Wake	Current	moist hardwood forest, swamps, wet woods \
Dragonfly c	<i>Neurocordulia</i>	Alabama SI	W3	none	S3?	G5	Wake	Current	small creeks in forested regions, often where
Dragonfly c	<i>Neurocordulia</i>	Smoky Sha	W3	none	S3?	G4	Wake	Current	rivers
Dragonfly c	<i>Neurocordulia</i>	Cinnamon	W3	none	S2?	G4	Wake	Current	large rivers
Sawfly, Wa	<i>Nomada</i>	in a cuckoo b	W3	none	SH	GNR	Wake	Historical	no habitat preferences available
Sawfly, Wa	<i>Nomada</i>	m a cuckoo b	W3	none	SH	GNR	Wake	Historical	no habitat preferences available
Sawfly, Wa	<i>Nomada</i>	ty a cuckoo b	SR	none	SH	GNR	Wake	Historical	no habitat preferences currently known
Freshwater	<i>Notropis</i>	cl Ironcolor S	SR	none	S2S3	G4	Wake	Current	coastal plain rivers and creeks

Freshwater	Notropis vc Mimic Shin T	none	S2	G5	Wake	Historical	New, French Broad, Little Tennessee, Tar, and
Freshwater	Noturus fu Carolina M T	E	S2	G2	Wake	Historical	Tar and Neuse drainages (endemic to North C
Reptile	Ophisaurus Slender Gl SR	none	S1	G5	Wake	Current	old fields, wooded edges, open woods
Crustacean	Orconectes North Caro SC	none	S3	G3	Wake	Current	rivers and streams in the Chowan, Roanoke, N
Vascular PI	Panax quin Ginseng W1	none	S3S4	G3G4	Wake	Current	cove forests, other rich forests
Vascular PI	Parthenium Mabry's W W1	none	S3	G5T3	Wake	Historical	savannas, pocosin edges, upland pine-oak wo
Vascular PI	Paspalum f Horsetail C SR-P	none	S1	G5	Wake	Current	drawdown riverbanks and seepage areas in s
Vascular PI	Pellaea atr Purple-ster W1	none	S3	G5	Wake	Historical	limestone outcrops
Liverwort	Pellia appa A Liverwort W7	none	S1	G4	Wake	Historical	on moist rock outcrops, usually near waterfall
Mammal	Perimyotis Tricolored SR	none	S3	G2G3	Wake	Current	roosts in clumps of leaves (mainly in summer)
Vascular PI	Persicaria c Dense-flow W1	none	S3	G5	Wake	Current	Swamp forests
Bird	Peucaea ac Bachman's SC	none	S3B,S2N	G3	Wake	Historical	open longleaf pine forests, old fields [breedin
Bird	Picoides bc Red-cockac E	E	S2	G3	Wake	Historical	mature open pine forests, mainly in longleaf p
Natural Coi	Piedmont Alluvial Forest	none	S4	G4	Wake	Current	null
Natural Coi	Piedmont Boggy Streamhead	none	S2	G2G3	Wake	Current	null
Natural Coi	Piedmont Bottomland Forest (High	none	S2	G3G4	Wake	Current	null
Natural Coi	Piedmont Bottomland Forest (Typic	none	S2	G2?	Wake	Current	null
Natural Coi	Piedmont Cliff (Acidic Subtype)	none	S2	G2?	Wake	Current	null
Natural Coi	Piedmont Levee Forest (Typic Sub	none	S3S4	G3G4	Wake	Current	null
Natural Coi	Piedmont Monadnock Forest (Typic	none	S3	G3G4	Wake	Current	null
Natural Coi	Piedmont/Coastal Plain Heath Blu	none	S3	G3	Wake	Current	null
Natural Coi	Piedmont/Mountain Semiperman	none	S4	G4G5	Wake	Current	null
Natural Coi	Piedmont/Mountain Semiperman	none	S4	G4?	Wake	Current	null
Natural Coi	Piedmont/Mountain Semiperman	none	S4	G4	Wake	Current	null
Vascular PI	Platanther White-fringed W1	none	S3?	G5	Wake	Historical	bogs or depressions
Vascular PI	Pogonia op Rose Pogon W6	none	S3	G5	Wake	Historical	open bogs and seepage slopes.
Vascular PI	Polygala se Seneca Sna SC-V	none	S2	G4G5	Wake	Current	woodlands and in thin soil around outcrops, u
Vascular PI	Polygonum Erect Knot W7	none	S1S2	G5	Wake	Historical	open places
Butterfly	Pontia prot Checkered SR	none	S1S2	G5	Wake	Current	fields, pastures; host plants -- mustard specie
Lichen	Porpidia m Boulder Lic W7	none	S1?	G4	Wake	Current	P: high elevation rocky summits, granitic flatr
Vascular PI	Portulaca s Small's Por T	none	S2	G3	Wake	Current	granite flatrocks and diabase glades
Amphibian	Pseudacris Southern C SR	none	S2	G5	Wake	Historical	ditches, Carolina bays, and other temporary s
Vascular PI	Pseudoglossa Heller's Ral E	none	S2S3	G4G5T3T4	Wake	Current	dry woodlands and openings (especially over
Vascular PI	Pycnanthemum Virginia Mc SR-P	none	S1?	G5	Wake	Current	forests, woodland borders, bogs
Vascular PI	Pyrola ame American S W1	none	S2S3	G5	Wake	Historical	forests

Vascular PI	Quercus bi	Swamp Wf	W1	none	S2	G5	Wake	Historical	upland swamp forests
Vascular PI	Quercus m	Chinquapir	W1	none	S2	G5	Wake	Current	calcareous forsts and bluffs
Bird	Rallus eleg	King Rail	W1,W3	none	S3B,S3N	G4	Wake	Current	fresh to slightly brackish marshes [breeding e
Vascular PI	Rhododenc	Catawba RI	W6	none	S5	G5	Wake	Historical	rocky slopes, ridges and balds, usually over 3C
Vascular PI	Rhus micha	Michaux's	E	E	S2	G2G3	Wake	Current	sandhills, sandy forests, woodland, woodland
Vascular PI	Ruellia hun	Low Wild-p	T	none	S1	G5	Wake	Current	diabase glades
Vascular PI	Ruellia pur	Pursh's Wil	SC-V	none	S2	G3	Wake	Historical	glades and woodlands, mostly over mafic or c
Vascular PI	Rumex alti	Pale Dock	W7	none	S2?	G5	Wake	Historical	low wet places
Vascular PI	Sabatia qua	Four-angle	W7	none	S2	G4G5	Wake	Current	moist to mesic grassy glades, woodland borde
Vascular PI	Sagittaria v	Grassleaf A	E	none	S2	G5T3T4	Wake	Historical	fresh to slightly brackish marshes, streams, sv
Vascular PI	Salix humil	Tall Prairie	W6	none	S3	G5	Wake	Historical	balds, roadsides and ditches
Vascular PI	Sarracenia	Northern P	W6	none	S3	G5	Wake	Historical	sphagnum bogs, moist savannahs and isolate
Moth	Schizura sp	a new Pron	SR	none	S1S2	GU	Wake	Current	unknown
Mammal	Sciurus nig	Eastern Fo	W2	none	S3	G5	Wake	Current	open forests, mainly longleaf pine/scrub oak
Vascular PI	Scutellaria	Southern S	E	none	S1	G4T4?	Wake	Historical	alluvial forests
Vascular PI	Scutellaria	Veined Sku	E	none	S1	G5	Wake	Current	alluvial forests
Vascular PI	Scutellaria	A Heartleaf	W7	none	S2?	G5T3T5	Wake	Current	rich woods on circumneutral soil
Vascular PI	Scutellaria	Showy Skul	W1	none	S2S3	G4G5	Wake	Current	deciduous forests
Vascular PI	Silene caro	Sticky Catcl	W7	none	S1S2	G5T4T5	Wake	Current	open woodlands with sandy or sandy-loamy s
Vascular PI	Silphium te	Prairie Doc	SR-P	none	S2	G4G5	Wake	Historical	diabase glades, other open or semi-open sites
Amphibian	Siren lacert	Greater Sir	W3	none	S3	G5	Wake	Current	lakes, ponds, and streams, especially where n
Vascular PI	Smilax laur	Laurel-leaf	W6	none	S5	G5	Wake	Historical	bays, pocosins, bogs, and swamp forests
Vascular PI	Solidago ra	Western R	E	none	S1	G5?	Wake	Historical	dry woodlands over mafic rocks
Vascular PI	Solidago sa	Round-leav	W1	none	S2?	G5T5	Wake	Current	seeps, pocosins, peaty places
Dragonfly c	Somatochl	Treetop En	W3	none	S3?	G4	Wake	Current	small forested seeps and pools, perhaps very
Butterfly	Speyeria di	Diana Fritil	W2	none	S3S4	G2G3	Wake	Historical	montane and foothill forest edges and openir
Moss	Sphagnum	Orange Pe	SR-P	none	S1	G5	Wake	Current	bogs and rock ledges
Moth	Sphingican	Honey Locu	W3	none	S3?	G5	Wake	Current	on honey locust (Gleditsia)
Freshwater	Strophitus	Creeper	T	none	S3	G5	Wake	Current	Roanoke, Tar, Neuse, Cape Fear, Yadkin-Pee E
Dragonfly c	Stylurus an	Riverine Cl	W3	none	S3	G4	Wake	Current	rivers
Dragonfly c	Stylurus lat	Laura's Clu	W1	none	S2S3	G4	Wake	Historical	medium-size streams with clean sandy substr
Vascular PI	Swida alter	Alternate-l	W6	none	S4	G5	Wake	Historical	shrub balds, deciduous woods and stream bai
Vascular PI	Symphyotr	Narrow-lea	E	none	S2	G5T4	Wake	Historical	forests, woodland borders especially over ma
Vascular PI	Thermopsi	Appalachia	SR-T	none	S2	G3G4	Wake	Current	dry ridges and open woodlands
Vascular PI	Tilia americ	American E	W7	none	S1?	G5T5	Wake	Historical	rich cove forests

Moss	Tortula plir A Chain-te	SR-O	none	S1?	G4G5	Wake	Historical	calcareous rocks, concrete or mortared walls
Vascular PI	Tradescant Hairy Spide	W7	none	S2	G5	Wake	Current	dry rocky woodlands and rock outcrops
Vascular PI	Tradescant Virginia Spi	T	none	S2S3	G5	Wake	Current	rich woods on circumneutral soils
Vascular PI	Trichostem Narrowleaf	SR-T	none	S2	G5	Wake	Current	dry woodlands, granite flatrocks
Vascular PI	Trifolium r Buffalo Clo	T	none	S1S2	G3G4	Wake	Current	open woods and clearings
Vascular PI	Trillium pu: Virginia Le	E	none	S1	G3T2	Wake	Current	mesic to swampy hardwood forests
Vascular PI	Tsuga cana Eastern He	W5	none	S4S5	G4G5	Wake	Current	moist soils
Natural Coi	Ultramafic Outcrop Barren (Piedm		none	S1	G1	Wake	Current	null
Vascular PI	Vaccinium Small-flow	W7	none	S1S2	G4	Wake	Current	pocosins, blackwater swamps, mesic pine flat
Vascular PI	Verbena h Blue Verva	W7	none	S2S3	G5	Wake	Current	marshes, bogs, and fields
Vascular PI	Verbesina Frostweed	W7	none	S2?	G5?T5?	Wake	Current	moist forests, especially over calcareous rock
Vascular PI	Veronicast Culver's-ro	W7	none	S2?	G4	Wake	Current	bogs, wet meadows, dry soils over mafic rock
Freshwater	Villosa con: Notched R	T	none	S3	G3	Wake	Current	Roanoke, Tar, Neuse, Yadkin-Pee Dee, and Ca
Bird	Vireo gilvu: Warbling V	SR	none	S2B	G5	Wake	Current	groves of hardwoods along rivers and stream:
Reptile	Virginia val Smooth Ea	W2	none	S3	G5	Wake	Current	deciduous or mixed woods, usually in mesic s
Animal Ass	Waterbird Waterbird Colony		none	S3	GNR	Wake	Current	null
Moss	Weissia m A Moss	W7	none	S2?	G5	Wake	Current	soil among grasses, roadsides
Mammal	Zapus huds Meadow Ju	SR	none	S1	G5	Wake	Historical	open moist fields and brushy places, usually n
Natural Coi	Acidic Cove Forest (Typic Subtype)		none	S4	G5	Wilkes	Current	null
Dragonfly c	Aeshna tuk Black-tippe	SR	none	S1	G5	Wilkes	Historical	boggy or marshy ponds
Vascular PI	Agalinis de Piedmont C	W1	none	S3	G3G4	Wilkes	Historical	dry, open sites
Freshwater	Alasmidont Brook Floa	E	none	S3	G3	Wilkes	Current	Cape Fear drainage, also along Blue Ridge esc
Vascular PI	Allium kee Kever's O	SC-V	none	S2	G2	Wilkes	Current	thin soils around rock outcrops, receiving nuti
Moss	Andreaea r Roth's and	W7	none	S2?	G5	Wilkes	Current	wet rocks and seepages at high elevation
Vascular PI	Angelica at Purple-ster	W4	none	S2S3	G5	Wilkes	Current	roadsides
Freshwater	Anguispira Flamed Tig	W2	none	S2S3	G5	Wilkes	Current	moist forested areas
Bird	Aquila chry Golden Eag	SR	BGPA	SUB,S1N	G5	Wilkes	Current	grass balds or fields amid remote and extensi
Vascular PI	Asclepias p Purple Milk	SR-T	none	S1?	G5?	Wilkes	Current	swamps, bottomlands, edges of moist woods
Vascular PI	Asplenium Lobed Sple	SR-P	none	S2	G4	Wilkes	Current	acidic rock outcrops and cliffs
Liverwort	Barbilopho A Liverwor	SR-D	none	S1	G5	Wilkes	Historical	on high elevation rocky summits
Moss	Blindia acu Sharp-poin	W7	none	S2?	G5	Wilkes	Historical	moist or dripping acidic rock faces
Sawfly, Wa	Bombus afi Rusty-patcl	SR	E	S1	G2	Wilkes	Historical	nests in abandoned mammal burrows, gather
Sawfly, Wa	Bombus fei Yellow Bun	W3	none	S3S4	G3G4	Wilkes	Current	fields and other open habitats
Dragonfly c	Boyeria gra Ocellated	SR	none	S2?	G5	Wilkes	Historical	rocky forest streams
Vascular PI	Boykinia ac Brook Saxif	W1	none	S3	G4	Wilkes	Historical	stream banks, meadows, and seepage slopes

Crustacean	<i>Cambarus j</i>	Carolina Fc	SR	none	S3	G3	Wilkes	Current	headwater streams in the Yadkin-Pee Dee, Ca
Crustacean	<i>Cambarus</i>	la crayfish	W3	none	S2S4	G2G3	Wilkes	Current	streams and rivers, species in Hiwassee and N
Vascular Pl	<i>Carex albu</i>	White Bear	W7	none	S2	G5	Wilkes	Current	rich cove forests, over mafic or calcareous roc
Vascular Pl	<i>Carex echir</i>	Star Sedge	W1	none	S2S3	G5T5	Wilkes	Historical	bogs and seeps
Vascular Pl	<i>Carex frase</i>	Fraser's Se	W1	none	S3	G4	Wilkes	Current	forests
Vascular Pl	<i>Carex proje</i>	Necklace S	SR-P	none	S1	G5	Wilkes	Current	bogs, marshes, swamps, brownwater floodpl
Vascular Pl	<i>Celastrus s</i>	American E	E	none	S2?	G5	Wilkes	Current	cove forests and rich woods
Natural Coi	Chestnut Oak Forest (Dry Heath S)			none	S5	G5	Wilkes	Current	null
Natural Coi	Chestnut Oak Forest (Herb Subtyp			none	S4	G4G5	Wilkes	Current	null
Natural Coi	Chestnut Oak Forest (White Pine S			none	S3	G3	Wilkes	Current	null
Vascular Pl	<i>Chrysosple</i>	Golden Sax	W1	none	S3	G5	Wilkes	Historical	seeps
Beetle	<i>Cicindela p</i>	Northern B	SR	none	S2?	G3	Wilkes	Current	sandy soil in open pine or pine-oak woods
Vascular Pl	<i>Cirsium car</i>	Carolina Th	E	none	S2	G5	Wilkes	Historical	forests and disturbed areas, mostly on basic s
Vascular Pl	<i>Comptonia</i>	Sweet Fern	W1	none	S3	G5	Wilkes	Current	open dry sites, often fire-maintained
Vascular Pl	<i>Crocather</i>	Creeping S	T	none	S1	G4	Wilkes	Historical	rock outcrops, glades
Reptile	<i>Crotalus hc</i>	Timber Rat	SC	none	S3	G4	Wilkes	Current	wetland forests in the Coastal Plain; rocky, up
Freshwater	<i>Cyprinella l</i>	Thicklip Ch	W5	none	S3	G4	Wilkes	Current	Yadkin, Catawba, and Broad drainages
Natural Coi	Dry-Mesic Oak--Hickory Forest (Pi			none	S4	G4G5	Wilkes	Current	null
Vascular Pl	<i>Duravia sp.</i>	Glade Knot	W7	none	S2?	G5	Wilkes	Current	glades and other thin soil over mafic rock
Freshwater	<i>Elliptio roa</i>	Roanoke Sl	SC	none	S3	G3	Wilkes	Current	Roanoke, Tar, Neuse, White Oak, Cape Fear, L
Bird	<i>Empidonax</i>	Willow Flyc	W2	none	S3B	G5	Wilkes	Current	wet thickets in open country, often along stre
Vascular Pl	<i>Epilobium l</i>	Narrowleaf	W1	none	S2S3	G5	Wilkes	Current	bogs and seeps
Butterfly	<i>Erora laeta</i>	Early Hairst	SR	none	S2S3	G2G3	Wilkes	Historical	deciduous forests, especially along edges of ri
Butterfly	<i>Euchloe ol</i>	Olympia M	SR	none	S1	G5	Wilkes	Current	dry, open wooded slopes, mainly on circumne
Bird	<i>Falco pereg</i>	American F	E	none	S1B,S2N	G4T4	Wilkes	Current	cliffs (nesting); coastal ponds and mudflats (fc
Vascular Pl	<i>Fallopia cri</i>	Crested Cli	W7	none	S2?	G5T5	Wilkes	Historical	moist forests, especially alluvial forests
Vascular Pl	<i>Fleischman</i>	Pink Thoro	SR-O	none	S2	G5	Wilkes	Current	rich woods and thin woodlands over diabase,
Vascular Pl	<i>Geum lacin</i>	Rough Ave	E	none	S1	G5	Wilkes	Historical	bogs and wet meadows
Reptile	<i>Glyptemys</i>	Bog Turtle	T	T(S/A)	S2	G2G3	Wilkes	Current	bogs, wet pastures, wet thickets
Vascular Pl	<i>Goodyera r</i>	Lesser Ratt	W1	none	S2S3	G5	Wilkes	Current	moist, acid forests, especially under rhododer
Natural Coi	Granitic Dome Basic Woodland			none	S2	G2	Wilkes	Current	null
Bird	<i>Haliaeetus</i>	Bald Eagle	T	BGPA	S3B,S3N	G5	Wilkes	Current	mature forests near large bodies of water (ne
Amphibian	<i>Hemidacty</i>	Four-toed	SC	none	S3	G5	Wilkes	Current	pools, bogs, and other wetlands in hardwood
Butterfly	<i>Hesperia s</i>	Indian Skip	W2	none	S3	G5	Wilkes	Current	old fields, clearings, wood margins, mainly at
Vascular Pl	<i>Heuchera f</i>	Hispid Alur	SR-P	none	S1	G5T3?	Wilkes	Current	rich, rocky woods

Dragonfly c	Hylogomph	Piedmont C	W2	none	S3	G4	Wilkes	Current	small woodland streams with sandy bottoms
Vascular Pl	Hypericum	Radford's S	SC-V	none	S2	G2	Wilkes	Current	thin soils around rock outcrops in the Brushy
Vascular Pl	Juglans cin	Butternut	W5	none	S2S3	G3	Wilkes	Historical	cove forests, rich woods
Reptile	Lampropelt	Milk Snake	W2	none	S3	G5	Wilkes	Current	wooded slopes, pastures, meadows, especial
Mammal	Lasiurus cir	Hoary Bat	W2	none	S3S4	G3G4	Wilkes	Current	mostly mid elevation to high elevation forests
Vascular Pl	Lathyrus ve	Smooth Pe	W1	none	S3	G5	Wilkes	Historical	rich bottomlands and rocky slopes, generally
Natural Coi	Low Elevation Acidic Glade (Grass			none	S2	G1G2	Wilkes	Current	null
Natural Coi	Low Elevation Basic Glade (Brushy			none	S1	G2	Wilkes	Current	null
Natural Coi	Low Elevation Granitic Dome			none	S2	G2	Wilkes	Current	null
Natural Coi	Low Elevation Rocky Summit (Acic			none	S2	G3?	Wilkes	Current	null
Mayfly	Macdunno a	mayfly	SR	none	S2	G3G4	Wilkes	Historical	French Broad River, Mills River, Hunting Creel
Moss	Macrocom	Sullivan's I	SR-D	none	S2	GNRT3T5	Wilkes	Current	bark of cedar or hardwoods
Vascular Pl	Meehania c	Meehania	SR-P	none	S2	G5	Wilkes	Current	cove forests, boulderfields
Natural Coi	Mesic Mixed Hardwood Forest (Pi			none	S4	G3G4	Wilkes	Current	null
Vascular Pl	Micranthes	Carolina Sa	SR-T	none	S3	G3	Wilkes	Current	high to middle elevation moist cliffs and rock
Vascular Pl	Mononeuri	Greenland	T	none	S2	G5	Wilkes	Current	high elevation and low elevation rocky summi
Natural Coi	Montane Oak--Hickory Forest (Aci			none	S4S5	G4G5	Wilkes	Current	null
Natural Coi	Montane Oak--Hickory Forest (Ba			none	S3	G3	Wilkes	Current	null
Natural Coi	Montane Oak--Hickory Forest (Wf			none	S2	G2G3	Wilkes	Current	null
Natural Coi	Montane Red Cedar-Hardwood W			none	S2	G2	Wilkes	Current	null
Mammal	Mustela fr	Long-tailed	W3	none	S3	G5	Wilkes	Current	forests, brushy areas
Mammal	Myotis leib	Eastern Sm	SC	none	S2	G4	Wilkes	Current	roosts in hollow trees and in rock crevices (wa
Mammal	Myotis luci	Little Brow	SR	none	S2	G3	Wilkes	Current	roosts in buildings (summer), in caves and mi
Mammal	Myotis sep	Northern L	T	T	S2	G1G2	Wilkes	Current	roosts in hollow trees and buildings (warmer
Dragonfly c	Ophiogom	Appalachia	W2	none	S3	G3	Wilkes	Current	small to medium streams
Moss	Orthotrich	Keever's Br	SR-L	none	S2	G2	Wilkes	Current	on trees around low elevation granitic domes
Vascular Pl	Palustricod	Marsh Bell	T	none	S2	G5TNR	Wilkes	Historical	bogs and other wet, open sites
Vascular Pl	Panax quin	Ginseng	W1	none	S3S4	G3G4	Wilkes	Current	cove forests, other rich forests
Freshwater	Paravitrea	Round Sup	SR	none	S2?	G3	Wilkes	Obscure	hillsides and ravines in hardwood forests
Vascular Pl	Parietaria	Pennsylvan	W7	none	S2	G5	Wilkes	Current	slopes and bottomlands, usually over calcare
Mammal	Perimyotis	Tricolored	SR	none	S3	G2G3	Wilkes	Current	roosts in clumps of leaves (mainly in summer)
Vascular Pl	Philadelph	Scentless N	W1	none	S3	G4G5	Wilkes	Current	bluffs, cliffs, and rocky woods, mainly over m
Natural Coi	Piedmont Levee Forest (Typic Sub			none	S3S4	G3G4	Wilkes	Current	null
Natural Coi	Piedmont Monadnock Forest (Typ			none	S3	G3G4	Wilkes	Current	null
Natural Coi	Piedmont/Coastal Plain Heath	Blu		none	S3	G3	Wilkes	Current	null



Natural Co	Pine--Oak/Heath (Typic Subtype)	none	S3	G3	Wilkes	Current	null
Liverwort	Plagiochila A Liverwort SR-T	none	S1S2	G3	Wilkes	Current	moist rocks
Liverwort	Plagiochila A Liverwort SR-L	none	S1	G3T3	Wilkes	Historical	on limestone
Reptile	Plestiodon Coal Skink SR	none	S2	G5	Wilkes	Historical	rocky slopes, wooded hillsides, roadbanks
Amphibian	Plethodon Wehrle's S; T	none	S2	G4	Wilkes	Current	upland forests (low mountains near Virginia b
Vascular Pl	Populus gr; Bigtooth A; W7	none	S2	G5	Wilkes	Current	dry ridges and rocky woods
Vascular Pl	Pycnanthe Torrey's M; SR-T	none	S1	G2	Wilkes	Historical	dry upland forests and woodlands, over mafic
Vascular Pl	Pyrola ame American S W1	none	S2S3	G5	Wilkes	Current	forests
Vascular Pl	Quercus ili; Bear Oak E	none	S2	G5	Wilkes	Current	dry summits and rocky woods on Piedmont m
Moss	Rauvolfia sci Smaller Fer W7	none	S2?	G3G5	Wilkes	Historical	on rocks, trees, logs
Stonefly	Remenus k Blueridge SSR	none	S1	G2	Wilkes	Current	Jones Creek in the Little Tennessee basin and
Unknown	Restricted Contact National Park	none	SNR	GNR	Wilkes	Current	null
Moss	Rhachithec Budding Tc SR-D	none	S1S2	G4G5	Wilkes	Historical	bark of hardwoods
Natural Co	Rich Cove Forest (Foothills Interm	none	S3	G4?	Wilkes	Current	null
Bird	Riparia rip; Bank Swall; SR	none	S1B	G5	Wilkes	Historical	high, vertical banks for nesting [breeding evid
Vascular Pl	Robinia his Fruitful Loc SR-O	none	S1	G4T1Q	Wilkes	Current	acidic cove forests, northern hardwoods fore
Vascular Pl	Robinia his Boynton's I W7	none	S2?	G4T3?	Wilkes	Historical	open woods
Vascular Pl	Sabatia bra Narrow-lea W6	none	S3	G5?	Wilkes	Historical	sandhills, savannas and pine barrens
Butterfly	Satyrium fa Northern C SR	none	S2S3	G4G5T4	Wilkes	Historical	oak-dominated woods, usually in dry sites; hc
Mammal	Sciurus nig; Eastern Fo; W2	none	S3	G5	Wilkes	Current	open forests, mainly longleaf pine/scrub oak
Vascular Pl	Scutellaria Heartleaf S W7	none	S1	G5TNR	Wilkes	Historical	rich woods on circumneutral soil
Bird	Setophaga Cerulean V SC	none	S2B	G4	Wilkes	Historical	mature hardwood forests; steep slopes and c
Bird	Sitta canad Red-breast W2,W5	none	S3B,S4N	G5	Wilkes	Current	high-elevation coniferous forests, preferably :
Mammal	Sorex hoyi American F W2	none	S3	G5	Wilkes	Current	montane deciduous forests; old fields and for
Butterfly	Speyeria di Diana Fritil W2	none	S3S4	G2G3	Wilkes	Current	montane and foothill forest edges and openir
Butterfly	Speyeria id Regal Fritill SR	none	SX	G3?	Wilkes	Historical	wet or dry meadows, bogs, open hilltops; hos
Mammal	Spilogale p Eastern Spr SR-G	none	S3	G4	Wilkes	Current	forests with rocks, cliffs, and other den sites
Vascular Pl	Spiraea alb Narrow-lea W1	none	S2	G5	Wilkes	Historical	bogs
Dragonfly c	Stenogom; Sable Clubt W2	none	S3	G4	Wilkes	Current	small spring-fed streams
Freshwater	Stenotrem; Highland Sl W2	none	S3S4	G3	Wilkes	Current	cove forests and northern hardwood forests
Vascular Pl	Stewartia c Mountain (SR-P	none	S3	G4	Wilkes	Current	bluffs and forests, usually with rhododendron
Freshwater	Strophitus Creeper T	none	S3	G5	Wilkes	Current	Roanoke, Tar, Neuse, Cape Fear, Yadkin-Pee I
Dragonfly c	Stylurus lat Laura's Clu W1	none	S2S3	G4	Wilkes	Current	medium-size streams with clean sandy substr
Dragonfly c	Stylurus sci Zebra Club SR	none	S1S2	G5	Wilkes	Historical	streams and rivers
Moss	Thuidium a Fernmoss W7	none	S2?	G3G5	Wilkes	Current	on soil, logs, exposed roots, and tree bases in

Vascular Pl Trichostem Narrowleaf SR-T	none	S2	G5	Wilkes	Current	dry woodlands, granite flatrocks
Grasshopp Trimerotro Lichen Gra: SR	none	S2?	G3	Wilkes	Current	lichen-covered rock outcrops, mainly granitic
Freshwater Triodopsis Dished Thr W2	none	S3?	G5	Wilkes	Current	hardwood forests, usually around high pH soi
Freshwater Villosa del Eastern Cre SR	none	S4	G4	Wilkes	Current	Cape Fear, Lumber, Yadkin-Pee Dee, and Cata
Vascular Pl Woodsia a Appalachia SR-P	none	S2	G4	Wilkes	Historical	cliffs, rock outcrops
Freshwater Zonitoides Appalachia SC	none	S2	G3	Wilkes	Current	cove hardwoods in deep leaf litter; southwest

# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Cumberland County, North Carolina



## Local office

Raleigh Ecological Services Field Office

☎ (919) 856-4520

📠 (919) 856-4556

MAILING ADDRESS

Post Office Box 33726  
Raleigh, NC 27636-3726

PHYSICAL ADDRESS

551 Pylon Drive, Suite F

Raleigh, NC 27606-1487

NOT FOR CONSULTATION

# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

## Birds

NAME

STATUS

**Red-cockaded Woodpecker** *Picoides borealis* **Endangered**

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/7614>

## Reptiles

NAME

STATUS

**American Alligator** *Alligator mississippiensis* **SAT**

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/776>

## Insects

NAME

STATUS

**Monarch Butterfly** *Danaus plexippus* **Candidate**

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/9743>

**Saint Francis' Satyr Butterfly** *Neonympha mitchellii francisci* **Endangered**

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/5419>

## Flowering Plants

NAME

STATUS

**American Chaffseed** *Schwalbea americana* **Endangered**

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/1286>

**Michaux's Sumac** *Rhus michauxii* **Endangered**

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/5217>

**Pondberry** *Lindera melissifolia* **Endangered**

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/1279>

Rough-leaved Loosestrife *Lysimachia asperulaefolia*

Endangered

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/2747>

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

THERE ARE NO MIGRATORY BIRDS OF CONSERVATION CONCERN EXPECTED TO OCCUR AT THIS LOCATION.

**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

### What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

### What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### Details about birds that are potentially affected by offshore projects



For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

## Facilities

### National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

### Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

# Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

## Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

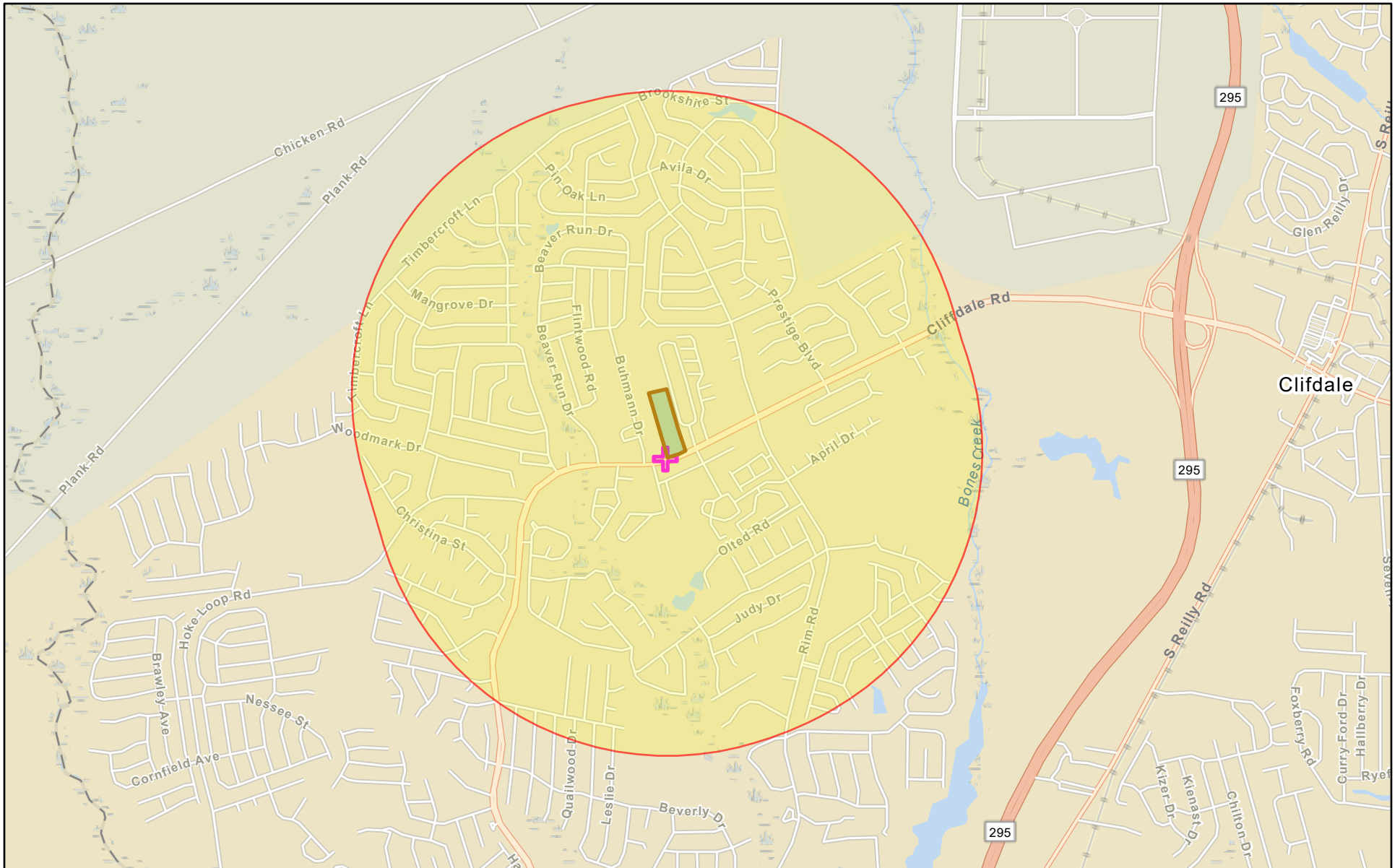
## Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

## Data precautions

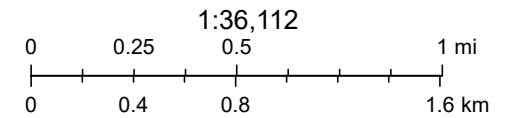
Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

# HEROS 08 ASTs 1 mile



October 13, 2021

-  Project Buffer
-  Search Result (point)
-  Clifdale Crossing



Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community



United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for Cumberland County, North Carolina



# Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# How Soil Surveys Are Made

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Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil



## Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

## Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

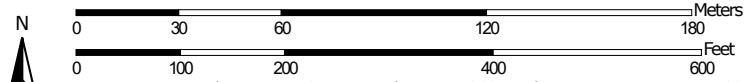
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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report Soil Map




Map Scale: 1:2,210 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84


### MAP LEGEND

**Area of Interest (AOI)**

 Area of Interest (AOI)




















**Soils**







 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

**Special Point Features**






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


**Water Features**

 Streams and Canals

**Transportation**

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

**Background**

 Aerial Photography

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cumberland County, North Carolina  
 Survey Area Data: Version 22, Sep 3, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 13, 2014—Feb 4, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
NoA	Norfolk loamy sand, 0 to 2 percent slopes	7.1	73.8%
WaB	Wagram loamy sand, 0 to 6 percent slopes	2.5	26.2%
<b>Totals for Area of Interest</b>		<b>9.6</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

## Custom Soil Resource Report

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Cumberland County, North Carolina

### NoA—Norfolk loamy sand, 0 to 2 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2v75w  
*Elevation:* 10 to 330 feet  
*Mean annual precipitation:* 40 to 55 inches  
*Mean annual air temperature:* 59 to 70 degrees F  
*Frost-free period:* 200 to 280 days  
*Farmland classification:* All areas are prime farmland

#### Map Unit Composition

*Norfolk and similar soils:* 83 percent  
*Minor components:* 17 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Norfolk

##### Setting

*Landform:* Flats on marine terraces, broad interstream divides on marine terraces  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Convex, linear  
*Parent material:* Loamy marine deposits

##### Typical profile

*Ap - 0 to 8 inches:* loamy sand  
*E - 8 to 14 inches:* loamy sand  
*Bt - 14 to 65 inches:* sandy clay loam  
*BC - 65 to 80 inches:* sandy clay loam

##### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.57 to 1.98 in/hr)  
*Depth to water table:* About 40 to 72 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Moderate (about 6.9 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 1  
*Hydrologic Soil Group:* A  
*Hydric soil rating:* No

#### Minor Components

##### Goldsboro

*Percent of map unit:* 9 percent  
*Landform:* Broad interstream divides on marine terraces, flats on marine terraces  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Linear



## Custom Soil Resource Report

*Across-slope shape:* Linear

*Hydric soil rating:* No

### **Wagram**

*Percent of map unit:* 8 percent

*Landform:* Ridges on marine terraces, broad interstream divides on marine terraces

*Landform position (two-dimensional):* Summit, shoulder

*Landform position (three-dimensional):* Crest, talf

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

## **WaB—Wagram loamy sand, 0 to 6 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* w72m

*Elevation:* 80 to 330 feet

*Mean annual precipitation:* 38 to 55 inches

*Mean annual air temperature:* 59 to 70 degrees F

*Frost-free period:* 210 to 265 days

*Farmland classification:* Farmland of statewide importance

### **Map Unit Composition**

*Wagram and similar soils:* 90 percent

*Minor components:* 5 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Wagram**

#### **Setting**

*Landform:* Ridges on marine terraces, broad interstream divides on marine terraces

*Landform position (two-dimensional):* Summit, shoulder

*Landform position (three-dimensional):* Crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Loamy marine deposits

#### **Typical profile**

*Ap - 0 to 8 inches:* loamy sand

*E - 8 to 24 inches:* loamy sand

*Bt - 24 to 75 inches:* sandy clay loam

*BC - 75 to 83 inches:* sandy loam

#### **Properties and qualities**

*Slope:* 0 to 6 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Well drained

*Runoff class:* Low

## Custom Soil Resource Report

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.57 to 1.98 in/hr)

*Depth to water table:* About 60 to 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* Moderate (about 6.7 inches)

### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2s

*Hydrologic Soil Group:* A

*Hydric soil rating:* No

### **Minor Components**

#### **Bibb, undrained**

*Percent of map unit:* 3 percent

*Landform:* Flood plains

*Landform position (two-dimensional):* Toeslope

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Hydric soil rating:* Yes

#### **Johnston, undrained**

*Percent of map unit:* 2 percent

*Landform:* Flood plains

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Hydric soil rating:* Yes

# **Soil Information for All Uses**

---

## **Suitabilities and Limitations for Use**

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

## **Land Classifications**

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

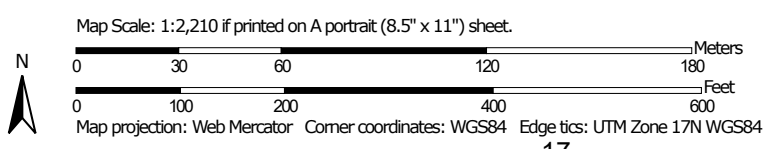
## **Farmland Classification**

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

# Custom Soil Resource Report Map—Farmland Classification




Soil Map may not be valid at this scale.



# Custom Soil Resource Report









## MAP LEGEND








### Area of Interest (AOI)






 Area of Interest (AOI)








### Soils



#### Soil Rating Polygons

-  Not prime farmland
-  All areas are prime farmland
-  Prime farmland if drained
-  Prime farmland if protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated
-  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated and drained
-  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season









-  Prime farmland if subsoiled, completely removing the root inhibiting soil layer
-  Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
-  Prime farmland if irrigated and reclaimed of excess salts and sodium
-  Farmland of statewide importance
-  Farmland of statewide importance, if drained
-  Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if irrigated

-  Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if irrigated and drained
-  Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
-  Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60







































-  Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
-  Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if warm enough
-  Farmland of statewide importance, if thawed
-  Farmland of local importance
-  Farmland of local importance, if irrigated

-  Farmland of unique importance
-  Not rated or not available

### Soil Rating Lines

-  Not prime farmland
-  All areas are prime farmland
-  Prime farmland if drained
-  Prime farmland if protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated
-  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated and drained
-  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

# Custom Soil Resource Report

	Prime farmland if subsoiled, completely removing the root inhibiting soil layer		Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium		Farmland of unique importance		Prime farmland if subsoiled, completely removing the root inhibiting soil layer
	Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60		Farmland of statewide importance, if irrigated and drained		Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season		Not prime farmland		Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
	Prime farmland if irrigated and reclaimed of excess salts and sodium		Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season		All areas are prime farmland		Prime farmland if irrigated and reclaimed of excess salts and sodium
	Farmland of statewide importance		Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season		Prime farmland if protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance
	Farmland of statewide importance, if drained		Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer		Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer		Prime farmland if irrigated		Farmland of statewide importance, if drained
	Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60		Farmland of statewide importance, if warm enough		Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
	Farmland of statewide importance, if irrigated		Farmland of statewide importance, if thawed		Farmland of statewide importance, if thawed		Prime farmland if irrigated and drained		Farmland of statewide importance, if irrigated
			Farmland of local importance		Farmland of local importance		Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season		
			Farmland of local importance, if irrigated		Farmland of local importance, if irrigated				

## Custom Soil Resource Report

<ul style="list-style-type: none"> <li> Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season</li> <li> Farmland of statewide importance, if irrigated and drained</li> <li> Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season</li> <li> Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer</li> <li> Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60</li> </ul>	<ul style="list-style-type: none"> <li> Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium</li> <li> Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season</li> <li> Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season</li> <li> Farmland of statewide importance, if warm enough</li> <li> Farmland of statewide importance, if thawed</li> <li> Farmland of local importance</li> <li> Farmland of local importance, if irrigated</li> </ul>	<ul style="list-style-type: none"> <li> Farmland of unique importance</li> <li> Not rated or not available</li> </ul> <p><b>Water Features</b></p> <ul style="list-style-type: none"> <li> Streams and Canals</li> </ul> <p><b>Transportation</b></p> <ul style="list-style-type: none"> <li> Rails</li> <li> Interstate Highways</li> <li> US Routes</li> <li> Major Roads</li> <li> Local Roads</li> </ul> <p><b>Background</b></p> <ul style="list-style-type: none"> <li> Aerial Photography</li> </ul>	<p>The soil surveys that comprise your AOI were mapped at 1:24,000.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Warning: Soil Map may not be valid at this scale.</p> <p>Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.</p> </div> <p>Please rely on the bar scale on each map sheet for map measurements.</p> <p>Source of Map: Natural Resources Conservation Service          Web Soil Survey URL:          Coordinate System: Web Mercator (EPSG:3857)</p> <p>Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.</p> <p>This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.</p> <p>Soil Survey Area: Cumberland County, North Carolina          Survey Area Data: Version 22, Sep 3, 2021</p> <p>Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.</p> <p>Date(s) aerial images were photographed: Aug 13, 2014—Feb 4, 2017</p> <p>The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.</p>
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**Table—Farmland Classification**

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
NoA	Norfolk loamy sand, 0 to 2 percent slopes	All areas are prime farmland	7.1	73.8%
WaB	Wagram loamy sand, 0 to 6 percent slopes	Farmland of statewide importance	2.5	26.2%
<b>Totals for Area of Interest</b>			<b>9.6</b>	<b>100.0%</b>

**Rating Options—Farmland Classification**

*Aggregation Method:* No Aggregation Necessary

*Tie-break Rule:* Lower



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- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053580](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580)
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## Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2\\_054242](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242)

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053624](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624)



United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. [http://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs142p2\\_052290.pdf](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf)

8368 Cliffdale Rd, Faye

Basemap Imagery Draw Erase Save Session Tools More Data

### Measure

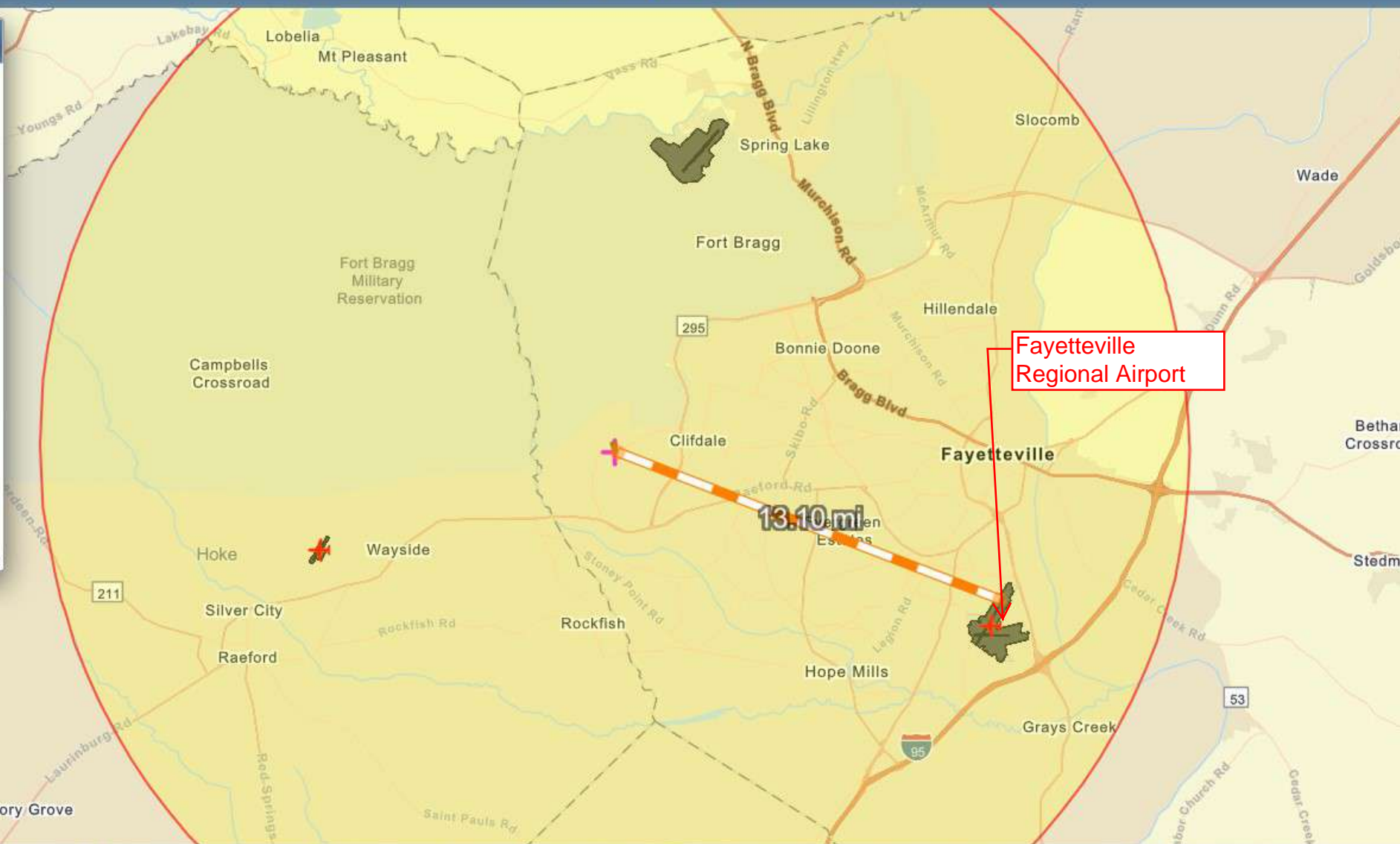
Click one of the following buttons to start measuring:

**Unit** Miles **Mode** Auto

Distance  
**13.10 mi**

[New Measurement](#)



### Select Map Contents


- EPA Facilities
- Water Monitoring Stations
- Boundaries
- Nonattainment Areas
- Water Features
- Transportation
  - Airport Points
  - Airport Polygons
- Railroads
- Places
- Soil Survey Map
- Critical Habitat
- NWI Wetlands
- FEMA Flood
- Land Cover

8368 Cliffdale Rd, Faye

Basemap Imagery Draw Erase Save Session Tools More Data

### Measure

Click one of the following buttons to start measuring:

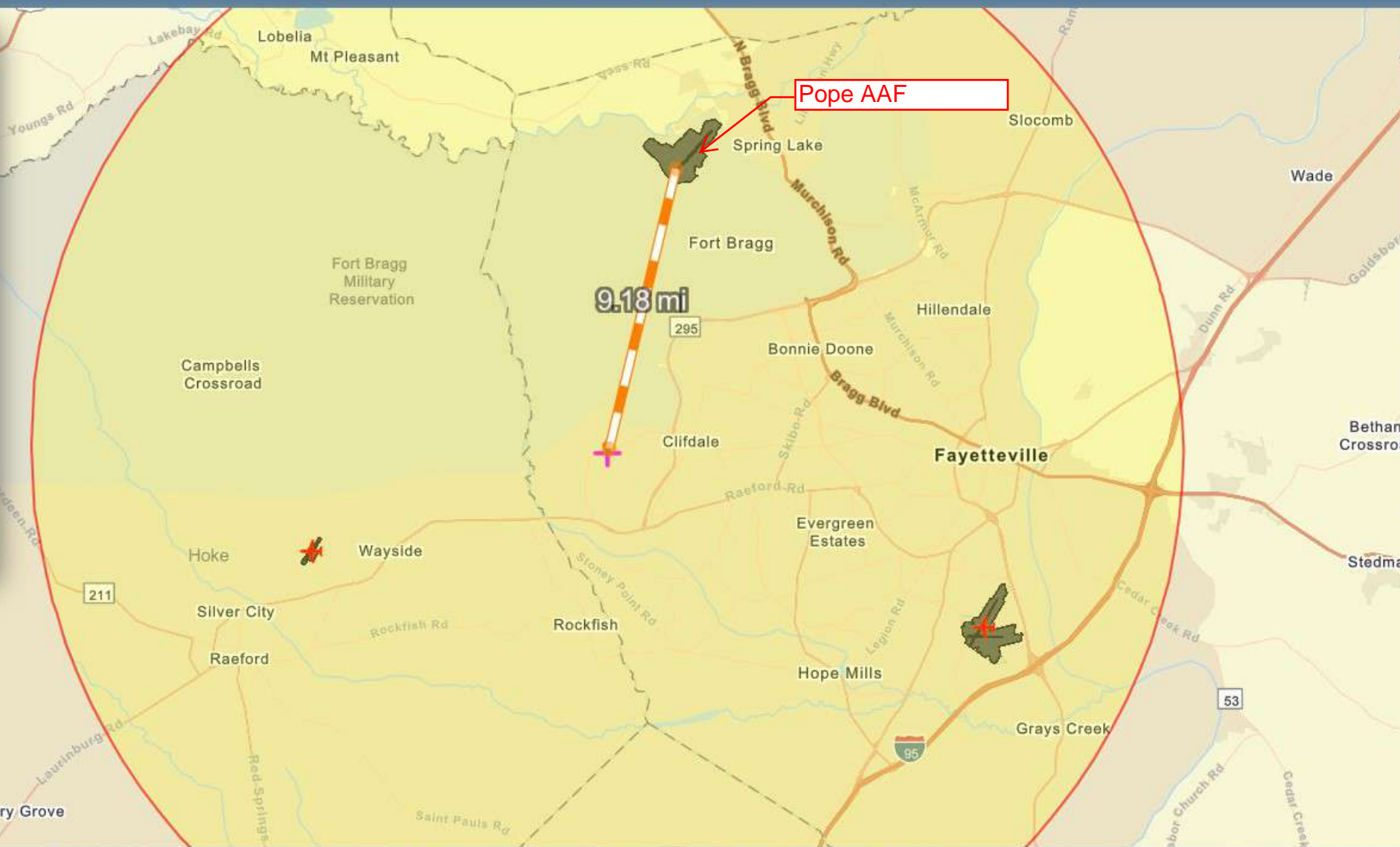


**Unit**  
Miles

**Mode**  
Auto

Distance  
**9.18 mi**

[New Measurement](#)





- ### Select Map Contents
- EPA Facilities
  - Water Monitoring Stations
  - Boundaries
  - Nonattainment Areas
  - Water Features
  - Transportation
    - Airport Points
    - Airport Polygons
  - Railroads
  - Places
  - Soil Survey Map
  - Critical Habitat
  - NWI Wetlands
  - FEMA Flood
  - Land Cover

8368 Cliffdale Rd, Faye

Basemap Imagery Draw Erase Save Session Tools More Data

### Measure

Click one of the following buttons to start measuring:

**Unit**  
Miles

**Mode**  
Auto

Distance  
**9.58 mi**

[New Measurement](#)



### Select Map Contents

- EPA Facilities
- Water Monitoring Stations
- Boundaries
- Nonattainment Areas
- Water Features
- Transportation
  - Airport Points
  - Airport Polygons
- Railroads
- Places
- Soil Survey Map
- Critical Habitat
- NWI Wetlands
- FEMA Flood
- Land Cover

View Aviation (✈️), Road (🚗), Rail (🚆) Noise in the U.S. for 2016 and 2018

8368 Cliffdale Roa...

Map:  Dark  Satellite

Year: 2016  2018

Mode:  Aviation  Road  Rail

Campbells Crossroad

Bones Ford

Bizza Ridge

Shaws

Pleasant Acres

Oakland

Summer Cottonade

Tokay

Beaver Creek

Lakecrest

Sadie Heights

Cambridge

Eccles Park

Lake Valley

Foxfire

Eutaw

The Oaks

Edenroc

Fairview Park

Loch Lommond

Lake Shores

Murray Hills

Haymount

Clifdale

Skibo

Kingsford

Highland Village

Fayetteville

Savoy Heights

Brentwood

Oakdale

Glendale Acres

Clairway

Williams Villa

Fenix

Winter Park

Borden Heights

Johnsons Mill

Shadowlawn

Bordeaux

Dogwood Acres

Quail Ridge

Woodlea

Ducks Landing

Woods Edge

Phoenician Woods

Crossgates

Rockfish

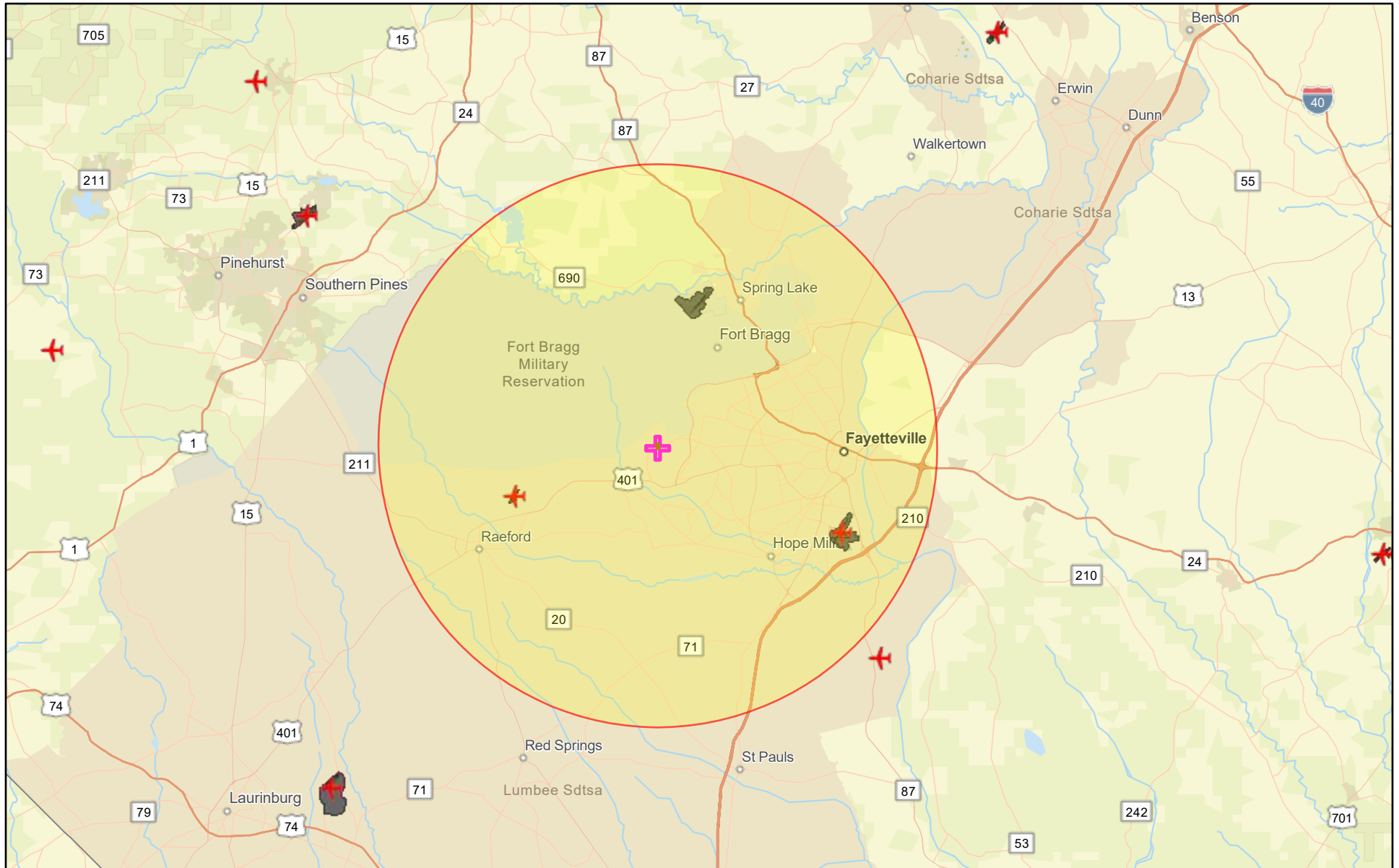
Tanglewood Estat

Decker Heights






Noise (dBA)  
24-hr LAeq

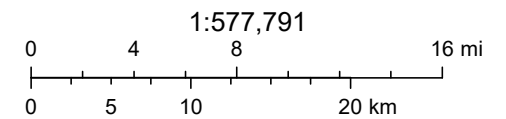
- > 90.0
- 80.0 - 89.9
- 70.0 - 79.9
- 60.0 - 69.9
- 55.0 - 59.9
- 50.0 - 54.9
- 45.0 - 49.9

# HEROS 12 Airport 15 miles



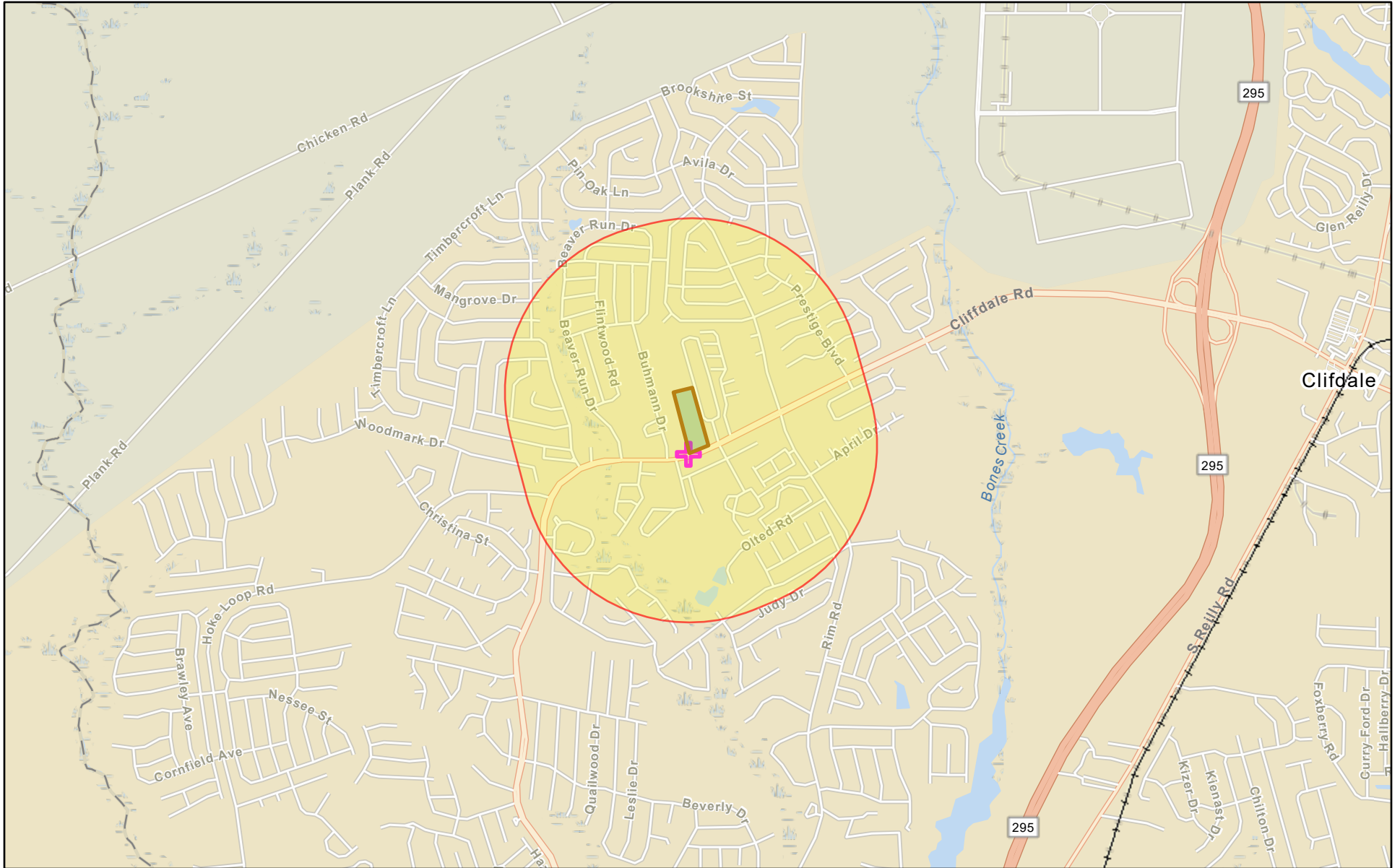
October 22, 2021

-  Project Buffer
-  Search Result (point)
-  Airport Polygons
-  Cliffdale
-  Airport Points







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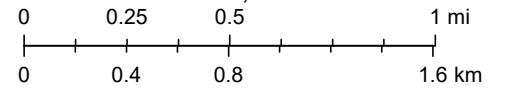
# HEROS 12 Railroad 3000 ft.



October 22, 2021

-  Project Buffer
-  Search Result (point)
-  Clifdale
-  Railroads

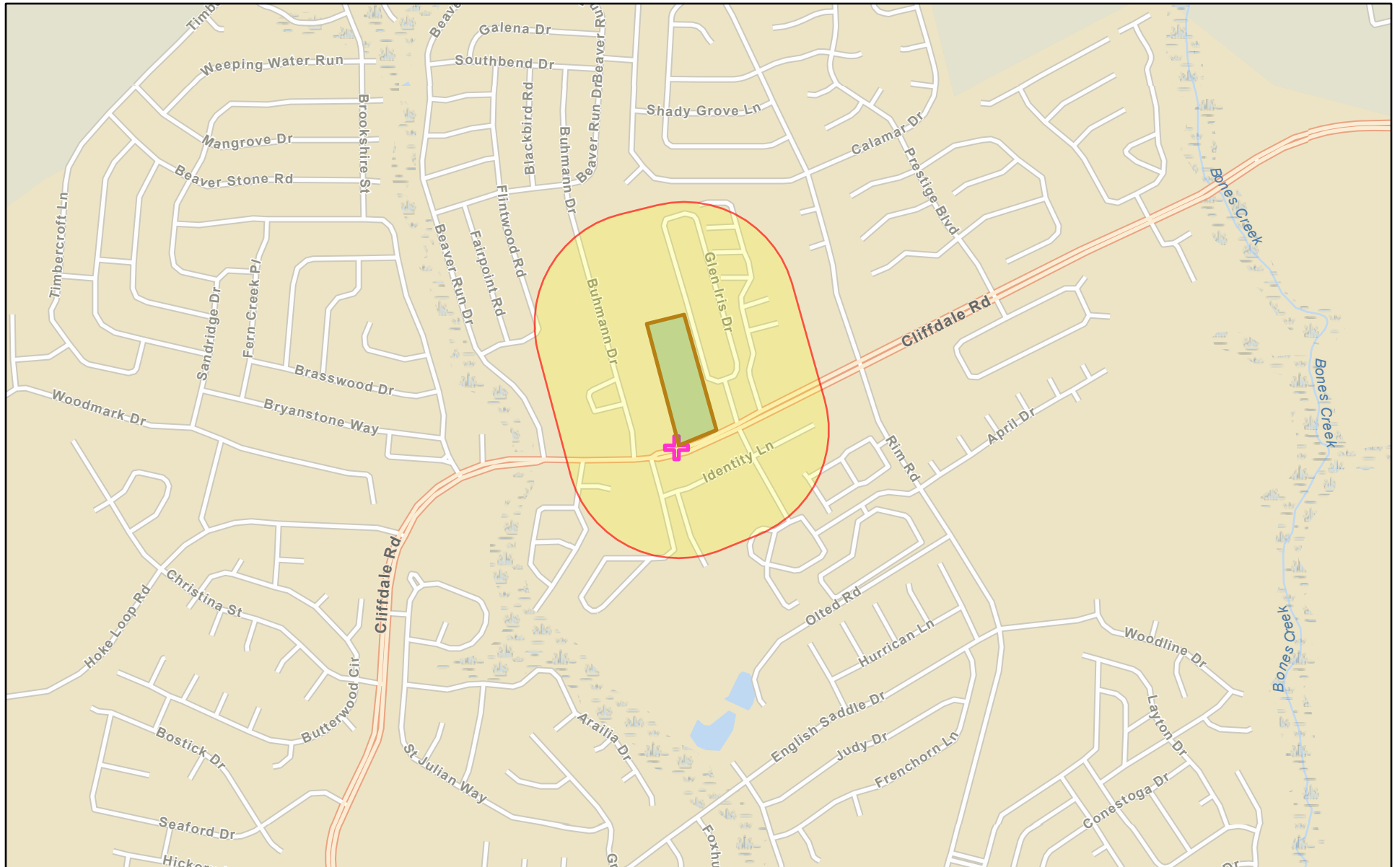
1:36,112



Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, EPA OEI



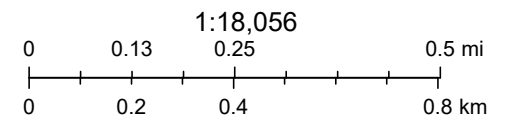
# HEROS 12 Road 1000 ft.



October 22, 2021

 Project Buffer  Search Result (point)

 Clifffdale



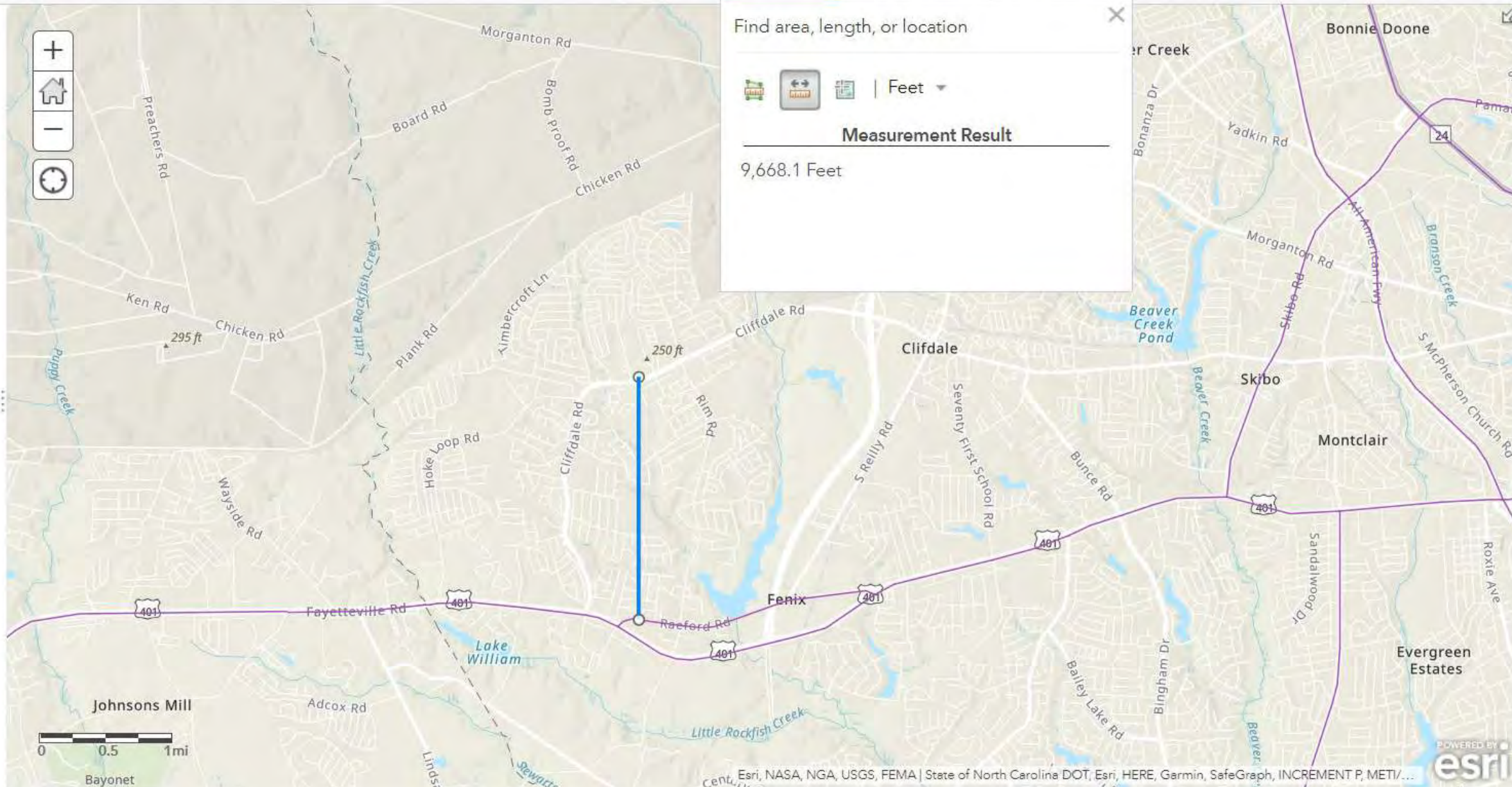
Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Details Add Basemap

Save Print Measure Bookmarks 8368 Cliffdale Rd, Fayetteville, NC, 28314, USA

About Content Legend

Legend  
Freight Analysis Framework 2012



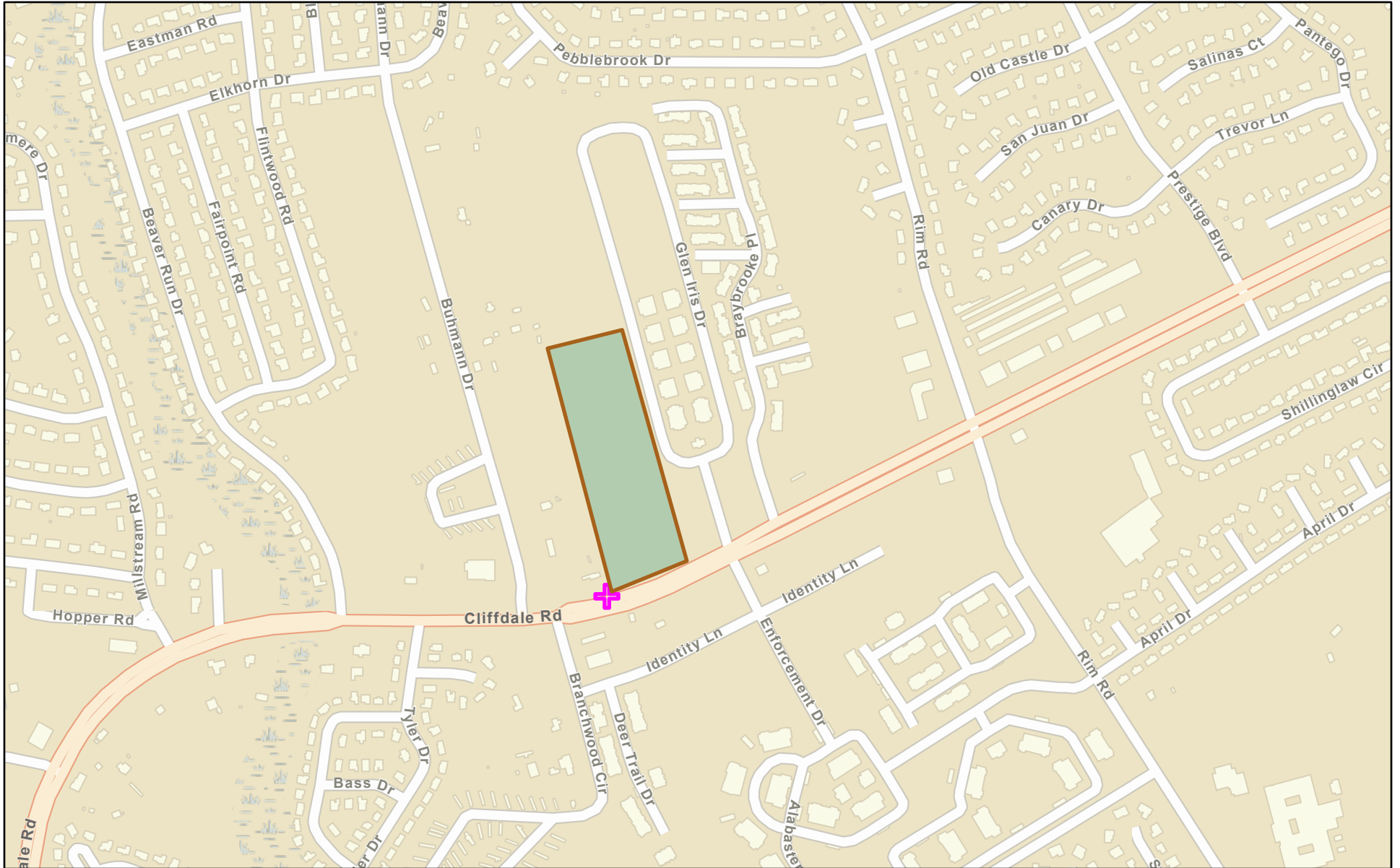
Find area, length, or location

Feet

**Measurement Result**

9,668.1 Feet

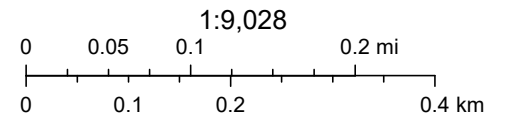
# HEROS 13 SSA



October 22, 2021

 Cliffdale  Sole Source Aquifers

 Search Result (point)












Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community



September 23, 2021

### Wetlands

- |   |                                |   |                                   |   |          |
|---|--------------------------------|---|-----------------------------------|---|----------|
|  | Estuarine and Marine Deepwater |  | Freshwater Emergent Wetland       |  | Lake     |
|  | Estuarine and Marine Wetland   |  | Freshwater Forested/Shrub Wetland |  | Other    |
|  | Freshwater Pond                |  |                                   |  | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

# Nationwide Rivers Inventory

National Park Service  
U.S. Department of the Interior



This is a listing of more than 3,200 free-flowing river segments in the U.S. that are believed to possess one or more "outstandingly remarkable" values.

Map controls: Home, Zoom In (+), Zoom Out (-)

Search bar: Find a location

Map data: National Park Service | © Mapbox | © OpenStreetMap contributors | Geocoding by Esri

Scale: 1 mi



## NORTH CAROLINA

North Carolina has approximately 37,853 miles of river, of which 144.5 miles are designated as wild & scenic—less than 4/10ths of 1% of the state's river miles.



Choose A State   
Choose A River

*Rivers of the Southeast define diversity, from bayous and rivers pushed by the tides to clear mountain streams with world-class whitewater.*

[+ View larger map](#)

- Chattoga River
- Horsepasture River
- Lumber River
- New River
- Wilson Creek



**Designated Rivers**

About WSR Act  
State Listings  
Profile Pages

**National System**

WSR Table  
Study Rivers  
Stewardship  
WSR Legislation

**River Management**

Council  
Agencies  
Management Plans  
River Mgt. Society  
GIS Mapping

**Resources**

Q & A Search  
Bibliography  
Publications  
GIS Mapping  
Logo & Sign Standards

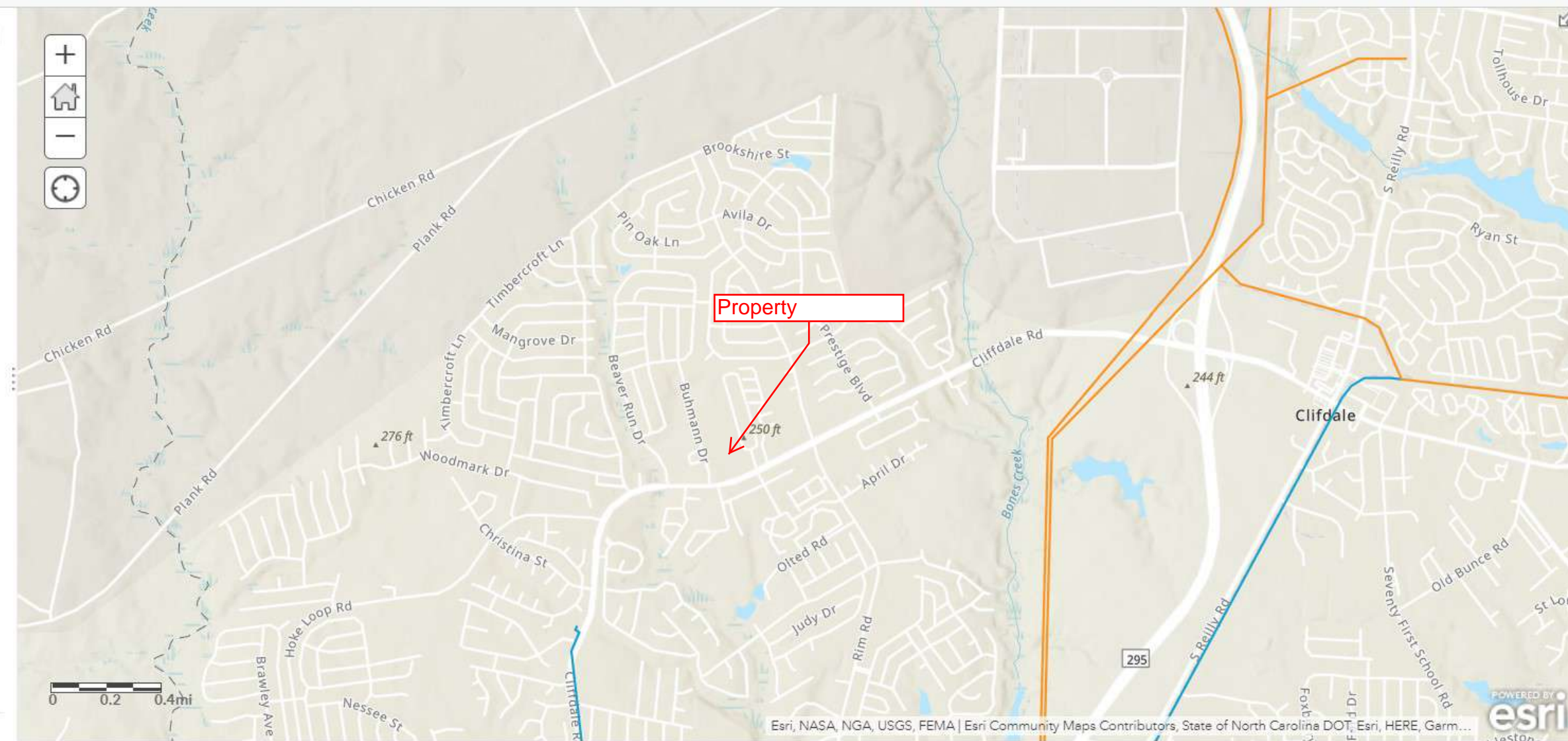




### Legend

#### Electric\_Power\_Transmission\_Lines - Transmission\_Lines

- AC, OVERHEAD
- OVERHEAD
- AC
- NOT AVAILABLE
- AC; OVERHEAD
- AC, UNDERGROUND
- UNDERGROUND
- AC; UNDERGROUND
- DC, OVERHEAD
- DC





### HEROS 16d Pipelines

Cliffdale Crossing  
8368 Cliffdale Road  
Fayetteville, NC  
Project Number: CK21-8848





Location: User-specified polygonal location  
 Ring (buffer): 500-foot radius  
 Description: Cliffdale

Summary of ACS Estimates	2014 - 2018
Population	199
Population Density (per sq. mile)	1,119
People of Color Population	124
% People of Color Population	62%
Households	108
Housing Units	144
Housing Units Built Before 1950	0
Per Capita Income	25,822
Land Area (sq. miles) (Source: SF1)	0.18
% Land Area	100%
Water Area (sq. miles) (Source: SF1)	0.00
% Water Area	0%

	2014 - 2018 ACS Estimates	Percent	MOE (±)
<b>Population by Race</b>			
Total	199	100%	412
Population Reporting One Race	177	89%	693
White	98	49%	300
Black	68	34%	261
American Indian	2	1%	23
Asian	4	2%	40
Pacific Islander	4	2%	44
Some Other Race	1	1%	25
Population Reporting Two or More Races	22	11%	129
Total Hispanic Population	38	19%	209
Total Non-Hispanic Population	161		
White Alone	75	38%	262
Black Alone	62	31%	260
American Indian Alone	1	0%	13
Non-Hispanic Asian Alone	4	2%	40
Pacific Islander Alone	4	2%	44
Other Race Alone	0	0%	12
Two or More Races Alone	15	8%	108
<b>Population by Sex</b>			
Male	97	49%	216
Female	102	51%	257
<b>Population by Age</b>			
Age 0-4	22	11%	126
Age 0-17	60	30%	189
Age 18+	139	70%	254
Age 65+	18	9%	96

**Data Note:** Detail may not sum to totals due to rounding. Hispanic population can be of any race.

N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2014 - 2018



Location: User-specified polygonal location  
 Ring (buffer): 500-feet radius  
 Description: Cliffdale

	2014 - 2018 ACS Estimates	Percent	MOE (±)
<b>Population 25+ by Educational Attainment</b>			
Total	123	100%	221
Less than 9th Grade	0	0%	12
9th - 12th Grade, No Diploma	4	3%	41
High School Graduate	24	20%	109
Some College, No Degree	64	52%	163
Associate Degree	11	9%	66
Bachelor's Degree or more	31	25%	116
<b>Population Age 5+ Years by Ability to Speak English</b>			
Total	178	100%	368
Speak only English	146	82%	289
Non-English at Home <sup>1+2+3+4</sup>	32	18%	149
<sup>1</sup> Speak English "very well"	21	12%	124
<sup>2</sup> Speak English "well"	5	3%	50
<sup>3</sup> Speak English "not well"	5	3%	53
<sup>4</sup> Speak English "not at all"	0	0%	12
<sup>3+4</sup> Speak English "less than well"	5	3%	53
<sup>2+3+4</sup> Speak English "less than very well"	10	6%	72
<b>Linguistically Isolated Households*</b>			
Total	4	100%	37
Speak Spanish	3	74%	32
Speak Other Indo-European Languages	0	0%	12
Speak Asian-Pacific Island Languages	1	26%	13
Speak Other Languages	0	0%	12
<b>Households by Household Income</b>			
Household Income Base	108	100%	128
< \$15,000	10	9%	56
\$15,000 - \$25,000	7	6%	44
\$25,000 - \$50,000	38	35%	107
\$50,000 - \$75,000	14	13%	62
\$75,000 +	40	37%	121
<b>Occupied Housing Units by Tenure</b>			
Total	108	100%	128
Owner Occupied	68	63%	121
Renter Occupied	41	37%	103
<b>Employed Population Age 16+ Years</b>			
Total	144	100%	263
In Labor Force	90	63%	211
Civilian Unemployed in Labor Force	7	5%	63
Not In Labor Force	53	37%	157

**Data Note:** Detail may not sum to totals due to rounding. Hispanic population can be of anyrace.

N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS)

\*Households in which no one 14 and over speaks English "very well" or speaks English only.



Location: User-specified polygonal location

Ring (buffer): 500-foot radius

Description: Cliffdale

	2014 - 2018 ACS Estimates	Percent	MOE (±)
<b>Population by Language Spoken at Home*</b>			
Total (persons age 5 and above)	N/A	N/A	N/A
English	N/A	N/A	N/A
Spanish	N/A	N/A	N/A
French	N/A	N/A	N/A
French Creole	N/A	N/A	N/A
Italian	N/A	N/A	N/A
Portuguese	N/A	N/A	N/A
German	N/A	N/A	N/A
Yiddish	N/A	N/A	N/A
Other West Germanic	N/A	N/A	N/A
Scandinavian	N/A	N/A	N/A
Greek	N/A	N/A	N/A
Russian	N/A	N/A	N/A
Polish	N/A	N/A	N/A
Serbo-Croatian	N/A	N/A	N/A
Other Slavic	N/A	N/A	N/A
Armenian	N/A	N/A	N/A
Persian	N/A	N/A	N/A
Gujarathi	N/A	N/A	N/A
Hindi	N/A	N/A	N/A
Urdu	N/A	N/A	N/A
Other Indic	N/A	N/A	N/A
Other Indo-European	N/A	N/A	N/A
Chinese	N/A	N/A	N/A
Japanese	N/A	N/A	N/A
Korean	N/A	N/A	N/A
Mon-Khmer, Cambodian	N/A	N/A	N/A
Hmong	N/A	N/A	N/A
Thai	N/A	N/A	N/A
Laotian	N/A	N/A	N/A
Vietnamese	N/A	N/A	N/A
Other Asian	N/A	N/A	N/A
Tagalog	N/A	N/A	N/A
Other Pacific Island	N/A	N/A	N/A
Navajo	N/A	N/A	N/A
Other Native American	N/A	N/A	N/A
Hungarian	N/A	N/A	N/A
Arabic	N/A	N/A	N/A
Hebrew	N/A	N/A	N/A
African	N/A	N/A	N/A
Other and non-specified	N/A	N/A	N/A
Total Non-English	N/A	N/A	N/A

**Data Note:** Detail may not sum to totals due to rounding. Hispanic population can be of any race.

N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2014 - 2018.

\*Population by Language Spoken at Home is available at the census tract summary level and up.



Location: User-specified polygonal location  
 Ring (buffer): 500-feet radius  
 Description: Cliffdale

Summary	Census 2010
Population	214
Population Density (per sq. mile)	1,202
People of Color Population	141
% People of Color Population	66%
Households	110
Housing Units	120
Land Area (sq. miles)	0.18
% Land Area	100%
Water Area (sq. miles)	0.00
% Water Area	0%

Population by Race	Number	Percent
Total	214	-----
Population Reporting One Race	197	92%
White	85	40%
Black	97	45%
American Indian	1	1%
Asian	5	2%
Pacific Islander	2	1%
Some Other Race	7	3%
Population Reporting Two or More Races	17	8%
Total Hispanic Population	28	13%
Total Non-Hispanic Population	186	87%
White Alone	73	34%
Black Alone	94	44%
American Indian Alone	1	0%
Non-Hispanic Asian Alone	5	2%
Pacific Islander Alone	2	1%
Other Race Alone	0	0%
Two or More Races Alone	13	6%

Population by Sex	Number	Percent
Male	100	47%
Female	114	53%

Population by Age	Number	Percent
Age 0-4	21	10%
Age 0-17	67	31%
Age 18+	147	69%
Age 65+	8	4%

Households by Tenure	Number	Percent
Total	110	
Owner Occupied	83	76%
Renter Occupied	26	24%

**Data Note:** Detail may not sum to totals due to rounding. Hispanic population can be of any race.  
**Source:** U.S. Census Bureau, Census 2010 Summary File 1.

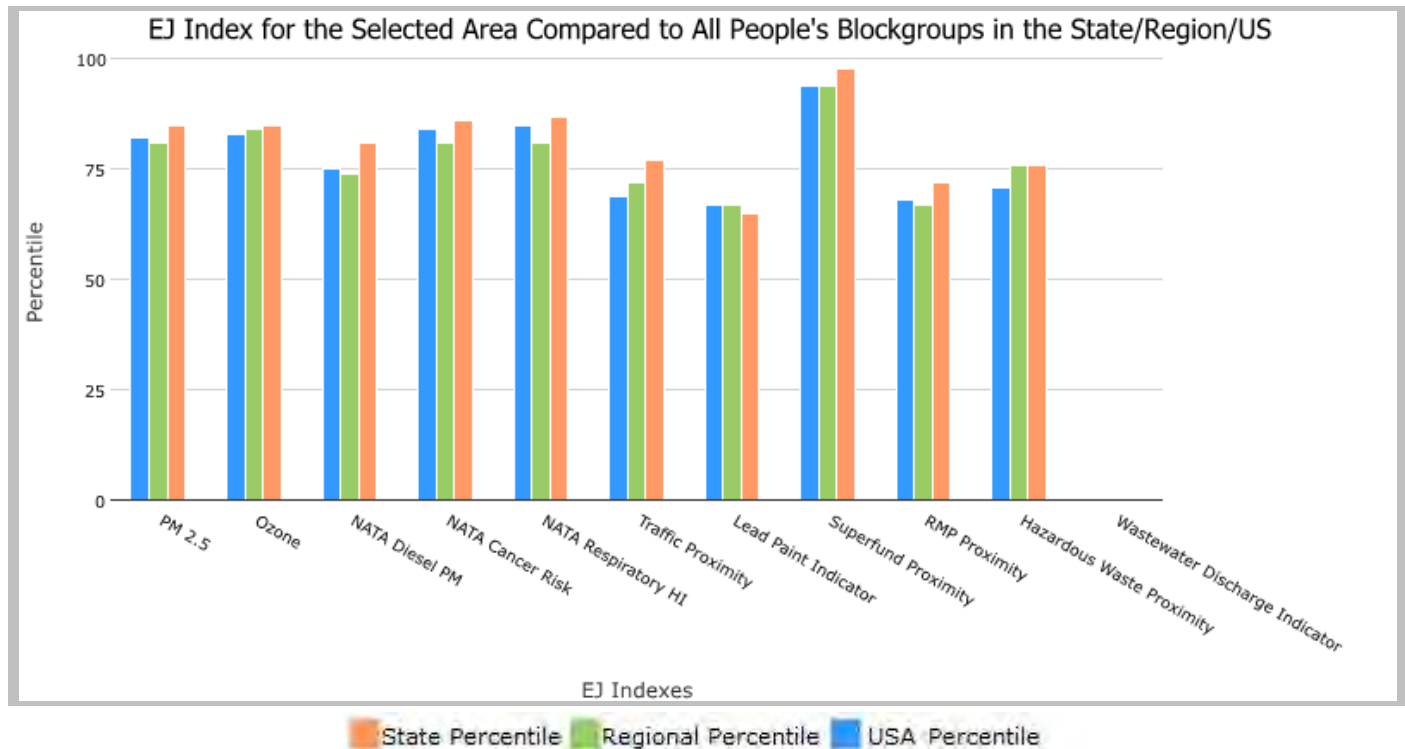
1 mile Ring around the Area, NORTH CAROLINA, EPA Region 4

Approximate Population: 11,374

Input Area (sq. miles): 3.75

Cliffdale

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
<b>EJ Indexes</b>			
EJ Index for PM2.5	85	81	82
EJ Index for Ozone	85	84	83
EJ Index for NATA* Diesel PM	81	74	75
EJ Index for NATA* Air Toxics Cancer Risk	86	81	84
EJ Index for NATA* Respiratory Hazard Index	87	81	85
EJ Index for Traffic Proximity and Volume	77	72	69
EJ Index for Lead Paint Indicator	65	67	67
EJ Index for Superfund Proximity	98	94	94
EJ Index for RMP Proximity	72	67	68
EJ Index for Hazardous Waste Proximity	76	76	71
EJ Index for Wastewater Discharge Indicator	N/A	N/A	N/A



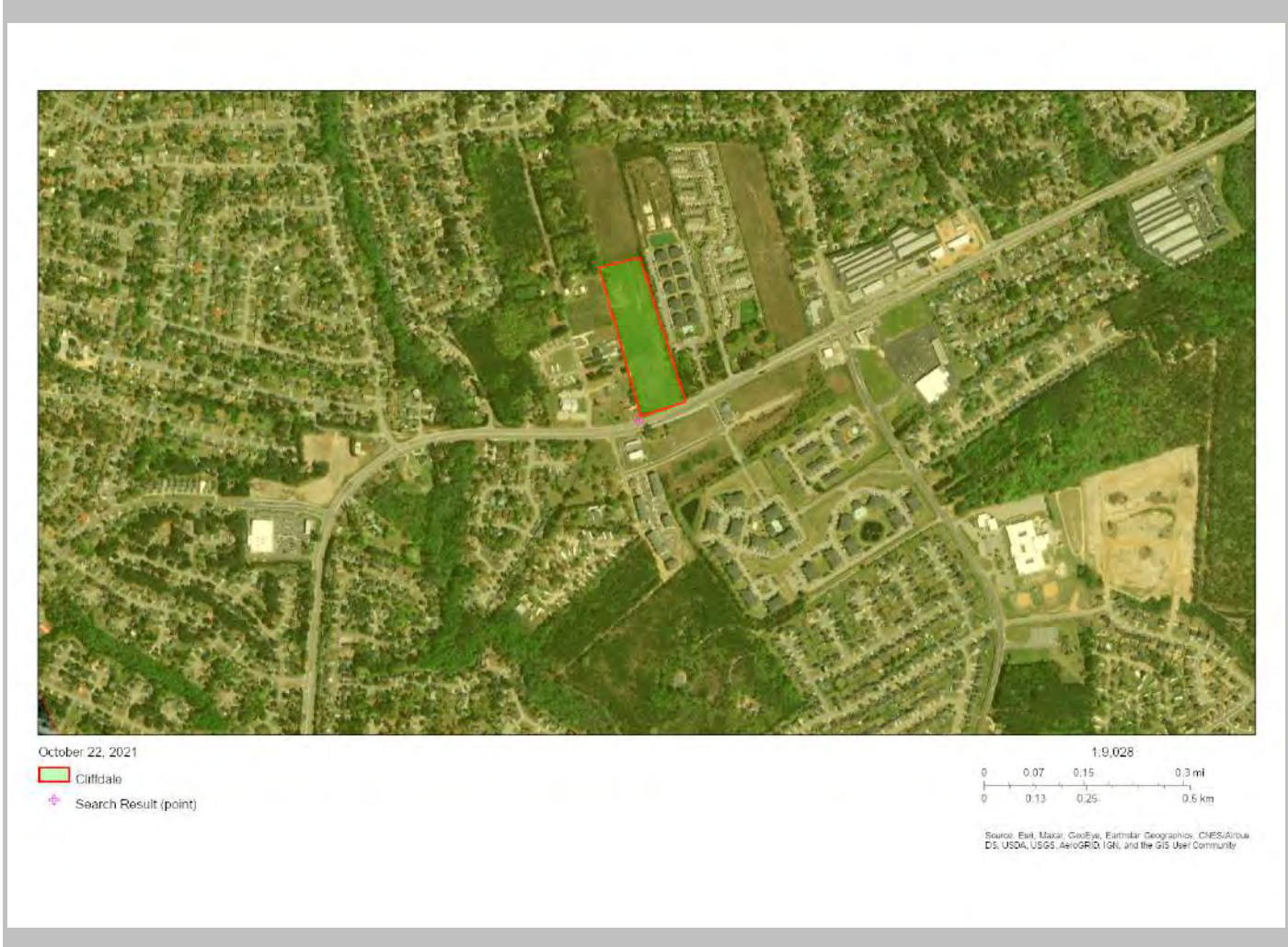
This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

1 mile Ring around the Area, NORTH CAROLINA, EPA Region 4

Approximate Population: 11,374

Input Area (sq. miles): 3.75

**Cliffdale**



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0



## EJSCREEN Report (Version 2020)



1 mile Ring around the Area, NORTH CAROLINA, EPA Region 4

Approximate Population: 11,374

Input Area (sq. miles): 3.75

Cliffdale

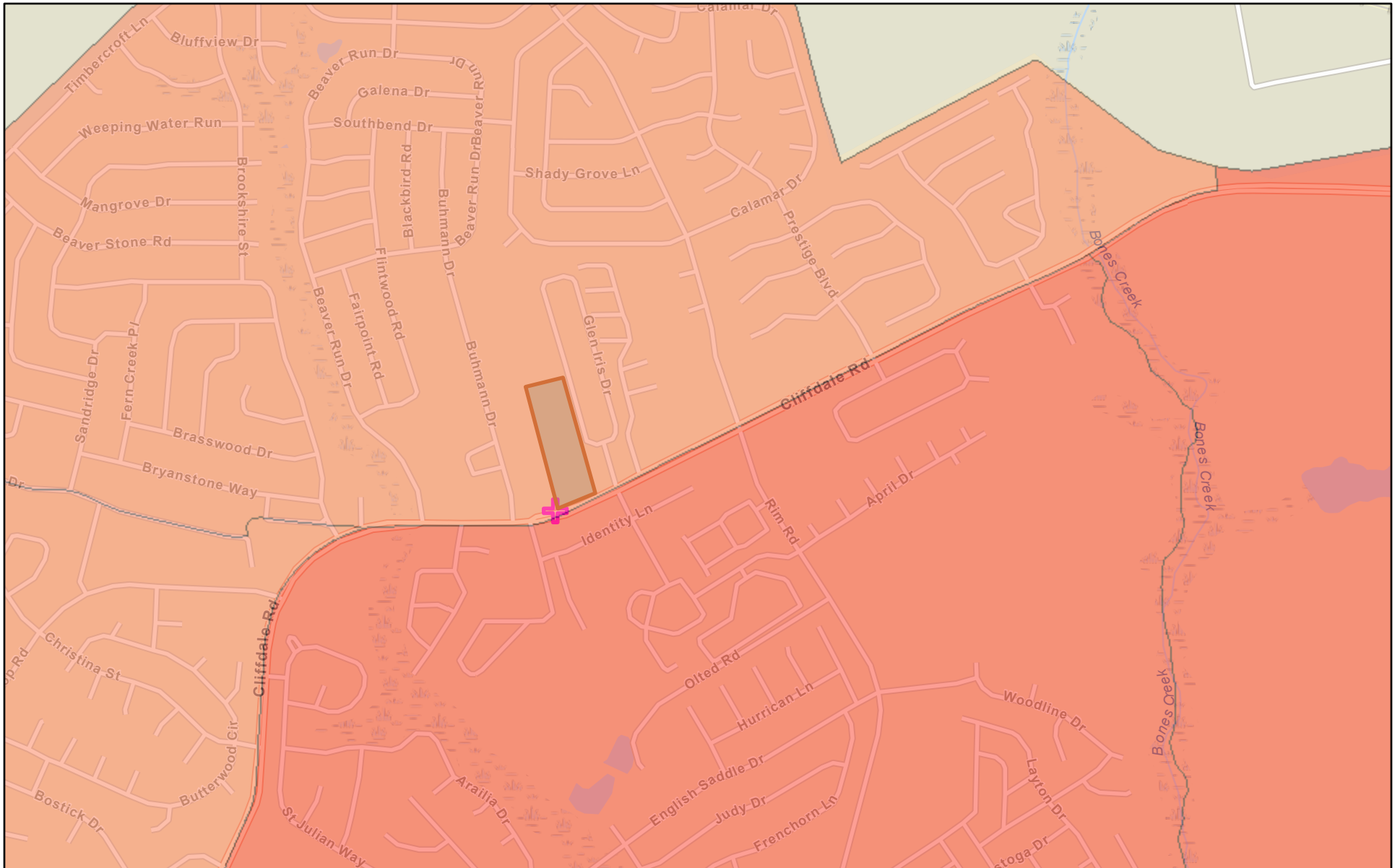
Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
<b>Environmental Indicators</b>							
Particulate Matter (PM 2.5 in $\mu\text{g}/\text{m}^3$ )	8.48	8.25	57	8.57	47	8.55	46
Ozone (ppb)	42.8	42.9	39	38	74	42.9	49
NATA* Diesel PM ( $\mu\text{g}/\text{m}^3$ )	0.252	0.309	43	0.417	<50th	0.478	<50th
NATA* Cancer Risk (lifetime risk per million)	36	34	66	36	50-60th	32	70-80th
NATA* Respiratory Hazard Index	0.55	0.46	90	0.52	60-70th	0.44	70-80th
Traffic Proximity and Volume (daily traffic count/distance to road)	74	230	49	350	42	750	30
Lead Paint Indicator (% Pre-1960 Housing)	0.014	0.16	15	0.15	22	0.28	15
Superfund Proximity (site count/km distance)	0.31	0.082	96	0.083	95	0.13	91
RMP Proximity (facility count/km distance)	0.097	0.39	22	0.6	18	0.74	14
Hazardous Waste Proximity (facility count/km distance)	0.35	1.3	40	0.91	50	5	33
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	N/A	0.16	N/A	0.65	N/A	9.4	N/A
<b>Demographic Indicators</b>							
Demographic Index	55%	36%	80	37%	77	36%	78
People of Color Population	73%	37%	87	39%	82	39%	80
Low Income Population	36%	36%	54	36%	52	33%	62
Linguistically Isolated Population	3%	2%	72	3%	68	4%	61
Population With Less Than High School Education	7%	13%	36	13%	34	13%	41
Population Under 5 years of age	8%	6%	77	6%	77	6%	74
Population over 64 years of age	8%	15%	19	17%	18	15%	22

\* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: <https://www.epa.gov/national-air-toxics-assessment>.

For additional information, see: [www.epa.gov/environmentaljustice](http://www.epa.gov/environmentaljustice)

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

# HEROS 17 Percent Pop Below Poverty Level



October 22, 2021

Source: 2014-2018 ACS (tr)

0 – 5.6

> 5.6 – 9.7

> 9.7 – 15

> 15 – 23.9

> 23.9 – 100

Clifffdale

Search Result (point)

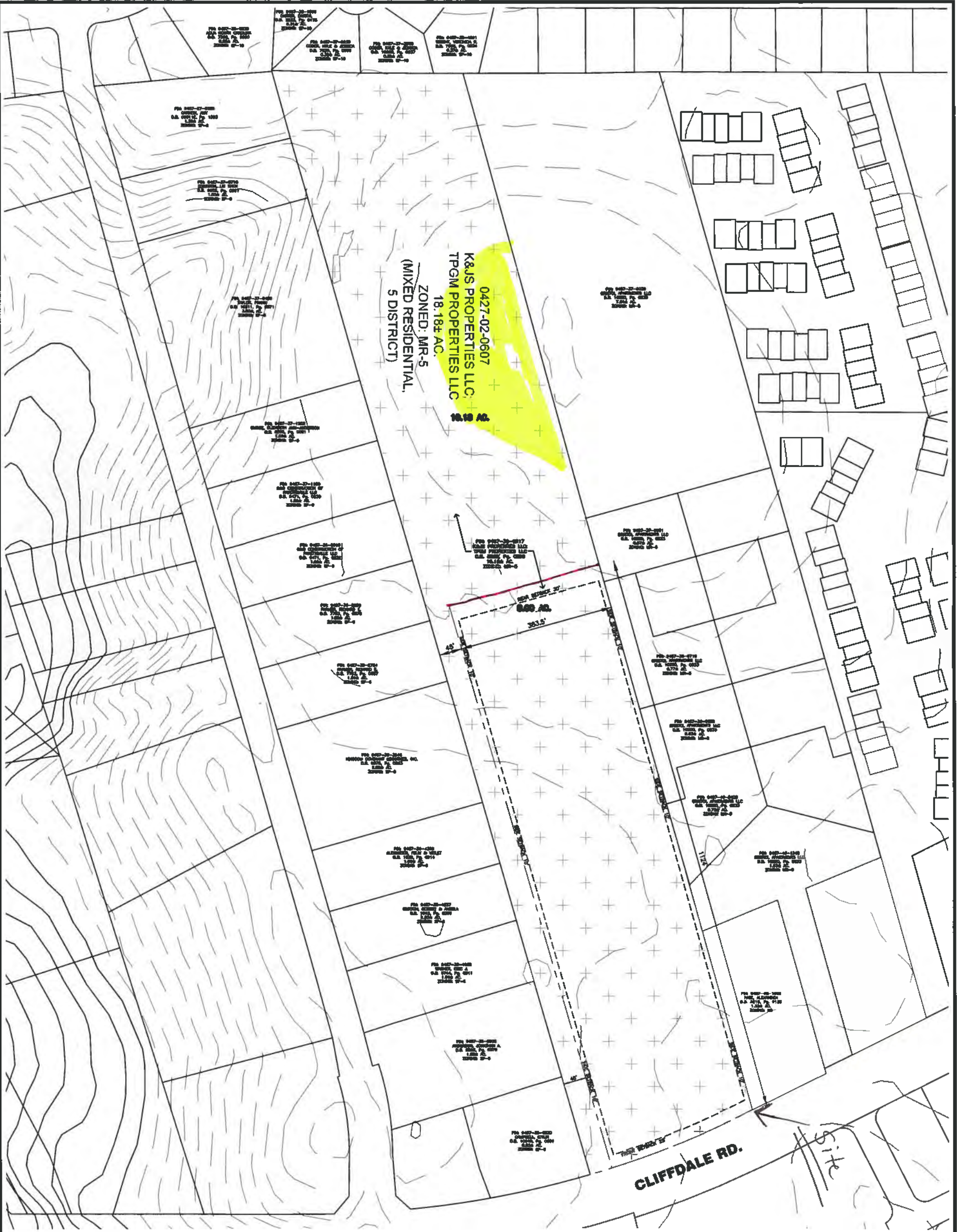
1:18,056

0 0.13 0.25 0.5 mi

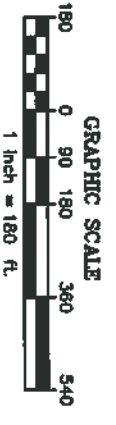
0 0.2 0.4 0.8 km

EPA. Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

# **APPENDIX E: Client Provided Documentation**



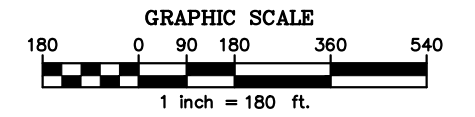
**CLIFFDALE CROSSING  
PLOT PLAN**



**PROJECT DATA**  
 PROJECT: CLIFFDALE DEVELOPMENT  
 PROJECT PK: 9487-36-0817  
 DEED BOOK/PAGE: 8888/0888  
 PROJECT ADDRESS: CLIFFDALE RD. FAYETTEVILLE, NC  
 DEVELOPER / FINANCIALLY RESPONSIBLE PARTY: SMITH DUBOIS DEVELOPERS, LLC  
 2029 BREZINWOOD AVENUE  
 FAYETTEVILLE, NC 28503

**SITE DATA**  
 DEVELOPMENT SITE= 8.00 AC± (OF 18.18 AC. SITE)  
 ZONING = MR-5 (MIXED RESIDENTIAL)  
 SETBACKS: FRONT= 25 FT  
 SIDE= 10 FT  
 REAR= 30 FT

# CLIFFDALE CROSSING SITE PLAN



**PROJECT DATA**  
 PROJECT: CLIFFDALE DEVELOPMENT  
 PROJECT PIN: 9487-36-6817  
 DEED BOOK/PAGE: 8868/0899  
 PROJECT ADDRESS: CLIFFDALE RD. FAYETTEVILLE, NC  
 DEVELOPER / FINANCIALLY RESPONSIBLE PARTY: SMITH DUGGINS DEVELOPERS, LLC  
 2929 BREEZEWOOD AVENUE SUITE 102 FAYETTEVILLE, NC 28303

**SITE DATA**  
 DEVELOPMENT SITE= 8.00 AC± (OF 18.18 AC. SITE)  
 ZONING = MR-5 (MIXED RESIDENTIAL)  
 SETBACKS: FRONT= 25 FT  
 SIDE= 10 FT  
 REAR= 30 FT  
 LATITUDE / LONGITUDE..... 35° 3' 30.18" N, 79° 3' 14.75" W  
 PROPOSED DENSITY= 80 DU = 9.6 DU/AC.  
 NO. OF UNITS: 80 DU (12-1 BR, 40-2 BR, 28-3 BR)  
 8 ADA UNITS INCLUDED: 2-1 BR, 4- 2 BR, 2  
 PARKING SPACES REQUIRED (COF):  
 1.8 SP/DU UNIT= 1.8x80 DU=144 SPACES  
 (1 ADA SPACES PER 25 INCL=6 ADA SPACES)  
 PARKING SPACES PROVIDED:  
 1.8 SP/DU UNIT= 1.8x80 DU= 144 SPACES  
 4 COMMON AREA SPACES (PLAYGROUND)  
 TOTAL SPACES PROVIDED = 148 SPACES  
 (13 ADA SPACES INCL.)  
 BUILT UPON AREA (BUILDINGS-PARKING -WALKWAYS)= 5.53 AC±  
 OPEN SPACE SET-ASIDE AREAS =2.2.47 AC±=30.8%± (10% REQ'D)  
 IMPERVIOUS AREA:  
 EXISTING: 0 AC ±  
 PROPOSED ROADS & SIDEWALKS: 92,268 SF  
 PROPOSED BUILDINGS: 48,705 SF (1.12 AC±)  
 TOTAL PROPOSED IMP: 3.24 AC±

TOTAL DISTURBED AREA= 5.61± AC.  
**SITE AMENITIES**  
 THE FOLLOWING ITEMS HAVE BEEN NOTED ON THE SITE PLAN TO BE PROVIDED WITH THE PROJECT:  
 (1) PLAY GROUNDS W/ EQUIPMENT & BENCHES  
 (1) TOT LOTS W/ EQUIPMENT & BENCHES  
 (1) COVERED PICNIC AREA W/ TWO TABLES & GRILL (150 SF)  
 (3) OUTDOOR SITTING AREAS W/BENCHES  
 COVERED POSTAL FACILITY  
 LANDSCAPED ENTRY + ENTRANCE SIGNS  
 IRRIGATED LAWNS  
**SHARED COMMUNITY BUILDING WITH THE FOLLOWING:**  
 OFFICE W/ STORAGE AND HC TOILETS  
 LAUNDRY ROOM W/ 4 WASHERS & 4 DRYERS  
 COMPUTER CENTER W/ HIGH SPEED INTERNET (2 STATIONS)  
 PLUS 2 NEW STATIONS  
 COMMUNITY ROOM W/ KITCHENETTE



# **APPENDIX F: Other Supporting Documentation**

# Cliffdale Crossing



10/19/2021, 8:35:43 AM

1:6,000

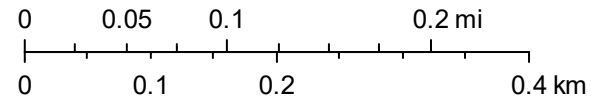
- Parcels
- Address
- Buildings
- Streets
- Linden
- Stedman
- Wade
- Subdivisions-MHPS

### HydroPolygons

- HydroPolygons

### Municipal Boundaries

- Fayetteville
- Hope Mills
- Spring Lake
- Eastover
- Falcon
- Godwin



CCGIS \ ESRI Charlotte  
CCGIS

# Property Summary

Tax Year: 2021

<b>REID</b>	9487366817000	<b>PIN</b>	9487-36-6817	<b>Property Owner</b>	K&JS PROPERTIES LLC;TPGM PROPERTIES LLC
<b>Location Address</b>	0 ? DR	<b>Property Description</b>	R A PATE EST LO7 SE01 PL0038-0075	<b>Owner's Mailing Address</b>	PO BOX 53729 FAYETTEVILLE NC 28305

Administrative Data	
<b>Plat Book &amp; Page</b>	0038-0075
<b>Old Map #</b>	
<b>Market Area</b>	4020
<b>Township</b>	NONE
<b>Planning Jurisdiction</b>	COUNTY
<b>City</b>	
<b>Fire District</b>	0151-FIRE-SERV-DIST
<b>Spec District</b>	RECREATION
<b>Land Class</b>	F100-RURAL
<b>History REID 1</b>	
<b>History REID 2</b>	
<b>Acreage</b>	18.18
<b>Permit Date</b>	
<b>Permit #</b>	

Transfer Information	
<b>Deed Date</b>	4/3/2012
<b>Deed Book</b>	008868
<b>Deed Page</b>	00899
<b>Revenue Stamps</b>	
<b>Package Sale Date</b>	
<b>Package Sale Price</b>	
<b>Land Sale Date</b>	4/3/2012
<b>Land Sale Price</b>	

Property Value	
<b>Total Appraised Land Value</b>	\$590,461
<b>Total Appraised Building Value</b>	
<b>Total Appraised Misc Improvements Value</b>	
<b>Total Cost Value</b>	\$590,461
<b>Total Appraised Value - Valued By Cost</b>	\$590,461
<b>Other Exemptions</b>	
<b>Exemption Desc</b>	
<b>Use Value Deferred</b>	\$586,643
<b>Historic Value Deferred</b>	
<b>Total Deferred Value</b>	\$586,643
<b>Total Taxable Value</b>	\$3,818

Improvement Summary	
<b>Total Buildings</b>	0
<b>Total Units</b>	0
<b>Total Living Area</b>	0
<b>Total Gross Leasable Area</b>	0



## Building Summary

## Misc Improvements Summary

Card #	Unit Quantity	Measure	Type	Base Price	Eff Year	Phys Depr (% Bad)	Econ Depr (% Bad)	Funct Depr (% Bad)	Common Interest (% Good)	Value
No Data										
<b>Total Misc Improvements Value Assessed:</b>										



## Land Summary

Land Class: F100-RURAL		Deeded Acres: 0			Calculated Acres: 18.06		
Zoning	Soil Class	Description	Size	Rate	Size Adj. Factor	Land Adjustment	Land Value
MR5		2096-RURAL-ACREAGE	16.52 BY THE ACRE PRICE	\$24,000			\$589,963
MR5		2300-SWAMP-WASTE	1.66 BY THE ACRE PRICE	\$300			\$498
<b>Total Land Value Assessed: \$590,461</b>							

## Ownership History

	Owner Name	Deed Type	% Ownership	Stamps	Sale Price	Book	Page	Deed Date
Current	K&JS PROPERTIES LLC/ TPGM PROPERTIES LLC	WD-WARRANTY DEED	50, 50	0		008868	00899	4/3/2012
1 Back	N C DEPT OF TRANSPORTATION	RW-RIGHT OF WAY DEED	100	0		005699	00781	3/12/2002
2 Back	RIDDLE, MARCH F	WD-WARRANTY DEED	100	0		004594	00558	12/30/1996

## Notes Summary

Building Card	Date	Line	Notes
No Data			

FILED  
 CUMBERLAND COUNTY NC  
 J. LEE WARREN, JR.  
 REGISTER OF DEEDS

---

FILED AT Apr 03, 2012  
 02:42:00 pm  
 BOOK 08868  
 START PAGE 0899  
 END PAGE 0903  
 INSTRUMENT # 12124  
 RECORDING \$26.00  
 EXCISE TAX (None)  
 DJ

### NORTH CAROLINA GENERAL WARRANTY DEED

Excise Tax: NTC

Prepared by and mail after recording to: Thomas E. Wagg III, Attorney  
 Brooks, Pierce, McLendon, Humphrey & Leonard, L.L.P., P O Box 26000, Greensboro, NC 27420  
 (Without title examination)

**THIS GENERAL WARRANTY DEED**, made and entered into as of the 3 day of April, 2102, by and between

Grantor	Grantee
<p><b>MARCH F. RIDDLE</b>, Widow            (unmarried)</p> <p>125 Great Oaks            Fayetteville, NC 28303-4977</p>	<p><b>K&amp;Js PROPERTIES, LLC</b>, a North Carolina limited liability company,            and  <b>TPGM PROPERTIES, LLC</b>, a North Carolina limited liability company,            as tenants in common, each holding a one-half (1/2) undivided interest</p> <p>238 North McPherson Church Road            Fayetteville, NC 28303</p>

*The designations Grantor and Grantee as used herein shall include such parties, their heirs, successors and assigns, and shall include singular, plural, masculine, feminine or neuter, as required by context.*

**WITNESSETH**, that the Grantor, for a valuable consideration paid by the Grantee, the receipt of which is hereby acknowledged, has and by these presents does grant, bargain, sell and convey to the Grantee in fee simple all of those certain lots or parcels of land situated in Cumberland County, North Carolina, being more particularly described on Exhibit A, attached hereto.

No portion of the property herein conveyed includes the primary residence of a Grantor.

No portion of the property herein conveyed includes the primary residence of a Grantor.

**TO HAVE AND TO HOLD** unto the Grantee, and unto its heirs, successors and assigns, in fee simple forever, the above described real estate, together with the improvements thereon, and the hereditaments and appurtenances thereunto appertaining.

**AND THE GRANTOR HEREBY COVENANTS** with the Grantee, and with its heirs, successors and assigns, that Grantor is seized of the premises in fee simple, has the right to convey the same in fee simple, that title is marketable and free and clear of all encumbrances, and that Grantor will warrant and defend the title against the lawful claims of all persons whomsoever, except for the following exceptions:

Easements, restrictions, and rights of way of record, if any, and ad valorem taxes for the current year.

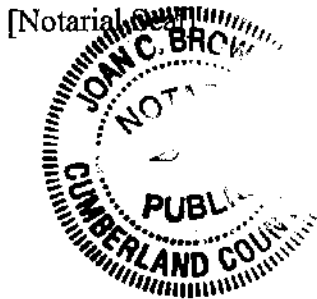
**IN WITNESS WHEREOF**, Grantor has hereunto set her hand and seal the day and year first above written.

*March F. Riddle* (Seal)  
March F. Riddle

NORTH CAROLINA  
CUMBERLAND COUNTY

I, *JOAN C. BROWN*, a Notary Public of the County and State aforesaid, certify that MARCH F. RIDDLE, personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

WITNESS my hand and notarial seal, this *3<sup>rd</sup>* day of April, 2012.



*Joan C. Brown*  
Notary Public  
Printed Name *Joan C. Brown*  
My Commission Expires: *SEPT. 13, 2015*

(N.P. SEAL)

### EXHIBIT A

This Exhibit lists those properties being conveyed in the deed from March F. Riddle to K&Js Properties, LLC and TPGM Properties, LLC, as tenants in common, each being conveyed an equal one-half (1/2) undivided interest.

Being all of the tracts of real property listed below and designated by the Deed Book and Page of the deed recorded in the Cumberland County Registry in which the Grantor was conveyed the tract, if applicable. The tracts are further identified by the PIN Number designated on the records of the Cumberland County Tax Department. These conveyances are made subject to easements, restrictions, and rights of way of record, if any, and are subject to any conveyances made by the Grantor preceding or subsequent to the deeds that are referenced.

Internal tract number, Tax PIN Number, and Deed references	Property description as designated on the corresponding tax listing.
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J1

0405-83-8412

Book 4594, Page 474

3.67 AC Rockfish

405-93-2304

Book 2809, Page 689

5.63 AC Rockfish

J2

0405-90-8359

Book 4681, Page 415

9.72 ACS Bluff Mill Tract

J3, J4, J5

0415-02-0348

Book 8373, Page 324

PT LTS 1 & 2, Mebane Tract 3

J6

0416-29-1776

Book 4594, Page 496

LTS in the Biggs Sub, 7.11 ACS

J7

0418-50-6080

Book 4594, Page 502

LT 14 Courtyards II

J8 0425-38-6118 Book 4603, Page 842	20 ACS Natal St
J9 0425-48-6072 Book 2925, Page 591	.47 ACRES Camden Rd
J10 0425-57-8969 Book 2544, Page 521	Various Lots in Southlawn Sec. 3 (22.60 ACS)
J11 0425-65-1284 Book 4690, Page 623	6.74 ACS McLean LD
J12 0434-11-7944 Book 4594, Page 511	33.61 ACS Keller LD
J13, J14 0434-20-0404 Book 4690, Page 644	7.10 ACS Rockfish
J15 0434-30-1262 Book 4690, Page 644	12.01 ACS, J C Lee
J16 0434-41-1503 Book 4690, Page 644	8.77 AC J C Lee
J17 0455-08-9919 Book 4692, Page 166	66.66 % Int. 9.11 ACS Martin
J18 0455-09-1319 Book 4747, Page 203	4.78 ACS Nick Carver
J19 0542-74-5536 Book 4699, Page 39	LOTS 3 & 4 Betsy Ann Barbour Davis (514.49 ACS)

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8868  
0903

BK 08868 PG 0903

J20

0542-82-0317

Book 5472, Page 779

34.53 ACS Wilkes LD

J21

9487-36-6817

Book 4594, Page 558

PT LT 7 R A Pate Estate (18.18 ACS)

J22

9487-47-7123

Book 4594, Page 561

PT LOT 4 R A Pate Estate (12.80 ACS)

J23

9497-91-3688



Book 4699, Page 43

50.54 ACS Currie LD



September 23, 2021

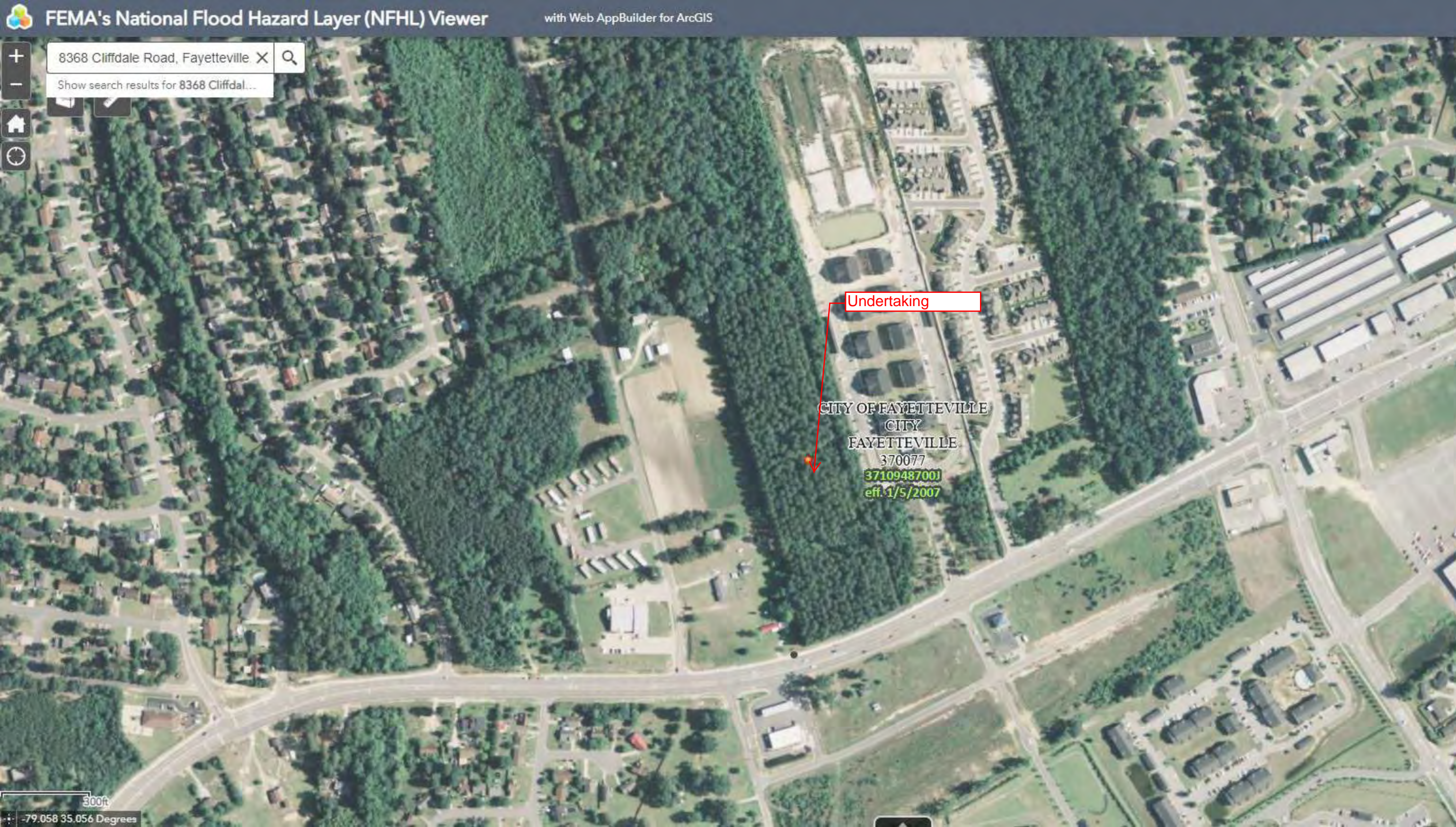
### Wetlands

- |   |                                |   |                                   |   |       |
|---|--------------------------------|---|-----------------------------------|---|-------|
|  | Estuarine and Marine Deepwater |    | Freshwater Emergent Wetland       |  | Lake  |
|  | Estuarine and Marine Wetland   |    | Freshwater Forested/Shrub Wetland |  | Other |
|  | Freshwater Pond                |  | Riverine                          |   |       |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

8368 Cliffdale Road, Fayetteville X

Show search results for 8368 Cliffdal...



Undertaking

CITY OF FAYETTEVILLE  
CITY  
FAYETTEVILLE  
370077  
[3710948700]  
eff. 1/5/2007

### Legend

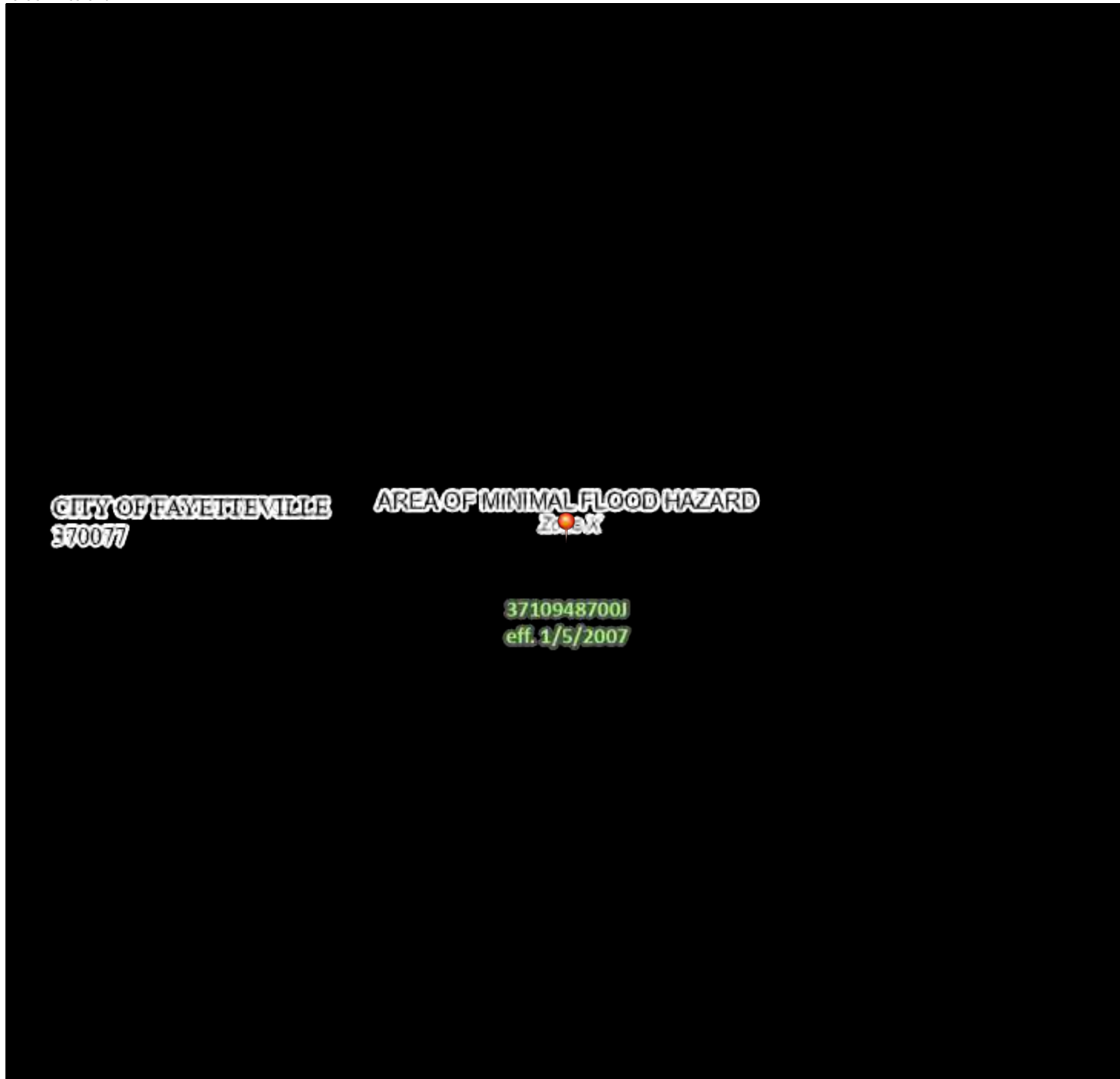
- Effective FIRM Panels**
  - GeoIndex
    - No Digital Data Available
    - Digital Data Available
    - Unmapped
- NFHL**
  - LOMRs
    - Effective
  - Political Jurisdictions
  - Profile Baselines
  - Cross-Sections
  - Base Flood Elevations
  - Levees
  - Coastal Transects
  - Transect Baselines
  - General Structures
    - Flood Structure
    - Bridge
    - Dam, Weir, Jetty
    - Other Structures
  - River Mile Markers
  - Limit of Moderate Wave Action
  - Flood Hazard Boundaries
    - Limit Lines



# National Flood Hazard Layer FIRMMette



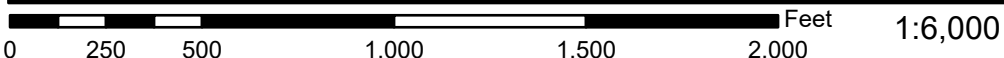
79°3'34"W 35°3'46"N



## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

<b>SPECIAL FLOOD HAZARD AREAS</b>		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway
<b>OTHER AREAS OF FLOOD HAZARD</b>		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>
<b>OTHER AREAS</b>		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
		Area of Undetermined Flood Hazard <i>Zone D</i>
<b>GENERAL STRUCTURES</b>		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
<b>OTHER FEATURES</b>		20.2 Cross Sections with 1% Annual Chance
		17.5 Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
<b>MAP PANELS</b>		Digital Data Available
		No Digital Data Available
		Unmapped
		The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.



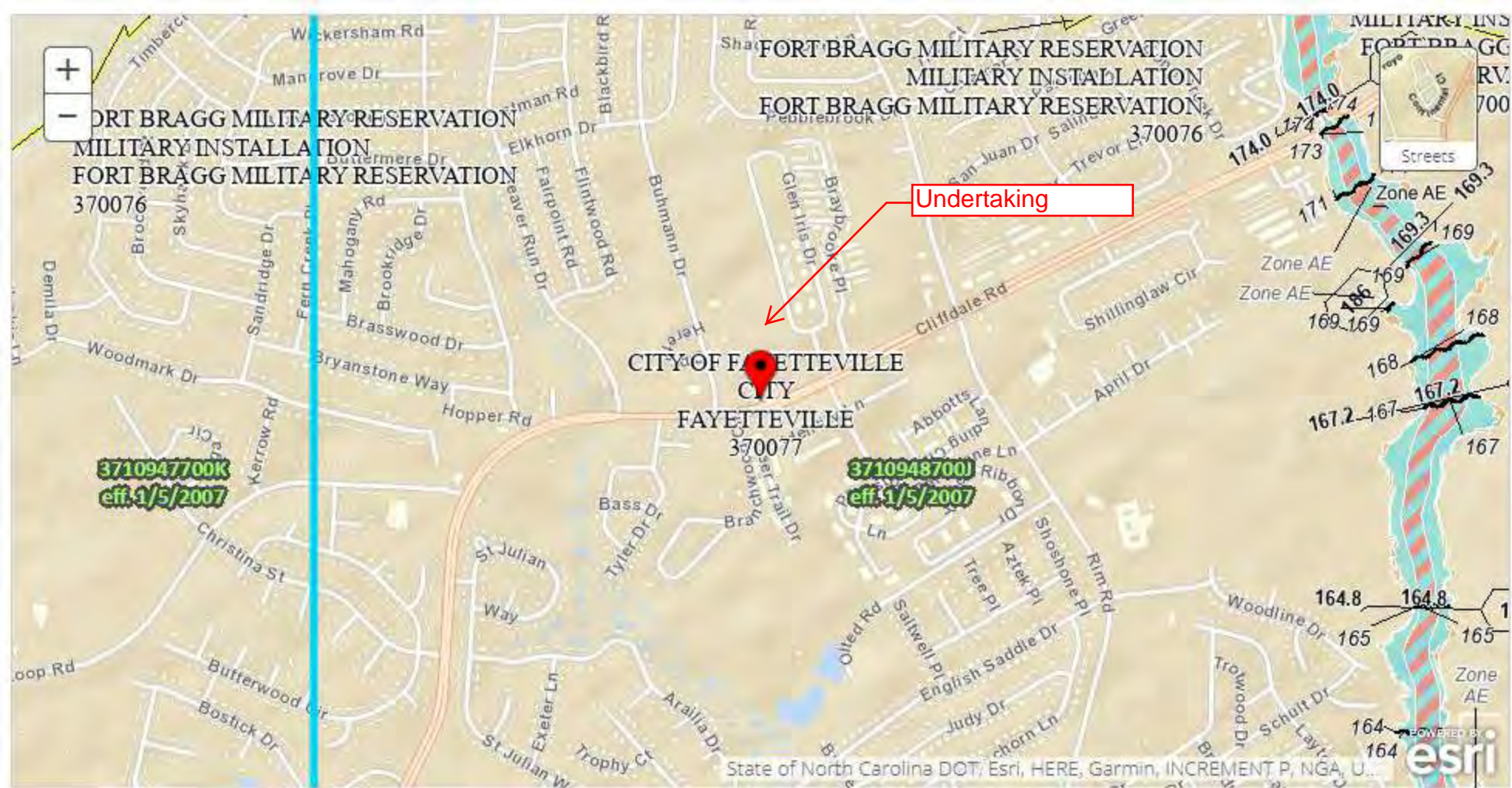
79°2'57"W 35°3'17"N

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **9/23/2021 at 11:39 AM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



PIN



Approximate location based on user input and does not represent an authoritative property location



Selected FloodMap Boundary



Digital Data Available

**SPECIAL FLOOD HAZARD AREAS**



Without Base Flood Elevation (BFE)  
Zone A, V, 499



With BFE or Depth



Regulatory Floodway Zone AE, AO, AH, VE, AR



0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average



**20.2** Cross Sections with 1% Annual Chance Water Surface Elevation



**17.5** Coastal Transect



Base Flood Elevation Line (BFE)



Limit of Study



Jurisdiction Boundary



## Property Information

Order Number:	21101400310p
Date Completed:	October 15, 2021
Project Number:	CK21-8848
Project Property:	Cliffdale Crossing 8368 Cliffdale Road Fayetteville NC 28314
Coordinates:	
Latitude:	35.06032051
Longitude:	-79.0547604
UTM Northing:	3881462.5713 Meters
UTM Easting:	677387.655748 Meters
UTM Zone:	UTM Zone 17S
Elevation:	252.20 ft
Slope Direction:	SSE

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Hydrologic Information.....	10
Geologic Information.....	13
Soil Information.....	15
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Liability Notice.....	46

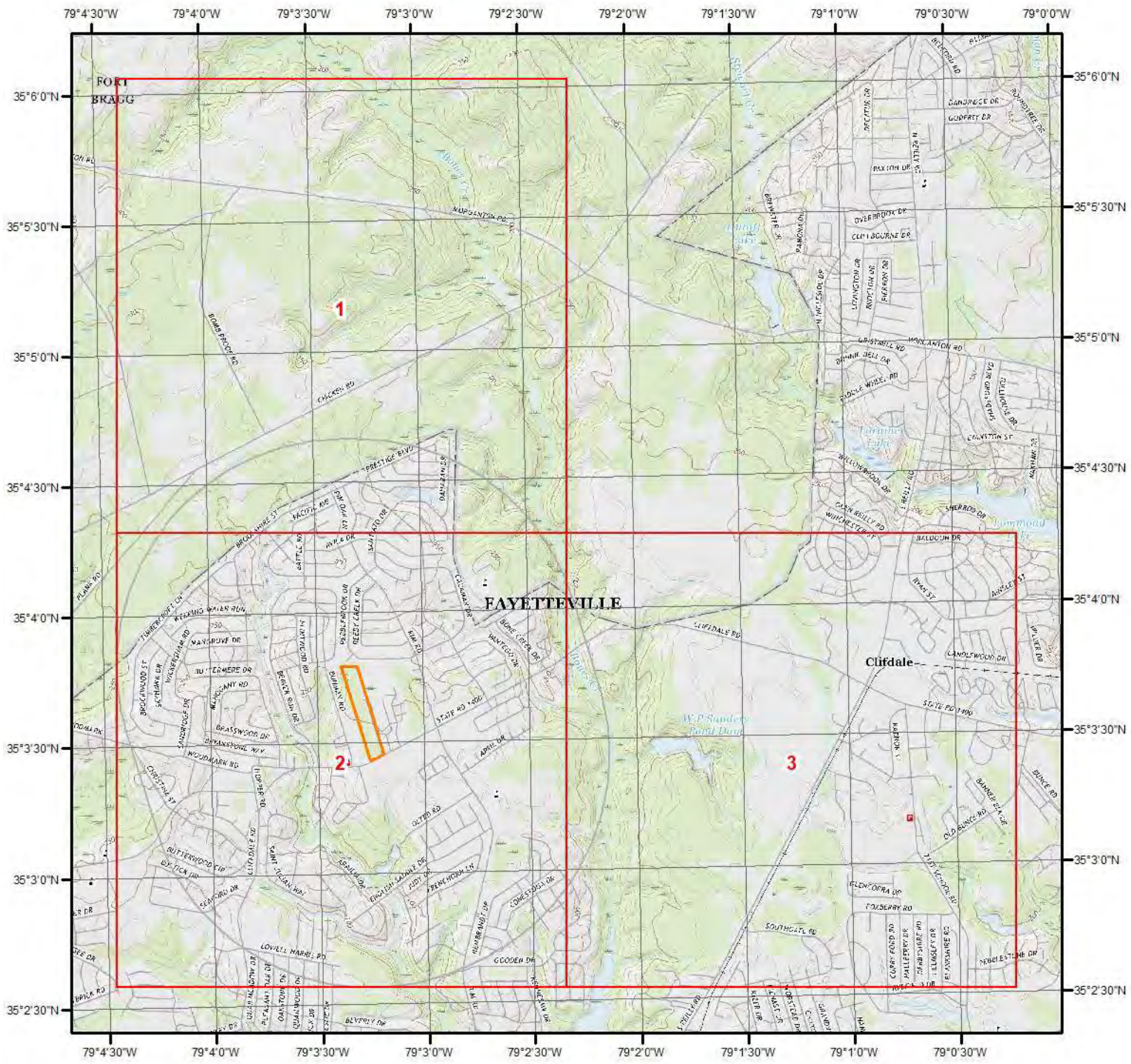
The ERIS **Physical Setting Report - PSR** provides comprehensive information about the physical setting around a site and includes a complete overview of topography and surface topology, in addition to hydrologic, geologic and soil characteristics. The location and detailed attributes of oil and gas wells, water wells, public water systems and radon are also included for review.

The compilation of both physical characteristics of a site and additional attribute data is useful in assessing the impact of migration of contaminants and subsequent impact on soils and groundwater.

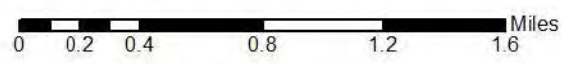
### Disclaimer

This Report does not provide a full environmental evaluation for the site or adjacent properties. Please see the terms and disclaimer at the end of the Report for greater detail.

# Topographic Information



**Current USGS Topo (2016)**

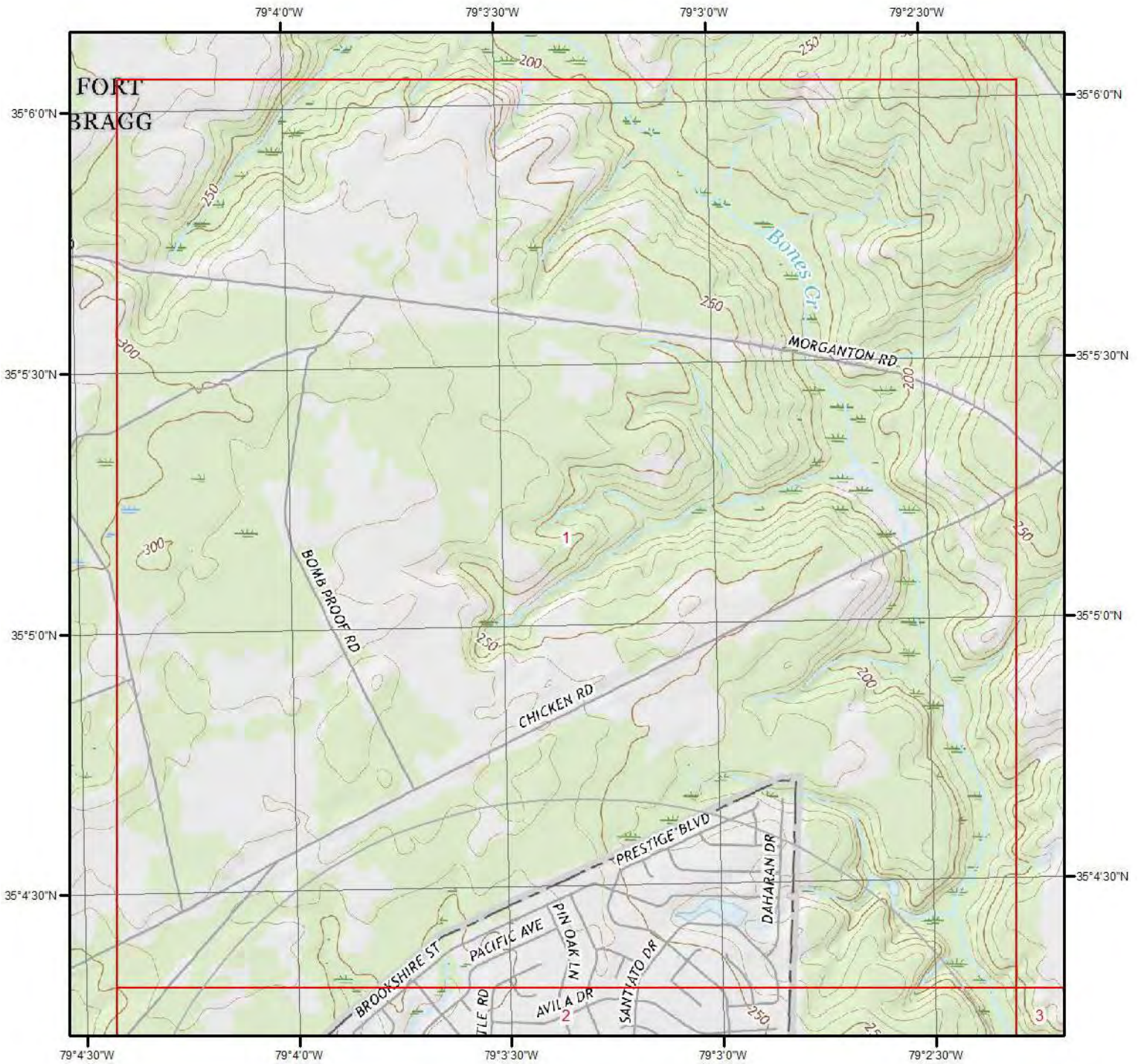


**Quadrangle(s): Clifdale,NC; Fayetteville,NC; Hope Mills,NC; Lohelia,NC;  
Manchester,NC; Nicholson Creek,NC; Overhills,NC; Parkton,NC; Rae**

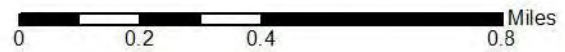


Source: USGS 7.5 Minute Topographic Map

# Topographic Information



**Current USGS Topo - Page 1**

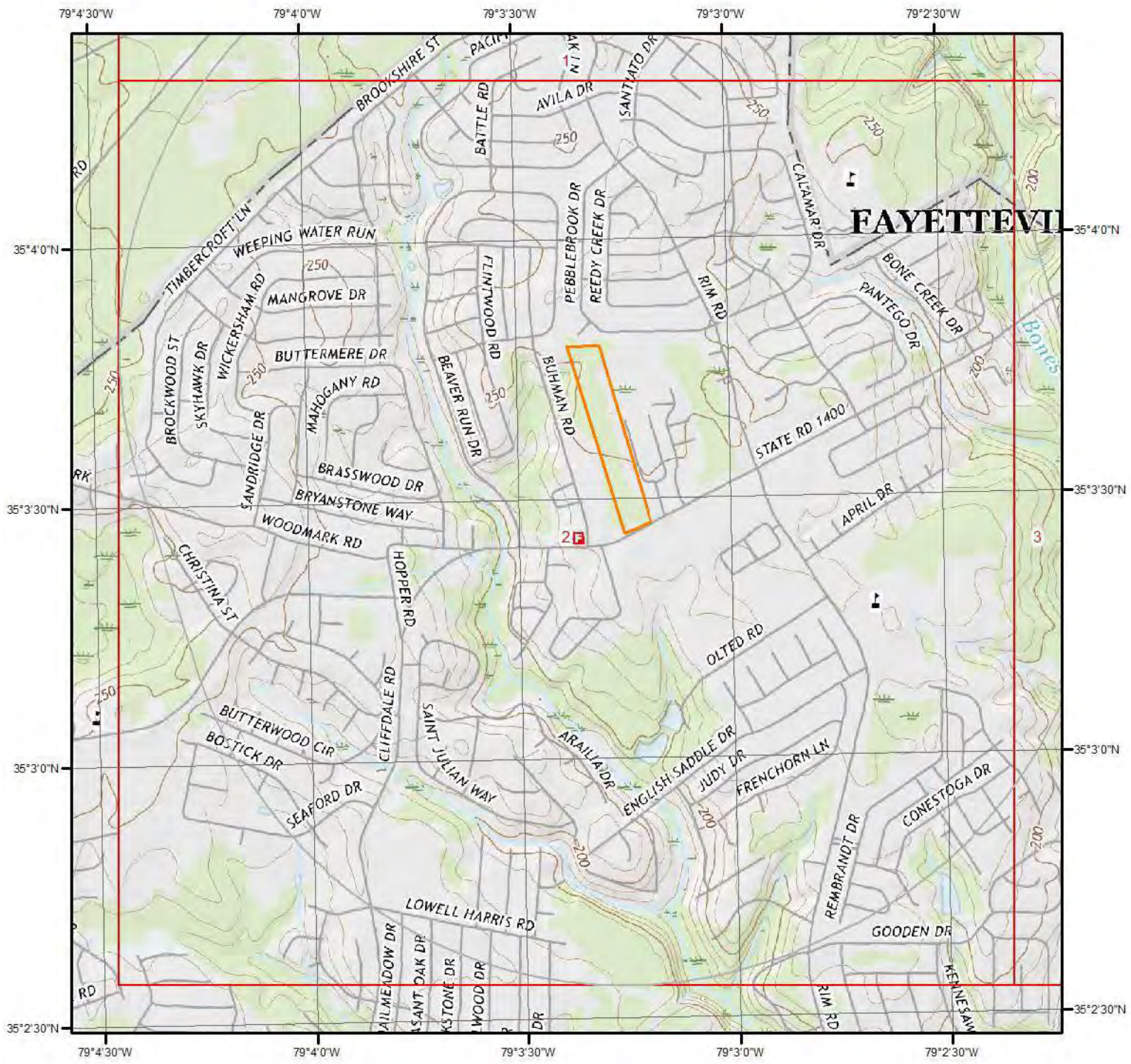


**Quadrangle(s): Clifdale,NC**

Source: USGS 7.5 Minute Topographic Map



# Topographic Information



Current USGS Topo - Page 2

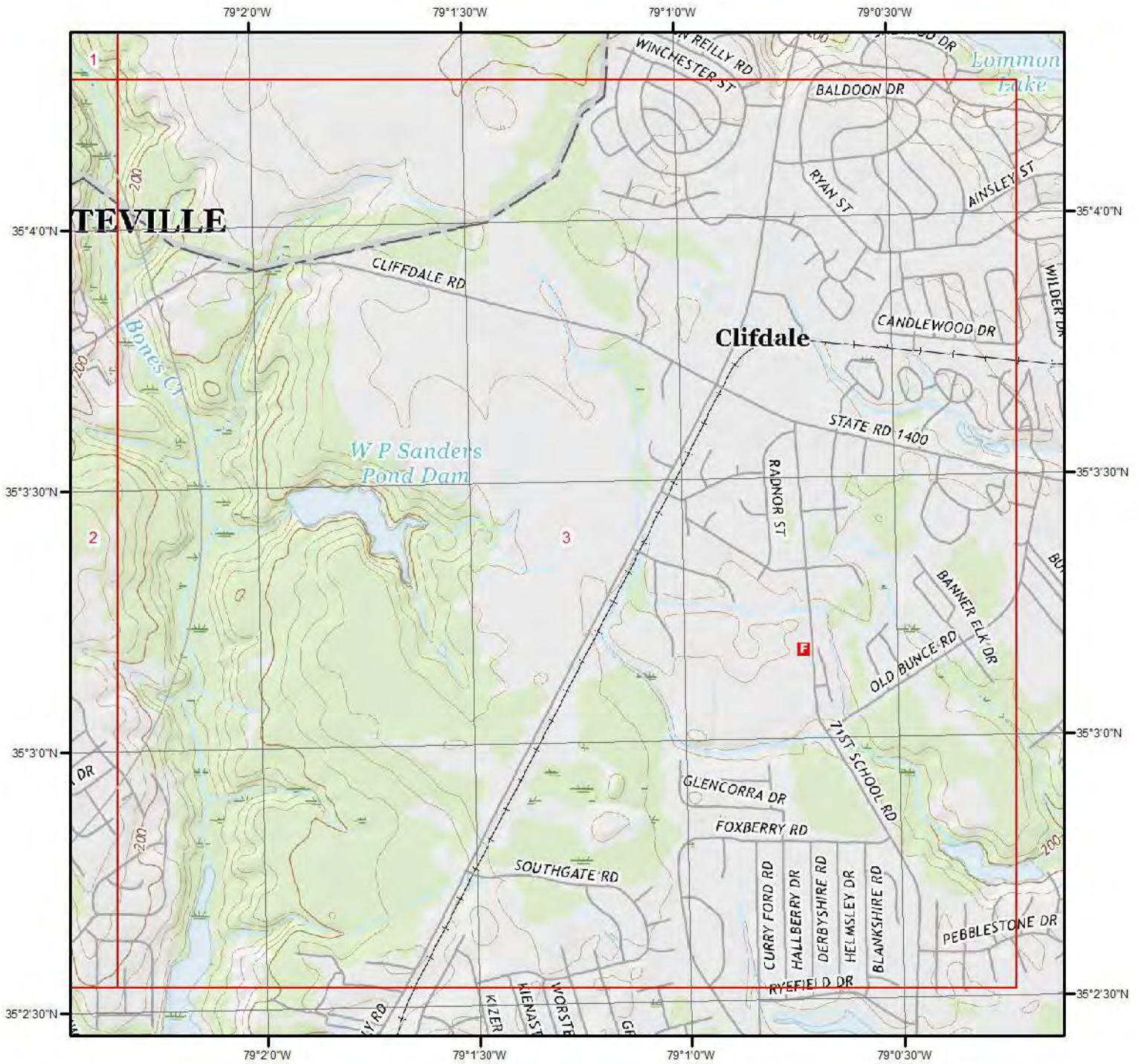


Quadrangle(s): Clifdale, NC

Source: USGS 7.5 Minute Topographic Map



# Topographic Information



**Current USGS Topo - Page 3**



**Quadrangle(s): Clifdale, NC**

Source: USGS 7.5 Minute Topographic Map



# Topographic Information

The previous topographic map(s) are created by seamlessly merging and cutting current USGS topographic data. Below are shaded relief map(s), derived from USGS elevation data to show surrounding topography in further detail.

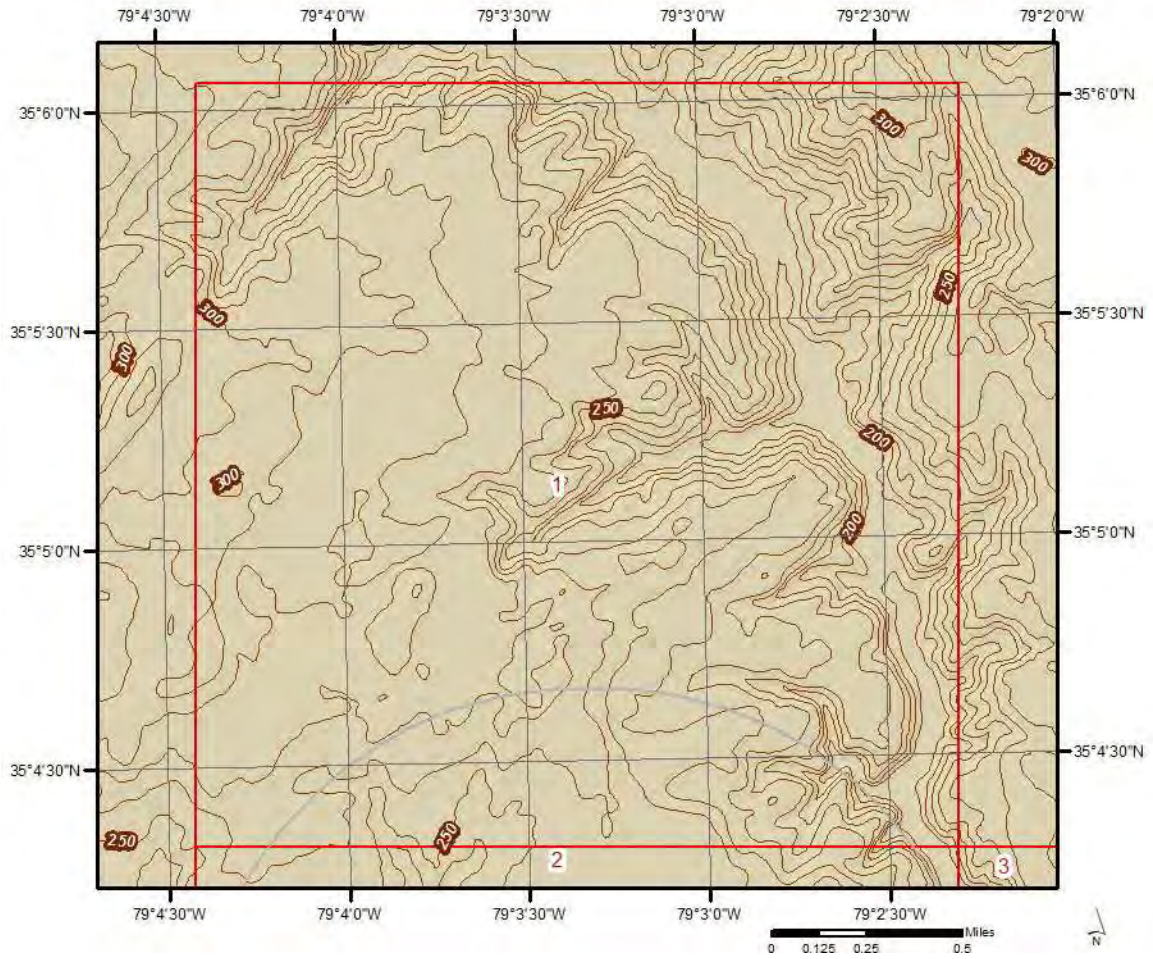
Topographic information at project property:

Elevation: 252.20 ft  
Slope Direction: SSE

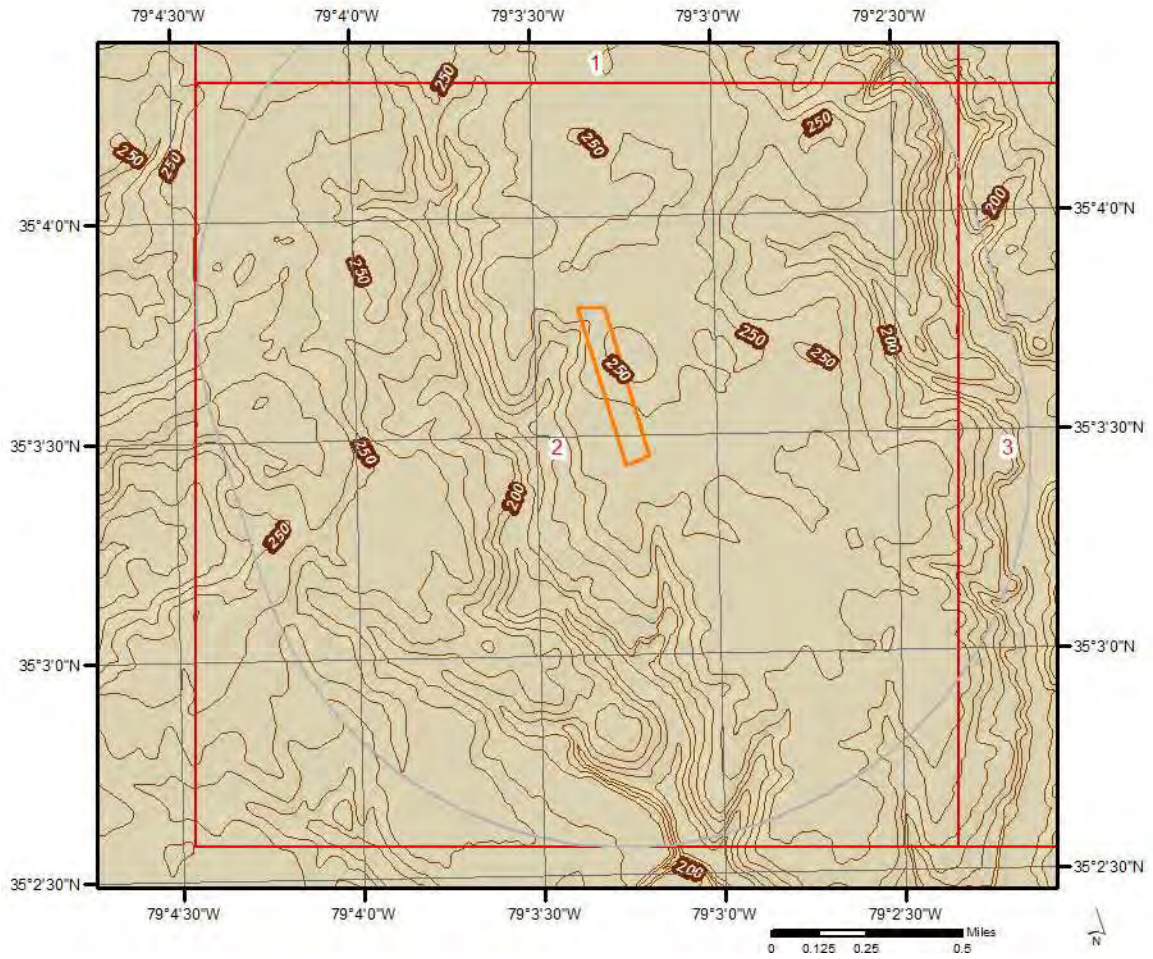




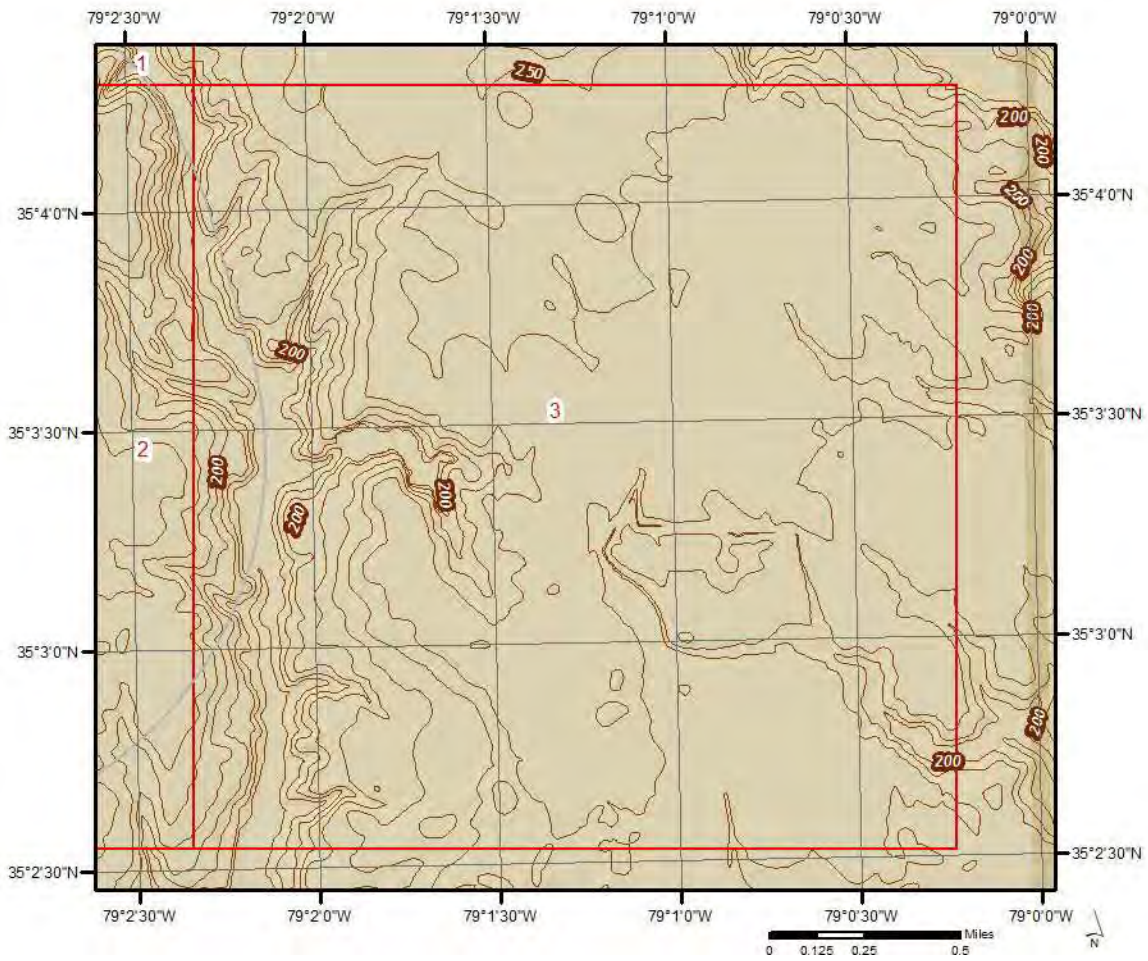
# Topographic Information



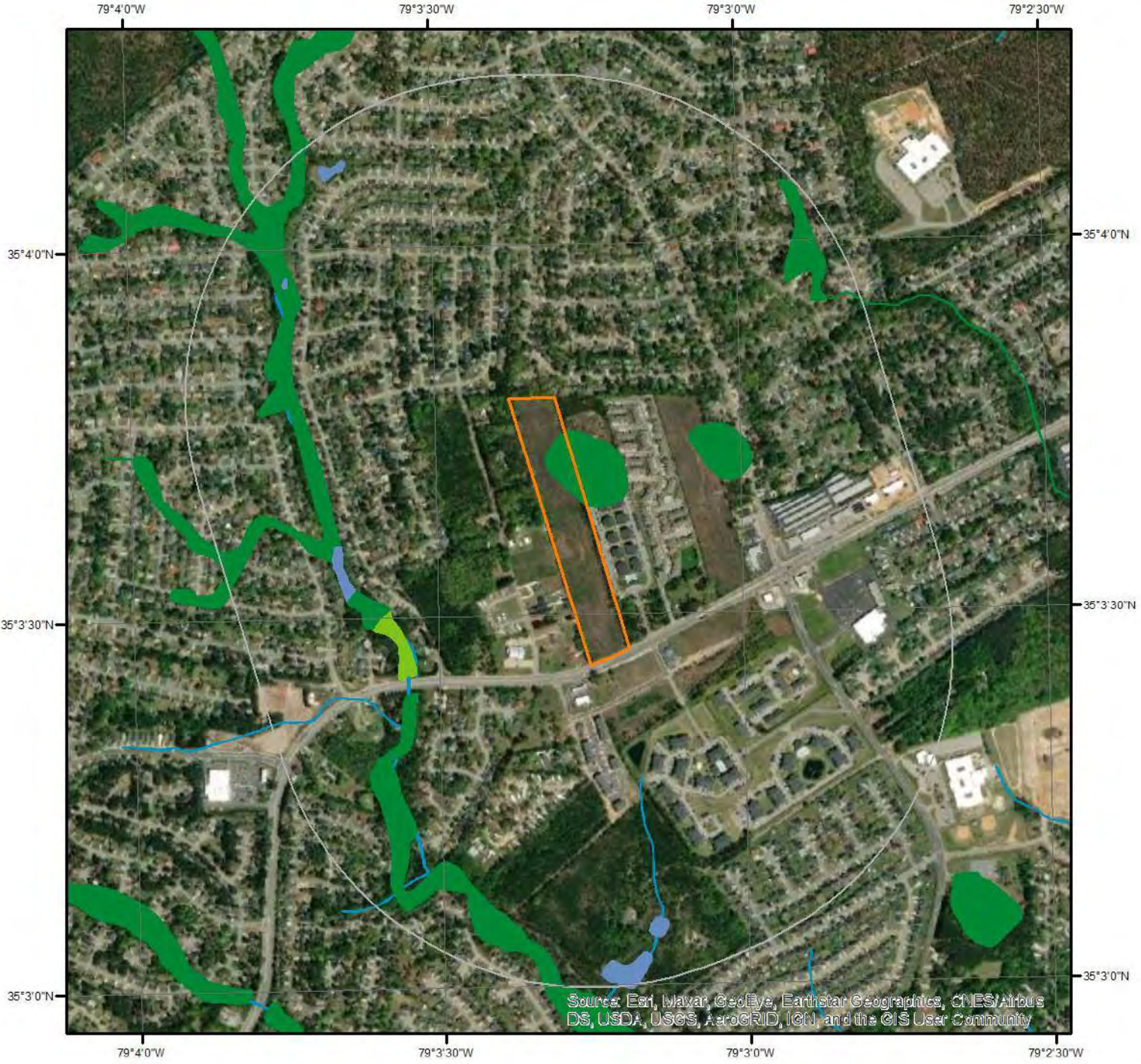
# Topographic Information



# Topographic Information



# Hydrologic Information




Source: Esri, Inxant, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

## Wetland

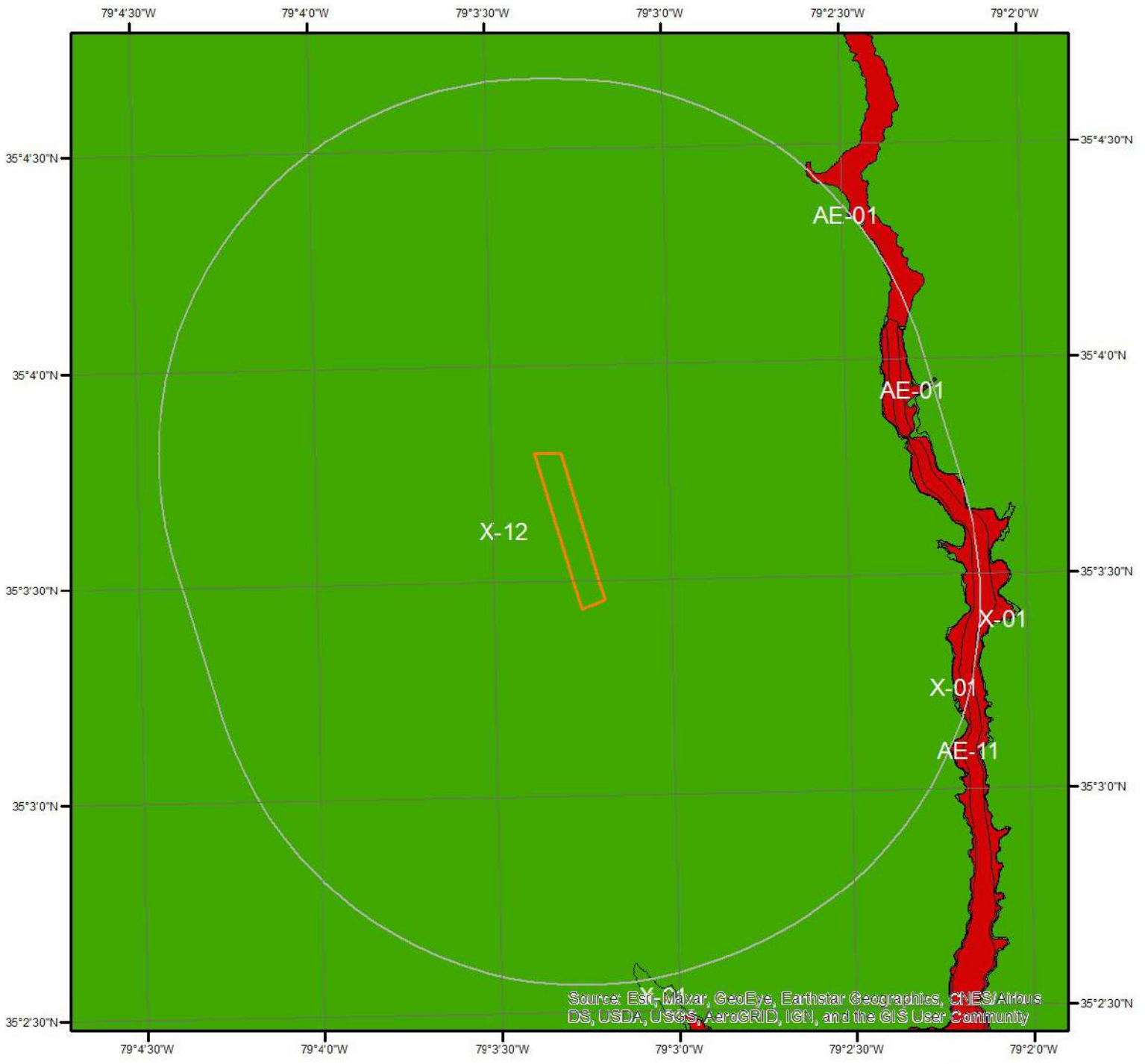


This map shows wetland existence using data from US Fish & Wildlife. Data coverage is shown to the right. Gray indicates no data available in the area.

- |   |   |
|---|---|
|  Estuarine and Marine Deepwater    |  Freshwater Pond |
|  Estuarine and Marine Wetland      |  Lake            |
|  Freshwater Emergent Wetland       |  Other           |
|  Freshwater Forested/Shrub Wetland |  Riverine        |

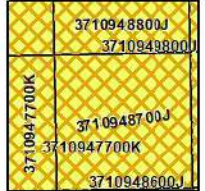
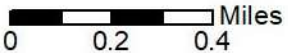


# Hydrologic Information



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

## Flood Hazard Zones



This map shows FEMA flood hazard zones. FIRM panels are shown to the right, and blank indicates no data is available.

- |     |    |                   |
|-----|----|-------------------|
| A   | AO | X                 |
| A99 | V  | OPEN WATER        |
| AE  | VE | NOT POPULATED     |
| AH  | D  | AREA NOT INCLUDED |



## Hydrologic Information

The Wetland Type map shows wetland existence overlaid on an aerial imagery. The Flood Hazard Zones map shows FEMA flood hazard zones overlaid on an aerial imagery. Relevant FIRM panels and detailed zone information is provided below. For detailed Zone descriptions please click the link: <https://floodadvocate.com/fema-zone-definitions>

---

Available FIRM Panels in area: 3710947700K(effective:2007-01-05) 3710948700J(effective:2007-01-05)  
3710946800K(effective:2007-01-05) 3710948800J(effective:2007-01-05)  
3710946800K(effective:2007-01-05) 3710947700K(effective:2007-01-05)

---

### Flood Zone AE-01

Zone: AE  
Zone subtype:

---

### Flood Zone AE-11

Zone: AE  
Zone subtype: FLOODWAY

---

### Flood Zone X-01

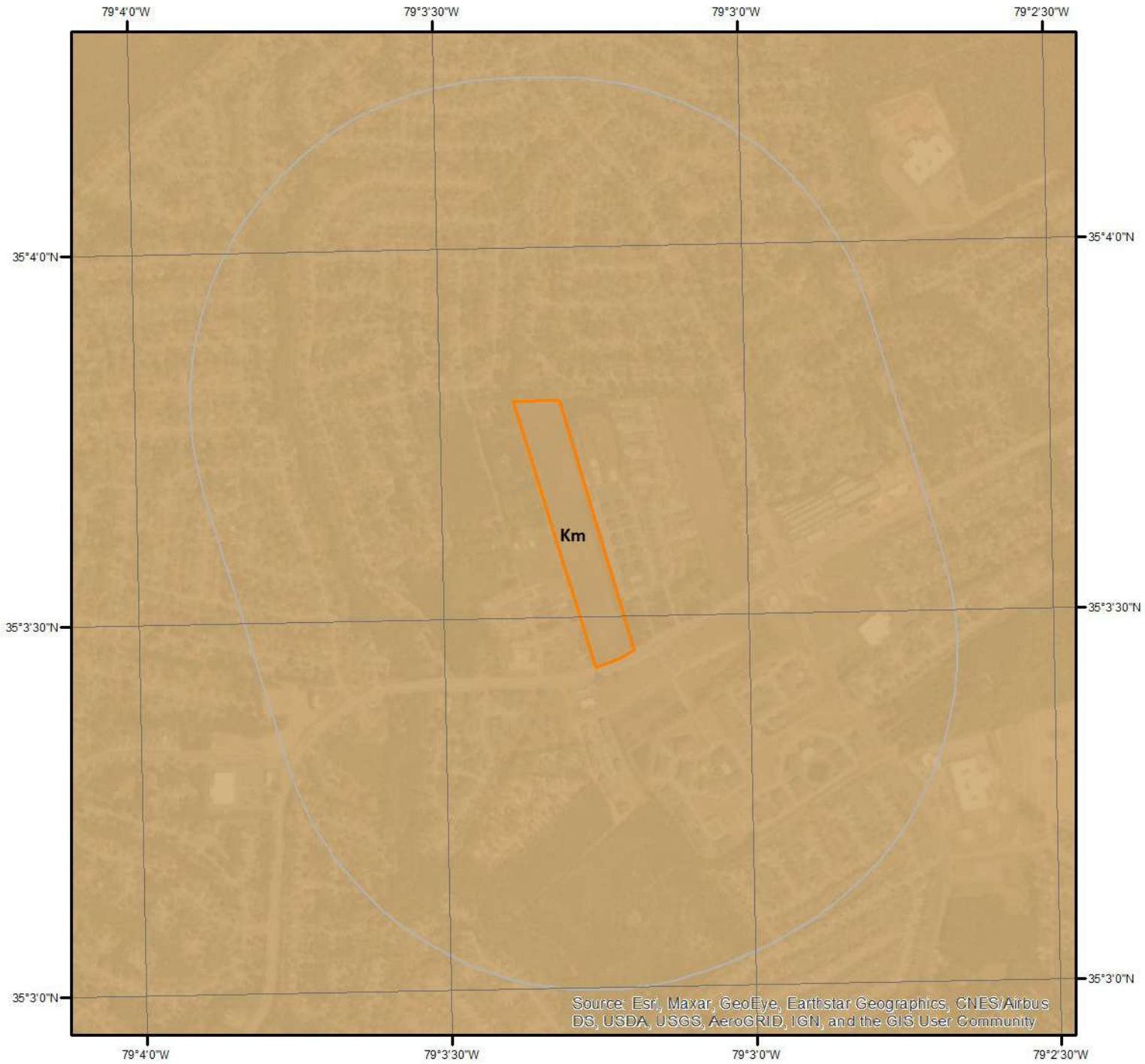
Zone: X  
Zone subtype: 0.2 PCT ANNUAL CHANCE FLOOD HAZARD

---

### Flood Zone X-12

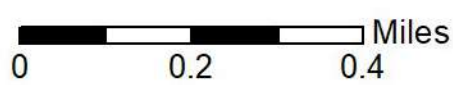
Zone: X  
Zone subtype: AREA OF MINIMAL FLOOD HAZARD

# Geologic Information



## Geologic Units

This maps shows geologic units in the area. Please refer to the report for detailed descriptions.



## Geologic Information

The previous page shows USGS geology information. Detailed information about each unit is provided below.

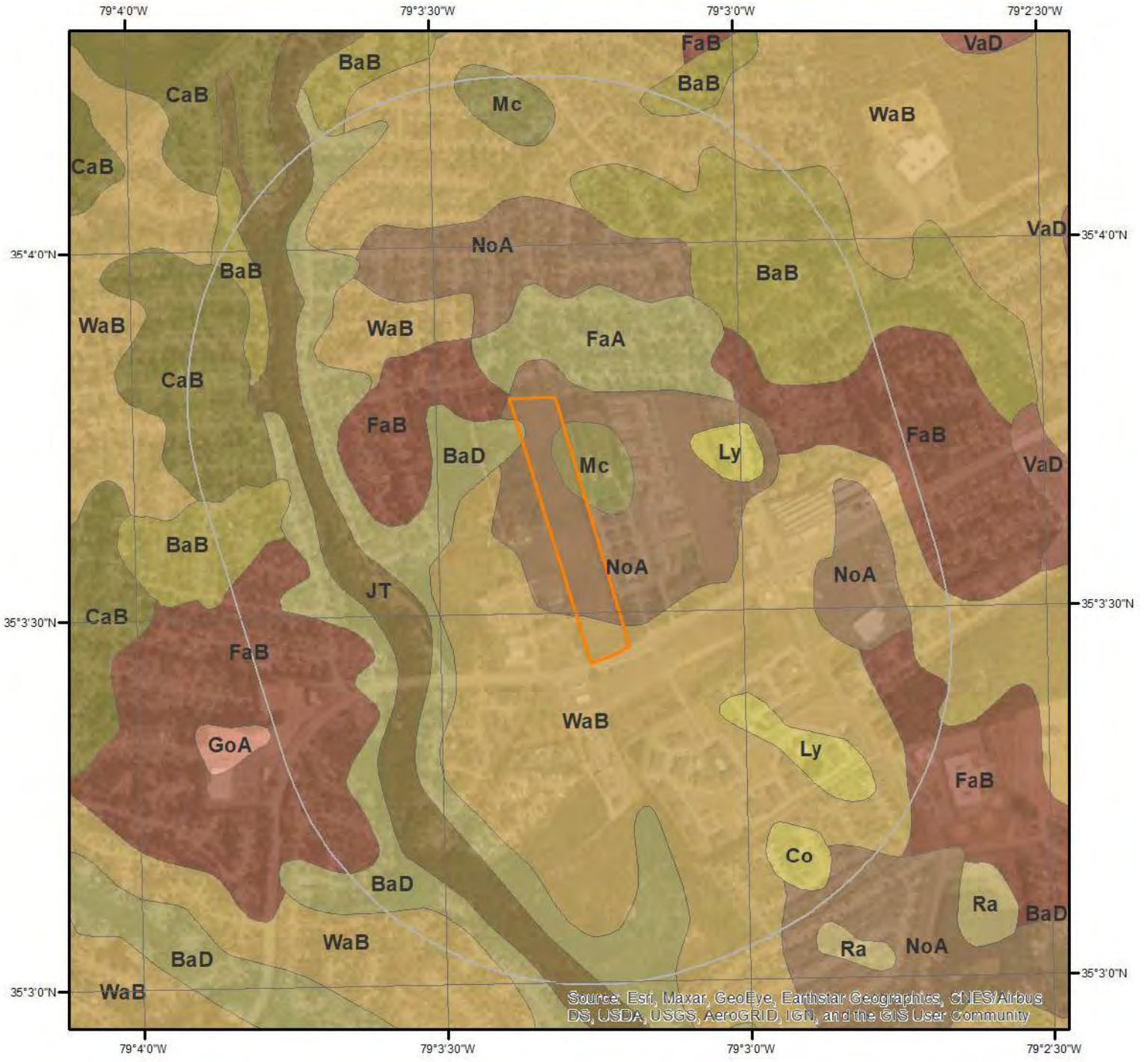
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### Geologic Unit Km

Unit Name:	Middendorf Formation
Unit Age:	Cretaceous
Primary Rock Type:	sand
Secondary Rock Type:	sandstone
Unit Description:	Middendorf Formation - sand, sandstone, and mudstone, gray to pale gray with an orange cast, mottled; clay balls and iron-cemented concretions common, beds laterally discontinuous, cross-bedding common.



# Soil Information



## SSURGO Soils



This maps shows SSURGO soil units around the target property. Please refer to the report for detailed soil descriptions.



## Soil Information

The previous page shows a soil map using SSURGO data from USDA Natural Resources Conservation Service. Detailed information about each unit is provided below.

---

### Map Unit BaB (3.29%)

Map Unit Name:	Blaney loamy sand, 2 to 8 percent slopes
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Well drained
Hydrologic Group - Dominant:	C - Soils in this group have moderately high runoff potential when thoroughly wet. Water transmission through the soil is somewhat restricted.

Major components are printed below

Blaney(90%)	
horizon A(0cm to 10cm)	Loamy sand
horizon E(10cm to 64cm)	Loamy sand
horizon Bt(64cm to 158cm)	Sandy clay loam
horizon C(158cm to 203cm)	Loamy coarse sand

Component Description:

Minor map unit components are excluded from this report.

Map Unit: BaB - Blaney loamy sand, 2 to 8 percent slopes

Component: Blaney (90%)

The Blaney component makes up 90 percent of the map unit. Slopes are 2 to 8 percent. This component is on low hills, sandhills. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. This component is in the F137XY002GA Loamy Summit Woodland - Provisional ecological site. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria.

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### Map Unit BaD (9.05%)

Map Unit Name:	Blaney loamy sand, 8 to 15 percent slopes
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Well drained
Hydrologic Group - Dominant:	C - Soils in this group have moderately high runoff potential when thoroughly wet. Water transmission through the soil is somewhat restricted.

Major components are printed below

Blaney(85%)	
horizon A(0cm to 10cm)	Loamy sand
horizon E(10cm to 64cm)	Loamy sand
horizon Bt(64cm to 158cm)	Sandy clay loam
horizon C(158cm to 203cm)	Loamy coarse sand

Component Description:

Minor map unit components are excluded from this report.

Map Unit: BaD - Blaney loamy sand, 8 to 15 percent slopes

Component: Blaney (85%)

## Soil Information

The Blaney component makes up 85 percent of the map unit. Slopes are 8 to 15 percent. This component is on low hills, sandhills. The parent material consists of sandy and loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. This component is in the F137XY006GA Loamy Backslope Woodland - Provisional ecological site. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

### Map Unit CaB (10.06%)

Map Unit Name:	Candor sand, 1 to 8 percent slopes
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Somewhat excessively drained
Hydrologic Group - Dominant:	A - Soils in this group have low runoff potential when thoroughly wet. Water is transmitted freely through the soil.

Major components are printed below

Candor(80%)	
horizon A(0cm to 20cm)	Sand
horizon E(20cm to 66cm)	Sand
horizon Bt(66cm to 96cm)	Loamy sand
horizon E'(96cm to 157cm)	Sand
horizon B't(157cm to 203cm)	Sandy clay loam

Component Description:

Minor map unit components are excluded from this report.

Map Unit: CaB - Candor sand, 1 to 8 percent slopes

Component: Candor (80%)

The Candor component makes up 80 percent of the map unit. Slopes are 1 to 8 percent. This component is on low ridges on marine terraces, coastal plains. The parent material consists of sandy and loamy marine deposits and/or eolian sands. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. This component is in the F137XY001GA Dry Sandy Upland Woodland ecological site. Nonirrigated land capability classification is 4s. This soil does not meet hydric criteria.

### Map Unit Co (0.12%)

Map Unit Name:	Coxville loam
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	15cm
Drainage Class - Dominant:	Poorly drained
Hydrologic Group - Dominant:	C/D - These soils have moderately high runoff potential when drained and high runoff potential when undrained.

Major components are printed below

Coxville(85%)	
horizon Ap(0cm to 23cm)	Loam
horizon Eg(23cm to 28cm)	Loam
horizon Btg(28cm to 183cm)	Sandy clay
horizon Cg(183cm to 203cm)	Sandy clay loam
Coxville(10%)	
horizon A(0cm to 23cm)	Loam
horizon Eg(23cm to 28cm)	Loam
horizon Btg(28cm to 183cm)	Sandy clay

## Soil Information

horizon Cg(183cm to 203cm)

Sandy clay loam

### Component Description:

Minor map unit components are excluded from this report.

Map Unit: Co - Coxville loam

#### Component: Coxville (85%)

The Coxville, drained component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions, coastal plains. The parent material consists of clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 3w. This soil meets hydric criteria.

#### Component: Coxville (10%)

The Coxville, undrained component makes up 10 percent of the map unit. Slopes are 0 to 2 percent. This component is on depressions, coastal plains. The parent material consists of clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.

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### Map Unit FaA (0.72%)

Map Unit Name:	Faceville loamy sand, 0 to 2 percent slopes
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Well drained
Hydrologic Group - Dominant:	B - Soils in this group have moderately low runoff potential when thoroughly wet. Water transmission through the soil is unimpeded.

Major components are printed below

#### Faceville(80%)

horizon Ap(0cm to 18cm)	Loamy sand
horizon E(18cm to 43cm)	Loamy sand
horizon Bt(43cm to 203cm)	Clay

### Component Description:

Minor map unit components are excluded from this report.

Map Unit: FaA - Faceville loamy sand, 0 to 2 percent slopes

#### Component: Faceville (80%)

The Faceville component makes up 80 percent of the map unit. Slopes are 0 to 2 percent. This component is on flats on marine terraces, low ridges on marine terraces, broad interstream divides on marine terraces, coastal plains. The parent material consists of clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 1. This soil does not meet hydric criteria.

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### Map Unit FaB (5.61%)

Map Unit Name:	Faceville loamy sand, 2 to 6 percent slopes
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	null
Drainage Class - Dominant:	Well drained

## Soil Information

Hydrologic Group - Dominant: B - Soils in this group have moderately low runoff potential when thoroughly wet. Water transmission through the soil is unimpeded.

Major components are printed below

Faceville(80%)

horizon Ap(0cm to 18cm)	Loamy sand
horizon E(18cm to 43cm)	Loamy sand
horizon Bt(43cm to 203cm)	Clay

Component Description:

Minor map unit components are excluded from this report.

Map Unit: FaB - Faceville loamy sand, 2 to 6 percent slopes

Component: Faceville (80%)

The Faceville component makes up 80 percent of the map unit. Slopes are 2 to 6 percent. This component is on broad interstream divides on marine terraces, low ridges on marine terraces, coastal plains. The parent material consists of clayey marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

### Map Unit JT (3.01%)

Map Unit Name:	Johnston loam
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	0cm
Drainage Class - Dominant:	Very poorly drained
Hydrologic Group - Dominant:	A/D - These soils have low runoff potential when drained and high runoff potential when undrained.

Major components are printed below

Johnston(85%)

horizon A(0cm to 76cm)	Mucky loam
horizon Cg1(76cm to 86cm)	Loamy fine sand
horizon Cg2(86cm to 203cm)	Fine sandy loam

Johnston(15%)

horizon A(0cm to 76cm)	Mucky loam
horizon Cg1(76cm to 86cm)	Loamy fine sand
horizon Cg2(86cm to 203cm)	Fine sandy loam

Component Description:

Minor map unit components are excluded from this report.

Map Unit: JT - Johnston loam

Component: Johnston (85%)

The Johnston, undrained component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains, coastal plains. The parent material consists of sandy and loamy alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is frequently flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 12 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria.

Component: Johnston (15%)

The Johnston, drained component makes up 15 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains, coastal plains. The parent material consists of sandy and loamy alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is frequently flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, December. Organic matter content in the surface horizon is

## Soil Information

about 12 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.

### Map Unit Ly (0.33%)

Map Unit Name:	Lynchburg sandy loam
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	15cm
Drainage Class - Dominant:	Somewhat poorly drained
Hydrologic Group - Dominant:	A/D - These soils have low runoff potential when drained and high runoff potential when undrained.

Major components are printed below

#### Lynchburg(90%)

horizon Ap(0cm to 15cm)	Sandy loam
horizon E(15cm to 25cm)	Sandy loam
horizon Btg1(25cm to 165cm)	Sandy clay loam
horizon Btg2(165cm to 203cm)	Clay

#### Lynchburg(4%)

horizon Ap(0cm to 15cm)	Sandy loam
horizon E(15cm to 25cm)	Sandy loam
horizon Btg1(25cm to 165cm)	Sandy clay loam
horizon Btg2(165cm to 203cm)	Clay

Component Description:

Minor map unit components are excluded from this report.

Map Unit: Ly - Lynchburg sandy loam, 0 to 2 percent slopes

#### Component: Lynchburg (84%)

The Lynchburg component makes up 84 percent of the map unit. Slopes are 0 to 2 percent. This component is on marine terraces, coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, November, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

#### Component: Rains (8%)

Generated brief soil descriptions are created for major soil components. The Rains soil is a minor component.

#### Component: Goldsboro (8%)

Generated brief soil descriptions are created for major soil components. The Goldsboro soil is a minor component.

### Map Unit Mc (0.38%)

Map Unit Name:	McColl loam
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	0cm
Drainage Class - Dominant:	Poorly drained
Hydrologic Group - Dominant:	D - Soils in this group have high runoff potential when thoroughly wet. Water movement through the soil is restricted or very restricted.

Major components are printed below

#### McColl(80%)

horizon A(0cm to 23cm)	Loam
horizon Btg(23cm to 33cm)	Clay
horizon Btx(33cm to 107cm)	Sandy clay loam

## Soil Information

horizon BC(107cm to 203cm) McColl(10%)	Sandy clay loam
horizon Ap(0cm to 23cm)	Loam
horizon Btg(23cm to 33cm)	Clay
horizon Btx(33cm to 107cm)	Sandy clay loam
horizon BC(107cm to 203cm)	Sandy clay loam

### Component Description:

Minor map unit components are excluded from this report.

Map Unit: Mc - McColl loam

#### Component: McColl (80%)

The McColl, ponded component makes up 80 percent of the map unit. Slopes are 0 to 1 percent. This component is on Carolina Bays, coastal plains. The parent material consists of clayey marine deposits. Depth to a root restrictive layer, fragipan, is 12 to 40 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 6w. This soil meets hydric criteria.

#### Component: McColl (10%)

The McColl, drained component makes up 10 percent of the map unit. Slopes are 0 to 1 percent. This component is on Carolina Bays, coastal plains. The parent material consists of clayey marine deposits. Depth to a root restrictive layer, fragipan, is 12 to 40 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 0 inches during January, February, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 3w. This soil meets hydric criteria.

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### Map Unit NoA (4.4%)

Map Unit Name:	Norfolk loamy sand, 0 to 2 percent slopes
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	122cm
Drainage Class - Dominant:	Well drained
Hydrologic Group - Dominant:	A - Soils in this group have low runoff potential when thoroughly wet. Water is transmitted freely through the soil.

Major components are printed below

Norfolk(85%)	
horizon Ap(0cm to 23cm)	Loamy sand
horizon E(23cm to 36cm)	Loamy sand
horizon Bt(36cm to 178cm)	Sandy clay loam
horizon C(178cm to 254cm)	Sandy clay loam

### Component Description:

Minor map unit components are excluded from this report.

Map Unit: NoA - Norfolk loamy sand, 0 to 2 percent slopes

#### Component: Norfolk (83%)

The Norfolk component makes up 83 percent of the map unit. Slopes are 0 to 2 percent. This component is on marine terraces, coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 48 inches during January, February, March, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 1. This soil does not meet hydric criteria.

#### Component: Goldsboro (9%)

Generated brief soil descriptions are created for major soil components. The Goldsboro soil is a minor component.

## Soil Information

Component: Wagram (8%)

Generated brief soil descriptions are created for major soil components. The Wagram soil is a minor component.

### Map Unit WaB (63.02%)

Map Unit Name:	Wagram loamy sand, 0 to 6 percent slopes
Bedrock Depth - Min:	null
Watertable Depth - Annual Min:	192cm
Drainage Class - Dominant:	Well drained
Hydrologic Group - Dominant:	A - Soils in this group have low runoff potential when thoroughly wet. Water is transmitted freely through the soil.

Major components are printed below

Wagram(90%)	
horizon Ap(0cm to 20cm)	Loamy sand
horizon E(20cm to 61cm)	Loamy sand
horizon Bt(61cm to 190cm)	Sandy clay loam
horizon BC(190cm to 211cm)	Sandy loam

Component Description:

Minor map unit components are excluded from this report.

Map Unit: WaB - Wagram loamy sand, 0 to 6 percent slopes

Component: Wagram (90%)

The Wagram component makes up 90 percent of the map unit. Slopes are 0 to 6 percent. This component is on low ridges on marine terraces, coastal plains. The parent material consists of loamy marine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 76 inches during January, February, March, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2s. This soil does not meet hydric criteria.

Component: Bibb (3%)

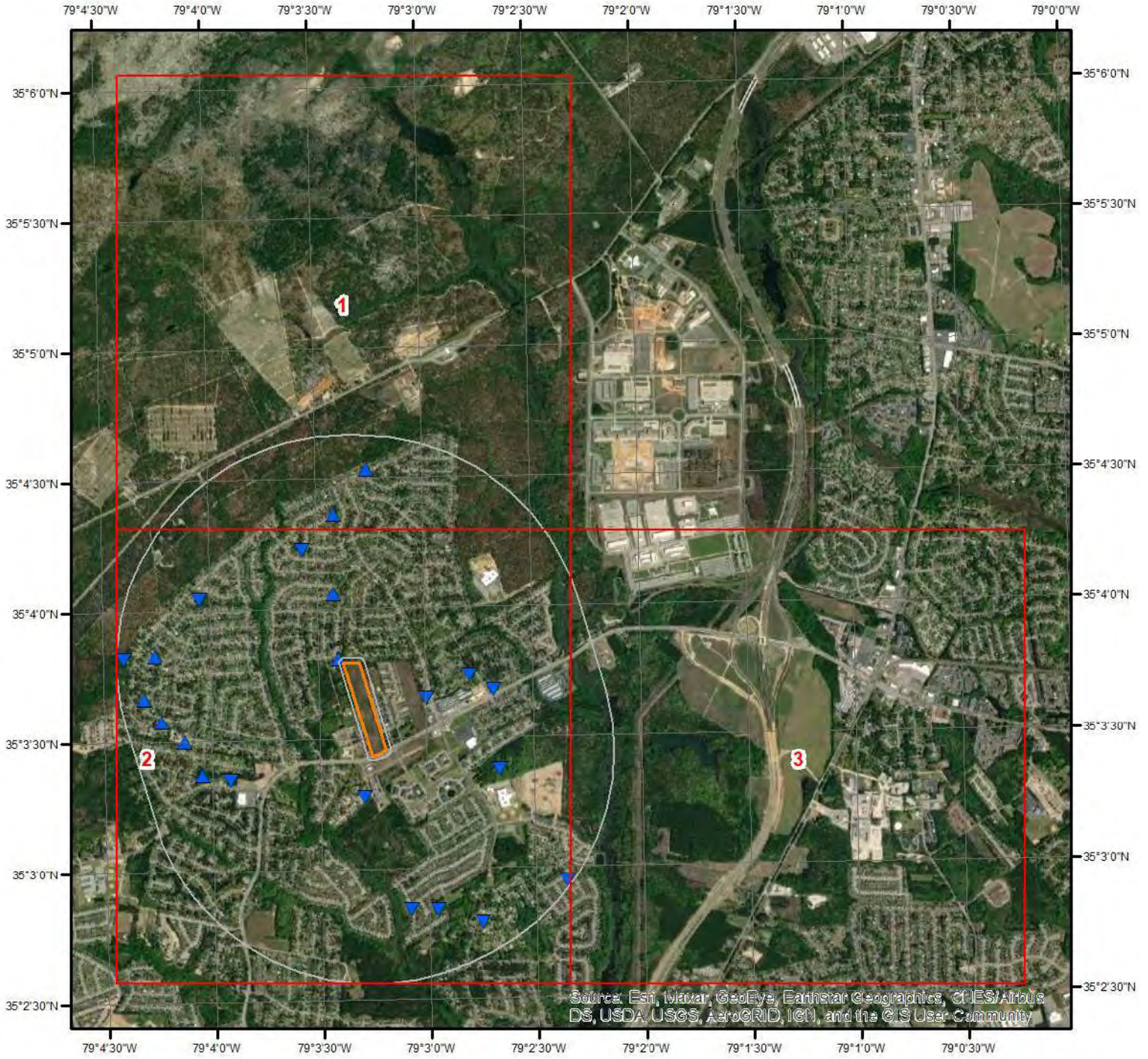
Generated brief soil descriptions are created for major soil components. The Bibb, undrained soil is a minor component.

Component: Johnston (2%)

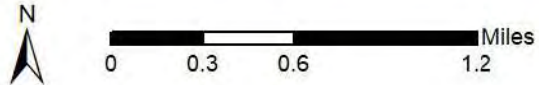
Generated brief soil descriptions are created for major soil components. The Johnston, undrained soil is a minor component.



# Wells and Additional Sources



## Wells & Additional Sources



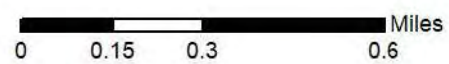
- |                                |                                    |
|--------------------------------|------------------------------------|
| ▲ Sites with Higher Elevation  | ▲ OGW Sites with Higher Elevation  |
| ■ Sites with Same Elevation    | ■ OGW Sites with Same Elevation    |
| ▼ Sites with Lower Elevation   | ▼ OGW Sites with Lower Elevation   |
| ○ Sites with Unknown Elevation | ● OGW Sites with Unknown Elevation |



# Wells and Additional Sources



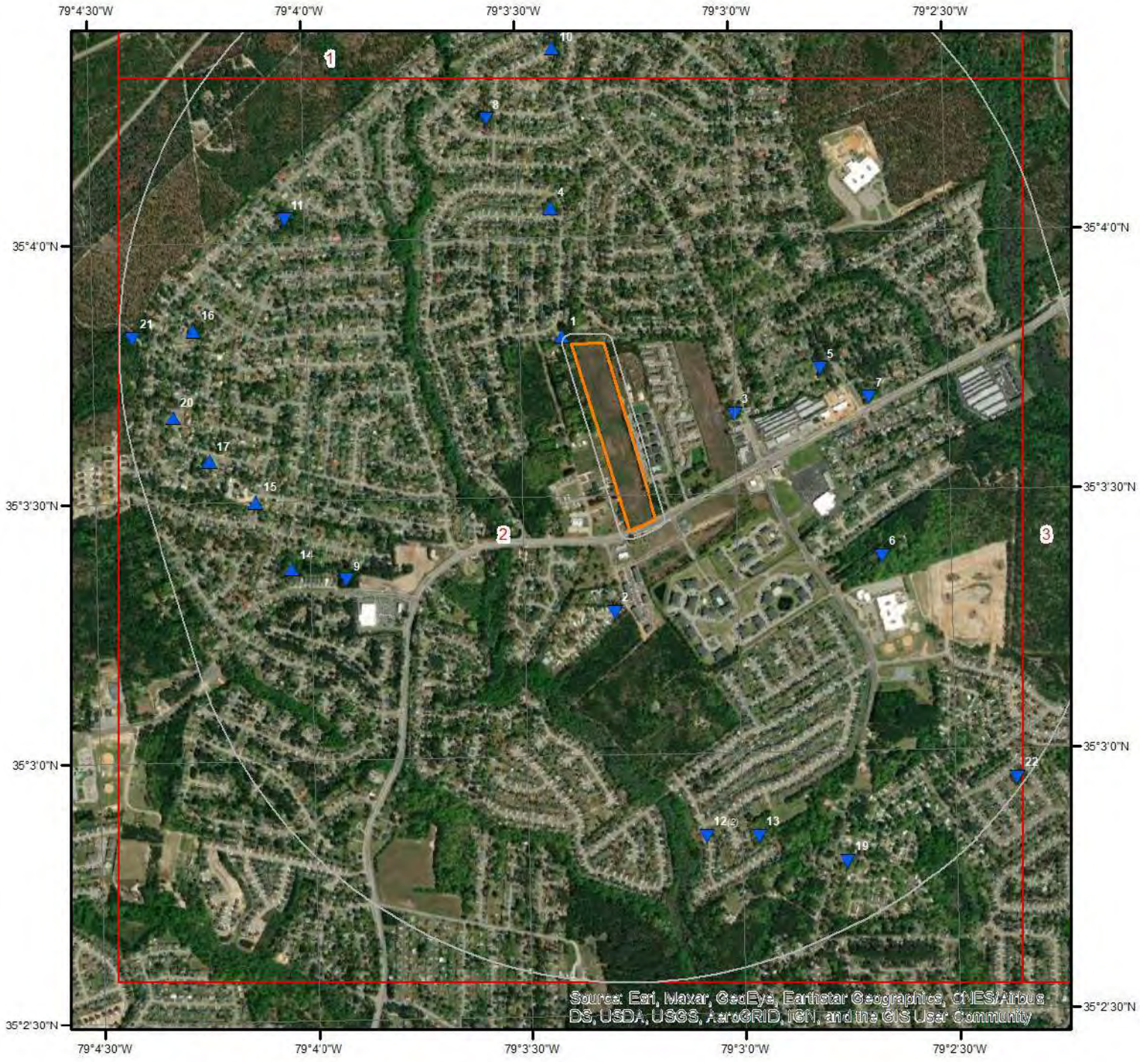
## Wells & Additional Sources - Page 1



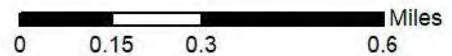
- |                                |                                    |
|--------------------------------|------------------------------------|
| ▲ Sites with Higher Elevation  | ▲ OGW Sites with Higher Elevation  |
| ■ Sites with Same Elevation    | ■ OGW Sites with Same Elevation    |
| ▼ Sites with Lower Elevation   | ▼ OGW Sites with Lower Elevation   |
| ○ Sites with Unknown Elevation | ● OGW Sites with Unknown Elevation |



# Wells and Additional Sources



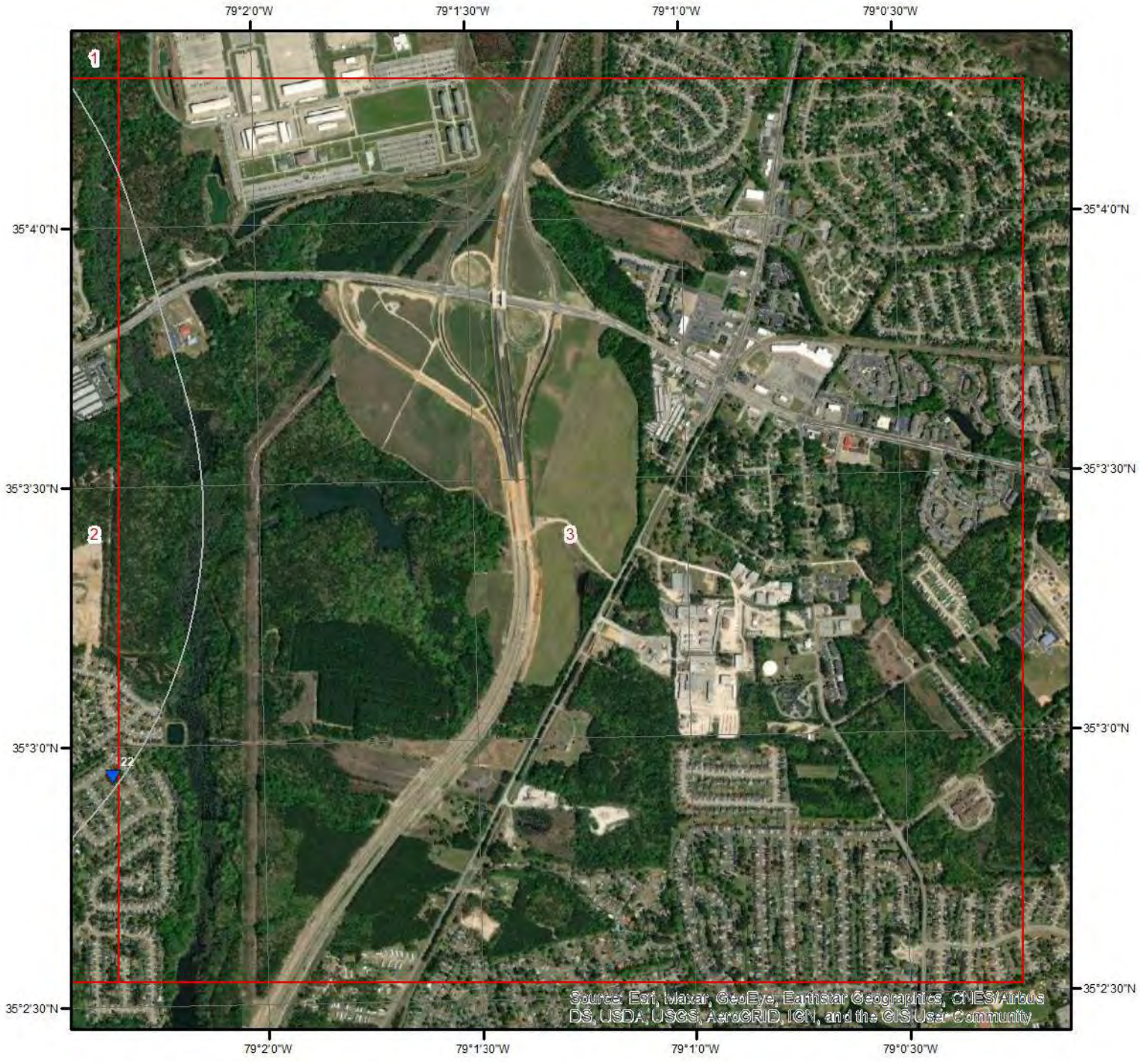
## Wells & Additional Sources - Page 2



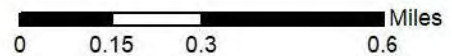
- |                                |                                    |
|--------------------------------|------------------------------------|
| ▲ Sites with Higher Elevation  | ▲ OGW Sites with Higher Elevation  |
| ■ Sites with Same Elevation    | ■ OGW Sites with Same Elevation    |
| ▼ Sites with Lower Elevation   | ▼ OGW Sites with Lower Elevation   |
| ○ Sites with Unknown Elevation | ● OGW Sites with Unknown Elevation |



# Wells and Additional Sources



## Wells & Additional Sources - Page 3



- |                                |                                    |
|--------------------------------|------------------------------------|
| ▲ Sites with Higher Elevation  | ▲ OGW Sites with Higher Elevation  |
| ■ Sites with Same Elevation    | ■ OGW Sites with Same Elevation    |
| ▼ Sites with Lower Elevation   | ▼ OGW Sites with Lower Elevation   |
| ○ Sites with Unknown Elevation | ● OGW Sites with Unknown Elevation |



# Wells and Additional Sources Summary

## Federal Sources

### Public Water Systems Violations and Enforcement Data

Map Key	PWS ID	Distance (ft)	Direction
12	NC0326925	3690.21	SSE

### Safe Drinking Water Information System (SDWIS)

Map Key	PWS ID	Distance (ft)	Direction
12	NC0326925	3690.21	SSE

### USGS National Water Information System

Map Key	ID	Distance (ft)	Direction
	No records found		

## State Sources

### Oil and Gas Wells

Map Key	ID	Distance (ft)	Direction
	No records found		

### Public Water Supply Sources

Map Key	PWS ID	Distance (ft)	Direction
1	0326332	130.27	NNW
2	0326332	978.21	S
3	0326332	1232.00	E
4	0326332	1607.42	NNW
5	0326332	2342.52	ENE
6	0326332	2678.79	ESE
7	0326332	2789.05	E
8	0326332	2797.64	NNW
9	0326332	3316.42	WSW
10	0326332	3460.44	N
11	0326332	3642.03	WNW
13	0326332	3883.42	SSE
14	0326332	3890.91	WSW
15	0326332	4061.62	W
16	0326332	4400.13	WNW
17	0326332	4437.92	W
18	0326332	4495.15	N
19	0326332	4592.53	SSE
20	0326332	4717.78	W
21	0326332	5119.50	W
22	0326332	5196.69	SE

### Underground Injection Control Wells

## Wells and Additional Sources Summary

Map Key	ID	Distance (ft)	Direction
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No records found

### Water Distribution Wells

Map Key	ID	Distance (ft)	Direction
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No records found

# Wells and Additional Sources Detail Report

## Public Water Systems Violations and Enforcement Data

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
12	SSE	0.70	3,690.21	193.16	PWSV

Address Line 2:

State Code: NC  
Zip Code: 28314  
City Name: FAYETTEVILLE  
Address Line 1: 1004 BUGLE CALL RD  
PWS ID: NC0326925  
PWS Type Code: TNCWS  
PWS Type Description: Transient Non-Community Water System  
Primary Source Code: GW  
Primary Source Desc: Groundwater  
PWS Activity Code: I  
PWS Activity Description: Inactive  
PWS Deactivation Date: 01/02/2011  
Phone Number: 910-257-1110

--Details--

Population Served Count: 25  
City Served: FAYETTEVILLE  
County Served: Cumberland  
State Served: NC  
Zip Code Served:

## Safe Drinking Water Information System (SDWIS)

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
12	SSE	0.70	3,690.21	193.16	SDWIS

PWS ID: NC0326925  
PWS Type: Transient non-community system  
No of Facilities: 4  
No of Violations: 49  
No of Site Visits: 12  
Cities Served: FAYETTEVILLE  
Counties Served: Cumberland  
Population Served Count: 25  
Primacy Agency: North Carolina  
EPA Region: Region 4

## Public Water Supply Sources

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
1	NNW	0.02	130.27	255.91	PWSS

## Wells and Additional Sources Detail Report

PWS ID:	0326332	Recharge Rate:	600000
Source ID:		RTL NBR CN:	5880
EPA Source ID:	25773	RTL Pop:	15288
PWS Type:	C	RWQ Rate:	
Source Type:	G	Own Loc Co:	W16
Source Name:	WELL #16	Owner:	AQUA NORTH CAROLINA INC.
Source Avail:	P	Owner Address 1:	202 MACKENAN DR.
Begin Date:	01-Jun-1977	Owner Address 2:	ATTN SHANNON BECKER
WSW Class:		Owner City:	CARY
Yield GPM:	128	Owner State:	NC
Well Integrity :	H	Owner Zip 1:	27511
Intake Location:		Owner Zip 2:	
Degree of Confine:	SC	System County:	CUMBERLAND
Aquifer Rating:	H	DEQ Region Name:	FAYETTEVILLE REGIONAL OFFICE
Avg Production Cap:	1460000	County:	26
Design Prod Cap:	2577600	Depth (ft):	98
Emergency Prod Cap:	0	Shape Source:	
Max Production Cap:	1750000		
Source Location:	7136 BEAVER RUN DR - OTHER INFO:ALLDOS 0.51GPH NAOH & GRUDNFOS 0.58GPD NAOCL		
Source Location Method:	E		
Description:	OFFICE 5948 FISHER ROAD SUITE 101		
PWS Type Name:	Community		
PWS Type Desc:	Serves 15+ connections or regularly serves 25+ year-round residents. ex. cities, towns, subdivisions.		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
2	S	0.19	978.21	243.82	PWSS

PWS ID:	0326332	Recharge Rate:	600000
Source ID:		RTL NBR CN:	5880
EPA Source ID:	25771	RTL Pop:	15288
PWS Type:	C	RWQ Rate:	
Source Type:	G	Own Loc Co:	W14
Source Name:	WELL #14	Owner:	AQUA NORTH CAROLINA INC.
Source Avail:	P	Owner Address 1:	202 MACKENAN DR.
Begin Date:	01-Jun-1977	Owner Address 2:	ATTN SHANNON BECKER
WSW Class:		Owner City:	CARY
Yield GPM:	152	Owner State:	NC
Well Integrity :	H	Owner Zip 1:	27511
Intake Location:		Owner Zip 2:	
Degree of Confine:	SC	System County:	CUMBERLAND
Aquifer Rating:	H	DEQ Region Name:	FAYETTEVILLE REGIONAL OFFICE
Avg Production Cap:	1460000	County:	26
Design Prod Cap:	2577600	Depth (ft):	100
Emergency Prod Cap:	0	Shape Source:	



## Wells and Additional Sources Detail Report

Max Production Cap: 1750000  
 Source Location: 7590 BRANCHWOOD DR -OTHER INFO:ALLDOS 4.2 LITE/HR NAOCL & 24 GPD CHEMTEC NAOH  
 Source Location Method: E  
 Description: OFFICE 5948 FISHER ROAD SUITE 101  
 PWS Type Name: Community  
 PWS Type Desc: Serves 15+ connections or regularly serves 25+ year-round residents. ex. cities, towns, subdivisions.

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
3	E	0.23	1,232.00	249.48	PWSS

PWS ID:	0326332	Recharge Rate:	600000
Source ID:		RTL NBR CN:	5880
EPA Source ID:	25770	RTL Pop:	15288
PWS Type:	C	RWQ Rate:	
Source Type:	G	Own Loc Co:	W13
Source Name:	WELL #13	Owner:	AQUA NORTH CAROLINA INC.
Source Avail:	P	Owner Address 1:	202 MACKENAN DR.
Begin Date:	01-Jun-1977	Owner Address 2:	ATTN SHANNON BECKER
WSW Class:		Owner City:	CARY
Yield GPM:	125	Owner State:	NC
Well Integrity :	H	Owner Zip 1:	27511
Intake Location:		Owner Zip 2:	
Degree of Confine:	SC	System County:	CUMBERLAND
Aquifer Rating:	H	DEQ Region Name:	FAYETTEVILLE REGIONAL OFFICE
Avg Production Cap:	1460000	County:	26
Design Prod Cap:	2577600	Depth (ft):	91
Emergency Prod Cap:	0	Shape Source:	
Max Production Cap:	1750000		
Source Location:	RIM RD ACROSS FROM 1049 RIM RD		
Source Location Method:	E		
Description:	OFFICE 5948 FISHER ROAD SUITE 101		
PWS Type Name:	Community		
PWS Type Desc:	Serves 15+ connections or regularly serves 25+ year-round residents. ex. cities, towns, subdivisions.		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
4	NNW	0.30	1,607.42	252.47	PWSS

PWS ID:	0326332	Recharge Rate:	600000
Source ID:		RTL NBR CN:	5880
EPA Source ID:	25792	RTL Pop:	15288
PWS Type:	C	RWQ Rate:	
Source Type:	G	Own Loc Co:	W34
Source Name:	WELL #34	Owner:	AQUA NORTH CAROLINA INC.
Source Avail:	P	Owner Address 1:	202 MACKENAN DR.
Begin Date:	01-Jun-1998	Owner Address 2:	ATTN SHANNON BECKER

## Wells and Additional Sources Detail Report

WSW Class:		Owner City:	CARY
Yield GPM:	85	Owner State:	NC
Well Integrity :	H	Owner Zip 1:	27511
Intake Location:		Owner Zip 2:	
Degree of Confine:	SC	System County:	CUMBERLAND
Aquifer Rating:	H	DEQ Region Name:	FAYETTEVILLE REGIONAL OFFICE
Avg Production Cap:	1460000	County:	26
Design Prod Cap:	2577600	Depth (ft):	92
Emergency Prod Cap:	0	Shape Source:	
Max Production Cap:	1750000		
Source Location:	BEAVER RUN (GALENE) 7215 BEAVER RUN DR		
Source Location Method:	E		
Description:	OFFICE 5948 FISHER ROAD SUITE 101		
PWS Type Name:	Community		
PWS Type Desc:	Serves 15+ connections or regularly serves 25+ year-round residents. ex. cities, towns, subdivisions.		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
5	ENE	0.44	2,342.52	243.49	PWSS

PWS ID:	0326332	Recharge Rate:	600000
Source ID:		RTL NBR CN:	5880
EPA Source ID:	25778	RTL Pop:	15288
PWS Type:	C	RWQ Rate:	
Source Type:	G	Own Loc Co:	W02
Source Name:	WELL #2	Owner:	AQUA NORTH CAROLINA INC.
Source Avail:	P	Owner Address 1:	202 MACKENAN DR.
Begin Date:	01-Jun-1977	Owner Address 2:	ATTN SHANNON BECKER
WSW Class:		Owner City:	CARY
Yield GPM:	140	Owner State:	NC
Well Integrity :	H	Owner Zip 1:	27511
Intake Location:		Owner Zip 2:	
Degree of Confine:	SC	System County:	CUMBERLAND
Aquifer Rating:	H	DEQ Region Name:	FAYETTEVILLE REGIONAL OFFICE
Avg Production Cap:	1460000	County:	26
Design Prod Cap:	2577600	Depth (ft):	120
Emergency Prod Cap:	0	Shape Source:	
Max Production Cap:	1750000		
Source Location:	CORNER OF PRESTIGE & CANARY - 828 PRESTIGE BLVD		
Source Location Method:	E		
Description:	OFFICE 5948 FISHER ROAD SUITE 101		
PWS Type Name:	Community		
PWS Type Desc:	Serves 15+ connections or regularly serves 25+ year-round residents. ex. cities, towns, subdivisions.		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
6	ESE	0.51	2,678.79	236.13	PWSS

## Wells and Additional Sources Detail Report

PWS ID:	0326332	Recharge Rate:	600000
Source ID:		RTL NBR CN:	5880
EPA Source ID:	25782	RTL Pop:	15288
PWS Type:	C	RWQ Rate:	
Source Type:	G	Own Loc Co:	W23
Source Name:	WELL #23	Owner:	AQUA NORTH CAROLINA INC.
Source Avail:	P	Owner Address 1:	202 MACKENAN DR.
Begin Date:	01-May-1996	Owner Address 2:	ATTN SHANNON BECKER
WSW Class:		Owner City:	CARY
Yield GPM:	90	Owner State:	NC
Well Integrity :	H	Owner Zip 1:	27511
Intake Location:		Owner Zip 2:	
Degree of Confine:	SC	System County:	CUMBERLAND
Aquifer Rating:	H	DEQ Region Name:	FAYETTEVILLE REGIONAL OFFICE
Avg Production Cap:	1460000	County:	26
Design Prod Cap:	2577600	Depth (ft):	92
Emergency Prod Cap:	0	Shape Source:	
Max Production Cap:	1750000		
Source Location:	NEXT TO COLONY VILLAGE - 1247 RIM RD		
Source Location Method:	E		
Description:	OFFICE 5948 FISHER ROAD SUITE 101		
PWS Type Name:	Community		
PWS Type Desc:	Serves 15+ connections or regularly serves 25+ year-round residents. ex. cities, towns, subdivisions.		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
7	E	0.53	2,789.05	246.98	PWSS

PWS ID:	0326332	Recharge Rate:	600000
Source ID:		RTL NBR CN:	5880
EPA Source ID:	25777	RTL Pop:	15288
PWS Type:	C	RWQ Rate:	
Source Type:	G	Own Loc Co:	W1A
Source Name:	WELL #1A	Owner:	AQUA NORTH CAROLINA INC.
Source Avail:	P	Owner Address 1:	202 MACKENAN DR.
Begin Date:	01-Sep-1998	Owner Address 2:	ATTN SHANNON BECKER
WSW Class:		Owner City:	CARY
Yield GPM:	130	Owner State:	NC
Well Integrity :	H	Owner Zip 1:	27511
Intake Location:		Owner Zip 2:	
Degree of Confine:	HC	System County:	CUMBERLAND
Aquifer Rating:	H	DEQ Region Name:	FAYETTEVILLE REGIONAL OFFICE
Avg Production Cap:	1460000	County:	26
Design Prod Cap:	2577600	Depth (ft):	360
Emergency Prod Cap:	0	Shape Source:	
Max Production Cap:	1750000		

## Wells and Additional Sources Detail Report

Source Location: CORNER OF PRESTIGE & CLIFFDALE RD - 885 PRESTIGE BLVD  
 Source Location Method: E  
 Description: OFFICE 5948 FISHER ROAD SUITE 101  
 PWS Type Name: Community  
 PWS Type Desc: Serves 15+ connections or regularly serves 25+ year-round residents. ex. cities, towns, subdivisions.

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
8	NNW	0.53	2,797.64	249.98	PWSS

PWS ID:	0326332	Recharge Rate:	0
Source ID:		RTL NBR CN:	5880
EPA Source ID:	25774	RTL Pop:	15288
PWS Type:	C	RWQ Rate:	
Source Type:	G	Own Loc Co:	W17
Source Name:	WELL #17	Owner:	AQUA NORTH CAROLINA INC.
Source Avail:	P	Owner Address 1:	202 MACKENAN DR.
Begin Date:	01-Jul-2015	Owner Address 2:	ATTN SHANNON BECKER
WSW Class:		Owner City:	CARY
Yield GPM:	70	Owner State:	NC
Well Integrity :		Owner Zip 1:	27511
Intake Location:		Owner Zip 2:	
Degree of Confine:		System County:	CUMBERLAND
Aquifer Rating:		DEQ Region Name:	FAYETTEVILLE REGIONAL OFFICE
Avg Production Cap:	1460000	County:	26
Design Prod Cap:	2577600	Depth (ft):	85
Emergency Prod Cap:	0	Shape Source:	
Max Production Cap:	1750000		
Source Location:	BATTLE RD AND AVILA		
Source Location Method:	E		
Description:	OFFICE 5948 FISHER ROAD SUITE 101		
PWS Type Name:	Community		
PWS Type Desc:	Serves 15+ connections or regularly serves 25+ year-round residents. ex. cities, towns, subdivisions.		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
9	WSW	0.63	3,316.42	245.71	PWSS

PWS ID:	0326332	Recharge Rate:	600000
Source ID:		RTL NBR CN:	5880
EPA Source ID:	25769	RTL Pop:	15288
PWS Type:	C	RWQ Rate:	
Source Type:	G	Own Loc Co:	W12
Source Name:	WELL #12	Owner:	AQUA NORTH CAROLINA INC.
Source Avail:	P	Owner Address 1:	202 MACKENAN DR.
Begin Date:	01-Jun-1977	Owner Address 2:	ATTN SHANNON BECKER
WSW Class:		Owner City:	CARY

## Wells and Additional Sources Detail Report

Yield GPM:	108	Owner State:	NC
Well Integrity :	H	Owner Zip 1:	27511
Intake Location:		Owner Zip 2:	
Degree of Confine:	SC	System County:	CUMBERLAND
Aquifer Rating:	H	DEQ Region Name:	FAYETTEVILLE REGIONAL OFFICE
Avg Production Cap:	1460000	County:	26
Design Prod Cap:	2577600	Depth (ft):	75
Emergency Prod Cap:	0	Shape Source:	
Max Production Cap:	1750000		
Source Location:	WOODMARK ST, LOT 5; 1028 HODE LOOP RD		
Source Location Method:	E		
Description:	OFFICE 5948 FISHER ROAD SUITE 101		
PWS Type Name:	Community		
PWS Type Desc:	Serves 15+ connections or regularly serves 25+ year-round residents. ex. cities, towns, subdivisions.		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
10	N	0.66	3,460.44	257.10	PWSS

PWS ID:	0326332	Recharge Rate:	600000
Source ID:		RTL NBR CN:	5880
EPA Source ID:	25775	RTL Pop:	15288
PWS Type:	C	RWQ Rate:	
Source Type:	G	Own Loc Co:	W18
Source Name:	WELL #18	Owner:	AQUA NORTH CAROLINA INC.
Source Avail:	P	Owner Address 1:	202 MACKENAN DR.
Begin Date:	01-May-1996	Owner Address 2:	ATTN SHANNON BECKER
WSW Class:		Owner City:	CARY
Yield GPM:	70	Owner State:	NC
Well Integrity :	H	Owner Zip 1:	27511
Intake Location:		Owner Zip 2:	
Degree of Confine:	SC	System County:	CUMBERLAND
Aquifer Rating:	H	DEQ Region Name:	FAYETTEVILLE REGIONAL OFFICE
Avg Production Cap:	1460000	County:	26
Design Prod Cap:	2577600	Depth (ft):	98
Emergency Prod Cap:	0	Shape Source:	
Max Production Cap:	1750000		
Source Location:	AT END OF BATTLE RD - 6700 BATTLE RD		
Source Location Method:	E		
Description:	OFFICE 5948 FISHER ROAD SUITE 101		
PWS Type Name:	Community		
PWS Type Desc:	Serves 15+ connections or regularly serves 25+ year-round residents. ex. cities, towns, subdivisions.		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
11	WNW	0.69	3,642.03	241.77	PWSS

## Wells and Additional Sources Detail Report

PWS ID:	0326332	Recharge Rate:	600000
Source ID:		RTL NBR CN:	5880
EPA Source ID:	25801	RTL Pop:	15288
PWS Type:	C	RWQ Rate:	
Source Type:	G	Own Loc Co:	W07
Source Name:	WELL #7	Owner:	AQUA NORTH CAROLINA INC.
Source Avail:	P	Owner Address 1:	202 MACKENAN DR.
Begin Date:	01-Jun-1977	Owner Address 2:	ATTN SHANNON BECKER
WSW Class:		Owner City:	CARY
Yield GPM:	95	Owner State:	NC
Well Integrity :	H	Owner Zip 1:	27511
Intake Location:		Owner Zip 2:	
Degree of Confine:	SC	System County:	CUMBERLAND
Aquifer Rating:	H	DEQ Region Name:	FAYETTEVILLE REGIONAL OFFICE
Avg Production Cap:	1460000	County:	26
Design Prod Cap:	2577600	Depth (ft):	98
Emergency Prod Cap:	0	Shape Source:	
Max Production Cap:	1750000		
Source Location:	AT END OF BIANCA CT		
Source Location Method:	E		
Description:	OFFICE 5948 FISHER ROAD SUITE 101		
PWS Type Name:	Community		
PWS Type Desc:	Serves 15+ connections or regularly serves 25+ year-round residents. ex. cities, towns, subdivisions.		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
13	SSE	0.74	3,883.42	230.43	PWSS

PWS ID:	0326332	Recharge Rate:	600000
Source ID:		RTL NBR CN:	5880
EPA Source ID:	25794	RTL Pop:	15288
PWS Type:	C	RWQ Rate:	
Source Type:	G	Own Loc Co:	W36
Source Name:	WELL #36	Owner:	AQUA NORTH CAROLINA INC.
Source Avail:	P	Owner Address 1:	202 MACKENAN DR.
Begin Date:	01-May-2000	Owner Address 2:	ATTN SHANNON BECKER
WSW Class:		Owner City:	CARY
Yield GPM:	70	Owner State:	NC
Well Integrity :	H	Owner Zip 1:	27511
Intake Location:		Owner Zip 2:	
Degree of Confine:	HC	System County:	CUMBERLAND
Aquifer Rating:	H	DEQ Region Name:	FAYETTEVILLE REGIONAL OFFICE
Avg Production Cap:	1460000	County:	26
Design Prod Cap:	2577600	Depth (ft):	400
Emergency Prod Cap:	0	Shape Source:	
Max Production Cap:	1750000		
Source Location:	HUNTERS CROSSING 1019 FOXHOUND CT		

## Wells and Additional Sources Detail Report

Source Location Method: E  
 Description: OFFICE 5948 FISHER ROAD SUITE 101  
 PWS Type Name: Community  
 PWS Type Desc: Serves 15+ connections or regularly serves 25+ year-round residents. ex. cities, towns, subdivisions.

<b>Map Key</b>	<b>Direction</b>	<b>Distance (mi)</b>	<b>Distance (ft)</b>	<b>Elevation (ft)</b>	<b>DB</b>
14	WSW	0.74	3,890.91	261.02	PWSS

PWS ID:	0326332	Recharge Rate:	600000
Source ID:		RTL NBR CN:	5880
EPA Source ID:	25776	RTL Pop:	15288
PWS Type:	C	RWQ Rate:	
Source Type:	G	Own Loc Co:	W19
Source Name:	WELL #19	Owner:	AQUA NORTH CAROLINA INC.
Source Avail:	P	Owner Address 1:	202 MACKENAN DR.
Begin Date:	01-May-1996	Owner Address 2:	ATTN SHANNON BECKER
WSW Class:		Owner City:	CARY
Yield GPM:	50	Owner State:	NC
Well Integrity :	H	Owner Zip 1:	27511
Intake Location:		Owner Zip 2:	
Degree of Confine:	SC	System County:	CUMBERLAND
Aquifer Rating:	H	DEQ Region Name:	FAYETTEVILLE REGIONAL OFFICE
Avg Production Cap:	1460000	County:	26
Design Prod Cap:	2577600	Depth (ft):	77
Emergency Prod Cap:	0	Shape Source:	
Max Production Cap:	1750000		
Source Location:	HOKE LOOP RD - 1142 HOKE LOOP RD		
Source Location Method:	E		
Description:	OFFICE 5948 FISHER ROAD SUITE 101		
PWS Type Name:	Community		
PWS Type Desc:	Serves 15+ connections or regularly serves 25+ year-round residents. ex. cities, towns, subdivisions.		

<b>Map Key</b>	<b>Direction</b>	<b>Distance (mi)</b>	<b>Distance (ft)</b>	<b>Elevation (ft)</b>	<b>DB</b>
15	W	0.77	4,061.62	271.77	PWSS

PWS ID:	0326332	Recharge Rate:	600000
Source ID:		RTL NBR CN:	5880
EPA Source ID:	25789	RTL Pop:	15288
PWS Type:	C	RWQ Rate:	
Source Type:	G	Own Loc Co:	W03
Source Name:	WELL #3	Owner:	AQUA NORTH CAROLINA INC.
Source Avail:	P	Owner Address 1:	202 MACKENAN DR.
Begin Date:	01-Jun-1977	Owner Address 2:	ATTN SHANNON BECKER
WSW Class:		Owner City:	CARY
Yield GPM:	110	Owner State:	NC

## Wells and Additional Sources Detail Report

Well Integrity :	H	Owner Zip 1:	27511
Intake Location:		Owner Zip 2:	
Degree of Confine:	SC	System County:	CUMBERLAND
Aquifer Rating:	H	DEQ Region Name:	FAYETTEVILLE REGIONAL OFFICE
Avg Production Cap:	1460000	County:	26
Design Prod Cap:	2577600	Depth (ft):	120
Emergency Prod Cap:	0	Shape Source:	
Max Production Cap:	1750000		
Source Location:	ELEVATED TANK BRYANSTONE WAY - OTHER INFO:400K ELEVATED TANK-6902 SANDBRIDGE DR		
Source Location Method:	E		
Description:	OFFICE 5948 FISHER ROAD SUITE 101		
PWS Type Name:	Community		
PWS Type Desc:	Serves 15+ connections or regularly serves 25+ year-round residents. ex. cities, towns, subdivisions.		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
16	WNW	0.83	4,400.13	260.93	PWSS

PWS ID:	0326332	Recharge Rate:	600000
Source ID:		RTL NBR CN:	5880
EPA Source ID:	25800	RTL Pop:	15288
PWS Type:	C	RWQ Rate:	
Source Type:	G	Own Loc Co:	W06
Source Name:	WELL #6	Owner:	AQUA NORTH CAROLINA INC.
Source Avail:	P	Owner Address 1:	202 MACKENAN DR.
Begin Date:	01-Jun-1977	Owner Address 2:	ATTN SHANNON BECKER
WSW Class:		Owner City:	CARY
Yield GPM:	150	Owner State:	NC
Well Integrity :	H	Owner Zip 1:	27511
Intake Location:		Owner Zip 2:	
Degree of Confine:	SC	System County:	CUMBERLAND
Aquifer Rating:	H	DEQ Region Name:	FAYETTEVILLE REGIONAL OFFICE
Avg Production Cap:	1460000	County:	26
Design Prod Cap:	2577600	Depth (ft):	102
Emergency Prod Cap:	0	Shape Source:	
Max Production Cap:	1750000		
Source Location:	BROOKWOOD & BEAVER STONE-6952 BROCKWOOD ST		
Source Location Method:	E		
Description:	OFFICE 5948 FISHER ROAD SUITE 101		
PWS Type Name:	Community		
PWS Type Desc:	Serves 15+ connections or regularly serves 25+ year-round residents. ex. cities, towns, subdivisions.		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
17	W	0.84	4,437.92	271.92	PWSS



## Wells and Additional Sources Detail Report

PWS ID:	0326332	Recharge Rate:	600000
Source ID:		RTL NBR CN:	5880
EPA Source ID:	25798	RTL Pop:	15288
PWS Type:	C	RWQ Rate:	
Source Type:	G	Own Loc Co:	W04
Source Name:	WELL #4	Owner:	AQUA NORTH CAROLINA INC.
Source Avail:	P	Owner Address 1:	202 MACKENAN DR.
Begin Date:	01-Jun-1977	Owner Address 2:	ATTN SHANNON BECKER
WSW Class:		Owner City:	CARY
Yield GPM:	51	Owner State:	NC
Well Integrity :	H	Owner Zip 1:	27511
Intake Location:		Owner Zip 2:	
Degree of Confine:	SC	System County:	CUMBERLAND
Aquifer Rating:	H	DEQ Region Name:	FAYETTEVILLE REGIONAL OFFICE
Avg Production Cap:	1460000	County:	26
Design Prod Cap:	2577600	Depth (ft):	110
Emergency Prod Cap:	0	Shape Source:	
Max Production Cap:	1750000		
Source Location:	CORNER OF CROFT & BROOKWOOD-6915 BROCKWOOD ST		
Source Location Method:	E		
Description:	OFFICE 5948 FISHER ROAD SUITE 101		
PWS Type Name:	Community		
PWS Type Desc:	Serves 15+ connections or regularly serves 25+ year-round residents. ex. cities, towns, subdivisions.		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
18	N	0.85	4,495.15	252.63	PWSS

PWS ID:	0326332	Recharge Rate:	600000
Source ID:		RTL NBR CN:	5880
EPA Source ID:	25772	RTL Pop:	15288
PWS Type:	C	RWQ Rate:	
Source Type:	G	Own Loc Co:	W15
Source Name:	WELL #15	Owner:	AQUA NORTH CAROLINA INC.
Source Avail:	P	Owner Address 1:	202 MACKENAN DR.
Begin Date:	01-Jun-1977	Owner Address 2:	ATTN SHANNON BECKER
WSW Class:		Owner City:	CARY
Yield GPM:	120	Owner State:	NC
Well Integrity :	H	Owner Zip 1:	27511
Intake Location:		Owner Zip 2:	
Degree of Confine:	SC	System County:	CUMBERLAND
Aquifer Rating:	H	DEQ Region Name:	FAYETTEVILLE REGIONAL OFFICE
Avg Production Cap:	1460000	County:	26
Design Prod Cap:	2577600	Depth (ft):	93
Emergency Prod Cap:	0	Shape Source:	
Max Production Cap:	1750000		
Source Location:	PRESTIGE & BROOKSHIRE - 658 PRESTIGE BLVD		

## Wells and Additional Sources Detail Report

Source Location Method: E  
 Description: OFFICE 5948 FISHER ROAD SUITE 101  
 PWS Type Name: Community  
 PWS Type Desc: Serves 15+ connections or regularly serves 25+ year-round residents. ex. cities, towns, subdivisions.

<b>Map Key</b>	<b>Direction</b>	<b>Distance (mi)</b>	<b>Distance (ft)</b>	<b>Elevation (ft)</b>	<b>DB</b>
19	SSE	0.87	4,592.53	226.61	PWSS

PWS ID:	0326332	Recharge Rate:	600000
Source ID:		RTL NBR CN:	5880
EPA Source ID:	25785	RTL Pop:	15288
PWS Type:	C	RWQ Rate:	
Source Type:	G	Own Loc Co:	W26
Source Name:	WELL #26	Owner:	AQUA NORTH CAROLINA INC.
Source Avail:	P	Owner Address 1:	202 MACKENAN DR.
Begin Date:	01-May-1996	Owner Address 2:	ATTN SHANNON BECKER
WSW Class:		Owner City:	CARY
Yield GPM:	130	Owner State:	NC
Well Integrity :	H	Owner Zip 1:	27511
Intake Location:		Owner Zip 2:	
Degree of Confine:	SC	System County:	CUMBERLAND
Aquifer Rating:	H	DEQ Region Name:	FAYETTEVILLE REGIONAL OFFICE
Avg Production Cap:	1460000	County:	26
Design Prod Cap:	2577600	Depth (ft):	72
Emergency Prod Cap:	0	Shape Source:	
Max Production Cap:	1750000		
Source Location:	RIM RD AT FRONT OF SUNSET PARK - 1623 RIM RD		
Source Location Method:	E		
Description:	OFFICE 5948 FISHER ROAD SUITE 101		
PWS Type Name:	Community		
PWS Type Desc:	Serves 15+ connections or regularly serves 25+ year-round residents. ex. cities, towns, subdivisions.		

<b>Map Key</b>	<b>Direction</b>	<b>Distance (mi)</b>	<b>Distance (ft)</b>	<b>Elevation (ft)</b>	<b>DB</b>
20	W	0.89	4,717.78	263.58	PWSS

PWS ID:	0326332	Recharge Rate:	600000
Source ID:		RTL NBR CN:	5880
EPA Source ID:	25799	RTL Pop:	15288
PWS Type:	C	RWQ Rate:	
Source Type:	G	Own Loc Co:	W05
Source Name:	WELL #5	Owner:	AQUA NORTH CAROLINA INC.
Source Avail:	P	Owner Address 1:	202 MACKENAN DR.
Begin Date:	01-Jun-1977	Owner Address 2:	ATTN SHANNON BECKER
WSW Class:		Owner City:	CARY
Yield GPM:	65	Owner State:	NC

## Wells and Additional Sources Detail Report

Well Integrity :	H	Owner Zip 1:	27511
Intake Location:		Owner Zip 2:	
Degree of Confine:	SC	System County:	CUMBERLAND
Aquifer Rating:	H	DEQ Region Name:	FAYETTEVILLE REGIONAL OFFICE
Avg Production Cap:	1460000	County:	26
Design Prod Cap:	2577600	Depth (ft):	106
Emergency Prod Cap:	0	Shape Source:	
Max Production Cap:	1750000		
Source Location:	BROOKWOOD & MOSSYVALE-6933 BROCKWOOD ST		
Source Location Method:	E		
Description:	OFFICE 5948 FISHER ROAD SUITE 101		
PWS Type Name:	Community		
PWS Type Desc:	Serves 15+ connections or regularly serves 25+ year-round residents. ex. cities, towns, subdivisions.		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
21	W	0.97	5,119.50	246.34	PWSS

PWS ID:	0326332	Recharge Rate:	600000
Source ID:		RTL NBR CN:	5880
EPA Source ID:	25784	RTL Pop:	15288
PWS Type:	C	RWQ Rate:	
Source Type:	G	Own Loc Co:	W25
Source Name:	WELL #25	Owner:	AQUA NORTH CAROLINA INC.
Source Avail:	P	Owner Address 1:	202 MACKENAN DR.
Begin Date:	01-May-1996	Owner Address 2:	ATTN SHANNON BECKER
WSW Class:		Owner City:	CARY
Yield GPM:	95	Owner State:	NC
Well Integrity :	H	Owner Zip 1:	27511
Intake Location:		Owner Zip 2:	
Degree of Confine:	SC	System County:	CUMBERLAND
Aquifer Rating:	H	DEQ Region Name:	FAYETTEVILLE REGIONAL OFFICE
Avg Production Cap:	1460000	County:	26
Design Prod Cap:	2577600	Depth (ft):	85
Emergency Prod Cap:	0	Shape Source:	
Max Production Cap:	1750000		
Source Location:	FT BRAGG RESERVATION BEHIND 6847 TIMBERCROFT LN		
Source Location Method:	E		
Description:	OFFICE 5948 FISHER ROAD SUITE 101		
PWS Type Name:	Community		
PWS Type Desc:	Serves 15+ connections or regularly serves 25+ year-round residents. ex. cities, towns, subdivisions.		

Map Key	Direction	Distance (mi)	Distance (ft)	Elevation (ft)	DB
22	SE	0.98	5,196.69	226.42	PWSS

PWS ID:	0326332	Recharge Rate:	600000
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## Wells and Additional Sources Detail Report

Source ID:		RTL NBR CN:	5880
EPA Source ID:	25788	RTL Pop:	15288
PWS Type:	C	RWQ Rate:	
Source Type:	G	Own Loc Co:	W29
Source Name:	WELL #29	Owner:	AQUA NORTH CAROLINA INC.
Source Avail:	P	Owner Address 1:	202 MACKENAN DR.
Begin Date:	01-May-1996	Owner Address 2:	ATTN SHANNON BECKER
WSW Class:		Owner City:	CARY
Yield GPM:	78	Owner State:	NC
Well Integrity :	H	Owner Zip 1:	27511
Intake Location:		Owner Zip 2:	
Degree of Confine:	SC	System County:	CUMBERLAND
Aquifer Rating:	H	DEQ Region Name:	FAYETTEVILLE REGIONAL OFFICE
Avg Production Cap:	1460000	County:	26
Design Prod Cap:	2577600	Depth (ft):	75
Emergency Prod Cap:	0	Shape Source:	
Max Production Cap:	1750000		
Source Location:	END OF LAYTON(UNDEV. LAND) 7325 LAYTON DR		
Source Location Method:	E		
Description:	OFFICE 5948 FISHER ROAD SUITE 101		
PWS Type Name:	Community		
PWS Type Desc:	Serves 15+ connections or regularly serves 25+ year-round residents. ex. cities, towns, subdivisions.		

## Radon Information

This section lists any relevant radon information found for the target property.

Federal EPA Radon Zone for *CUMBERLAND* County: **3**

*Zone 1: Counties with predicted average indoor radon screening levels greater than 4 pCi/L*

*Zone 2: Counties with predicted average indoor radon screening levels from 2 to 4 pCi/L*

*Zone 3: Counties with predicted average indoor radon screening levels less than 2 pCi/L*

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Federal Area Radon Information for *CUMBERLAND* County

No Measures/Homes:	98
Arithmetic Mean:	1
Maximum:	4
Minimum:	0
Notes on Data Table:	TABLE 1. Summary of screening indoor radon data in North Carolina from the EPA/State Residential Radon Survey, the North Carolina Cooperative Extension Service Radon Survey, and non-random data collected from vendors of charcoal canister radon detectors. Data represent 2-7 day screening tests.

## **Federal Sources**

### **FEMA National Flood Hazard Layer**

**FEMA FLOOD**

The National Flood Hazard Layer (NFHL) data incorporates Flood Insurance Rate Map (FIRM) databases published by the Federal Emergency Management Agency (FEMA), and any Letters Of Map Revision (LOMRs) that have been issued against those databases since their publication date. The FIRM Database is the digital, geospatial version of the flood hazard information shown on the published paper FIRMs. The FIRM Database depicts flood risk information and supporting data used to develop the risk data. The FIRM Database is derived from Flood Insurance Studies (FISs), previously published FIRMs, flood hazard analyses performed in support of the FISs and FIRMs, and new mapping data, where available.

### **Indoor Radon Data**

**INDOOR RADON**

Indoor radon measurements tracked by the Environmental Protection Agency(EPA) and the State Residential Radon Survey.

### **Public Water Systems Violations and Enforcement Data**

**PWSV**

List of drinking water violations and enforcement actions from the Safe Drinking Water Information System (SDWIS) made available by the Drinking Water Protection Division of the US EPA's Office of Groundwater and Drinking Water. Enforcement sensitive actions are not included in the data released by the EPA. Address information provided in SWDIS may correspond either with the physical location of the water system, or with a contact address.

### **Radon Zone Level**

**RADON ZONE**

Areas showing the level of Radon Zones (level 1, 2 or 3) by county. This data is maintained by the Environmental Protection Agency (EPA).

### **Safe Drinking Water Information System (SDWIS)**

**SDWIS**

The Safe Drinking Water Information System (SDWIS) contains information about public water systems as reported to US Environmental Protection Agency (EPA) by the states. Addresses may correspond with the location of the water system, or with a contact address.

### **Soil Survey Geographic database**

**SSURGO**

The Soil Survey Geographic database (SSURGO) contains information about soil as collected by the National Cooperative Soil Survey at the Natural Resources Conservation Service (NRCS). Soil maps outline areas called map units. The map units are linked to soil properties in a database. Each map unit may contain one to three major components and some minor components.

### **U.S. Fish & Wildlife Service Wetland Data**

**US WETLAND**

The U.S. Fish & Wildlife Service Wetland layer represents the approximate location and type of wetlands and deepwater habitats in the United States.

### **USGS Current Topo**

**US TOPO**

US Topo topographic maps are produced by the National Geospatial Program of the U.S. Geological Survey (USGS). The project was launched in late 2009, and the term "US Topo" refers specifically to quadrangle topographic maps published in 2009 and later.

### **USGS Geology**

**US GEOLOGY**

Seamless maps depicting geological information provided by the United States Geological Survey (USGS).

### **USGS National Water Information System**

**FED USGS**

The U.S. Geological Survey (USGS)'s National Water Information System (NWIS) is the nation's principal repository of water resources data. This database includes comprehensive information of well-construction details, time-series data for gage height, streamflow, groundwater level, and precipitation and water use data.

## **State Sources**

### **Oil and Gas Wells**

**OGW**

As of NC state regulatory agencies, FracTracker Alliance - state of North Carolina confirmed not to have

# Appendix

any active (drilled but not plugged) oil and gas wells.

## **Public Water Supply Sources**

**PWSS**

The North Carolina Department of Environmental Quality (DEQ), Division of Environmental Health, Public Water Supply Section in cooperation with the NC Center for Geographic Information and Analysis, tracks the locations of public water supply system sources in North Carolina.

## **Underground Injection Control Wells**

**UIC**

This list of Underground Injection Control Wells is made available by the North Carolina Department of Environment and Natural Resources.

## **Water Distribution Wells**

**WATER WELLS**

The North Carolina Rural Economic Development Center (NCREDC) in conjunction with Hobbs, Upchurch & Associates developed digital well locations data by individual system owners as required by contract. The data collected was to facilitate planning, siting and impact analysis in the 70 individual counties of North Carolina. This data contains information on groundwater intake wells, including: Well ID, construction date, latest renovation date, and safe yield. There has been no plan by the NCREDC or Hobbs, Upchurch & Associates to update this database.

## Liability Notice

**Reliance on information in Report:** The Physical Setting Report (PSR) DOES NOT replace a full Phase I Environmental Site Assessment but is solely intended to be used as a review of environmental databases and physical characteristics for the site or adjacent properties.

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# **APPENDIX G: Qualifications of Environmental Professionals**

## ROBERT J. ATZL

### SENIOR PROJECT MANAGER, TELECOM DUE DILIGENCE

#### PROFESSIONAL EDUCATION

Bachelor of Science, Environmental Studies, State University of New York at Buffalo – January 1994

#### CERTIFICATIONS/QUALIFICATIONS

- ◆ Environmental Professional (EP) in Accordance with ASTM E1527-13
- ◆ Environmental Site Assessment (ESA) Experience, 25+ years
- ◆ NJDEP Subsurface Evaluator (1997 to 2000)
- ◆ NYSDOL Asbestos Inspector (Cert. No. 96-13959)
- ◆ NYSDOL Asbestos Management Planner (2006 to 2011)
- ◆ OSHA 40-Hour Hazardous Waste Operations Certification (29 CFR 1910.120/1926.65)
- ◆ OSHA Certified Environmental Specialist
- ◆ OSHA Working with Lead Exposure in General Industry Certification (29 CFR 1910.1025)
- ◆ USEPA Lead Inspector (1998 to 2011)
- ◆ USEPA Lead Renovation, Repair, and Painting Rule Certification (40 CFR 745, Subpart E)
- ◆ USEPA Lead Risk Assessor (2006 to 2011)

#### SELECTED EXPERIENCE

Mr. Atzl has over 25 years of experience in the environmental assessment and consulting industry. He has conducted and managed thousands of ESAs and other real estate due diligence projects for a wide range of local and national clients, including wireless telecommunications carriers, government agencies, banks, agency lenders, investment banks, law firms, and property owners. The properties he has evaluated have included multi-family residential, retail, office, industrial, hospitality, and wireless telecommunications. Mr. Atzl maintains expertise in environmental rules and regulations pertaining to the environmental consulting industry including ASTM E1527 and USEPA All Appropriate Inquiry Rules as well as client specific scopes of work.

His technical experience includes the performance of hundreds of projects involving Phase II subsurface investigations, remedial investigations, soil vapor intrusion investigations, soil and groundwater restoration, underground storage tank closures, and insurance claim oversight. Additional technical background for Mr. Atzl includes performing numerous asbestos and lead-based paint surveys as well as management and risk assessment of these materials.

Mr. Atzl also has extensive experience conducting and managing Federal Communications Commission (FCC) National Environmental Policy Act (NEPA) Screenings and Assessments and Section 106 State Historic Preservation Office (SHPO) Reports for wireless telecommunications facilities.

#### PROFESSIONAL ORGANIZATIONS

- ◆ New York State Wireless Association
- ◆ New England Wireless Association
- ◆ New Jersey Wireless Association
- ◆ Pennsylvania Wireless Association
- ◆ Air & Waste Management Association – Genesee Finger Lakes Chapter
- ◆ New York Water Environmental Association – Genesee Valley Chapter
- ◆ Alliance of Hazardous Materials Professionals – Finger Lakes Chapter



## ROB WILKENS

### DIRECTOR, TELECOM DUE DILIGENCE

#### PROFESSIONAL EDUCATION

Bachelor of Arts, Area Studies - Environmental Business, Rollins College, Winter Park, Florida, May 1998

#### CERTIFICATIONS/QUALIFICATIONS

- ◆ Environmental Professional (EP) in Accordance with ASTM E1527-13
- ◆ Habitat Evaluation Practitioner (HEP)
- ◆ AHERA Asbestos Inspector
- ◆ EPA RRP Lead Certified
- ◆ OSHA 40-Hour Hazardous Waste Operations Certification (29CFR 1910.120)
- ◆ Environmental Site Assessment (ESA) Experience, 20+ years

#### SELECTED EXPERIENCE

Mr. Wilkens has over 20 years of consulting experience in the environmental industry throughout the United States. He has conducted Environmental Site Assessments (ESAs) and National Environmental Policy Act (NEPA) reports for a wide range of local and national clients, including wireless carriers, tower builders, government agencies, banks, law firms, and property owners. The properties he has evaluated have included multifamily residential, retail, office, industrial, hospitality, and numerous proposed and existing wireless installations.

Mr. Wilkens has provided hundreds of environmental site assessments in accordance with ASTM E1527, the USEPA All Appropriate Inquiry rules, and other client-specific scopes of work. His environmental background includes a detailed understanding of the risks associated with hazardous and regulated materials storage, use generation and disposal, above ground and underground storage tanks, polychlorinated biphenyls (PCBs), asbestos-containing materials (ACM), lead-based paint (LBP), mold, and radon. Mr. Wilkens has managed numerous subsurface investigations to assess the horizontal and vertical extent of soil and groundwater contamination and has provided oversight services to environmental remediation projects.

#### PHASE I ESA/NEPA EXPERIENCE

- ◆ American Tower Portfolio Acquisition, United States: assisted with the evaluation, review, and delivery of 300 reports on tower sites for a law firm representing a tower company. Assessed field conditions and sampled on-site materials asbestos and lead content. Assessed wildlife habitat, wetlands, and floodplain conditions required under FCC NEPA rules.

#### PHASE II ESA EXPERIENCE

- ◆ Linden Airport, New Jersey: subsurface investigation of a World War II-era military production facility. Assessed the legacy environmental impact to soil and groundwater of aircraft production, use, and maintenance.

#### PROFESSIONAL ORGANIZATIONS

- ◆ Association of NEPA Professionals
- ◆ State Wireless Association Program (NY, NJ, VA, Maryland/DC)



## KRISTIN TATE

### REGIONAL ACCOUNT MANAGER/HUD PROGRAM MANAGER

#### PROFESSIONAL EDUCATION

Bachelor of Architecture, University of Houston, Houston, TX, May 2004

#### CERTIFICATIONS/QUALIFICATIONS

- ◆ Environmental Professional (EP) in Accordance with ASTM E1527-13
- ◆ Certified Mold Assessment Consultant in the State of Texas
- ◆ Termites and Other Wood Destroying Pests Training
- ◆ Certified Multifamily Accelerated Processing (MAP), HUD
- ◆ Environmental Site Assessment (ESA) On-The-Job Training
- ◆ ESA Experience, 12+ years
- ◆ Multifamily ESA Experience, 10+ years
- ◆ Property Condition Assessment (PCA) On-The-Job Training
- ◆ PCA Experience, 12+ years
- ◆ Multifamily PCA Experience, 10+ years

#### SELECTED EXPERIENCE

Ms. Tate has more than 12 years of consulting experience in the environmental industry and in the property condition industry throughout the United States. She has conducted Environmental Site Assessments (ESAs) and Property Condition Assessments (PCAs) for a wide range of local and national clients, including governmental agencies, banks, agency lenders, investment banks, life insurance companies, law firms, and property owners. The properties she has evaluated have included multifamily residential, retail, office, industrial, and hospitality.

#### PHASE I ESAs

Ms. Tate has provided hundreds of ESAs in accordance with ASTM E1527-13, the USEPA All Appropriate Inquiry rules, Fannie Mae Delegated Underwriting Standards, Freddie Mac guidelines, HUD MAP and LEAN guidelines, and other client-specific scopes of work. Her environmental background includes a detailed understanding of the risks associated with hazardous and regulated materials storage, use generation and disposal, above ground and underground storage tanks, polychlorinated biphenyls (PCBs), asbestos-containing materials (ACM), lead-based paint (LBP), mold, and radon. Ms. Tate has managed numerous subsurface investigations to assess the horizontal and vertical extent of soil and groundwater contamination and has provided oversight services to environmental remediation projects.

#### PCA

Ms. Tate has provided hundreds of PCAs in accordance with ASTM 2018, Fannie Mae Delegated Underwriting Standards, Freddie Mac guidelines, HUD MAP and LEAN guidelines, and other client-specific scopes of work. She is experienced in assessing site improvements, building structures and envelopes, and mechanical, electrical, and plumbing systems for evidence of deferred maintenance or problematic or deleterious materials. She has been responsible for estimating Immediate Needs Reserves as well as On-Going Reserves needed to maintain a property, based on her observations and interviews with personnel familiar with the property.

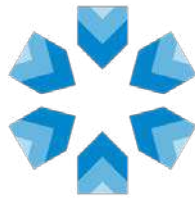
#### CONSTRUCTION MONITORING

Ms. Tate has performed several construction monitoring assignments, including self-storage facilities, luxury apartment buildings, outlet malls, and multifamily residential properties in Texas and New Mexico.

#### DOCUMENTS REVIEW

Ms. Tate has assisted in several construction document reviews for commercial lenders. Property types include multifamily residential, multifamily residential high-rise, and self-storage facilities.





Nova  
Group

# Carbon Neutral Report

[novagroupgbc.com/carbonneutral](http://novagroupgbc.com/carbonneutral)

## Gievers, Andrea

---

**From:** Raleigh, FW4 <raleigh@fws.gov>  
**Sent:** Thursday, November 18, 2021 9:52 AM  
**To:** Gievers, Andrea  
**Subject:** Automatic reply: [EXTERNAL] Online Project Review Certification Letter (NCORR HUD CDBG-DR - Cliffdale Crossing)

**CAUTION:** External email. Do not click links or open attachments unless you verify. Send all suspicious email as an attachment to [Report Spam](#).

Thank you for submitting your online project package. We will review your package within 30 days of receipt. If you have submitted an online **project review request letter**, expect our response within 30 days. If you have submitted an online **project review certification letter**, you will typically not receive a response from us since the certification letter is our official response. However, if we have additional questions or we do not concur with your determinations, we will contact you during the review period.

## Gievers, Andrea

---

**From:** Gievers, Andrea  
**Sent:** Thursday, November 18, 2021 9:44 AM  
**To:** Raleigh@fws.gov  
**Cc:** Mann, Leigh  
**Subject:** Online Project Review Certification Letter (NCORR HUD CDBG-DR - Cliffdale Crossing)  
**Attachments:** NCORR USFWS No Effect Cliffdale Crossing Package 11.18.21.pdf

Hello:

Please find attached the Self-certification Letter and 10-step Project Review Package prepared by Nova Group for the proposed Cliffdale Crossing affordable housing project. The North Carolina Office of Recovery and Resiliency (NCORR) as a recipient of Community Development Block Grant – Disaster Recovery (CDBG-DR) funds from the United States Department of Housing and Urban Development (HUD) is considering funding the proposed project in part by the North Carolina Affordable Housing Development Fund Program for Hurricane Florence storm recovery activities in North Carolina. *A separate environmental review is being performed by NCHFA for a HUD HOME Program funding application.*

NCORR is submitting the above information as notification of its No Effect determination and requests acknowledgement from USFWS that they have received this determination that the proposed project would have No Effect on migratory birds, endangered/threatened species, or critical habitat for species under USFWS jurisdiction.

If you have any questions or require additional information regarding this request, please feel free to contact me at (845) 682-1700 or via email at [Andrea.L.Gievers@Rebuild.NC.gov](mailto:Andrea.L.Gievers@Rebuild.NC.gov). Thank you for your time and assistance.

Sincerely,

Andrea

Andrea Gievers, JD, MSEL, ERM  
Environmental SME  
Community Development  
NC Office of Recovery and Resiliency  
[Andrea.L.Gievers@Rebuild.NC.Gov](mailto:Andrea.L.Gievers@Rebuild.NC.Gov)  
(845) 682-1700



# North Carolina Department of Public Safety

## Office of Recovery and Resiliency

Roy Cooper, Governor

Cassandra Skinner Hoekstra, Interim Secretary

Laura H. Hogshead, Director

November 18, 2021

Mr. John Ellis  
U.S. Fish and Wildlife Service  
Raleigh ES Field Office  
P.O. Box 33726  
Raleigh, NC 27636-3726

Sent Via Email: [Raleigh@fws.gov](mailto:Raleigh@fws.gov)  
[Leigh\\_Mann@fws.gov](mailto:Leigh_Mann@fws.gov)

RE: Section 7 Project Review - No Effect Determination  
NCORR - HUD CDBG-DR Program  
Cliffdale Crossing  
8368 Cliffdale Road  
Fayetteville, NC 28314

Dear Mr. Ellis:

The North Carolina Office of Recovery and Resiliency (NCORR) as a recipient of Community Development Block Grant – Disaster Recovery (CDBG-DR) funds from the United States Department of Housing and Urban Development (HUD) is considering funding this proposed affordable housing project, Cliffdale Crossing located at 8368 Cliffdale Road, Fayetteville, Cumberland County, North Carolina 28314. The State of North Carolina was adversely impacted by the landfall of Hurricanes Matthew (October 8, 2016) and Florence (September 14, 2018). These hurricanes damaged or destroyed hundreds of homes worsening the affordable housing shortage. This proposed project will increase affordable housing inventory for low- and moderate-income families. Therefore, funding for the proposed project will be provided in part by the HUD CDBG-DR North Carolina Affordable Housing Development Fund Program for Hurricane Florence storm recovery activities in North Carolina. *A separate environmental review is being performed by NCHFA for a HUD HOME Program funding application.*

The purpose of this letter is to provide the U.S. Fish and Wildlife Service – Raleigh ES Field Office (USFWS) notice of the proposed project and to document compliance with Section 7 of the Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as well as the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703–712) and the Bald and Golden Eagle

Mailing Address:  
Post Office Box 110465  
Durham, NC 27709



Telephone: 984.833.5350  
[www.ncdps.gov](http://www.ncdps.gov)  
[www.rebuild.nc.gov](http://www.rebuild.nc.gov)



Protection Act (BGEPA) (16 U.S.C. 668-668c, 54 Stat. 250), as amended.

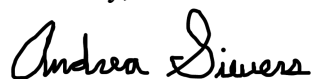
We have reviewed the proposed project using the USFWS Raleigh Ecological Services' online 10-step project review process and made “**no effect**” determinations for proposed/listed species and/or proposed/designated critical habitat and a “**no Eagle Act permit required**” determination for eagles. Please find attached the Self-certification Letter and 10-step Project Review Package prepared by Nova Group for the proposed project in accordance with all instructions provided, using the best available information to reach our conclusions.

Cliffdale Crossing involves the new construction of 80 units in a growing area of Fayetteville. The development will offer 12 one-bedroom, one bath units; 40 two-bedroom, one-bath units; and 28 three-bedroom, two-bath units in six (6) two-story buildings. The development will also include a leasing/community building, all located on 8 acres. Grocery, shopping, restaurants and schools are nearby. The Subject Property is currently unimproved, consisting of recently cleared vacant land with new growth shrubbery and saplings. The Subject Property has consisted of undeveloped land or vacant land utilized for agricultural purposes throughout its known history (researched back to 1937). Project implementation would be conditioned upon issuance of applicable Federal and State permits and would be constructed in accordance with Federal and State permit conditions. The proposed project would not jeopardize the continued existence of ESA species or destroy or adversely modify their critical habitat.

NCORR is submitting the above information as notification of its **No Effect** determination and requests *acknowledgement* from USFWS that they have received this determination that the proposed project would have No Effect on migratory birds, endangered/threatened species, or critical habitat for species under USFWS jurisdiction.

If you have any questions or require additional information regarding this request, please feel free to contact Andrea Gievers at (845) 682-1700 or via email at [Andrea.L.Gievers@Rebuild.NC.gov](mailto:Andrea.L.Gievers@Rebuild.NC.gov). Thank you for your time and assistance.

Sincerely,



Andrea Gievers, JD, MSEL, ERM  
NCORR Environmental Subject Matter Expert

Attachments:

- Self-certification Letter
- 10-step Project Review Package



# United States Department of the Interior



## FISH AND WILDLIFE SERVICE

Raleigh Field Office  
P.O. Box 33726  
Raleigh, NC 27636-3726

Date: \_\_\_\_\_

### Self-Certification Letter

Project Name \_\_\_\_\_

Dear Applicant:

Thank you for using the U.S. Fish and Wildlife Service (Service) Raleigh Ecological Services online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the project named above in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA), and the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c, 54 Stat. 250), as amended (Eagle Act). This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

The species conclusions table in the enclosed project review package summarizes your ESA and Eagle Act conclusions. Based on your analysis, mark all the determinations that apply:

“no effect” determinations for proposed/listed species and/or proposed/designated critical habitat; and/or

“may affect, not likely to adversely affect” determinations for proposed/listed species and/or proposed/designated critical habitat; and/or

“may affect, likely to adversely affect” determination for the Northern long-eared bat (*Myotis septentrionalis*) and relying on the findings of the January 5, 2016, Programmatic Biological Opinion for the Final 4(d) Rule on the Northern long-eared bat;

“no Eagle Act permit required” determinations for eagles.

We certify that use of the online project review process in strict accordance with the instructions provided as documented in the enclosed project review package results in reaching the appropriate determinations. Therefore, we concur with the “no effect” or “not likely to adversely affect” determinations for proposed and listed species and proposed and designated critical habitat; the “may affect” determination for Northern long-eared bat; and/or the “no Eagle Act permit required” determinations for eagles. Additional coordination with this office is not needed. Candidate species are not legally protected pursuant to the ESA. However, the Service encourages consideration of these species by avoiding adverse impacts to them. Please contact this office for additional coordination if your project action area contains candidate species. Should project plans change or if additional information on the distribution of proposed or listed species, proposed or designated critical habitat, or bald eagles becomes available, this determination may be reconsidered. This certification letter is valid for 1 year. Information about the online project review process including instructions, species information, and other information regarding project reviews within North Carolina is available at our website <http://www.fws.gov/raleigh/pp.html>. If you have any questions, you can write to us at [Raleigh@fws.gov](mailto:Raleigh@fws.gov) or please contact Leigh Mann of this office at 919-856-4520, ext. 10.

Sincerely,

/s/Pete Benjamin

Pete Benjamin  
Field Supervisor  
Raleigh Ecological Services

Enclosures - project review package

## Species Conclusions Table

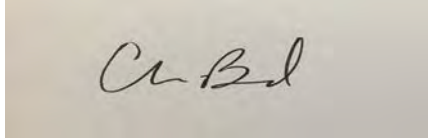
Project Name: Cliffdale Crossing

Date: 11/16/2021

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Red-cockaded Woodpecker	No suitable habitat present	No effect	Site visit and review by qualified biologist, google earth aerial imagery of previous years, clear cutting of trees in project area the previous year.
American Alligator	No suitable habitat present	No effect	Site visit and review by qualified biologist, google earth aerial imagery of previous years, clear cutting of trees in project area the previous year.
Monarch Butterfly	No suitable habitat present	No effect	Site visit and review by qualified biologist, google earth aerial imagery of previous years, clear cutting of trees in project area the previous year.
Saint Francis' Satyr Butterfly	No suitable habitat present	No effect	Site visit and review by qualified biologist, google earth aerial imagery of previous years, clear cutting of trees in project area the previous year.
American Chaffseed	No suitable habitat present	No effect	Site visit and review by qualified biologist, google earth aerial imagery of previous years, clear cutting of trees in project area the previous year.
Michaux's Sumac	No suitable habitat present	No effect	Site visit and review by qualified biologist, google earth aerial imagery of previous years, clear cutting of trees in project area the previous year.
Pondberry	No suitable habitat present	No effect	Site visit and review by qualified biologist, google earth aerial imagery of previous years, clear cutting of trees in project area the previous year.
Rough-leaved Loosestrife	No suitable habitat present	No effect	Site visit and review by qualified biologist, google earth aerial imagery of previous years, clear cutting of trees in project area the previous year.

Critical Habitat	No critical habitat present	No effect	
Bald Eagle	Unlikely to disturb nesting bald eagles	No Eagle Act Permit Required	No nest within action area and not within the county,

Acknowledgement: I agree that the above information about my proposed project is true. I used all of the provided resources to make an informed decision about impacts in the immediate and surrounding areas.



Christopher Bond / Project Manager-Biologist Nova Group, GBC

\_\_\_\_\_  
Signature /Title

\_\_\_\_\_  
11/16/2021  
Date

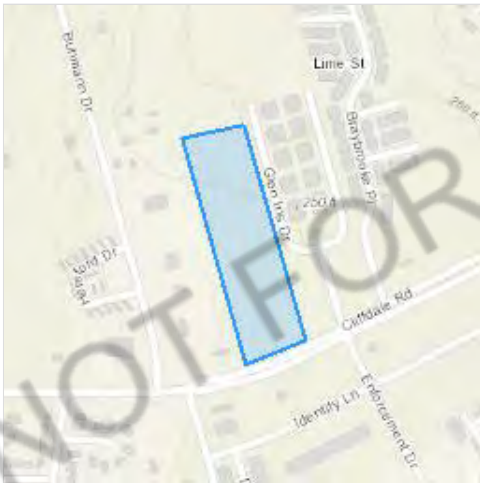
# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Cumberland County, North Carolina



## Local office

Raleigh Ecological Services Field Office

☎ (919) 856-4520

📠 (919) 856-4556

MAILING ADDRESS

Post Office Box 33726  
Raleigh, NC 27636-3726

PHYSICAL ADDRESS

551 Pylon Drive, Suite F

Raleigh, NC 27606-1487

NOT FOR CONSULTATION

# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

## Birds

NAME

STATUS



**Red-cockaded Woodpecker** *Picoides borealis* **Endangered**

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/7614>

## Reptiles

NAME

STATUS

**American Alligator** *Alligator mississippiensis* **SAT**

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/776>

## Insects

NAME

STATUS

**Monarch Butterfly** *Danaus plexippus* **Candidate**

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/9743>

**Saint Francis' Satyr Butterfly** *Neonympha mitchellii francisci* **Endangered**

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/5419>

## Flowering Plants

NAME

STATUS

**American Chaffseed** *Schwalbea americana* **Endangered**

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/1286>

**Michaux's Sumac** *Rhus michauxii* **Endangered**

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/5217>

**Pondberry** *Lindera melissifolia* **Endangered**

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/1279>

Rough-leaved Loosestrife *Lysimachia asperulaefolia*

Endangered

Wherever found

No critical habitat has been designated for this species.

<http://ecos.fws.gov/ecp/species/2747>

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

THERE ARE NO MIGRATORY BIRDS OF CONSERVATION CONCERN EXPECTED TO OCCUR AT THIS LOCATION.

**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

### What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

### What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

## Facilities

### National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

### Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

# Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

## Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

## Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

## Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Taxonomic	Scientific Name	Common Name	NC Status	Federal Status	State Rank	Global Rank	County	County Status	Habitat	Comment
Vascular Plant	<i>Acmispon</i>	Carolina Bit	T	none	S3	G5T3	Cabarrus	Current	woodlands and openings, generally on clayey	
Vascular Plant	<i>Agave virgata</i>	Eastern Agave	W1	none	S3	G5	Cabarrus	Current	granite flatrocks, mafic glades, dry outcrops, c	
Bird	<i>Ammodramus</i>	Grasshopper	W1, W5	none	S3B, S1N	G5	Cabarrus	Current	pastures and other grasslands [breeding seas	
Vascular Plant	<i>Baptisia alba</i>	Prairie Blue	E	none	S2	G5T2	Cabarrus	Historical	glades and open forests on basic soils	
Vascular Plant	<i>Baptisia alba</i>	Thick-pod	T	none	S2	G5	Cabarrus	Current	open woodlands, clearings	
Natural Community	Basic Mesic Forest (Piedmont Sub			none	S3S4	G3G4	Cabarrus	Current	null	
Sawfly, <i>Wa</i>	<i>Bombus ferrugineus</i>	Yellow Bumblebee	W3	none	S3S4	G3G4	Cabarrus	Current	fields and other open habitats	
Sawfly, <i>Wa</i>	<i>Bombus pennsylvanicus</i>	American Bumblebee	W3	none	S3S4	G3G4	Cabarrus	Current	open habitats, fields	
Vascular Plant	<i>Carex bushii</i>	Bush's Sedge	SR-P	none	S1	G4	Cabarrus	Current	open wet areas	
Vascular Plant	<i>Carex pellita</i>	Woolly Sedge	SR-P	none	S1	G5	Cabarrus	Current	wet meadows	
Vascular Plant	<i>Carex tenuis</i>	Quill Sedge	W7	none	S1?	G5T5	Cabarrus	Current	low woods	
Reptile	<i>Cnemidophorus</i>	Scarlet Snake	W1, W5	none	S3	G5	Cabarrus	Current	sandhills, sandy woods, and other dry woods	
Vascular Plant	<i>Cirsium carolinianum</i>	Carolina Thistle	E	none	S2	G5	Cabarrus	Historical	forests and disturbed areas, mostly on basic s	
Reptile	<i>Crotalus horridus</i>	Timber Rattlesnake	SC	none	S3	G4	Cabarrus	Historical	wetland forests in the Coastal Plain; rocky, up	
Vascular Plant	<i>Cyperus graniticus</i>	Granite Flatrock	T	none	S2	G3G4Q	Cabarrus	Current	granite flatrocks, other rock outcrops	
Crustacean	<i>Dactylocythara</i>	Pee Dee Crayfish	W3	none	S2?	GNR	Cabarrus	Current	symbiotic on crayfish in Pee Dee drainage (en	
Reptile	<i>Deirochelys</i>	Eastern Chelonia	SC	none	S2S3	G5T5	Cabarrus	Historical	quiet waters of ponds, ditches, and sluggish s	
Vascular Plant	<i>Desmodium sessile</i>	Tick	SC-H	none	SH	G5	Cabarrus	Historical	open woodlands	
Natural Community	Dry Basic Oak--Hickory Forest			none	S2S3	G2G3	Cabarrus	Current	null	
Natural Community	Dry Oak--Hickory Forest (Piedmon			none	S4	G4G5	Cabarrus	Current	null	
Natural Community	Dry-Mesic Basic Oak--Hickory For			none	S3	G3G4	Cabarrus	Current	null	
Natural Community	Dry-Mesic Oak--Hickory Forest (Pi			none	S4	G4G5	Cabarrus	Current	null	
Vascular Plant	<i>Dryopteris spinulosa</i>	Spinulose	W7	none	S2	G5	Cabarrus	Historical	swampy woods	
Vascular Plant	<i>Eleocharis tripartita</i>	Three-angled	W1	none	S2S3	G4	Cabarrus	Current	bogs and savannas	
Vascular Plant	<i>Eleocharis wolfii</i>	Wolf's Spike	SR-T	none	S1	G3G5	Cabarrus	Current	oak flatwoods, wet meadows	
Freshwater	<i>Elliptio prostratus</i>	Atlantic Spirogon	W3, W5	none	SU	G3Q	Cabarrus	Current	many Atlantic drainages; very difficult to iden	
Bird	<i>Empidonax</i>	Willow Flycatcher	W2	none	S3B	G5	Cabarrus	Current	wet thickets in open country, often along stre	
Freshwater	<i>Etheostoma</i>	Carolina Darter	SC	none	S3	G3	Cabarrus	Current	Roanoke, Tar, Neuse, Cape Fear, Yadkin-Pee I	
Vascular Plant	<i>Eupatorium</i>	Tall Boneset	W1	none	S2	G5	Cabarrus	Current	woodlands, openings, and old fields over maf	
Vascular Plant	<i>Eurybia speciosa</i>	Showy Aster	SR-O	none	S2?	G5	Cabarrus	Historical	pine barrens and woodland borders	
Vascular Plant	<i>Frangula caroliniana</i>	Carolina Buckeye	W1	none	S3	G5	Cabarrus	Current	rich bottomlands and slopes	
Vascular Plant	<i>Gillenia stipitata</i>	Indian Physalis	T	none	S2	G5	Cabarrus	Historical	forests and open woods, mainly over mafic ro	
Natural Community	Granitic Flatrock (Annual Herb Suk			none	S2	G3	Cabarrus	Current	null	
Natural Community	Granitic Flatrock (Perennial Herb			none	S2	G3	Cabarrus	Current	null	

Natural Coi	Granitic Flatrock Border Woodlan	none	S2	G3?	Cabarrus	Current	null
Bird	Haliaeetus Bald Eagle T	BGPA	S3B,S3N	G5	Cabarrus	Current	mature forests near large bodies of water (ne
Vascular Pl	Helianthus Smooth Su SC-V	none	S3	G4	Cabarrus	Current	shaly open woods and roadsides
Vascular Pl	Helianthus Schweinitz' E	E	S3	G3	Cabarrus	Current	open woods, roadsides, and other rights-of-w
Vascular Pl	Heuchera c Carolina Al W7	none	S3	G3	Cabarrus	Historical	rich, rocky woods
Vascular Pl	Hexalectris Crested Co SR-P	none	S2	G5	Cabarrus	Current	dry or mesic woods on basic soils
Dragonfly c	Hylogompl Banner Clu W3	none	S3	G3G4	Cabarrus	Current	spring-fed streams
Moth	Idea scint Diminutive W3	none	SU	GNR	Cabarrus	Current	unknown habitats
Moth	Ipimorpha Even-lined W3	none	SU	G5	Cabarrus	Current	no habitat information
Vascular Pl	Juncus brai Whiteroot W7	none	S2?	G4G5	Cabarrus	Current	wet sandy soil
Freshwater	Lampsilis r; Eastern Lar T	none	S3	G5	Cabarrus	Current	Chowan, Roanoke, Tar, Neuse, Cape Fear, Yac
Bird	Lanius ludc Loggerhear SC, W2	none	S2S3B,S3N	G4	Cabarrus	Current	fields and pastures [breeding season only]
Freshwater	Lasmigona Carolina Hc E	E	S1	G1	Cabarrus	Historical	Catawba and Pee Dee drainages (endemic to
Vascular Pl	Lilium cana Canada Lily E	none	S1	G5	Cabarrus	Current	bogs, wet meadows
Natural Coi	Low Elevation Seep (Floodplain Su	none	S2	G4	Cabarrus	Current	null
Natural Coi	Low Elevation Seep (Typic Subtypc	none	S3	G3?	Cabarrus	Current	null
Natural Coi	Mesic Mixed Hardwood Forest (Pi	none	S4	G3G4	Cabarrus	Current	null
Natural Coi	Mixed Moisture Hardpan Forest	none	S2	G2?	Cabarrus	Historical	null
Mammal	Mustela frc Long-tailed W3	none	S3	G5	Cabarrus	Current	forests, brushy areas
Vascular Pl	Oenothera Perennial S SC-V	none	S2	G5	Cabarrus	Current	wet meadows and bogs
Moth	Oligia chlora Brocade I W3	none	SU	G4	Cabarrus	Current	no habitat information
Vascular Pl	Oligoneuro Southeaste SR-P	none	S2	G5T4	Cabarrus	Current	glades, barrens, other open sites over mafic o
Dragonfly c	Ophiogoml Appalachia W2	none	S3	G3	Cabarrus	Current	small to medium streams
Mammal	Perimyotis Tricolored SR	none	S3	G2G3	Cabarrus	Current	roosts in clumps of leaves (mainly in summer)
Vascular Pl	Philadelphu Scentless N W1	none	S3	G4G5	Cabarrus	Historical	bluffs, cliffs, and rocky woods, mainly over m:
Natural Coi	Piedmont Alluvial Forest	none	S4	G4	Cabarrus	Current	null
Natural Coi	Piedmont Levee Forest (Typic Sub	none	S3S4	G3G4	Cabarrus	Current	null
Natural Coi	Piedmont Monadnock Forest (Typ	none	S3	G3G4	Cabarrus	Current	null
Natural Coi	Piedmont/Mountain Semiperman	none	S4	G4G5	Cabarrus	Current	null
Natural Coi	Piedmont/Mountain Semiperman	none	S4	G4?	Cabarrus	Current	null
Natural Coi	Piedmont/Mountain Semiperman	none	S4	G4	Cabarrus	Current	null
Vascular Pl	Platantherc Southern R W6	none	SNR	G4?T4?Q	Cabarrus	Historical	shaded wet places, such as swampy forests
Butterfly	Pontia prot Checkered SR	none	S1S2	G5	Cabarrus	Current	fields, pastures; host plants -- mustard specie
Vascular Pl	Portulaca s Small's Por T	none	S2	G3	Cabarrus	Current	granite flatrocks and diabase glades
Vascular Pl	Prunus um Hog Plum W7	none	S2	G4G5	Cabarrus	Historical	rocky or sandy woodlands

Vascular PI Pseudogna Heller's Ral E	none	S2S3	G4G5T3T4	Cabarrus	Current	dry woodlands and openings (especially over
Vascular PI Quercus m Chinquapir W1	none	S2	G5	Cabarrus	Historical	calcareous forsts and bluffs
Vascular PI Scirpus per Rufous Buli SR-O	none	S1	G5	Cabarrus	Current	wet places over mafic rocks
Moss Scopelophi Agoyan Cat SR-D	none	S1	G3	Cabarrus	Current	copper-rich soils
Moss Scopelophi Copper Mc SR-O	none	S1	G5?	Cabarrus	Current	copper-rich soils and rock faces
Vascular PI Sideroxylor Buckthorn W1	none	S2S3	G5	Cabarrus	Current	maritime forests, bluffs or forests over calcare
Vascular PI Silphium p Northern C T	none	S1	G5	Cabarrus	Current	floodplains
Vascular PI Silphium te Prairie Doc SR-P	none	S2	G4G5	Cabarrus	Current	diabase glades, other open or semi-open sites
Vascular PI Sium suave Hemlock W W6	none	S3S4	G5	Cabarrus	Historical	fresh or brackish marshes, swamps and creek
Vascular PI Solidago pt Downy Gol W7	none	S2	G5T4T5	Cabarrus	Historical	habitat not well known
Vascular PI Sphenophc Slender W W7	none	S2	G5	Cabarrus	Historical	moist nutrient-rich forests, barrens, meadow:
Moth Sphinx fran Franck's Sp W3	none	SU	G4G5	Cabarrus	Current	basic-mesic hardwoods and other habitats wi
Freshwater Strophitus Creeper T	none	S3	G5	Cabarrus	Current	Roanoke, Tar, Neuse, Cape Fear, Yadkin-Pee L
Vascular PI Thermopsi: Appalachia SR-T	none	S2	G3G4	Cabarrus	Historical	dry ridges and open woodlands
Vascular PI Triosteum : Smooth Le: W7	none	S2	G5	Cabarrus	Historical	mesic forests, bluffs, outcrops, especially over
Natural Co: Upland Depression Swamp Forest	none	S2S3	G2G3	Cabarrus	Current	null
Freshwater Villosa con: Notched R: T	none	S3	G3	Cabarrus	Current	Roanoke, Tar, Neuse, Yadkin-Pee Dee, and Ca
Freshwater Villosa del: Eastern Cr: SR	none	S4	G4	Cabarrus	Current	Cape Fear, Lumber, Yadkin-Pee Dee, and Cata
Freshwater Villosa vau: Carolina Cr E	none	S3	G2G3	Cabarrus	Current	Cape Fear, Yadkin-Pee Dee, and Catawba drai
Animal Ass Waterbird Waterbird Colony	none	S3	GNR	Cabarrus	Current	null
Natural Co: Xeric Hardpan Forest (Basic Hardp	none	S2	G2G3	Cabarrus	Current	null
Lichen Acanthoth: a script lich W7	none	S1	GNR	Camden	Current	null
Freshwater Acipenser l Shortnose : E	E	S1	G3	Camden	Historical	brackish water of large rivers and estuaries; s
Freshwater Acipenser c Atlantic St: E	E	S2	G3T3	Camden	Current	coastal waters, estuaries, large rivers
Lichen Anzia ornata A Black-foa SR-T	none	S2	G1G3	Camden	Current	on bark of deciduous trees where humidity is
Vascular PI Boltonia as White Doll' SR-O	none	S2	G5TNR	Camden	Historical	clay-based Carolina bays, marshes, savannas
Moss Brachythec Rota's Feat SR-D	none	S1	G5	Camden	Historical	on bark or rock in cove forests
Butterfly Callophrys Hessel's Ha SR	none	S3	G3	Camden	Current	Atlantic white cedar swamps; host plant -- wh
Moth Callosamia Sweetbay S W3	none	SU	G4	Camden	Current	pocosins and other wetlands with sweetbay
Vascular PI Carex deco Cypress Kn SR-O	none	S2	G3G4	Camden	Current	beaver ponds, old millponds; often on Taxodi
Reptile Clemmys g Spotted Tu W1	none	S4	G5	Camden	Current	shallow water of pools, marshes, wet pasture
Natural Co: Coastal Plain Semipermanent Imp	none	S4	G4G5	Camden	Current	null
Mammal Corynorhin Eastern Big SC	none	S3	G3G4T3	Camden	Current	roosts in hollow trees, old buildings, and bene
Reptile Crotalus hc Timber Rat SC	none	S3	G4	Camden	Current	wetland forests in the Coastal Plain; rocky, up
Vascular PI Dryopteris Spinulose W W7	none	S2	G5	Camden	Historical	swampy woods



Vascular Pl	Dryopteris Crested W	W1	none	S3	G5	Camden	Historical	bogs, wet woods
Vascular Pl	Eleocharis Beaked Spi	SR-O	none	S2	G5	Camden	Current	brackish marshes
Moss	Elodium pa Pond Fern	W7	none	S2?	G3G5	Camden	Current	on soil, humus, trees, or logs in swamps, mar
Freshwater	Enneacantl Banded Sui	SR	none	S3	G5	Camden	Current	most Atlantic drainages
Natural Coi	Estuarine Fringe Pine Forest (Lobl		none	S3	G3	Camden	Obscure	null
Natural Coi	Estuarine Fringe Pine Forest (Ponc		none	S2	G2?	Camden	Current	null
Reptile	Farancia er Rainbow Sr	SR	none	S3	G4	Camden	Historical	swamps, lakes, rivers, and other sluggish wate
Moth	Franclemoi Franclemoi	SR	none	S3?	G3G4	Camden	Current	canebrakes
Bird	Haliaeetus Bald Eagle	T	BGPA	S3B,S3N	G5	Camden	Current	mature forests near large bodies of water (ne
Bird	Helmitherc Worm-eati	W5	none	S3B	G5TNR	Camden	Current	nonriverine wet hardwoods, pocosins [breedi
Natural Coi	High Pocosin (Evergreen Subtype)		none	S3S4	G3	Camden	Current	null
Moth	Iridopsis cy Small Cypr	SR	none	S2S3	GU	Camden	Current	cypress swamps
Vascular Pl	Iris prismat Slender Bl	SR-T	none	S1S2	G4G5	Camden	Historical	bogs, marshes, and wet powerline clearings
Mammal	Lasiurus se Seminole B	W2	none	S3	G5	Camden	Current	forages over open areas, often over water (su
Vascular Pl	Lilaeopsis c Carolina Gr	SR-O	none	S2	G3G5	Camden	Current	freshwater marshes, pools, tidal marshes
Moth	Lithophane Cypress Pir	W3	none	SU	G4	Camden	Current	cypress swamps
Bird	Lophodyte: Hooded M	W3	none	S1B,S4N	G5	Camden	Current	lakes and ponds, with dead trees for nesting [
Vascular Pl	Ludwigia al Winged Ser	SR-P	none	S2	G3G5	Camden	Current	interdune ponds, marshes
Natural Coi	Mesic Mixed Hardwood Forest (C		none	S3	G3	Camden	Current	null
Mammal	Myotis aus Southeaste	SC	none	S2	G4	Camden	Current	roosts in buildings, hollow trees; forages near
Mammal	Myotis luci Little Brow	SR	none	S2	G3	Camden	Current	roosts in buildings (summer), in caves and mi
Mammal	Myotis sep Northern L	T	T	S2	G1G2	Camden	Current	roosts in hollow trees and buildings (warmer
Natural Coi	Nonriverine Swamp Forest (Cypre		none	S2	G2G3	Camden	Current	null
Natural Coi	Nonriverine Swamp Forest (Mixed		none	S3	G3	Camden	Current	null
Natural Coi	Nonriverine Swamp Forest (Popla		none	S1	G2	Camden	Current	null
Natural Coi	Nonriverine Wet Hardwood Fores		none	S1	G2	Camden	Current	null
Vascular Pl	Oenothera Riverbank I	SR-L	none	S2S3	G2G3	Camden	Current	Freshwater tidal marshes and freshwater tida
Natural Coi	Peatland Atlantic White Cedar For		none	S1	G2	Camden	Current	null
Natural Coi	Peatland Canebrake		none	S1	G1	Camden	Historical	null
Mammal	Perimyotis Tricolored	SR	none	S3	G2G3	Camden	Current	roosts in clumps of leaves (mainly in summer)
Bird	Picoides bc Red-cockac	E	E	S2	G3	Camden	Current	mature open pine forests, mainly in longleaf
Natural Coi	Pond Pine Woodland (Northern S		none	S1	G2?	Camden	Current	null
Amphibian	Rana kauffi Atlantic Co	W3	none	S3	G3G4	Camden	Current	freshwater wetlands, such as marshes and po
Moth	Rivula step a Noctuid	W3	none	SU	GNR	Camden	Current	no habitat information
Butterfly	Satyrium f Northern C	SR	none	S2S3	G4G5T4	Camden	Historical	oak-dominated woods, usually in dry sites; hc

Moth	Scopula ca	Frosted Tai W3	none	S2S3	G4	Camden	Current	sandhills and other dry forests
Bird	Setophaga	Wayne's Bl E	none	S2B	G5T1	Camden	Current	nonriverine wetland forests, especially where
Mammal	Sorex hoyi	American F W2	none	S3	G5	Camden	Current	montane deciduous forests; old fields and for
Natural Coi	Tidal Freshwater Marsh (Broadlea	none	S2	G4G5	Camden	Current	null	
Natural Coi	Tidal Freshwater Marsh (Cattail Su	none	S3	G4G5	Camden	Current	null	
Natural Coi	Tidal Freshwater Marsh (Giant Coi	none	S4	G4	Camden	Current	null	
Natural Coi	Tidal Freshwater Marsh (Needleru	none	S2	G2G3	Camden	Current	null	
Natural Coi	Tidal Freshwater Marsh (Oligohali	none	S1	G1	Camden	Current	null	
Natural Coi	Tidal Freshwater Marsh (Sawgrass	none	S4	G4?	Camden	Current	null	
Natural Coi	Tidal Freshwater Marsh (Shrub Su	none	S4	G4	Camden	Current	null	
Natural Coi	Tidal Freshwater Marsh (Threesqu	none	S2S3	G2G3	Camden	Current	null	
Natural Coi	Tidal Swamp (Cypress--Gum Subty	none	S4	G3G4	Camden	Current	null	
Vascular Pl	Trillium pu	Virginia Le E	none	S1	G3T2	Camden	Historical	mesic to swampy hardwood forests
Animal Ass	Waterbird	Waterbird Colony	none	S3	GNR	Camden	Current	null
Vascular Pl	Actaea pac	White Ban W6	none	S4	G5	Durham	Historical	rich cove forests and slopes
Vascular Pl	Agalinis de	Piedmont C W1	none	S3	G3G4	Durham	Current	dry, open sites
Vascular Pl	Agastache	Yellow Giar SR-P	none	S1	G5	Durham	Current	oak--hickory forests, especially over mafic roc
Freshwater	Alasmidont	Triangle Flc T	none	S3	G4	Durham	Current	Roanoke, Chowan, Tar, Neuse, Cape Fear drai
Freshwater	Ambloplite	Roanoke B:SR	none	S2	G3	Durham	Current	streams in Neuse and Tar systems
Moss	Amblystegi A	Thin-net W7	none	S2?	G5T5	Durham	Current	wet substrates
Bird	Ammodran	Grasshopp W1,W5	none	S3B,S1N	G5	Durham	Current	pastures and other grasslands [breeding seas
Moss	Anacamptc	Knothole N W7	none	S2?	G3G5	Durham	Historical	bark of trees
Liverwort	Aneura sha A	Liverwort SR-T	none	S1	GNR	Durham	Historical	in spray zones of waterfalls
Moss	Aphanorrh A	Moss SR-O	none	SH	G4G5	Durham	Historical	soil or clay in places subject to inundation
Moss	Archidium	Tokyo Soil W7	none	SH	G4G5	Durham	Historical	open ground of old fields or meadows
Vascular Pl	Asclepias p	Purple Milk SR-T	none	S1?	G5?	Durham	Current	swamps, bottomlands, edges of moist woods
Hornwort	Aspiromitu A	Hornwor W7	none	S2?	G3?	Durham	Historical	old fields
Vascular Pl	Baptisia ab	Prairie Blue E	none	S2	G5T2	Durham	Current	glades and open forests on basic soils
Natural Coi	Basic Mesic Forest (Piedmont Sub	none	S3S4	G3G4	Durham	Current	null	
Vascular Pl	Berberis ca	American E SC-V	none	S2	G3G4	Durham	Current	open forests and glades on basic soils
Sawfly, Wa	Bombus afi	Rusty-patcl SR	E	S1	G2	Durham	Historical	nests in abandoned mammal burrows, gather
Sawfly, Wa	Bombus pe	American E W3	none	S3S4	G3G4	Durham	Current	open habitats, fields
Moss	Brachythec	Rota's Feat SR-D	none	S1	G5	Durham	Historical	on bark or rock in cove forests
Moss	Brachythec	Rough-stall W7	none	S2?	G5	Durham	Historical	trees, humus, rocks in wet forests
Moss	Bruchia tex	Texas Bruc W7	none	SH	G3G5	Durham	Historical	moist clay or sandy soil in open areas



**Christopher Bond**  
 Project Manager-Biologist  
 813-553-6753 Cell  
[chris.bond@novagroupgbc.com](mailto:chris.bond@novagroupgbc.com)  
[www.novagroupgbc.com](http://www.novagroupgbc.com)

October 22, 2021

Re: "Cliffdale Crossing" – Proposed Wireless Telecommunications Facility  
 8368 Cliffdale Road  
 Fayetteville, Cumberland County, North Carolina 28314  
 Latitude 35.0572385° N, Longitude 79.0538351° W  
 NOVA Project No.: CK21-8848

For whom it may concern,

NOVA Group GBC (NOVA) has been retained to conduct a biological assessment review of Smith Duggins Developers, LLC proposed development (Undertaking) known as "Cliffdale Crossing," located at 8368 Cliffdale Road, in Fayetteville, Cumberland County, North Carolina 28314 (the "Subject").

### Subject & Surrounding Area Description

The Property consists of one, irregular-shaped parcel that is approximately 18.18 acres in size. Currently, the Property is unimproved and consists of wooded land. No structures or significant surface features were noted on the Property at the time of the reconnaissance. According to Google Earth and historic imagery, the project area was clear cut in 2020. Since that time some early successional shrubs were observed within this area. All trees have been removed from the project area. The process of clear cutting the project area has heavily disturbed the existing ground there.

### Listed Species

NOVA obtained a list of threatened and endangered species from the U.S. Fish and Wildlife Service (USFWS) via their Information for Planning and Consultation (IPaC) tool. NOVA also obtained a list of state threatened and endangered species from the North Carolina Wildlife Resources Commission (NCWRC) Natural Heritage Program Species Search database. These lists provide information on federal, and state listed, threatened, and endangered species and their potential to be within the area of the Undertaking. Of note, no state listed species were identified within Cumberland County according to the NCWRC database.

USFWS Species	Habitat Description	Suitable Habitat / Observations
Red-cockaded Woodpecker (Endangered)	Mature pine forests. Prefers longleaf pines with an open understory.	No suitable habitat was observed in the area of the Undertaking.  Proposed project will have No Effect on the Red-cockaded Woodpecker.
American Alligator (SAT)	Found in slow-moving freshwater rivers, swamps, marshes, and lakes.	No suitable habitat was observed in the area of the Undertaking.  Proposed project will have No Effect on the American Alligator.

Monarch Butterfly (Candidate)	Open fields and meadows with milkweed.	No suitable habitat was observed in the area of the Undertaking.  Proposed project will have No Effect on the Monarch Butterfly.
Saint Francis' Satyr Butterfly (Endangered)	Open grassy wetlands maintained naturally by fire and beaver.	No suitable habitat was observed in the area of the Undertaking.  Proposed project will have No Effect on the Saint Francis' Satyr Butterfly.
American Chaffseed (Endangered)	Open, moist pine flatwoods and fire-maintained savannas.	No suitable habitat was observed in the area of the Undertaking.  Proposed project will have No Effect on the American Chaffseed.
Michaux's Sumac (Endangered)	Sandy or rocky open woods.	No suitable habitat was observed in the area of the Undertaking.  Proposed project will have No Effect on the Michaux's Sumac.
Pondberry (Endangered)	Wetland habitats such as bottomland and hardwoods.	No suitable habitat was observed in the area of the Undertaking.  Proposed project will have No Effect on the Pondberry.
Rough-leaved Loosestrife (Endangered)	Longleaf pine/scrub oak, pine savannah, and flatwoods.	No suitable habitat was observed in the area of the Undertaking.  Proposed project will have No Effect on the Rough-leaved Loosestrife.

**Species Discussion**

The project area was clear cut in 2020. The existing habitat has therefore been heavily disturbed from the mass tree removal process conducted here. Currently the project area consists of a treeless area with early successional shrubs and grasses. Based on the lack of mature habitat and the recent heavy disturbance, NOVA did not observe any suitable habitat for the federally listed species above.

Of note, NOVA did not observe any of the above listed species while on the site visit. Therefore, based on the heavily disturbed nature of the project area, the lack of suitable habitat for the listed species, NOVA has determined that the project will have No Effect on all of the above listed species.

Sincerely,  
**NOVA Group, GBC**

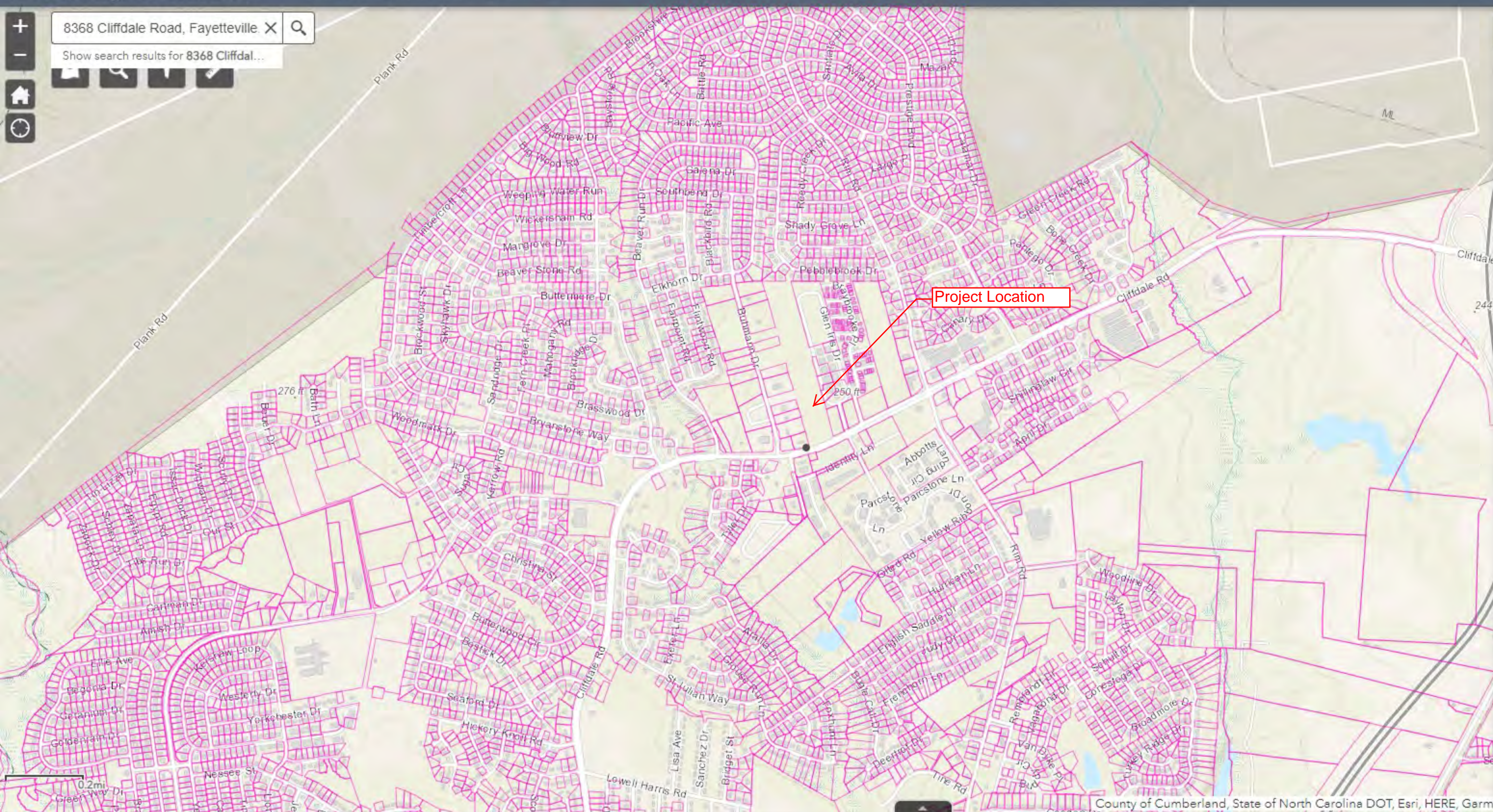
*Christopher Bond*

Christopher Bond  
Project Manager - Biologist

8368 Cliffdale Road, Fayetteville. X Q

Show search results for 8368 Cliffdal...

Map navigation icons: Home, Search, Layers, Print, Info



Legend

- Bald Eagle (Current)**
- Successful
  - Active
  - Occupied
  - Inactive
  - Abandoned
  - Could Not Locate
  - Unknown
  - Insufficient Data
  - Other

- Parcels (Polygons) - Parcels**
- ▭

# Cliffdale Crossing

Smith Duggins Developers, LLC  
CK21-8848  
USGST Cliffdale NC 1983





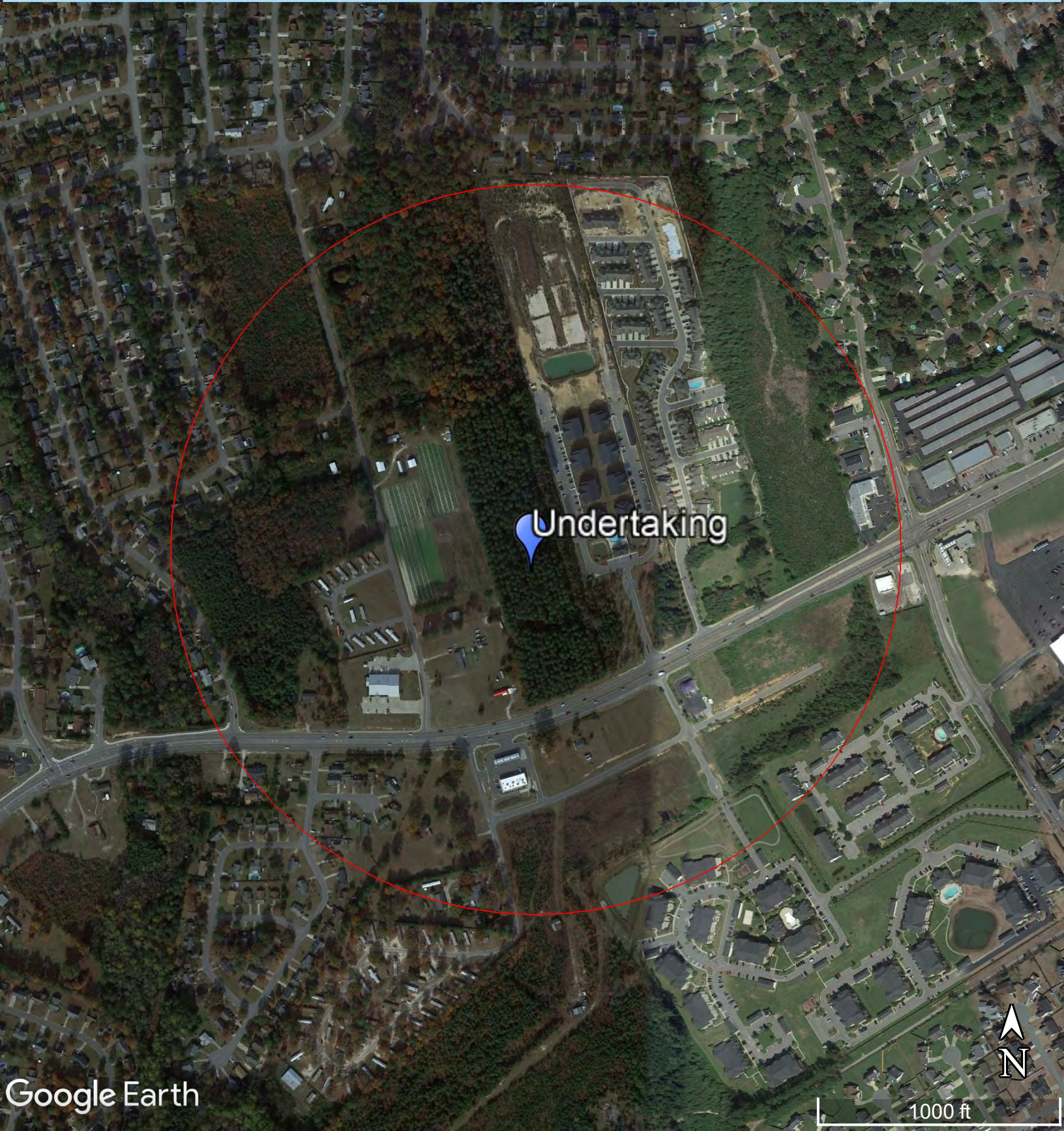
# Nova Group

## Aerial Photograph

Source: Google Earth

### Legend

-  1,500-foot APE
-  Undertaking



Undertaking



# Cliffdale Crossing

Smith Duggins Developers, LLC  
CK21-8848  
USGST Cliffdale NC 1983





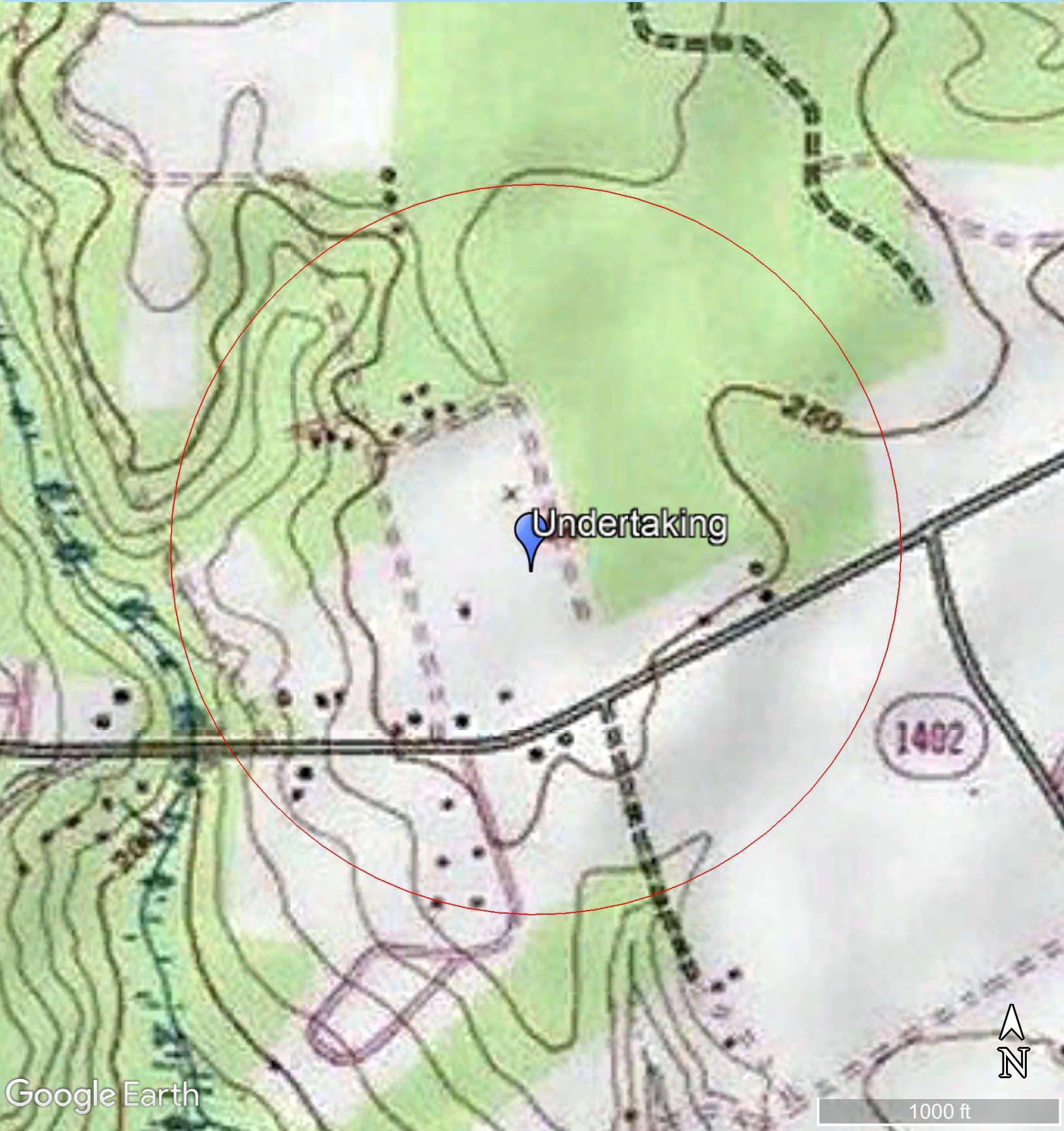
Nova  
Group

USGS 7.5 Minute Quadrangle Map

Sources: 2013 National Geographic Society, i-cubed

## Legend

-  1,500-foot APE
-  Undertaking



The following photographs were taken on September 27 and 28, 2021 unless otherwise noted.

1. View looking north from the center of the Subject Property.



2. View looking east from the center of the Subject Property.





3. View looking south from the center of the Subject Property.



4. View looking west from the center of the Subject Property.



5. View looking north from the southern portion of the Subject Property.



6. View looking east from the southern portion of the Subject Property.



7. View looking south from the southern portion of the Subject Property.



8. View looking west from the southern portion of the Subject Property.



9. View looking northwest from Cliffdale Road.



10. View looking west from Cliffdale Road.





Roy Cooper, Governor

D. Reid Wilson, Secretary

Misty Buchanan  
Deputy Director, Natural Heritage Program

NCNHDE-17479

March 23, 2022

Andrea Gievers  
NCORR  
123 Kings Hill Road  
Walden, NY 12586  
RE: Cliffdale Crossing - NC NHP Search

Dear Andrea Gievers:

The North Carolina Natural Heritage Program (NCNHP) appreciates the opportunity to provide information about natural heritage resources for the project referenced above.

Based on the project area mapped with your request, a query of the NCNHP database indicates that there are no records for rare species, important natural communities, natural areas, and/or conservation/managed areas within the proposed project boundary. Please note that although there may be no documentation of natural heritage elements within the project boundary, it does not imply or confirm their absence; the area may not have been surveyed. The results of this query should not be substituted for field surveys where suitable habitat exists. In the event that rare species are found within the project area, please contact the NCNHP so that we may update our records.

The attached 'Potential Occurrences' table summarizes rare species and natural communities that have been documented within a one-mile radius of the property boundary. The proximity of these records suggests that these natural heritage elements may potentially be present in the project area if suitable habitat exists. Tables of natural areas and conservation/managed areas within a one-mile radius of the project area, if any, are also included in this report.

If a Federally-listed species is found within the project area or is indicated within a one-mile radius of the project area, the NCNHP recommends contacting the US Fish and Wildlife Service (USFWS) for guidance. Contact information for USFWS offices in North Carolina is found here:

<https://www.fws.gov/offices/Directories/ListOffices.cfm?statecode=37>.

Please note that natural heritage element data are maintained for the purposes of conservation planning, project review, and scientific research, and are not intended for use as the primary criteria for regulatory decisions. Information provided by the NCNHP database may not be published without prior written notification to the NCNHP, and the NCNHP must be credited as an information source in these publications. Maps of NCNHP data may not be redistributed without permission.

The NC Natural Heritage Program may follow this letter with additional correspondence if a Dedicated Nature Preserve, Registered Heritage Area, Land and Water Fund easement, or Federally-listed species are documented near the project area.

If you have questions regarding the information provided in this letter or need additional assistance, please contact Rodney A. Butler at [rodney.butler@ncdcr.gov](mailto:rodney.butler@ncdcr.gov) or 919-707-8603.

Sincerely,  
NC Natural Heritage Program

Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Within a One-mile Radius of the Project Area  
 Cliffdale Crossing - NC NHP Search  
 March 23, 2022  
 NCNHDE-17479

Element Occurrences Documented Within a One-mile Radius of the Project Area

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Butterfly	33913	<i>Callophrys hesseli</i>	Hessel's Hairstreak	1972-07	H	5-Very Low	---	Significantly Rare	G3	S3
Butterfly	34488	<i>Neonympha helicta</i>	Helicta Satyr	1997-06-24	H?	5-Very Low	---	Significantly Rare	G3G4	S1?
Butterfly	8676	<i>Neonympha mitchellii francisci</i>	Saint Francis' Satyr	1997-08	H?	5-Very Low	Endangered	Significantly Rare	G2T1	S1
Crustacean	32580	<i>Cambarus hystricosus</i>	Sandhills Spiny Crayfish	2004-10-29	E	3-Medium	---	Significantly Rare	G2	S2
Dragonfly or Damselfly	33740	<i>Somatochlora georgiana</i>	Coppery Emerald	2004-Pre	H?	5-Very Low	---	Significantly Rare	G3G4	S1?
Dragonfly or Damselfly	33780	<i>Stylurus ivae</i>	Shining Clubtail	2004-Pre	H?	5-Very Low	---	Significantly Rare	G4	S1?
Freshwater Fish	31812	<i>Enneacanthus chaetodon</i>	Blackbanded Sunfish	2003-10-20	E	3-Medium	---	Significantly Rare	G3G4	S3
Vascular Plant	20660	<i>Desmodium fernaldii</i>	Fernald's Tick-trefoil	1992-10-02	E	3-Medium	---	Significantly Rare Peripheral	G4	S1
Vascular Plant	11997	<i>Galactia mollis</i>	Soft Milk-pea	1999-10-26	F	3-Medium	---	Threatened	G4G5	S2

Natural Areas Documented Within a One-mile Radius of the Project Area

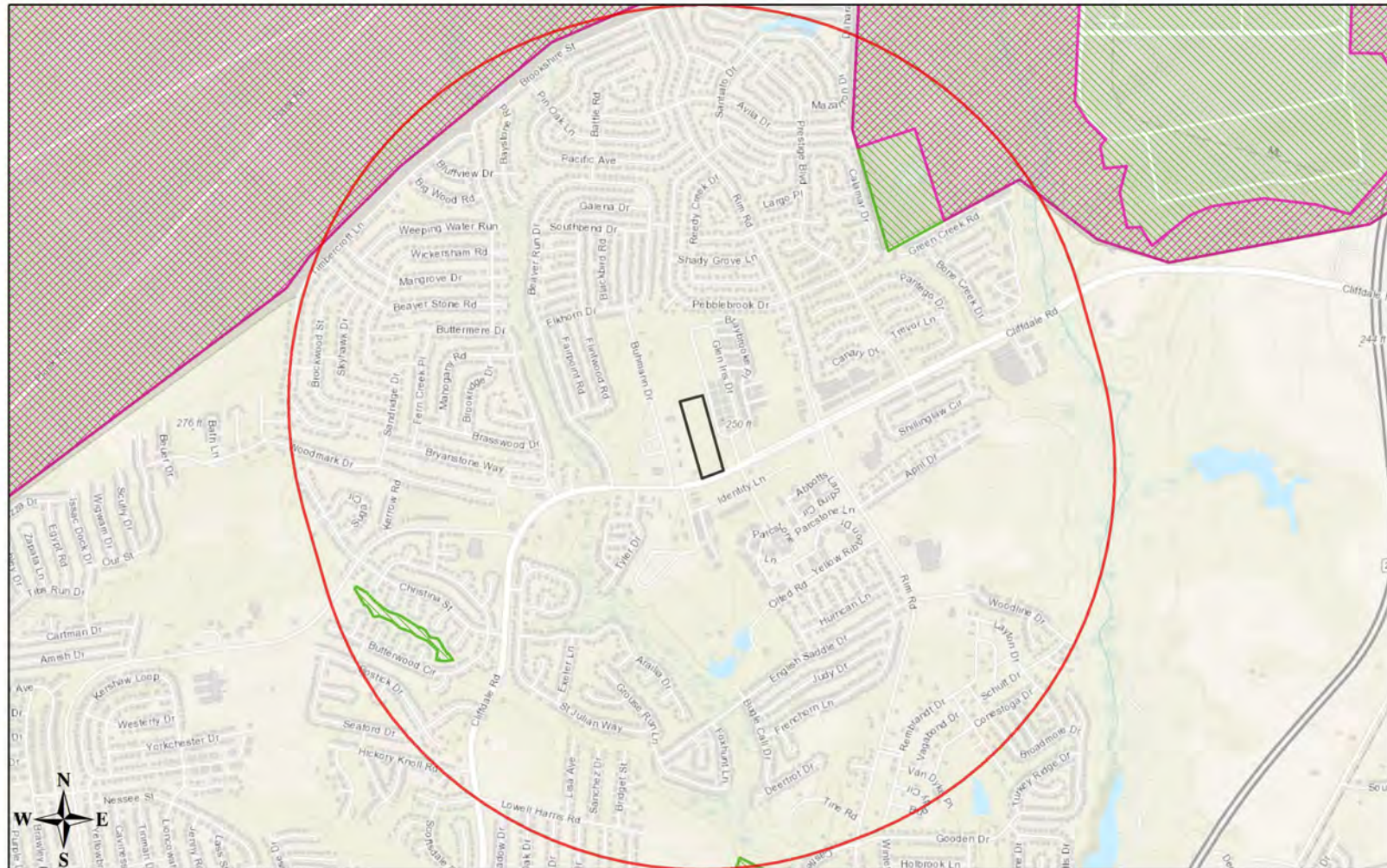
Site Name	Representational Rating	Collective Rating
Fort Bragg (Central Section)	R1 (Exceptional)	C1 (Exceptional)

Managed Areas Documented Within a One-mile Radius of the Project Area



Managed Area Name	Owner	Owner Type
City of Fayetteville Open Space	City of Fayetteville	Local Government
Cumberland County Open Space	Cumberland County	Local Government
Fort Bragg Military Reservation	US Department of Defense	Federal

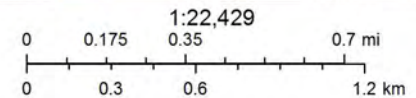
Definitions and an explanation of status designations and codes can be found at <https://ncnhde.natureserve.org/help>. Data query generated on March 23, 2022; source: NCNHP, Q4, January 2022. Please resubmit your information request if more than one year elapses before project initiation as new information is continually added to the NCNHP database.

# NCNHDE-17479: Cliffdale Crossing - NC NHP Search



March 23, 2022

-  Project Boundary
-  Buffered Project Boundary
-  NHP Natural Area (NHNA)
-  Managed Area (MAREA)



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



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◇ NORTH CAROLINA WILDLIFE RESOURCES COMMISSION ◇

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Cameron Ingram, Executive Director

**MEMORANDUM**

**TO:** Lyn Hardison, Environmental Assistance Coordinator  
NCDEQ Division of Environmental Assistance and Customer Services

**FROM:** Gabriela Garrison  
Eastern Piedmont Coordinator *Gabriela Garrison*  
Habitat Conservation

**DATE:** December 8, 2021

**SUBJECT:** Request for Environmental Scoping for Cliffdale Crossing Apartments, Cumberland County, DEQ Project No. 22-0099.

Biologists with the North Carolina Wildlife Resources Commission (NCWRC) have reviewed the subject document. Comments are provided in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667e), North Carolina Environmental Policy Act (G.S. 113A-1 through 113A-10; 1 NCAC 25) and North Carolina General Statutes (G.S. 113-131 et seq.).

A new development, Cliffdale Crossing Apartments, is proposed for construction along Cliffdale Road, west of its intersection with Rim Road in Fayetteville. The site is currently 8 acres and undeveloped. Planned construction includes 12, one-bedroom units, 40, two-bedroom units, and 28 three-bedroom units in six, two-story buildings, as well as a community building.

The NCWRC offers the following recommendations to minimize impacts to aquatic and terrestrial wildlife resources:

1. The project footprint should be surveyed for wetlands and streams to ensure there are no impacts to surface waters. In addition to providing wildlife habitat, wetland areas and streams aid in flood control and water quality protection. United States Army Corps of Engineers Section 404 Permits and NC Division of Water Resources Section 401 Certifications are required for any impacts to jurisdictional streams or wetlands.
2. Maintain or establish a minimum 100-foot undisturbed, native forested buffer along each side of perennial streams and 50-foot undisturbed, native forested buffer along each side of intermittent streams and wetlands. Forested riparian buffers protect habitat areas and travel corridors for wildlife species. In addition, forested riparian buffers protect water quality by stabilizing stream banks and filtering stormwater runoff.
3. Stormwater runoff to receiving surface waters can be minimized by reducing impervious surfaces and increasing infiltration on site using Low Impact Development (LID). Using LID technology in landscaping will not only help maintain the predevelopment hydrologic regime, but also enhance the aesthetic and habitat value of the site. LID techniques include bioretention areas that can collect



December 8, 2021  
Cliffdale Crossing Apartments  
DEQ Project No.: 22-0099

stormwater from driveways and parking areas. Additional alternatives include narrower roads, swales versus curbs/gutters and permeable surfaces such as turf stone, brick, and cobblestone. Compared to conventional developments, implementing appropriate LID techniques can be more cost-effective, increase property values, provide space-saving advantages, reduce runoff, and protect water quality (Roseen et al. 2011). Additional information on LID can be found at the NC State University LID guide: [http://www.onsiteconsortium.org/npsdeal/NC\\_LID\\_Guidebook.pdf](http://www.onsiteconsortium.org/npsdeal/NC_LID_Guidebook.pdf).

4. Consider using native shrubs, grasses, and wildflower seed mixes that are beneficial to wildlife for stabilization and beautification. The NCWRC strongly recommends against the use of fescue-based mixtures and *Sericea lespedeza* (*Lespedeza cuneata*) as stabilizing groundcovers. *Sericea lespedeza* in particular is an egregious and invasive, non-native species that is very hard to eradicate. Using native plant species instead of ornamentals should reduce the need for water, fertilizers, and pesticides. Free technical assistance from NCWRC biologists is available for ideas on establishing vegetation or incorporating other measures that are beneficial for wildlife.
5. Insecticides and herbicides should not be used within 100 feet of perennial streams and 50 feet of intermittent streams, or within floodplains and wetlands associated with these streams.
6. Stringent sediment and erosion control measures should be installed prior to any land-disturbing activity. The use of biodegradable and wildlife-friendly sediment and erosion control devices is strongly recommended. Silt fencing, fiber rolls and/or other products should have loose-weave netting that is made of natural fiber materials with movable joints between the vertical and horizontal twines. Silt fencing and similar materials that have been reinforced with plastic or metal mesh should be avoided as they impede the movement of terrestrial wildlife species. Excessive silt and sediment loads can have detrimental effects on aquatic resources including destruction of spawning habitat, suffocation of eggs and clogging of gills.

The NCWRC encourages the applicant to consider additional measures to protect aquatic and terrestrial wildlife species in developing landscapes. The NCWRC's *Guidance Memorandum to Address and Mitigate Secondary and Cumulative Impacts to Aquatic and Terrestrial Wildlife Resources and Water Quality* (August 2002; [http://www.ncwildlife.org/Portals/0/Conserving/documents/2002\\_GuidanceMemorandumforSecondaryandCumulativeImpacts.pdf](http://www.ncwildlife.org/Portals/0/Conserving/documents/2002_GuidanceMemorandumforSecondaryandCumulativeImpacts.pdf)) details measures to minimize secondary and cumulative impacts to aquatic and terrestrial wildlife resources; in addition, the NCWRC's Green Growth Toolbox (<https://www.ncwildlife.org/conserving/programs/Green-Growth-Toolbox>) provides information on nature-friendly planning.

Thank you for the opportunity to review and comment on this project. If I can be of further assistance, please contact me at (910) 409-7350 or [gabriela.garrison@ncwildlife.org](mailto:gabriela.garrison@ncwildlife.org).




#### Literature Cited

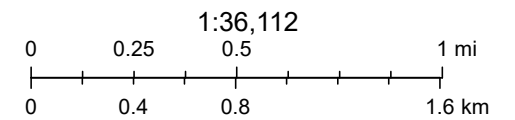
Roseen, R. M., T. V. Janeski, J. J. Houle, M. H. Simpson, and J. Gunderson. 2011. Forging the Link: Linking the Economic Benefits of Low Impact Development and Community Decisions. Available at: <https://owl.cwp.org/mdocs-posts/roseen-et-al-2011-forging-the-link/>.

# HEROS 08 ASTs 1 mile



October 26, 2021



-  Project Buffer
-  Search Result (point)
-  Project 1



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

### My Map

**tigerWMS\_Census2010**

- Urbanized Areas 
- Urbanized Areas Labels
- Urban Clusters 
- Urban Clusters Labels
- States 
- States Labels



 300ft

Source: U.S. Census Bureau | NC CGIA, Maxar



United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for Cumberland County, North Carolina



# Preface

---

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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# How Soil Surveys Are Made

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Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil



## Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

## Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

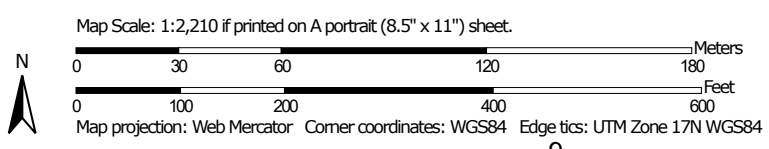
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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report Soil Map




Soil Map may not be valid at this scale.




### MAP LEGEND

**Area of Interest (AOI)**

 Area of Interest (AOI)




















**Soils**







 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

**Special Point Features**






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


**Water Features**

 Streams and Canals

**Transportation**

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

**Background**

 Aerial Photography

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cumberland County, North Carolina  
 Survey Area Data: Version 22, Sep 3, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 13, 2014—Feb 4, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
NoA	Norfolk loamy sand, 0 to 2 percent slopes	7.1	73.8%
WaB	Wagram loamy sand, 0 to 6 percent slopes	2.5	26.2%
<b>Totals for Area of Interest</b>		<b>9.6</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

## Custom Soil Resource Report

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Cumberland County, North Carolina

### NoA—Norfolk loamy sand, 0 to 2 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2v75w  
*Elevation:* 10 to 330 feet  
*Mean annual precipitation:* 40 to 55 inches  
*Mean annual air temperature:* 59 to 70 degrees F  
*Frost-free period:* 200 to 280 days  
*Farmland classification:* All areas are prime farmland

#### Map Unit Composition

*Norfolk and similar soils:* 83 percent  
*Minor components:* 17 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Norfolk

##### Setting

*Landform:* Flats on marine terraces, broad interstream divides on marine terraces  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Convex, linear  
*Parent material:* Loamy marine deposits

##### Typical profile

*Ap - 0 to 8 inches:* loamy sand  
*E - 8 to 14 inches:* loamy sand  
*Bt - 14 to 65 inches:* sandy clay loam  
*BC - 65 to 80 inches:* sandy clay loam

##### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.57 to 1.98 in/hr)  
*Depth to water table:* About 40 to 72 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water supply, 0 to 60 inches:* Moderate (about 6.9 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 1  
*Hydrologic Soil Group:* A  
*Hydric soil rating:* No

#### Minor Components

##### Goldsboro

*Percent of map unit:* 9 percent  
*Landform:* Broad interstream divides on marine terraces, flats on marine terraces  
*Landform position (three-dimensional):* Talf  
*Down-slope shape:* Linear



## Custom Soil Resource Report

*Across-slope shape:* Linear

*Hydric soil rating:* No

### **Wagram**

*Percent of map unit:* 8 percent

*Landform:* Ridges on marine terraces, broad interstream divides on marine terraces

*Landform position (two-dimensional):* Summit, shoulder

*Landform position (three-dimensional):* Crest, talf

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil rating:* No

## **WaB—Wagram loamy sand, 0 to 6 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* w72m

*Elevation:* 80 to 330 feet

*Mean annual precipitation:* 38 to 55 inches

*Mean annual air temperature:* 59 to 70 degrees F

*Frost-free period:* 210 to 265 days

*Farmland classification:* Farmland of statewide importance

### **Map Unit Composition**

*Wagram and similar soils:* 90 percent

*Minor components:* 5 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Wagram**

#### **Setting**

*Landform:* Ridges on marine terraces, broad interstream divides on marine terraces

*Landform position (two-dimensional):* Summit, shoulder

*Landform position (three-dimensional):* Crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Loamy marine deposits

#### **Typical profile**

*Ap - 0 to 8 inches:* loamy sand

*E - 8 to 24 inches:* loamy sand

*Bt - 24 to 75 inches:* sandy clay loam

*BC - 75 to 83 inches:* sandy loam

#### **Properties and qualities**

*Slope:* 0 to 6 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Well drained

*Runoff class:* Low

## Custom Soil Resource Report

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.57 to 1.98 in/hr)

*Depth to water table:* About 60 to 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* Moderate (about 6.7 inches)

### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2s

*Hydrologic Soil Group:* A

*Hydric soil rating:* No

### **Minor Components**

#### **Bibb, undrained**

*Percent of map unit:* 3 percent

*Landform:* Flood plains

*Landform position (two-dimensional):* Toeslope

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Hydric soil rating:* Yes

#### **Johnston, undrained**

*Percent of map unit:* 2 percent

*Landform:* Flood plains

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Hydric soil rating:* Yes

# **Soil Information for All Uses**

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## **Suitabilities and Limitations for Use**

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

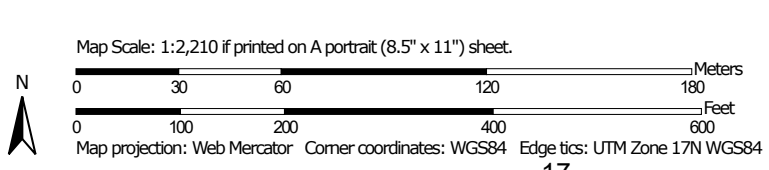
## **Land Classifications**

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

## **Farmland Classification**

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.


# Custom Soil Resource Report Map—Farmland Classification



# Custom Soil Resource Report









## MAP LEGEND








### Area of Interest (AOI)






 Area of Interest (AOI)








### Soils



#### Soil Rating Polygons

-  Not prime farmland
-  All areas are prime farmland
-  Prime farmland if drained
-  Prime farmland if protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated
-  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated and drained
-  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season









-  Prime farmland if subsoiled, completely removing the root inhibiting soil layer
-  Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
-  Prime farmland if irrigated and reclaimed of excess salts and sodium
-  Farmland of statewide importance
-  Farmland of statewide importance, if drained
-  Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if irrigated

-  Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if irrigated and drained
-  Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
-  Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60







































-  Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
-  Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if warm enough
-  Farmland of statewide importance, if thawed
-  Farmland of local importance
-  Farmland of local importance, if irrigated

-  Farmland of unique importance
-  Not rated or not available

### Soil Rating Lines

-  Not prime farmland
-  All areas are prime farmland
-  Prime farmland if drained
-  Prime farmland if protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated
-  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated and drained
-  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

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	Prime farmland if subsoiled, completely removing the root inhibiting soil layer		Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium		Farmland of unique importance		Prime farmland if subsoiled, completely removing the root inhibiting soil layer
	Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60		Farmland of statewide importance, if irrigated and drained		Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season		Not prime farmland		Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
	Prime farmland if irrigated and reclaimed of excess salts and sodium		Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season		All areas are prime farmland		Prime farmland if irrigated and reclaimed of excess salts and sodium
	Farmland of statewide importance		Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season		Prime farmland if protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance
	Farmland of statewide importance, if drained		Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer		Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer		Prime farmland if irrigated		Farmland of statewide importance, if drained
	Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60		Farmland of statewide importance, if warm enough		Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season		Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
	Farmland of statewide importance, if irrigated		Farmland of statewide importance, if thawed		Farmland of statewide importance, if thawed		Prime farmland if irrigated and drained		Farmland of statewide importance, if irrigated
			Farmland of local importance		Farmland of local importance		Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season		
			Farmland of local importance, if irrigated		Farmland of local importance, if irrigated				

## Custom Soil Resource Report

<ul style="list-style-type: none"> <li> Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season</li> <li> Farmland of statewide importance, if irrigated and drained</li> <li> Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season</li> <li> Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer</li> <li> Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60</li> </ul>	<ul style="list-style-type: none"> <li> Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium</li> <li> Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season</li> <li> Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season</li> <li> Farmland of statewide importance, if warm enough</li> <li> Farmland of statewide importance, if thawed</li> <li> Farmland of local importance</li> <li> Farmland of local importance, if irrigated</li> </ul>	<ul style="list-style-type: none"> <li> Farmland of unique importance</li> <li> Not rated or not available</li> </ul> <p><b>Water Features</b></p> <ul style="list-style-type: none"> <li> Streams and Canals</li> </ul> <p><b>Transportation</b></p> <ul style="list-style-type: none"> <li> Rails</li> <li> Interstate Highways</li> <li> US Routes</li> <li> Major Roads</li> <li> Local Roads</li> </ul> <p><b>Background</b></p> <ul style="list-style-type: none"> <li> Aerial Photography</li> </ul>	<p>The soil surveys that comprise your AOI were mapped at 1:24,000.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Warning: Soil Map may not be valid at this scale.</p> <p>Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.</p> </div> <p>Please rely on the bar scale on each map sheet for map measurements.</p> <p>Source of Map: Natural Resources Conservation Service          Web Soil Survey URL:          Coordinate System: Web Mercator (EPSG:3857)</p> <p>Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.</p> <p>This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.</p> <p>Soil Survey Area: Cumberland County, North Carolina          Survey Area Data: Version 22, Sep 3, 2021</p> <p>Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.</p> <p>Date(s) aerial images were photographed: Aug 13, 2014—Feb 4, 2017</p> <p>The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.</p>
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**Table—Farmland Classification**

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
NoA	Norfolk loamy sand, 0 to 2 percent slopes	All areas are prime farmland	7.1	73.8%
WaB	Wagram loamy sand, 0 to 6 percent slopes	Farmland of statewide importance	2.5	26.2%
<b>Totals for Area of Interest</b>			<b>9.6</b>	<b>100.0%</b>

**Rating Options—Farmland Classification**

*Aggregation Method:* No Aggregation Necessary

*Tie-break Rule:* Lower



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ALPHA ENVIRONMENTAL  
ALPHA ENGINEERING SERVICES, P.A.

A faint, light blue background image of a surveying instrument, possibly a total station or theodolite, is centered behind the text.

## **GEOTECHNICAL EXPLORATION REPORT**

**CLIFFDALE CROSSING  
CLIFFDALE ROAD (E911 Not Assigned)  
FAYETTEVILLE, NORTH CAROLINA 28314**

**ALPHA PROJECT NO. 21297.01  
January 31, 2022**

***Prepared by:***

Alpha Environmental & Engineering  
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***Prepared for:***

Smith Duggins Developers LLC  
2929 Breezewood Avenue, Suite 200  
Fayetteville, NC 28303

January 31, 2022

Smith Duggins Developers, LLC  
2929 Breezewood Avenue, Suite 200  
Fayetteville, NC 28303

Attn: Mr. Wade Duggins

Re: Geotechnical Sub-Surface Evaluation Report  
Cliffdale Crossing  
Cliffdale Road, Fayetteville, NC 28314

Dear Mr. Duggins,

Alpha Environmental & Engineering is pleased to submit this Subsurface Exploration Report for the referenced project. The exploration was performed in general accordance with our Proposal No. 21297, dated September 22, 2021, authorized on December 2, 2021, by Mr. Wade Duggins. The purpose of the exploration was to evaluate general subsurface conditions at the proposed apartment housing development site located at (E911 not yet assigned) Cliffdale Road, Fayetteville, NC 28314 (Figure 1), with respect to earthwork impacts and possible foundation systems. This report presents a brief description of our understanding of the project, the exploration results, and our geotechnical conclusions and recommendations.

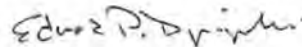
We greatly appreciate the opportunity to conduct this investigation and provide this study and look forward to working with you on the site preparation activities during the project construction. Please contact us for any additional information or if you have any questions regarding this report.

Sincerely,

ALPHA ENVIRONMENTAL  
ALPHA ENGINEERING SERVICES, PA



James K. Connors, P.E.  
Senior Geotechnical Engineer



Edward P. Dzierzynski  
Project Engineer / Manager

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Figure 1	Site Location Map
Figure 2	Site Concept Plan
Figure 3	Test Bore Location Map

### Appendices

Appendix I	Bore Logs
Appendix II	Laboratory Test Results
Appendix III	Unified Soil Classification System
Appendix IV	Seasonal High Water Table Study
Appendix V	Structural Specifications and Foundation Drawings
Appendix VI	Geotechnical Bulletin

## 1.0 Project Information

Our understanding of the project is based on the following:

- An email submittal of the CLIFFDALE DEVELOPMENT - *Site Plan Proposed*, drawing C-1 (Figure 2) was received from Marvin Mercer, PE of Mercer Design Group on September 12, 2021, along with a verbal request for a Geotechnical Exploration proposal including a Seasonal High Water Table study for the area of the proposed retention pond.
- Review of a topographic site survey available on the Cumberland County GIS website.
- Review of soil types for the site available on the USDA Web Soil Survey.

Based on the above information, we understand that Smith Duggins Developers LLC is planning to construct six new apartment housing buildings and one community general use building extending to the north directly off Cliffdale Road that will include access roads and parking and other auxiliary features. We understand the project buildings are expected to be two stories for the apartments and one story for the community center. At this time, we understand the general construction of the buildings will be wood frame interior and exterior walls with some exterior areas having a brick veneer. Structural loading information used to formulate soil recommendations in this report are based on the CLIFFDALE DEVELOPMENT *General Notes*, drawing S-0, and *Building Foundation*, various types shown on drawing S-1, S-2, S-3, and S-4 (Appendix V) received from Marvin Mercer, PE of Mercer Design Group.

## 2.0 Exploration and Testing

Alpha Environmental & Engineering conducted the site exploration and testing utilizing its own geotechnical specific drilling equipment, staff of professional engineers, professional geologists, and certified field technicians in the performance of the scope of work.

### 2.1 Field Exploration

The field exploration included a visual site reconnaissance by a Geotechnical Engineer for planning and determining the test bore locations and quantity.

Our initial investigation was performed on December 14 and 15, 2021, for the purpose of collecting ground water levels and soil infiltration rates for the Seasonal High Water Table (SHWT) study, as requested of the

contract. This study was performed in the center of the planned retention pond in the location determined from the Mercer Design Group proposed site plan. The SHWT report It is found in Appendix IV.

The site exploration was performed from January 18 through and January 24, 2022, was consisted of 18 soil test borings at approximate locations for the proposed building as shown on the provided sketches. The boring locations were established by our personnel by using available aerial photographs and overlaying onto the Mercer Design Group proposed site plan to generate GPS coordinates as shown on the Boring Location Plan in the Appendix (Figure 3). Because precise survey techniques were not used, the indicated locations should be considered approximate. Our field personnel then used handheld GPS tracking tablet to find the predetermined soil test location at the site.

The borings were conducted from Alpha's own Geoprobe 7720DT rubber-tracked, mechanically operated drill rig utilizing hollow stem augers to advance the boreholes. Drilling fluid was not used in this process. Representative soil samples were obtained in five-foot intervals or at areas of geotechnical interest by means of the split-barrel sampling procedure in general accordance with ASTM Specification D-1586. In this procedure, a 2-inch O.D., split-barrel sampler is driven into the soil 18 inches by a 140-pound automatic hammer with a free fall of 30 inches. The number of blows required to drive the sampler through a 12-inch interval is termed the Standard Penetration Resistance Value and is indicated for each sample on the field boring logs. All soil samples obtained from the drilling operations were sealed immediately in the field and brought to our laboratory for further examination and testing.

Boring Logs presenting the subsurface information obtained and a description of the boring procedures are included in the Appendix I. The ground surface elevations shown on the Boring Logs were interpolated from the county GIS topographic site survey and are also approximate.

## **2.2 Laboratory Testing**

The samples obtained during the exploration were transported to our laboratory and where visually and manually classified by a Geotechnical Engineer or Staff Geologist. The visual and manual classification was estimated based on the Unified Soil Classification System (USCS) and our experience with similar soil conditions. Alpha laboratory technicians performed quantitative ASTM-standardized laboratory testing. The following laboratory tests were performed:

- Natural moisture content
- Grain size analysis determination
- Atterberg limits

The laboratory data sheets for the above referenced tests are included in the Appendix II. The Unified Soil Classification System (USCS) reference sheet is found in Appendix IV.

### **3.0 Site and Subsurface Conditions**

#### **3.1 Site Conditions**

The proposed apartment housing development site is located directly off and north of Cliffdale Drive. Underground utilities, as marked by the public utility locators prior to our work, consist of at least water lines, power lines for light poles, sanitary sewer, and storm water drainage systems, all being located along and within the road right-of-way. The site is covered with small scrub pines, and a mix of nuisance underbrush and briars.

#### **3.2 Area Geology**

The project site lies within the Coastal Plains Province of North Carolina. Specifically, this site falls within the Middendorf Formation. The geological setting for the site and surrounding soils are typically fluvial (stream and river deposits) sediments deposited during the Upper Cretaceous time period between 101 to 66 million years ago. Middendorf sediments are identified as grey to pale grey with orange cast and mottled sands, sandstones, and mudstones with common clay balls and iron cemented concretions. Cross bedded sands are common. Contacts of these sedimentary units may be sharp or gradational and laterally discontinuous. No major geologic features, such as faults, are documented for this area on the Generalized Geologic Map of North Carolina dated 1985, and in The Geology of the Carolinas, dated 1991.

Specifically, sedimentary soils encountered during the drilling process were described as having characteristics of either sands or clays/silts or gradations thereof depending on the location and depth encountered. No surface outcrops of rocks were witnessed, nor subsurface rock encountered as part of this investigation.

According to a review of the National Wetlands Survey Map, the site does not encroach on any wetland area and is not expected to be affected by any wetland, 401/404 water permit, or associated endangered species



restrictions. A formal investigation and determination of any potential wetland impact was not part of this evaluation.

### 3.3 Subsurface Conditions

The description of subsurface conditions provided in the chart below is relatively brief and general. Please refer to the Boring Logs in the Appendix for more detailed information at the individual boring locations. A description of the soil conditions as they relate to the various structure and site development is provided in the subsequent sections.

Boring Chart - Structures						
Boring ID	Depth (Ft.)	Existing Surface Grade Elevation (± 1 Ft.)	Proposed Final Footing Elevation (Ft.)	Est Depth to 2000psf Soil (Ft.)	24-Hr. Groundwater Depth (ft.)	Planned Structure
B-B1-1	25.0	248	Not available	3.0	Dry	Building 1
B-B1-2	20.0	247		3.0	Dry	
B-B2-1	25.0	246		3.0	Dry	Building 2
B-B2-2	20.0	246		3.0	Dry	
B-B3-1	25.0	251		3.0	Dry	Building 3
B-B3-2	20.0	249		3.0	Dry	
B-B3-3	20.0	248		3.0	Dry	
B-B4-1	25.0	251		3.0	18.0	Building 4
B-B4-2	20.0	250		3.0	Dry	
B-B4-3	20.0	249		3.0	Dry	
B-B5-1	20.0	247		3.0	Dry	Building 5
B-B5-2	20.0	248		7.5	Dry	
B-B5-3	20.0	249		3.0	Dry	
B-B6-1	20.5	247		7.5	Dry	Building 6
B-B6-2	20.0	248		7.5	Dry	
B-B6-3	25.0	248		6.0	Dry	

Boring Chart – Roadways & Parking Areas					
Boring ID	Depth (Ft.)	Existing Surface Grade Elevation (± 1 Ft.)	Depth to 1500psf Soil (Ft.)	24-Hr. Groundwater Depth (ft.)	Planned Structure
B-RW-1	15.0	252	1.5	Dry	Entrance
B-RW-2	15.0	249	1.5	Dry	Front Drive
B-RW-3	15.0	246	1.5	Dry	Mid Drive
B-RW-4	12.5	250	1.5	Dry	Mid Drive
B-RW-5	12.5	249	3.0	Dry	Back Drive

### 3.3.1 Surface and Subsurface Materials

The following test bore descriptions are listed starting at the south (front) of the site working to the north (back) of the site as viewed from Cliffdale Road.

#### *Building 6 (Test Bores B-B6-1, B-B6-2, and B-B6-3)*

- *Top Soils:* The borings typically encountered about 4 to 6 inches of organic topsoil.
- *Fill:* No fill material from previous site operations was encountered in the soil tests.
- *Alluvium:* Beneath the topsoil alluvium was encountered to the boring termination depth. In the top 5-foot layer the alluvium was generally described as light brown SILTY SAND (SM). For this layer standard penetration resistance values (N-values) ranged from 4 to 7 blows per foot (bpf). Particularly in boring B-B6-3, the N-values were the lowest, ranging from only 0 to 5 bpf indicative that some limited soil repair may be needed in the immediate area. In the lower layer the alluvium was generally described as red-brown SILTY SAND (SM). For this layer standard penetration resistance values (N-values) were generally found at and greater than 10 bpf.
- *Residuum:* No residuum soil was encountered in the soil tests.
- *Partially Weathered Rock (PWR).* No partially weathered rock (PWR) was encountered in the soil tests.
- *Auger Refusal Materials.* None of the soil test locations encountered Auger refusal.

#### *Building 5 (Test Bores B-B5-1, B-B5-2, and B-B5-3)*

#### *Building 1 (Test Bores B-B1-1, and B-B1-2)*

#### *Building 2 (Test Bores B-B2-1, and B-B2-2)*

- *Top Soils:* The borings typically encountered about 4 to 6 inches of organic topsoil.
- *Fill:* No fill material from previous site operations was encountered in the soil tests.
- *Alluvium:* Beneath the topsoil alluvium was encountered to the boring termination depth. In the top 5-foot to 10-foot layer the alluvium was generally described as light brown SILTY SAND (SM). For this layer standard penetration resistance values (N-values) ranged from 4 to 11 blows per foot (bpf). In the lower layer the alluvium was generally described as gray brown SILTY CLAYEY SAND (SC-SM). For this layer standard penetration resistance values (N-values) were generally found at and greater than 12 bpf.
- *Residuum:* No residuum soil was encountered in the soil tests.
- *Partially Weathered Rock (PWR).* No partially weathered rock (PWR) was encountered in the soil tests.

- *Auger Refusal Materials.* None of the soil test locations encountered Auger refusal.

*Building 3 (Test Bores B-B3-1, B-B3-2, and B-B3-3)*

*Building 4 (Test Bores B-B4-1, B-B4-2, and B-B4-3)*

- *Top Soils:* The borings typically encountered about 4 to 6 inches of organic topsoil. The topsoil thicknesses will vary in unexplored areas and are expected to increase as the wetland to the north is approached.
- *Fill:* No fill material from previous site operations was encountered in the soil tests.
- *Alluvium:* Beneath the topsoil alluvium was encountered to the boring termination depth. In the top 15-foot layer the alluvium was generally described as light brown SILTY SAND (SM). For this layer standard penetration resistance values (N-values) ranged from 10 to 22 blows per foot (bpf). In the lower layer the alluvium was generally described as gray brown SILTY CLAYEY SAND (SC-SM). For this layer standard penetration resistance values (N-values) were generally found at and greater than 15 bpf.
- *Residuum:* No residuum soil was encountered in the soil tests.
- *Partially Weathered Rock (PWR).* No partially weathered rock (PWR) was encountered in the soil tests.
- *Auger Refusal Materials.* None of the soil test locations encountered Auger refusal.

*Roadways and Parking (Test Bores B-RW-1, B-RW-2, B-RW-3, B-RW-4, and B-RW-5)*

- *Top Soils:* The borings typically encountered about 4 to 6 inches of organic topsoil.
- *Fill:* Fill was encountered in test bore B-RW-5 which is closest to Cliffdale Road. The fill is assumed to be wasted material from the road construction or from creating the site access. No fill material from previous site operations was encountered in the other roadway/parking area soil tests.
- *Alluvium:* Beneath the topsoil alluvium was encountered to the boring termination depth. In the top 10-foot layer the alluvium was generally described as light brown SILTY SAND (SM). For this layer standard penetration resistance values (N-values) ranged from 5 to 22 blows per foot (bpf). In the lower layer the alluvium was generally described as gray brown SILTY CLAYEY SAND (SC-SM). For this layer standard penetration resistance values (N-values) were generally found at and greater than 15 bpf.
- *Residuum:* No residuum soil was encountered in the soil tests.
- *Partially Weathered Rock (PWR).* No partially weathered rock (PWR) was encountered in the soil tests.
- *Auger Refusal Materials.* None of the soil test locations encountered Auger refusal.

### *General Test Bore Findings*

Several of the test bore locations had moist soils which are suspect to being a result of significant rain events in the week preceding our exploration, and from a snow event during our exploration. Laboratory testing indicates that using the on-site soils for fill areas may require simple drying technics such as fluffing or scarifying.

### *3.3.2 Subsurface Water*

Subsurface water was only measured in 1 boring (B-B4-1) 24 hours after the time of drilling. The depth was 18 feet below surface grade. It should also be noted that groundwater levels will fluctuate during the year and from year to year due to seasonal and climatic changes and will be at different depths if measured in the future.

### **3.4 Laboratory Test Results**

Selected split-spoon samples from Borings B-RW-3, B-B4-3, B-RW-1, and B-B3-2 were subjected to laboratory testing consisting of moisture content and grain size distribution (sieve analysis). In-situ moisture contents ranged from 10.7 percent in B-RW-3 to 20.2 percent in B-RW-1. Soils below 20 percent moisture content will likely require the addition of water if they are to be used as fill.

Sieve analysis of selected samples from Borings B-RW-3, B-B4-3, B-RW-1, and B-B3-2 indicated fine grain material (percent passing #200 sieve) at levels of 21, 37, 55, and 42 percent, respectively. The test results are included on data sheets in Appendix II.

### **4.0 Preliminary Conclusions and Recommendations**

The results of the exploration indicate the site is suitable for the proposed apartment housing development utilizing typical grading and foundation preparation methods. No special earth excavation or blasting equipment is expected to be required. No deep or special foundation are anticipated. The preliminary conclusions and recommendations presented herein are based on the structural loads, existing grades, expected final site grades, as presented to us in the respective specification sheet and foundation plan drawings from Mercer Design Group, our understanding of the proposed project, findings of the preliminary subsurface exploration, geotechnical engineering evaluations of encountered subsurface conditions, and experience with similar projects. When reviewing this information, please keep in mind subsurface conditions vary in this geologic area, particularly with respect to alluvial soils. Particular to this site there are minor geotechnical

issues that should be understood and considered regarding the project development and site design. These issues primarily consist of:

- Alluvium (water-deposited soil) at almost all test boring locations with deep groundwater encountered at Borings B-B4-1 at the north (back) of the site. The moist soils are suspect to a result of recent heavy rains in the week preceding our exploration and from melting snow at the time of our exploration.

In our opinion, the geotechnical issues associated with moist soils can be easily overcome with typical repair methods. Based on the soil conditions encountered, shallow spread and strip footings can be used for supporting the buildings. However, minor undercutting of the alluvial soils is likely to be required at select locations within the perimeter 1-2 of the building footprints. These locations are likely to be short sections with the footing to span patches of soft soils. Ground improvement methods such as compacted soils and/or fabric wrapped stone base are typical and economical options for building footing soil repairs. Using a ground improvement system is essential to reducing the potential risk of differential settlement across an individual structure. The following sections provide more detailed comments and preliminary recommendations for these and other geotechnical issues relative to the proposed apartment housing development.

#### 4.1. Site Preparation

Earthwork operations should include stripping the construction area of topsoil and other soft or unsuitable materials. In areas where large trees are removed consideration should be given to establishing a uniform soil condition by removing all the soil in the area to the average depth of the craters that will exist after the root ball removal (approximately 3-4 feet). After a reasonable area has been excavated then the excavated soil can be used to bring the area up to grade. The soil should be placed and compacted as described in the Compacted Fill section of this report when the area is within a planned structure or roadway, otherwise the extent of the compaction can be determined by the site contractor.

In areas that are to be paved the surface of the subgrade soil should be proof rolled prior to the installation of the gravel base in order to identify any soft areas. If any soft areas are found the soft soils should be removed and the undercut area should be brought up to grade using suitable material compacted while being placed.

If underground utilities are found during the earthwork stripping operations within a planned structure or roadway area, they should be removed from proposed construction areas to a distance of 3-5 feet outside of

the area. Voids in the soils left after the removal of any utility lines and associated structures should be replaced with an approved borrow material compacted to a minimum of 95 percent of the maximum dry density obtained in accordance with ASTM Specification D-698, Standard Proctor Method.

Best Management Practices to prevent soil erosion and loss of material off site, including silt fences, catchment ponds, and others should be enacted. Tree removal should be limited to the affected construction areas with care given to not disturb any vegetation outside construction limits.

4.2. Compacted Fill

Compacted fill is likely to be required for some of the areas of this site. Should any fill or backfill be placed in the roadway embankments or driveway areas it should be compacted to a minimum of 95 percent of the maximum dry density obtained in accordance with ASTM Specification D-698, Standard Proctor Method. Fill or backfill placed within five horizontal feet of any building structure should be compacted to a minimum of 98 percent of the maximum dry density obtained in accordance with ASTM Specification D-698, Standard Proctor Method. The moisture content of the fill at the time of placement should be within +/- 2 percent of the optimum moisture content established by the above referenced laboratory compaction test.

Structural Fill Placement Location	Per ASTM D-698 Std Proctor Test		
	Minimum Compaction Required (%)	Moisture Content (%) Range for Compaction	
		Minimum	Maximum
Non-Structural Areas	92	-2%	+2%
Foundations and Slabs	98	-2%	+2%
Pavement	95	-2%	+2%

Should any previously filled and compacted soils be excavated for the placement of utilities or other subsurface components, the removed soils should be replaced and compacted as described above.

We recommend a low to moderate plasticity index soil (Plasticity Index less than 20) be used as fill. The fill should be placed in loose lifts of approximately nine inches in thickness and properly compacted after each lift with fill operations continuing until the subgrade elevations are achieved. In-place density tests made in accordance with ASTM D-1556 or equivalent should be used to verify compaction. See Chart on the next page.

Fill Type*	USCS Classification	Acceptable Placement Location
Imported Sandy - Silts/Clays and Silty-Clayey-Sand Soils	ML, CL, SC, SM (LL<45)	All locations and elevations
Imported Granular Soil	SW, SP, GW, GP	All locations and elevations
Available On-Site Soils	Dependent upon testing results	Dependent upon testing results
*Materials to be used for compacted fill should be free of organic matter and debris and should be free of material larger than 3-inch diameter. Frozen material should not be used. Samples of material types should be evaluated by the Geotechnical Engineer.		

For the purpose of earthwork operations, and in any areas to receive fill, the fill areas should be extended a minimum five feet beyond the limits of a structures footprint to ensure that all topsoil and otherwise soft or unsuitable soils are removed from the area for the structure’s construction.

#### 4.3. Foundations

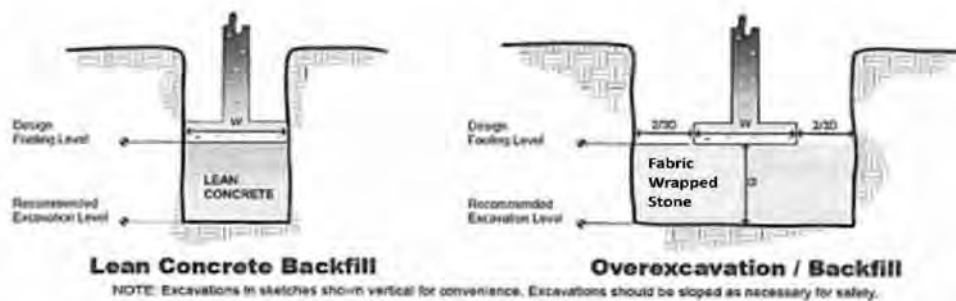
The specified design bearing capacity of 2000psf for the structures and any potential retaining walls was used for this report recommendations. At each of the borings, soil strengths indicated that the 2000psf soil is generally achieved at 3-feet to 5-feet from the existing ground surface for the planned building locations. The depth may vary due to the amount of planned cut and fill operations performed for a specific building. It is expected that undercutting of the potentially unsuitable soils may be required in some limited locations to achieve bearing capacities of 2,000psf or greater. We recommend testing for bearing capacity of the building footing areas during excavation to confirm the soil conditions at the bottom and bearing elevation for the footing. Testing may include additional hand auger borings and Dynamic Cone Penetrometer (DCP) to define the lateral and vertical extents of any suspect soft/loose soils. The testing is best performed after completion of the footing excavation and as called for by an experienced site grading supervisor.

It is possible and likely that in most areas the site grading (cut) will remove enough of the upper layers of loose/soft soils to place the footings on the 2000psf soil without any repairs. In the event the excavation for the specified bottom elevation for a footing does not meet 2000psf there are common and typical methods available for footing soil repair. The method selected are contingent upon the final bottom of footing elevations, the final proposed surface grade, and the final footing dimensions selected by the design engineer. The method selection may be made by the site superintendent or owner based on construction timeline and cost. The most common recommended methods include:

- In an area where the footing excavation does not remove enough loose/soft soils the soil should be undercut to the depth necessary to reach the 2000psf material, however the maximum undercut should not exceed three feet. The undercut is be replaced with layers of compacted #57 stone wrapped in filter

fabric such as Mirafi 140NL or an equivalent product, or the undercut area can be filled and compacted with available suitable on-site soils.

- In an area of marginal measured bearing capacity of 1500psf to 1800psf, the structural engineer may decide to widen the footer to spread the load across more soils achieving the desired load bearing capacity for that area.



The bottom of the footings should be at least 2.5 feet below finished grade, or as otherwise acceptable to local building codes, in order to provide frost protection. Standard linear wall footings and standard rectangular pier footings should be used. The footings dimension should be determined from the design building loads.

#### 4.4. Floor Slab

Depending upon final grade elevations, and the cut and fill operations, over some of the areas where Existing Surface Grade was found to be roughly 5 feet above the 2000psf bearing capacity soil further random testing of slab subgrade materials is recommended to determine if this condition still exists. If, following the testing, slab subgrade soil strengths are found to be less than 2,000psf the soil engineer should be consulted for recommended repair methods and the extents the repair should be conducted. Once the repairs, if any, are performed we recommend that a capillary cutoff layer be provided under the floor slab to prevent rise of water through the floor slab. The capillary layer should consist of a minimum of a 4-inch thick, clean crushed stone or washed gravel layer, maximum size of 3/4 inches with a maximum of 2 percent passing the No. 200 sieve. A vapor barrier should be utilized on top of the stone to provide additional moisture protection placed immediately before the placement of the floor slab concrete. Prior to placing the stone for the capillary cutoff layer, the floor slab subgrade soil should be properly compacted and free of standing water or mud. In any areas of soft or depressed soil we recommend that the stone layer be thickened to 6-8 inches for additional slab support. Suitable adjustment to this can be determined by an experienced site or general contractor.



**4.5. Pavement Recommendations**

In the drives and parking areas, bearing capacity of 1500psf was used for this report recommendations. We recommend that the pavement be designed as a flexible pavement using guidelines established by the Asphalt Institute for Full Depth Asphalt Pavement Structures. Based on previous laboratory tests on similar material, a California Bearing Ratio of six was selected for on-site soil compacted to 95 percent of the maximum dry density determined in accordance with ASTM Specification D-698, Standard Proctor Method. For the general parking area, we recommend that the pavements be designed for 2 inches of asphalt overlying 6 inches of compacted crushed stone. For general access roadways and in truck loading areas we recommend the design consist of 2 inches of asphalt over 8 inches of compacted crushed stone. These designs are generally based on the Asphalt Institute’s MS-1 Thickness Design Manual.

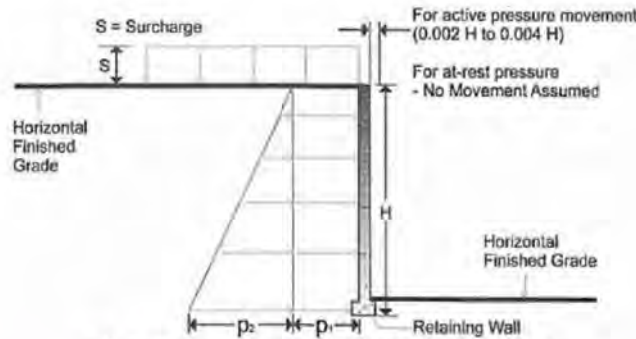
Typical Minimum Pavement Section Thickness (Inches)						
Final Proposed Usage/Traffic Type	Pavement Options	Asphalt Concrete (AC) Surface Course	Asphalt Concrete (AC) Binder Course	Portland Cement Concrete (PCC)	Aggregate Base Course (ABC)	Total Thickness (inches)
Light Duty Parking (Cars)	PCC	-	-	5	4	9
	AC	2	-	-	6	8
Heavy Duty (Drives & Truck Access)	PCC	-	-	6.5	4	10.5
	AC	1.25	1.75	-	8	11
Trash Container Pads, Delivery Pads, Entrance & Exit Sections	PCC	-	-	6.5	4	10.5

Regardless of the section and type of construction utilized, saturation of the subgrade materials and asphalt pavement areas results in a softening of the subgrade material and shortened life span for the pavement, therefore, we recommend that both the surface and subsurface materials for the pavement be properly graded to enhance surface and subgrade drainage. By quickly removing surface and subsurface water, softening of the subgrade can be reduced and the performance of the parking area can be improved. Site preparation for the parking and roadway areas should be similar to that for the building areas including stripping, proof rolling, and the placement of compacted structural fill.

**4.6. Retained Soils**

It is not expected that the final design will include the need for any retained soil structure. If needed, potential final retaining wall options include reinforced concrete, cantilever, driven steel or concrete sheeting, gravity, and mechanically stabilized earth (MSE). Of the above listed options, a reinforced concrete wall or an MSE wall would appear to be most appropriate. The decision to construct either reinforced concrete walls versus MSE

walls would be determined by the final layout of the site. If the final top of wall elevation is to be placed near a building structure foundation perimeter (less than 11-ft +/-), then a reinforced concrete wall may be selected.



\*Drawing Depicts Generic RIGID Type Wall Section

Earth Pressure Coefficient	Coefficient for Backfill Type Assumed unit weight 120 PCF	Equivalent Fluid Density (pcf)	Surcharge Pressure, $p_1$ (psf)	Earth Pressure, $p_2$ (psf)
Active ( $K_a$ )	Granular - 0.29	35	$(0.29)S$	$(35)H$
	Sandy-Silt/Silty-Sand - .29	35	$(0.29)S$	$(35)H$
At-Rest ( $K_o$ )	Granular - 0.46	55	$(0.46)S$	$(55)H$
	Sandy-Silt/Silty-Sand - .50	60	$(0.50)S$	$(60)H$
Passive ( $K_p$ )	Granular - 3.4	410	-	$(410)H$
	Sandy-Silt/Silty-Sand - 3.4	410	-	$(410)H$

\*Note: This diagram does not apply to MSE type walls. MSE Walls should be designed using the computer program recommended by the system manufacturer. The pressure diagram for MSE are a function of the load pressure and deflection characteristics associated with the type block/ geogrid design

It is assumed that where a retaining wall may be desired, the selected preferred retaining wall type will be a Mechanically Stabilized Earth (MSE) wall system. In designing the retaining walls consideration should be given to locating the walls adjacent to the proposed buildings a sufficient distance away from the planned wall footings so that the wall geogrid does not extend beneath the face of the proposed footings and so that the wall footing excavation does not disrupt the engineered fill or the geogrid holding the previously constructed walls.

The wall design should include a global stability analysis, the soil values for the natural material supporting the wall foundation used in the global analysis should be  $\Phi = 33^\circ$ ,  $K_a = .29$ ,  $K_p = 3.39$ , Unit weight 120 pcf.

There are several companies that supply block walls. These companies supply the necessary information including information on the required geogrid based on wall height and the specifications for the engineered

structural fill that should be used with their product. It is important that the wall design provide for adequate drainage in order to prevent a buildup of hydrostatic pressure behind the walls.

**4.7. Seismic Rating**

The 2018 North Carolina Building Code (NCBC) requires that a seismic Site Class be assigned for new structures. The method for determining the Site Class is presented in Section 1613.5.2 of the NCBC. The seismic Site Class is typically determined by calculating a weighted average of the N-values or recorded in test borings to a depth of 100 feet.

**Seismic Site Classification**

Site Class	Soil Profile Name	Shear Wave Velocity, $V_s$ , (ft./s)	N value (bpf)
A	Hard Rock	$V_s > 5,000$ fps	N/A
B	Rock	$2,500 < V_s \leq 5,000$ fps	N/A
C	Very dense soil and soft rock	$1,200 < V_s \leq 2,500$ fps	>50
D	Stiff Soil Profile	$600 \leq V_s \leq 1,200$ fps	15 to 60
E	Soft Soil Profile	$V_s < 600$ fps	<15

Based upon boring data, we judge that the seismic site classification may range between “C” and “D” with a higher probability of use of “D” for structural design.

**5.0 Limitations of Report**

This report has been prepared in accordance with generally accepted geotechnical engineering practice for specific application to this project. The preliminary conclusions and recommendations contained in this report are based upon applicable standards of our practice in the geographic area of the site at the time this report was prepared. No other warranty, expressed or implied, is made.

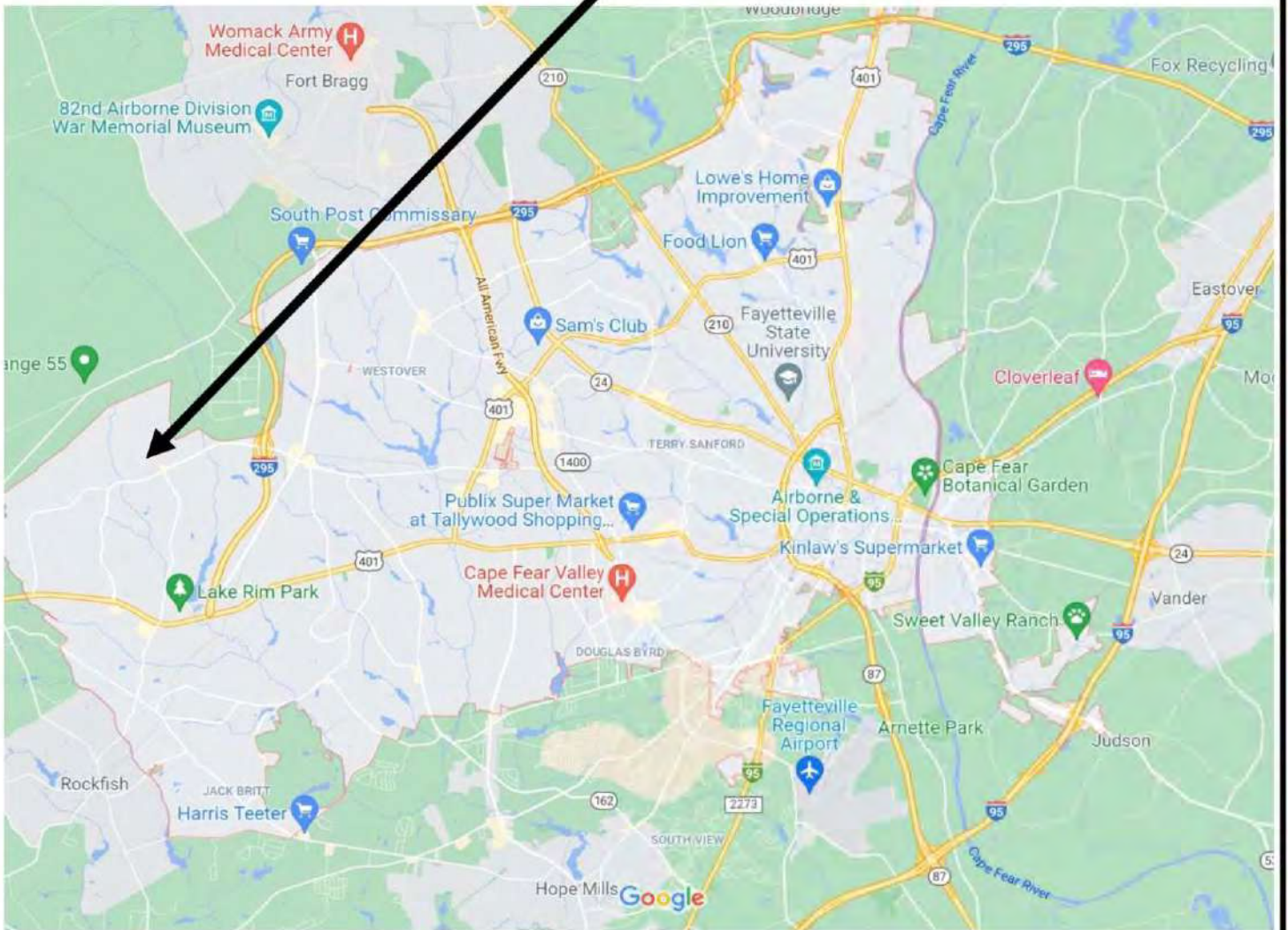
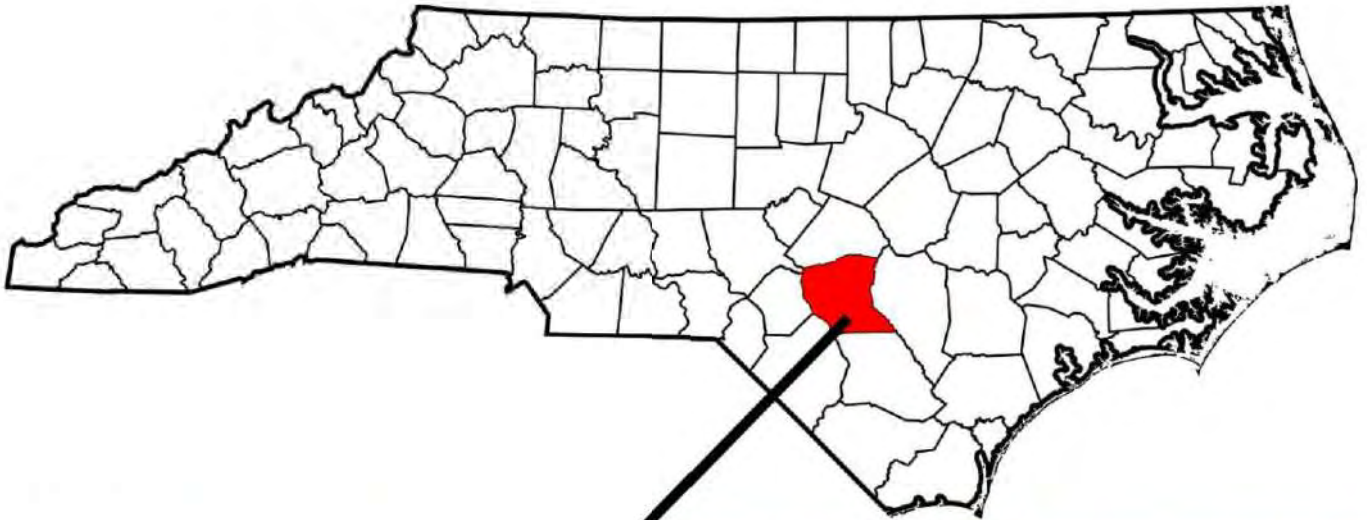
The analyses and preliminary recommendations submitted herein are based, in part, upon the data obtained from the subsurface exploration. The nature and extent of variations between the borings may not be evident or may not become evident until further exploration or until construction activities are undertaken. If variations appear evident, then we will re-evaluate the recommendations of this report. In the event there are any changes in the nature, design, or location of the proposed buildings, the conclusions and recommendations contained in this report will not be considered valid unless the changes are reviewed, and conclusions modified or verified in writing. We recommend that Alpha be provided the opportunity to review the grading plans,

structural plans, and specifications in order that our recommendations are properly interpreted and implemented. It is recommended but not required that all construction operations dealing with earthwork and foundations be reviewed by an experienced soil engineer to provide information on which to base a decision as to whether the design requirements are fulfilled in the actual construction.

# ALPHA

## Figures

- |          |                        |
|----------|------------------------|
| Figure 1 | Site Location Map      |
| Figure 2 | Conceptual Site Plan   |
| Figure 3 | Test Bore Location Map |





**PRELIMINARY**  
**NOT FOR CONSTRUCTION**

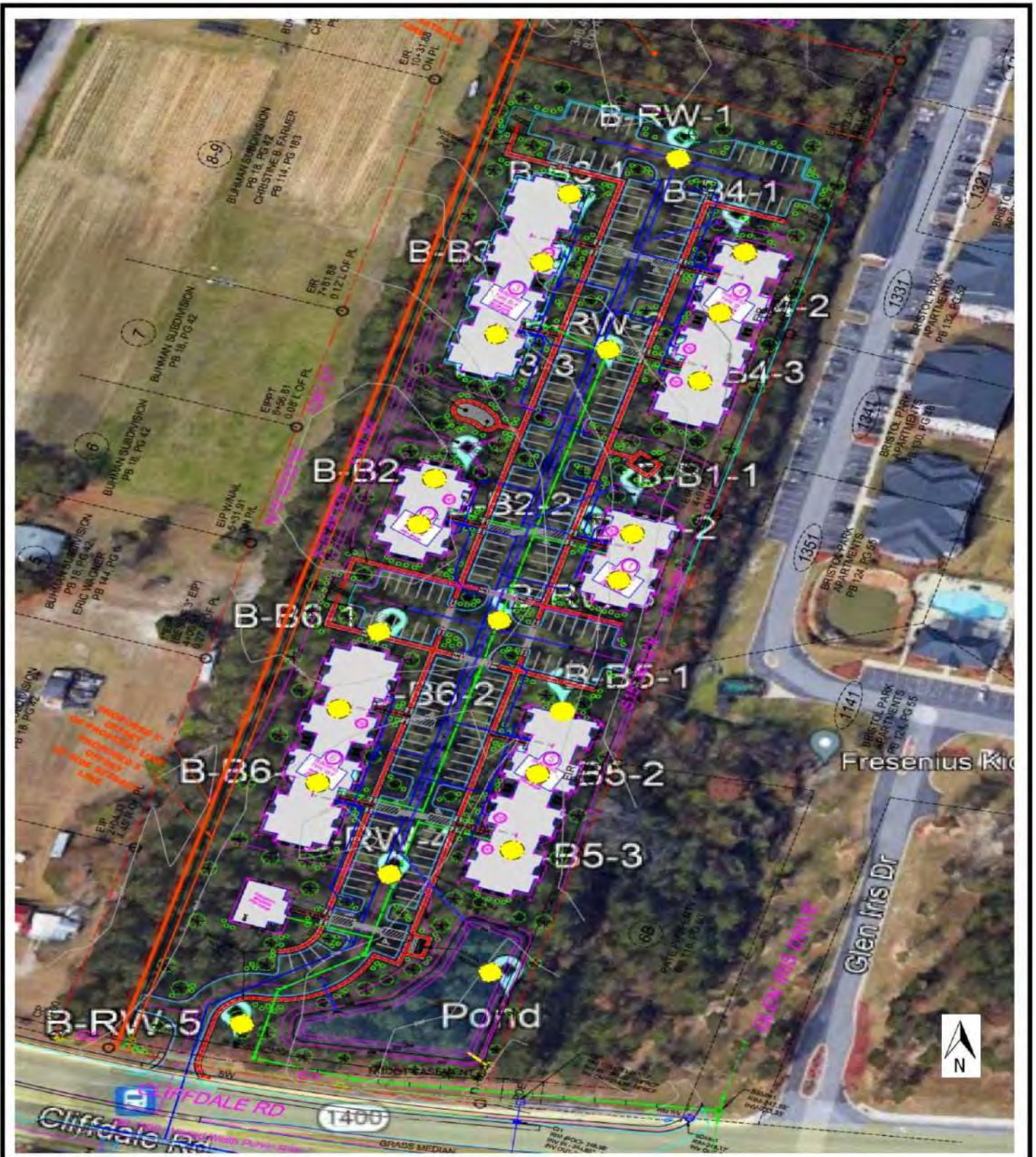
**VICINITY MAP**  
Not To Scale



**PROJECT TITLE:** CLIFFDALE DEVELOPMENT  
**PROJECT NO.:** 21-009  
**OWNER:** SMITH DUGGINS DEVELOPERS, LLC  
**DESIGNER:** ALPHA ENVIRONMENTAL ENGINEERING SERVICES, P.A.  
**DATE:** 04/11/2023

**GENERAL NOTES:**  
 1. THIS PLAN IS A PRELIMINARY CONCEPT PLAN AND IS NOT TO BE USED FOR CONSTRUCTION.  
 2. ALL DIMENSIONS ARE IN FEET AND INCHES.  
 3. THE TOTAL AREA OF THE SITE IS 8.00 ACRES.  
 4. THE TOTAL AREA OF THE BUILDING FOOTPRINTS IS 10,000 SQ. FT.  
 5. THE TOTAL AREA OF THE PARKING AREAS IS 15,000 SQ. FT.  
 6. THE TOTAL AREA OF THE LANDSCAPING AREAS IS 10,000 SQ. FT.

<p><b>CLIFFDALE DEVELOPMENT</b>  <b>SMITH DUGGINS DEVELOPERS, LLC</b>  <small>CLAYTON COUNTY, GEORGIA</small>  <small>1000 W. MARKET STREET, SUITE 100</small></p>	<p><b>MDG</b>  <small>MICHAEL DUGGINS GROUP</small></p>	<p><b>REVISIONS/CHANGES</b></p> <table border="1"> <thead> <tr> <th>NO.</th> <th>REVISION/CHANGES</th> <th>DATE</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	NO.	REVISION/CHANGES	DATE																															<p><b>DATE:</b> 04/11/23  <b>SCALE:</b> 1" = 20'</p>
NO.	REVISION/CHANGES	DATE																																		



**ALPHA**

ALPHA ENVIRONMENTAL  
ALPHA ENGINEERING SERVICES, P.A.

Figure 3  
Test Bore Location Map

ALPHA Project No. 21297.01  
Cliffdale Crossing  
Cliffdale Road, Fayetteville, NC



# ALPHA

## Appendices

- I. Bore Logs
- II. Laboratory Test Results
- III. Unified Soil Classification System
- IV. Seasonal High Water Table Study
- V. Specifications and Foundation Drawings
- VI. Geotechnical Bulletin



## Appendix I

### Bore Logs

#### Test Bore Coordinates

Bore ID	Latitude	Longitude	North	East
B-B1-1	35.05901	-79.05403889	476407.630	1983828.884
B-B1-2	35.05886	-79.05406944	476354.053	1983819.712
B-B2-1	35.0589	-79.05449167	476370.299	1983693.369
B-B2-2	35.05876	-79.05444444	476318.732	1983707.474
B-B3-1	35.05971	-79.05473611	476663.509	1983620.382
B-B3-2	35.05951	-79.05466667	476591.722	1983641.122
B-B3-3	35.05929	-79.05459444	476512.855	1983662.693
B-B4-1	35.05983	-79.05432500	476707.925	1983743.430
B-B4-2	35.05961	-79.05425000	476626.027	1983765.828
B-B4-3	35.0594	-79.05418056	476550.193	1983786.567
B-B5-1	35.05843	-79.05383056	476199.341	1983891.113
B-B5-2	35.05824	-79.05377222	476129.580	1983908.534
B-B5-3	35.05803	-79.05368056	476052.734	1983935.922
B-B6-1	35.05839	-79.05432500	476185.268	1983743.144
B-B6-2	35.05818	-79.05423889	476108.423	1983768.870
B-B6-3	35.05798	-79.05414444	476034.613	1983797.094
B-RW-1	35.05998	-79.05461667	476762.563	1983656.178
B-RW-2	35.05932	-79.05435833	476522.927	1983733.354
B-RW-3	35.05857	-79.05410278	476247.913	1983809.678
B-RW-4	35.05784	-79.05387500	475981.998	1983877.697
B-RW-5	35.05736	-79.05395556	475807.121	1983853.494
Pond	35.05772	-79.05345000	475940.481	1984004.857

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**BORING NUMBER B-B6-1**  
PAGE 1 OF 1

**CLIENT** Smith Duggins Developers LLC      **PROJECT NAME** Cliffdale Crossing  
**PROJECT NUMBER** 21297.01      **PROJECT LOCATION** Cliffdale Road Fayetteville, NC  
**DATE STARTED** 1/20/22      **COMPLETED** 1/20/22      **GROUND ELEVATION** 247 ft      **HOLE SIZE** 4 inches  
**DRILLING CONTRACTOR** Alpha Environmental      **GROUND WATER LEVELS:**  
**DRILLING METHOD** Hollow Stem Auger with Splitspoon      **AT TIME OF DRILLING** ---  
**LOGGED BY** ASD      **CHECKED BY** CJM      **AT END OF DRILLING** ---  
**NOTES** \_\_\_\_\_      **AFTER DRILLING** ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION	
0					(OL), Topsoil	246.5
	SS 111		3-5-4 (9)		SILTY SAND, light brown , Alluvium (SM)	244.5
5			3-6-5 (11)		SILTY SAND, light brown , Alluvium (SM)	242.0
10	SS 112		5-10-10 (20)		SILTY SAND, light brown , Alluvium (SM)	237.0
15	SS 113		6-12-14 (26)		SILTY SAND, reddish gray , Alluvium (SM)	232.0
20	SS 114		12-16-18 (34)		SILTY SAND, light brown , Alluvium (SM)	227.0
						226.4

Bottom of borehole at 20.6 feet.

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# BORING NUMBER B-B6-2



<b>CLIENT</b> <u>Smith Duggins Developers LLC</u> <b>PROJECT NUMBER</b> <u>21297.01</u> <b>DATE STARTED</b> <u>1/20/22</u> <b>COMPLETED</b> <u>1/20/22</u> <b>DRILLING CONTRACTOR</b> <u>Alpha Environmental</u> <b>DRILLING METHOD</b> <u>Hollow Stem Auger with Splitspoon</u> <b>LOGGED BY</b> <u>ASD</u> <b>CHECKED BY</b> <u>CJM</u> <b>NOTES</b> _____	<b>PROJECT NAME</b> <u>Cliffdale Crossing</u> <b>PROJECT LOCATION</b> <u>Cliffdale Road Fayetteville, NC</u> <b>GROUND ELEVATION</b> <u>248 ft</u> <b>HOLE SIZE</b> <u>4 inches</u> <b>GROUND WATER LEVELS:</b> <b>AT TIME OF DRILLING</b> <u>---</u> <b>AT END OF DRILLING</b> <u>---</u> <b>AFTER DRILLING</b> <u>---</u>
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DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION	
0					(OL), Topsoil	247.5
	SS 109		2-1-3 (4)	[Stippled Pattern]	SILTY SAND, light brown, moist , Alluvium (SM)	245.5
			3-5-6 (11)	[Stippled Pattern]	SILTY SAND, light brown, moist , Alluvium (SM)	243.0
5						
	SS 110		4-6-8 (14)	[Stippled Pattern]	SILTY SAND, light brown, moist , Alluvium (SM)	238.0
			5-9-10 (19)	[Stippled Pattern]	SILTY SAND, light brown, moist , Alluvium (SM)	233.0
10						
			7-10-9 (19)	[Stippled Pattern]	Bottom of borehole at 20.0 feet.	228.0
15						
20						

# BORING NUMBER B-B6-3



**CLIENT** Smith Duggins Developers LLC      **PROJECT NAME** Cliffdale Crossing  
**PROJECT NUMBER** 21297.01      **PROJECT LOCATION** Cliffdale Road Fayetteville, NC  
**DATE STARTED** 1/20/22      **COMPLETED** 1/20/22      **GROUND ELEVATION** 248 ft      **HOLE SIZE** 4 inches  
**DRILLING CONTRACTOR** Alpha Environmental      **GROUND WATER LEVELS:**  
**DRILLING METHOD** Hollow Stem Auger with Splitspoon      **AT TIME OF DRILLING** ---  
**LOGGED BY** ASD      **CHECKED BY** CJM      **AT END OF DRILLING** ---  
**NOTES** \_\_\_\_\_      **AFTER DRILLING** ---

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DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft)
0					(OL), Topsoil	247.5
0 - 2.5	SS 106		2-0-0 (0)		SAND, light brown, moist, Alluvium (SW)	245.5
2.5 - 5.0			4-2-3 (5)		SAND, light brown, moist, Alluvium (SW)	243.0
5.0 - 10.0	SS 107		6-3-7 (10)		SILTY SAND, brownish red, moist, Alluvium (SM), Minor Gravel	238.0
10.0 - 15.0			0-3-8 (11)		SILTY SAND, brownish red, moist, Alluvium (SM)	233.0
15.0 - 20.0			6-8-6 (14)		SILTY SAND, brownish red, moist, Alluvium (SM)	228.0
20.0 - 25.0	SS 108		0-6-6 (12)		Bottom of borehole at 25.0 feet.	223.0

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# BORING NUMBER B-B5-1



<b>CLIENT</b> <u>Smith Duggins Developers LLC</u>	<b>PROJECT NAME</b> <u>Cliffdale Crossing</u>
<b>PROJECT NUMBER</b> <u>21297.01</u>	<b>PROJECT LOCATION</b> <u>Cliffdale Road Fayetteville, NC</u>
<b>DATE STARTED</b> <u>1/24/22</u> <b>COMPLETED</b> <u>1/24/22</u>	<b>GROUND ELEVATION</b> <u>247 ft</u> <b>HOLE SIZE</b> <u>4 inches</u>
<b>DRILLING CONTRACTOR</b> <u>Alpha Environmental</u>	<b>GROUND WATER LEVELS:</b>
<b>DRILLING METHOD</b> <u>Hollow Stem Auger with Splitspoon</u>	<b>AT TIME OF DRILLING</b> <u>---</u>
<b>LOGGED BY</b> <u>ASD</u> <b>CHECKED BY</b> <u>CJM</u>	<b>AT END OF DRILLING</b> <u>---</u>
<b>NOTES</b>	<b>AFTER DRILLING</b> <u>---</u>

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION	
0					(OL), Topsoil	246.5
	SS 155		6-3-4 (7)		SILTY SAND, light brown , Alluvium (SM)	244.5
			3-3-4 (7)		SILTY SAND, light brown , Alluvium (SM)	242.0
5						
	SS 156		5-6-8 (14)		SILTY CLAYEY SAND, grayish brown pinkish, moist , Alluvium (SC-SM)	237.0
10						
	SS 157		6-9-7 (16)		SILTY CLAYEY SAND, grayish brown pinkish, moist , Alluvium (SC-SM)	232.0
15						
			12-20-22 (42)		CLAYEY SAND, light grayish brown, moist , Alluvium (SC)	227.0
20					Bottom of borehole at 20.0 feet.	

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# BORING NUMBER B-B5-2

PAGE 1 OF 1



<b>CLIENT</b> <u>Smith Duggins Developers LLC</u>	<b>PROJECT NAME</b> <u>Cliffdale Crossing</u>
<b>PROJECT NUMBER</b> <u>21297.01</u>	<b>PROJECT LOCATION</b> <u>Cliffdale Road Fayetteville, NC</u>
<b>DATE STARTED</b> <u>1/24/22</u> <b>COMPLETED</b> <u>1/24/22</u>	<b>GROUND ELEVATION</b> <u>248 ft</u> <b>HOLE SIZE</b> <u>4 inches</u>
<b>DRILLING CONTRACTOR</b> <u>Alpha Environmental</u>	<b>GROUND WATER LEVELS:</b>
<b>DRILLING METHOD</b> <u>Hollow Stem Auger with Splitspoon</u>	<b>AT TIME OF DRILLING</b> <u>---</u>
<b>LOGGED BY</b> <u>ASD</u> <b>CHECKED BY</b> <u>CJM</u>	<b>AT END OF DRILLING</b> <u>---</u>
<b>NOTES</b>	<b>AFTER DRILLING</b> <u>---</u>

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION
0					(OL), Topsoil	247.5
2.5	SS 158		2-2-2 (4)		SILTY SAND, light brown, moist, Alluvium (SM)	245.5
5.0			2-2-2 (4)		SILTY SAND, light brown, moist, Alluvium (SM)	243.0
10.0	SS 159		3-4-8 (12)		SILTY CLAYEY SAND, grayish brown, moist, Alluvium (SC-SM)	238.0
15.0	SS 160		5-6-8 (14)		SANDY CLAY, grayish brown reddish, moist, Alluvium (CLS)	233.0
20.0	SS 161		9-15-12 (27)		SILTY SAND, light brown, moist, Alluvium (SM) Bottom of borehole at 20.0 feet.	228.0

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**BORING NUMBER B-B5-3**  
PAGE 1 OF 1

**CLIENT** Smith Duggins Developers LLC      **PROJECT NAME** Cliffdale Crossing  
**PROJECT NUMBER** 21297.01      **PROJECT LOCATION** Cliffdale Road Fayetteville, NC  
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**DRILLING CONTRACTOR** Alpha Environmental      **GROUND WATER LEVELS:**  
**DRILLING METHOD** Hollow Stem Auger with Splitspoon      **AT TIME OF DRILLING** ---  
**LOGGED BY** ASD      **CHECKED BY** CJM      **AT END OF DRILLING** ---  
**NOTES** \_\_\_\_\_      **AFTER DRILLING** ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION
0					(OL), Topsoil	248.5
0-4.4	SS 162		(8)		SILTY SAND, light brown, moist, Alluvium (SM)	246.5
2-3.3			(6)		SILTY SAND, light brown, moist, Alluvium (SM)	244.0
5-8.9	SS 163		(17)		SILTY SANDY CLAY, reddish brown grayish, moist, Alluvium (CL-ML)	239.0
5-8.9			(17)		SILTY SANDY CLAY, reddish brown grayish, moist, Alluvium (CL-ML)	234.0
4-8.8	SS 166		(16)		SILTY SAND, light brown, moist, Alluvium (SM)	229.0
Bottom of borehole at 20.0 feet.						



GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 1/27/22 09:32 - Z:\2021 PROJECT FILES\GT - GEOTECHNICAL SERVICES\21297.01 SD DEV: CLIFFDALE CROSSING: FAYETTEVILLE NCD. PROJECT FILES\1. FIELD LOGS\INSPI-NGR REPORTS\GINT\

# BORING NUMBER B-B1-1



<b>CLIENT</b> <u>Smith Duggins Developers LLC</u> <b>PROJECT NUMBER</b> <u>21297.01</u> <b>DATE STARTED</b> <u>1/24/22</u> <b>COMPLETED</b> <u>1/24/22</u> <b>DRILLING CONTRACTOR</b> <u>Alpha Environmental</u> <b>DRILLING METHOD</b> <u>Hollow Stem Auger with Splitspoon</u> <b>LOGGED BY</b> <u>ASD</u> <b>CHECKED BY</b> <u>CJM</u> <b>NOTES</b> _____	<b>PROJECT NAME</b> <u>Cliffdale Crossing</u> <b>PROJECT LOCATION</b> <u>Cliffdale Road Fayetteville, NC</u> <b>GROUND ELEVATION</b> <u>248 ft</u> <b>HOLE SIZE</b> <u>4 inches</u> <b>GROUND WATER LEVELS:</b> <b>AT TIME OF DRILLING</b> <u>---</u> <b>AT END OF DRILLING</b> <u>---</u> <b>AFTER DRILLING</b> <u>---</u>
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DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION
0					0.5 (OL), Topsoil <span style="float: right;">247.5</span>
	SS 148		6-3-3 (6)	[Dotted Pattern]	2.5 SILTY SAND, light brown, moist , Alluvium (SM) <span style="float: right;">245.5</span>
5			3-4-5 (9)	[Dotted Pattern]	5.0 SILTY SAND, light brown, moist , Alluvium (SM) <span style="float: right;">243.0</span>
10			5-7-9 (16)	[Dotted Pattern]	10.0 SILTY SAND, light brown, moist , Alluvium (SM) <span style="float: right;">238.0</span>
15	SS 149		5-7-13 (20)	[Diagonal Hatching]	15.0 CLAYEY SAND, grayish brown, moist , Alluvium (SC) <span style="float: right;">233.0</span>
20			2-2-6 (8)	[Diagonal Hatching]	20.0 CLAYEY SAND, grayish brown, moist , Alluvium (SC) <span style="float: right;">228.0</span>
25			2-7-9 (16)	[Diagonal Hatching]	25.0 CLAYEY SAND, grayish brown, moist , Alluvium (SC) <span style="float: right;">223.0</span>

Bottom of borehole at 25.0 feet.

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 1/27/22 09:33 - Z:\2021 PROJECT FILES\GT - GEOTECHNICAL SERVICES\1297.01 SD DEV: CLIFFDALE CROSSING; FAYETTEVILLE NCD. PROJECT FILES\1. FIELD LOGS\INSP REPORTS-ENGR REPORTS\GINT\1



**BORING NUMBER B-B1-2**  
PAGE 1 OF 1

**CLIENT** Smith Duggins Developers LLC      **PROJECT NAME** Cliffdale Crossing  
**PROJECT NUMBER** 21297.01      **PROJECT LOCATION** Cliffdale Road Fayetteville, NC  
**DATE STARTED** 1/24/22      **COMPLETED** 1/24/22      **GROUND ELEVATION** 247 ft      **HOLE SIZE** 4 inches  
**DRILLING CONTRACTOR** Alpha Environmental      **GROUND WATER LEVELS:**  
**DRILLING METHOD** Hollow Stem Auger with Splitspoon      **AT TIME OF DRILLING** ---  
**LOGGED BY** ASD      **CHECKED BY** CJM      **AT END OF DRILLING** ---  
**NOTES** \_\_\_\_\_      **AFTER DRILLING** ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION	
0					(OL), Topsoil	246.5
0 - 2.5	SS 150		4-4-4 (8)		SILTY SAND, light brown, moist, Alluvium (SM)	244.5
2.5 - 5.0			2-3-3 (6)		SILTY SAND, light brown, moist, Alluvium (SM)	242.0
5.0 - 10.0	SS 151		3-4-8 (12)		CLAYEY SAND, grayish brown, moist, Alluvium (SC)	237.0
10.0 - 15.0			16-12-12 (24)		CLAYEY SAND, grayish brown, moist, Alluvium (SC)	232.0
15.0 - 20.0	SS 152		5-8-15 (23)		SILTY SAND, moist, Alluvium (SM)	227.0

Bottom of borehole at 20.0 feet.

# BORING NUMBER B-B2-1

PAGE 1 OF 1



**CLIENT** Smith Duggins Developers LLC      **PROJECT NAME** Cliffdale Crossing  
**PROJECT NUMBER** 21297.01      **PROJECT LOCATION** Cliffdale Road Fayetteville, NC  
**DATE STARTED** 1/21/22      **COMPLETED** 1/21/22      **GROUND ELEVATION** 246 ft      **HOLE SIZE** 4 inches  
**DRILLING CONTRACTOR** Alpha Environmental      **GROUND WATER LEVELS:**  
**DRILLING METHOD** Hollow Stem Auger with Splitspoon      **AT TIME OF DRILLING** ---  
**LOGGED BY** ASD      **CHECKED BY** CJM      **AT END OF DRILLING** ---  
**NOTES** \_\_\_\_\_      **AFTER DRILLING** ---

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 1/27/22 09:33 - Z:\2021 PROJECT FILES\GT - GEOTECHNICAL SERVICES\21297.01 SD DEV: CLIFFDALE CROSSING; FAYETTEVILLE NCD. PROJECT FILES\1. FIELD LOGS\INSP REPORTS\ENGR REPORTS\GINT\

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft)
0					(OL), Topsoil	245.5
0 - 2.5	SS 118		3-4-5 (9)		SILTY SAND, light brown, moist, Alluvium (SM)	243.5
2.5 - 5.0			3-4-5 (9)		SILTY SAND, light brown, moist, Alluvium (SM)	241.0
5.0 - 10.0	SS 119		4-5-6 (11)		SILTY SAND, reddish brown grayish, moist, Alluvium (SM)	236.0
10.0 - 15.0	SS 120		2-5-12 (17)		SILTY SAND, light brown, moist, Alluvium (SM)	231.0
15.0 - 20.0	SS 121		2-5-6 (11)		CLAYEY SAND, pinkish brown, moist, Alluvium (SC)	226.0
20.0 - 25.0			2-5-7 (12)			221.0
					Bottom of borehole at 25.0 feet.	

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 1/27/22 09:33 - Z:\2021 PROJECT FILES\GT - GEOTECHNICAL SERVICES\21297.01 SD DEV; CLIFFDALE CROSSING; FAYETTEVILLE NCD. PROJECT FILES\1. FIELD LOGS\INSP REPORTS\ENGR REPORTS\GINT\1



**BORING NUMBER B-B2-2**  
PAGE 1 OF 1

<b>CLIENT</b> <u>Smith Duggins Developers LLC</u>	<b>PROJECT NAME</b> <u>Cliffdale Crossing</u>
<b>PROJECT NUMBER</b> <u>21297.01</u>	<b>PROJECT LOCATION</b> <u>Cliffdale Road Fayetteville, NC</u>
<b>DATE STARTED</b> <u>1/22/22</u> <b>COMPLETED</b> <u>1/22/22</u>	<b>GROUND ELEVATION</b> <u>246 ft</u> <b>HOLE SIZE</b> <u>4 inches</u>
<b>DRILLING CONTRACTOR</b> <u>Alpha Environmental</u>	<b>GROUND WATER LEVELS:</b>
<b>DRILLING METHOD</b> <u>Hollow Stem Auger with Splitspoon</u>	<b>AT TIME OF DRILLING</b> <u>---</u>
<b>LOGGED BY</b> <u>ASD</u> <b>CHECKED BY</b> <u>CJM</u>	<b>AT END OF DRILLING</b> <u>---</u>
<b>NOTES</b>	<b>AFTER DRILLING</b> <u>---</u>

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION
0					(OL), Topsoil	245.5
	SS 115		2-4-5 (9)		SILTY SAND, light brown, moist , Alluvium (SM)	243.5
			4-8-12 (20)		SILTY SAND, light brown, moist , Alluvium (SM)	241.0
5						
	SS 116		5-6-9 (15)		SILTY SAND, reddish brown grayish, moist , Alluvium (SM-SC)	236.0
10						
	SS 117		10-16-15 (31)		SILTY SAND, light brown, moist , Alluvium (SM)	231.0
15						
20			14-16-13 (29)		Bottom of borehole at 20.0 feet.	226.0

# BORING NUMBER B-B3-1



**CLIENT** Smith Duggins Developers LLC      **PROJECT NAME** Cliffdale Crossing  
**PROJECT NUMBER** 21297.01      **PROJECT LOCATION** Cliffdale Road Fayetteville, NC  
**DATE STARTED** 1/23/22      **COMPLETED** 1/23/22      **GROUND ELEVATION** 251 ft      **HOLE SIZE** 4 inches  
**DRILLING CONTRACTOR** Alpha Environmental      **GROUND WATER LEVELS:**  
**DRILLING METHOD** Hollow Stem Auger with Splitspoon      **AT TIME OF DRILLING** ---  
**LOGGED BY** ASD      **CHECKED BY** CJM      **AT END OF DRILLING** ---  
**NOTES** \_\_\_\_\_      **AFTER DRILLING** ---

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 1/27/22 09:34 - Z:\2021 PROJECT FILES\GT - GEOTECHNICAL SERVICES\21297.01 SD DEV: CLIFFDALE CROSSING; FAYETTEVILLE NCD. PROJECT FILES\1. FIELD LOGS\INSP REPORTS\ENGR REPORTS\GINT\

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft)
0					(OL), Topsoil	250.5
0 - 2.5	SS 131		3-5-6 (11)		SILTY SAND, light brown, Alluvium (SM)	248.5
2.5 - 5.0			6-10-11 (21)		SILTY SAND, light brown, Alluvium (SM)	246.0
5.0 - 10.0			6-12-10 (22)		SILTY SAND, light brown, Alluvium (SM)	241.0
10.0 - 15.0	SS 132		6-8-9 (17)		SILTY SAND, pinkish brown, Alluvium (SM-SC)	236.0
15.0 - 20.0			5-6-7 (13)		WELL GRADED SAND, reddish brown, Alluvium (SW)	231.0
20.0 - 25.0	SS 133		2-7-9 (16)			226.0
					Bottom of borehole at 25.0 feet.	

# BORING NUMBER B-B3-2

PAGE 1 OF 1



**CLIENT** Smith Duggins Developers LLC      **PROJECT NAME** Cliffdale Crossing  
**PROJECT NUMBER** 21297.01      **PROJECT LOCATION** Cliffdale Road Fayetteville, NC  
**DATE STARTED** 1/22/22      **COMPLETED** 1/22/22      **GROUND ELEVATION** 249 ft      **HOLE SIZE** 4 inches  
**DRILLING CONTRACTOR** Alpha Environmental      **GROUND WATER LEVELS:**  
**DRILLING METHOD** Hollow Stem Auger with Splitspoon      **AT TIME OF DRILLING** ---  
**LOGGED BY** ASD      **CHECKED BY** CJM      **AT END OF DRILLING** ---  
**NOTES** \_\_\_\_\_      **AFTER DRILLING** ---

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 1/27/22 09:34 - Z:\2021 PROJECT FILES\GT - GEOTECHNICAL SERVICES\21297.01 SD DEV: CLIFFDALE CROSSING; FAYETTEVILLE NCD. PROJECT FILES\1. FIELD LOGS\INSP REPORTS-ENGR REPORTS\GINT\

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft)
0					(OL), Topsoil	248.5
0 - 2.5	SS 128		3-4-7 (11)		SILTY SAND, light brown, moist, Alluvium (SM)	246.5
2.5 - 5.0			5-7-10 (17)		SILTY SAND, light brown, moist, Alluvium (SM)	244.0
5.0 - 10.0			7-9-10 (19)		SILTY SAND, light brown, moist, Alluvium (SM)	239.0
10.0 - 15.0	SS 129		6-7-10 (17)		WELL GRADED SAND, CLAYEY, moist, Alluvium (SM)	234.0
15.0 - 20.0	SS 130		2-15-17 (32)		SILTY SAND, light brown, moist, Alluvium (SM)	229.0
20.0					Bottom of borehole at 20.0 feet.	

# BORING NUMBER B-B3-3



**CLIENT** Smith Duggins Developers LLC      **PROJECT NAME** Cliffdale Crossing  
**PROJECT NUMBER** 21297.01      **PROJECT LOCATION** Cliffdale Road Fayetteville, NC  
**DATE STARTED** 1/22/22      **COMPLETED** 1/22/22      **GROUND ELEVATION** 248 ft      **HOLE SIZE** 4 inches  
**DRILLING CONTRACTOR** Alpha Environmental      **GROUND WATER LEVELS:**  
**DRILLING METHOD** Hollow Stem Auger with Splitspoon      **AT TIME OF DRILLING** ---  
**LOGGED BY** ASD      **CHECKED BY** CJM      **AT END OF DRILLING** ---  
**NOTES** \_\_\_\_\_      **AFTER DRILLING** ---

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 1/27/22 09:34 - Z:\2021 PROJECT FILES\GT - GEOTECHNICAL SERVICES\21297.01 SD DEV: CLIFFDALE CROSSING; FAYETTEVILLE NCD. PROJECT FILES\1. FIELD LOGS\INSP REPORTS-ENGR REPORTS\GINT\

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION
0					(OL), Topsoil	247.5
0 - 2.5	SS 122		3-4-6 (10)		SILTY SAND, light brown, moist, Alluvium (SM)	245.5
2.5 - 5.0			4-6-10 (16)		SILTY SAND, light brown, moist, Alluvium (SM)	243.0
5.0 - 10.0	SS 123		6-8-10 (18)		SILTY SAND, pinkish brown, moist, Alluvium (SC-SM)	238.0
10.0 - 15.0			4-8-13 (21)		SILTY SAND, pinkish brown, moist, Alluvium (SC-SM)	233.0
15.0 - 20.0	SS 124		4-14-16 (30)		SILTY SAND, light brown, moist, Alluvium (SW-SM)	228.0
20.0					Bottom of borehole at 20.0 feet.	

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 1/27/22 09:36 - Z:\2021 PROJECT FILES\GT - GEOTECHNICAL SERVICES\21297.01 SD DEV: CLIFFDALE CROSSING; FAYETTEVILLE NCD. PROJECT FILES\1. FIELD LOGS\INSP REPORTS\ENGR REPORTS\GINT\

# BORING NUMBER B-B4-1



<b>CLIENT</b> <u>Smith Duggins Developers LLC</u> <b>PROJECT NUMBER</b> <u>21297.01</u> <b>DATE STARTED</b> <u>1/23/22</u> <b>COMPLETED</b> <u>1/23/22</u> <b>DRILLING CONTRACTOR</b> <u>Alpha Environmental</u> <b>DRILLING METHOD</b> <u>Hollow Stem Auger with Splitspoon</u> <b>LOGGED BY</b> <u>ASD</u> <b>CHECKED BY</b> <u>CJM</u> <b>NOTES</b> _____	<b>PROJECT NAME</b> <u>Cliffdale Crossing</u> <b>PROJECT LOCATION</b> <u>Cliffdale Road Fayetteville, NC</u> <b>GROUND ELEVATION</b> <u>251 ft</u> <b>HOLE SIZE</b> <u>4 inches</u> <b>GROUND WATER LEVELS:</b> <b>AT TIME OF DRILLING</b> _____ <b>AT END OF DRILLING</b> <u>18.00 ft / Elev 233.00 ft</u> <b>AFTER DRILLING</b> _____
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DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION
0					0.5 (OL), Topsoil <span style="float: right;">250.5</span>
	SS 137		3-5-6 (11)		2.5 SILTY SAND, light brown, moist, Alluvium (SM) <span style="float: right;">248.5</span>
5			5-7-8 (15)		5.0 SILTY SAND, light brown, moist, Alluvium (SM) <span style="float: right;">246.0</span>
10		SS 138		6-7-9 (16)	
15	SS 139		11-16-17 (33)		15.0 WELL GRADED SAND, light brown, moist, Alluvium (SW) <span style="float: right;">236.0</span>
20	SS 140		7-4-9 (13)		20.0 CLAYEY SAND, light brown, wet, Alluvium (SC) <span style="float: right;">231.0</span>
25			2-6-8 (14)		25.0 CLAYEY SAND, light brown, wet, Alluvium (SC) <span style="float: right;">226.0</span>

Bottom of borehole at 25.0 feet.



# BORING NUMBER B-B4-2



**CLIENT** Smith Duggins Developers LLC      **PROJECT NAME** Cliffdale Crossing  
**PROJECT NUMBER** 21297.01      **PROJECT LOCATION** Cliffdale Road Fayetteville, NC  
**DATE STARTED** 1/23/22      **COMPLETED** 1/23/22      **GROUND ELEVATION** 250 ft      **HOLE SIZE** 4 inches  
**DRILLING CONTRACTOR** Alpha Environmental      **GROUND WATER LEVELS:**  
**DRILLING METHOD** Hollow Stem Auger with Splitspoon      **AT TIME OF DRILLING** ---  
**LOGGED BY** ASD      **CHECKED BY** CJM      **AT END OF DRILLING** ---  
**NOTES** \_\_\_\_\_      **AFTER DRILLING** ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION
0					(OL), Topsoil
0.5					249.5
2.5	SS 141		5-7-10 (17)		SILTY SAND, light brown , Alluvium (SM)
247.5					
5.0			4-6-9 (15)		SILTY SAND, light brown , Alluvium (SM)
245.0					
10.0			6-10-13 (23)		SILTY SAND, light brown , Alluvium (SM)
240.0					
15.0	SS 142		10-12-14 (26)		WELL GRADED SAND WITH SILT, CLAYEY SAND, pinkish brown, moist , Alluvium (SC-SM)
235.0					
20.0	SS 143		2-10-13 (23)		SILTY SAND, light brown, moist , Alluvium (SM)
230.0					Bottom of borehole at 20.0 feet.

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 1/27/22 09:36 - Z:\2021 PROJECT FILES\GT - GEOTECHNICAL SERVICES\21297.01 SD DEV: CLIFFDALE CROSSING: FAYETTEVILLE NCD. PROJECT FILES\1. FIELD LOGS\INSP REPORTS-ENGR REPORTS\GINT\

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 1/27/22 09:35 - Z:\2021 PROJECT FILES\GT - GEOTECHNICAL SERVICES\21297.01 SD DEV; CLIFFDALE CROSSING; FAYETTEVILLE NCD. PROJECT FILES\1. FIELD LOGS\INSPECTION REPORTS\ENGR REPORTS\GINT\



**BORING NUMBER B-B4-3**  
PAGE 1 OF 1

<b>CLIENT</b> <u>Smith Duggins Developers LLC</u>	<b>PROJECT NAME</b> <u>Cliffdale Crossing</u>
<b>PROJECT NUMBER</b> <u>21297.01</u>	<b>PROJECT LOCATION</b> <u>Cliffdale Road Fayetteville, NC</u>
<b>DATE STARTED</b> <u>1/24/22</u> <b>COMPLETED</b> <u>1/24/22</u>	<b>GROUND ELEVATION</b> <u>249 ft</u> <b>HOLE SIZE</b> <u>4 inches</u>
<b>DRILLING CONTRACTOR</b> <u>Alpha Environmental</u>	<b>GROUND WATER LEVELS:</b>
<b>DRILLING METHOD</b> <u>Hollow Stem Auger with Splitspoon</u>	<b>AT TIME OF DRILLING</b> <u>---</u>
<b>LOGGED BY</b> <u>ASD</u> <b>CHECKED BY</b> <u>CJM</u>	<b>AT END OF DRILLING</b> <u>---</u>
<b>NOTES</b>	<b>AFTER DRILLING</b> <u>---</u>

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION
0					0.5 (OL), Topsoil 248.5
	SS 144		8-10-12 (22)	[Dotted pattern]	2.5 SILTY SAND, light brown, moist , Alluvium (SM) 246.5
5			6-11-15 (26)	[Dotted pattern]	5.0 SILTY SAND, light brown, moist , Alluvium (SM) 244.0
10	SS 145		6-12-16 (28)	[Dotted pattern]	10.0 SILTY SAND, light brown, moist , Alluvium (SM) 239.0
15	SS 146		6-6-7 (13)	[Diagonal hatching]	15.0 SILTY SAND, pinkish brown, moist , Alluvium (SC-SM) 234.0
20	SS 147		2-8-9 (17)	[Diagonal hatching]	20.0 SILTY SAND, light brown, saturated , Alluvium (SM) 229.0

Bottom of borehole at 20.0 feet.

GENERAL BH / TP / WELL - GINT STD US.GDT - 1/31/22 09:16 - \\WSVR19-DC01\USERS\2021 PROJECT FILES\GT - GEOTECHNICAL SERVICES\21297.01 SD DEV: CLIFFDALE CROSSING; FAYETTEVILLE NCD. PROJECT FILES\1. FIELD LOGS-INSP REPORTS-ENGR RE



ALPHA ENVIRONMENTAL  
ALPHA ENGINEERING SERVICES, P.A.

# BORING NUMBER B-RW-5

PAGE 1 OF 1

**CLIENT** Smith Duggins Developers LLC **PROJECT NAME** Cliffdale Crossing  
**PROJECT NUMBER** 21297.01 **PROJECT LOCATION** Cliffdale Road Fayetteville, NC  
**DATE STARTED** 1/20/22 **COMPLETED** 1/20/22 **GROUND ELEVATION** 249 ft **HOLE SIZE** 4 inches  
**DRILLING CONTRACTOR** Alpha Environmental **GROUND WATER LEVELS:**  
**DRILLING METHOD** Hollow Stem Auger with Splitspoon **AT TIME OF DRILLING** ---  
**LOGGED BY** ASD **CHECKED BY** CJM **AT END OF DRILLING** ---  
**NOTES** \_\_\_\_\_ **AFTER DRILLING** ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION	
0					(OL), Topsoil	248.5
	SS-100		0-0-0 (0)		SILTY SAND, light brown, dry, Fill Material (SM)	246.5
5	SS-101		0-5-11 (16)		SILTY SAND, light brown, dry, Saprolite (SM)	244.0
10	SS-102		2-7-12 (19)		SILTY SAND, grayish brown, dry, Saprolite (SM)	239.0
			7-14-12 (26)		Bottom of borehole at 12.5 feet.	236.5

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 1/27/22 09:39 - Z:\2021 PROJECT FILES\GT - GEOTECHNICAL SERVICES\21297.01 SD DEV; CLIFFDALE CROSSING; FAYETTEVILLE NCD. PROJECT FILES\1. FIELD LOGS\INSP REPORTS\ENGR REPORTS\GINT\



<b>CLIENT</b> <u>Smith Duggins Developers LLC</u>	<b>PROJECT NAME</b> <u>Cliffdale Crossing</u>
<b>PROJECT NUMBER</b> <u>21297.01</u>	<b>PROJECT LOCATION</b> <u>Cliffdale Road Fayetteville, NC</u>
<b>DATE STARTED</b> <u>1/20/22</u> <b>COMPLETED</b> <u>1/20/22</u>	<b>GROUND ELEVATION</b> <u>250 ft</u> <b>HOLE SIZE</b> <u>4 inches</u>
<b>DRILLING CONTRACTOR</b> <u>Alpha Environmental</u>	<b>GROUND WATER LEVELS:</b>
<b>DRILLING METHOD</b> <u>Hollow Stem Auger with Splitspoon</u>	<b>AT TIME OF DRILLING</b> <u>---</u>
<b>LOGGED BY</b> <u>ASD</u> <b>CHECKED BY</b> <u>CJM</u>	<b>AT END OF DRILLING</b> <u>---</u>
<b>NOTES</b> _____	<b>AFTER DRILLING</b> <u>---</u>

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION	
0						
				---	(OL), Topsoil	249.5
	SS 103		11-2-3 (5)		SILTY SAND, light brown, dry , Colluvium (SM)	247.5
5	SS 104		4-3-5 (8)		SILTY SAND, light brown, dry , Colluvium (SM)	245.0
10	SS 105		7-7-8 (15)		SILTY SAND, brownish gray, dry , Saprolite (SM), Minor Gravel	240.0
			7-7-11 (18)		Bottom of borehole at 12.5 feet.	237.5

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 1/27/22 09:39 - Z:\2021 PROJECT FILES\GT - GEOTECHNICAL SERVICES\21297.01 SD DEV; CLIFFDALE CROSSING; FAYETTEVILLE NCD. PROJECT FILES\1. FIELD LOGS\INSP REPORTS-ENGR REPORTS\GINT\



<b>CLIENT</b> <u>Smith Duggins Developers LLC</u>	<b>PROJECT NAME</b> <u>Cliffdale Crossing</u>
<b>PROJECT NUMBER</b> <u>21297.01</u>	<b>PROJECT LOCATION</b> <u>Cliffdale Road Fayetteville, NC</u>
<b>DATE STARTED</b> <u>1/24/22</u> <b>COMPLETED</b> <u>1/24/22</u>	<b>GROUND ELEVATION</b> <u>246 ft</u> <b>HOLE SIZE</b> <u>4 inches</u>
<b>DRILLING CONTRACTOR</b> <u>Alpha Environmental</u>	<b>GROUND WATER LEVELS:</b>
<b>DRILLING METHOD</b> <u>Hollow Stem Auger with Splitspoon</u>	<b>AT TIME OF DRILLING</b> <u>---</u>
<b>LOGGED BY</b> <u>ASD</u> <b>CHECKED BY</b> <u>CJM</u>	<b>AT END OF DRILLING</b> <u>---</u>
<b>NOTES</b> _____	<b>AFTER DRILLING</b> <u>---</u>

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION	
0					(OL), Topsoil	245.5
	SS 153		5-3-3 (6)		SILTY SAND, light brown, moist , Alluvium (SM)	243.5
			3-4-5 (9)		SILTY SAND, light brown, moist , Alluvium (SM)	241.0
5					SILTY SAND, light brown, moist , Alluvium (SM)	
10	SS 154		5-7-9 (16)		SILTY CLAYEY SAND, pinkish brown, moist , Alluvium (SM-SC)	236.0
15			10-12-12 (24)		SILTY CLAYEY SAND, pinkish brown, moist , Alluvium (SM-SC) Bottom of borehole at 15.0 feet.	231.0

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 1/27/22 09:38 - Z:\2021 PROJECT FILES\GT - GEOTECHNICAL SERVICES\21297.01 SD DEV: CLIFFDALE CROSSING; FAYETTEVILLE NCD. PROJECT FILES\1. FIELD LOGS\INSR REPORTS-ENGR REPORTS\GINT\



<b>CLIENT</b> <u>Smith Duggins Developers LLC</u>	<b>PROJECT NAME</b> <u>Cliffdale Crossing</u>
<b>PROJECT NUMBER</b> <u>21297.01</u>	<b>PROJECT LOCATION</b> <u>Cliffdale Road Fayetteville, NC</u>
<b>DATE STARTED</b> <u>1/22/22</u> <b>COMPLETED</b> <u>1/22/22</u>	<b>GROUND ELEVATION</b> <u>249 ft</u> <b>HOLE SIZE</b> <u>4 inches</u>
<b>DRILLING CONTRACTOR</b> <u>Alpha Environmental</u>	<b>GROUND WATER LEVELS:</b>
<b>DRILLING METHOD</b> <u>Hollow Stem Auger with Splitspoon</u>	<b>AT TIME OF DRILLING</b> <u>---</u>
<b>LOGGED BY</b> <u>ASD</u> <b>CHECKED BY</b> <u>CJM</u>	<b>AT END OF DRILLING</b> <u>---</u>
<b>NOTES</b>	<b>AFTER DRILLING</b> <u>---</u>

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION (ft)
0					(OL), Topsoil	248.5
0 - 2.5	SS 125		3-3-7 (10)		WELL GRADED SAND WITH SILT, light brown, moist , Alluvium (SM)	246.5
2.5 - 5.0			5-11-16 (27)		WELL GRADED SAND WITH SILT, light brown, moist , Alluvium (SM)	244.0
5.0 - 10.0	SS 126		5-9-10 (19)		SILTY CLAYEY SAND, moist , Alluvium (SC-SM)	239.0
10.0 - 15.0	SS 127		10-15-12 (27)		WELL GRADED SAND, reddish brown, moist , Alluvium (SW) Bottom of borehole at 15.0 feet.	234.0

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 1/28/22 15:18 - Z:\2021 PROJECT FILES\GT - GEOTECHNICAL SERVICES\21297.01 SD DEV; CLIFFDALE CROSSING; FAYETTEVILLE NCD. PROJECT FILES\1. FIELD LOGS\INSPIR-ENG-REPORTS\GINT\



<b>CLIENT</b> <u>Smith Duggins Developers LLC</u>	<b>PROJECT NAME</b> <u>Cliffdale Crossing</u>
<b>PROJECT NUMBER</b> <u>21297.01</u>	<b>PROJECT LOCATION</b> <u>Cliffdale Road Fayetteville, NC</u>
<b>DATE STARTED</b> <u>1/23/22</u> <b>COMPLETED</b> <u>1/23/22</u>	<b>GROUND ELEVATION</b> <u>252 ft</u> <b>HOLE SIZE</b> <u>4 inches</u>
<b>DRILLING CONTRACTOR</b> <u>Alpha Environmental</u>	<b>GROUND WATER LEVELS:</b>
<b>DRILLING METHOD</b> <u>Hollow Stem Auger with Splitspoon</u>	<b>AT TIME OF DRILLING</b> <u>---</u>
<b>LOGGED BY</b> <u>ASD</u> <b>CHECKED BY</b> <u>CJM</u>	<b>AT END OF DRILLING</b> <u>---</u>
<b>NOTES</b>	<b>AFTER DRILLING</b> <u>---</u>

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	GRAPHIC LOG	MATERIAL DESCRIPTION	
0					(OL), Topsoil	251.5
	SS 134		4-6-8 (14)		SANDY SILT, light brown, moist , Alluvium (SM)	249.5
			6-11-15 (26)		SANDY SILT, light brown, moist , Alluvium (SM)	247.0
5			8-12-11 (23)		SANDY SILT, light brown, moist , Alluvium (SM)	242.0
10	SS 135				SILTY CLAYEY SAND, pinkish brown, moist , Alluvium (ML)	
15	SS 136		6-7-8 (15)		SANDY SILT, moist , Alluvium (CLS)	237.0

Bottom of borehole at 15.0 feet.

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**Appendix II**  
**Laboratory Test Results**



Project :	<b>CLIFFDALE CROSSING</b>	Sample ID:	SS-129
Project Number:	21297.01	Sampled From:	B3-2
Client :	Smith Duggins Developers LLC	Sample Depth	15'
Contact:	Wade Duggins	Sample Date:	1/22/2022

Sample Field Description (From Bore Logs): Light Brown Silty Sand

Reported By:	CMK	Testing Date:	1/27/2022	<b>United Soil Classification System</b>	<b>SM</b>
Sample Amount <b>Pre Wash Wet + Pan</b> (g)	347.00	Sample Amount <b>Pre Wash Dry</b> (g)	214.57		
Sample Amount <b>Pre Wash Dry + Pan</b> (g)	313.87	Sample Amount <b>Post Wash Dry</b> (g)	125.98		
Sample Amount <b>Post Wash Dry + Pan</b> (g)	225.28	Amount Washed Through #200 (g)	88.59		
Weigh of Pan <b>Empty/Clean</b> (g)	99.30				

Grain Size Description	Sieve Size Number	Sieve Opening Size (inches)	Sieve Opening Size (millimeters)	Weight Retained (g)	Cumulative Weight Retained (g)	Cumulative % Retained	Cumulative % Finer
Coarse Sand	4	0.187	4.76	0.00	0.00	0.0	100.0
Medium Sand	20	0.33	0.84	13.36	13.36	6.2	93.8
Medium Fine Sand	40	0.0165	0.42	35.86	49.22	23.0	77.0
Fine Sand	80	0.0083	0.21	43.08	92.30	43.0	57.0
Very Fine Sand	100	0.0059	0.149	6.17	98.47	45.9	54.1
Fines (Silts/Clays)	200	0.0029	0.074	26.58	125.05	58.3	41.7
Passing #200	Bowl	0.00039	0.01	0.78	214.42	100.0	0.0

## Grain Size Distribution



Project :	<b>CLIFFDALE CROSSING</b>	Sample ID:	SS-136
Project Number:	21297.01	Sampled From:	B-RW-1
Client :	Smith Duggins Developers LLC	Sample Depth	15'
Contact:	Wade Duggins	Sample Date:	1/23/2022

Sample Field Description (From Bore Logs): Pinkish Brown Sandy Clayey Silt

Reported By: CMK	Testing Date: 1/23/2022	<b>United Soil Classification System</b>	<b>ML</b>
Sample Amount <b>Pre Wash Wet + Pan</b> (g)	459.00	Sample Amount <b>Pre Wash Dry</b> (g)	268.34
Sample Amount <b>Pre Wash Dry + Pan</b> (g)	404.77	Sample Amount <b>Post Wash Dry</b> (g)	122.24
Sample Amount <b>Post Wash Dry + Pan</b> (g)	258.67	Amount Washed Through #200 (g)	146.10
Weigh of Pan <b>Empty/Clean</b> (g)	136.43		

Grain Size Description	Sieve Size Number	Sieve Opening Size (inches)	Sieve Opening Size (millimeters)	Weight Retained (g)	Cumulative Weight Retained (g)	Cumulative % Retained	Cumulative % Finer
Coarse Sand	4	0.187	4.76	0.00	0.00	0.0	100.0
Medium Sand	20	0.33	0.84	7.58	7.58	2.8	97.2
Medium Fine Sand	40	0.0165	0.42	24.75	32.33	12.1	87.9
Fine Sand	80	0.0083	0.21	44.13	76.46	28.5	71.5
Very Fine Sand	100	0.0059	0.149	8.28	84.74	31.6	68.4
Fines (Silts/Clays)	200	0.0029	0.074	34.53	119.27	44.5	55.5
Passing #200	Bowl	0.00039	0.01	2.65	268.02	100.0	0.0

## Grain Size Distribution



Project :	<b>CLIFFDALE CROSSING</b>	Sample ID:	SS-145
Project Number:	21297.01	Sampled From:	B4-3
Client :	Smith Duggins Developers LLC	Sample Depth	10'
Contact:	Wade Duggins	Sample Date:	1/24/2022

Sample Field Description (From Bore Logs): Light Brown Silty Sand

Reported By: CMK	Testing Date: 1/27/2022	<b>United Soil Classification System</b>	<b>SM</b>
Sample Amount <b>Pre Wash Wet + Pan</b> (g)	404.06	Sample Amount <b>Pre Wash Dry</b> (g)	226.75
Sample Amount <b>Pre Wash Dry + Pan</b> (g)	363.03	Sample Amount <b>Post Wash Dry</b> (g)	145.35
Sample Amount <b>Post Wash Dry + Pan</b> (g)	281.63	Amount Washed Through #200 (g)	81.40
Weigh of Pan <b>Empty/Clean</b> (g)	136.28		

Grain Size Description	Sieve Size Number	Sieve Opening Size (inches)	Sieve Opening Size (millimeters)	Weight Retained (g)	Cumulative Weight Retained (g)	Cumulative % Retained	Cumulative % Finer
Coarse Sand	4	0.187	4.76	0.00	0.00	0.0	100.0
Medium Sand	20	0.33	0.84	10.69	10.69	4.7	95.3
Medium Fine Sand	40	0.0165	0.42	31.10	41.79	18.5	81.5
Fine Sand	80	0.0083	0.21	59.45	101.24	44.7	55.3
Very Fine Sand	100	0.0059	0.149	9.60	110.84	49.0	51.0
Fines (Silts/Clays)	200	0.0029	0.074	31.31	142.15	62.8	37.2
Passing #200	Bowl	0.00039	0.01	2.79	226.34	100.0	0.0

## Grain Size Distribution



Project :	<b>CLIFFDALE CROSSING</b>	Sample ID:	SS-154
Project Number:	21297.01	Sampled From:	B-RW-3
Client :	Smith Duggins Developers LLC	Sample Depth	10'
Contact:	Wade Duggins	Sample Date:	1/24/2022

Sample Field Description (From Bore Logs): Pinkish Brown Silty Clayey Sand

Reported By:	CMK	Testing Date:	1/27/2022	<b>United Soil Classification System</b>	<b>SM</b>
Sample Amount <b>Pre Wash Wet + Pan</b> (g)	370.34	Sample Amount <b>Pre Wash Dry</b> (g)	212.09		
Sample Amount <b>Pre Wash Dry + Pan</b> (g)	347.57	Sample Amount <b>Post Wash Dry</b> (g)	180.64		
Sample Amount <b>Post Wash Dry + Pan</b> (g)	316.12	Amount Washed Through #200 (g)	31.45		
Weigh of Pan <b>Empty/Clean</b> (g)	135.48				

Grain Size Description	Sieve Size Number	Sieve Opening Size (inches)	Sieve Opening Size (millimeters)	Weight Retained (g)	Cumulative Weight Retained (g)	Cumulative % Retained	Cumulative % Finer
Coarse Sand	4	0.187	4.76	0.00	0.00	0.0	100.0
Medium Sand	20	0.33	0.84	16.51	16.51	10.3	89.7
Medium Fine Sand	40	0.0165	0.42	54.96	71.47	44.4	55.6
Fine Sand	80	0.0083	0.21	23.11	94.58	58.8	41.2
Very Fine Sand	100	0.0059	0.149	8.52	103.10	64.1	35.9
Fines (Silts/Clays)	200	0.0029	0.074	23.91	127.01	78.9	21.1
Passing #200	Bowl	0.00039	0.01	2.50	160.96	100.0	0.0

## Grain Size Distribution





MATERIALS ENGINEERING DIVISION

Project No: 21297.01  
Project Name: Cliffdale Crossing  
Project Location: Fayetteville NC

### Water Content Laboratory Analysis

Tested By: CMK Date Tested: 1/27/2022 Date Weighed: 1/28/2022

Sample ID.	SS-129	SS-136	SS-145	SS-154	
Sample Date	1/22/2022	1/23/2022	1/24/2022	1/24/2022	
Sample Description (From Bore Log)	Light Brown Silty Sand	Pinkish Brown Sandy Clayey Silt	Light Brown Silty Sand	Pinkish Brown Silty Clayey Sand	
Boring No.	B3-2	B-RW-1	B4-3	B-RW-3	
Container No. (cup)	1	2	3	4	
Mass of Cup + Wet Soil <b>(A)</b>	347	459	404.06	370.34	
Mass of Cup + Dry Soil <b>(B)</b>	313.87	404.77	363.03	347.57	
Mass of Cup <b>(C)</b>	99.3	136.43	136.28	135.48	
Mass of Dry Soil <b>(B-C)</b>	214.57	268.34	226.75	212.09	
Mass of Water <b>(A-B)</b>	33.13	54.23	41.03	22.77	
Water Content% <b>(A-B/D) x 100</b>	<b>15.4</b>	<b>20.2</b>	<b>18.1</b>	<b>10.7</b>	

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**Appendix III**  
**Unified Soil Classification System**

## Unified Soil Classification System

Major Division		Group Symbol	Typical Names	Laboratory Classification Criteria		
Coarse grained soils (more than half of materials are larger than No. 200 sieve size)	Gravel's (More than half of coarse fraction larger than No. 4 sieve size)	GW	Well graded gravel's, gravel sand mixtures, little or no fines	$C_u = D_{60}/D_{10}$ greater than 4; $C_c = (D_{30})^2/D_{10}$ X $D_{60}$ between 1 and 3		
		GP	Poorly graded gravel's, gravel sand mixtures, little or no fines	Not meeting all gradation requirements for GW		
		GM	d	Silty gravel's, gravel sand silt mixtures	Atterberg limits below "A" line or P.I. greater than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
			u			
	GC	Clayey gravel's, gravel sand clay mixtures	Atterberg limits below "A" line with P.I. greater than 7			
	Sands (More than half of coarse fraction smaller than No. 4 sieve size)	Clean sands (little or no fines)	SW	Well graded sands, gravelly sands, little or no fines	$C_u = D_{60}/D_{10}$ greater than 6; $C_c = (D_{30})^2/D_{10}$ X $D_{60}$ between 1 and 3	
			SP	Poorly graded sands, little or no fines	Not meeting all gradation requirements for GW	
		SM	d	Silty sands, sand silt mixture	Atterburg limits below "A" line or P.I. greater than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
			u			
	SC	Clayey sands, sand clay mixture	Atterberg limits below "A" line with P.I. greater than 7			
Fine grained soils (More than half of materials is smaller than No. 200 sieve size)	Silts and clays (Liquid limit less than 50)	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts, silts with slight plasticity	Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse grained soils are classified as follows:		
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	Less than 5% - GW, GP, SW, SP More than 12% - GM, GC, Sm, SC		
		OL	Organic silts and organic silty clays of low plasticity	5 - 12% - Borderline cases requiring dual symbols		
	Silts and clays (Liquid limit greater than 50)	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts	Notes:		
		CH	Inorganic clays of high plasticity, fat clays			
		OH	Organic clays of medium to high plasticity, organic silts			
		Pt	Peat and other highly organic soils			

### Drilling and Sampling Symbols

SS	Split Spoon 1 1/3" I.D., 2" o.d.	OS	Osterberg Sampler - 3" Shelby Tube
St	Shelby Tube = 2" O.D.	HS	Hollow Stem Auger
PA	Power Auger	WS	Wash Sample
DB	Diamond Bit - NX, BX, AX	FT	Fish Tail
AS	Auger Sample	RB	Rock Bit
JS	Jar Sample	BS	Bulk Sample
VS	Vane Shear	PM	Pressuremeter Test, In-Situ
		GS	Giddings Sampler

Standard "N" Penetration: Blows per foot of a 140-pound hammer falling 30 inches on a 2-inch O.D. split spoon sampler, except where otherwise noted.

### Water Level Measurement Symbols

WL	Water Level	WCI	Wet Cave In
WS	While Sampling	DCI	Dry Cave In
WD	While Drilling	BCR	Before Casing Removal
AB	After Boring	ACR	After Casing Removal

Water levels indicated as the boring logs are the levels recorded in the boring at the times indicated. In pervious soils, the indicated elevations are considered reliable groundwater levels. In impervious soils, the accurate determination of groundwater deviation may not be possible even after several days of observations, additional evidence of groundwater elevations must be sought.

### Gradation Description and Terminology

Coarse grained or granular soils have more than 50% of their dry weight retained as a #200 sieve; they are described as boulders, cobbles, gravel or sand. Fine grained soils have less than 50% of their dry weight retained as a #200 sieve; they are described as: clays or clayey silts, if they are cohesive and silts if they are not cohesive. In addition to gradation, granular soils are defined on the basis of their relative in-place density and fine grained soils on the basis of their strength or consistence and their plasticity.

Major Components of Sample	Size Grain	Descriptive Term of Components also Present in	Percent of Dry Weight
Boulders	Over 8-inches (200 mm)	Trace	1 - 9
Cobbles	8-inches to 3-inches (200 mm to 75 mm)	Little	10 - 19
Gravel	3-inches to #4 sieve (75 mm to 4/76 mm)	Some	20 - 34
Sand	#4 to #200 sieve (4.76 mm to 0.074 mm)	And	35 - 50
Silt	Passing #200 sieve (0.074 mm to 0.005 mm)		
Clay	smaller than 0.005 mm		
Consistency of Cohesive Soil		Relative Density of Granular Soils	
Unconfined Compressive Strength, $Q_2$ , tsf	Consistency	N - Blows per foot	Relative Density
<0.25	Very Soft	0 - 3	Very Loose
0.25 - 0.49	Soft	4 - 9	Loose
0.50 - 0.99	Medium (firm)	10 - 29	Medium Dense
1.00 - 1.99	Stiff	30 - 49	Dense
2.00 - 3.99	Very Stiff	50 - 80	Very Dense
4.00 - 8.00	Hard	80	Extremely Dense
>8.00	Very Hard		



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**Appendix IV**

**Seasonal High Water Table Study**



ALPHA ENVIRONMENTAL  
ALPHA ENGINEERING SERVICES, P.A.

January 11, 2022

Mr. Marvin Mercer, Principle  
MDG ENGINEERING  
P.O. BOX 1516  
WEAVERVILLE, NC 28787

Re: Infiltration Testing Report  
Cliffdale Crossing  
Fayetteville, NC 28311

Dear Mr. Mercer:

Alpha has predicted the seasonal high-water table (SHWT) for the above site to be 15.5' feet below the undisturbed surface grade. Based on the sample from the boring at the approximate center of the proposed pond the infiltration rate for the soils is calculated as 0.00031 in/hr.

Discussion: A seasonal high-water table (SHWT) is the shallowest depth to free water that stands in an unlined borehole or where the soil moisture tension is zero for a significant period (more than a few weeks) (Watts and Hurt, 1991). Although the published sources of information such as the Soil Conservation Service generally provide reliable preliminary guidance on the depth to the water table, Alpha conducted a site-specific investigation for comparison to the published data. This consisted of measuring the stabilized groundwater level in a newly opened borehole, or piezometer at a selected location and time; evaluating the soil profile in the test hole (i.e., sand, silty sand, clayey sand, etc.), including its redoximorphic features; and by performing infiltration testing of soil samples from the Site.

Conclusion: Alpha's prediction correlates to The Soil Conservation Service (SCS) of the United States Department of Agriculture mapping for the general area as having moderate depth soil and groundwater table conditions of more than 80 inches.

Alpha Environmental greatly appreciates the opportunity to conduct this investigation and provide this study and looks forward to working with you on the site development for the project. Please contact us for any additional questions regarding this report.

Sincerely,  
Alpha Environmental



Attachments: Soil laboratory results, Monitoring well readings.

---

PO BOX 2155 ASHEVILLE, NORTH CAROLINA 28802  
PHONE: 828-398-2040 FAX: 828-398-2041 EMAIL: INFO@ALPHAENVIRON.COM



**MOISTURE CONTENT**

ASTM D 2216-10

Client: Alpha Environmental  
 Client Reference: Cliffdale Crossing  
 Project No.: R-2021-324-001

Lab ID:	-001
Boring No.:	NA
Depth (ft):	NA
Sample No.:	S-1
Tare Number	445
Wt. of Tare & Wet Sample (g)	268.65
Wt. of Tare & Dry Sample (g)	242.18
Weight of Tare (g)	37.53
Weight of Water (g)	26.47
Weight of Dry Sample (g)	204.65
<b>Water Content (%)</b>	<b>12.9</b>

Notes :

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Tested By	RFF	Date	12/20/21	Checked By	AES	Date	12/20/21
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page 1 of 1 DCN: CT-S1 DATE: 3/18/13 REVISION: 4

## MOISTURE - DENSITY RELATIONSHIP

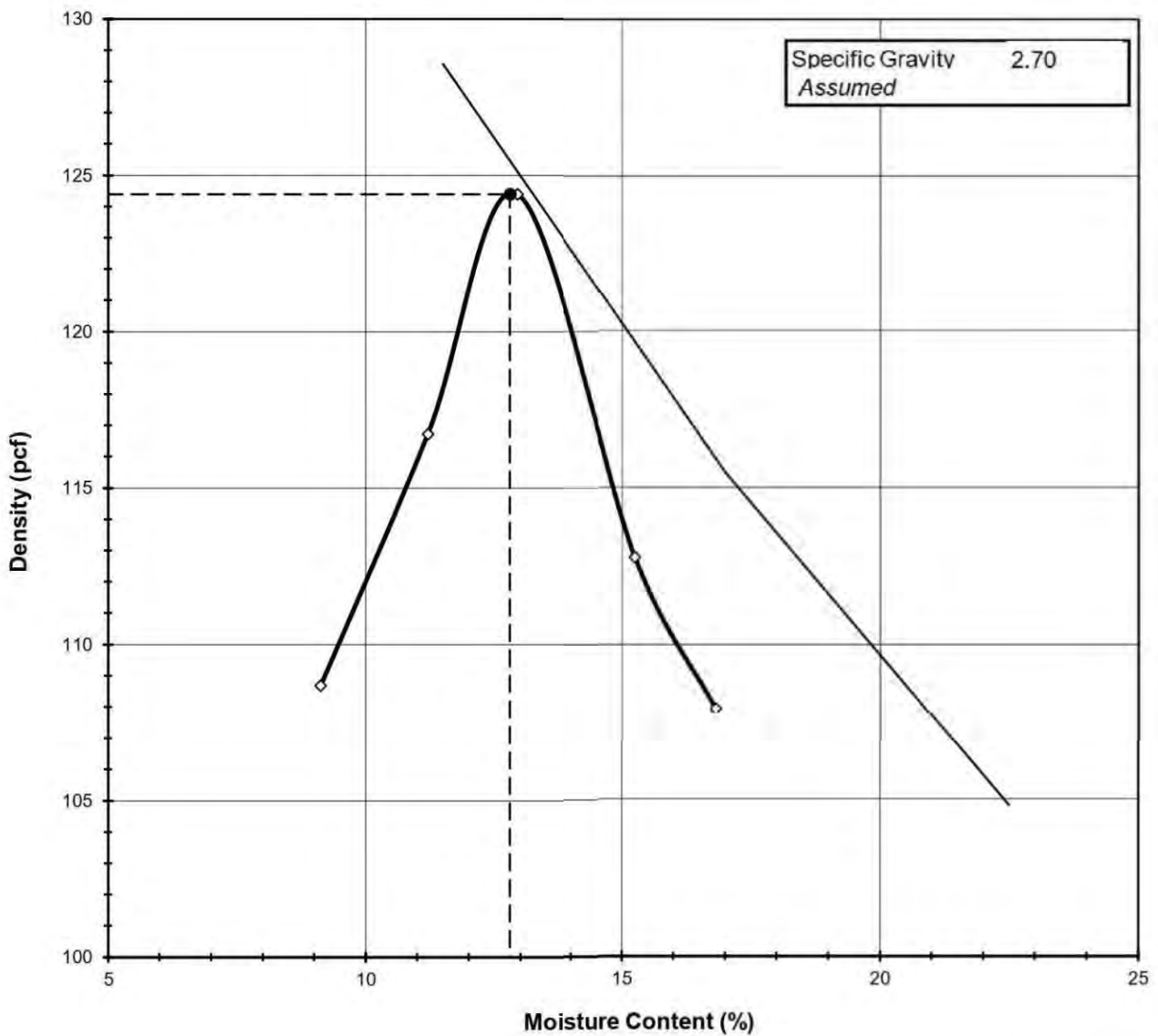
ASTM D698-12

Client: Alpha Environmental  
 Client Reference: Cliffdale Crossing  
 Project No.: R-2021-324-001  
 Lab ID: R-2021-324-001-001

Boring No.: NA  
 Depth (ft): NA  
 Sample No.: S-1  
 Test Method **STANDARD**

Visual Description: Brown Sandy Clay

**Optimum Moisture Content (%): 12.8**  
**Maximum Dry Density (pcf): 124.4**



Tested By NS Date 12/28/21 Checked By AES Date 12/29/21

## MOISTURE - DENSITY RELATIONSHIP

ASTM D698-12

Client: Alpha Environmental  
 Client Reference: Cliffdale Crossing  
 Project No.: R-2021-324-001  
 Lab ID: R-2021-324-001-001

Boring No.: NA  
 Depth (ft): NA  
 Sample No.: S-1

Visual Description: Brown Sandy Clay

Total Weight of the Sample (g):	20200
As Received Water Content (%):	NA
Assumed Specific Gravity:	2.70
Percent Retained on 3/4":	0
Percent Retained on 3/8":	0
Percent Retained on #4:	0
Oversize Material:	Not included
Procedure Used:	B

Test Type:	<b>STANDARD</b>
Rammer Weight (lb):	5.5
Rammer Drop (in):	12
Rammer Type:	MECHANICAL
Machine ID:	R174
Mold ID:	R607
Mold diameter:	4"
Weight of the Mold (g):	4261
Volume of the Mold (cm <sup>3</sup> ):	943

### Mold / Specimen

Point No.	1	2	3	4	5
Weight of Mold & Wet Sample (g):	6054	6223	6385	6226	6167
Weight of Mold (g):	4261	4261	4261	4261	4261
Weight of Wet Sample (g):	1792	1962	2123	1964	1906
Mold Volume (cm <sup>3</sup> ):	943	943	943	943	943

### Moisture Content / Density

Tare Number:	427	478	446	484	487
Weight of Tare & Wet Sample (g):	502.20	507.50	540.80	463.30	485.40
Weight of Tare & Dry Sample (g):	468.50	466.20	490.20	415.20	429.80
Weight of Tare (g):	99.20	97.80	99.50	99.80	99.20
Weight of Water (g):	33.70	41.30	50.60	48.10	55.60
Weight of Dry Sample (g):	369.30	368.40	390.70	315.40	330.60

Wet Density (g/cm <sup>3</sup> ):	1.90	2.08	2.25	2.08	2.02
Wet Density (pcf):	118.6	129.8	140.5	130.0	126.1
<b>Moisture Content (%):</b>	<b>9.1</b>	<b>11.2</b>	<b>13.0</b>	<b>15.3</b>	<b>16.8</b>
<b>Dry Density (pcf):</b>	<b>108.7</b>	<b>116.7</b>	<b>124.4</b>	<b>112.8</b>	<b>108.0</b>

### Zero Air Voids

<b>Moisture Content (%):</b>	11.5	17.0	22.5
<b>Dry Unit Weight (pcf):</b>	128.6	115.5	104.8

Tested By NS Date 12/28/21 Checked By AES Date 12/29/21

# FLEXIBLE WALL PERMEABILITY TEST

## PERMOMETER METHOD

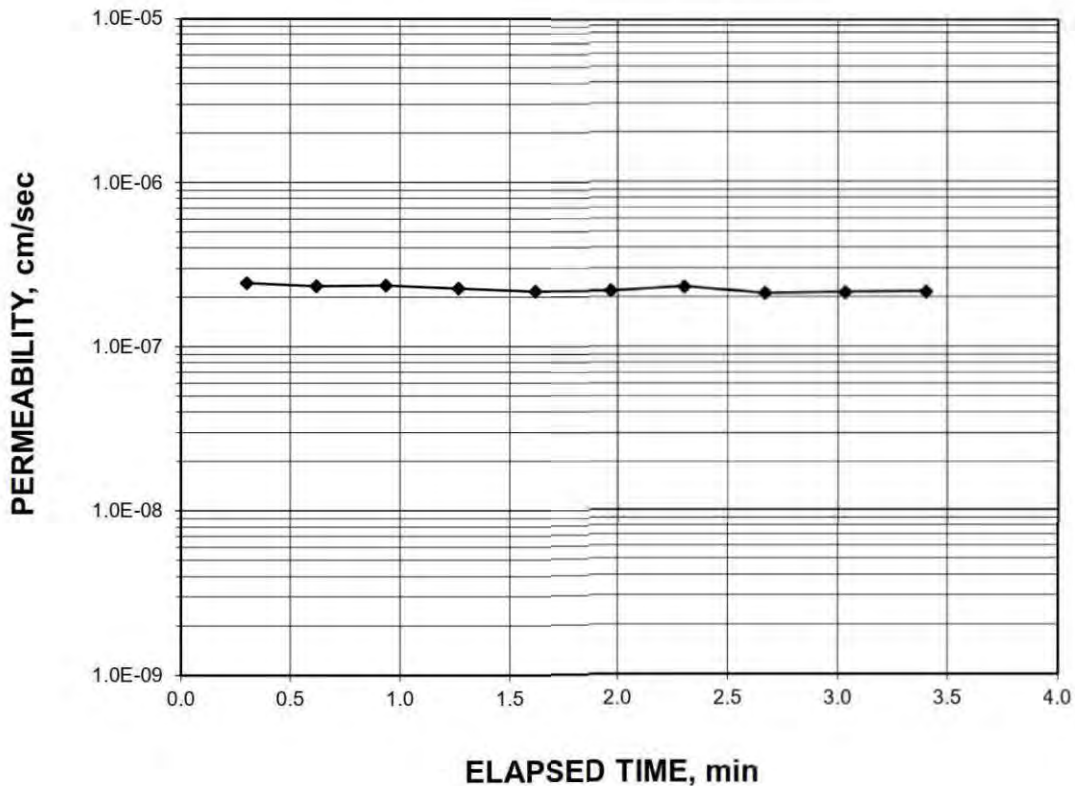
ASTM D 5084-16a  
(SOP-S22C)

Client	Alpha Environmental	Boring No.	NA
Client Project	Cliffdale Crossing	Depth (ft.)	NA
Project No.	R-2021-324-001	Sample No.	S-1
Lab ID No.	R-2021-324-001-001		

Visual Description: Brown Sandy Clay

**AVERAGE PERMEABILITY = 2.2E-07 cm/sec @ 20°C**  
**AVERAGE PERMEABILITY = 2.2E-09 m/sec @ 20°C**

### PERMEABILITY vs. TIME



Tested By: NL Date: 1/4/22 Checked By: GEM Date: 1/6/22

# FLEXIBLE WALL PERMEABILITY TEST

## PERMOMETER METHOD

ASTM D 5084-16a  
(SOP-S22C)

Client	Alpha Environmental	Boring No.	NA
Client Project	Cliffdale Crossing	Depth (ft.)	NA
Project No.	R-2021-324-001	Sample No.	S-1
Lab ID No.	R-2021-324-001-001		

Specific Gravity	2.70	Assumed
Sample Condition		Remolded

Visual Description: Brown Sandy Clay

Permeant Type: Deaired Tap Water

MOISTURE CONTENT:	BEFORE TEST	AFTER TEST
Tare Number	429	702
Wt. of Tare & WS (gm.)	223.68	703.29
Wt. of Tare & DS (gm.)	208.89	625.91
Wt. of Tare (gm.)	97.86	91.42
Wt. of Water (gm.)	14.79	77.38
Wt. of DS (gm.)	111.03	534.49
Moisture Content (%)	<b>13.3</b>	<b>14.5</b>

SPECIMEN:	BEFORE TEST	AFTER TEST
Wt. of Tube & WS (gm.)	2539.46	NA
Wt. of Tube (gm.)	1626.22	NA
Wt. of WS (calc.) (gm.)	913.24	922.56
Length 1 (in.)	4.002	3.973
Length 2 (in.)	4.002	3.997
Length 3 (in.)	4.002	3.965
Top Diameter (in.)	2.872	2.880
Middle Diameter (in.)	2.872	2.865
Bottom Diameter (in.)	2.872	2.869
Average Length (in.)	4.00	3.98
Average Area (in. <sup>2</sup> )	6.48	6.48
Sample Volume (cm <sup>3</sup> )	424.85	422.14
Unit Wet Wt. (gm./cm <sup>3</sup> )	2.150	2.185
Unit Wet Wt. (pcf)	134.2	136.4
Unit Dry Wt. (pcf)	118.4	119.2
Unit Dry Wt. (gm./cm <sup>3</sup> )	1.897	1.909
Void Ratio, e	0.423	0.414
Porosity, n	0.297	0.293
Pore Volume (cm <sup>3</sup> )	126.4	123.7
Total Wt. Of Sample After Test		920.42

Tested By: NL      Date: 1/4/22      Checked By: GEM      Date: 1/6/22



# FLEXIBLE WALL PERMEABILITY TEST

## PERMOMETER METHOD

ASTM D 5084-16a  
(SOP-S22C)

Client	Alpha Environmental	Boring No.	NA
Client Project	Cliffdale Crossing	Depth (ft.)	NA
Project No.	R-2021-324-001	Sample No.	S-1
Lab ID No.	R-2021-324-001-001		

Test Pressures		Final Sample Dimensions	
Cell Pressure(psi)	90.0	Sample Length (cm), L	10.10
Back Pressure(psi)	81.0	Sample Area (cm <sup>2</sup> ), A	41.78
Eff. Cons. Pressure(psi)	9.0	Pipette Area (cm <sup>2</sup> ), a <sub>p</sub>	0.03142
Response (%)	99	Annulus Area (cm <sup>2</sup> ), a <sub>a</sub> Equilibrium	0.76712
		Level (cm), R <sub>eq</sub>	1.6

**AVERAGE PERMEABILITY = 2.2E-07 cm/sec @ 20°C**  
**AVERAGE PERMEABILITY = 2.2E-09 m/sec @ 20°C**

DATE		TIME			ELAPSED TIME	PIPETTE READING	INCREMENT GRADIENT	TEMP.	INCREMENTAL PERMEABILITY
(mm/dd/yy)	(hr)	(min)	(sec)	(min)	t	R <sub>p</sub>	i	(°C)	@ 20°C
					(min)	(cm)	(cm/cm)		(cm/sec)
1/5/21	10	11	30	11.50	0.000	14.5	16.7	21.0	NA
1/5/21	10	11	48	11.80	0.300	14.4	16.5	21.0	2.5E-07
1/5/21	10	12	7	12.12	0.617	14.3	16.4	21.0	2.3E-07
1/5/21	10	12	26	12.43	0.933	14.2	16.3	21.0	2.4E-07
1/5/21	10	12	46	12.77	1.267	14.1	16.2	21.0	2.3E-07
1/5/21	10	13	7	13.12	1.617	14.0	16.0	21.0	2.2E-07
1/5/21	10	13	28	13.47	1.967	13.9	15.9	21.0	2.2E-07
1/5/21	10	13	48	13.80	2.300	13.8	15.8	21.0	2.3E-07
1/5/21	10	14	10	14.17	2.667	13.7	15.6	21.0	2.1E-07
1/5/21	10	14	32	14.53	3.033	13.6	15.5	21.0	2.1E-07
1/5/21	10	14	54	14.90	3.400	13.5	15.4	21.0	2.2E-07

Tested By: NL Date: 1/4/22 Checked By: GEM Date: 1/6/22

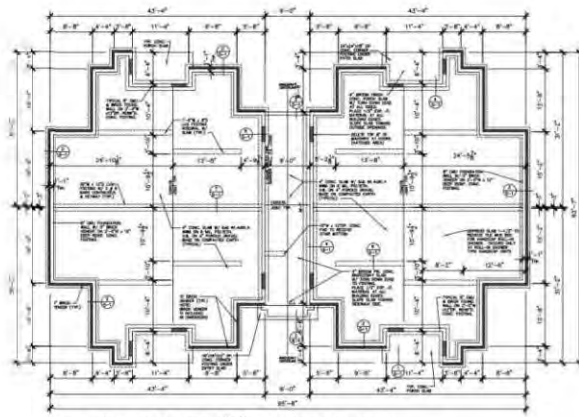
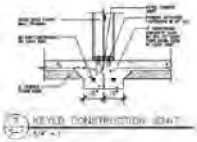
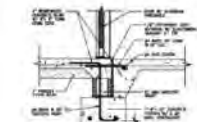
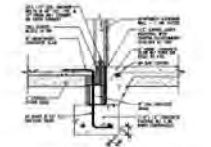
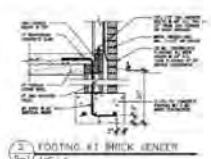
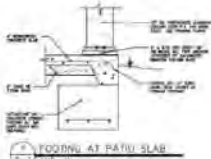


## **Appendix V**

### **Structural Specifications and Foundation Drawings**

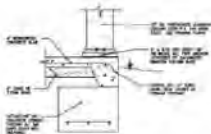
Note: The drawings in this appendix represent the information used to develop the geotechnical recommendations in this report and are not a submittal for construction.



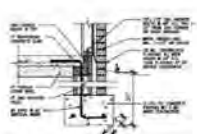


B BUILDING TYPE "B" FOUNDATION PLAN  
1/8" = 1'-0"

DATE	
BY	
CHECKED	
APPROVED	
SCALE	
PROJECT	21-009
CLIENT	CLIFFDALE DEVELOPMENT
DESIGNER	SMITH DUGGINS DEVELOPERS, LLC
DATE	10/20/21
PROJECT NO.	21-009
SCALE	AS SHOWN
<b>CLIFFDALE DEVELOPMENT</b> SMITH DUGGINS DEVELOPERS, LLC 10000 W. 15th Street, Suite 100 Denver, CO 80202 (303) 751-1111 www.cliffdale.com	
<b>TYPE 'B' BUILDING FOUNDATION</b>	
<b>S-1</b> 21-009	



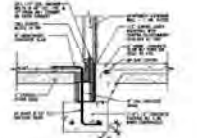
1 FOOTING AT PATIO SLAB  
1/4\"/>



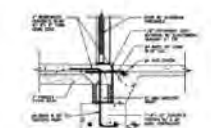
2 FOOTING AT BRICK VENEER  
1/4\"/>



3 ENTRY AREA AT SLAB EDGE  
1/4\"/>



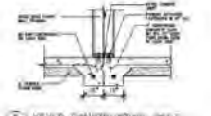
4 FOOTING AT BREEZEWAY EDGE  
1/4\"/>



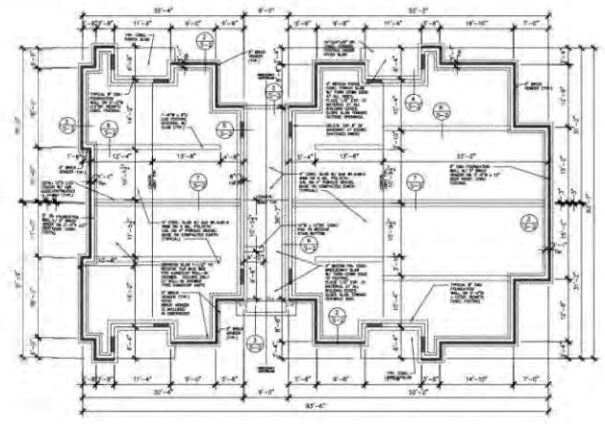
5 FOOTING AT EXTERIOR DOOR  
1/4\"/>



6 LUG FOOTING  
1/4\"/>



7 MASONRY CONSTRUCTION DETAIL  
1/4\"/>



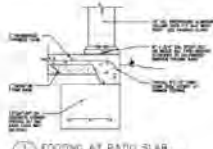
8 BUILDING TYPE "C" FOUNDATION PLAN  
1/4\"/>

NO. OF FOUNDATIONS	11
NO. OF WALLS	11
NO. OF DOORS	11
NO. OF WINDOWS	11
NO. OF PATIOS	11
NO. OF BREEZEWAYS	11
NO. OF BRICK VENEER	11
NO. OF PATIO SLABS	11
NO. OF ENTRY AREAS	11
NO. OF EXTERIOR DOORS	11
NO. OF LUG FOOTINGS	11
NO. OF MASONRY CONSTRUCTION DETAILS	11

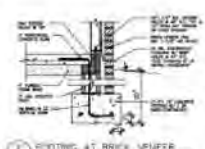
**IDG**  
 INDEPENDENT DESIGN GROUP  
 1000 W. 10TH STREET, SUITE 100  
 WASHINGTON, NC 27570  
 PHONE: 919.833.1111  
 FAX: 919.833.1112  
 WWW: WWW.IDGDESIGN.COM

**CLIFFDALE DEVELOPMENT**  
 SMITH DUGGINS DEVELOPERS, LLC  
 CAPITAL CONSTRUCTION  
 1000 W. 10TH STREET, SUITE 100  
 WASHINGTON, NC 27570  
**TYPE "C" BUILDING FOUNDATION**

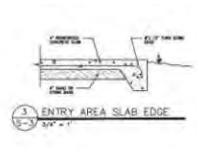
**S-2**  
 21-009



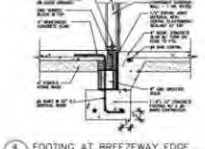
1 FOOTING AT PATIO SLAB  
3/4" = 1'



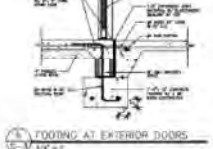
2 FOOTING AT BRICK VENEER  
3/4" = 1'



3 ENTRY AREA SLAB EDGE  
3/4" = 1'



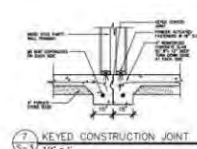
4 FOOTING AT BREEZEWAY EDGE  
3/4" = 1'



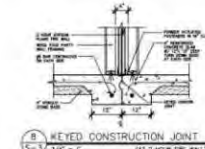
5 FOOTING AT EXTERIOR DOORS  
3/4" = 1'



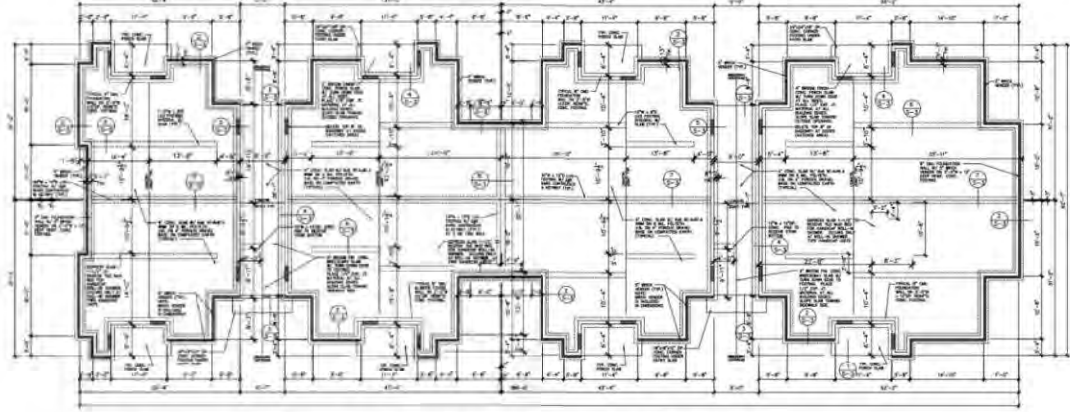
6 LUG FOOTING  
3/4" = 1'



7 KEYED CONSTRUCTION JOINT  
3/4" = 1'

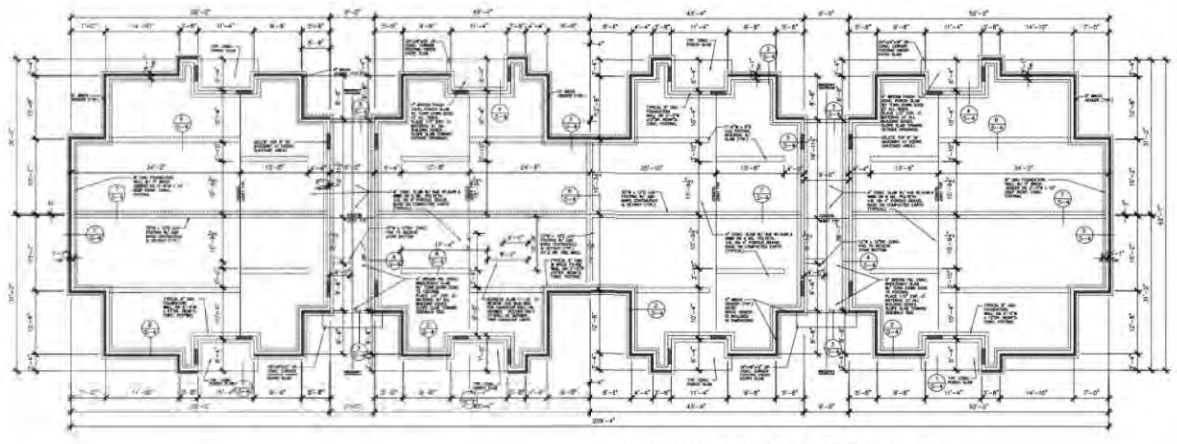
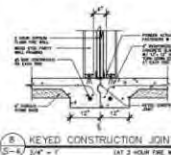
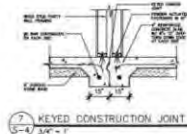
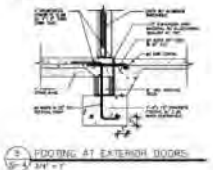
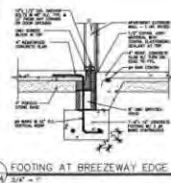
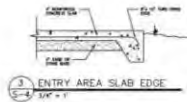
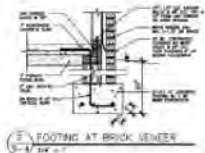
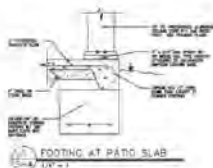


8 KEYED CONSTRUCTION JOINT  
(2 HOUR FIRE WALL)  
3/4" = 1'



9 BUILDING TYPE "D" FOUNDATION PLAN  
3/4" = 1'

DATE	
BY	
CHECKED	
APPROVED	
SCALE	
PROJECT NO.	21-009
DATE	08/2021
DESCRIPTION	FOUNDATION PLAN
<b>CLIFFDALE DEVELOPMENT</b> SMITH DUGGINS DEVELOPERS, LLC 10000 CLIFFDALE DRIVE CLIFFDALE, NORTH CAROLINA 27019 TYPE "D" BUILDING FOUNDATION	
<b>S-3</b> 21-009	



9 BUILDING TYPE "D-1" FOUNDATION PLAN  
1/8" = 1'

	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;"> </td> </tr> <tr> <td style="text-align: center;"> <b>CLIFFDALE DEVELOPMENT</b>            SMITH DUGGINS DEVELOPERS, LLC  <small>SMITH DUGGINS ARCHITECTS ASSOCIATES, INCORPORATED</small>  <b>TYPE D-1 BUILDING FOUNDATION</b> </td> </tr> <tr> <td style="text-align: center;"> <b>S-4</b>            21-009         </td> </tr> </table>		<b>CLIFFDALE DEVELOPMENT</b> SMITH DUGGINS DEVELOPERS, LLC <small>SMITH DUGGINS ARCHITECTS ASSOCIATES, INCORPORATED</small> <b>TYPE D-1 BUILDING FOUNDATION</b>	<b>S-4</b> 21-009
<b>CLIFFDALE DEVELOPMENT</b> SMITH DUGGINS DEVELOPERS, LLC <small>SMITH DUGGINS ARCHITECTS ASSOCIATES, INCORPORATED</small> <b>TYPE D-1 BUILDING FOUNDATION</b>				
<b>S-4</b> 21-009				

**ALPHA**

**Appendix VI**  
**Geotechnical Bulletin**



# Important Information About Your Geotechnical Engineering Report

*Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes*

*The following information is provided to help you manage your risks.*

## **Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects**

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one - not even you -* should apply the report for any purpose or project except the one originally contemplated.

## **Read the Full Report**

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

## **A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors**

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,

- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes - even minor ones - and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

## **Subsurface Conditions Can Change**

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

## **Most Geotechnical Findings Are Professional Opinions**

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ - sometimes significantly - from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

## **A Report's Recommendations Are *Not* Final**

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final*, because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual

subsurface conditions revealed during construction. The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.

### **A Geotechnical Engineering Report Is Subject to Misinterpretation**

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

### **Do Not Redraw the Engineer's Logs**

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

### **Give Contractors a Complete Report and Guidance**

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time* to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

### **Read Responsibility Provisions Closely**

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led

to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

### **Geoenvironmental Concerns Are Not Covered**

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

### **Obtain Professional Assistance To Deal with Mold**

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the express purpose of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; ***none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.***

### **Rely on Your ASFE-Member Geotechnical Engineer For Additional Assistance**

Membership in ASFE/The Best People on Earth exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with your ASFE-member geotechnical engineer for more information.



8811 Colesville Road/Suite G106, Silver Spring, MD 20910  
Telephone: 301/565-2733 Facsimile: 301/589-2017  
e-mail: info@asfe.org www.asfe.org

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North Carolina Department of Natural and Cultural Resources  
State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Roy Cooper  
Secretary D. Reid Wilson

Office of Archives and History  
Deputy Secretary, Darin J. Waters, Ph.D.

December 14, 2021

MEMORANDUM

TO: Andrea Gievers [andrea.l.gievers@rebuild.nc.gov](mailto:andrea.l.gievers@rebuild.nc.gov)  
Community Development  
NC Office of Recovery and Resiliency

FROM: Ramona Bartos *RMB for Ramona M. Bartos*

SUBJECT: Construct Cliffdale Crossing apartments (22-E-4600-0099), 8368 Cliffdale Road,  
Fayetteville, Cumberland County, ER 21-2720

Thank you for your email of November 4, 2021, concerning the above project. We apologize for the delay in our response and any inconvenience it may have caused.

We have conducted a review of the project and are aware of no historic resources which would be affected by the project. Therefore, we have no comment on the project as proposed.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, Environmental Review Coordinator, at 919-814-6579 or [environmental.review@ncdcr.gov](mailto:environmental.review@ncdcr.gov). In all future communication concerning this project, please cite the above referenced tracking number.

cc Crystal Best, DOA [crystal.best@doa.nc.gov](mailto:crystal.best@doa.nc.gov)  
Laura Mancuso, Nova Group [laura.mancuso@novagroupgbc.com](mailto:laura.mancuso@novagroupgbc.com)



# North Carolina Department of Public Safety

## Office of Recovery and Resiliency

Roy Cooper, Governor

Cassandra Skinner Hoekstra, Interim Secretary

Laura H. Hogshead, Director

November 4, 2021

Ms. Renee Gledhill-Earley  
Environmental Review Coordinator  
NC State Historic Preservation Office  
4617 Mail Service Center  
Raleigh, NC 27699-4617

Via email: [Environmental.Review@ncdcr.gov](mailto:Environmental.Review@ncdcr.gov)  
[renee.gledhill-earley@ncdcr.gov](mailto:renee.gledhill-earley@ncdcr.gov)

RE: State Historic Preservation Office Request for Concurrence  
Section 106 Review - HUD CDBG-DR Program  
Proposed Cliffdale Crossing  
8368 Cliffdale Road  
Fayetteville, NC 28314

Dear Ms. Gledhill-Earley:

In accordance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 CFR Part 800, we are providing information for your review and concurrence regarding the above-referenced project. The North Carolina Office of Recovery and Resiliency (NCORR), as a recipient of Community Development Block Grant – Disaster Recovery (CDBG-DR) funds from the United States Department of Housing and Urban Development (HUD), is serving as the responsible entity for compliance with the HUD environmental review procedures set forth in 24 CFR Part 58. NCORR is acting on behalf of HUD in providing the enclosed project information and request for consultation. *A separate environmental review is being performed by NCHFA for a HUD HOME Program funding application.*

Area of Potential Effects (APE) under §800.16(d): We have defined the APE as 1,500 feet from the Subject Property consisting of an approximately 18.18-acre parcel located on the north side of Cliffdale Road between Glen Iris Drive and Buhmann Drive in Fayetteville, Cumberland County, North Carolina. Ms. Laura Mancuso of Nova Group determined the APE based upon the height and size of the proposed development as well as neighborhood context. The letter from Laura Mancuso is included in **Attachment 1**.

The State of North Carolina was adversely impacted by the landfall of Hurricanes Matthew (October 8, 2016) and Florence (September 14, 2018). These hurricanes damaged or destroyed

Mailing Address:  
Post Office Box 110465  
Durham, NC 27709



Telephone: 984.833.5350  
[www.ncdps.gov](http://www.ncdps.gov)  
[www.rebuild.nc.gov](http://www.rebuild.nc.gov)

hundreds of homes worsening the affordable housing shortage. This proposed project will increase affordable housing inventory for low- and moderate-income families.

Proposed Project Description: Smith Duggins Developers, LLC proposes to construct six two-story residential structures and a leasing/community building on the southern portion of the property. The site will be accessed via Cliffdale Road with a driveway and parking located at the center of the parcel and the buildings on the exterior. The development will consist of 80 housing units: 12 one-bedroom, one bath units; 40 two-bedroom, one bath units; and 28 three-bedroom, two bath units. The proposed project site plan is included in **Attachment 2**.

We have made a Finding of “*No Historic Properties Affected*” pursuant to 36 CFR 800.4(d)(1) based on the following:

Based on research completed by Ms. Laura L. Mancuso, a Secretary of the Interior (SOI) Qualified Architectural Historian, no properties over 50 years old are located within the APEs. In addition, a review of properties listed on or eligible for listing on the National Register of Historic Places was completed on September 23, 2021, by Ms. Mancuso. No properties were identified on the property or within the 1,500-foot visual APE; therefore, no historic properties will be affected by the proposed undertaking. Proposed project location maps showing the Undertaking and APE and NC HPOWEB Map are included in **Attachment 2**. We are requesting your concurrence with the determination that there are No Historic Properties in APE for both direct and visual effects. A Phase I Archaeological Review was completed by the Archaeological Consultants of the Carolinas, Inc and concluded that no cultural resources were identified, and no further archaeological investigations are recommended. The Subject Property Photographs and Phase I Archaeological Review are included in **Attachment 3**.

Attached for your review are copies of relevant documents supporting our finding, along with photographs and a map showing the location of the Subject Property. This documentation satisfies requirements set forth at §800.11(d).

NCORR processes environmental reviews for proposed projects funded with HUD CDBG-DR on a case-by-case basis. A consultation request for the proposed project described herein is also being sent to the Catawba Indian Nation. A notification of the proposed project is being sent to the Lumbee Tribe. An invitation to consult letter was submitted to the Fayetteville Certified Local Government on September 24, 2021. A public notice was posted in the Fayetteville Observer on September 30, 2021. As of the date of this report, no response has been received. Should a response be received, a copy will be sent to you under separate cover. These public outreach items are included in **Attachment 3**. In accordance with Section 101(d)(6)(B) of the NHPA of 1966, as amended (16 U.S.C. 470f), and its implementing regulations, 36 CFR Part 800, this letter serves as notification of the proposed action.

NCORR respectfully requests your review of the proposed project described herein. In accordance with §800.4(d)(1)(i), your office has *thirty days* to object to this finding. Please respond within this timeframe, otherwise we will assume that you concur with our finding. If you concur, please sign on the line below and return a copy of this letter by email to Andrea Gievers at [Andrea.L.Gievers@Rebuild.NC.gov](mailto:Andrea.L.Gievers@Rebuild.NC.gov).

If you have any questions or require additional information regarding this request, please feel free to contact Andrea Gievers at (845) 682-1700 or via email at [Andrea.L.Gievers@Rebuild.NC.gov](mailto:Andrea.L.Gievers@Rebuild.NC.gov). Thank you for your time and assistance.

Sincerely,



Andrea Gievers, JD, MSEL, ERM  
NCORR Environmental Subject Matter Expert

**Proposed Cliffdale Crossing Enclosures:**

Attachment 1: Laura Mancuso, SOI Qualified Architectural Historian Letter

Attachment 2: Proposed Project Site Plan, Location Maps, and NC HPOWEB Map

Attachment 3: Subject Property Photographs, Phase I Archaeological Review and Public Outreach

Concurrence:

---

State Historic Preservation Officer

Date

**ATTACHMENT 1:**

**Laura Mancuso, SOI Qualified Architectural  
Historian Letter**

October 15, 2021

Renee Gledhill-Earley  
State Historic Preservation Office  
4617 Mail Service Center  
Raleigh, NC 27699-4617  
[Environmental.Review@ncdcr.gov](mailto:Environmental.Review@ncdcr.gov)

Re: Proposed Housing Development  
Cliffdale Crossing  
8368 Cliffdale Road  
Fayetteville, NC 28314  
Nova Project No.: CK21-8848

Dear Ms. Gledhill-Earley:

Nova Group, GBC (Nova) is writing on behalf of Smith Duggins Developers, LLC to solicit your comments on a proposed development project at the above referenced address. As the Project is a federal undertaking regulated by the Department of Housing and Urban Development (HUD), it is being reviewed under Section 106 of the National Historic Preservation Act for its impacts to historic architectural and archaeological resources.

The Subject Property consists of a vacant 18.18-acre parcel located on the north side of Cliffdale Road between Glen Iris Drive and Buhmann Drive. Smith Duggins Developers, LLC proposes to construct six two-story residential structures and a leasing/community building on the southern portion of the property. The site will be accessed via Cliffdale Road with a driveway and parking located at the center of the parcel and the buildings on the exterior. The development will consist of 80 housing units: 12 one-bedroom, one bath units; 40 two-bedroom, one bath units; and 28 three-bedroom, two bath units, all located on 8 acres.

An Invitation to consult letter was submitted to the Fayetteville Certified Local Government on September 24, 2021. A public notice was posted in the Fayetteville Observer on September 30, 2021. As of the date of this report, no response has been received. Should a response be received, a copy will be sent to you under separate cover.

Based on the height and size of the proposed development as well as neighborhood context, Nova has determined that the visual Area of Potential Effects (APE) for this project is an area 1,500 feet from the Subject Property.

Based on research completed by Laura L. Mancuso, a Secretary of the Interior Qualified Architectural Historian, no properties over 50 years old are located within the APEs. In addition, a review of properties listed on or eligible for listing on the National Register of Historic Places was completed on September 23, 2021, by Ms. Mancuso. No properties were identified on the property or within the 1,500-foot visual APE; therefore, no historic properties will be affected by the proposed undertaking. Nova is requesting your concurrence with the determination that there are *No Historic Properties in APE* for both direct and visual effects.





A Phase I Archaeological Review was completed by the Archaeological Consultants of the Carolinas, Inc. Please see the attached Report which concludes that no cultural resources were identified, and no further archaeological investigations are recommended.

Should you have any questions, please do not hesitate to contact me.

Sincerely,

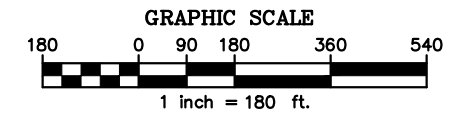
A handwritten signature in black ink that reads "Laura L. Mancuso".

Laura L. Mancuso  
National Practice Leader-Cultural Resources  
203.240.0077  
laura.mancuso@novagroupgbc.com

**ATTACHMENT 2:**

**Proposed Project Site Plan, Location Maps, and NC  
HPOWEB Map**

# CLIFFDALE CROSSING SITE PLAN



**PROJECT DATA**  
 PROJECT: CLIFFDALE DEVELOPMENT  
 PROJECT PIN: 9487-36-6817  
 DEED BOOK/PAGE: 8868/0899  
 PROJECT ADDRESS: CLIFFDALE RD. FAYETTEVILLE, NC  
 DEVELOPER / FINANCIALLY RESPONSIBLE PARTY: SMITH DUGGINS DEVELOPERS, LLC  
 2929 BREEZEWOOD AVENUE SUITE 102 FAYETTEVILLE, NC 28303

**SITE DATA**  
 DEVELOPMENT SITE= 8.00 AC± (OF 18.18 AC. SITE)  
 ZONING = MR-5 (MIXED RESIDENTIAL)  
 SETBACKS: FRONT= 25 FT  
 SIDE= 10 FT  
 REAR= 30 FT  
 LATITUDE / LONGITUDE..... 35° 3' 30.18" N, 79° 3' 14.75" W  
 PROPOSED DENSITY= 80 DU = 9.6 DU/AC.  
 NO. OF UNITS: 80 DU (12-1 BR, 40-2 BR, 28-3 BR)  
 8 ADA UNITS INCLUDED: 2-1 BR, 4- 2 BR, 2  
 PARKING SPACES REQUIRED (COF):  
 1.8 SP/DU UNIT= 1.8x80 DU=144 SPACES  
 (1 ADA SPACES PER 25 INCL=6 ADA SPACES)  
 PARKING SPACES PROVIDED:  
 1.8 SP/DU UNIT= 1.8x80 DU= 144 SPACES  
 4 COMMON AREA SPACES (PLAYGROUND)  
 TOTAL SPACES PROVIDED = 148 SPACES  
 (13 ADA SPACES INCL.)  
 BUILT UPON AREA (BUILDINGS-PARKING -WALKWAYS)= 5.53 AC±  
 OPEN SPACE SET-ASIDE AREAS =2.2.47 AC±=30.8%± (10% REQ'D)  
 IMPERVIOUS AREA:  
 EXISTING: 0 AC ±  
 PROPOSED ROADS & SIDEWALKS: 92,268 SF  
 PROPOSED BUILDINGS: 48,705 SF (1.12 AC±)  
 TOTAL PROPOSED IMP: 3.24 AC±

TOTAL DISTURBED AREA= 5.61± AC.  
**SITE AMENITIES**  
 THE FOLLOWING ITEMS HAVE BEEN NOTED ON THE SITE PLAN TO BE PROVIDED WITH THE PROJECT:  
 (1) PLAY GROUNDS W/ EQUIPMENT & BENCHES  
 (1) TOT LOTS W/ EQUIPMENT & BENCHES  
 (1) COVERED PICNIC AREA W/ TWO TABLES & GRILL (150 SF)  
 (3) OUTDOOR SITTING AREAS W/BENCHES  
 COVERED POSTAL FACILITY  
 LANDSCAPED ENTRY + ENTRANCE SIGNS  
 IRRIGATED LAWNS  
**SHARED COMMUNITY BUILDING WITH THE FOLLOWING:**  
 OFFICE W/ STORAGE AND HC TOILETS  
 LAUNDRY ROOM W/ 4 WASHERS & 4 DRYERS  
 COMPUTER CENTER W/ HIGH SPEED INTERNET (2 STATIONS)  
 PLUS 2 NEW STATIONS  
 COMMUNITY ROOM W/ KITCHENETTE



# Cliffdale Crossing

Smith Duggins Developers, LLC  
CK21-8848  
USGST Cliffdale NC 1983





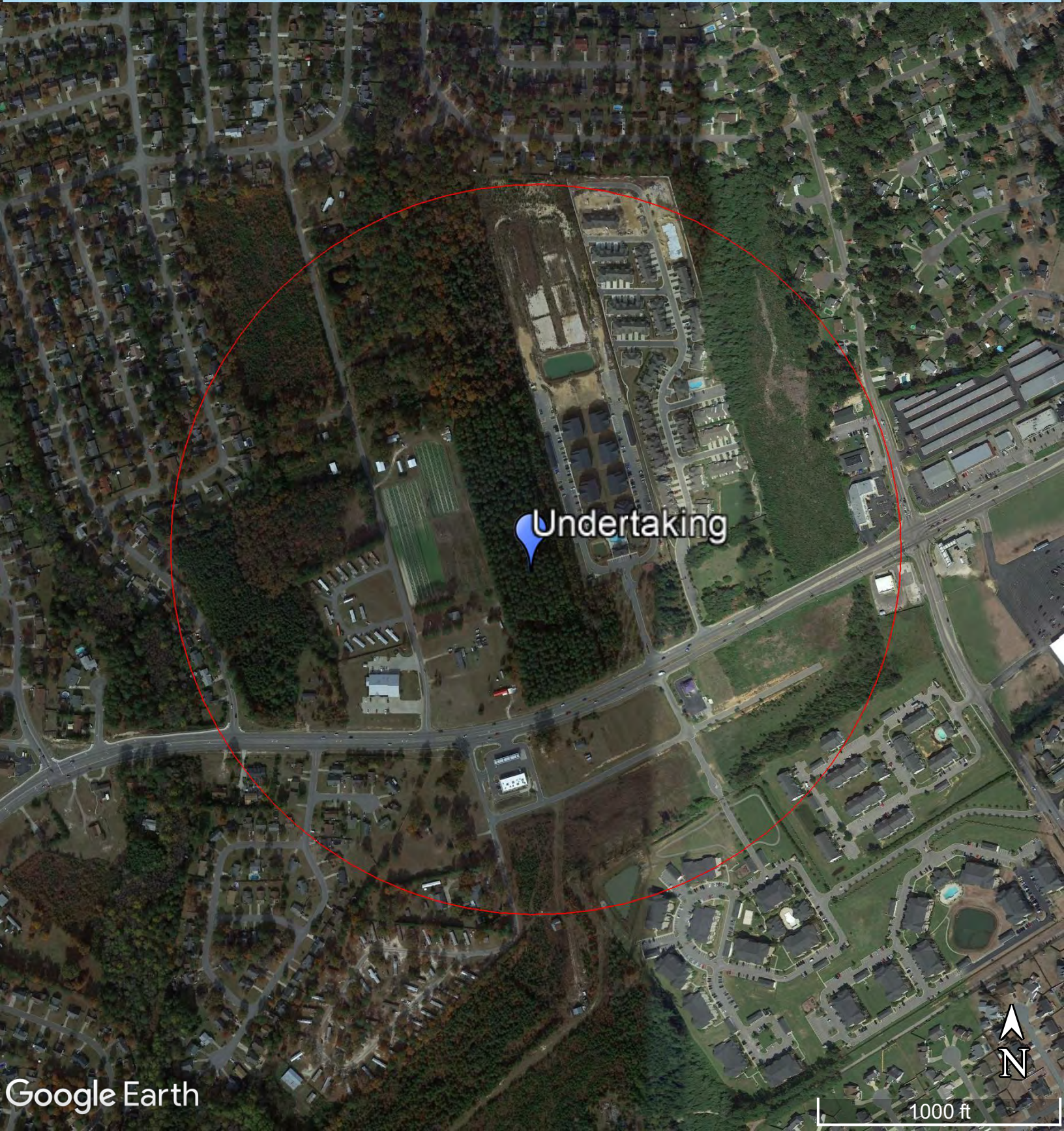
# Nova Group

## Aerial Photograph

Source: Google Earth

### Legend

-  1,500-foot APE
-  Undertaking



Undertaking



# Cliffdale Crossing

Smith Duggins Developers, LLC  
CK21-8848  
USGST Cliffdale NC 1983





# Nova Group

## Aerial Photograph

Source: Google Earth

### Legend

-  1,500-foot APE
-  Undertaking



Undertaking

Google Earth

700 ft



# Cliffdale Crossing

Smith Duggins Developers, LLC  
CK21-8848  
USGST Cliffdale NC 1983





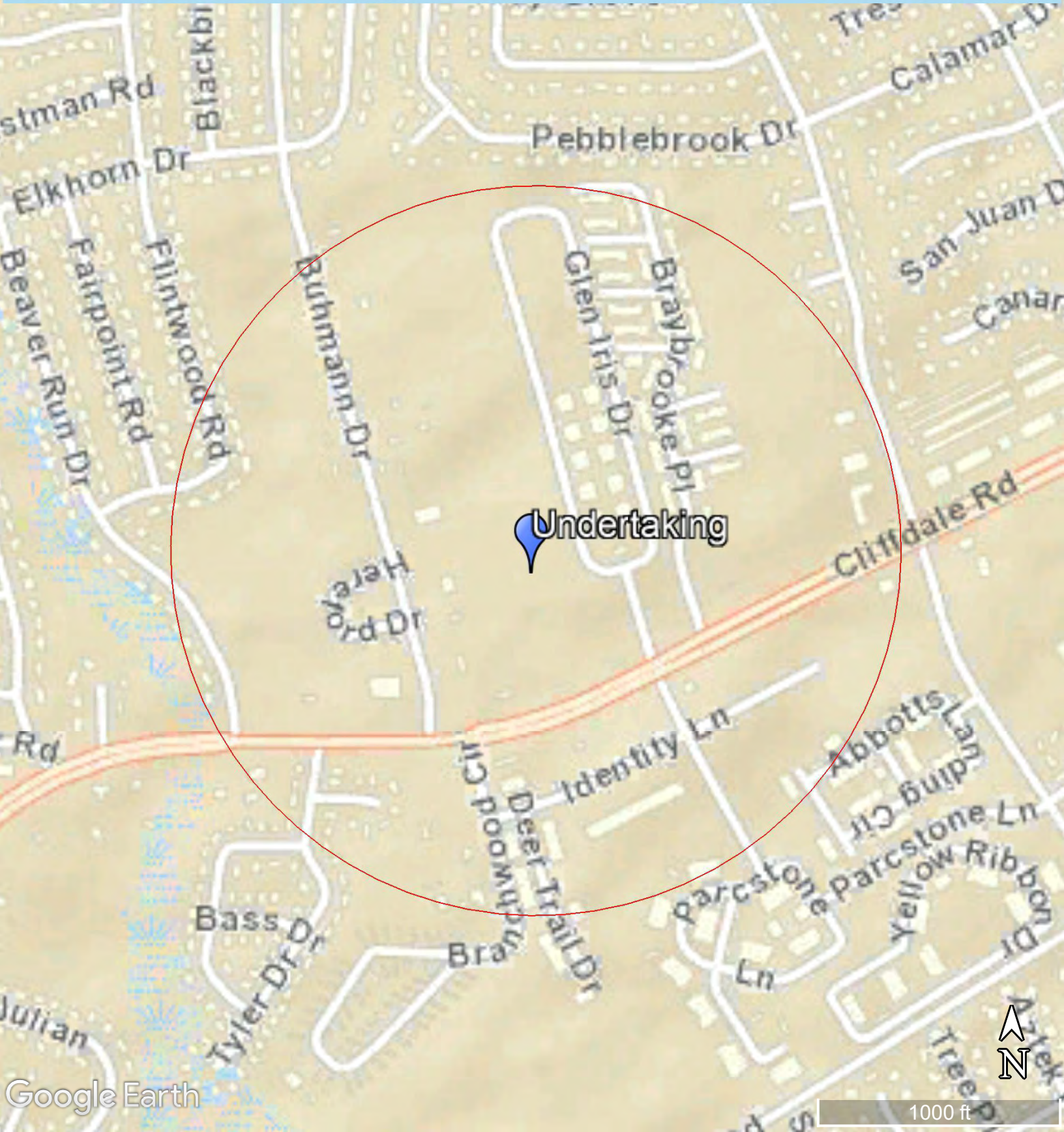
# Nova Group

## Street Map

Sources: ESRI, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, METI, NGCC, OpenStreetMap contributors, and the GIS User Community

### Legend

-  1,500-foot APE
-  Undertaking



# Cliffdale Crossing

Smith Duggins Developers, LLC  
CK21-8848  
USGST Cliffdale NC 1983





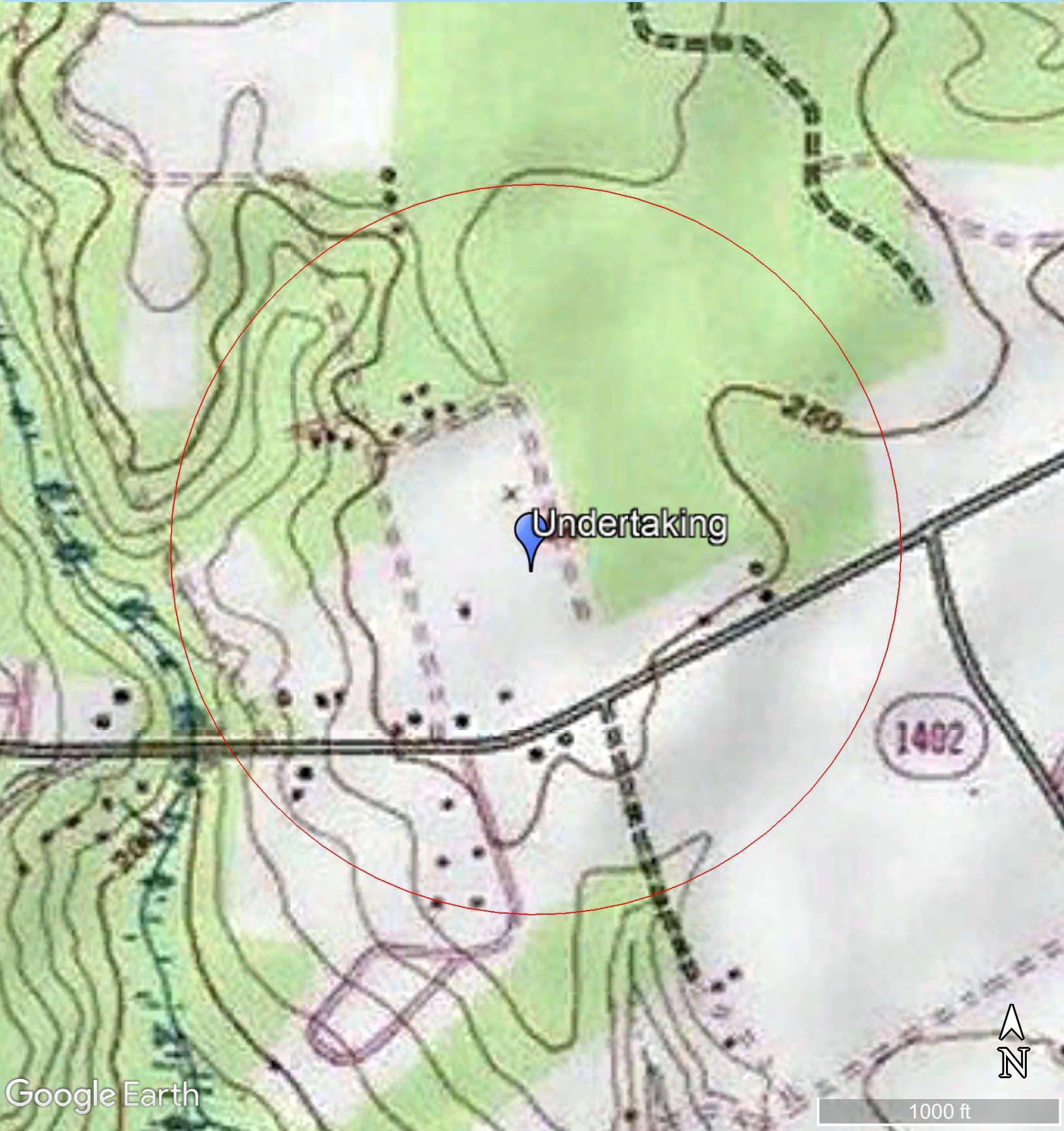
Nova  
Group

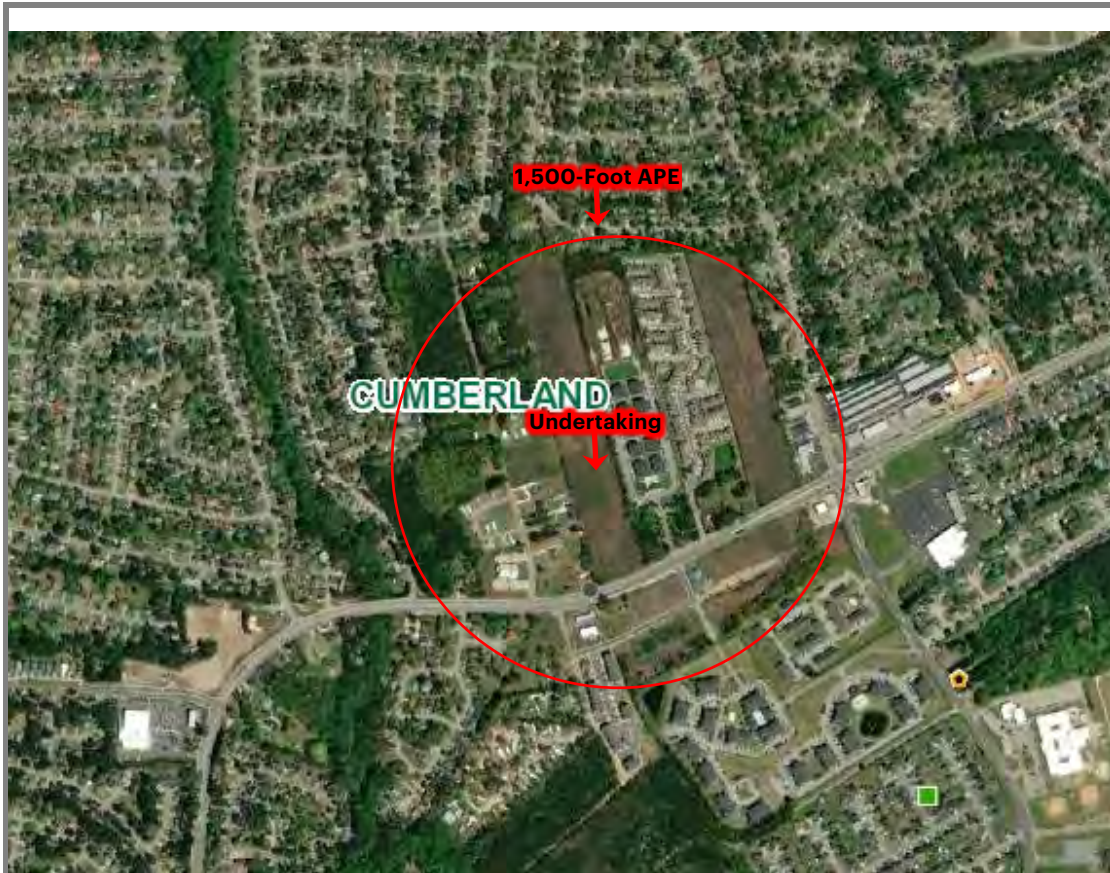
## USGS 7.5 Minute Quadrangle Map

Sources: 2013 National Geographic Society, i-cubed

### Legend

-  1,500-foot APE
-  Undertaking





## Historic Properties Map

Source: HPOWEB 2.0



---

**Applicant's Name:** Smith Duggins  
Developers, LLC  
**Project Name:** Cliffdale Crossing  
**Nova Project Number:** CK21-8848



**ATTACHMENT 3:**

**Subject Property Photographs, Phase I Archaeological  
Review and Public Outreach**

# Photographs



**APE-VE Map for Visual Effects and Photo Key**

Source: Google Earth 2021

— Undertaking



**Applicant's Name:** Smith Duggins Developers, LLC  
**Project Name:** Cliffdale Crossing  
**Nova Project Number:** CK21-8848

The following photographs were taken on September 27 and 28, 2021 unless otherwise noted.

1. View looking north from the center of the Subject Property.



2. View looking east from the center of the Subject Property.



3. View looking south from the center of the Subject Property.



4. View looking west from the center of the Subject Property.



5. View looking north from the southern portion of the Subject Property.



6. View looking east from the southern portion of the Subject Property.



7. View looking south from the southern portion of the Subject Property.



8. View looking west from the southern portion of the Subject Property.



9. View looking northwest from Cliffdale Road.



10. View looking west from Cliffdale Road.



11. View looking northwest to the Subject Property from Enforcement Drive.



12. View looking west-northwest to the Subject Property from Cliffdale Road at the edge of the APE.





13. View looking southeast to the Subject Property from Buhmann Drive at the edge of the APE.



14. View looking east-southeast to the Subject Property from Buhmann Drive.



15. View looking east to the Subject Property from Buhmann Drive.



16. View looking east-northeast to the Subject Property from Cliffdale Road from the edge of the APE.



17. View looking southwest to the Subject Property from Glen Iris Drive.



**Archaeological Survey of the  
Cliffdale Crossing Tract  
Cumberland County, North Carolina**

**DRAFT REPORT**



**Archaeological Consultants of the Carolinas, Inc.  
October 2021**

**Archaeological Survey of the  
Cliffdale Crossing Tract,  
Cumberland County, North Carolina**

Prepared for  
Nova Group, GBC  
New Orleans, Louisiana

Prepared by

Abigail McCoy  
Archaeologist

Under the direction of

*Michael Keith O'Neal*

---

Michael O'Neal  
Principal Investigator

**Archaeological Consultants of the Carolinas, Inc.  
October 2021**

## Management Summary

Between September 27 and 28, 2021, Archaeological Consultants of the Carolinas (ACC), Inc., conducted an intensive archaeological survey of the 18-acre (7.3-ha) Cliffdale Crossing tract in Cumberland County, North Carolina. This survey was undertaken on behalf of Nova Group, GBC as due diligence in anticipation of Housing and Urban Development (HUD) funding requirements for the completion of an archaeological survey. The goals of this investigation were to identify all archaeological resources located within the project tract, assess those resources for eligibility for the National Register of Historic Places (NRHP), and advance management recommendations, as appropriate.

Cultural and environmental background research was conducted prior to the field visit. No previously recorded archaeological sites are located within a 1.6-kilometer radius of the project tract. Five historic resources are recorded within 1.6 kilometers of the project tract. Four of these resources have been determined to be not eligible for the NRHP. One resource, the Angus McGill House (CD0694), was placed on the Study List in 1980. None will be impacted by the proposed development.

Prior to conducting the field investigation, approximately 16.3 acres (6.6 ha) of the tract were determined to have high potential for the presence of archaeological sites. The survey in these areas consisted of excavating shovel tests at 30-meter intervals along parallel transects 30-meters apart. Low potential areas totaled 1.7 acres (0.7 ha) and were examined using pedestrian survey and judgmentally placed shovel tests. All areas of exposed ground surface were visually inspected for cultural remains. No archaeological deposits were identified during the survey, and no further work is recommended within the project tract.



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# Chapter 1. Introduction

Between September 27 and 28, 2021, Archaeological Consultants of the Carolinas (ACC), Inc., conducted an intensive archaeological survey of the 18-acre (7.3-ha) Cliffdale Crossing tract in Cumberland County, North Carolina. This survey was undertaken on behalf of Nova Group, GBC as due diligence in anticipation of Housing and Urban Development (HUD) funding requirements for the completion of an archaeological survey. The goals of this investigation were to identify all archaeological resources located within the project tract, assess those resources for eligibility for the National Register of Historic Places (NRHP), and advance management recommendations, as appropriate. Mr. Michael O’Neal served as Principal Investigator and Field Director. He was assisted in the field by Mr. Robert Jordan. The field investigation required a total of four person days to complete.

## Project Area

The project tract encompasses 18 acres (7.3 ha) located west of the city of Fayetteville, in Cumberland County, North Carolina (Figure 1.1). The tract boundaries are comprised primarily of property lines (Figure 1.2 and Figure 1.3). The tract is bound on the north, east, and west by residential areas. Cliffdale Road borders the tract on the south.

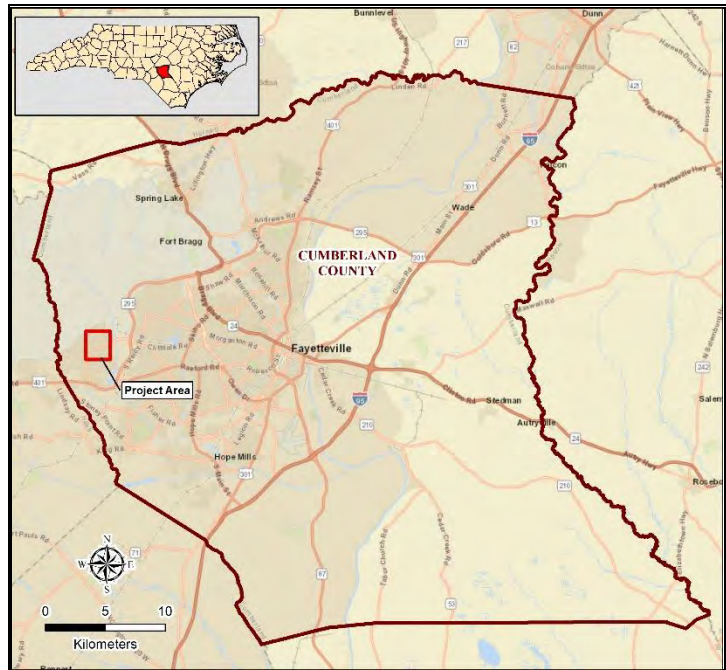
The project tract is characterized primarily by young pines and hardwoods and dense briars and other secondary growth (Figure 1.4). The western portion of a Carolina Bay is located in the northern portion of the project tract. Vegetation in the Carolina Bay was very dense (Figure 1.5).

## Methods of Investigation

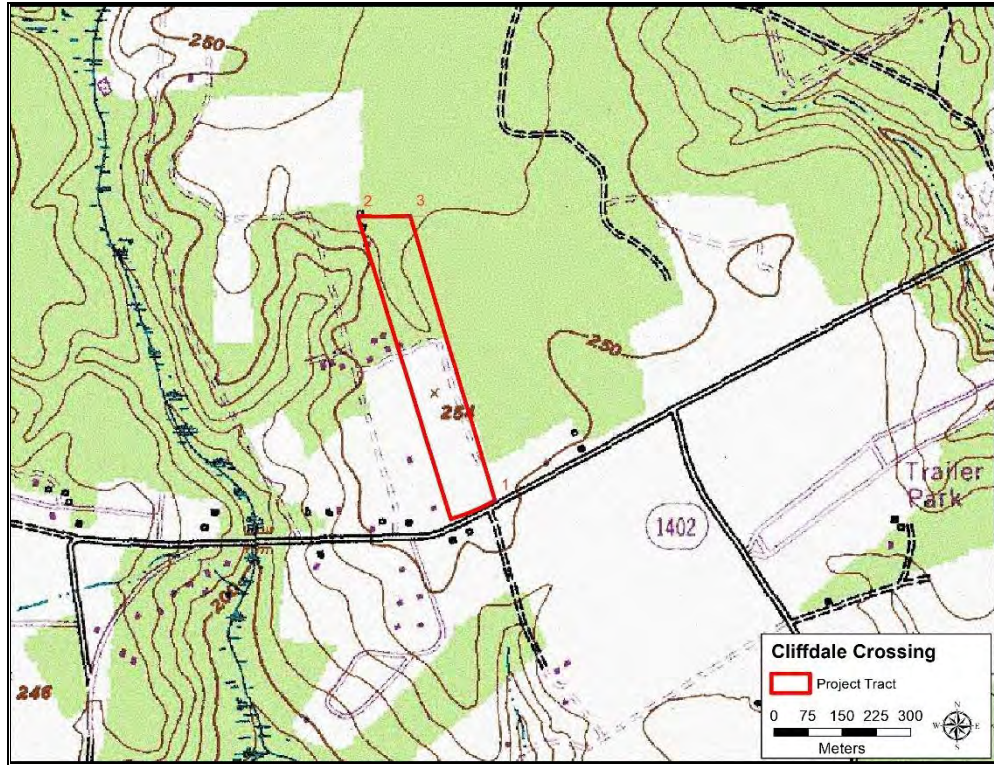
This investigation consisted of four separate tasks: Archival Research, Field Survey, Laboratory Analysis, and Report Production. Each of these tasks is discussed in detail below.

## Archival Research

Archival research began with a review of archaeological site forms, maps, and reports on file at the North Carolina Office of State Archaeology (OSA) in Raleigh, as well as a review of historic resources mapped on the Department of Natural and Cultural Resources (DNCR) Survey and Planning Division’s mapping application website (HPOWEB). This review served to identify previously recorded resources in the project vicinity and provided data on the prehistoric and historic context of the project area. Historic



**Figure 1.1.** Map showing the location of the project tract in Cumberland County, North Carolina.



**Figure 1.2.** Topographic map showing the project tract (1950 *Cliffdale NC* 7.5-minute USGS topographic quadrangle [photorevised 1971]).



**Figure 1.3.** Aerial view of the project tract.





**Figure 1.4.** View of mixed hardwoods and pines in the project tract.



**Figure 1.5.** View of planted pine area in the project tract.

maps of Cumberland County and the project vicinity were obtained from a wide variety of published and online sources. Maps reviewed for this project include the 1922 Cumberland County soil map, the 1938 county highway map, and topographic maps dating from 1948 to 1997. The maps were used to determine past land use, the possible presence of structural remains or historic landscape features and known Native American occupations. Aerial images dating back to 1993 were also examined. The United States Department of Agriculture (USDA) Web Soil Survey, the published soil survey of Cumberland County, and LiDAR imagery were consulted to determine the environmental characteristics of the project vicinity.

## Field Survey

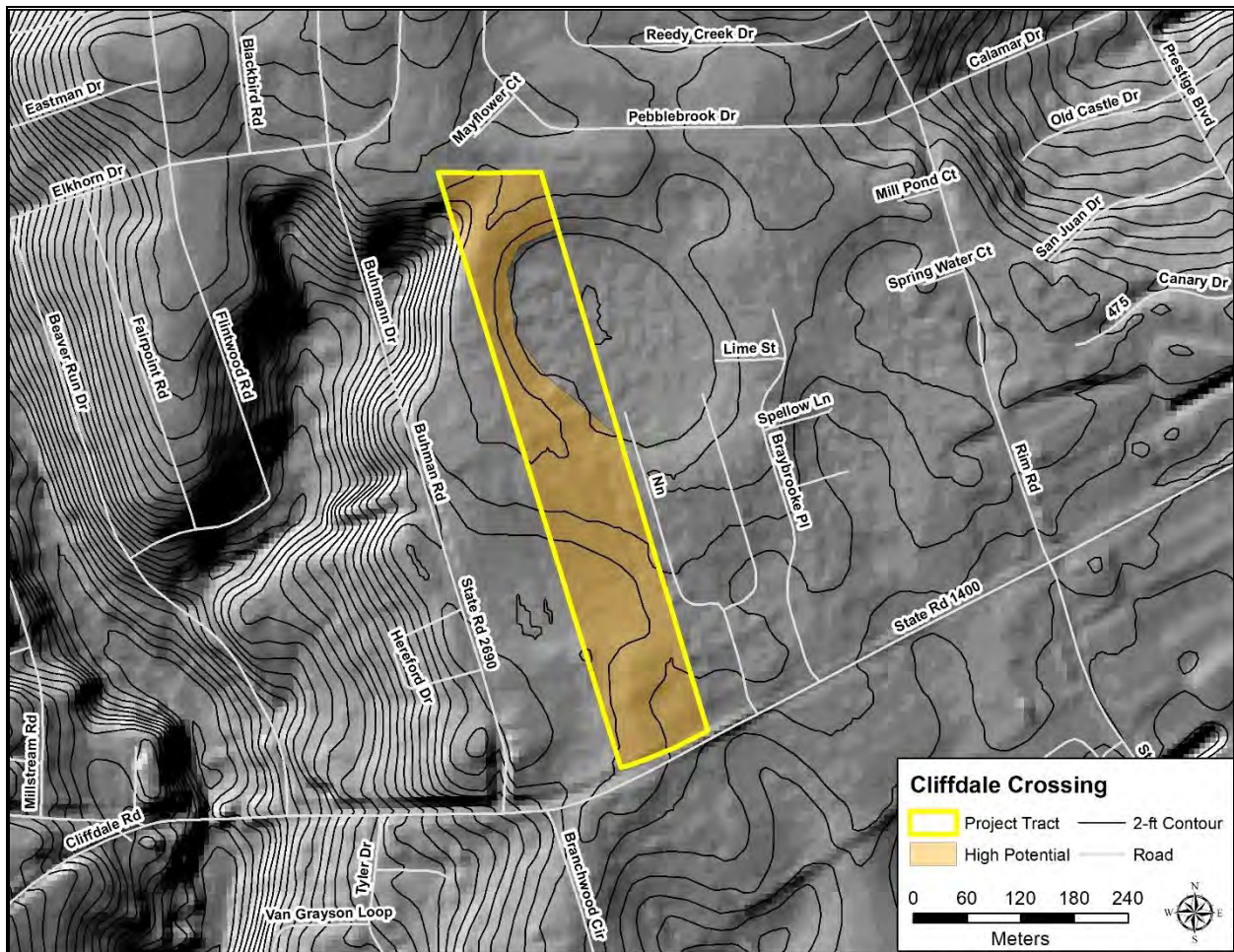
Close-interval contour topographic maps, Light Detecting and Ranging (LiDAR) images, and soil survey data were consulted prior to the field survey to identify portions of the tract with high potential for the presence of archaeological remains. High probability areas were determined based on the presence of well- and moderately well drained soils and the proximity to wetlands and/or drainage frontage. Approximately 16.3 acres (6.6 ha) in the project tract were determined to have a high potential for the presence of archaeological sites (Figure 1.6). These areas were shovel tested at 30-meter intervals along transects spaced 30 meters apart. The remaining 1.7 acres (0.6 ha) were defined as having low potential for the presence of archaeological deposits. These areas were subjected to pedestrian walkover with judgmentally placed shovel tests. This survey strategy was approved by Dr. David Cranford, Assistant State Archaeologist.

Shovel tests measured approximately 30 centimeters in diameter and were excavated to 10 centimeters into subsoil or to the water table. Shovel test fill was screened through ¼ inch wire mesh. Details of artifacts and soils for each shovel test were recorded in field notebooks. No artifacts were identified during this investigation. However, when artifacts are collected, they are placed in plastic bags labeled with the date, field site number, grid point locations (i.e., shovel test/transect or north/east coordinate), depth of artifacts, and initials of the excavator.

A site is defined as an area containing one or more artifacts within a 30-meter or less diameter of surface exposure or where surface or subsurface cultural features are present. Artifacts and/or features less than 50 years in age are not considered a site without a specific research or management reason. At sites where good surface visibility is available, site boundaries are determined based on both close interval surface examination and selective shovel testing. At sites where the ground surface is obscured, site boundaries are established by excavating shovel tests at 15-meter intervals across the site area. Site settings are photographed with a digital camera. Sketch maps are produced in the field showing the locations of shovel tests and surface finds. The locations of all archaeological sites as well as the surface collection transects are recorded using a Trimble Pathfinder Geo 7x Global Positioning System (GPS) unit capable of sub-meter accuracy. These GPS data are then relayed onto project maps.

Site significance is based on the site's ability to contribute to our understanding of past lifeways, and its subsequent eligibility for listing on the NRHP. Department of Interior regulations (36 CFR Part 60) established criteria that must be met for an archaeological site or historic resource to be considered significant, or eligible for the NRHP (Townsend et al. 1993). Under these criteria, a site can be defined as significant if it retains integrity of "location, design, setting, materials, workmanship, feeling, and association" and if it *A*) is associated with events that have made a significant contribution to the broad pattern of history; *B*) is associated with the lives of persons significant in the past; *C*) embodies distinctive characteristics of a type, period, or method of construction, or represents work of a master, possesses high artistic values or represents a significant and distinguishable entity whose components may lack individual distinction; or *D*) has yielded, or is likely to yield, information important in history or prehistory. Archaeological sites are most frequently evaluated pursuant to Criterion D. However, all archaeological sites can be considered under all four criteria.





**Figure 1.6** LiDAR map showing high potential areas in the project tract.

The primary goals of this field investigation were to identify archaeological resources and evaluate their potential research value or significance. Although the determination of the site significance is made by the State Historic Preservation Office, whenever possible, sufficient data are gathered to allow us to make a significance recommendation. Sites that exhibit little or no further research potential are recommended *not eligible* for the NRHP, and no further investigation is proposed. Sites for which insufficient data could be obtained at the survey level are considered *unassessed* and preservation or more in-depth investigation is advocated. It is rare for ample data to be recovered at the survey level of investigation to definitively determine that a site meets NRHP eligibility criteria. However, when this occurs, the site is recommended *eligible* for the NRHP. Again, preservation of the resource is advocated. If preservation is not possible, mitigation options (e.g., data recovery) would need to be considered.

### Laboratory Analysis

Had artifacts been recovered, they would have been processed in the Clayton laboratory facilities of ACC. All artifacts would be washed in warm soapy water and allowed to thoroughly air dry. A provenience number, based on artifact contexts (i.e., grid coordinate, depth, etc.), would be assigned to each positive excavation location. Within each provenience, individual artifacts or artifact classes would then be

assigned a catalog number. Artifacts would be cataloged based on specific morphological characteristics and would be compared to such as raw material in the case of lithics, and decoration and temper type in the case of prehistoric ceramics. Historic artifacts would have been identified by color, material of manufacture (e.g., ceramics), type (e.g., slipware), form (e.g., bowl, plate), method of manufacture (e.g., molded), period of manufacture (e.g., 1780-1820), and intended function (e.g., tableware). Historic artifacts with established manufacture date ranges would have been categorized using published sources.

Upon acceptance of the final project report, all analysis sheets, field notes, photographs, and maps, will be prepared according to federal guidelines and transferred to OSA for final curation.

### **Project Documentation**

Data compiled during this investigation was used to produce this document with details of the tasks undertaken. Chapter 2 presents environmental and cultural overviews of the project region. Chapter 3 present the results of the archival research. The results of field investigation and management recommendations, as appropriate, are presented in Chapter 4.

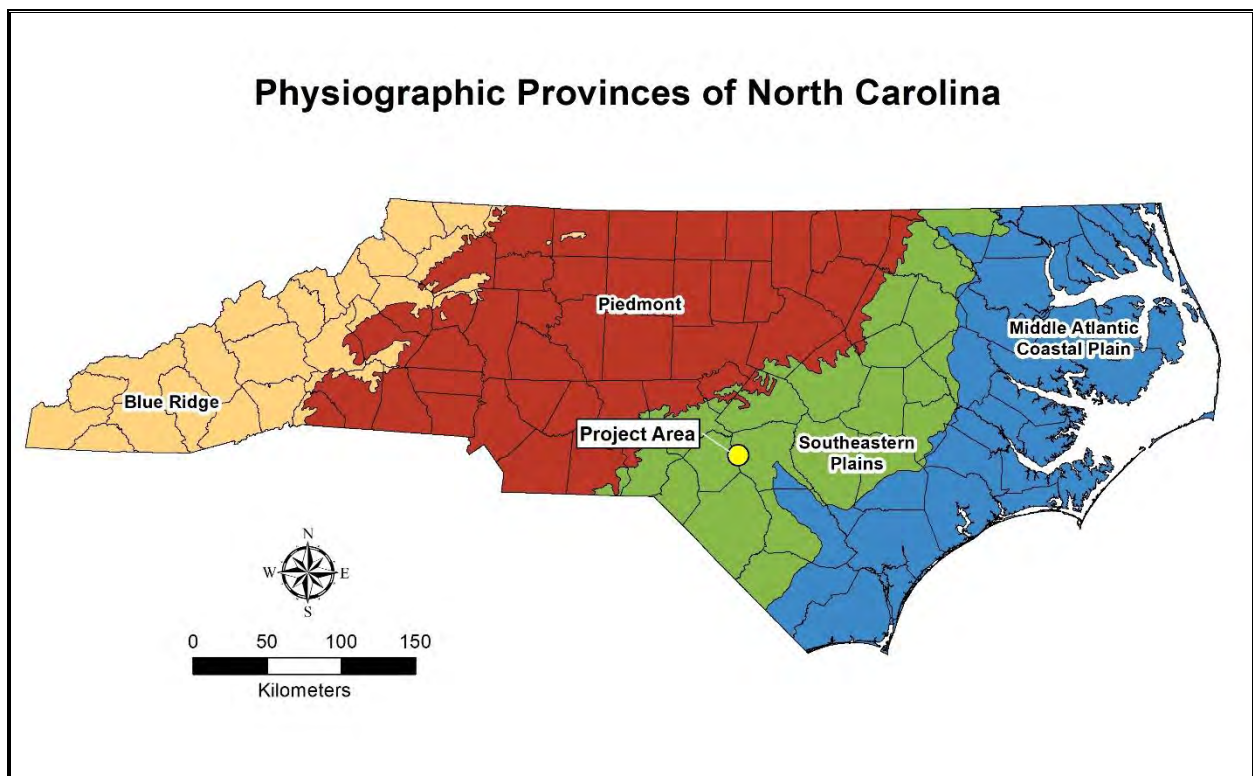


## Chapter 2. Environmental and Cultural Overview

To be able to comprehensively examine the archaeological resources identified during this survey, it is necessary to understand the larger context within which they occur. The natural environment, technological development, and ideological values are all intertwined in shaping the way humans live. In this chapter, details about the local environment and cultural development in the region are presented to provide a context within which these archaeological resources can be assessed. This basic framework is an important tool in evaluating the National Register of Historic Places (NRHP) eligibility of these resources.

### Environmental Overview

Cumberland County is in the southwestern portion of the upper Coastal Plain of North Carolina (Figure 3.1). The Coastal Plain is comprised of broad, relatively flat terraces of unconsolidated sediments and carbonate rocks that were deposited in shallow seas by rivers draining the Blue Ridge and Piedmont provinces during the Cretaceous through Quaternary period (Rogers 1999). The western portion of Cumberland County falls within the Sandhills region. The Sandhills are a strip of remnant beach dunes that extend from Georgia to North Carolina and loosely form the boundary between the Coastal Plain and the Piedmont provinces.



**Figure 2.1.** Physiographic map of the North Carolina showing the location of the project area.

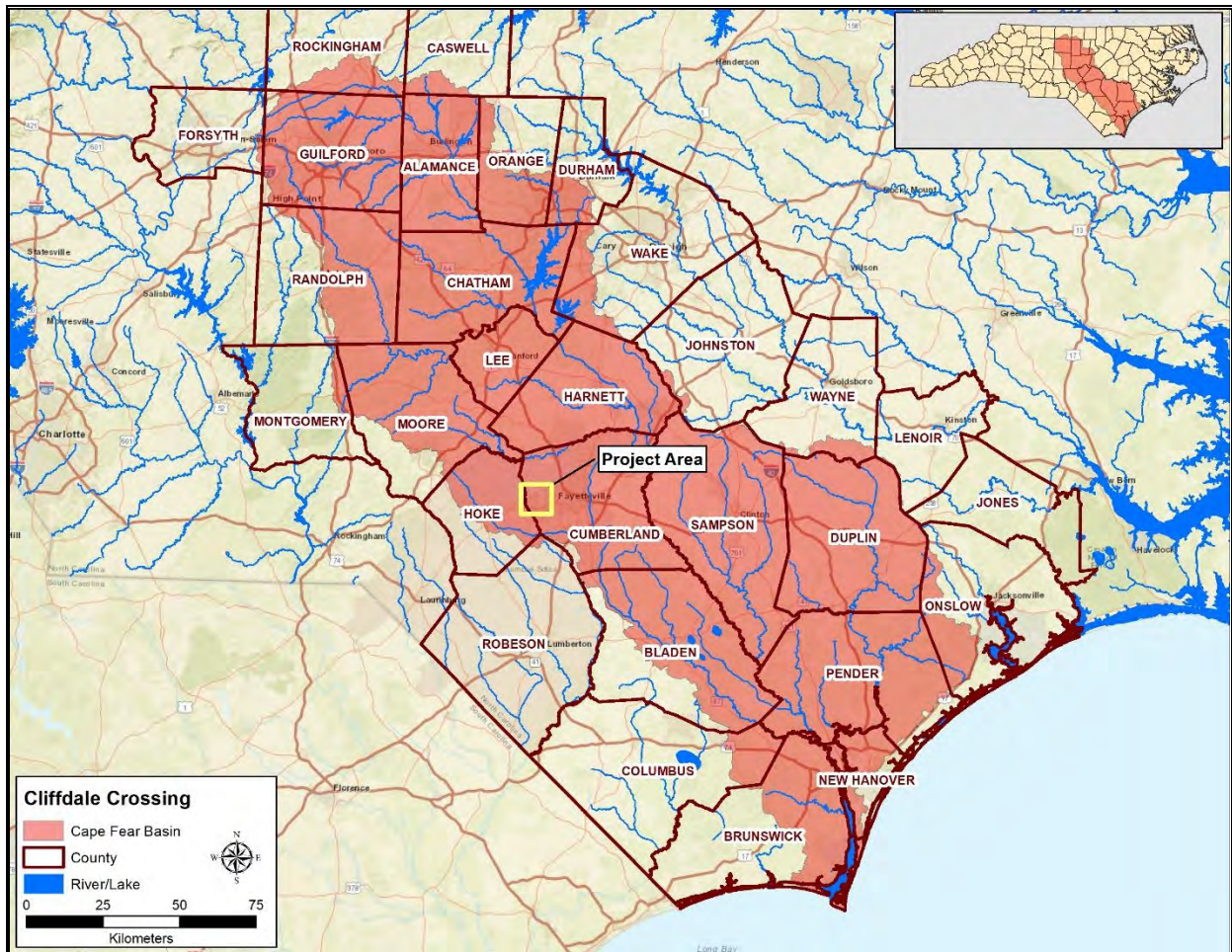
Elevations in the tract range between approximately 75.6 and 77.4 meters above mean sea level. The project tract contains relatively little topographic relief. Slight rises are present in the northern and southern portion of the tract and gradual slope is also present in the southern portion of the tract. The northeastern portion of the tract consists of the western half of a small Carolina Bay and its southwestern rim.



Carolina Bays are common landscape features in the Coastal Plain of North and South Carolina. Carolina Bays are oval depressions especially prevalent in the Coastal plain near the North Carolina and South Carolina border. They tend to be oriented northwest-southeast, with an elevated sand rim on the southeastern margin. Sizes vary from 60 meters to 19.3 kilometers long. Some of the large ones are lakes (e.g., Lake Waccamaw, White Lake, Little Singletary Lake), others are bogs or pocosins, and still others are drained and used as agricultural fields. The peat in the bogs can be between 3.0 to 15.2 meters thick. Origin theories once linked the creation of Carolina Bays to extraterrestrial impacts (with a comet being perhaps the most likely); however, more recent research conducted by Moore et al. (2016) suggests that they are formed by long term climatological and hydrological processes. They are likely wind-oriented lakes with nearly identical patterns of shape, orientation, and sand rim composition. They can become more active during periods of climatic instability.

### Drainage

The project area falls within the Cape Fear River Basin, the largest river basin within North Carolina (Figure 2.2). The project tract is drained by a small, unnamed tributary of Bones Creek. Bones Creek converges with Little Rockfish Creek southeast of the tract. Little Rockfish Creek converges with Rockfish Creek before draining into the Cape Fear River south of Fayetteville, North Carolina. The Cape Fear River is approximately 200 miles long, flowing from Jordan lake into the Atlantic Ocean (City of Fayetteville 2015).



**Figure 2.2.** Map showing the project location within the Cape Fear River basin.



## **Climate**

The climate in Cumberland County includes hot and humid summers and moderately cold winters. Summer temperatures average 78 degrees Fahrenheit (F), with the highest temperatures around 89 degrees F. Winter temperatures average 44 degrees F, with lows around 31 degrees F. Yearly rainfall totals 109 to 117 centimeters and is evenly distributed throughout the year (Hudson 1984).

## **Geology**

The project area is underlain primarily by the Cape Fear Formation. This formation is the product of non-marine delta formation during the Upper Cretaceous period. It is comprised of bedded sand, sandstone, and mudstone (Sohl and Owens 1991). The lithic material present in the project vicinity, as in much of the Coastal Plain, likely originates in the Carolina Slate Belt in the Piedmont. Rivers flowing out of the Piedmont transported the material, including metavolcanics and quartz, into the Coastal Plain where it was deposited as gravels and formed cobble bars.

## **Soils**

Soil data for the project tract were obtained from the United States Department of Agriculture, Natural Resources Conservation Service Web Soil Survey (USDA 2021) and the published soil surveys for Cumberland County (Hudson 1984). There are four soil types present in the project tract (Figure 2.3, Table 2.1). Blaney loamy sand is a well-drained soil that is found on the side slopes and narrow ridges of uplands. McColl loam is a poorly drained soil that is found in shallow, oval depressions of uplands. The majority of the tract contains Norfolk loamy sand, which is a well-drained soil found on broad, smooth flats on uplands. Wagram loamy sand is another well drained soil also formed on broad, smooth flats and the side slopes of uplands.

## **Cultural Overview**

The following discussion summarizes the various occupations in southeastern North Carolina, emphasizing technological change, settlement, and site function throughout prehistory. Table 2.2 presents an archaeological chronology of Native American occupation in the southern Upper Coastal Plain of North Carolina.

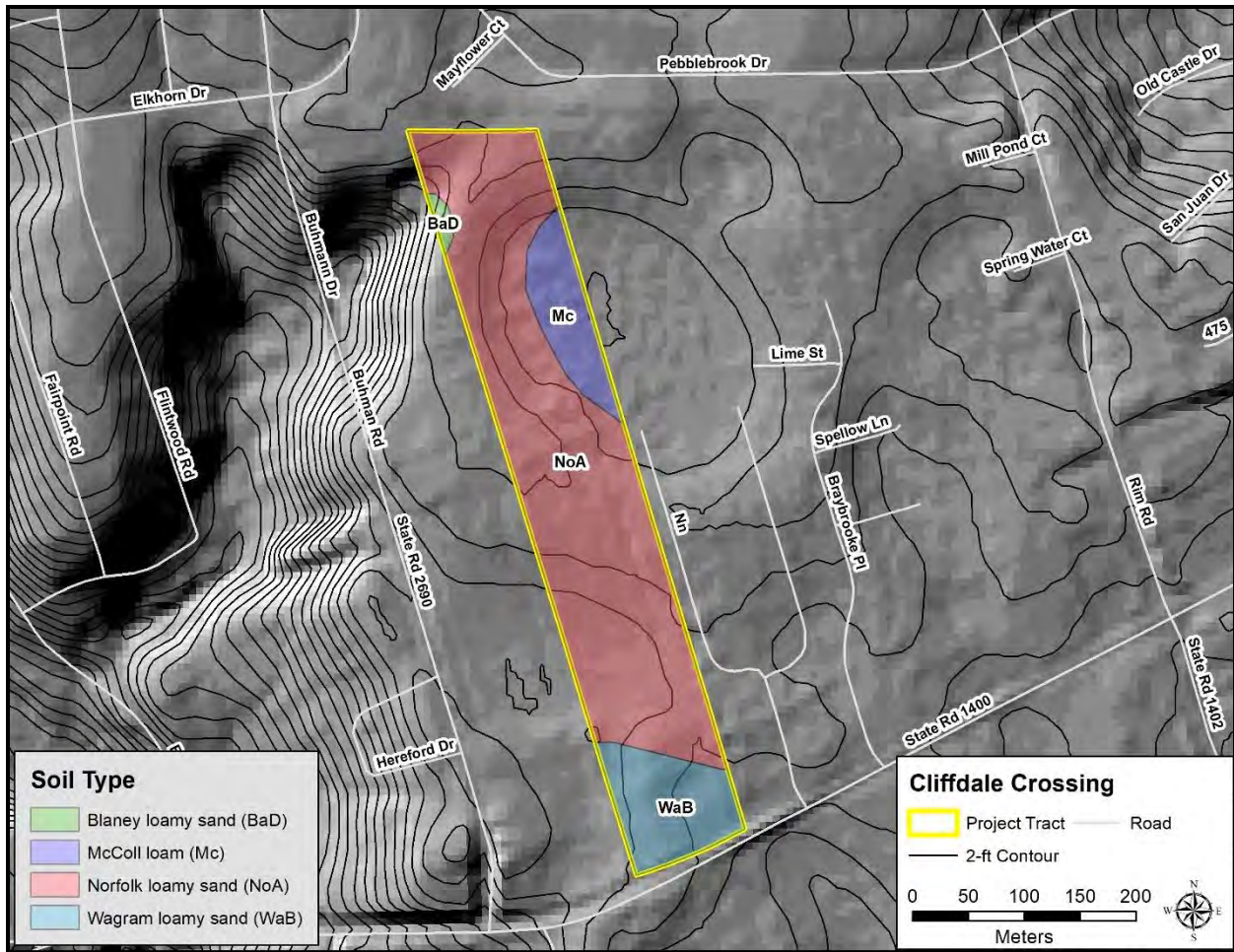
### **Prehistoric Cultural Overview**

#### ***Paleoindian Period (12,000 - 8,000 BC).***

The Paleoindian Period refers to the earliest human occupations of the New World, the origins and age of which remain a subject of debate. The most accepted theory dates the influx of migrant bands of hunter-gatherers to approximately 12,000 years ago. This time period corresponds to the exposure of a land bridge connecting Siberia to the North American continent during the last ice age (Driver 1998; Jackson et al. 1997). Research conducted over the past few decades has begun to cast doubt on this theory.

Investigations at Paleoindian sites have produced radiocarbon dates predating 12,000 years. The Monte Verde site in South America has been dated to 10,500 BC (Dillehay 1997; Meltzer et al. 1997). In North America, the Meadowcroft Rockshelter in Pennsylvania had deposits dating to 9,500 BC. Current research conducted at the Topper Site indicates occupations dating between 15,000 to 19,000 (or more) years ago (Goodyear 2006). Two sites, 44SM37 and Cactus Hill, in Virginia have yielded similar dates.





**Figure 2.3.** Map showing the soils present in the APE.

**Table 2.1.** Summary of Soils Present in the Project Tract (USDA 2021).

Soil Type	Description	Percent Coverage (Acres)
Blaney loamy sand (BaD)	Well-drained, 8-15% slope	0.9
McColl loam (Mc)	Poorly drained	9.7
Norfolk loamy sand (NoA)	Well-drained, 0-2% slope	75.9
Wagram loamy sand (WaB)	Well-drained, 0-6% slope	13.5

One contentious point about these early sites is that the occupations predate what has been recognized as the earliest New World culture, Clovis. Artifacts identified at pre-Clovis sites include flake tools and blades, prismatic blades, bifaces, and lanceolate-like points (Adovasio and Page 2002; Goodyear 2006; Johnson 1997; McAvoy and McAvoy 1997; and McDonald 2000).

The major artifact marker for the Clovis period is the Clovis lanceolate fluted point (Gardner 1974, 1989; Griffin 1967). First identified in New Mexico, Clovis fluted points have been recovered throughout the United States. However, most of the identified Clovis points have been found in the eastern United States (Ward and Davis 1999). Most Clovis points have been recovered from surface contexts, although some sites (e.g., Cactus Hill and Topper sites) have contained well-defined subsurface Clovis contexts.



**Table 2.2.** Native American Archaeological Chronology for the Southern North Carolina Coastal Plain and Sandhills.

	<b>Phase</b>	<b>Diagnostic Artifacts</b>	<b>Settlement</b>	<b>Subsistence</b>
Paleoindian 12,000-8,000 BC	Clovis	large, triangular, fluted or side-notched projectile points	small, seasonal camps	intensive foraging, focus on large fauna
	Dalton			
Archaic 8,000-1,000 BC	Kirk Palmer	side-notched projectile points corner-notched projectile points	larger, seasonal camps; base camps	intensive foraging
	Stanly Morrow Mtn. Guilford	stemmed points		
	Savannah River	large Savannah River points Stallings Island fiber tempered and Thom's Creek and New River sand tempered ceramics		
Woodland 1,000 BC-1584 AD	New River	large triangular points sand (New River) and limestone (Hamps Landing) tempered pottery cord marked surface treatments	small, dispersed villages; focus on flood plain areas	intensive foraging supplemented by horticulture; agriculture; continued focus on shellfish
	Cape Fear	grog tempered (Hanover) and sand tempered (Cape Fear) ceramics small triangular points		
	White Oak	shell tempered ceramics		

Moore et al. (2003), Phelps (1983), and Ward and Davis (1999)

In the southeastern United States, Clovis was followed by smaller fluted and nonfluted lanceolate spear points, such as Dalton and Hardaway point types, that are characteristic of the later Paleoindian Period (Goodyear 1982). The Hardaway point, first described by Coe (1964), is seen as a regional variant of Dalton (Oliver 1985; Ward 1983). Most Paleoindian materials occur as isolated surface finds in the eastern United States (Ward and Davis 1999); this indicates to many scholars that population density was extremely low during this period and that groups were small and highly mobile (Meltzer 1988). It has been noted that group movements were probably well-scheduled, and that some semblance of territories was probably maintained to ensure adequate arrangements for procuring mates and maintaining population levels (Anderson and Hanson 1988).

O'Steen (1996) analyzed Paleoindian settlement patterns in the Oconee River valley in northeastern Georgia and noted a pattern of decreasing mobility throughout the Paleoindian period. Sites of the earliest portion of the period seem to be restricted to the floodplains, while later sites were distributed widely in the uplands, showing an exploitation of a wider range of environmental resources. If this pattern holds true for



the Southeast in general, it may be a result of changing environments trending toward increased deciduous forest and decreasing availability of Pleistocene megafauna and the consequent increased reliance on smaller mammals for subsistence; population growth may have also been a factor.

### ***Archaic Period (8,000 - 1,000 BC)***

The Archaic Period has been the focus of considerable research in the Southeast. Hunter-gatherer groups of this period are considered to have been highly mobile, focusing on game animals such as deer and on seasonally available wild plant resources such as nuts. Archaic sites are common in the North Carolina Upper Coastal Plain, and their sheer number suggests substantial population increase from the Paleoindian Period. Soil conditions in the Coastal Plain frequently impede preservation of all traces of settlement save lithic artifacts. Variations in lithic tool styles are used to delineate three subperiods within the Archaic Period.

*Early Archaic (8,000 - 6,000 BC).* The Early Archaic subperiod is marked by a shift from a boreal forest to more northern hardwoods. Southern pines became the dominant species as the Oak-Hickory forest retreated to the Piedmont (Delcourt and Delcourt 1981; Delcourt and Delcourt 1985). Based on site distribution data for Fort Bragg, Early Archaic site locations are extremely diverse indicating adaptation and exploitation of a wide variety of settings (Irwin and Culpepper 2000). Site types generally fall into three categories: base camps (often at stream confluences), specialized resource procurement sites located in areas with seasonally variable resources, and specialized use sites (Cable and Cantley 2006). In the Southeast, the smaller temporary procurement camps and the larger base camps are found at a ratio of ten to one (Ward and Davis 1999).

A number of settlement models have been advanced for the Early Archaic. Anderson and Hanson (1988) theorize that group movement focused on a single drainage with inter-drainage movement being sporadic and directly tied to macroband aggregations. Based on this view, it could be interpreted that individual groups had established territories within which they remained most of the time. Daniel (1998) speculates that Early Archaic groups moved freely between drainages but were tethered to quality lithic sources in the Piedmont. This view assumes that good quality lithic material would not have been available outside of the Piedmont, although abundant lithic sources are present in the Coastal Plain, most in the form of gravel bars and cobble beds. Both views have their proponents. Regardless, it is generally agreed upon that band-sized groups moved across the landscape utilizing a broad range of resources.

As noted, subsistence data for this time period in the Upper Coastal Plain is sparse. However, remains recovered from Early Archaic sites in the Southeast have included deer, a variety of small mammals, turtles, fish, wild birds. Evidence of plant remains exploited includes acorns, hickory nuts, maygrass, and goosefoot (Goodyear et al. 1979; Smith 1987). There is some debate on the prevalence of groundstone tools at Early Archaic sites, although their presence is used as evidence of the processing of plant remains.

Lithic tools diagnostic of the Early Archaic include Hardaway side-notched, Palmer and Kirk corner-notched, and bifurcated spear points are diagnostic of the time period. End and side scrapers are also attributed to the Early Archaic, as are adzes, graters, drills, and perforators (Daniel 1998).

*Middle Archaic (6,000-3,000 BC).* There is a noted increase in site frequency through the Middle Archaic. This increase may reflect continued mobility with the associated decrease in band territory that many researchers speculate occurred during this subperiod (Custer 1990; Smith 1987). With reduced territories, it may have been necessary to establish more permanent settlements. This trend is reflected in the increased presence of storage facilities (Chapman 1977; Griffin 1967; and Wetmore 1986). Middle Archaic sites in the Coastal Plain have exhibited site layouts consistent with residential camps of some



duration with huts, exterior hearths, prepared clay floors, and discrete artifact scatters (Cable and Cantley 1998; Cantley and Cable 2002; Cable et al. 2005, and Smith 1987).

Stanly Stemmed, Morrow Mountain Stemmed, and Guilford Lanceolate spear points are the primary diagnostic artifacts of this time period. Morrow Mountain and Guilford phases are believed to have been introduced from the west (Coe 1964). Phelps (1964) referred to this as the “Western Intrusive horizon.” Halifax projectile points have also been found in the north Coastal Plain of North Carolina. These points date to approximately 4000 BC and were introduced from peoples living to the north (Coe 1964). Middle Archaic tools also include scrapers, graters, and spokeshaves and there is a decided preference for expediently available raw lithic material. There is some debate regarding the apparent increase in groundstone tools during the Middle Archaic. Although some researchers have noted a marked increase in the presence of groundstone tools, Bruce Smith (1986) cites a large assemblage of groundstone tools recovered from Early Archaic deposits at the Rose Island site in Tennessee as evidence of a continuation of the same level of groundstone tool use rather than an increase.

*Late Archaic (3,000 - 1,000 BC).* The Late Archaic subperiod is characterized by population growth and further decreases in mobility. Longer term habitation of sites is reflected by the presence of large dense middens, evidence of structures, and abundant storage features. There were also innovations in technology and subsistence strategies. Plant cultivation intensified, leading to the early stages of formal agriculture (Sassaman et al. 2002). Steatite slabs and bowls were produced, presumably for cooking purposes, and were widely in use from about 2000 to 1500 BC (Gray 2010). The predominant spear type of the Late Archaic is the Savannah River spear point. Other tools associated with Late Archaic sites include grinding stones, scrapers, drills, and grooved axes.

Fiber-tempered Stallings ceramics begin being produced as early as 2500 BC (Anderson et al. 1982). Stallings ceramics have been recovered from sites on Fort Bragg but are not generally found above the Fall Line (Culpepper et al. 2000; Griffin et al. 2001). The use of sand for clay temper gradually replaced the use of fiber through the Late Archaic. Sand tempered Thoms Creek wares are found in the southern Coastal region (Ward and Davis 1999), and more recently, radiocarbon and thermoluminescence dates place the early production of New River wares in this same time frame (Dr. Joseph Herbert, personal communication). Surface treatments on New River ceramics include cord marking, net impressions, and simple stamping.

#### ***Woodland Period (1,000 BC - 1584 AD)***

*Early Woodland (1,500 - 200 BC).* Along the North Carolina coast, Early Woodland sites consist of shell middens near tidal marshes and ceramic and/or lithic scatters in different environmental zones. Site type categories established by Trinkley (1990) for this portion of the state include seasonal camps located in upland settings at springs or stream confluences, small seasonal campsites located on swamp edges, and large semi-permanent camps on swamp edges. Site location patterns suggest a dispersed, highly mobile lifeway that continued from the Late Archaic into the Woodland. Two ceramic types are associated with the Early Woodland along the southern coast of North Carolina. New River ceramics are tempered with dense coarse sand, and exhibit surface treatments that are dominated by cord marking, but also include fabric impressing, net impressing, and simple stamping (Lofffield 1975; Mathis 1999; Ward and Davis 1999). Hamps Landing ceramics are characterized by limestone or marl temper and have plain, faint thong marked, cord marked, fabric impressed, and simple stamped surfaces (Ward and Davis 1999).

*Middle Woodland (200 BC - AD 1000).* Sites dating to this period include small single house shell middens, more significant shell middens, and shell-less sites in the interior that vary in size and artifact density. Trinkley (1990) notes that the site types from Early Woodland continue into the Middle Woodland but with the addition of sand burial mounds. The low, sand burial mounds have been identified at several



archaeological sites in the region. Estuarine resources made a significant contribution to the subsistence of Middle Woodland peoples (Drucker and Jackson 1984; Espenshade and Brockington 1989; Trinkley 1976, 1980). The two ceramic series associated with the Middle Woodland in the southern coastal plain are the grog tempered Hanover wares and the sand tempered Cape Fear wares. Hanover wares are typically cord marked or fabric impressed (Ward and Davis 1999). Cape Fear have similar decorations, although South (1976) observed rare net impressing on these wares (Ward and Davis 1999).

*Late Woodland (AD 1000 - 1584).* Sand burials continued to be used during the Late Woodland with burials generally being secondary and bundled. Cremations or charred remains are common (Jones et al. 1997). House structures include both circular and rectangular outlines, but it is unclear whether the two house styles indicate seasonal differences or the presence of Algonquin speakers in the area (Loftfield 1990). The Late Woodland in the southern Coastal Plain of North Carolina is characterized by the White Oak Phase. South (1976), working in Brunswick and New Hanover Counties, described the “Oak Island” series as being shell tempered pottery that included cord marked, net impressed, fabric impressed, and plain surface treatments. Working near the White Oak River, South (1962) identified shell tempered fabric impressed sherds which he defined as White Oak fabric impressed. Loftfield (1976) expanded the definition of White Oak to include simple stamped and smoothed surfaces based on work conducted in Onslow and Carteret County. Few researchers, today, distinguish between South’s “Oak Island” and Loftfield’s “White Oak” ceramic series (Ward and Davis 1999). However, it is believed by some that many of the shell tempered Oak Island sherds identified by South (1976) are actually limestone tempered and part of the Early Woodland Hamps Landing series, and that the term White Oak should be used to define the shell tempered Oak Island ceramics (Ward and Davis 1999).

### **Historic Overview**

In the decades following the expedition of Christopher Columbus, the coast and interior portions of what would become North Carolina were explored. Much of this activity was initiated by Spain in the hope of preserving its hegemony over North America. Hernando de Soto (1539-1543) and Juan Pardo (1566-1568) led military expeditions into the western Piedmont and mountains of North Carolina during the mid-sixteenth century (Hudson 1990, 1994). Despite these military incursions and the establishment of minor outposts, the Spanish presence in the Carolinas could not be sustained. Mounting pressure from hostile Native Americans and English privateers resulted in the withdrawal of Spanish forces to St. Augustine in 1587 (South 1980).

England’s interest in the New World was heavily promoted by Walter Raleigh. A courtier in the court of Queen Elizabeth I, Raleigh secured the financial and political support necessary to attempt the first permanent settlement of the New World by English colonists in 1585 (Powell 1989). Although his efforts failed, Raleigh’s single-minded ambition ultimately led to the establishment of the Jamestown colony in 1607 (Noël Hume 1994).

The disastrous mismanagement and resulting loss of life in Virginia during the first two decades of the colony’s existence resulted in the revocation of the Virginia Company’s charter in 1624 (Noël Hume 1994). Preoccupied with the civil war between Royalist and Parliamentary forces in the 1640s, the authorities in Virginia showed little interest in North Carolina until the 1650s. During this period the area around the Albemarle Sound in northeastern North Carolina was inhabited by traders, hunters, trappers, rogues, and tax evaders (Powell 1989). Even then, North Carolina was becoming notorious as a refuge for the independent and self-reliant.

In 1662, Captain William Hilton was searching for a favorable location for a Puritan colony when he encountered a cape and inlet which he named “Cape Fear.” Settlers from New England followed Hilton



to the area but soon left. A sign was left attached to a post at the point of the cape warning others to avoid the area.

The restoration of Charles II to the throne in 1660 resulted in the distribution of rewards to those who had supported the Royalist cause during the upheaval (Powell 1989). This initiated the Proprietary colonial period in the Carolinas, which lasted from 1663 until 1729. During the rule of the Lords and Proprietors, Charlestown was established north of the mouth of the Cape Fear River. The town was abandoned in 1667 for several factors including political problems abroad and local Native American populations turning violent due to abuse by the English (Lee 1971).

Years of turmoil brought about by an unstable system of government culminated in war with the Tuscarora Indians. Severe fighting broke out in 1711, triggered by the death of the colony's Surveyor General (John Lawson) at the hands of the Tuscarora (Powell 1989). The war ended in 1712, leaving the Carolina colonies in dire financial straits. These conditions persisted until the Lords and Proprietors were forced to sell their holdings in the Carolinas to the Crown in 1729 (Powell 1989).

The acquisition of North Carolina by the Crown initiated a period of relatively stable government. During this time, immigration into North Carolina was along three major routes (Powell 1989): western North Carolina was settled by German and Scots-Irish immigrants arriving from Pennsylvania and Virginia via the Great Wagon Road; new arrivals at the important towns of New Bern and Brunswick pushed west up the Cape Fear and Neuse river valleys; and colonists from South Carolina advanced up the Pee Dee and Catawba rivers in search of new land.

The European settlers to the area, mostly comprised of Highland Scots, encountered several Native American tribes including the Tuscarora, Cherokee, Cheraw, and Croatan (Swanton 1979). In 1725, surveyors for the Wineau Company documented a village of "Waccamaw Indians on the Lumber River. At that time, the waterway was called Drowning Creek for its swift currents and dark water. The tribe now known as the Lumbee have been known as the Croatan and/or Cherokee of Robeson County, and they comprise the ninth largest Native American tribe in the United States (Blu 2004). The Lumbee territory includes Scotland, Hoke, Cumberland, and Robeson counties.

The Lumbee Indians are descendants of the Cheraw Indians, and other groups who merged with them. In the late 1600s, the Cheraw were settled near Danville, Virginia. In the early 1700s they moved to the area of present-day Cheraw, South Carolina, along the Pee Dee River. By 1725 they were living near the North Carolina/South Carolina border, along the Pee Dee River near Cheraw, and along Drowning Creek in North Carolina. In the 1750s, Royal Governor Rowan called Drowning Creek the "frontier to the Indians" where about 50 families lived. The South Carolina Gazette documented the Cheraw settlement on Drowning Creek in 1771. The 1790 United States Census lists prominent family names under the heading "All other free persons" including Locklear, Oxendine, Chavis, Lowry, Hammonds, Brooks, Brayboy, Cumbo, Revels, Carter, and Kursey (Lumbee Tribe of North Carolina 2019).

In 1754, Cumberland and Robeson Counties were created from parts of Bladen County. Cumberland county was made up principally of Scotch Highlanders who came to America following the Battle of Culloden in 1745 (Meyer 1961). The county was named in honor of William Augustus, Duke of Cumberland, who was their commander during the battle. The name changed to Fayette County in early 1784 before reverting back to Cumberland later that year. The county seat was first called Cumberland Court House and was later changed to Campbelton in 1762. The town's name was later changed to Fayetteville after Revolutionary War hero, Lafayette (Corbitt 2000).

During the Revolutionary War, many of Cumberland County's residents were staunch loyalists, although few joined the fighting on either side of the war. Fighting in Cumberland County was generally



limited to violence perpetrated between loyalists and patriot factions within the county. Several hundred men of the county served either side throughout the war. No major battles took place in the county. However, in 1781, Lord Cornwallis marched through the county in route to Guilford Courthouse, where the British would suffer a pyrrhic victory.

During the antebellum period, farming was the chief occupation of in the region. There were few large landowners and hundreds of small farmers. Tobacco began as the dominant cash crop following the colonial period but was quickly overtaken by cotton. The population of Cumberland County also nearly doubled from 8,671 to 16,369 people between 1790 and 1860 (Parker 1990:27). The slave population also increased from 26.1 percent to 41.6 percent of the population (Parker 1990:28). Aside from farming, other major economic drivers included textiles, banking, and the naval stores industries.

Cumberland County also became an arsenal during this period, a foreshadowing of its later military importance. In 1790 a small federal arsenal was established in Fayetteville. By the end of the War of 1812, the arsenal housed 150 guns, tents, canteens, knapsacks and powder (Parker 1990:50). In 1820, a state arsenal was erected. The United States Arsenal was built in 1838, as one of four facilities authorized by the United States Congress (Parker 1990).

Although it took place in Virginia, the Nat Turner slave rebellion in 1831 sent shock waves through the South. In 1835, North Carolina enacted a new constitution prohibiting “persons of color” from voting, serving on juries, testifying against whites, bearing arms, and learning to read and write. Although having previously been allowed all rights of citizenship, the new constitutional restrictions were applied to the Lumbees. During the Civil War, a number of companies were formed from Richmond and neighboring Robeson County residents. These included Battery E of the 3<sup>rd</sup> North Carolina Artillery and the 1<sup>st</sup> Company D of the 12<sup>th</sup> North Carolina State Troops. The Lumbees were excluded from military service under the new state constitution, but they were conscripted to work on various work projects for the Confederates, including the construction of Fort Fisher. Resentments about the forced labor led many Lumbee men to flee into the swamps. In 1864, Henry Berry Lowry, a 16-year old Lumbee, and his brothers began a series of ambushes on local planters and conscription officials. Lowry and his band became local legends as they stole from the wealthy landowners and distributed the goods to the poor in Robeson County (Perdue and Oakley 2014).

As agriculture, naval stores, and timber industries helped improve the economy, attempts to improve transportation were made. In 1849, construction on the first plank-covered road in North Carolina began. Completed in 1854, Plank Road was 129 miles long, connecting Fayetteville with Salem. By the time of the Civil War, five plank roads radiated from Fayetteville.

At the onset of the Civil War, Cumberland County supplied eight companies to the Confederate Army (Parker 1990). These included the Fayetteville Independent Light Infantry of the 1<sup>st</sup> North Carolina Regiment, the Lafayette Light Infantry of the 1<sup>st</sup> North Carolina Regiment (later changed to Artillery with the 13<sup>th</sup> North Carolina Battalion), the Cumberland Plowboys of the 24th North Carolina Regiment, the Manchester Guardians of the 8th North Carolina Regiment, and the Carolina Boys of the 38<sup>th</sup> North Carolina Regiment. The Confederate States also took charge of the U.S. Arsenal and named it the Fayetteville Arsenal and Armory. It provided rifles, pistol carbines, ammunition, knapsacks, and artillery carriages to the Confederate Army. This service was provided throughout the war until it was seized by the Union Army in 1865 when much of the compound was burned during General Sherman’s Carolina campaign (Parker 1990).

As Union sympathizers, the Lumbee looked forward to the end of the Civil War. Unfortunately, their lot remained largely unchanged. Due to political pressure, Lumbee rights were not reinstated. Lowry and his gang were pursued by the newly established Home Guard. In February 1872, Lowry robbed a store





in Lumberton of a safe containing \$22,000.00. Over the next several years, members of his band disappeared or were captured and killed, but Lowry was never seen again (Perdue and Oakley 2014).

Following the Civil War, agriculture continued to be the primary economic contributor to the area. Tobacco and cotton were the principal money-making crops. Other important agricultural products included corn used for fodder, hogs, and sheep. Many former slaves, who had previously been relied upon as the primary source of labor, became tenant farmers on the former plantations where they continued to live. The majority of farms were small with few having more than one or two tenants (Parker 1990).

Perhaps the most important economic and social change to Cumberland and other surrounding counties began during World War I, when the War Department announced the creation of Camp Bragg in the North Carolina Sandhills. The camp was completed in 1919 and could house 16,000 soldiers (Parker 1990:115). Although almost closed in 1921, Camp Bragg began to grow and was renamed Fort Bragg. Pope Field, named after an army pilot, later became Pope Air Force Base, before being subsumed back into Fort Bragg. Its importance and stature grew during World War II housing 67,000 soldiers, becoming the largest Army camp (Parker 1990:134).

Fort Bragg produced more than 50 artillery battalions that fought in all theaters of the war. The most notable of units to come from Fort Bragg are the Ninth Infantry Division and the 82<sup>nd</sup> and 101<sup>st</sup> Airborne. These units fought in North Africa, Utah Beach during D-Day, and the Battle of the Bulge. Fort Bragg is the most intensively used training facility and several Army Reserve and National Guard Divisions train at Fort Bragg annually.

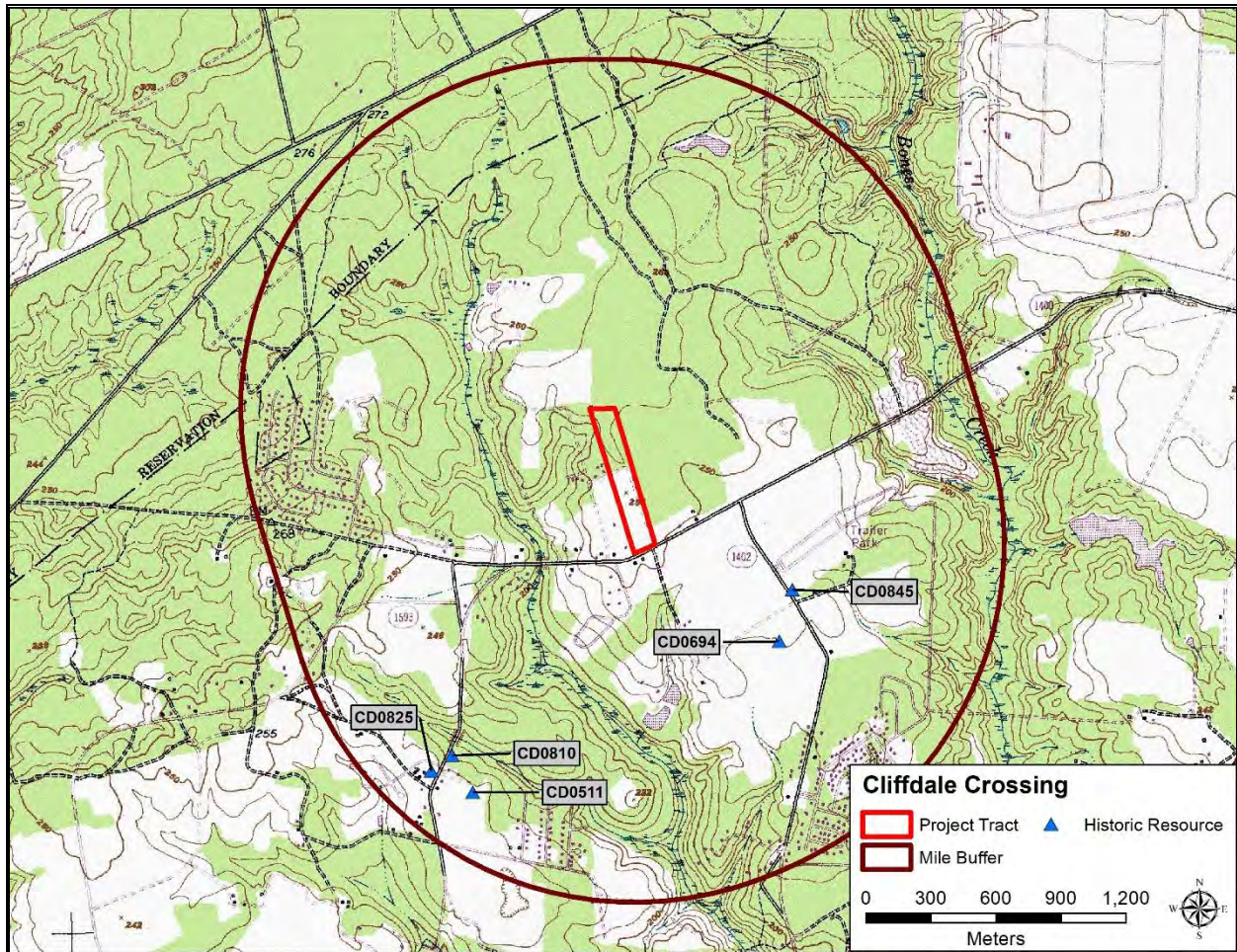
Presently, Cumberland County contains more than 326,000 residents (Cumberland County 2017). Its economy is less dependent now on agriculture. Textiles and Fort Bragg remain important economic forces within the county, although manufacturing and merchandising have come to play an important role as well (Parker 1990).



## Chapter 3. Results of Archival Research

### Previously Recorded Cultural Resources in the Project Vicinity

Cultural and environmental background research was conducted prior to the field visit. No archaeological sites have been recorded within the project tract or within a 1.6-kilometer radius of the tract. Five historic resources are recorded within 1.6 kilometers of the project tract (Figure 3.1, Table 3.1). Resource CD0511 is the approximate site of the Raymount Schoolhouse, a 1-story front-gabled school with a shed porch; it was surveyed in 1979. Its National Register of Historic Places (NHRP) status is listed as Survey Only (SO). The Angus McGill House (CD0694) was placed on the Study List in 1980. Three resources (CD0810, CD0825, and CD0845), all houses, have been destroyed.



**Figure 3.1.** Map showing the locations of historic resources in the project vicinity (1950 *Cliffdale NC* 7.5-minute USGS topographic quadrangle [photorevised 1971]).

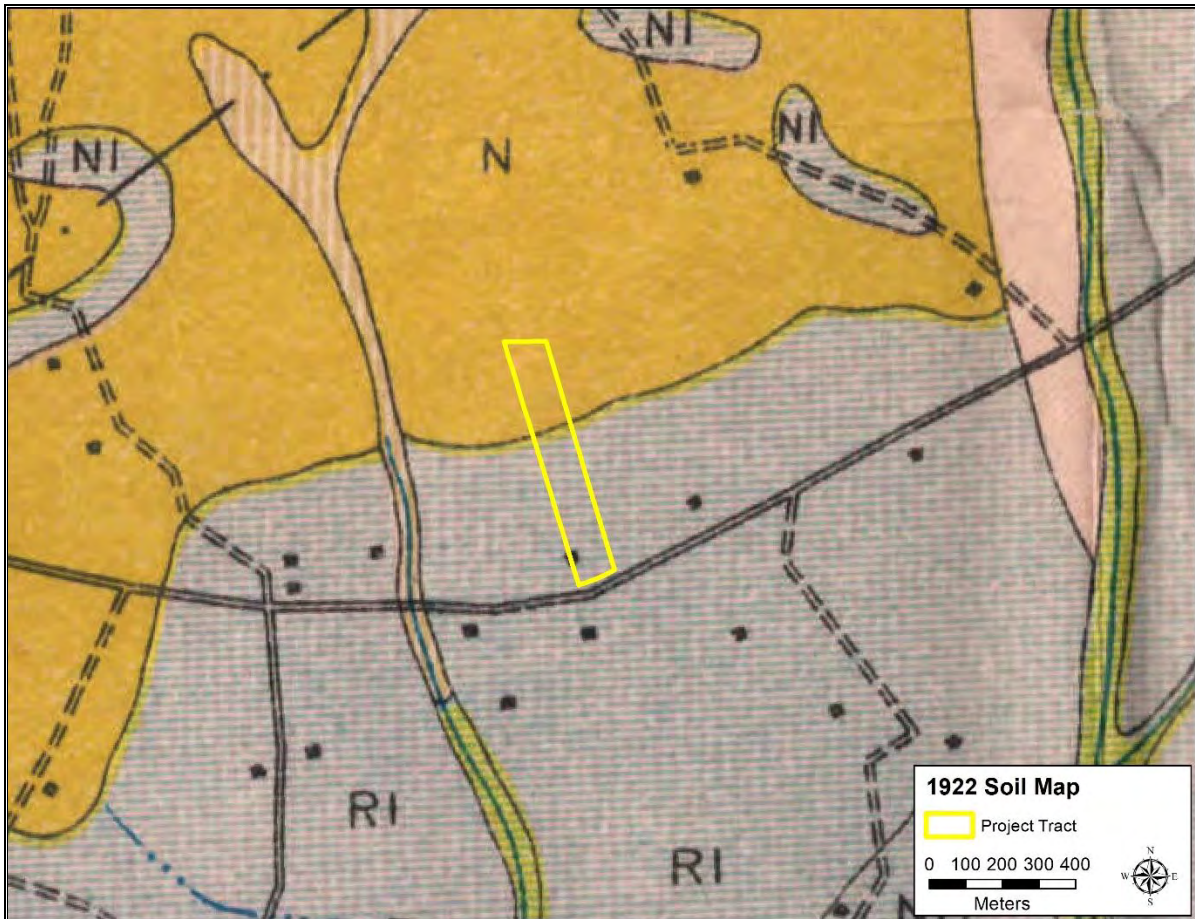
**Table 3.1.** Historic Resources Recorded Within a 1.6-Kilometer Radius of the Project Tract.

Resource Number	Description	NRHP Status
CD0511	c. 1884 Raymount Schoolhouse (approximate site)	SO
CD0694	Angus McGill House	SL
CD0810	Kennedy House (Gone)	SD
CD0825	McGougan House (Gone)	SD
CD0845	R.A. Pate House (Gone)	SD

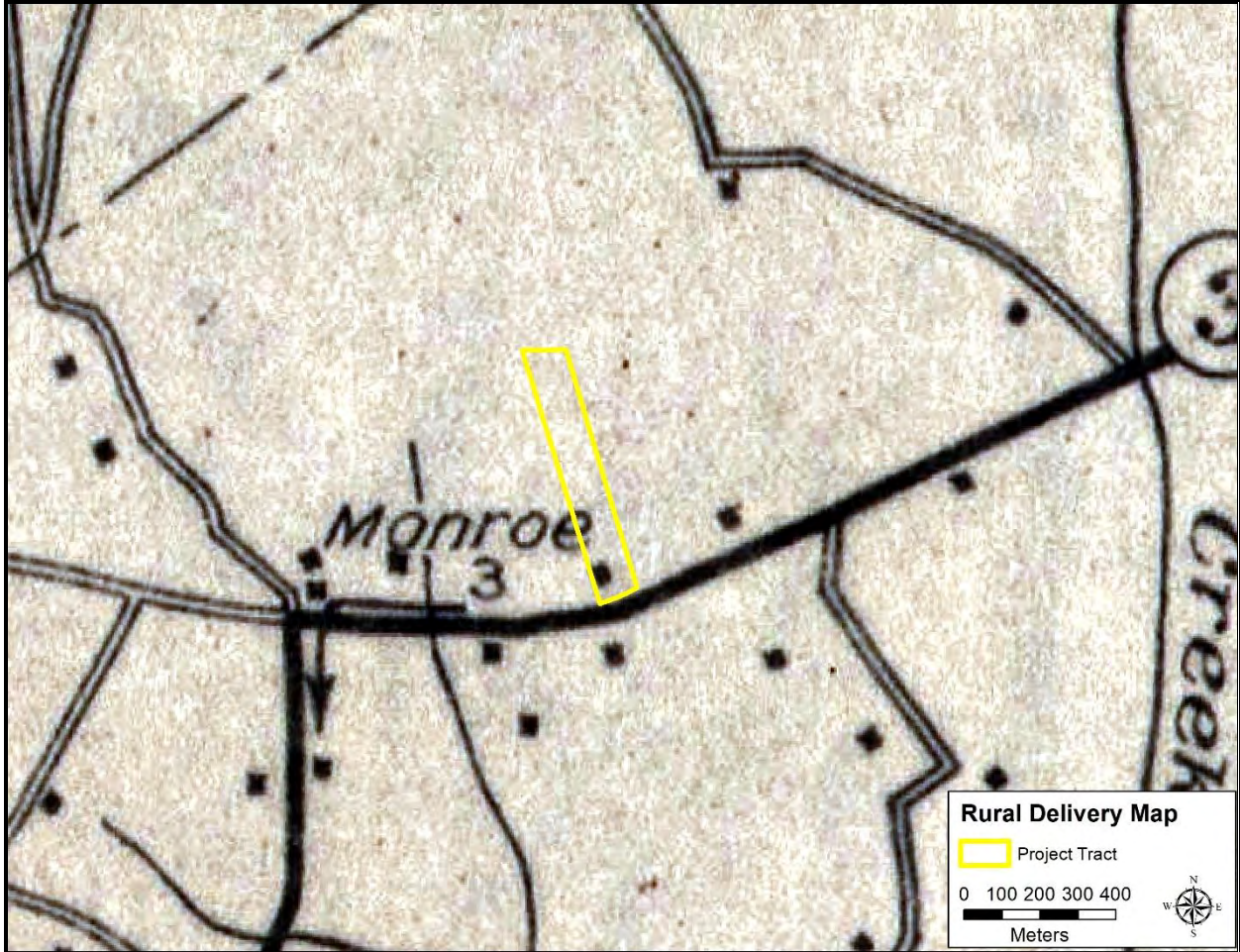
**Historic Map and Aerial Image Review**

Maps reviewed for this project include the 1922 Cumberland County soil map, the 1938 county highway map, and topographic maps dating from 1948 to 1997. The maps were used to determine past land use, the possible presence of structural remains or historic landscape features and known Native American occupations. Aerial images dating back to 1993 were also examined.

The 1922 county soil map (Figure 3.2) and rural delivery map dating circa 1910 to 1920 (Figure 3.3) show one building in the southwestern portion of the project tract. The 1938 county highway map does not show any buildings present within the tract, suggesting the house in the southern portion of the tract was destroyed by late 1930s. The 1948, 1950, and 1974 topographic maps show no buildings present in the project tract.

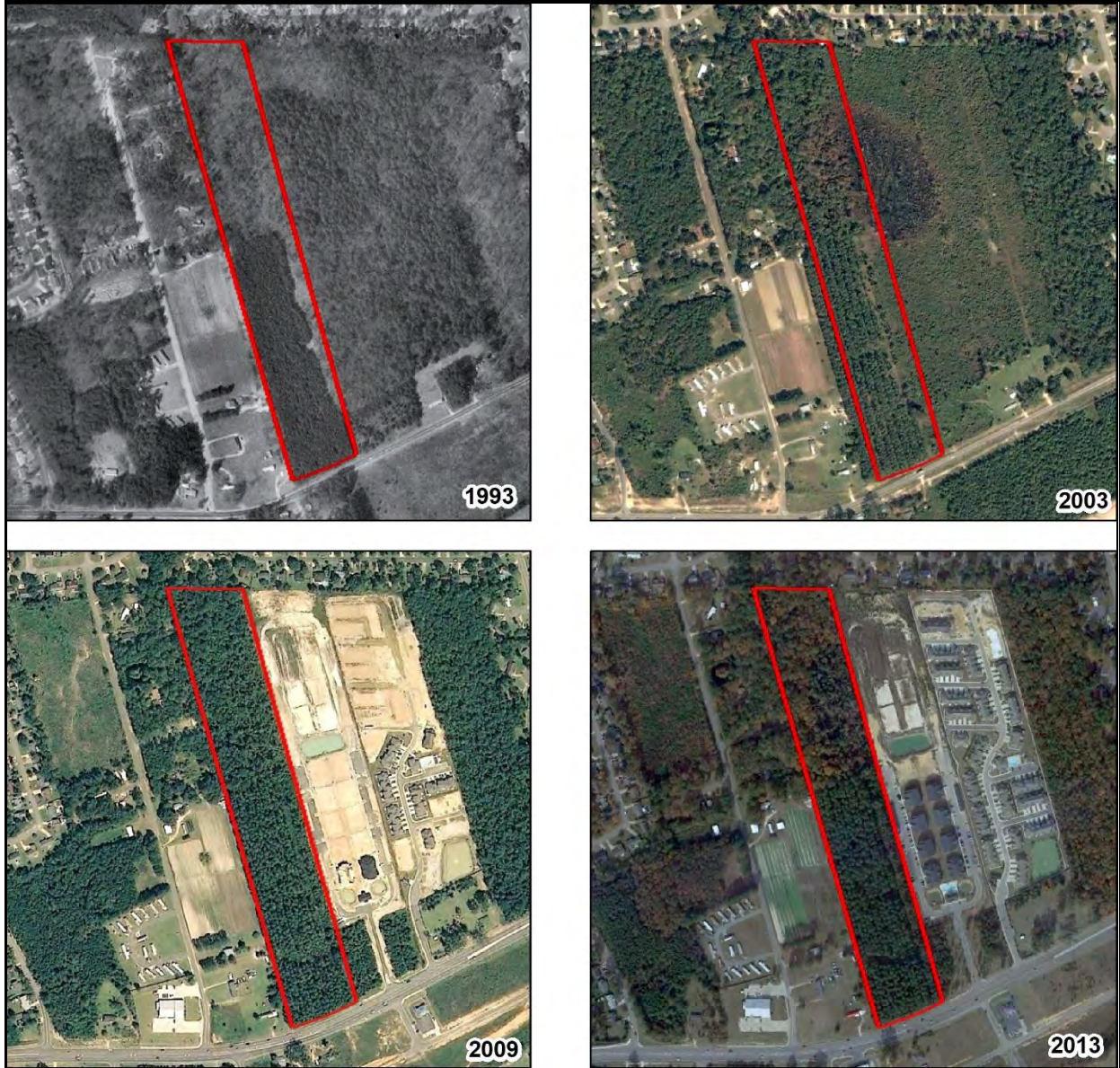


**Figure 3.2.** 1922 soil map showing one building in the project tract.



**Figure 3.3.** Rural delivery map showing buildings in the project tract circa 1910-1920.

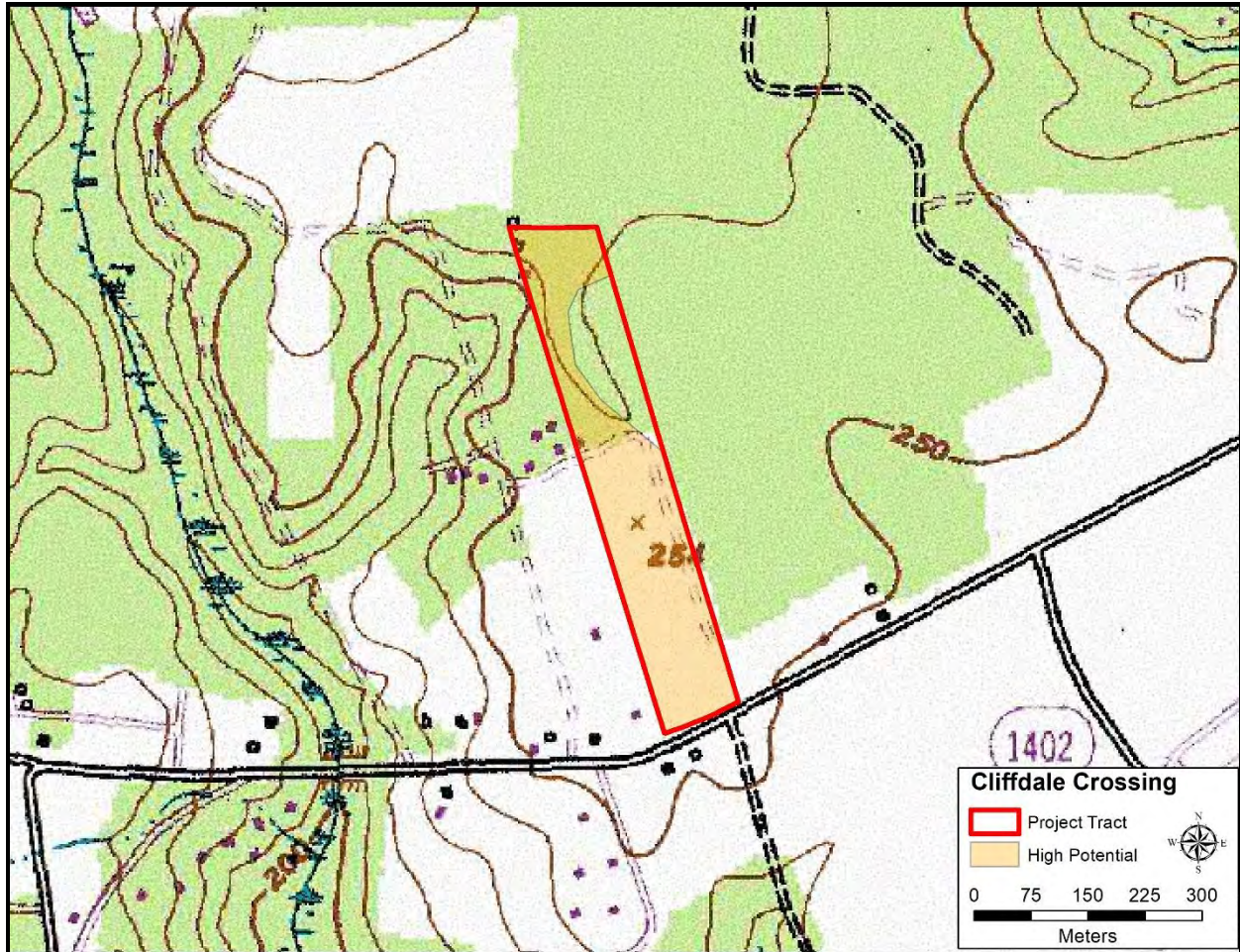
Aerial photographs available through Google Earth show the project tract as wooded since at least 1993 (Figure 3.4). The southern portion of the tract extending from Cliffdale Road to the Carolina Bay appears to be in planted pines. The forest in the Carolina Bay north to the property line appears to be a mixed pine and hardwood forest. The most recent aerial that clearly shows the project tract dates to 2013 when the tract was still wooded. The tract was clear-cut sometime after 2014 (see Figure 1.3). The project tract is currently characterized by young, planted pines and very dense secondary growth.



**Figure 3.4.** Aerial images of the project tract from 1993 to 2013.

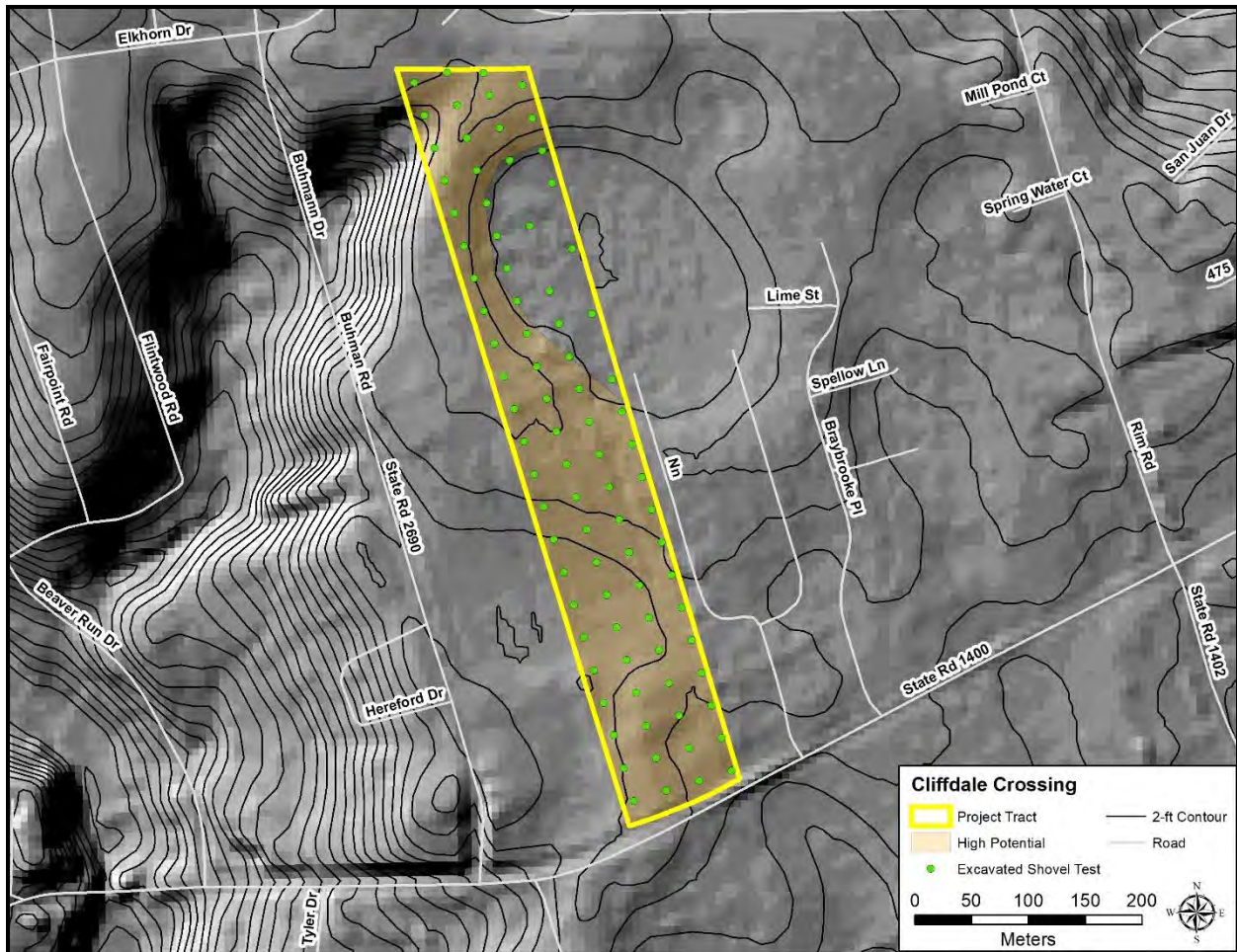
## Chapter 4. Results of the Field Investigation

The Cliffdale Crossing tract encompasses 18 acres (7.3 ha; Figure 4.1) with approximately 16.3 acres (6.6 ha) determined to have a high potential for the presence of archaeological sites. Field survey focused intensively on high potential areas. For these high potential areas, 30-meter interval shovel testing was used as the primary site discovery method. Areas with low potential for the presence of archaeological sites (1.7 acres [0.7 ha]) were given a reconnaissance level examination with shovel tests being excavated at judgmentally determined locations. A total of 86 shovel tests were excavated during this investigation (Figure 4.2).



**Figure 4.1.** Map showing the project tract (1950 *Clifdale NC* 7.5-minute USGS topographic quadrangle [photorevised 1971]).

Soil profiles exposed in shovel tests excavated in the southern portion of the project tract consisted of brown (10YR5/3) sand to a depth of 20 centimeters overlying 10 centimeters of light yellowish brown (10YR6/4) loamy sand. Beneath this zone was pale yellowish brown (10YR7/4) sand. Subsoil of strong brown (7.5YR5/8) clayey sand was encountered at depths ranging from 60 to 90 centimeters. Shovel tests excavated on the Carolina Bay rim and northern portion of the project tract were shallower, exhibiting 8 centimeters of very dark gray (10YR3/2) sand overlying yellowish brown (10YR5/4) sand to a depth of 20 centimeters. Yellowish brown (10YR5/6) sand was present below a depth of 20 centimeters and graded



**Figure 4.2.** Map showing the high potential areas and excavated shovel tests in the project tract.

to strong brown (7.5YR5/8) sandy clay at a depth of 30 centimeters. Soil profiles in the Carolina Bay consisted of dark gray (10YR4/1) sandy clay overlying gray (10YR5/1) sandy clay. Gray (10YR6/1) clay subsoil was encountered at an average depth of 30 centimeters. Figure 4.3 presents views of the soil profiles. No artifacts were recovered from shovel tests. No aboveground features or deposits were observed. No evidence of the building once present in the southern portion of the tract was identified.

This survey has resulted in the intensive investigation of the Cliffdale Crossing development tract. No cultural resources were identified. No further archaeological investigations are advocated for the Cliffdale Crossing tract.



**Figure 4.3.** View of soil profiles in the project tract.



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## **Appendix A. Resume of Principal Investigator**





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**EDUCATION**

M.A. in Anthropology, University of Arkansas, Fayetteville, 2001.  
B.A. in Anthropology, Appalachian State University, Boone, NC, 1999.

**PROFESSIONAL MEMBERSHIPS**

Register of Professional Archaeologists	North Carolina Archaeological Council
Society for American Archaeology	-Secretary/Treasurer 2013-2015
Southeastern Archaeological Conference	-Chair 2016-2019
Council of South Carolina Professional Archaeologists	-Vice Chair 2019-present

**AREAS OF SPECIALIZATION**

Ground Stone Technology  
Lithic Technology  
Geographic Information Systems (GIS)

**EMPLOYMENT HISTORY**

July 2020-Present	Vice President/Principal Investigator. Archaeological Consultants of the Carolinas, Inc. Clayton, NC
April 2006-Present	Senior Archaeologist/Principal Investigator. Archaeological Consultants of the Carolinas, Inc., Clayton, NC.
August 2004-March 2006	Archaeologist/Project Manager. Archaeological Consultants of the Carolinas, Inc., Clayton, NC.
June 2002-August 2004	Archaeologist/Project Manager. Brockington and Associates, Inc., Raleigh, NC.
July 2001-May 2002	Archaeological Technician. Brockington and Associates, Inc., Raleigh, NC.
August 2000-May 2001	Archaeological Research Assistant, Department of Anthropology, University of Arkansas, Fayetteville.
August 2000-September 2000	Archaeological Technician, Department of Anthropology, University of Arkansas, Fayetteville.
July 2000	Archaeological Field Technician, SPEARS Inc., West Fork, Arkansas.

**Cultural Resource Surveys (Phase I) and Archaeological Site Testing (Phase II)**

- **Utility Corridors** for Duke Energy (Charlotte), FPS (Charlotte), SCE&G (Columbia), and others – serving in all capacities including Principal Investigator



**Cliffdale Crossing Tract**  
**Cumberland County, North Carolina**

- **Transportation Corridors** for South Carolina Department of Transportation (Columbia) – serving as archaeological technician
- **Development Tracts** for numerous independent developers, engineering firms, and local and county governments throughout North Carolina, South Carolina, and Virginia, and federal agencies including the USFS (South Carolina) and the USACE (Wilmington District) – serving in all capacities including Principal Investigator

### **Archaeological Data Recovery (Phase III) - Representative Examples**

- Prehistoric Camp (38HR496) and 19<sup>th</sup> century saw mill (38HR490) in Horry County, South Carolina – serving as Archaeological Technician
- Civil War encampment (44IW0204) for Isle of Wight County, Isle of Wight, VA – serving as Field Director
- Prehistoric village (31ON1578) and late 18<sup>th</sup>/early 19<sup>th</sup> century plantation (31ON1582) for R.A. Management, Charlotte, NC – serving as Field Director/Crew Chief

### **FEDERAL ENERGY REGULATORY COMMISSION RELATED INVESTIGATIONS**

Duke Energy - Lake James and Lake Norman, North Carolina- serving as Field Director/Crew Chief

### **PUBLICATIONS AND PAPERS PRESENTED**

2008 Michael Keith O'Neal

*Putting the Tar in Tar Heels: The Naval Stores Industry and Plantations in North Carolina.* Paper presented at the 65<sup>th</sup> annual Southeastern Archaeological Conference, Charlotte, North Carolina.

2005 Michael K. O'Neal and Dawn Reid

*Who Says There Aren't Rocks in the Coastal Plain?: Local Lithic Resources and Bipolar Reduction Strategies in Horry County, South Carolina.* Paper presented at the 62<sup>nd</sup> annual Southeastern Archaeological Conference, Columbia, South Carolina.

1999 Cheryl Claassen, Michael O'Neal, Tamara Wilson, Elizabeth Arnold, and Brent Lansdell

*Hearing and Reading Southeastern Archaeology: A Review of the Annual Meetings of SEAC from 1983 through 1995 and the Journal Southeastern Archaeology.* *Southeastern Archaeology* 18(2): 85-97.

1998 Cheryl Claassen, Michael O'Neal, Tamara Wilson, Elizabeth Arnold, and Brent Lansdell

*Hearing and Reading Southeastern Archaeology: A Review of the Annual Meetings of SEAC from 1983 through 1995 and the Journal Southeastern Archaeology.* Paper presented at the 55<sup>th</sup> annual Southeastern Archaeological Conference, Greenville, South Carolina.

\*\* A full listing of projects and authored reports available upon request



September 24, 2021

Mr. Taurus Freeman  
Planning Director  
City of Fayetteville  
433 Hay Street  
Fayetteville, NC 28301  
910-433-10437  
[tfreeman@ci.fay.nc.us](mailto:tfreeman@ci.fay.nc.us)

Re: Section 106 Public Outreach  
Cliffdale Crossing  
8368 Cliffdale Road  
Fayetteville, NC 28314  
Nova Project No.: CK21-8848

Dear Mr. Freeman:

Nova Group, GBC (Nova) is writing on behalf of the U.S. Department of Housing and Urban Development (HUD) to solicit your input concerning a proposed development at the above-referenced address.

Smith Duggins Developers, LLC is proposing to construct six two-story buildings with a total of 80 residential units on 8 acres of land.

HUD is identifying organizations with an interest in the project and its potential to affect historic resources. The purpose of this letter is to find out whether you wish to become a consulting party for this project. Consulting parties have certain rights and obligations under the National historic Preservation Act and its implementing regulations at 36 CFR Part 800. The review process, known as Section 106 review, is described at <http://www.achp.gov/citizensguide.html> and at <https://www.onecpd.info/environmental-review/historic-preservation/>. By becoming a consulting party, you will be actively informed of steps in the Section 106 process, including public meetings, and your view will be actively sought.

If you are interested in becoming a consulting party and have any comments or concerns regarding the proposed project, please contact me in writing at Nova, 5320 West 23<sup>rd</sup> Street, Suite 270, St. Louis Park, Minnesota 55416 or at [culturalresources@novagrouppbc.com](mailto:culturalresources@novagrouppbc.com). Please reference the project name and address in your comments. Any responses must be received within 30 days of receipt of this letter. If you do not respond within this time frame, you may request consulting party status in the future; however, the project may advance without your input and you will not have an opportunity to comment on the current steps. If you are requesting consulting party status, we do ask that your organization nominate one



representative and an alternate to participate on behalf of the group. People may also participate in the Section 106 process as members of the public.

Thank you for your time and attention to this matter.

Sincerely,

A handwritten signature in black ink that reads "Laura L. Mancuso".

Laura L. Mancuso  
National Practice Leader-Cultural Resources

Site Drawings sent with the Invitation to Consult Letter(s)  
are not included for clarity.



Print

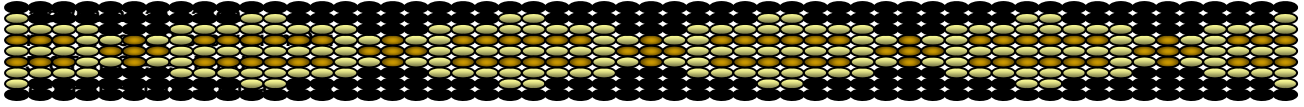
Publication Date

**2021-09-30**

Subcategory

**Miscellaneous Notices**

PUBLIC NOTICE: Cliffdale Crossing The U.S. Department of Housing and Urban Development is proposing to construct 6 2-story buildings at 8368 Cliffdale Road, Fayetteville, Cumberland County, NC 28314. Public comments regarding the potential effects from this site on historic properties may be submitted within 30-days from the date of this publication to: Laura Mancuso - Nova Group, GBC, 5320 West 23rd Street, Suite 270, St. Louis Park, MN 55416, culturalresources@novagroupgbc.com or 203.240.0077. 9/30 5252956



Office 803-328-2427  
Fax 803-328-5791

December 13, 2021

Attention: Andrea Gievers  
NCORR  
P.O. Box 110465  
Durham, NC 27709

Re. THPO #	TCNS #	Project Description
2022-1119-2		Proposed Cliffdale Crossing – 8368 Cliffdale Road, Fayetteville, NC

Dear Ms. Gievers,

The Catawba have no immediate concerns with regard to traditional cultural properties, sacred sites or Native American archaeological sites within the boundaries of the proposed project areas. **However, the Catawba are to be notified if Native American artifacts and / or human remains are located during the ground disturbance phase of this project.**

If you have questions please contact Caitlin Rogers at 803-328-2427 ext. 226, or e-mail [Caitlin.Rogers@catawba.com](mailto:Caitlin.Rogers@catawba.com).

Sincerely,

Wenonah G. Haire  
Tribal Historic Preservation Officer



# North Carolina Department of Public Safety

## Office of Recovery and Resiliency

Roy Cooper, Governor  
Casandra Skinner Hoekstra, Interim Secretary

Laura H. Hogshead, Director

November 4, 2021

Chief Bill Harris  
Catawba Indian Nation  
996 Avenue of the Nations  
Rock Hill, SC 29730

RE: Section 106 Review - HUD CDBG-DR Program  
Proposed Cliffdale Crossing  
8368 Cliffdale Road  
Fayetteville, NC 28314

Dear Chief Bill Harris:

The North Carolina Office of Recovery and Resiliency (NCORR), as a recipient of Community Development Block Grant – Disaster Recovery (CDBG-DR) funds from the United States Department of Housing and Urban Development (HUD), is serving as the responsible entity for compliance with the HUD environmental review procedures set forth in 24 CFR Part 58. NCORR is acting on behalf of HUD in providing the enclosed project information and inviting this discussion with your Nation. *A separate environmental review is being performed by the North Carolina Housing Finance Agency (NCHFA) for a HUD HOME Program funding application.*

NCORR processes environmental reviews for proposed projects funded with HUD CDBG-DR on a case-by-case basis. In accordance with Section 101(d)(6)(B) of the National Historic Preservation Act (NHPA) of 1966, as amended (16 U.S.C. 470f), and its implementing regulations, 36 CFR Part 800, this letter serves as notification of the proposed action. This letter also serves as an invitation to discussion as a consulting party in this review to help identify historic properties in the proposed project area that may have religious and cultural significance to your Nation, and if such properties exist, to help assess how the proposed project might affect them. If the proposed project might have an adverse effect, we would like to discuss possible ways to avoid, minimize or mitigate potential adverse effects.

The proposed project information has been sent to the NC SHPO in accordance with Section 106 of the NHPA and its implementing regulations, 36 CFR Part 800. The Lumbee Tribe is being sent a notification of the proposed project.

Mailing Address:  
Post Office Box 110465  
Durham, NC 27709



Telephone: 984.833.5350  
[www.ncdps.gov](http://www.ncdps.gov)  
[www.rebuild.nc.gov](http://www.rebuild.nc.gov)



Area of Potential Effects (APE) under §800.16(d): We have defined the APE as 1,500 feet from the Subject Property consisting of an approximately 18.18-acre vacant parcel located on the north side of Cliffdale Road between Glen Iris Drive and Buhmann Drive in Fayetteville, Cumberland County, North Carolina. Ms. Laura Mancuso of Nova Group determined the APE based upon the height and size of the proposed development as well as neighborhood context. The proposed project location maps are included in **Attachment 1**.

The State of North Carolina was adversely impacted by the landfall of Hurricanes Matthew (October 8, 2016) and Florence (September 14, 2018). These hurricanes damaged or destroyed hundreds of homes worsening the affordable housing shortage. This proposed project will increase affordable housing inventory for low- and moderate-income families.

Proposed Project Description: Smith Duggins Developers, LLC proposes to construct six two-story residential structures and a leasing/community building on the southern portion of the property. The site will be accessed via Cliffdale Road with a driveway and parking located at the center of the parcel and the buildings on the exterior. The development will consist of 80 housing units: 12 one-bedroom, one bath units; 40 two-bedroom, one bath units; and 28 three-bedroom, two bath units. The proposed project site plan is included in **Attachment 1**.

We have completed an initial review of this project in compliance with Section 106 of the NHPA and its implementing regulations 36 CFR Part 800. Based on research completed by Ms. Laura L. Mancuso, a Secretary of the Interior (SOI) Qualified Architectural Historian, no properties over 50 years old are located within the APEs. In addition, a review of properties listed on or eligible for listing on the National Register of Historic Places was completed on September 23, 2021, by Ms. Mancuso. No properties were identified on the property or within the 1,500-foot visual APE; therefore, no historic properties will be affected by the proposed undertaking. Proposed project location maps showing the Undertaking and APE and NC HPOWEB Map are included in **Attachment 1**. A Phase I Archaeological Review was completed by the Archaeological Consultants of the Carolinas, Inc and concluded that no cultural resources were identified, and no further archaeological investigations are recommended. The Subject Property Photographs and Phase I Archaeological Review are included in **Attachment 2**.

With this letter, NCORR respectfully submits for your review the attached documentation for the proposed project described herein. If the APE encompasses historic properties of religious or cultural significance to your Nation, please respond within 30 days of receipt of this letter indicating a desire to consult. If you have any concerns with potential impacts of the proposed project on historic properties, please note them in your response along with your preferred principal representative's point of contact. Please respond within this timeframe, otherwise we will assume that the proposed project will have no effect to historic properties of religious or cultural significance. Please respond via email at [Andrea.L.Gievers@Rebuild.NC.gov](mailto:Andrea.L.Gievers@Rebuild.NC.gov) or in writing to the address listed below.

Ms. Andrea Gievers  
NCORR - Environmental  
ATTN: THPO Comments  
P.O. Box 110465  
Durham, NC 27709

If you have any questions or require additional information regarding this request, please feel free to contact Andrea Gievers at (845) 682-1700 or via email at [Andrea.L.Gievers@Rebuild.NC.gov](mailto:Andrea.L.Gievers@Rebuild.NC.gov). Thank you for your time and assistance.

Sincerely,



Andrea Gievers, JD, MSEL, ERM  
NCORR Environmental Subject Matter Expert

**Proposed Cliffdale Crossing Enclosures:**

Attachment 1: Proposed Project Site Plan, Location Maps, and NC HPOWEB Map

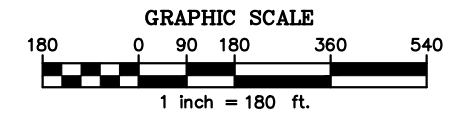
Attachment 2: Subject Property Photographs, Phase I Archaeological Review and Public Outreach

cc: Dr. Wenonah George Haire, THPO, Catawba Indian Nation, 1536 Tom Steven Road, Rock Hill, SC 29730

**ATTACHMENT 1:**

**Proposed Project Site Plan, Location Maps, and NC  
HPOWEB Map**

# CLIFFDALE CROSSING SITE PLAN



**PROJECT DATA**  
 PROJECT: CLIFFDALE DEVELOPMENT  
 PROJECT PIN: 9487-36-6817  
 DEED BOOK/PAGE: 8868/0899  
 PROJECT ADDRESS: CLIFFDALE RD. FAYETTEVILLE, NC  
 DEVELOPER / FINANCIALLY RESPONSIBLE PARTY: SMITH DUGGINS DEVELOPERS, LLC  
 2929 BREEZEWOOD AVENUE SUITE 102 FAYETTEVILLE, NC 28303

**SITE DATA**  
 DEVELOPMENT SITE= 8.00 AC± (OF 18.18 AC. SITE)  
 ZONING = MR-5 (MIXED RESIDENTIAL)  
 SETBACKS: FRONT= 25 FT  
 SIDE= 10 FT  
 REAR= 30 FT  
 LATITUDE / LONGITUDE..... 35° 3' 30.18" N, 79° 3' 14.75" W  
 PROPOSED DENSITY= 80 DU = 9.6 DU/AC.  
 NO. OF UNITS: 80 DU (12-1 BR, 40-2 BR, 28-3 BR)  
 8 ADA UNITS INCLUDED: 2-1 BR, 4- 2 BR, 2  
 PARKING SPACES REQUIRED (COF):  
 1.8 SP/DU UNIT= 1.8x80 DU=144 SPACES  
 (1 ADA SPACES PER 25 INCL=6 ADA SPACES)  
 PARKING SPACES PROVIDED:  
 1.8 SP/DU UNIT= 1.8x80 DU= 144 SPACES  
 4 COMMON AREA SPACES (PLAYGROUND)  
 TOTAL SPACES PROVIDED = 148 SPACES  
 (13 ADA SPACES INCL.)  
 BUILT UPON AREA (BUILDINGS-PARKING -WALKWAYS)= 5.53 AC±  
 OPEN SPACE SET-ASIDE AREAS =2.2.47 AC±=30.8%± (10% REQ'D)  
 IMPERVIOUS AREA:  
 EXISTING: 0 AC ±  
 PROPOSED ROADS & SIDEWALKS: 92,268 SF  
 PROPOSED BUILDINGS: 48,705 SF (1.12 AC±)  
 TOTAL PROPOSED IMP: 3.24 AC±

TOTAL DISTURBED AREA= 5.61± AC.  
**SITE AMENITIES**  
 THE FOLLOWING ITEMS HAVE BEEN NOTED ON THE SITE PLAN TO BE PROVIDED WITH THE PROJECT:  
 (1) PLAY GROUNDS W/ EQUIPMENT & BENCHES  
 (1) TOT LOTS W/ EQUIPMENT & BENCHES  
 (1) COVERED PICNIC AREA W/ TWO TABLES & GRILL (150 SF)  
 (3) OUTDOOR SITTING AREAS W/BENCHES  
 COVERED POSTAL FACILITY  
 LANDSCAPED ENTRY + ENTRANCE SIGNS  
 IRRIGATED LAWNS  
**SHARED COMMUNITY BUILDING WITH THE FOLLOWING:**  
 OFFICE W/ STORAGE AND HC TOILETS  
 LAUNDRY ROOM W/ 4 WASHERS & 4 DRYERS  
 COMPUTER CENTER W/ HIGH SPEED INTERNET (2 STATIONS)  
 PLUS 2 NEW STATIONS  
 COMMUNITY ROOM W/ KITCHENETTE



# Cliffdale Crossing

Smith Duggins Developers, LLC  
CK21-8848  
USGST Cliffdale NC 1983





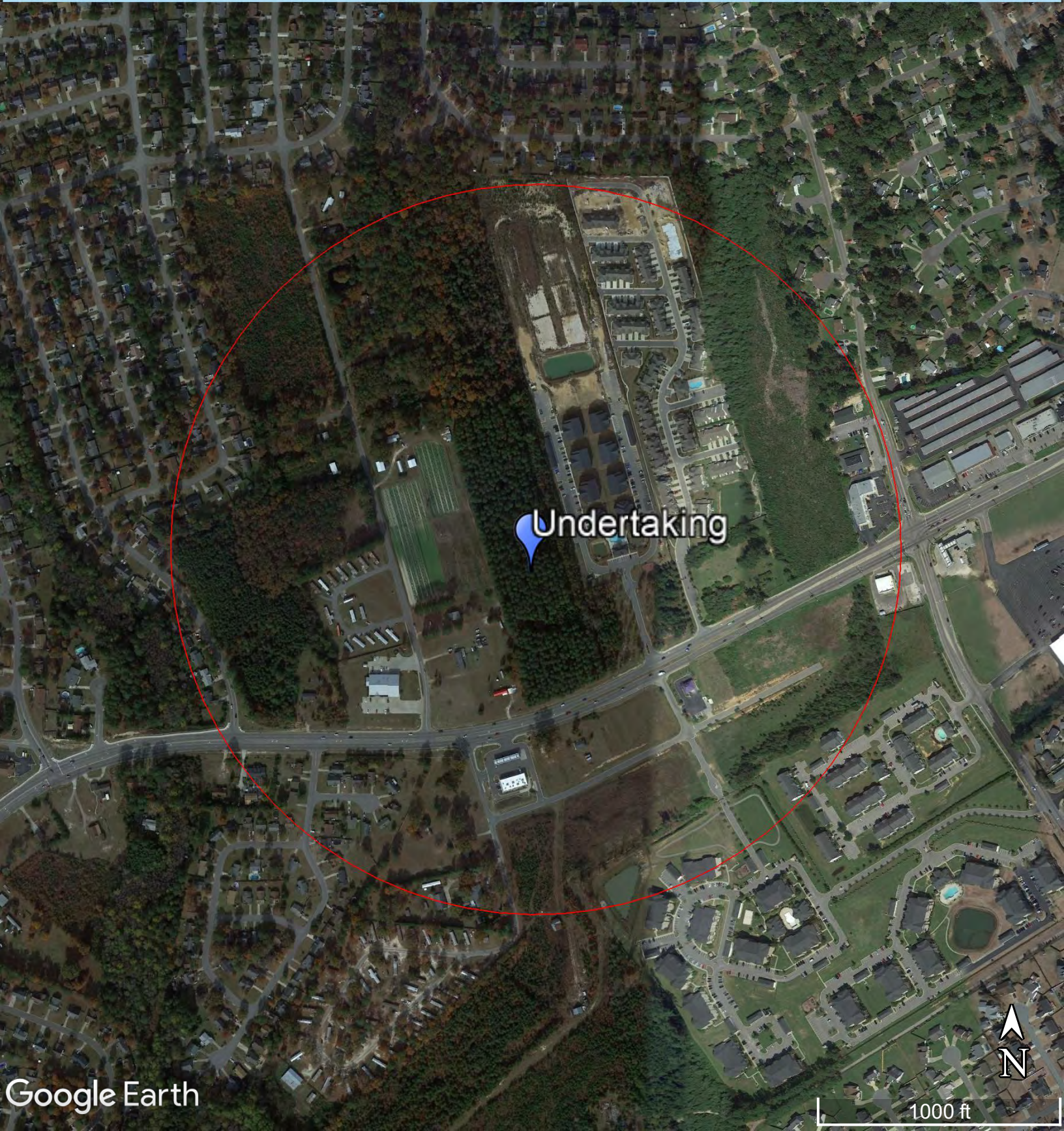
# Nova Group

## Aerial Photograph

Source: Google Earth

### Legend

-  1,500-foot APE
-  Undertaking



Undertaking



# Cliffdale Crossing

Smith Duggins Developers, LLC  
CK21-8848  
USGST Cliffdale NC 1983





# Nova Group

## Aerial Photograph

Source: Google Earth

### Legend

-  1,500-foot APE
-  Undertaking



Undertaking

Google Earth

700 ft



# Cliffdale Crossing

Smith Duggins Developers, LLC  
CK21-8848  
USGST Cliffdale NC 1983





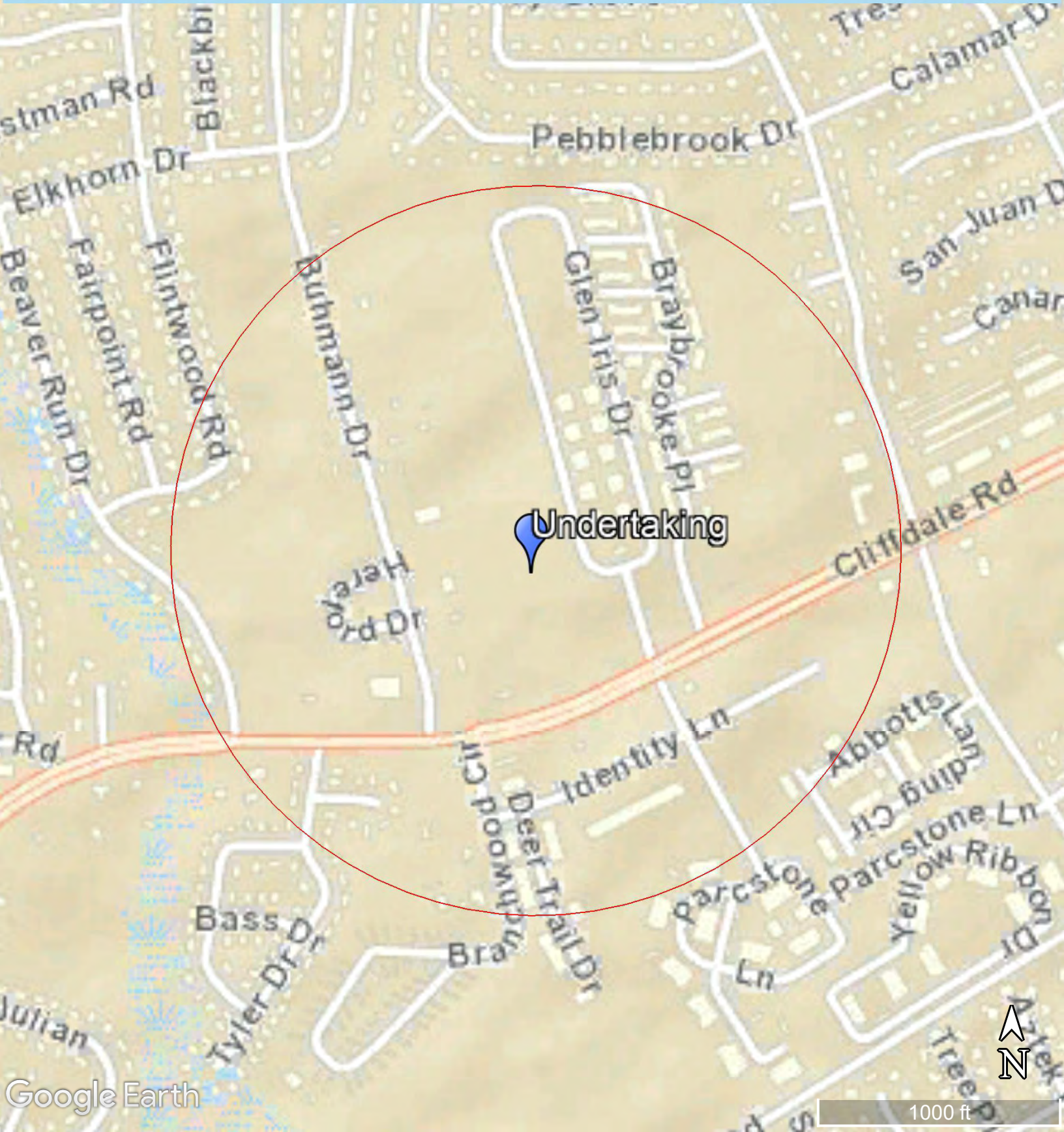
# Nova Group

## Street Map

Sources: ESRI, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, METI, NGCC, OpenStreetMap contributors, and the GIS User Community

### Legend

-  1,500-foot APE
-  Undertaking



# Cliffdale Crossing

Smith Duggins Developers, LLC  
CK21-8848  
USGST Cliffdale NC 1983





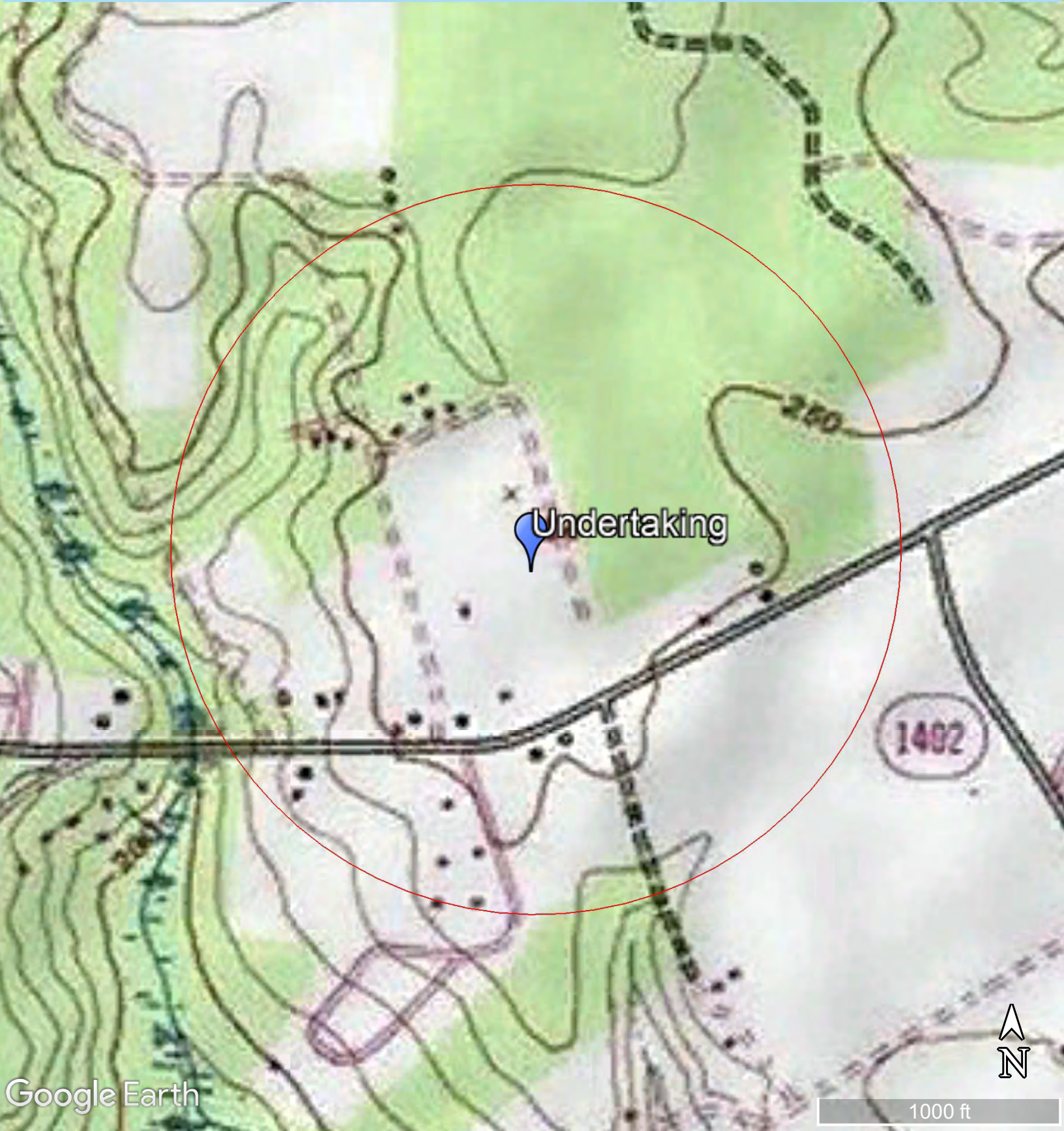
# Nova Group

## USGS 7.5 Minute Quadrangle Map

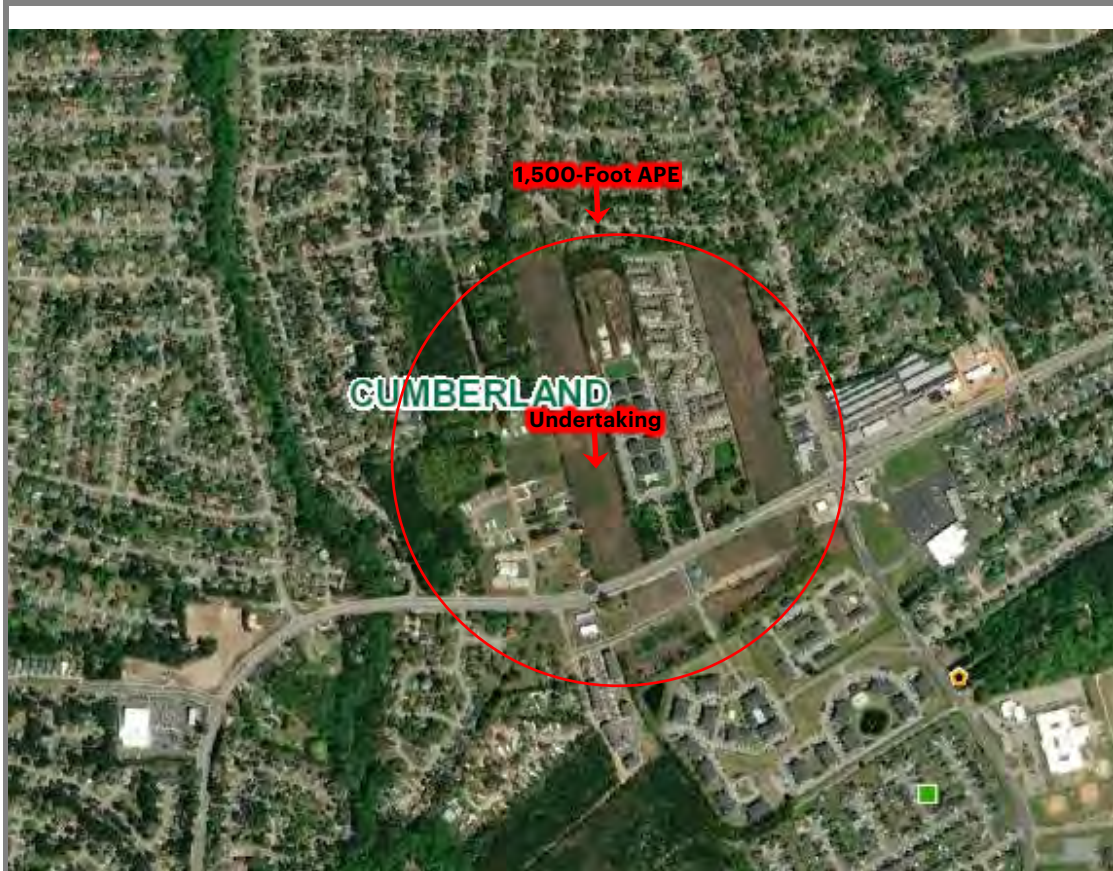
Sources: 2013 National Geographic Society, i-cubed

### Legend

-  1,500-foot APE
-  Undertaking







## Historic Properties Map

Source: HPOWEB 2.0



---

**Applicant's Name:** Smith Duggins  
Developers, LLC  
**Project Name:** Cliffdale Crossing  
**Nova Project Number:** CK21-8848

**ATTACHMENT 2:**

**Subject Property Photographs, Phase I Archaeological  
Review and Public Outreach**

# Photographs



**APE-VE Map for Visual Effects and Photo Key**

Source: Google Earth 2021

— Undertaking



**Applicant's Name:** Smith Duggins Developers, LLC  
**Project Name:** Cliffdale Crossing  
**Nova Project Number:** CK21-8848

The following photographs were taken on September 27 and 28, 2021 unless otherwise noted.

1. View looking north from the center of the Subject Property.



2. View looking east from the center of the Subject Property.



3. View looking south from the center of the Subject Property.



4. View looking west from the center of the Subject Property.



5. View looking north from the southern portion of the Subject Property.



6. View looking east from the southern portion of the Subject Property.



7. View looking south from the southern portion of the Subject Property.



8. View looking west from the southern portion of the Subject Property.



9. View looking northwest from Cliffdale Road.



10. View looking west from Cliffdale Road.





11. View looking northwest to the Subject Property from Enforcement Drive.



12. View looking west-northwest to the Subject Property from Cliffdale Road at the edge of the APE.



13. View looking southeast to the Subject Property from Buhmann Drive at the edge of the APE.



14. View looking east-southeast to the Subject Property from Buhmann Drive.



15. View looking east to the Subject Property from Buhmann Drive.



16. View looking east-northeast to the Subject Property from Cliffdale Road from the edge of the APE.



17. View looking southwest to the Subject Property from Glen Iris Drive.



**Archaeological Survey of the  
Cliffdale Crossing Tract  
Cumberland County, North Carolina**

**DRAFT REPORT**



**Archaeological Consultants of the Carolinas, Inc.  
October 2021**

**Archaeological Survey of the  
Cliffdale Crossing Tract,  
Cumberland County, North Carolina**

Prepared for  
Nova Group, GBC  
New Orleans, Louisiana

Prepared by

Abigail McCoy  
Archaeologist

Under the direction of

*Michael Keith O'Neal*

---

Michael O'Neal  
Principal Investigator

**Archaeological Consultants of the Carolinas, Inc.  
October 2021**

## Management Summary

Between September 27 and 28, 2021, Archaeological Consultants of the Carolinas (ACC), Inc., conducted an intensive archaeological survey of the 18-acre (7.3-ha) Cliffdale Crossing tract in Cumberland County, North Carolina. This survey was undertaken on behalf of Nova Group, GBC as due diligence in anticipation of Housing and Urban Development (HUD) funding requirements for the completion of an archaeological survey. The goals of this investigation were to identify all archaeological resources located within the project tract, assess those resources for eligibility for the National Register of Historic Places (NRHP), and advance management recommendations, as appropriate.

Cultural and environmental background research was conducted prior to the field visit. No previously recorded archaeological sites are located within a 1.6-kilometer radius of the project tract. Five historic resources are recorded within 1.6 kilometers of the project tract. Four of these resources have been determined to be not eligible for the NRHP. One resource, the Angus McGill House (CD0694), was placed on the Study List in 1980. None will be impacted by the proposed development.

Prior to conducting the field investigation, approximately 16.3 acres (6.6 ha) of the tract were determined to have high potential for the presence of archaeological sites. The survey in these areas consisted of excavating shovel tests at 30-meter intervals along parallel transects 30-meters apart. Low potential areas totaled 1.7 acres (0.7 ha) and were examined using pedestrian survey and judgmentally placed shovel tests. All areas of exposed ground surface were visually inspected for cultural remains. No archaeological deposits were identified during the survey, and no further work is recommended within the project tract.



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# Chapter 1. Introduction

Between September 27 and 28, 2021, Archaeological Consultants of the Carolinas (ACC), Inc., conducted an intensive archaeological survey of the 18-acre (7.3-ha) Cliffdale Crossing tract in Cumberland County, North Carolina. This survey was undertaken on behalf of Nova Group, GBC as due diligence in anticipation of Housing and Urban Development (HUD) funding requirements for the completion of an archaeological survey. The goals of this investigation were to identify all archaeological resources located within the project tract, assess those resources for eligibility for the National Register of Historic Places (NRHP), and advance management recommendations, as appropriate. Mr. Michael O’Neal served as Principal Investigator and Field Director. He was assisted in the field by Mr. Robert Jordan. The field investigation required a total of four person days to complete.

## Project Area

The project tract encompasses 18 acres (7.3 ha) located west of the city of Fayetteville, in Cumberland County, North Carolina (Figure 1.1). The tract boundaries are comprised primarily of property lines (Figure 1.2 and Figure 1.3). The tract is bound on the north, east, and west by residential areas. Cliffdale Road borders the tract on the south.

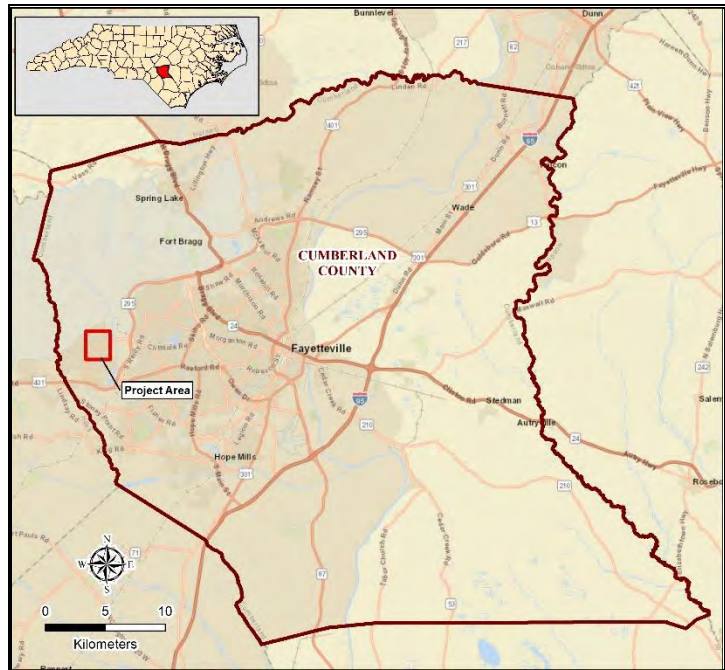
The project tract is characterized primarily by young pines and hardwoods and dense briars and other secondary growth (Figure 1.4). The western portion of a Carolina Bay is located in the northern portion of the project tract. Vegetation in the Carolina Bay was very dense (Figure 1.5).

## Methods of Investigation

This investigation consisted of four separate tasks: Archival Research, Field Survey, Laboratory Analysis, and Report Production. Each of these tasks is discussed in detail below.

## Archival Research

Archival research began with a review of archaeological site forms, maps, and reports on file at the North Carolina Office of State Archaeology (OSA) in Raleigh, as well as a review of historic resources mapped on the Department of Natural and Cultural Resources (DNCR) Survey and Planning Division’s mapping application website (HPOWEB). This review served to identify previously recorded resources in the project vicinity and provided data on the prehistoric and historic context of the project area. Historic



**Figure 1.1.** Map showing the location of the project tract in Cumberland County, North Carolina.

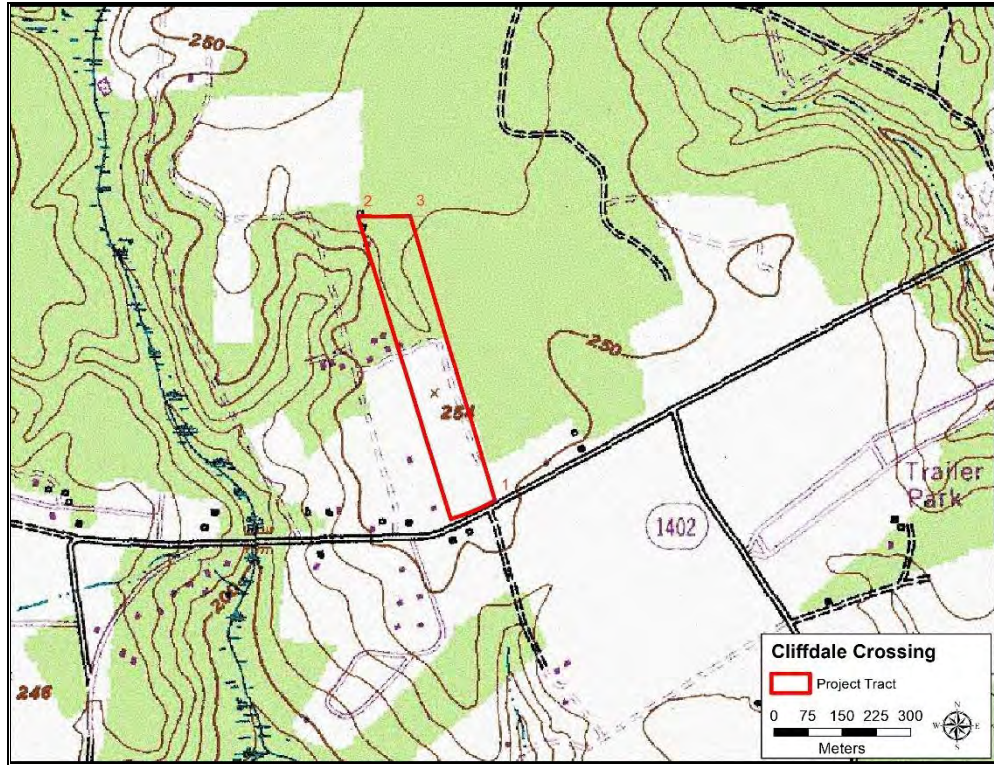


Figure 1.2. Topographic map showing the project tract (1950 *Cliffdale NC* 7.5-minute USGS topographic quadrangle [photorevised 1971]).



Figure 1.3. Aerial view of the project tract.



**Figure 1.4.** View of mixed hardwoods and pines in the project tract.



**Figure 1.5.** View of planted pine area in the project tract.

maps of Cumberland County and the project vicinity were obtained from a wide variety of published and online sources. Maps reviewed for this project include the 1922 Cumberland County soil map, the 1938 county highway map, and topographic maps dating from 1948 to 1997. The maps were used to determine past land use, the possible presence of structural remains or historic landscape features and known Native American occupations. Aerial images dating back to 1993 were also examined. The United States Department of Agriculture (USDA) Web Soil Survey, the published soil survey of Cumberland County, and LiDAR imagery were consulted to determine the environmental characteristics of the project vicinity.

## Field Survey

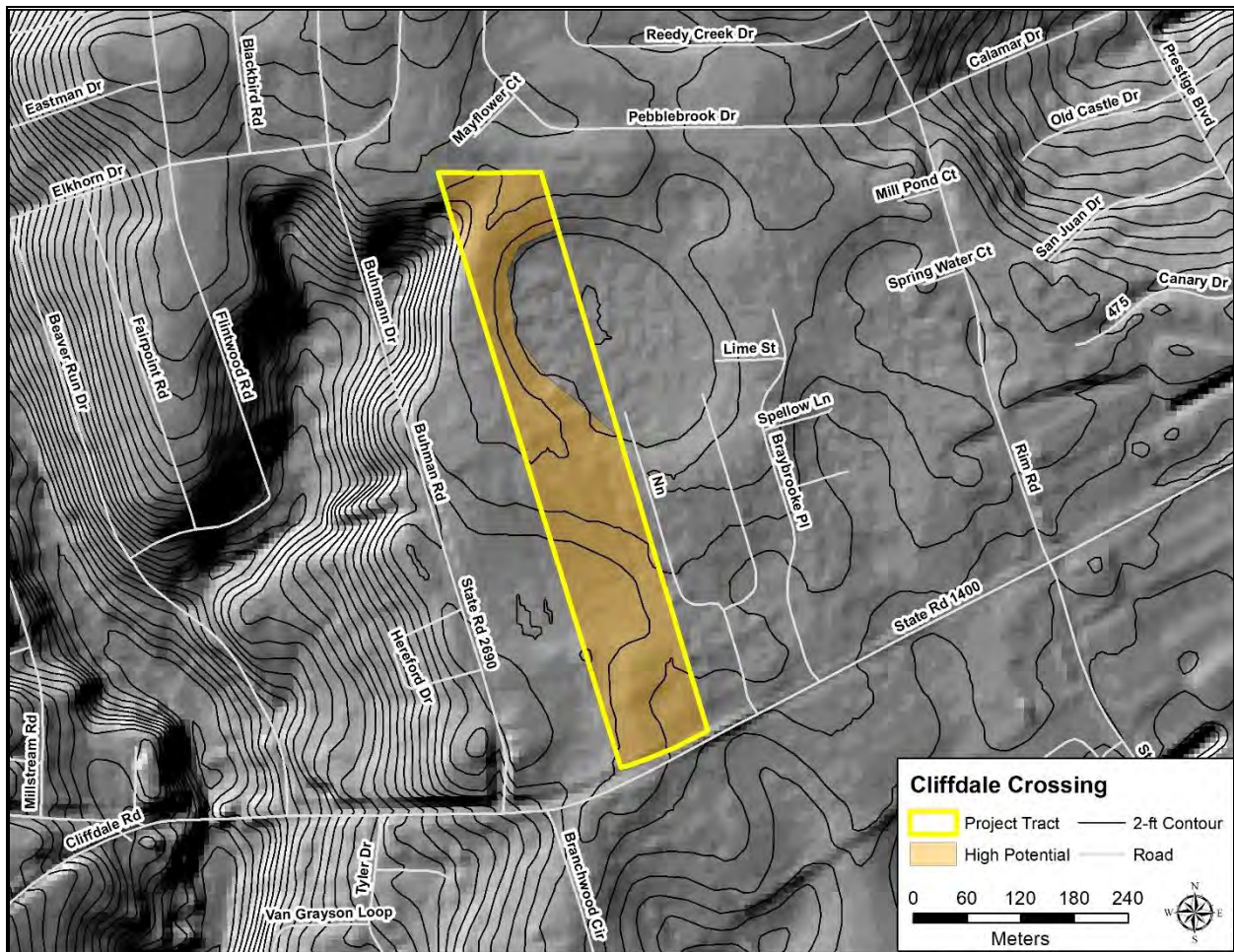
Close-interval contour topographic maps, Light Detecting and Ranging (LiDAR) images, and soil survey data were consulted prior to the field survey to identify portions of the tract with high potential for the presence of archaeological remains. High probability areas were determined based on the presence of well- and moderately well drained soils and the proximity to wetlands and/or drainage frontage. Approximately 16.3 acres (6.6 ha) in the project tract were determined to have a high potential for the presence of archaeological sites (Figure 1.6). These areas were shovel tested at 30-meter intervals along transects spaced 30 meters apart. The remaining 1.7 acres (0.6 ha) were defined as having low potential for the presence of archaeological deposits. These areas were subjected to pedestrian walkover with judgmentally placed shovel tests. This survey strategy was approved by Dr. David Cranford, Assistant State Archaeologist.

Shovel tests measured approximately 30 centimeters in diameter and were excavated to 10 centimeters into subsoil or to the water table. Shovel test fill was screened through ¼ inch wire mesh. Details of artifacts and soils for each shovel test were recorded in field notebooks. No artifacts were identified during this investigation. However, when artifacts are collected, they are placed in plastic bags labeled with the date, field site number, grid point locations (i.e., shovel test/transect or north/east coordinate), depth of artifacts, and initials of the excavator.

A site is defined as an area containing one or more artifacts within a 30-meter or less diameter of surface exposure or where surface or subsurface cultural features are present. Artifacts and/or features less than 50 years in age are not considered a site without a specific research or management reason. At sites where good surface visibility is available, site boundaries are determined based on both close interval surface examination and selective shovel testing. At sites where the ground surface is obscured, site boundaries are established by excavating shovel tests at 15-meter intervals across the site area. Site settings are photographed with a digital camera. Sketch maps are produced in the field showing the locations of shovel tests and surface finds. The locations of all archaeological sites as well as the surface collection transects are recorded using a Trimble Pathfinder Geo 7x Global Positioning System (GPS) unit capable of sub-meter accuracy. These GPS data are then relayed onto project maps.

Site significance is based on the site's ability to contribute to our understanding of past lifeways, and its subsequent eligibility for listing on the NRHP. Department of Interior regulations (36 CFR Part 60) established criteria that must be met for an archaeological site or historic resource to be considered significant, or eligible for the NRHP (Townsend et al. 1993). Under these criteria, a site can be defined as significant if it retains integrity of "location, design, setting, materials, workmanship, feeling, and association" and if it *A*) is associated with events that have made a significant contribution to the broad pattern of history; *B*) is associated with the lives of persons significant in the past; *C*) embodies distinctive characteristics of a type, period, or method of construction, or represents work of a master, possesses high artistic values or represents a significant and distinguishable entity whose components may lack individual distinction; or *D*) has yielded, or is likely to yield, information important in history or prehistory. Archaeological sites are most frequently evaluated pursuant to Criterion D. However, all archaeological sites can be considered under all four criteria.





**Figure 1.6** LiDAR map showing high potential areas in the project tract.

The primary goals of this field investigation were to identify archaeological resources and evaluate their potential research value or significance. Although the determination of the site significance is made by the State Historic Preservation Office, whenever possible, sufficient data are gathered to allow us to make a significance recommendation. Sites that exhibit little or no further research potential are recommended *not eligible* for the NRHP, and no further investigation is proposed. Sites for which insufficient data could be obtained at the survey level are considered *unassessed* and preservation or more in-depth investigation is advocated. It is rare for ample data to be recovered at the survey level of investigation to definitively determine that a site meets NRHP eligibility criteria. However, when this occurs, the site is recommended *eligible* for the NRHP. Again, preservation of the resource is advocated. If preservation is not possible, mitigation options (e.g., data recovery) would need to be considered.

### Laboratory Analysis

Had artifacts been recovered, they would have been processed in the Clayton laboratory facilities of ACC. All artifacts would be washed in warm soapy water and allowed to thoroughly air dry. A provenience number, based on artifact contexts (i.e., grid coordinate, depth, etc.), would be assigned to each positive excavation location. Within each provenience, individual artifacts or artifact classes would then be

assigned a catalog number. Artifacts would be cataloged based on specific morphological characteristics and would be compared to such as raw material in the case of lithics, and decoration and temper type in the case of prehistoric ceramics. Historic artifacts would have been identified by color, material of manufacture (e.g., ceramics), type (e.g., slipware), form (e.g., bowl, plate), method of manufacture (e.g., molded), period of manufacture (e.g., 1780-1820), and intended function (e.g., tableware). Historic artifacts with established manufacture date ranges would have been categorized using published sources.

Upon acceptance of the final project report, all analysis sheets, field notes, photographs, and maps, will be prepared according to federal guidelines and transferred to OSA for final curation.

### **Project Documentation**

Data compiled during this investigation was used to produce this document with details of the tasks undertaken. Chapter 2 presents environmental and cultural overviews of the project region. Chapter 3 present the results of the archival research. The results of field investigation and management recommendations, as appropriate, are presented in Chapter 4.

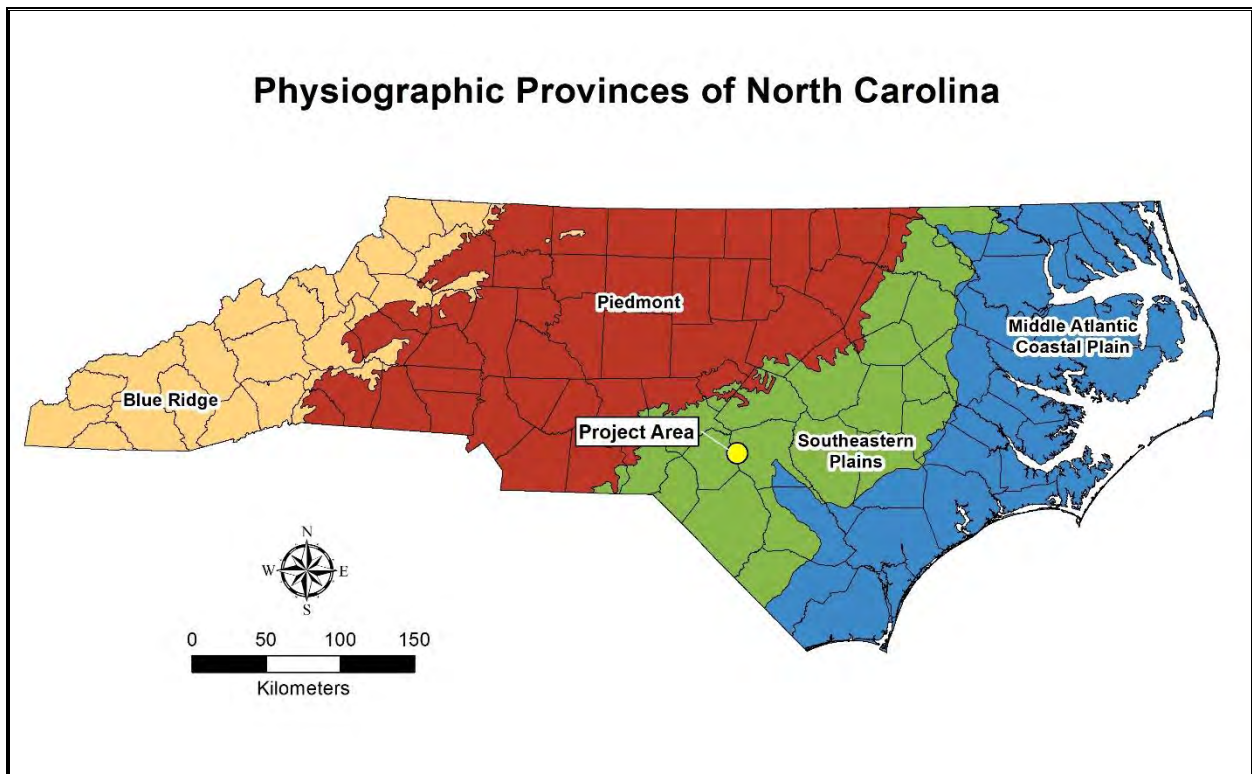


## Chapter 2. Environmental and Cultural Overview

To be able to comprehensively examine the archaeological resources identified during this survey, it is necessary to understand the larger context within which they occur. The natural environment, technological development, and ideological values are all intertwined in shaping the way humans live. In this chapter, details about the local environment and cultural development in the region are presented to provide a context within which these archaeological resources can be assessed. This basic framework is an important tool in evaluating the National Register of Historic Places (NRHP) eligibility of these resources.

### Environmental Overview

Cumberland County is in the southwestern portion of the upper Coastal Plain of North Carolina (Figure 3.1). The Coastal Plain is comprised of broad, relatively flat terraces of unconsolidated sediments and carbonate rocks that were deposited in shallow seas by rivers draining the Blue Ridge and Piedmont provinces during the Cretaceous through Quaternary period (Rogers 1999). The western portion of Cumberland County falls within the Sandhills region. The Sandhills are a strip of remnant beach dunes that extend from Georgia to North Carolina and loosely form the boundary between the Coastal Plain and the Piedmont provinces.



**Figure 2.1.** Physiographic map of the North Carolina showing the location of the project area.

Elevations in the tract range between approximately 75.6 and 77.4 meters above mean sea level. The project tract contains relatively little topographic relief. Slight rises are present in the northern and southern portion of the tract and gradual slope is also present in the southern portion of the tract. The northeastern portion of the tract consists of the western half of a small Carolina Bay and its southwestern rim.

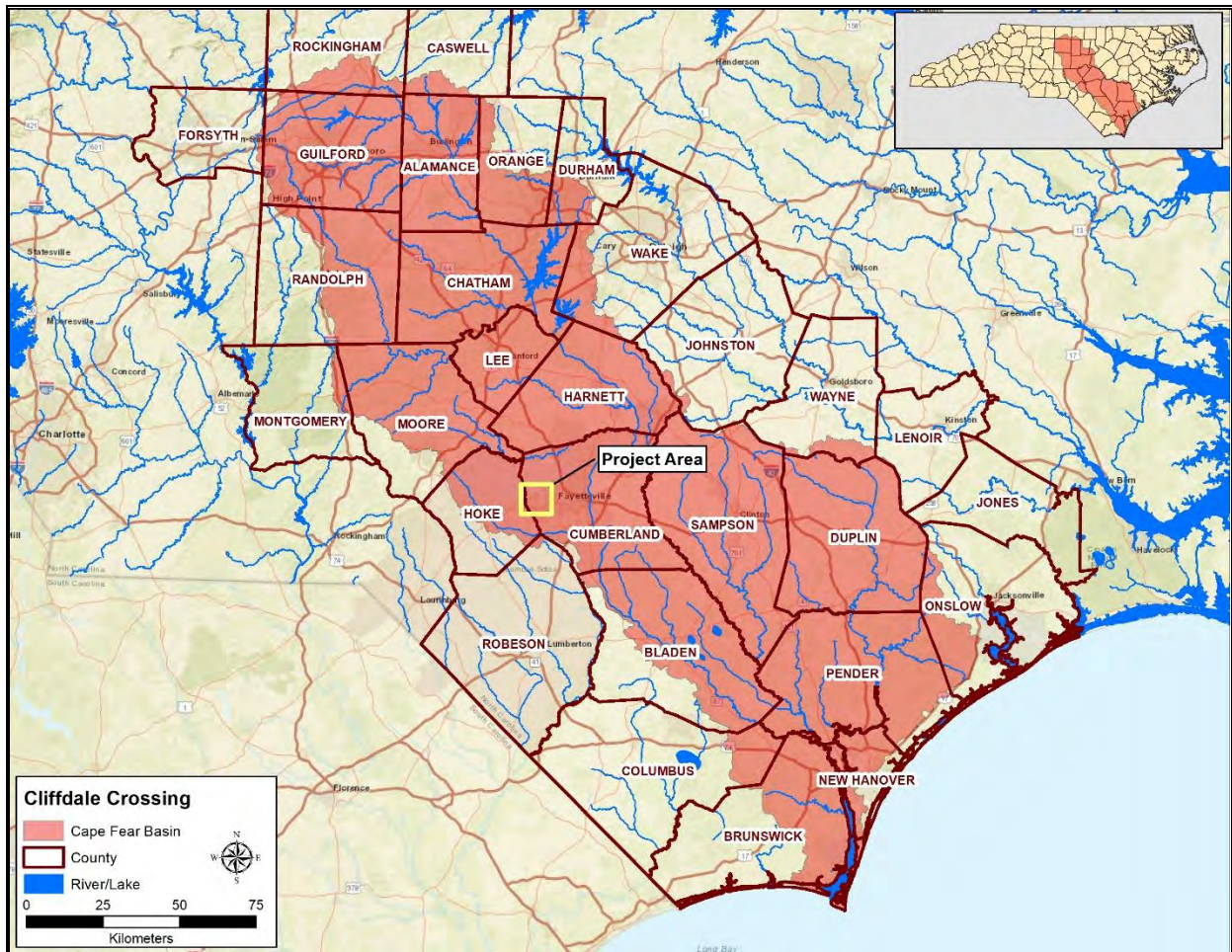




Carolina Bays are common landscape features in the Coastal Plain of North and South Carolina. Carolina Bays are oval depressions especially prevalent in the Coastal plain near the North Carolina and South Carolina border. They tend to be oriented northwest-southeast, with an elevated sand rim on the southeastern margin. Sizes vary from 60 meters to 19.3 kilometers long. Some of the large ones are lakes (e.g., Lake Waccamaw, White Lake, Little Singletary Lake), others are bogs or pocosins, and still others are drained and used as agricultural fields. The peat in the bogs can be between 3.0 to 15.2 meters thick. Origin theories once linked the creation of Carolina Bays to extraterrestrial impacts (with a comet being perhaps the most likely); however, more recent research conducted by Moore et al. (2016) suggests that they are formed by long term climatological and hydrological processes. They are likely wind-oriented lakes with nearly identical patterns of shape, orientation, and sand rim composition. They can become more active during periods of climatic instability.

### Drainage

The project area falls within the Cape Fear River Basin, the largest river basin within North Carolina (Figure 2.2). The project tract is drained by a small, unnamed tributary of Bones Creek. Bones Creek converges with Little Rockfish Creek southeast of the tract. Little Rockfish Creek converges with Rockfish Creek before draining into the Cape Fear River south of Fayetteville, North Carolina. The Cape Fear River is approximately 200 miles long, flowing from Jordan lake into the Atlantic Ocean (City of Fayetteville 2015).



**Figure 2.2.** Map showing the project location within the Cape Fear River basin.

## Climate

The climate in Cumberland County includes hot and humid summers and moderately cold winters. Summer temperatures average 78 degrees Fahrenheit (F), with the highest temperatures around 89 degrees F. Winter temperatures average 44 degrees F, with lows around 31 degrees F. Yearly rainfall totals 109 to 117 centimeters and is evenly distributed throughout the year (Hudson 1984).

## Geology

The project area is underlain primarily by the Cape Fear Formation. This formation is the product of non-marine delta formation during the Upper Cretaceous period. It is comprised of bedded sand, sandstone, and mudstone (Sohl and Owens 1991). The lithic material present in the project vicinity, as in much of the Coastal Plain, likely originates in the Carolina Slate Belt in the Piedmont. Rivers flowing out of the Piedmont transported the material, including metavolcanics and quartz, into the Coastal Plain where it was deposited as gravels and formed cobble bars.

## Soils

Soil data for the project tract were obtained from the United States Department of Agriculture, Natural Resources Conservation Service Web Soil Survey (USDA 2021) and the published soil surveys for Cumberland County (Hudson 1984). There are four soil types present in the project tract (Figure 2.3, Table 2.1). Blaney loamy sand is a well-drained soil that is found on the side slopes and narrow ridges of uplands. McColl loam is a poorly drained soil that is found in shallow, oval depressions of uplands. The majority of the tract contains Norfolk loamy sand, which is a well-drained soil found on broad, smooth flats on uplands. Wagram loamy sand is another well drained soil also formed on broad, smooth flats and the side slopes of uplands.

## Cultural Overview

The following discussion summarizes the various occupations in southeastern North Carolina, emphasizing technological change, settlement, and site function throughout prehistory. Table 2.2 presents an archaeological chronology of Native American occupation in the southern Upper Coastal Plain of North Carolina.

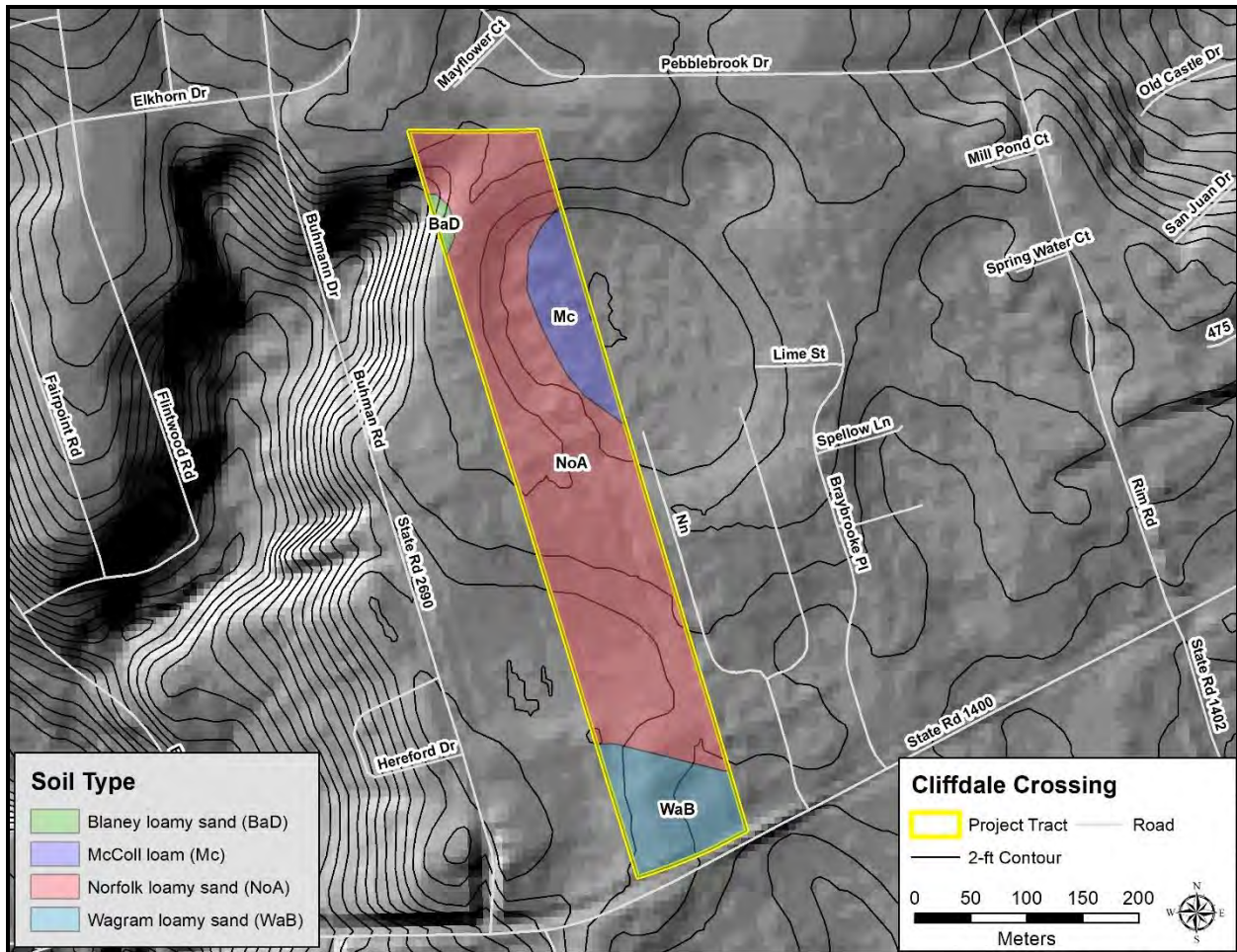
### Prehistoric Cultural Overview

#### *Paleoindian Period (12,000 - 8,000 BC).*

The Paleoindian Period refers to the earliest human occupations of the New World, the origins and age of which remain a subject of debate. The most accepted theory dates the influx of migrant bands of hunter-gatherers to approximately 12,000 years ago. This time period corresponds to the exposure of a land bridge connecting Siberia to the North American continent during the last ice age (Driver 1998; Jackson et al. 1997). Research conducted over the past few decades has begun to cast doubt on this theory.

Investigations at Paleoindian sites have produced radiocarbon dates predating 12,000 years. The Monte Verde site in South America has been dated to 10,500 BC (Dillehay 1997; Meltzer et al. 1997). In North America, the Meadowcroft Rockshelter in Pennsylvania had deposits dating to 9,500 BC. Current research conducted at the Topper Site indicates occupations dating between 15,000 to 19,000 (or more) years ago (Goodyear 2006). Two sites, 44SM37 and Cactus Hill, in Virginia have yielded similar dates.





**Figure 2.3.** Map showing the soils present in the APE.

**Table 2.1.** Summary of Soils Present in the Project Tract (USDA 2021).

Soil Type	Description	Percent Coverage (Acres)
Blaney loamy sand (BaD)	Well-drained, 8-15% slope	0.9
McColl loam (Mc)	Poorly drained	9.7
Norfolk loamy sand (NoA)	Well-drained, 0-2% slope	75.9
Wagram loamy sand (WaB)	Well-drained, 0-6% slope	13.5

One contentious point about these early sites is that the occupations predate what has been recognized as the earliest New World culture, Clovis. Artifacts identified at pre-Clovis sites include flake tools and blades, prismatic blades, bifaces, and lanceolate-like points (Adovasio and Page 2002; Goodyear 2006; Johnson 1997; McAvoy and McAvoy 1997; and McDonald 2000).

The major artifact marker for the Clovis period is the Clovis lanceolate fluted point (Gardner 1974, 1989; Griffin 1967). First identified in New Mexico, Clovis fluted points have been recovered throughout the United States. However, most of the identified Clovis points have been found in the eastern United States (Ward and Davis 1999). Most Clovis points have been recovered from surface contexts, although some sites (e.g., Cactus Hill and Topper sites) have contained well-defined subsurface Clovis contexts.

**Table 2.2.** Native American Archaeological Chronology for the Southern North Carolina Coastal Plain and Sandhills.

	<b>Phase</b>	<b>Diagnostic Artifacts</b>	<b>Settlement</b>	<b>Subsistence</b>
Paleoindian 12,000-8,000 BC	Clovis	large, triangular, fluted or side-notched projectile points	small, seasonal camps	intensive foraging, focus on large fauna
	Dalton			
Archaic 8,000-1,000 BC	Kirk Palmer	side-notched projectile points corner-notched projectile points	larger, seasonal camps; base camps	intensive foraging
	Stanly Morrow Mtn. Guilford	stemmed points		
	Savannah River	large Savannah River points Stallings Island fiber tempered and Thom's Creek and New River sand tempered ceramics		
Woodland 1,000 BC-1584 AD	New River	large triangular points sand (New River) and limestone (Hamps Landing) tempered pottery cord marked surface treatments	small, dispersed villages; focus on flood plain areas	intensive foraging supplemented by horticulture; agriculture; continued focus on shellfish
	Cape Fear	grog tempered (Hanover) and sand tempered (Cape Fear) ceramics small triangular points		
	White Oak	shell tempered ceramics		

Moore et al. (2003), Phelps (1983), and Ward and Davis (1999)

In the southeastern United States, Clovis was followed by smaller fluted and nonfluted lanceolate spear points, such as Dalton and Hardaway point types, that are characteristic of the later Paleoindian Period (Goodyear 1982). The Hardaway point, first described by Coe (1964), is seen as a regional variant of Dalton (Oliver 1985; Ward 1983). Most Paleoindian materials occur as isolated surface finds in the eastern United States (Ward and Davis 1999); this indicates to many scholars that population density was extremely low during this period and that groups were small and highly mobile (Meltzer 1988). It has been noted that group movements were probably well-scheduled, and that some semblance of territories was probably maintained to ensure adequate arrangements for procuring mates and maintaining population levels (Anderson and Hanson 1988).

O'Steen (1996) analyzed Paleoindian settlement patterns in the Oconee River valley in northeastern Georgia and noted a pattern of decreasing mobility throughout the Paleoindian period. Sites of the earliest portion of the period seem to be restricted to the floodplains, while later sites were distributed widely in the uplands, showing an exploitation of a wider range of environmental resources. If this pattern holds true for



the Southeast in general, it may be a result of changing environments trending toward increased deciduous forest and decreasing availability of Pleistocene megafauna and the consequent increased reliance on smaller mammals for subsistence; population growth may have also been a factor.

### ***Archaic Period (8,000 - 1,000 BC)***

The Archaic Period has been the focus of considerable research in the Southeast. Hunter-gatherer groups of this period are considered to have been highly mobile, focusing on game animals such as deer and on seasonally available wild plant resources such as nuts. Archaic sites are common in the North Carolina Upper Coastal Plain, and their sheer number suggests substantial population increase from the Paleoindian Period. Soil conditions in the Coastal Plain frequently impede preservation of all traces of settlement save lithic artifacts. Variations in lithic tool styles are used to delineate three subperiods within the Archaic Period.

*Early Archaic (8,000 - 6,000 BC).* The Early Archaic subperiod is marked by a shift from a boreal forest to more northern hardwoods. Southern pines became the dominant species as the Oak-Hickory forest retreated to the Piedmont (Delcourt and Delcourt 1981; Delcourt and Delcourt 1985). Based on site distribution data for Fort Bragg, Early Archaic site locations are extremely diverse indicating adaptation and exploitation of a wide variety of settings (Irwin and Culpepper 2000). Site types generally fall into three categories: base camps (often at stream confluences), specialized resource procurement sites located in areas with seasonally variable resources, and specialized use sites (Cable and Cantley 2006). In the Southeast, the smaller temporary procurement camps and the larger base camps are found at a ratio of ten to one (Ward and Davis 1999).

A number of settlement models have been advanced for the Early Archaic. Anderson and Hanson (1988) theorize that group movement focused on a single drainage with inter-drainage movement being sporadic and directly tied to macroband aggregations. Based on this view, it could be interpreted that individual groups had established territories within which they remained most of the time. Daniel (1998) speculates that Early Archaic groups moved freely between drainages but were tethered to quality lithic sources in the Piedmont. This view assumes that good quality lithic material would not have been available outside of the Piedmont, although abundant lithic sources are present in the Coastal Plain, most in the form of gravel bars and cobble beds. Both views have their proponents. Regardless, it is generally agreed upon that band-sized groups moved across the landscape utilizing a broad range of resources.

As noted, subsistence data for this time period in the Upper Coastal Plain is sparse. However, remains recovered from Early Archaic sites in the Southeast have included deer, a variety of small mammals, turtles, fish, wild birds. Evidence of plant remains exploited includes acorns, hickory nuts, maygrass, and goosefoot (Goodyear et al. 1979; Smith 1987). There is some debate on the prevalence of groundstone tools at Early Archaic sites, although their presence is used as evidence of the processing of plant remains.

Lithic tools diagnostic of the Early Archaic include Hardaway side-notched, Palmer and Kirk corner-notched, and bifurcated spear points are diagnostic of the time period. End and side scrapers are also attributed to the Early Archaic, as are adzes, graters, drills, and perforators (Daniel 1998).

*Middle Archaic (6,000-3,000 BC).* There is a noted increase in site frequency through the Middle Archaic. This increase may reflect continued mobility with the associated decrease in band territory that many researchers speculate occurred during this subperiod (Custer 1990; Smith 1987). With reduced territories, it may have been necessary to establish more permanent settlements. This trend is reflected in the increased presence of storage facilities (Chapman 1977; Griffin 1967; and Wetmore 1986). Middle Archaic sites in the Coastal Plain have exhibited site layouts consistent with residential camps of some



duration with huts, exterior hearths, prepared clay floors, and discrete artifact scatters (Cable and Cantley 1998; Cantley and Cable 2002; Cable et al. 2005, and Smith 1987).

Stanly Stemmed, Morrow Mountain Stemmed, and Guilford Lanceolate spear points are the primary diagnostic artifacts of this time period. Morrow Mountain and Guilford phases are believed to have been introduced from the west (Coe 1964). Phelps (1964) referred to this as the “Western Intrusive horizon.” Halifax projectile points have also been found in the north Coastal Plain of North Carolina. These points date to approximately 4000 BC and were introduced from peoples living to the north (Coe 1964). Middle Archaic tools also include scrapers, graters, and spokeshaves and there is a decided preference for expediently available raw lithic material. There is some debate regarding the apparent increase in groundstone tools during the Middle Archaic. Although some researchers have noted a marked increase in the presence of groundstone tools, Bruce Smith (1986) cites a large assemblage of groundstone tools recovered from Early Archaic deposits at the Rose Island site in Tennessee as evidence of a continuation of the same level of groundstone tool use rather than an increase.

*Late Archaic (3,000 - 1,000 BC).* The Late Archaic subperiod is characterized by population growth and further decreases in mobility. Longer term habitation of sites is reflected by the presence of large dense middens, evidence of structures, and abundant storage features. There were also innovations in technology and subsistence strategies. Plant cultivation intensified, leading to the early stages of formal agriculture (Sassaman et al. 2002). Steatite slabs and bowls were produced, presumably for cooking purposes, and were widely in use from about 2000 to 1500 BC (Gray 2010). The predominant spear type of the Late Archaic is the Savannah River spear point. Other tools associated with Late Archaic sites include grinding stones, scrapers, drills, and grooved axes.

Fiber-tempered Stallings ceramics begin being produced as early as 2500 BC (Anderson et al. 1982). Stallings ceramics have been recovered from sites on Fort Bragg but are not generally found above the Fall Line (Culpepper et al. 2000; Griffin et al. 2001). The use of sand for clay temper gradually replaced the use of fiber through the Late Archaic. Sand tempered Thoms Creek wares are found in the southern Coastal region (Ward and Davis 1999), and more recently, radiocarbon and thermoluminescence dates place the early production of New River wares in this same time frame (Dr. Joseph Herbert, personal communication). Surface treatments on New River ceramics include cord marking, net impressions, and simple stamping.

#### ***Woodland Period (1,000 BC - 1584 AD)***

*Early Woodland (1,500 - 200 BC).* Along the North Carolina coast, Early Woodland sites consist of shell middens near tidal marshes and ceramic and/or lithic scatters in different environmental zones. Site type categories established by Trinkley (1990) for this portion of the state include seasonal camps located in upland settings at springs or stream confluences, small seasonal campsites located on swamp edges, and large semi-permanent camps on swamp edges. Site location patterns suggest a dispersed, highly mobile lifeway that continued from the Late Archaic into the Woodland. Two ceramic types are associated with the Early Woodland along the southern coast of North Carolina. New River ceramics are tempered with dense coarse sand, and exhibit surface treatments that are dominated by cord marking, but also include fabric impressing, net impressing, and simple stamping (Lofffield 1975; Mathis 1999; Ward and Davis 1999). Hamps Landing ceramics are characterized by limestone or marl temper and have plain, faint thong marked, cord marked, fabric impressed, and simple stamped surfaces (Ward and Davis 1999).

*Middle Woodland (200 BC - AD 1000).* Sites dating to this period include small single house shell middens, more significant shell middens, and shell-less sites in the interior that vary in size and artifact density. Trinkley (1990) notes that the site types from Early Woodland continue into the Middle Woodland but with the addition of sand burial mounds. The low, sand burial mounds have been identified at several



archaeological sites in the region. Estuarine resources made a significant contribution to the subsistence of Middle Woodland peoples (Drucker and Jackson 1984; Espenshade and Brockington 1989; Trinkley 1976, 1980). The two ceramic series associated with the Middle Woodland in the southern coastal plain are the grog tempered Hanover wares and the sand tempered Cape Fear wares. Hanover wares are typically cord marked or fabric impressed (Ward and Davis 1999). Cape Fear have similar decorations, although South (1976) observed rare net impressing on these wares (Ward and Davis 1999).

*Late Woodland (AD 1000 - 1584).* Sand burials continued to be used during the Late Woodland with burials generally being secondary and bundled. Cremations or charred remains are common (Jones et al. 1997). House structures include both circular and rectangular outlines, but it is unclear whether the two house styles indicate seasonal differences or the presence of Algonquin speakers in the area (Loftfield 1990). The Late Woodland in the southern Coastal Plain of North Carolina is characterized by the White Oak Phase. South (1976), working in Brunswick and New Hanover Counties, described the “Oak Island” series as being shell tempered pottery that included cord marked, net impressed, fabric impressed, and plain surface treatments. Working near the White Oak River, South (1962) identified shell tempered fabric impressed sherds which he defined as White Oak fabric impressed. Loftfield (1976) expanded the definition of White Oak to include simple stamped and smoothed surfaces based on work conducted in Onslow and Carteret County. Few researchers, today, distinguish between South’s “Oak Island” and Loftfield’s “White Oak” ceramic series (Ward and Davis 1999). However, it is believed by some that many of the shell tempered Oak Island sherds identified by South (1976) are actually limestone tempered and part of the Early Woodland Hamps Landing series, and that the term White Oak should be used to define the shell tempered Oak Island ceramics (Ward and Davis 1999).

### **Historic Overview**

In the decades following the expedition of Christopher Columbus, the coast and interior portions of what would become North Carolina were explored. Much of this activity was initiated by Spain in the hope of preserving its hegemony over North America. Hernando de Soto (1539-1543) and Juan Pardo (1566-1568) led military expeditions into the western Piedmont and mountains of North Carolina during the mid-sixteenth century (Hudson 1990, 1994). Despite these military incursions and the establishment of minor outposts, the Spanish presence in the Carolinas could not be sustained. Mounting pressure from hostile Native Americans and English privateers resulted in the withdrawal of Spanish forces to St. Augustine in 1587 (South 1980).

England’s interest in the New World was heavily promoted by Walter Raleigh. A courtier in the court of Queen Elizabeth I, Raleigh secured the financial and political support necessary to attempt the first permanent settlement of the New World by English colonists in 1585 (Powell 1989). Although his efforts failed, Raleigh’s single-minded ambition ultimately led to the establishment of the Jamestown colony in 1607 (Noël Hume 1994).

The disastrous mismanagement and resulting loss of life in Virginia during the first two decades of the colony’s existence resulted in the revocation of the Virginia Company’s charter in 1624 (Noël Hume 1994). Preoccupied with the civil war between Royalist and Parliamentary forces in the 1640s, the authorities in Virginia showed little interest in North Carolina until the 1650s. During this period the area around the Albemarle Sound in northeastern North Carolina was inhabited by traders, hunters, trappers, rogues, and tax evaders (Powell 1989). Even then, North Carolina was becoming notorious as a refuge for the independent and self-reliant.

In 1662, Captain William Hilton was searching for a favorable location for a Puritan colony when he encountered a cape and inlet which he named “Cape Fear.” Settlers from New England followed Hilton



to the area but soon left. A sign was left attached to a post at the point of the cape warning others to avoid the area.

The restoration of Charles II to the throne in 1660 resulted in the distribution of rewards to those who had supported the Royalist cause during the upheaval (Powell 1989). This initiated the Proprietary colonial period in the Carolinas, which lasted from 1663 until 1729. During the rule of the Lords and Proprietors, Charlestown was established north of the mouth of the Cape Fear River. The town was abandoned in 1667 for several factors including political problems abroad and local Native American populations turning violent due to abuse by the English (Lee 1971).

Years of turmoil brought about by an unstable system of government culminated in war with the Tuscarora Indians. Severe fighting broke out in 1711, triggered by the death of the colony's Surveyor General (John Lawson) at the hands of the Tuscarora (Powell 1989). The war ended in 1712, leaving the Carolina colonies in dire financial straits. These conditions persisted until the Lords and Proprietors were forced to sell their holdings in the Carolinas to the Crown in 1729 (Powell 1989).

The acquisition of North Carolina by the Crown initiated a period of relatively stable government. During this time, immigration into North Carolina was along three major routes (Powell 1989): western North Carolina was settled by German and Scots-Irish immigrants arriving from Pennsylvania and Virginia via the Great Wagon Road; new arrivals at the important towns of New Bern and Brunswick pushed west up the Cape Fear and Neuse river valleys; and colonists from South Carolina advanced up the Pee Dee and Catawba rivers in search of new land.

The European settlers to the area, mostly comprised of Highland Scots, encountered several Native American tribes including the Tuscarora, Cherokee, Cheraw, and Croatan (Swanton 1979). In 1725, surveyors for the Wineau Company documented a village of "Waccamaw Indians on the Lumber River. At that time, the waterway was called Drowning Creek for its swift currents and dark water. The tribe now known as the Lumbee have been known as the Croatan and/or Cherokee of Robeson County, and they comprise the ninth largest Native American tribe in the United States (Blu 2004). The Lumbee territory includes Scotland, Hoke, Cumberland, and Robeson counties.

The Lumbee Indians are descendants of the Cheraw Indians, and other groups who merged with them. In the late 1600s, the Cheraw were settled near Danville, Virginia. In the early 1700s they moved to the area of present-day Cheraw, South Carolina, along the Pee Dee River. By 1725 they were living near the North Carolina/South Carolina border, along the Pee Dee River near Cheraw, and along Drowning Creek in North Carolina. In the 1750s, Royal Governor Rowan called Drowning Creek the "frontier to the Indians" where about 50 families lived. The South Carolina Gazette documented the Cheraw settlement on Drowning Creek in 1771. The 1790 United States Census lists prominent family names under the heading "All other free persons" including Locklear, Oxendine, Chavis, Lowry, Hammonds, Brooks, Brayboy, Cumbo, Revels, Carter, and Kursey (Lumbee Tribe of North Carolina 2019).

In 1754, Cumberland and Robeson Counties were created from parts of Bladen County. Cumberland county was made up principally of Scotch Highlanders who came to America following the Battle of Culloden in 1745 (Meyer 1961). The county was named in honor of William Augustus, Duke of Cumberland, who was their commander during the battle. The name changed to Fayette County in early 1784 before reverting back to Cumberland later that year. The county seat was first called Cumberland Court House and was later changed to Campbelton in 1762. The town's name was later changed to Fayetteville after Revolutionary War hero, Lafayette (Corbitt 2000).

During the Revolutionary War, many of Cumberland County's residents were staunch loyalists, although few joined the fighting on either side of the war. Fighting in Cumberland County was generally





limited to violence perpetrated between loyalists and patriot factions within the county. Several hundred men of the county served either side throughout the war. No major battles took place in the county. However, in 1781, Lord Cornwallis marched through the county in route to Guilford Courthouse, where the British would suffer a pyrrhic victory.

During the antebellum period, farming was the chief occupation of in the region. There were few large landowners and hundreds of small farmers. Tobacco began as the dominant cash crop following the colonial period but was quickly overtaken by cotton. The population of Cumberland County also nearly doubled from 8,671 to 16,369 people between 1790 and 1860 (Parker 1990:27). The slave population also increased from 26.1 percent to 41.6 percent of the population (Parker 1990:28). Aside from farming, other major economic drivers included textiles, banking, and the naval stores industries.

Cumberland County also became an arsenal during this period, a foreshadowing of its later military importance. In 1790 a small federal arsenal was established in Fayetteville. By the end of the War of 1812, the arsenal housed 150 guns, tents, canteens, knapsacks and powder (Parker 1990:50). In 1820, a state arsenal was erected. The United States Arsenal was built in 1838, as one of four facilities authorized by the United States Congress (Parker 1990).

Although it took place in Virginia, the Nat Turner slave rebellion in 1831 sent shock waves through the South. In 1835, North Carolina enacted a new constitution prohibiting “persons of color” from voting, serving on juries, testifying against whites, bearing arms, and learning to read and write. Although having previously been allowed all rights of citizenship, the new constitutional restrictions were applied to the Lumbees. During the Civil War, a number of companies were formed from Richmond and neighboring Robeson County residents. These included Battery E of the 3<sup>rd</sup> North Carolina Artillery and the 1<sup>st</sup> Company D of the 12<sup>th</sup> North Carolina State Troops. The Lumbees were excluded from military service under the new state constitution, but they were conscripted to work on various work projects for the Confederates, including the construction of Fort Fisher. Resentments about the forced labor led many Lumbee men to flee into the swamps. In 1864, Henry Berry Lowry, a 16-year old Lumbee, and his brothers began a series of ambushes on local planters and conscription officials. Lowry and his band became local legends as they stole from the wealthy landowners and distributed the goods to the poor in Robeson County (Perdue and Oakley 2014).

As agriculture, naval stores, and timber industries helped improve the economy, attempts to improve transportation were made. In 1849, construction on the first plank-covered road in North Carolina began. Completed in 1854, Plank Road was 129 miles long, connecting Fayetteville with Salem. By the time of the Civil War, five plank roads radiated from Fayetteville.

At the onset of the Civil War, Cumberland County supplied eight companies to the Confederate Army (Parker 1990). These included the Fayetteville Independent Light Infantry of the 1<sup>st</sup> North Carolina Regiment, the Lafayette Light Infantry of the 1<sup>st</sup> North Carolina Regiment (later changed to Artillery with the 13<sup>th</sup> North Carolina Battalion), the Cumberland Plowboys of the 24th North Carolina Regiment, the Manchester Guardians of the 8th North Carolina Regiment, and the Carolina Boys of the 38<sup>th</sup> North Carolina Regiment. The Confederate States also took charge of the U.S. Arsenal and named it the Fayetteville Arsenal and Armory. It provided rifles, pistol carbines, ammunition, knapsacks, and artillery carriages to the Confederate Army. This service was provided throughout the war until it was seized by the Union Army in 1865 when much of the compound was burned during General Sherman’s Carolina campaign (Parker 1990).

As Union sympathizers, the Lumbee looked forward to the end of the Civil War. Unfortunately, their lot remained largely unchanged. Due to political pressure, Lumbee rights were not reinstated. Lowry and his gang were pursued by the newly established Home Guard. In February 1872, Lowry robbed a store



in Lumberton of a safe containing \$22,000.00. Over the next several years, members of his band disappeared or were captured and killed, but Lowry was never seen again (Perdue and Oakley 2014).

Following the Civil War, agriculture continued to be the primary economic contributor to the area. Tobacco and cotton were the principal money-making crops. Other important agricultural products included corn used for fodder, hogs, and sheep. Many former slaves, who had previously been relied upon as the primary source of labor, became tenant farmers on the former plantations where they continued to live. The majority of farms were small with few having more than one or two tenants (Parker 1990).

Perhaps the most important economic and social change to Cumberland and other surrounding counties began during World War I, when the War Department announced the creation of Camp Bragg in the North Carolina Sandhills. The camp was completed in 1919 and could house 16,000 soldiers (Parker 1990:115). Although almost closed in 1921, Camp Bragg began to grow and was renamed Fort Bragg. Pope Field, named after an army pilot, later became Pope Air Force Base, before being subsumed back into Fort Bragg. Its importance and stature grew during World War II housing 67,000 soldiers, becoming the largest Army camp (Parker 1990:134).

Fort Bragg produced more than 50 artillery battalions that fought in all theaters of the war. The most notable of units to come from Fort Bragg are the Ninth Infantry Division and the 82<sup>nd</sup> and 101<sup>st</sup> Airborne. These units fought in North Africa, Utah Beach during D-Day, and the Battle of the Bulge. Fort Bragg is the most intensively used training facility and several Army Reserve and National Guard Divisions train at Fort Bragg annually.

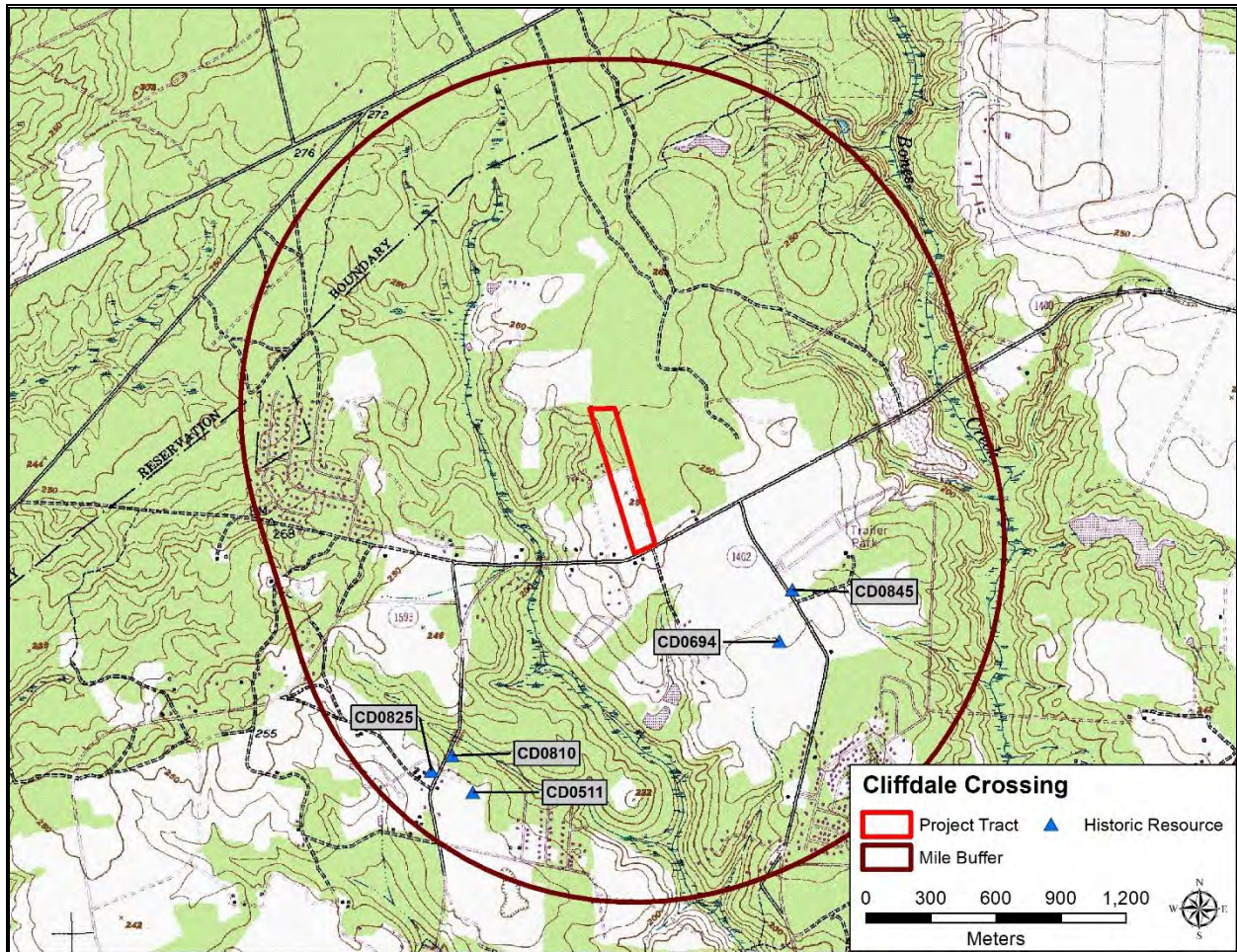
Presently, Cumberland County contains more than 326,000 residents (Cumberland County 2017). Its economy is less dependent now on agriculture. Textiles and Fort Bragg remain important economic forces within the county, although manufacturing and merchandising have come to play an important role as well (Parker 1990).



## Chapter 3. Results of Archival Research

### Previously Recorded Cultural Resources in the Project Vicinity

Cultural and environmental background research was conducted prior to the field visit. No archaeological sites have been recorded within the project tract or within a 1.6-kilometer radius of the tract. Five historic resources are recorded within 1.6 kilometers of the project tract (Figure 3.1, Table 3.1). Resource CD0511 is the approximate site of the Raymount Schoolhouse, a 1-story front-gabled school with a shed porch; it was surveyed in 1979. Its National Register of Historic Places (NHRP) status is listed as Survey Only (SO). The Angus McGill House (CD0694) was placed on the Study List in 1980. Three resources (CD0810, CD0825, and CD0845), all houses, have been destroyed.



**Figure 3.1.** Map showing the locations of historic resources in the project vicinity (1950 *Cliffdale NC* 7.5-minute USGS topographic quadrangle [photorevised 1971]).

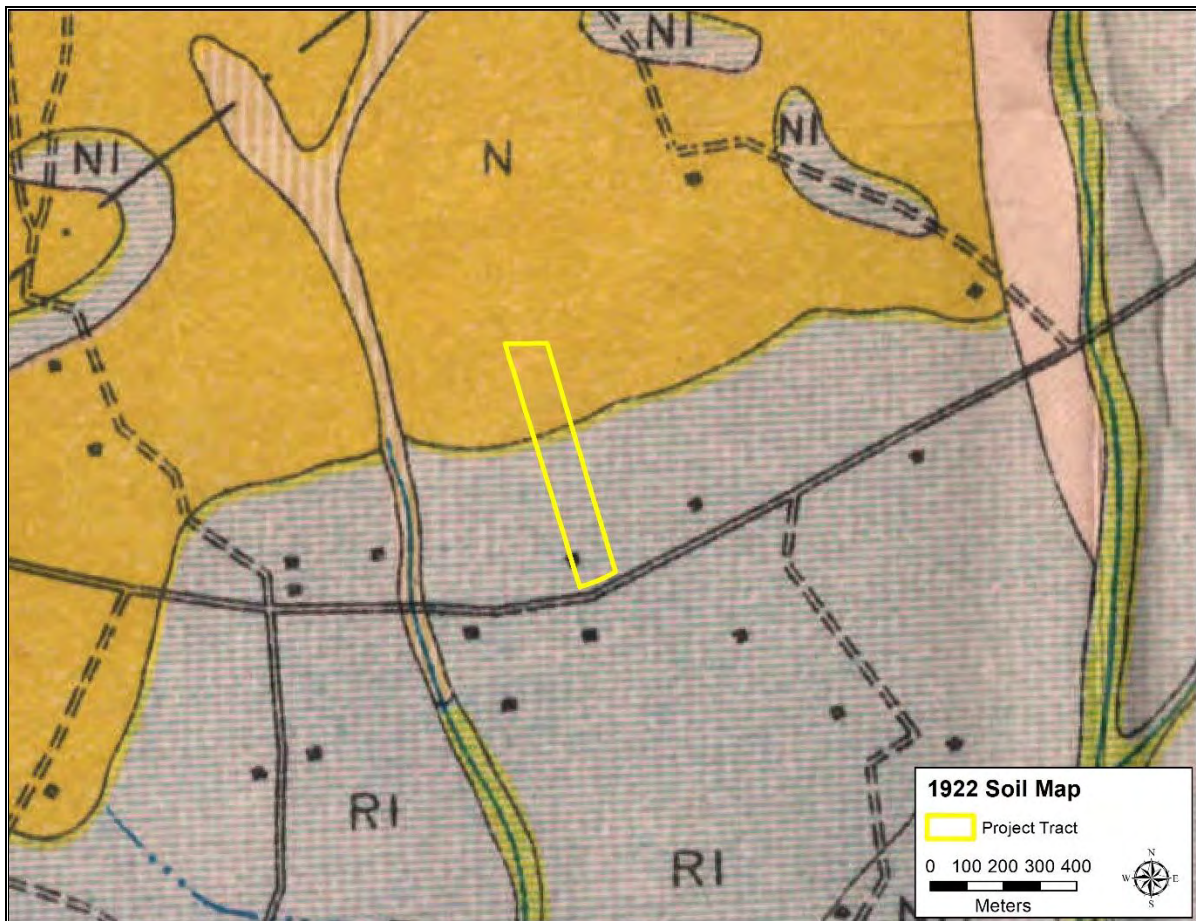
**Table 3.1.** Historic Resources Recorded Within a 1.6-Kilometer Radius of the Project Tract.

Resource Number	Description	NRHP Status
CD0511	c. 1884 Raymount Schoolhouse (approximate site)	SO
CD0694	Angus McGill House	SL
CD0810	Kennedy House (Gone)	SD
CD0825	McGougan House (Gone)	SD
CD0845	R.A. Pate House (Gone)	SD

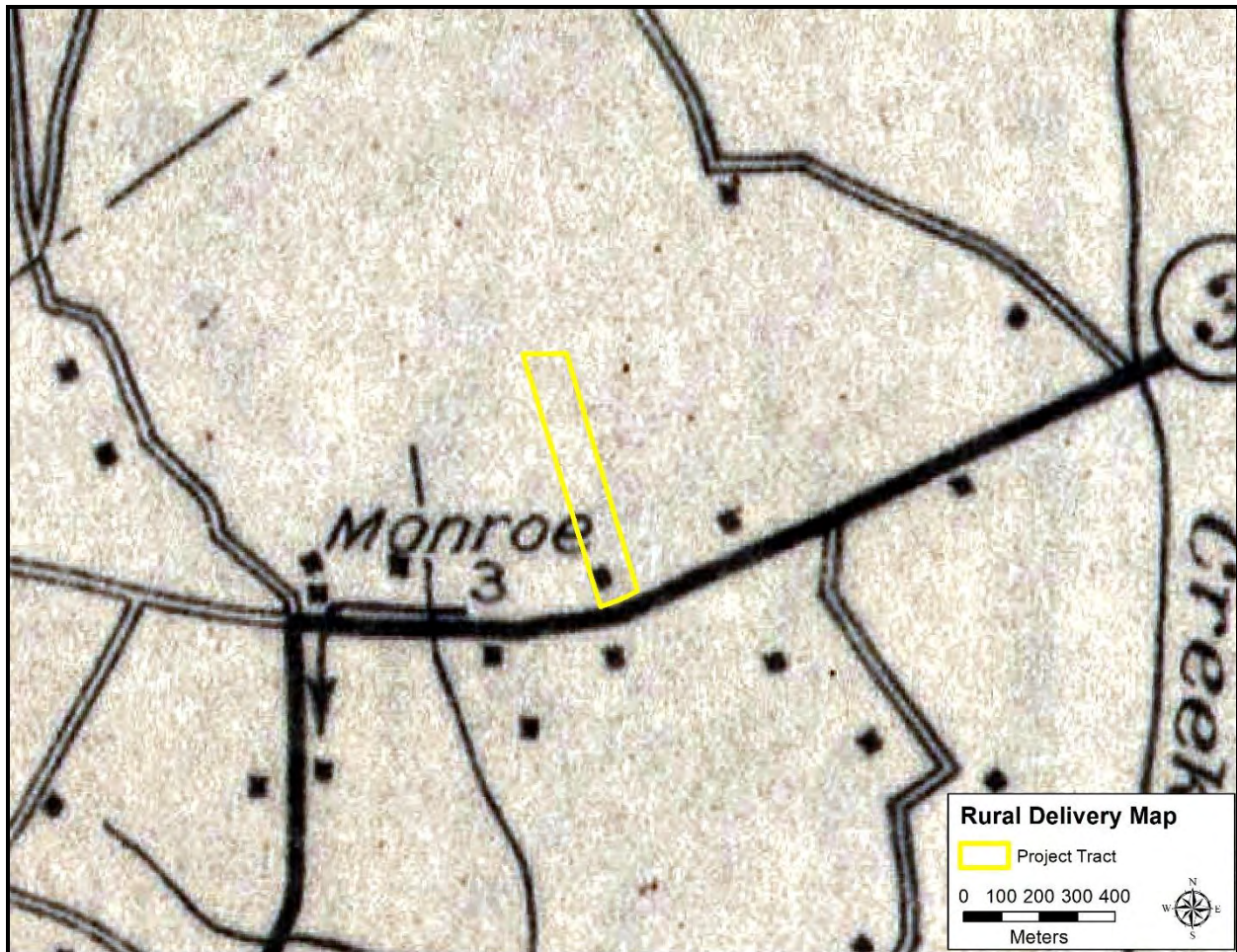
### Historic Map and Aerial Image Review

Maps reviewed for this project include the 1922 Cumberland County soil map, the 1938 county highway map, and topographic maps dating from 1948 to 1997. The maps were used to determine past land use, the possible presence of structural remains or historic landscape features and known Native American occupations. Aerial images dating back to 1993 were also examined.

The 1922 county soil map (Figure 3.2) and rural delivery map dating circa 1910 to 1920 (Figure 3.3) show one building in the southwestern portion of the project tract. The 1938 county highway map does not show any buildings present within the tract, suggesting the house in the southern portion of the tract was destroyed by late 1930s. The 1948, 1950, and 1974 topographic maps show no buildings present in the project tract.

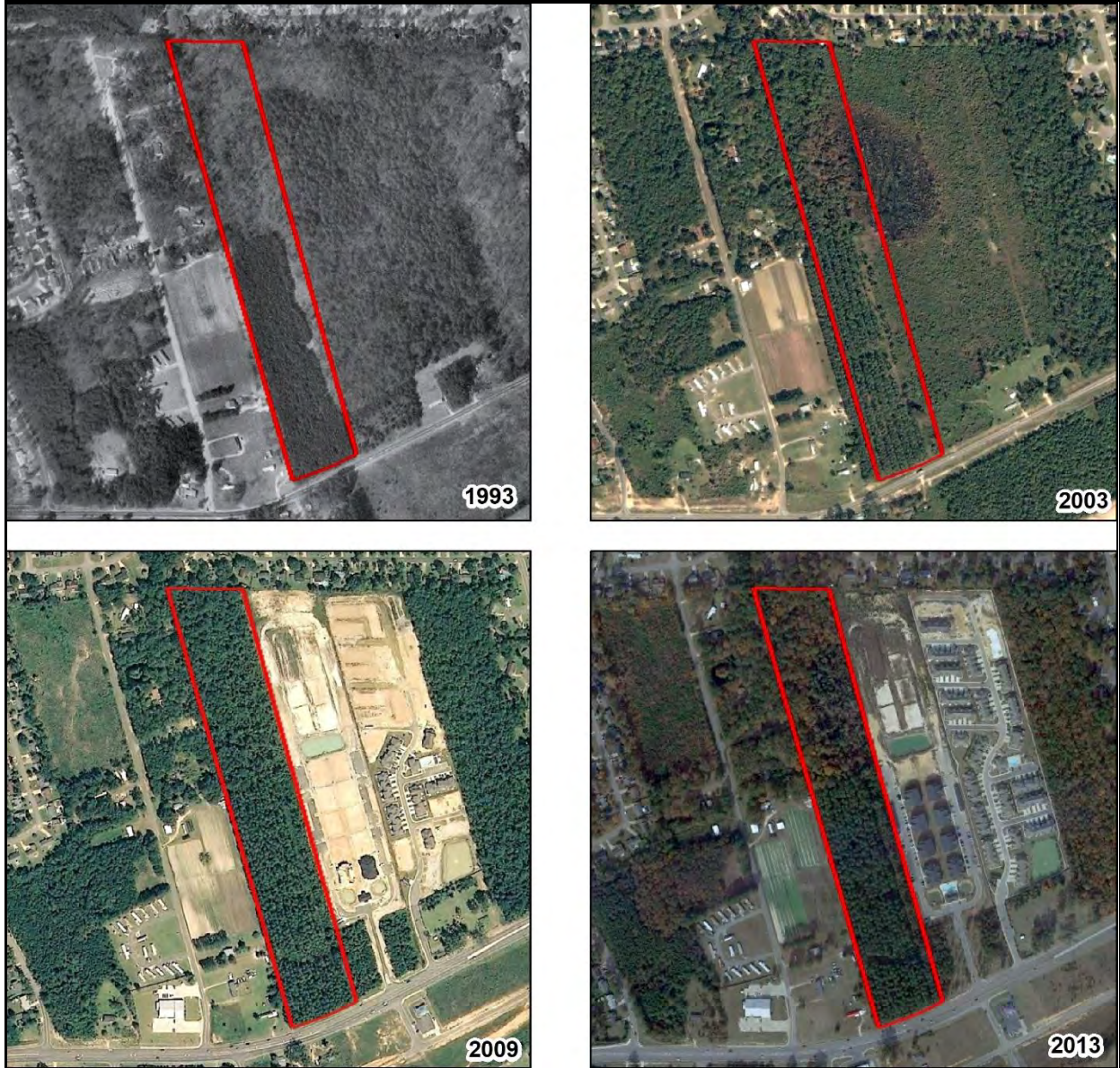


**Figure 3.2.** 1922 soil map showing one building in the project tract.



**Figure 3.3.** Rural delivery map showing buildings in the project tract circa 1910-1920.

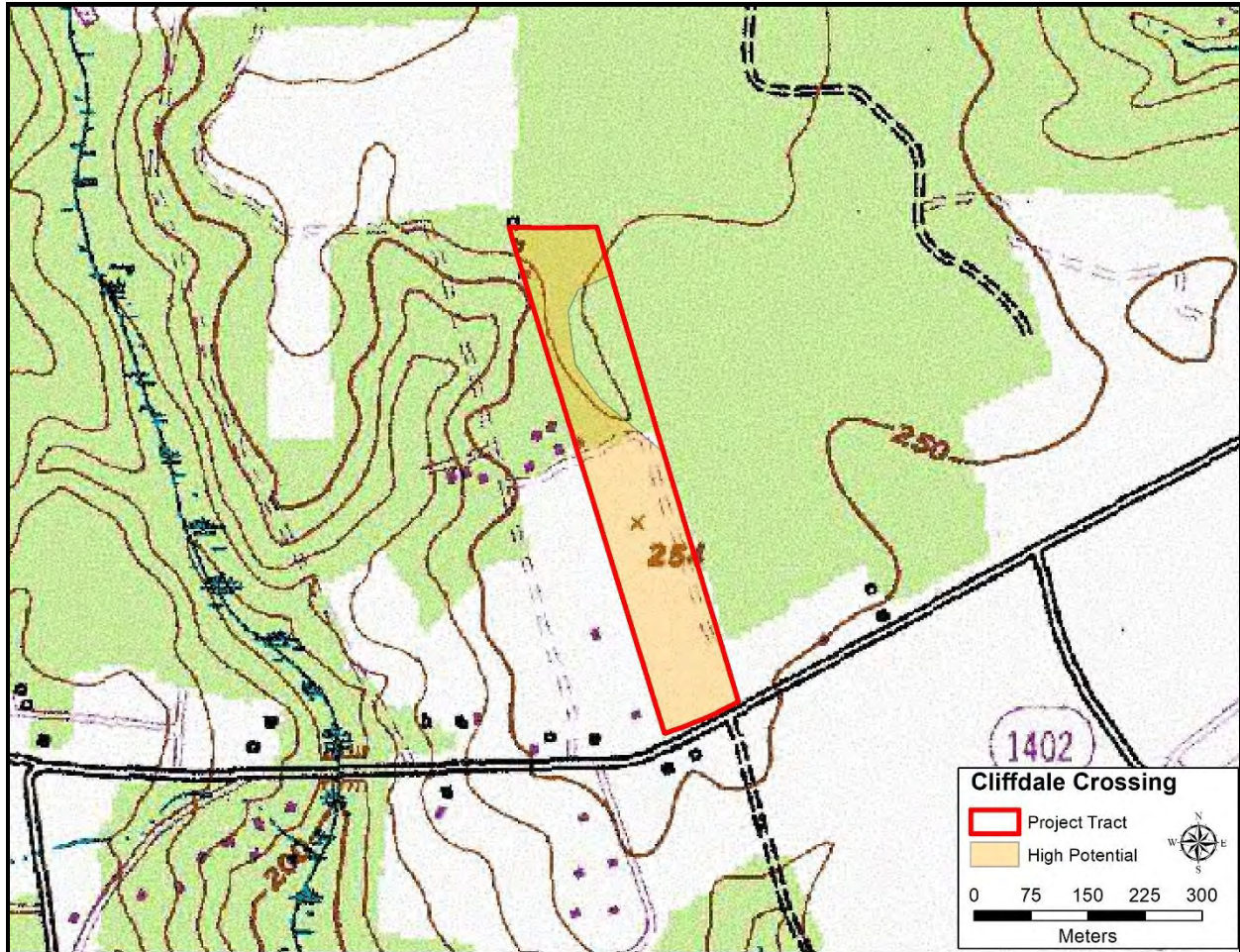
Aerial photographs available through Google Earth show the project tract as wooded since at least 1993 (Figure 3.4). The southern portion of the tract extending from Cliffdale Road to the Carolina Bay appears to be in planted pines. The forest in the Carolina Bay north to the property line appears to be a mixed pine and hardwood forest. The most recent aerial that clearly shows the project tract dates to 2013 when the tract was still wooded. The tract was clear-cut sometime after 2014 (see Figure 1.3). The project tract is currently characterized by young, planted pines and very dense secondary growth.



**Figure 3.4.** Aerial images of the project tract from 1993 to 2013.

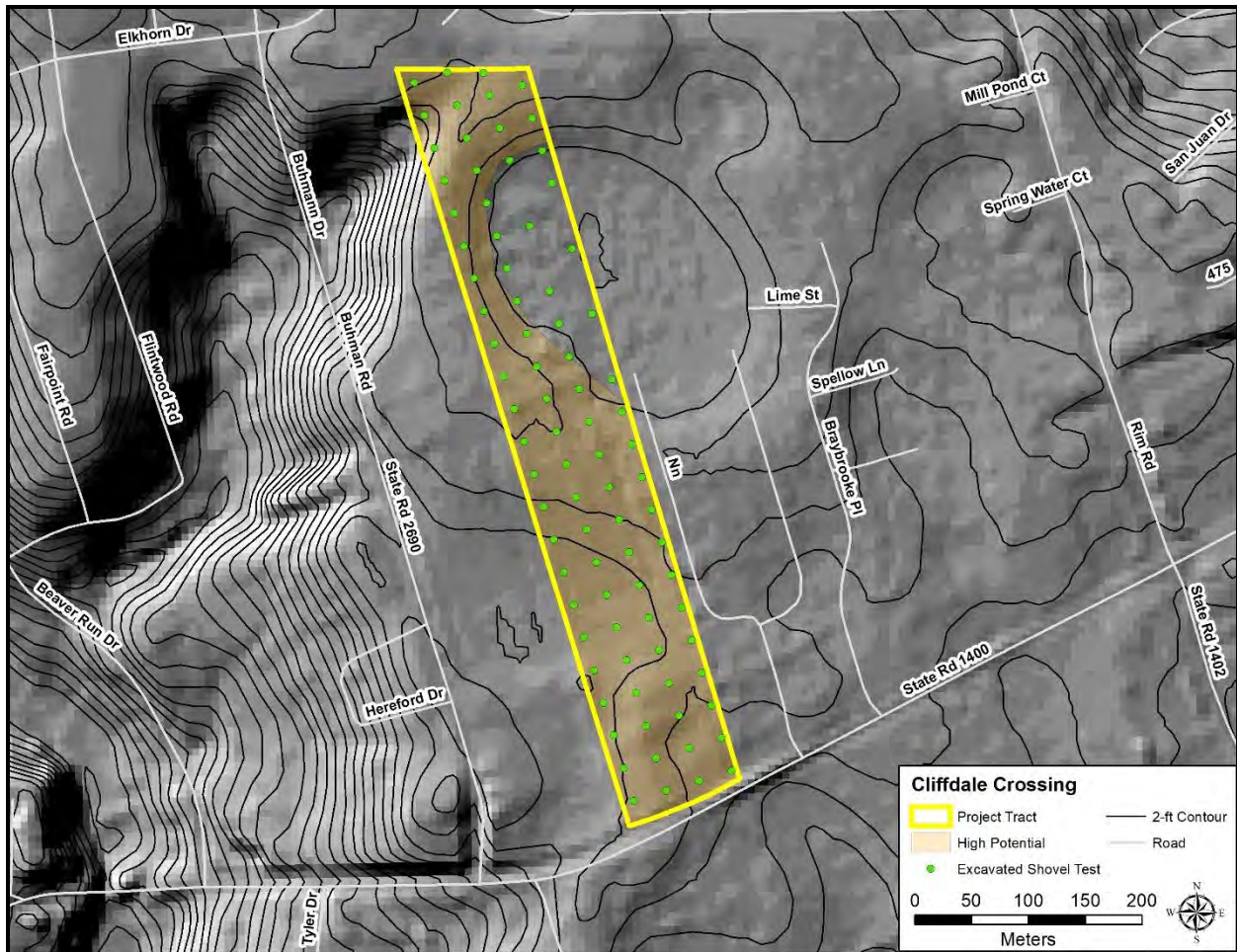
## Chapter 4. Results of the Field Investigation

The Cliffdale Crossing tract encompasses 18 acres (7.3 ha; Figure 4.1) with approximately 16.3 acres (6.6 ha) determined to have a high potential for the presence of archaeological sites. Field survey focused intensively on high potential areas. For these high potential areas, 30-meter interval shovel testing was used as the primary site discovery method. Areas with low potential for the presence of archaeological sites (1.7 acres [0.7 ha]) were given a reconnaissance level examination with shovel tests being excavated at judgmentally determined locations. A total of 86 shovel tests were excavated during this investigation (Figure 4.2).



**Figure 4.1.** Map showing the project tract (1950 *Clifdale NC* 7.5-minute USGS topographic quadrangle [photorevised 1971]).

Soil profiles exposed in shovel tests excavated in the southern portion of the project tract consisted of brown (10YR5/3) sand to a depth of 20 centimeters overlying 10 centimeters of light yellowish brown (10YR6/4) loamy sand. Beneath this zone was pale yellowish brown (10YR7/4) sand. Subsoil of strong brown (7.5YR5/8) clayey sand was encountered at depths ranging from 60 to 90 centimeters. Shovel tests excavated on the Carolina Bay rim and northern portion of the project tract were shallower, exhibiting 8 centimeters of very dark gray (10YR3/2) sand overlying yellowish brown (10YR5/4) sand to a depth of 20 centimeters. Yellowish brown (10YR5/6) sand was present below a depth of 20 centimeters and graded



**Figure 4.2.** Map showing the high potential areas and excavated shovel tests in the project tract.

to strong brown (7.5YR5/8) sandy clay at a depth of 30 centimeters. Soil profiles in the Carolina Bay consisted of dark gray (10YR4/1) sandy clay overlying gray (10YR5/1) sandy clay. Gray (10YR6/1) clay subsoil was encountered at an average depth of 30 centimeters. Figure 4.3 presents views of the soil profiles. No artifacts were recovered from shovel tests. No aboveground features or deposits were observed. No evidence of the building once present in the southern portion of the tract was identified.

This survey has resulted in the intensive investigation of the Cliffdale Crossing development tract. No cultural resources were identified. No further archaeological investigations are advocated for the Cliffdale Crossing tract.





**Figure 4.3.** View of soil profiles in the project tract.

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## **Appendix A. Resume of Principal Investigator**



**Michael Keith O’Neal**  
**Archaeological Consultants of the Carolinas, Inc.**  
121 East First Street  
Clayton, NC 27520  
Voice (919) 553-9007; Fax (919) 553-9077  
michaeloneal@archcon.org

**EDUCATION**

M.A. in Anthropology, University of Arkansas, Fayetteville, 2001.  
B.A. in Anthropology, Appalachian State University, Boone, NC, 1999.

**PROFESSIONAL MEMBERSHIPS**

Register of Professional Archaeologists	North Carolina Archaeological Council
Society for American Archaeology	-Secretary/Treasurer 2013-2015
Southeastern Archaeological Conference	-Chair 2016-2019
Council of South Carolina Professional Archaeologists	-Vice Chair 2019-present

**AREAS OF SPECIALIZATION**

Ground Stone Technology  
Lithic Technology  
Geographic Information Systems (GIS)

**EMPLOYMENT HISTORY**

July 2020-Present	Vice President/Principal Investigator. Archaeological Consultants of the Carolinas, Inc. Clayton, NC
April 2006-Present	Senior Archaeologist/Principal Investigator. Archaeological Consultants of the Carolinas, Inc., Clayton, NC.
August 2004-March 2006	Archaeologist/Project Manager. Archaeological Consultants of the Carolinas, Inc., Clayton, NC.
June 2002-August 2004	Archaeologist/Project Manager. Brockington and Associates, Inc., Raleigh, NC.
July 2001-May 2002	Archaeological Technician. Brockington and Associates, Inc., Raleigh, NC.
August 2000-May 2001	Archaeological Research Assistant, Department of Anthropology, University of Arkansas, Fayetteville.
August 2000-September 2000	Archaeological Technician, Department of Anthropology, University of Arkansas, Fayetteville.
July 2000	Archaeological Field Technician, SPEARS Inc., West Fork, Arkansas.

**Cultural Resource Surveys (Phase I) and Archaeological Site Testing (Phase II)**

- **Utility Corridors** for Duke Energy (Charlotte), FPS (Charlotte), SCE&G (Columbia), and others – serving in all capacities including Principal Investigator



**Cliffdale Crossing Tract**  
**Cumberland County, North Carolina**

- **Transportation Corridors** for South Carolina Department of Transportation (Columbia) – serving as archaeological technician
- **Development Tracts** for numerous independent developers, engineering firms, and local and county governments throughout North Carolina, South Carolina, and Virginia, and federal agencies including the USFS (South Carolina) and the USACE (Wilmington District) – serving in all capacities including Principal Investigator

### **Archaeological Data Recovery (Phase III) - Representative Examples**

- Prehistoric Camp (38HR496) and 19<sup>th</sup> century saw mill (38HR490) in Horry County, South Carolina – serving as Archaeological Technician
- Civil War encampment (44IW0204) for Isle of Wight County, Isle of Wight, VA – serving as Field Director
- Prehistoric village (31ON1578) and late 18<sup>th</sup>/early 19<sup>th</sup> century plantation (31ON1582) for R.A. Management, Charlotte, NC – serving as Field Director/Crew Chief

### **FEDERAL ENERGY REGULATORY COMMISSION RELATED INVESTIGATIONS**

Duke Energy - Lake James and Lake Norman, North Carolina- serving as Field Director/Crew Chief

### **PUBLICATIONS AND PAPERS PRESENTED**

2008 Michael Keith O'Neal

*Putting the Tar in Tar Heels: The Naval Stores Industry and Plantations in North Carolina.* Paper presented at the 65<sup>th</sup> annual Southeastern Archaeological Conference, Charlotte, North Carolina.

2005 Michael K. O'Neal and Dawn Reid

*Who Says There Aren't Rocks in the Coastal Plain?: Local Lithic Resources and Bipolar Reduction Strategies in Horry County, South Carolina.* Paper presented at the 62<sup>nd</sup> annual Southeastern Archaeological Conference, Columbia, South Carolina.

1999 Cheryl Claassen, Michael O'Neal, Tamara Wilson, Elizabeth Arnold, and Brent Lansdell

*Hearing and Reading Southeastern Archaeology: A Review of the Annual Meetings of SEAC from 1983 through 1995 and the Journal Southeastern Archaeology.* *Southeastern Archaeology* 18(2): 85-97.

1998 Cheryl Claassen, Michael O'Neal, Tamara Wilson, Elizabeth Arnold, and Brent Lansdell

*Hearing and Reading Southeastern Archaeology: A Review of the Annual Meetings of SEAC from 1983 through 1995 and the Journal Southeastern Archaeology.* Paper presented at the 55<sup>th</sup> annual Southeastern Archaeological Conference, Greenville, South Carolina.

\*\* A full listing of projects and authored reports available upon request



September 24, 2021

Mr. Taurus Freeman  
Planning Director  
City of Fayetteville  
433 Hay Street  
Fayetteville, NC 28301  
910-433-10437  
[tfreeman@ci.fay.nc.us](mailto:tfreeman@ci.fay.nc.us)

Re: Section 106 Public Outreach  
Cliffdale Crossing  
8368 Cliffdale Road  
Fayetteville, NC 28314  
Nova Project No.: CK21-8848

Dear Mr. Freeman:

Nova Group, GBC (Nova) is writing on behalf of the U.S. Department of Housing and Urban Development (HUD) to solicit your input concerning a proposed development at the above-referenced address.

Smith Duggins Developers, LLC is proposing to construct six two-story buildings with a total of 80 residential units on 8 acres of land.

HUD is identifying organizations with an interest in the project and its potential to affect historic resources. The purpose of this letter is to find out whether you wish to become a consulting party for this project. Consulting parties have certain rights and obligations under the National historic Preservation Act and its implementing regulations at 36 CFR Part 800. The review process, known as Section 106 review, is described at <http://www.achp.gov/citizensguide.html> and at <https://www.onecpd.info/environmental-review/historic-preservation/>. By becoming a consulting party, you will be actively informed of steps in the Section 106 process, including public meetings, and your view will be actively sought.

If you are interested in becoming a consulting party and have any comments or concerns regarding the proposed project, please contact me in writing at Nova, 5320 West 23<sup>rd</sup> Street, Suite 270, St. Louis Park, Minnesota 55416 or at [culturalresources@novagroupgbc.com](mailto:culturalresources@novagroupgbc.com). Please reference the project name and address in your comments. Any responses must be received within 30 days of receipt of this letter. If you do not respond within this time frame, you may request consulting party status in the future; however, the project may advance without your input and you will not have an opportunity to comment on the current steps. If you are requesting consulting party status, we do ask that your organization nominate one



representative and an alternate to participate on behalf of the group. People may also participate in the Section 106 process as members of the public.

Thank you for your time and attention to this matter.

Sincerely,

A handwritten signature in black ink that reads "Laura L. Mancuso".

Laura L. Mancuso  
National Practice Leader-Cultural Resources

Site Drawings sent with the Invitation to Consult Letter(s)  
are not included for clarity.



Print

Publication Date

**2021-09-30**

Subcategory

**Miscellaneous Notices**

PUBLIC NOTICE: Cliffdale Crossing The U.S. Department of Housing and Urban Development is proposing to construct 6 2-story buildings at 8368 Cliffdale Road, Fayetteville, Cumberland County, NC 28314. Public comments regarding the potential effects from this site on historic properties may be submitted within 30-days from the date of this publication to: Laura Mancuso - Nova Group, GBC, 5320 West 23rd Street, Suite 270, St. Louis Park, MN 55416, culturalresources@novagroupgbc.com or 203.240.0077. 9/30 5252956



# North Carolina Department of Public Safety

## Office of Recovery and Resiliency

Roy Cooper, Governor  
Casandra Skinner Hoekstra, Interim Secretary

Laura H. Hogshead, Director

November 4, 2021

Dr. Wenonah George Haire  
Tribal Historic Preservation Officer  
ATTN: THPO Archaeology Dept.  
Catawba Indian Nation  
1536 Tom Steven Road  
Rock Hill, SC 29730

RE: Section 106 Review - HUD CDBG-DR Program  
Proposed Cliffdale Crossing  
8368 Cliffdale Road  
Fayetteville, NC 28314

Dear Dr. Wenonah George Haire:

The North Carolina Office of Recovery and Resiliency (NCORR), as a recipient of Community Development Block Grant – Disaster Recovery (CDBG-DR) funds from the United States Department of Housing and Urban Development (HUD), is serving as the responsible entity for compliance with the HUD environmental review procedures set forth in 24 CFR Part 58. NCORR is acting on behalf of HUD in providing the enclosed project information and inviting this discussion with your Nation. *A separate environmental review is being performed by the North Carolina Housing Finance Agency (NCHFA) for a HUD HOME Program funding application.*

NCORR processes environmental reviews for proposed projects funded with HUD CDBG-DR on a case-by-case basis. In accordance with Section 101(d)(6)(B) of the National Historic Preservation Act (NHPA) of 1966, as amended (16 U.S.C. 470f), and its implementing regulations, 36 CFR Part 800, this letter serves as notification of the proposed action. This letter also serves as an invitation to discussion as a consulting party in this review to help identify historic properties in the proposed project area that may have religious and cultural significance to your Nation, and if such properties exist, to help assess how the proposed project might affect them. If the proposed project might have an adverse effect, we would like to discuss possible ways to avoid, minimize or mitigate potential adverse effects.

The proposed project information has been sent to the NC SHPO in accordance with Section 106 of the NHPA and its implementing regulations, 36 CFR Part 800. The Lumbee Tribe is being sent a notification of the proposed project.

Mailing Address:  
Post Office Box 110465  
Durham, NC 27709



Telephone: 984.833.5350  
[www.ncdps.gov](http://www.ncdps.gov)  
[www.rebuild.nc.gov](http://www.rebuild.nc.gov)



Area of Potential Effects (APE) under §800.16(d): We have defined the APE as 1,500 feet from the Subject Property consisting of an approximately 18.18-acre vacant parcel located on the north side of Cliffdale Road between Glen Iris Drive and Buhmann Drive in Fayetteville, Cumberland County, North Carolina. Ms. Laura Mancuso of Nova Group determined the APE based upon the height and size of the proposed development as well as neighborhood context. The proposed project location maps are included in **Attachment 1**.

The State of North Carolina was adversely impacted by the landfall of Hurricanes Matthew (October 8, 2016) and Florence (September 14, 2018). These hurricanes damaged or destroyed hundreds of homes worsening the affordable housing shortage. This proposed project will increase affordable housing inventory for low- and moderate-income families.

Proposed Project Description: Smith Duggins Developers, LLC proposes to construct six two-story residential structures and a leasing/community building on the southern portion of the property. The site will be accessed via Cliffdale Road with a driveway and parking located at the center of the parcel and the buildings on the exterior. The development will consist of 80 housing units: 12 one-bedroom, one bath units; 40 two-bedroom, one bath units; and 28 three-bedroom, two bath units. The proposed project site plan is included in **Attachment 1**.

We have completed an initial review of this project in compliance with Section 106 of the NHPA and its implementing regulations 36 CFR Part 800. Based on research completed by Ms. Laura L. Mancuso, a Secretary of the Interior (SOI) Qualified Architectural Historian, no properties over 50 years old are located within the APEs. In addition, a review of properties listed on or eligible for listing on the National Register of Historic Places was completed on September 23, 2021, by Ms. Mancuso. No properties were identified on the property or within the 1,500-foot visual APE; therefore, no historic properties will be affected by the proposed undertaking. Proposed project location maps showing the Undertaking and APE and NC HPOWEB Map are included in **Attachment 1**. A Phase I Archaeological Review was completed by the Archaeological Consultants of the Carolinas, Inc and concluded that no cultural resources were identified, and no further archaeological investigations are recommended. The Subject Property Photographs and Phase I Archaeological Review are included in **Attachment 2**.

With this letter, NCORR respectfully submits for your review the attached documentation for the proposed project described herein. If the APE encompasses historic properties of religious or cultural significance to your Nation, please respond within 30 days of receipt of this letter indicating a desire to consult. If you have any concerns with potential impacts of the proposed project on historic properties, please note them in your response along with your preferred principal representative's point of contact. Please respond within this timeframe, otherwise we will assume that the proposed project will have no effect to historic properties of religious or cultural significance. Please respond via email at [Andrea.L.Gievers@Rebuild.NC.gov](mailto:Andrea.L.Gievers@Rebuild.NC.gov) or in writing to the address listed below.

Ms. Andrea Gievers  
NCORR - Environmental  
ATTN: THPO Comments  
P.O. Box 110465  
Durham, NC 27709

If you have any questions or require additional information regarding this request, please feel free to contact Andrea Gievers at (845) 682-1700 or via email at [Andrea.L.Gievers@Rebuild.NC.gov](mailto:Andrea.L.Gievers@Rebuild.NC.gov). Thank you for your time and assistance.

Sincerely,



Andrea Gievers, JD, MSEL, ERM  
NCORR Environmental Subject Matter Expert

**Proposed Cliffdale Crossing Enclosures:**

Attachment 1: Proposed Project Site Plan, Location Maps, and NC HPOWEB Map

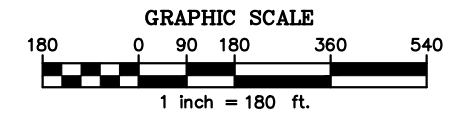
Attachment 2: Subject Property Photographs, Phase I Archaeological Review and Public Outreach

cc: Chief Bill Harris, Catawba Indian Nation, 996 Avenue of the Nations, Rock Hill, SC 29730

**ATTACHMENT 1:**

**Proposed Project Site Plan, Location Maps, and NC  
HPOWEB Map**

# CLIFFDALE CROSSING SITE PLAN



**PROJECT DATA**  
 PROJECT: CLIFFDALE DEVELOPMENT  
 PROJECT PIN: 9487-36-6817  
 DEED BOOK/PAGE: 8868/0899  
 PROJECT ADDRESS: CLIFFDALE RD. FAYETTEVILLE, NC  
 DEVELOPER / FINANCIALLY RESPONSIBLE PARTY: SMITH DUGGINS DEVELOPERS, LLC  
 2929 BREEZEWOOD AVENUE SUITE 102 FAYETTEVILLE, NC 28303

**SITE DATA**  
 DEVELOPMENT SITE= 8.00 AC± (OF 18.18 AC. SITE)  
 ZONING = MR-5 (MIXED RESIDENTIAL)  
 SETBACKS: FRONT= 25 FT  
 SIDE= 10 FT  
 REAR= 30 FT  
 LATITUDE / LONGITUDE..... 35° 3' 30.18" N, 79° 3' 14.75" W  
 PROPOSED DENSITY= 80 DU = 9.6 DU/AC.  
 NO. OF UNITS: 80 DU (12-1 BR, 40-2 BR, 28-3 BR)  
 8 ADA UNITS INCLUDED: 2-1 BR, 4- 2 BR, 2  
 PARKING SPACES REQUIRED (COF):  
 1.8 SP/DU UNIT= 1.8x80 DU=144 SPACES  
 (1 ADA SPACES PER 25 INCL=6 ADA SPACES)  
 PARKING SPACES PROVIDED:  
 1.8 SP/DU UNIT= 1.8x80 DU= 144 SPACES  
 4 COMMON AREA SPACES (PLAYGROUND)  
 TOTAL SPACES PROVIDED = 148 SPACES  
 (13 ADA SPACES INCL.)  
 BUILT UPON AREA (BUILDINGS-PARKING -WALKWAYS)= 5.53 AC±  
 OPEN SPACE SET-ASIDE AREAS =2.2.47 AC±=30.8%± (10% REQ'D)  
 IMPERVIOUS AREA:  
 EXISTING: 0 AC ±  
 PROPOSED ROADS & SIDEWALKS: 92,268 SF  
 PROPOSED BUILDINGS: 48,705 SF (1.12 AC±)  
 TOTAL PROPOSED IMP: 3.24 AC±

TOTAL DISTURBED AREA= 5.61± AC.  
**SITE AMENITIES**  
 THE FOLLOWING ITEMS HAVE BEEN NOTED ON THE SITE PLAN TO BE PROVIDED WITH THE PROJECT:  
 (1) PLAY GROUNDS W/ EQUIPMENT & BENCHES  
 (1) TOT LOTS W/ EQUIPMENT & BENCHES  
 (1) COVERED PICNIC AREA W/ TWO TABLES & GRILL (150 SF)  
 (3) OUTDOOR SITTING AREAS W/BENCHES  
 COVERED POSTAL FACILITY  
 LANDSCAPED ENTRY + ENTRANCE SIGNS  
 IRRIGATED LAWNS  
**SHARED COMMUNITY BUILDING WITH THE FOLLOWING:**  
 OFFICE W/ STORAGE AND HC TOILETS  
 LAUNDRY ROOM W/ 4 WASHERS & 4 DRYERS  
 COMPUTER CENTER W/ HIGH SPEED INTERNET (2 STATIONS)  
 PLUS 2 NEW STATIONS  
 COMMUNITY ROOM W/ KITCHENETTE



# Cliffdale Crossing

Smith Duggins Developers, LLC  
CK21-8848  
USGST Cliffdale NC 1983





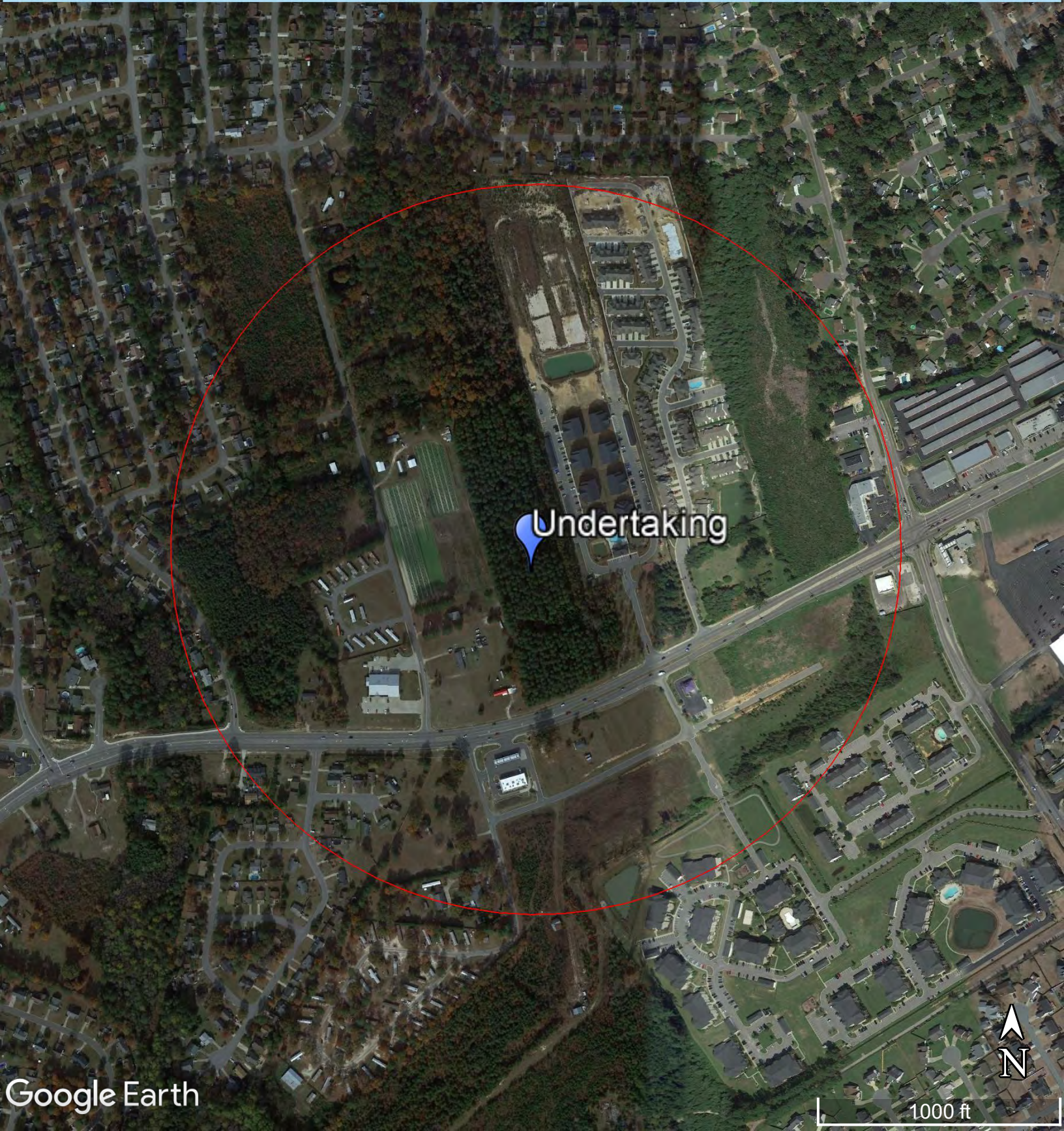
Nova  
Group

Aerial Photograph

Source: Google Earth

## Legend

-  1,500-foot APE
-  Undertaking



Undertaking



# Cliffdale Crossing

Smith Duggins Developers, LLC  
CK21-8848  
USGST Cliffdale NC 1983





# Nova Group

## Aerial Photograph

Source: Google Earth

### Legend

-  1,500-foot APE
-  Undertaking



Undertaking

Google Earth

700 ft



# Cliffdale Crossing

Smith Duggins Developers, LLC  
CK21-8848  
USGST Cliffdale NC 1983





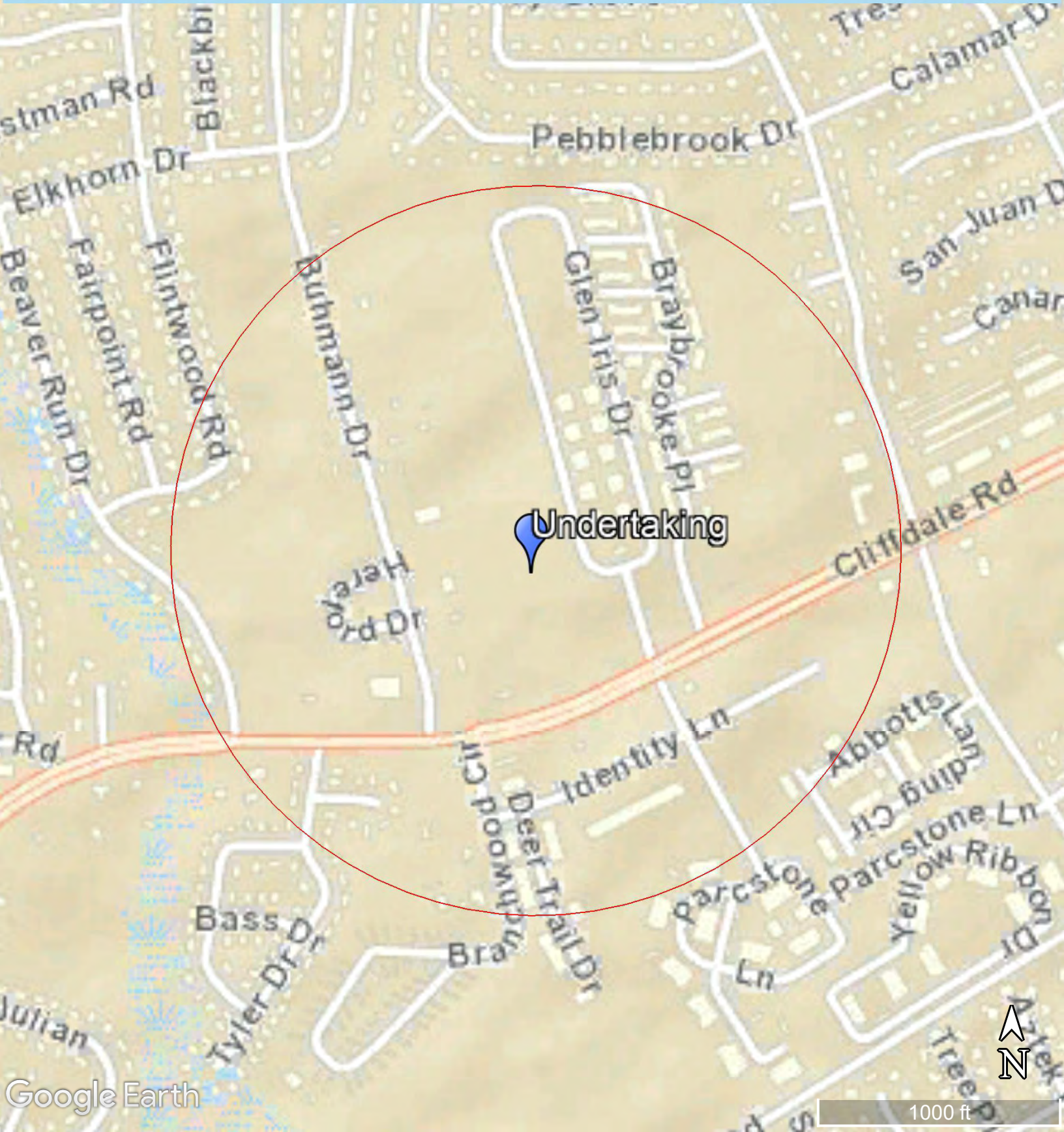
# Nova Group

## Street Map

Sources: ESRI, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, METI, NGCC, OpenStreetMap contributors, and the GIS User Community

### Legend

-  1,500-foot APE
-  Undertaking



# Cliffdale Crossing

Smith Duggins Developers, LLC  
CK21-8848  
USGST Cliffdale NC 1983





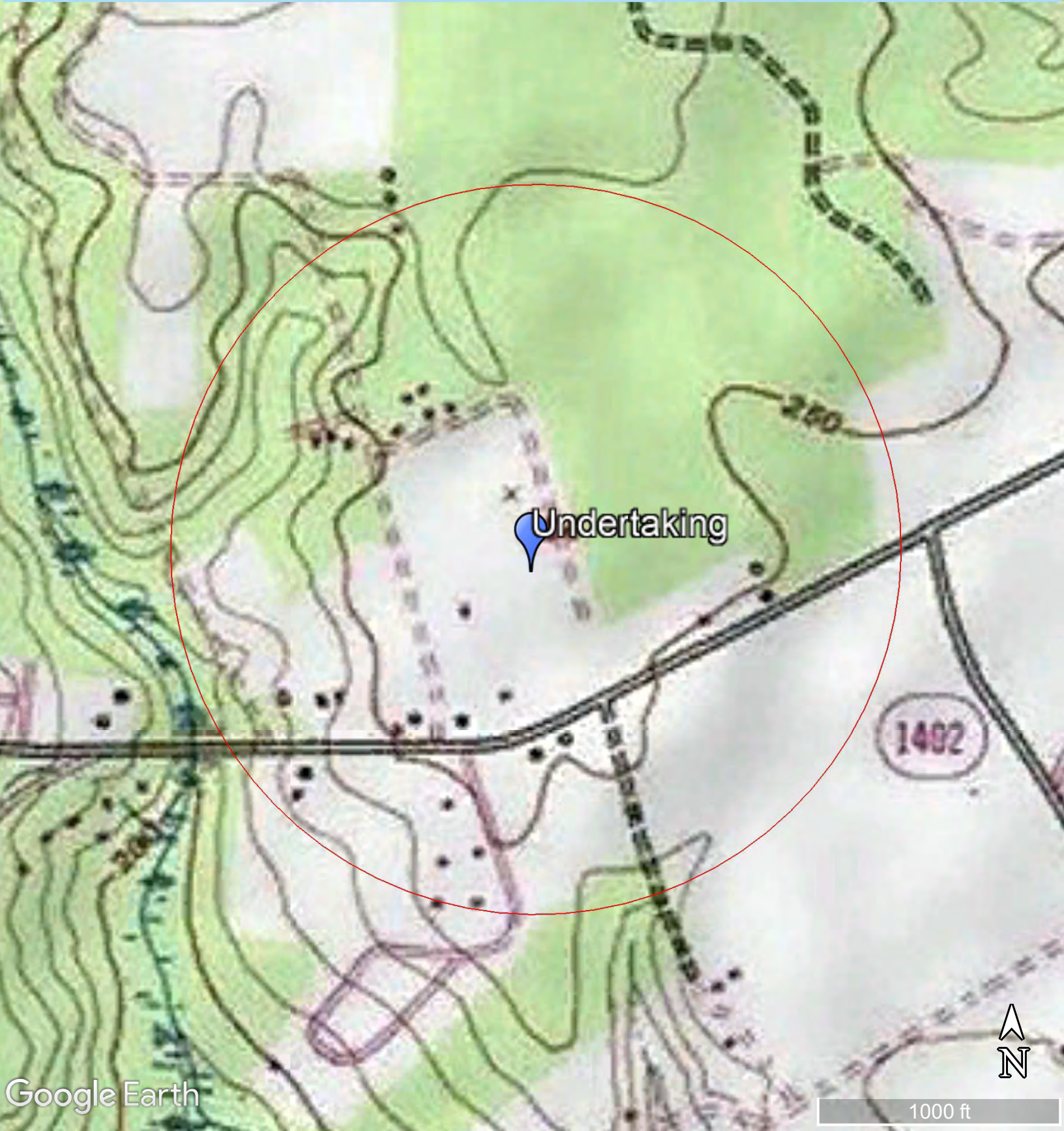
# Nova Group

## USGS 7.5 Minute Quadrangle Map

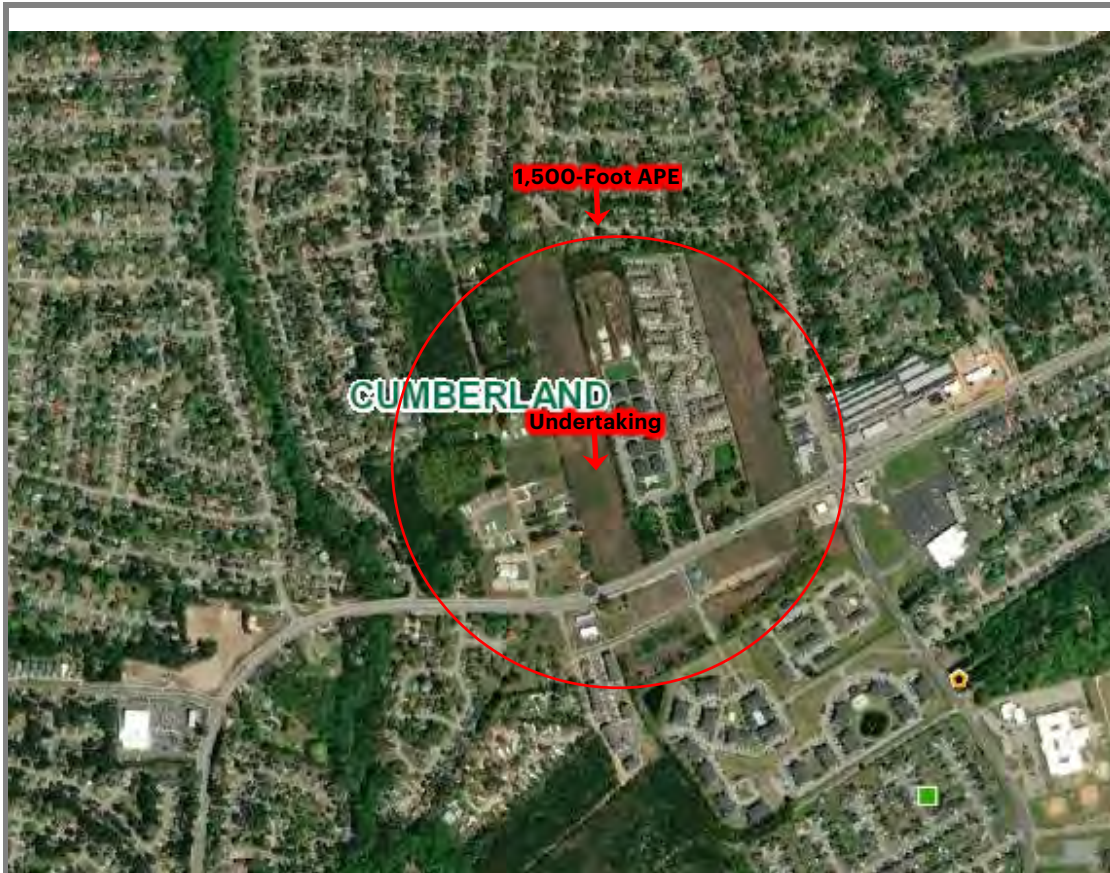
Sources: 2013 National Geographic Society, i-cubed

### Legend

-  1,500-foot APE
-  Undertaking







## Historic Properties Map

Source: HPOWEB 2.0



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**Applicant's Name:** Smith Duggins  
Developers, LLC  
**Project Name:** Cliffdale Crossing  
**Nova Project Number:** CK21-8848

**ATTACHMENT 2:**

**Subject Property Photographs, Phase I Archaeological  
Review and Public Outreach**

# Photographs



**APE-VE Map for Visual Effects and Photo Key**

Source: Google Earth 2021

— Undertaking



**Applicant's Name:** Smith Duggins Developers, LLC  
**Project Name:** Cliffdale Crossing  
**Nova Project Number:** CK21-8848

The following photographs were taken on September 27 and 28, 2021 unless otherwise noted.

1. View looking north from the center of the Subject Property.



2. View looking east from the center of the Subject Property.



3. View looking south from the center of the Subject Property.



4. View looking west from the center of the Subject Property.



5. View looking north from the southern portion of the Subject Property.



6. View looking east from the southern portion of the Subject Property.



7. View looking south from the southern portion of the Subject Property.



8. View looking west from the southern portion of the Subject Property.



9. View looking northwest from Cliffdale Road.



10. View looking west from Cliffdale Road.





11. View looking northwest to the Subject Property from Enforcement Drive.



12. View looking west-northwest to the Subject Property from Cliffdale Road at the edge of the APE.



13. View looking southeast to the Subject Property from Buhmann Drive at the edge of the APE.



14. View looking east-southeast to the Subject Property from Buhmann Drive.



15. View looking east to the Subject Property from Buhmann Drive.



16. View looking east-northeast to the Subject Property from Cliffdale Road from the edge of the APE.



17. View looking southwest to the Subject Property from Glen Iris Drive.



**Archaeological Survey of the  
Cliffdale Crossing Tract  
Cumberland County, North Carolina**

**DRAFT REPORT**



**Archaeological Consultants of the Carolinas, Inc.  
October 2021**

**Archaeological Survey of the  
Cliffdale Crossing Tract,  
Cumberland County, North Carolina**

Prepared for  
Nova Group, GBC  
New Orleans, Louisiana

Prepared by

Abigail McCoy  
Archaeologist

Under the direction of

*Michael Keith O'Neal*

---

Michael O'Neal  
Principal Investigator

**Archaeological Consultants of the Carolinas, Inc.  
October 2021**

## Management Summary

Between September 27 and 28, 2021, Archaeological Consultants of the Carolinas (ACC), Inc., conducted an intensive archaeological survey of the 18-acre (7.3-ha) Cliffdale Crossing tract in Cumberland County, North Carolina. This survey was undertaken on behalf of Nova Group, GBC as due diligence in anticipation of Housing and Urban Development (HUD) funding requirements for the completion of an archaeological survey. The goals of this investigation were to identify all archaeological resources located within the project tract, assess those resources for eligibility for the National Register of Historic Places (NRHP), and advance management recommendations, as appropriate.

Cultural and environmental background research was conducted prior to the field visit. No previously recorded archaeological sites are located within a 1.6-kilometer radius of the project tract. Five historic resources are recorded within 1.6 kilometers of the project tract. Four of these resources have been determined to be not eligible for the NRHP. One resource, the Angus McGill House (CD0694), was placed on the Study List in 1980. None will be impacted by the proposed development.

Prior to conducting the field investigation, approximately 16.3 acres (6.6 ha) of the tract were determined to have high potential for the presence of archaeological sites. The survey in these areas consisted of excavating shovel tests at 30-meter intervals along parallel transects 30-meters apart. Low potential areas totaled 1.7 acres (0.7 ha) and were examined using pedestrian survey and judgmentally placed shovel tests. All areas of exposed ground surface were visually inspected for cultural remains. No archaeological deposits were identified during the survey, and no further work is recommended within the project tract.



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# Chapter 1. Introduction

Between September 27 and 28, 2021, Archaeological Consultants of the Carolinas (ACC), Inc., conducted an intensive archaeological survey of the 18-acre (7.3-ha) Cliffdale Crossing tract in Cumberland County, North Carolina. This survey was undertaken on behalf of Nova Group, GBC as due diligence in anticipation of Housing and Urban Development (HUD) funding requirements for the completion of an archaeological survey. The goals of this investigation were to identify all archaeological resources located within the project tract, assess those resources for eligibility for the National Register of Historic Places (NRHP), and advance management recommendations, as appropriate. Mr. Michael O’Neal served as Principal Investigator and Field Director. He was assisted in the field by Mr. Robert Jordan. The field investigation required a total of four person days to complete.

## Project Area

The project tract encompasses 18 acres (7.3 ha) located west of the city of Fayetteville, in Cumberland County, North Carolina (Figure 1.1). The tract boundaries are comprised primarily of property lines (Figure 1.2 and Figure 1.3). The tract is bound on the north, east, and west by residential areas. Cliffdale Road borders the tract on the south.

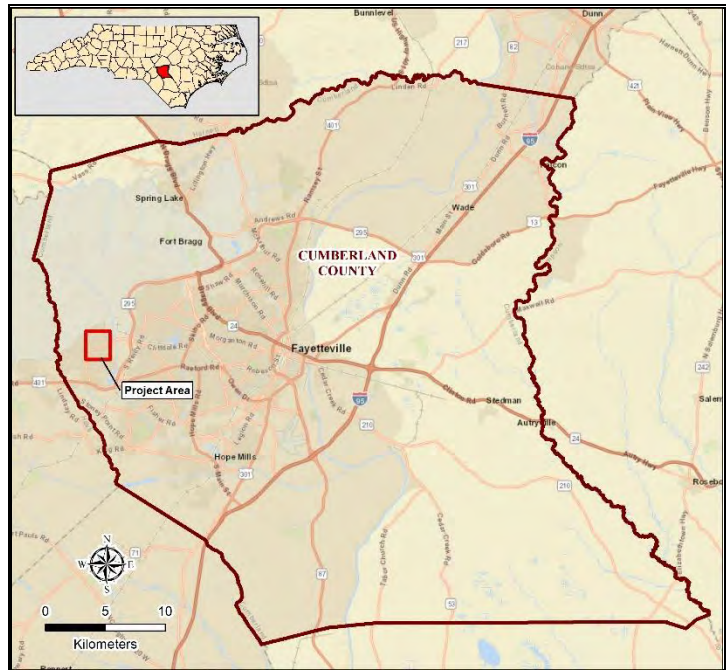
The project tract is characterized primarily by young pines and hardwoods and dense briars and other secondary growth (Figure 1.4). The western portion of a Carolina Bay is located in the northern portion of the project tract. Vegetation in the Carolina Bay was very dense (Figure 1.5).

## Methods of Investigation

This investigation consisted of four separate tasks: Archival Research, Field Survey, Laboratory Analysis, and Report Production. Each of these tasks is discussed in detail below.

## Archival Research

Archival research began with a review of archaeological site forms, maps, and reports on file at the North Carolina Office of State Archaeology (OSA) in Raleigh, as well as a review of historic resources mapped on the Department of Natural and Cultural Resources (DNCR) Survey and Planning Division’s mapping application website (HPOWEB). This review served to identify previously recorded resources in the project vicinity and provided data on the prehistoric and historic context of the project area. Historic



**Figure 1.1.** Map showing the location of the project tract in Cumberland County, North Carolina.

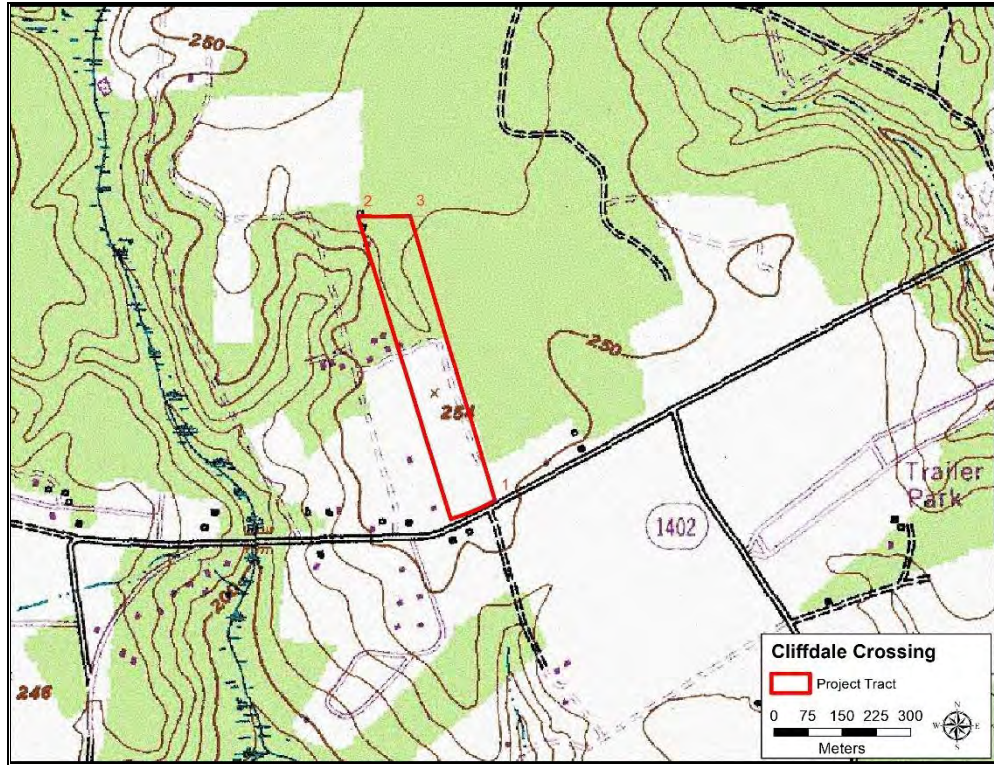


Figure 1.2. Topographic map showing the project tract (1950 *Cliffdale NC* 7.5-minute USGS topographic quadrangle [photorevised 1971]).



Figure 1.3. Aerial view of the project tract.



**Figure 1.4.** View of mixed hardwoods and pines in the project tract.



**Figure 1.5.** View of planted pine area in the project tract.

maps of Cumberland County and the project vicinity were obtained from a wide variety of published and online sources. Maps reviewed for this project include the 1922 Cumberland County soil map, the 1938 county highway map, and topographic maps dating from 1948 to 1997. The maps were used to determine past land use, the possible presence of structural remains or historic landscape features and known Native American occupations. Aerial images dating back to 1993 were also examined. The United States Department of Agriculture (USDA) Web Soil Survey, the published soil survey of Cumberland County, and LiDAR imagery were consulted to determine the environmental characteristics of the project vicinity.

## Field Survey

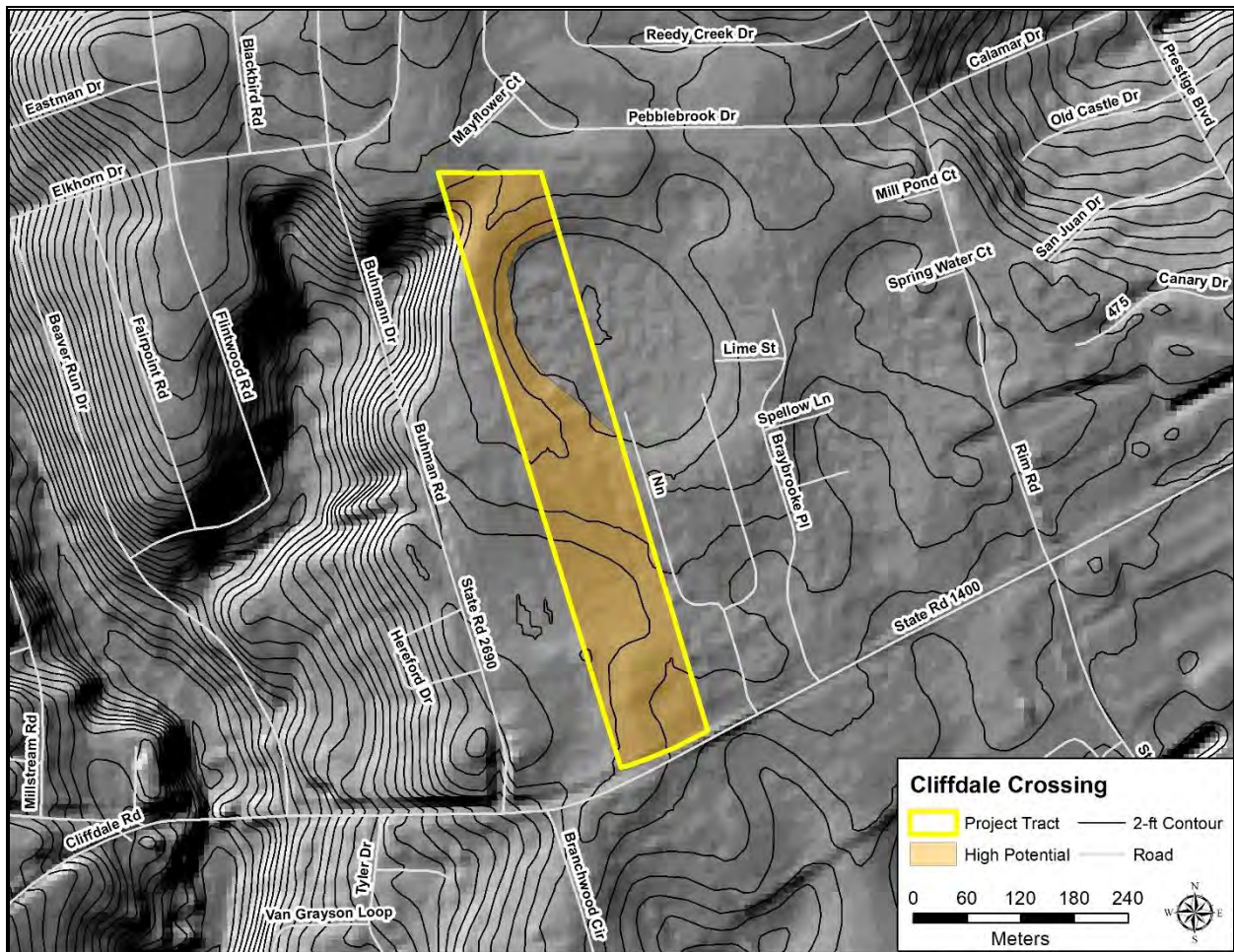
Close-interval contour topographic maps, Light Detecting and Ranging (LiDAR) images, and soil survey data were consulted prior to the field survey to identify portions of the tract with high potential for the presence of archaeological remains. High probability areas were determined based on the presence of well- and moderately well drained soils and the proximity to wetlands and/or drainage frontage. Approximately 16.3 acres (6.6 ha) in the project tract were determined to have a high potential for the presence of archaeological sites (Figure 1.6). These areas were shovel tested at 30-meter intervals along transects spaced 30 meters apart. The remaining 1.7 acres (0.6 ha) were defined as having low potential for the presence of archaeological deposits. These areas were subjected to pedestrian walkover with judgmentally placed shovel tests. This survey strategy was approved by Dr. David Cranford, Assistant State Archaeologist.

Shovel tests measured approximately 30 centimeters in diameter and were excavated to 10 centimeters into subsoil or to the water table. Shovel test fill was screened through ¼ inch wire mesh. Details of artifacts and soils for each shovel test were recorded in field notebooks. No artifacts were identified during this investigation. However, when artifacts are collected, they are placed in plastic bags labeled with the date, field site number, grid point locations (i.e., shovel test/transect or north/east coordinate), depth of artifacts, and initials of the excavator.

A site is defined as an area containing one or more artifacts within a 30-meter or less diameter of surface exposure or where surface or subsurface cultural features are present. Artifacts and/or features less than 50 years in age are not considered a site without a specific research or management reason. At sites where good surface visibility is available, site boundaries are determined based on both close interval surface examination and selective shovel testing. At sites where the ground surface is obscured, site boundaries are established by excavating shovel tests at 15-meter intervals across the site area. Site settings are photographed with a digital camera. Sketch maps are produced in the field showing the locations of shovel tests and surface finds. The locations of all archaeological sites as well as the surface collection transects are recorded using a Trimble Pathfinder Geo 7x Global Positioning System (GPS) unit capable of sub-meter accuracy. These GPS data are then relayed onto project maps.

Site significance is based on the site's ability to contribute to our understanding of past lifeways, and its subsequent eligibility for listing on the NRHP. Department of Interior regulations (36 CFR Part 60) established criteria that must be met for an archaeological site or historic resource to be considered significant, or eligible for the NRHP (Townsend et al. 1993). Under these criteria, a site can be defined as significant if it retains integrity of "location, design, setting, materials, workmanship, feeling, and association" and if it *A*) is associated with events that have made a significant contribution to the broad pattern of history; *B*) is associated with the lives of persons significant in the past; *C*) embodies distinctive characteristics of a type, period, or method of construction, or represents work of a master, possesses high artistic values or represents a significant and distinguishable entity whose components may lack individual distinction; or *D*) has yielded, or is likely to yield, information important in history or prehistory. Archaeological sites are most frequently evaluated pursuant to Criterion D. However, all archaeological sites can be considered under all four criteria.





**Figure 1.6** LiDAR map showing high potential areas in the project tract.

The primary goals of this field investigation were to identify archaeological resources and evaluate their potential research value or significance. Although the determination of the site significance is made by the State Historic Preservation Office, whenever possible, sufficient data are gathered to allow us to make a significance recommendation. Sites that exhibit little or no further research potential are recommended *not eligible* for the NRHP, and no further investigation is proposed. Sites for which insufficient data could be obtained at the survey level are considered *unassessed* and preservation or more in-depth investigation is advocated. It is rare for ample data to be recovered at the survey level of investigation to definitively determine that a site meets NRHP eligibility criteria. However, when this occurs, the site is recommended *eligible* for the NRHP. Again, preservation of the resource is advocated. If preservation is not possible, mitigation options (e.g., data recovery) would need to be considered.

### Laboratory Analysis

Had artifacts been recovered, they would have been processed in the Clayton laboratory facilities of ACC. All artifacts would be washed in warm soapy water and allowed to thoroughly air dry. A provenience number, based on artifact contexts (i.e., grid coordinate, depth, etc.), would be assigned to each positive excavation location. Within each provenience, individual artifacts or artifact classes would then be

assigned a catalog number. Artifacts would be cataloged based on specific morphological characteristics and would be compared to such as raw material in the case of lithics, and decoration and temper type in the case of prehistoric ceramics. Historic artifacts would have been identified by color, material of manufacture (e.g., ceramics), type (e.g., slipware), form (e.g., bowl, plate), method of manufacture (e.g., molded), period of manufacture (e.g., 1780-1820), and intended function (e.g., tableware). Historic artifacts with established manufacture date ranges would have been categorized using published sources.

Upon acceptance of the final project report, all analysis sheets, field notes, photographs, and maps, will be prepared according to federal guidelines and transferred to OSA for final curation.

### **Project Documentation**

Data compiled during this investigation was used to produce this document with details of the tasks undertaken. Chapter 2 presents environmental and cultural overviews of the project region. Chapter 3 present the results of the archival research. The results of field investigation and management recommendations, as appropriate, are presented in Chapter 4.

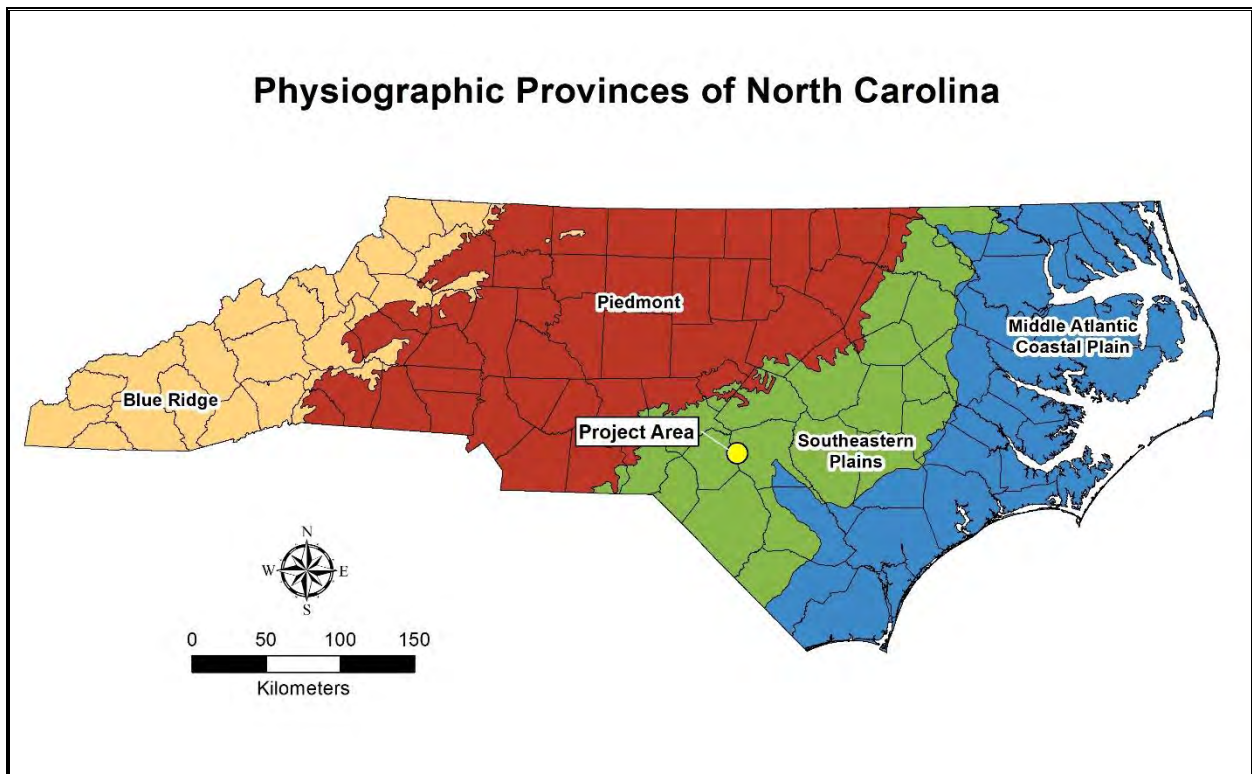


## Chapter 2. Environmental and Cultural Overview

To be able to comprehensively examine the archaeological resources identified during this survey, it is necessary to understand the larger context within which they occur. The natural environment, technological development, and ideological values are all intertwined in shaping the way humans live. In this chapter, details about the local environment and cultural development in the region are presented to provide a context within which these archaeological resources can be assessed. This basic framework is an important tool in evaluating the National Register of Historic Places (NRHP) eligibility of these resources.

### Environmental Overview

Cumberland County is in the southwestern portion of the upper Coastal Plain of North Carolina (Figure 3.1). The Coastal Plain is comprised of broad, relatively flat terraces of unconsolidated sediments and carbonate rocks that were deposited in shallow seas by rivers draining the Blue Ridge and Piedmont provinces during the Cretaceous through Quaternary period (Rogers 1999). The western portion of Cumberland County falls within the Sandhills region. The Sandhills are a strip of remnant beach dunes that extend from Georgia to North Carolina and loosely form the boundary between the Coastal Plain and the Piedmont provinces.



**Figure 2.1.** Physiographic map of the North Carolina showing the location of the project area.

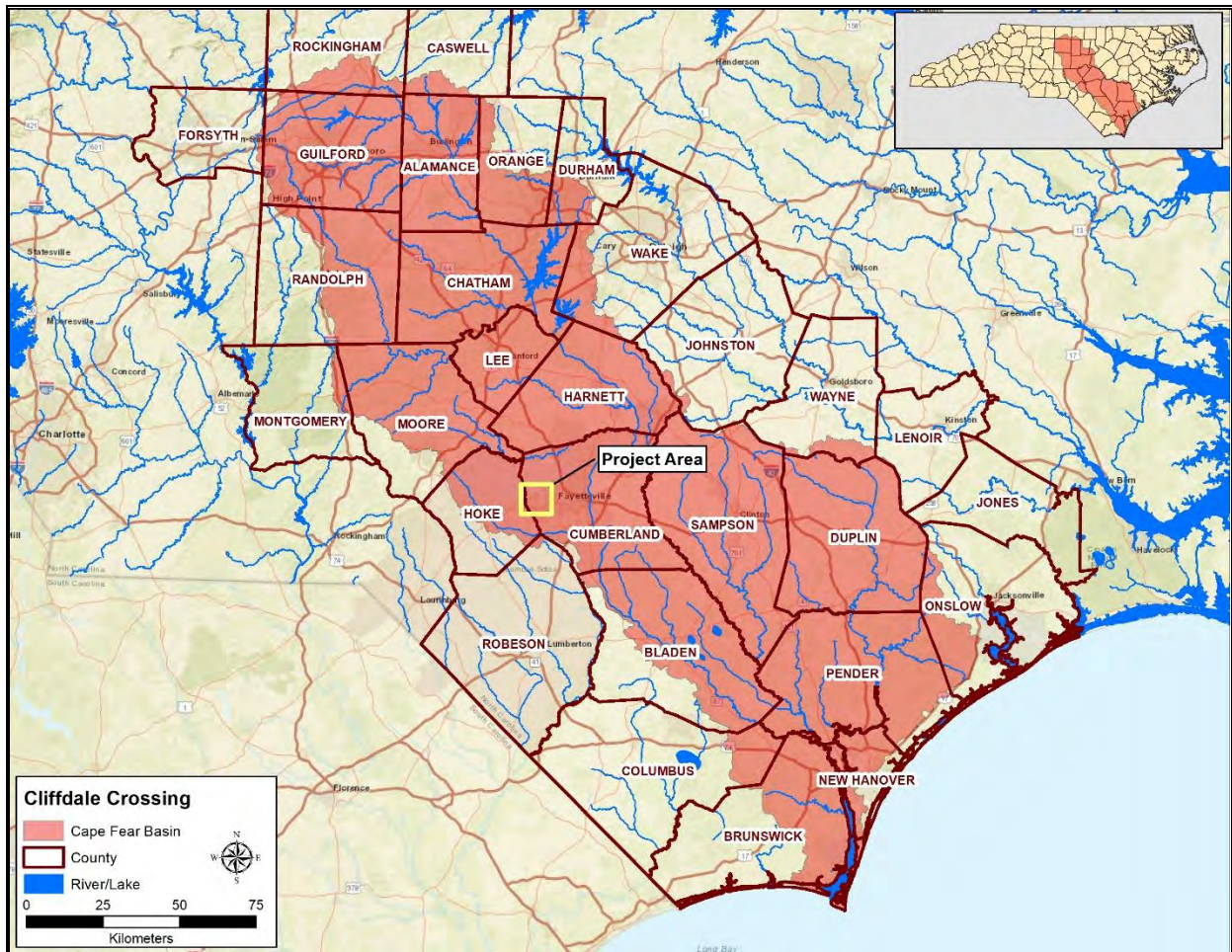
Elevations in the tract range between approximately 75.6 and 77.4 meters above mean sea level. The project tract contains relatively little topographic relief. Slight rises are present in the northern and southern portion of the tract and gradual slope is also present in the southern portion of the tract. The northeastern portion of the tract consists of the western half of a small Carolina Bay and its southwestern rim.



Carolina Bays are common landscape features in the Coastal Plain of North and South Carolina. Carolina Bays are oval depressions especially prevalent in the Coastal plain near the North Carolina and South Carolina border. They tend to be oriented northwest-southeast, with an elevated sand rim on the southeastern margin. Sizes vary from 60 meters to 19.3 kilometers long. Some of the large ones are lakes (e.g., Lake Waccamaw, White Lake, Little Singletary Lake), others are bogs or pocosins, and still others are drained and used as agricultural fields. The peat in the bogs can be between 3.0 to 15.2 meters thick. Origin theories once linked the creation of Carolina Bays to extraterrestrial impacts (with a comet being perhaps the most likely); however, more recent research conducted by Moore et al. (2016) suggests that they are formed by long term climatological and hydrological processes. They are likely wind-oriented lakes with nearly identical patterns of shape, orientation, and sand rim composition. They can become more active during periods of climatic instability.

### Drainage

The project area falls within the Cape Fear River Basin, the largest river basin within North Carolina (Figure 2.2). The project tract is drained by a small, unnamed tributary of Bones Creek. Bones Creek converges with Little Rockfish Creek southeast of the tract. Little Rockfish Creek converges with Rockfish Creek before draining into the Cape Fear River south of Fayetteville, North Carolina. The Cape Fear River is approximately 200 miles long, flowing from Jordan lake into the Atlantic Ocean (City of Fayetteville 2015).



**Figure 2.2.** Map showing the project location within the Cape Fear River basin.

## **Climate**

The climate in Cumberland County includes hot and humid summers and moderately cold winters. Summer temperatures average 78 degrees Fahrenheit (F), with the highest temperatures around 89 degrees F. Winter temperatures average 44 degrees F, with lows around 31 degrees F. Yearly rainfall totals 109 to 117 centimeters and is evenly distributed throughout the year (Hudson 1984).

## **Geology**

The project area is underlain primarily by the Cape Fear Formation. This formation is the product of non-marine delta formation during the Upper Cretaceous period. It is comprised of bedded sand, sandstone, and mudstone (Sohl and Owens 1991). The lithic material present in the project vicinity, as in much of the Coastal Plain, likely originates in the Carolina Slate Belt in the Piedmont. Rivers flowing out of the Piedmont transported the material, including metavolcanics and quartz, into the Coastal Plain where it was deposited as gravels and formed cobble bars.

## **Soils**

Soil data for the project tract were obtained from the United States Department of Agriculture, Natural Resources Conservation Service Web Soil Survey (USDA 2021) and the published soil surveys for Cumberland County (Hudson 1984). There are four soil types present in the project tract (Figure 2.3, Table 2.1). Blaney loamy sand is a well-drained soil that is found on the side slopes and narrow ridges of uplands. McColl loam is a poorly drained soil that is found in shallow, oval depressions of uplands. The majority of the tract contains Norfolk loamy sand, which is a well-drained soil found on broad, smooth flats on uplands. Wagram loamy sand is another well drained soil also formed on broad, smooth flats and the side slopes of uplands.

## **Cultural Overview**

The following discussion summarizes the various occupations in southeastern North Carolina, emphasizing technological change, settlement, and site function throughout prehistory. Table 2.2 presents an archaeological chronology of Native American occupation in the southern Upper Coastal Plain of North Carolina.

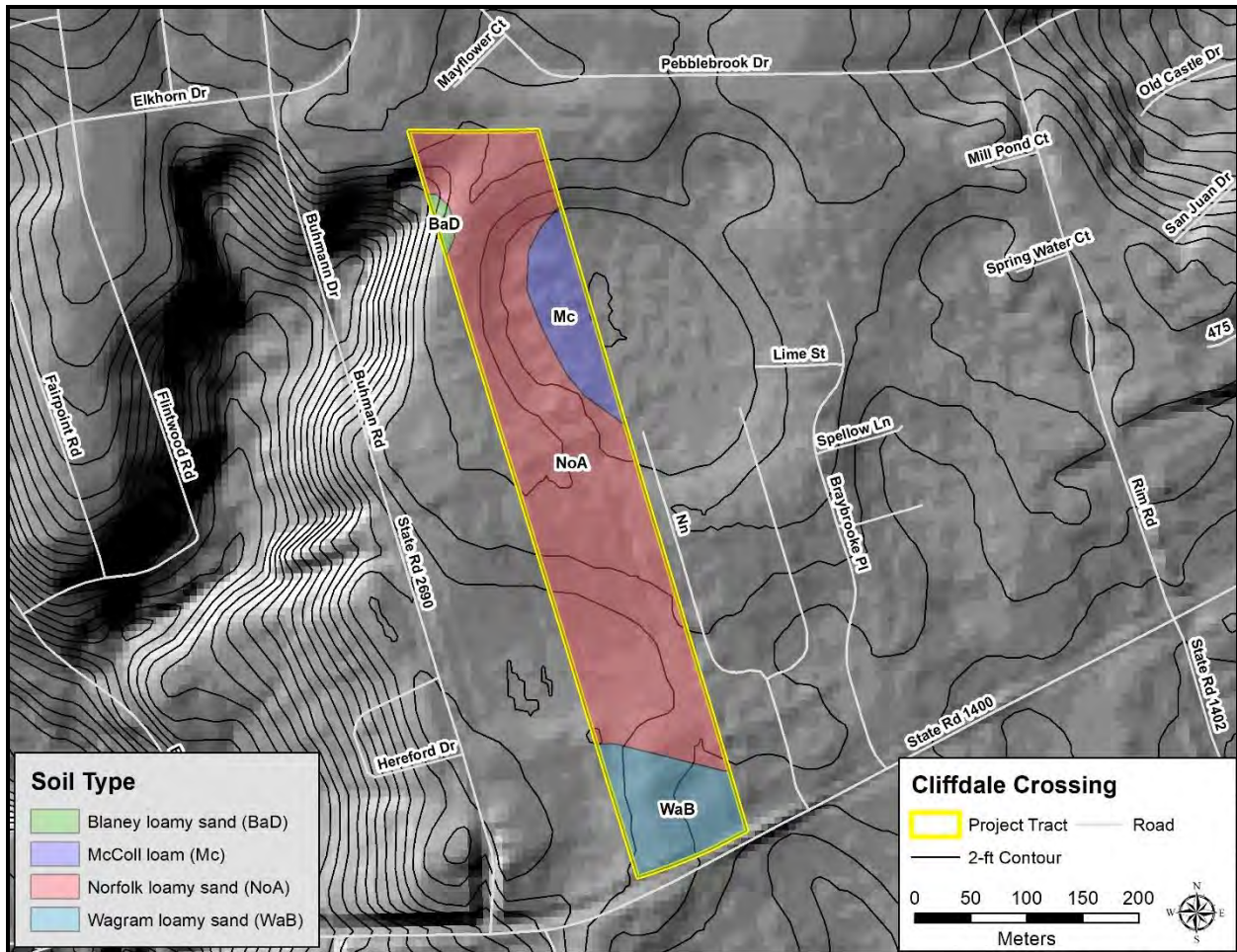
### **Prehistoric Cultural Overview**

#### ***Paleoindian Period (12,000 - 8,000 BC).***

The Paleoindian Period refers to the earliest human occupations of the New World, the origins and age of which remain a subject of debate. The most accepted theory dates the influx of migrant bands of hunter-gatherers to approximately 12,000 years ago. This time period corresponds to the exposure of a land bridge connecting Siberia to the North American continent during the last ice age (Driver 1998; Jackson et al. 1997). Research conducted over the past few decades has begun to cast doubt on this theory.

Investigations at Paleoindian sites have produced radiocarbon dates predating 12,000 years. The Monte Verde site in South America has been dated to 10,500 BC (Dillehay 1997; Meltzer et al. 1997). In North America, the Meadowcroft Rockshelter in Pennsylvania had deposits dating to 9,500 BC. Current research conducted at the Topper Site indicates occupations dating between 15,000 to 19,000 (or more) years ago (Goodyear 2006). Two sites, 44SM37 and Cactus Hill, in Virginia have yielded similar dates.





**Figure 2.3.** Map showing the soils present in the APE.

**Table 2.1.** Summary of Soils Present in the Project Tract (USDA 2021).

Soil Type	Description	Percent Coverage (Acres)
Blaney loamy sand (BaD)	Well-drained, 8-15% slope	0.9
McColl loam (Mc)	Poorly drained	9.7
Norfolk loamy sand (NoA)	Well-drained, 0-2% slope	75.9
Wagram loamy sand (WaB)	Well-drained, 0-6% slope	13.5

One contentious point about these early sites is that the occupations predate what has been recognized as the earliest New World culture, Clovis. Artifacts identified at pre-Clovis sites include flake tools and blades, prismatic blades, bifaces, and lanceolate-like points (Adovasio and Page 2002; Goodyear 2006; Johnson 1997; McAvoy and McAvoy 1997; and McDonald 2000).

The major artifact marker for the Clovis period is the Clovis lanceolate fluted point (Gardner 1974, 1989; Griffin 1967). First identified in New Mexico, Clovis fluted points have been recovered throughout the United States. However, most of the identified Clovis points have been found in the eastern United States (Ward and Davis 1999). Most Clovis points have been recovered from surface contexts, although some sites (e.g., Cactus Hill and Topper sites) have contained well-defined subsurface Clovis contexts.



**Table 2.2.** Native American Archaeological Chronology for the Southern North Carolina Coastal Plain and Sandhills.

	<b>Phase</b>	<b>Diagnostic Artifacts</b>	<b>Settlement</b>	<b>Subsistence</b>
Paleoindian 12,000-8,000 BC	Clovis	large, triangular, fluted or side-notched projectile points	small, seasonal camps	intensive foraging, focus on large fauna
	Dalton			
Archaic 8,000-1,000 BC	Kirk Palmer	side-notched projectile points corner-notched projectile points	larger, seasonal camps; base camps	intensive foraging
	Stanly Morrow Mtn. Guilford	stemmed points		
	Savannah River	large Savannah River points Stallings Island fiber tempered and Thom's Creek and New River sand tempered ceramics		
Woodland 1,000 BC-1584 AD	New River	large triangular points sand (New River) and limestone (Hamps Landing) tempered pottery cord marked surface treatments	small, dispersed villages; focus on flood plain areas	intensive foraging supplemented by horticulture; agriculture; continued focus on shellfish
	Cape Fear	grog tempered (Hanover) and sand tempered (Cape Fear) ceramics small triangular points		
	White Oak	shell tempered ceramics		

Moore et al. (2003), Phelps (1983), and Ward and Davis (1999)

In the southeastern United States, Clovis was followed by smaller fluted and nonfluted lanceolate spear points, such as Dalton and Hardaway point types, that are characteristic of the later Paleoindian Period (Goodyear 1982). The Hardaway point, first described by Coe (1964), is seen as a regional variant of Dalton (Oliver 1985; Ward 1983). Most Paleoindian materials occur as isolated surface finds in the eastern United States (Ward and Davis 1999); this indicates to many scholars that population density was extremely low during this period and that groups were small and highly mobile (Meltzer 1988). It has been noted that group movements were probably well-scheduled, and that some semblance of territories was probably maintained to ensure adequate arrangements for procuring mates and maintaining population levels (Anderson and Hanson 1988).

O'Steen (1996) analyzed Paleoindian settlement patterns in the Oconee River valley in northeastern Georgia and noted a pattern of decreasing mobility throughout the Paleoindian period. Sites of the earliest portion of the period seem to be restricted to the floodplains, while later sites were distributed widely in the uplands, showing an exploitation of a wider range of environmental resources. If this pattern holds true for



the Southeast in general, it may be a result of changing environments trending toward increased deciduous forest and decreasing availability of Pleistocene megafauna and the consequent increased reliance on smaller mammals for subsistence; population growth may have also been a factor.

### ***Archaic Period (8,000 - 1,000 BC)***

The Archaic Period has been the focus of considerable research in the Southeast. Hunter-gatherer groups of this period are considered to have been highly mobile, focusing on game animals such as deer and on seasonally available wild plant resources such as nuts. Archaic sites are common in the North Carolina Upper Coastal Plain, and their sheer number suggests substantial population increase from the Paleoindian Period. Soil conditions in the Coastal Plain frequently impede preservation of all traces of settlement save lithic artifacts. Variations in lithic tool styles are used to delineate three subperiods within the Archaic Period.

*Early Archaic (8,000 - 6,000 BC).* The Early Archaic subperiod is marked by a shift from a boreal forest to more northern hardwoods. Southern pines became the dominant species as the Oak-Hickory forest retreated to the Piedmont (Delcourt and Delcourt 1981; Delcourt and Delcourt 1985). Based on site distribution data for Fort Bragg, Early Archaic site locations are extremely diverse indicating adaptation and exploitation of a wide variety of settings (Irwin and Culpepper 2000). Site types generally fall into three categories: base camps (often at stream confluences), specialized resource procurement sites located in areas with seasonally variable resources, and specialized use sites (Cable and Cantley 2006). In the Southeast, the smaller temporary procurement camps and the larger base camps are found at a ratio of ten to one (Ward and Davis 1999).

A number of settlement models have been advanced for the Early Archaic. Anderson and Hanson (1988) theorize that group movement focused on a single drainage with inter-drainage movement being sporadic and directly tied to macroband aggregations. Based on this view, it could be interpreted that individual groups had established territories within which they remained most of the time. Daniel (1998) speculates that Early Archaic groups moved freely between drainages but were tethered to quality lithic sources in the Piedmont. This view assumes that good quality lithic material would not have been available outside of the Piedmont, although abundant lithic sources are present in the Coastal Plain, most in the form of gravel bars and cobble beds. Both views have their proponents. Regardless, it is generally agreed upon that band-sized groups moved across the landscape utilizing a broad range of resources.

As noted, subsistence data for this time period in the Upper Coastal Plain is sparse. However, remains recovered from Early Archaic sites in the Southeast have included deer, a variety of small mammals, turtles, fish, wild birds. Evidence of plant remains exploited includes acorns, hickory nuts, maygrass, and goosefoot (Goodyear et al. 1979; Smith 1987). There is some debate on the prevalence of groundstone tools at Early Archaic sites, although their presence is used as evidence of the processing of plant remains.

Lithic tools diagnostic of the Early Archaic include Hardaway side-notched, Palmer and Kirk corner-notched, and bifurcated spear points are diagnostic of the time period. End and side scrapers are also attributed to the Early Archaic, as are adzes, graters, drills, and perforators (Daniel 1998).

*Middle Archaic (6,000-3,000 BC).* There is a noted increase in site frequency through the Middle Archaic. This increase may reflect continued mobility with the associated decrease in band territory that many researchers speculate occurred during this subperiod (Custer 1990; Smith 1987). With reduced territories, it may have been necessary to establish more permanent settlements. This trend is reflected in the increased presence of storage facilities (Chapman 1977; Griffin 1967; and Wetmore 1986). Middle Archaic sites in the Coastal Plain have exhibited site layouts consistent with residential camps of some



duration with huts, exterior hearths, prepared clay floors, and discrete artifact scatters (Cable and Cantley 1998; Cantley and Cable 2002; Cable et al. 2005, and Smith 1987).

Stanly Stemmed, Morrow Mountain Stemmed, and Guilford Lanceolate spear points are the primary diagnostic artifacts of this time period. Morrow Mountain and Guilford phases are believed to have been introduced from the west (Coe 1964). Phelps (1964) referred to this as the “Western Intrusive horizon.” Halifax projectile points have also been found in the north Coastal Plain of North Carolina. These points date to approximately 4000 BC and were introduced from peoples living to the north (Coe 1964). Middle Archaic tools also include scrapers, graters, and spokeshaves and there is a decided preference for expediently available raw lithic material. There is some debate regarding the apparent increase in groundstone tools during the Middle Archaic. Although some researchers have noted a marked increase in the presence of groundstone tools, Bruce Smith (1986) cites a large assemblage of groundstone tools recovered from Early Archaic deposits at the Rose Island site in Tennessee as evidence of a continuation of the same level of groundstone tool use rather than an increase.

*Late Archaic (3,000 - 1,000 BC).* The Late Archaic subperiod is characterized by population growth and further decreases in mobility. Longer term habitation of sites is reflected by the presence of large dense middens, evidence of structures, and abundant storage features. There were also innovations in technology and subsistence strategies. Plant cultivation intensified, leading to the early stages of formal agriculture (Sassaman et al. 2002). Steatite slabs and bowls were produced, presumably for cooking purposes, and were widely in use from about 2000 to 1500 BC (Gray 2010). The predominant spear type of the Late Archaic is the Savannah River spear point. Other tools associated with Late Archaic sites include grinding stones, scrapers, drills, and grooved axes.

Fiber-tempered Stallings ceramics begin being produced as early as 2500 BC (Anderson et al. 1982). Stallings ceramics have been recovered from sites on Fort Bragg but are not generally found above the Fall Line (Culpepper et al. 2000; Griffin et al. 2001). The use of sand for clay temper gradually replaced the use of fiber through the Late Archaic. Sand tempered Thoms Creek wares are found in the southern Coastal region (Ward and Davis 1999), and more recently, radiocarbon and thermoluminescence dates place the early production of New River wares in this same time frame (Dr. Joseph Herbert, personal communication). Surface treatments on New River ceramics include cord marking, net impressions, and simple stamping.

#### ***Woodland Period (1,000 BC - 1584 AD)***

*Early Woodland (1,500 - 200 BC).* Along the North Carolina coast, Early Woodland sites consist of shell middens near tidal marshes and ceramic and/or lithic scatters in different environmental zones. Site type categories established by Trinkley (1990) for this portion of the state include seasonal camps located in upland settings at springs or stream confluences, small seasonal campsites located on swamp edges, and large semi-permanent camps on swamp edges. Site location patterns suggest a dispersed, highly mobile lifeway that continued from the Late Archaic into the Woodland. Two ceramic types are associated with the Early Woodland along the southern coast of North Carolina. New River ceramics are tempered with dense coarse sand, and exhibit surface treatments that are dominated by cord marking, but also include fabric impressing, net impressing, and simple stamping (Lofffield 1975; Mathis 1999; Ward and Davis 1999). Hamps Landing ceramics are characterized by limestone or marl temper and have plain, faint thong marked, cord marked, fabric impressed, and simple stamped surfaces (Ward and Davis 1999).

*Middle Woodland (200 BC - AD 1000).* Sites dating to this period include small single house shell middens, more significant shell middens, and shell-less sites in the interior that vary in size and artifact density. Trinkley (1990) notes that the site types from Early Woodland continue into the Middle Woodland but with the addition of sand burial mounds. The low, sand burial mounds have been identified at several



archaeological sites in the region. Estuarine resources made a significant contribution to the subsistence of Middle Woodland peoples (Drucker and Jackson 1984; Espenshade and Brockington 1989; Trinkley 1976, 1980). The two ceramic series associated with the Middle Woodland in the southern coastal plain are the grog tempered Hanover wares and the sand tempered Cape Fear wares. Hanover wares are typically cord marked or fabric impressed (Ward and Davis 1999). Cape Fear have similar decorations, although South (1976) observed rare net impressing on these wares (Ward and Davis 1999).

*Late Woodland (AD 1000 - 1584).* Sand burials continued to be used during the Late Woodland with burials generally being secondary and bundled. Cremations or charred remains are common (Jones et al. 1997). House structures include both circular and rectangular outlines, but it is unclear whether the two house styles indicate seasonal differences or the presence of Algonquin speakers in the area (Loftfield 1990). The Late Woodland in the southern Coastal Plain of North Carolina is characterized by the White Oak Phase. South (1976), working in Brunswick and New Hanover Counties, described the “Oak Island” series as being shell tempered pottery that included cord marked, net impressed, fabric impressed, and plain surface treatments. Working near the White Oak River, South (1962) identified shell tempered fabric impressed sherds which he defined as White Oak fabric impressed. Loftfield (1976) expanded the definition of White Oak to include simple stamped and smoothed surfaces based on work conducted in Onslow and Carteret County. Few researchers, today, distinguish between South’s “Oak Island” and Loftfield’s “White Oak” ceramic series (Ward and Davis 1999). However, it is believed by some that many of the shell tempered Oak Island sherds identified by South (1976) are actually limestone tempered and part of the Early Woodland Hamps Landing series, and that the term White Oak should be used to define the shell tempered Oak Island ceramics (Ward and Davis 1999).

### **Historic Overview**

In the decades following the expedition of Christopher Columbus, the coast and interior portions of what would become North Carolina were explored. Much of this activity was initiated by Spain in the hope of preserving its hegemony over North America. Hernando de Soto (1539-1543) and Juan Pardo (1566-1568) led military expeditions into the western Piedmont and mountains of North Carolina during the mid-sixteenth century (Hudson 1990, 1994). Despite these military incursions and the establishment of minor outposts, the Spanish presence in the Carolinas could not be sustained. Mounting pressure from hostile Native Americans and English privateers resulted in the withdrawal of Spanish forces to St. Augustine in 1587 (South 1980).

England’s interest in the New World was heavily promoted by Walter Raleigh. A courtier in the court of Queen Elizabeth I, Raleigh secured the financial and political support necessary to attempt the first permanent settlement of the New World by English colonists in 1585 (Powell 1989). Although his efforts failed, Raleigh’s single-minded ambition ultimately led to the establishment of the Jamestown colony in 1607 (Noël Hume 1994).

The disastrous mismanagement and resulting loss of life in Virginia during the first two decades of the colony’s existence resulted in the revocation of the Virginia Company’s charter in 1624 (Noël Hume 1994). Preoccupied with the civil war between Royalist and Parliamentary forces in the 1640s, the authorities in Virginia showed little interest in North Carolina until the 1650s. During this period the area around the Albemarle Sound in northeastern North Carolina was inhabited by traders, hunters, trappers, rogues, and tax evaders (Powell 1989). Even then, North Carolina was becoming notorious as a refuge for the independent and self-reliant.

In 1662, Captain William Hilton was searching for a favorable location for a Puritan colony when he encountered a cape and inlet which he named “Cape Fear.” Settlers from New England followed Hilton



to the area but soon left. A sign was left attached to a post at the point of the cape warning others to avoid the area.

The restoration of Charles II to the throne in 1660 resulted in the distribution of rewards to those who had supported the Royalist cause during the upheaval (Powell 1989). This initiated the Proprietary colonial period in the Carolinas, which lasted from 1663 until 1729. During the rule of the Lords and Proprietors, Charlestown was established north of the mouth of the Cape Fear River. The town was abandoned in 1667 for several factors including political problems abroad and local Native American populations turning violent due to abuse by the English (Lee 1971).

Years of turmoil brought about by an unstable system of government culminated in war with the Tuscarora Indians. Severe fighting broke out in 1711, triggered by the death of the colony's Surveyor General (John Lawson) at the hands of the Tuscarora (Powell 1989). The war ended in 1712, leaving the Carolina colonies in dire financial straits. These conditions persisted until the Lords and Proprietors were forced to sell their holdings in the Carolinas to the Crown in 1729 (Powell 1989).

The acquisition of North Carolina by the Crown initiated a period of relatively stable government. During this time, immigration into North Carolina was along three major routes (Powell 1989): western North Carolina was settled by German and Scots-Irish immigrants arriving from Pennsylvania and Virginia via the Great Wagon Road; new arrivals at the important towns of New Bern and Brunswick pushed west up the Cape Fear and Neuse river valleys; and colonists from South Carolina advanced up the Pee Dee and Catawba rivers in search of new land.

The European settlers to the area, mostly comprised of Highland Scots, encountered several Native American tribes including the Tuscarora, Cherokee, Cheraw, and Croatan (Swanton 1979). In 1725, surveyors for the Wineau Company documented a village of "Waccamaw Indians on the Lumber River. At that time, the waterway was called Drowning Creek for its swift currents and dark water. The tribe now known as the Lumbee have been known as the Croatan and/or Cherokee of Robeson County, and they comprise the ninth largest Native American tribe in the United States (Blu 2004). The Lumbee territory includes Scotland, Hoke, Cumberland, and Robeson counties.

The Lumbee Indians are descendants of the Cheraw Indians, and other groups who merged with them. In the late 1600s, the Cheraw were settled near Danville, Virginia. In the early 1700s they moved to the area of present-day Cheraw, South Carolina, along the Pee Dee River. By 1725 they were living near the North Carolina/South Carolina border, along the Pee Dee River near Cheraw, and along Drowning Creek in North Carolina. In the 1750s, Royal Governor Rowan called Drowning Creek the "frontier to the Indians" where about 50 families lived. The South Carolina Gazette documented the Cheraw settlement on Drowning Creek in 1771. The 1790 United States Census lists prominent family names under the heading "All other free persons" including Locklear, Oxendine, Chavis, Lowry, Hammonds, Brooks, Brayboy, Cumbo, Revels, Carter, and Kursey (Lumbee Tribe of North Carolina 2019).

In 1754, Cumberland and Robeson Counties were created from parts of Bladen County. Cumberland county was made up principally of Scotch Highlanders who came to America following the Battle of Culloden in 1745 (Meyer 1961). The county was named in honor of William Augustus, Duke of Cumberland, who was their commander during the battle. The name changed to Fayette County in early 1784 before reverting back to Cumberland later that year. The county seat was first called Cumberland Court House and was later changed to Campbelton in 1762. The town's name was later changed to Fayetteville after Revolutionary War hero, Lafayette (Corbitt 2000).

During the Revolutionary War, many of Cumberland County's residents were staunch loyalists, although few joined the fighting on either side of the war. Fighting in Cumberland County was generally





limited to violence perpetrated between loyalists and patriot factions within the county. Several hundred men of the county served either side throughout the war. No major battles took place in the county. However, in 1781, Lord Cornwallis marched through the county in route to Guilford Courthouse, where the British would suffer a pyrrhic victory.

During the antebellum period, farming was the chief occupation of in the region. There were few large landowners and hundreds of small farmers. Tobacco began as the dominant cash crop following the colonial period but was quickly overtaken by cotton. The population of Cumberland County also nearly doubled from 8,671 to 16,369 people between 1790 and 1860 (Parker 1990:27). The slave population also increased from 26.1 percent to 41.6 percent of the population (Parker 1990:28). Aside from farming, other major economic drivers included textiles, banking, and the naval stores industries.

Cumberland County also became an arsenal during this period, a foreshadowing of its later military importance. In 1790 a small federal arsenal was established in Fayetteville. By the end of the War of 1812, the arsenal housed 150 guns, tents, canteens, knapsacks and powder (Parker 1990:50). In 1820, a state arsenal was erected. The United States Arsenal was built in 1838, as one of four facilities authorized by the United States Congress (Parker 1990).

Although it took place in Virginia, the Nat Turner slave rebellion in 1831 sent shock waves through the South. In 1835, North Carolina enacted a new constitution prohibiting “persons of color” from voting, serving on juries, testifying against whites, bearing arms, and learning to read and write. Although having previously been allowed all rights of citizenship, the new constitutional restrictions were applied to the Lumbees. During the Civil War, a number of companies were formed from Richmond and neighboring Robeson County residents. These included Battery E of the 3<sup>rd</sup> North Carolina Artillery and the 1<sup>st</sup> Company D of the 12<sup>th</sup> North Carolina State Troops. The Lumbees were excluded from military service under the new state constitution, but they were conscripted to work on various work projects for the Confederates, including the construction of Fort Fisher. Resentments about the forced labor led many Lumbee men to flee into the swamps. In 1864, Henry Berry Lowry, a 16-year old Lumbee, and his brothers began a series of ambushes on local planters and conscription officials. Lowry and his band became local legends as they stole from the wealthy landowners and distributed the goods to the poor in Robeson County (Perdue and Oakley 2014).

As agriculture, naval stores, and timber industries helped improve the economy, attempts to improve transportation were made. In 1849, construction on the first plank-covered road in North Carolina began. Completed in 1854, Plank Road was 129 miles long, connecting Fayetteville with Salem. By the time of the Civil War, five plank roads radiated from Fayetteville.

At the onset of the Civil War, Cumberland County supplied eight companies to the Confederate Army (Parker 1990). These included the Fayetteville Independent Light Infantry of the 1<sup>st</sup> North Carolina Regiment, the Lafayette Light Infantry of the 1<sup>st</sup> North Carolina Regiment (later changed to Artillery with the 13<sup>th</sup> North Carolina Battalion), the Cumberland Plowboys of the 24th North Carolina Regiment, the Manchester Guardians of the 8th North Carolina Regiment, and the Carolina Boys of the 38<sup>th</sup> North Carolina Regiment. The Confederate States also took charge of the U.S. Arsenal and named it the Fayetteville Arsenal and Armory. It provided rifles, pistol carbines, ammunition, knapsacks, and artillery carriages to the Confederate Army. This service was provided throughout the war until it was seized by the Union Army in 1865 when much of the compound was burned during General Sherman’s Carolina campaign (Parker 1990).

As Union sympathizers, the Lumbee looked forward to the end of the Civil War. Unfortunately, their lot remained largely unchanged. Due to political pressure, Lumbee rights were not reinstated. Lowry and his gang were pursued by the newly established Home Guard. In February 1872, Lowry robbed a store



in Lumberton of a safe containing \$22,000.00. Over the next several years, members of his band disappeared or were captured and killed, but Lowry was never seen again (Perdue and Oakley 2014).

Following the Civil War, agriculture continued to be the primary economic contributor to the area. Tobacco and cotton were the principal money-making crops. Other important agricultural products included corn used for fodder, hogs, and sheep. Many former slaves, who had previously been relied upon as the primary source of labor, became tenant farmers on the former plantations where they continued to live. The majority of farms were small with few having more than one or two tenants (Parker 1990).

Perhaps the most important economic and social change to Cumberland and other surrounding counties began during World War I, when the War Department announced the creation of Camp Bragg in the North Carolina Sandhills. The camp was completed in 1919 and could house 16,000 soldiers (Parker 1990:115). Although almost closed in 1921, Camp Bragg began to grow and was renamed Fort Bragg. Pope Field, named after an army pilot, later became Pope Air Force Base, before being subsumed back into Fort Bragg. Its importance and stature grew during World War II housing 67,000 soldiers, becoming the largest Army camp (Parker 1990:134).

Fort Bragg produced more than 50 artillery battalions that fought in all theaters of the war. The most notable of units to come from Fort Bragg are the Ninth Infantry Division and the 82<sup>nd</sup> and 101<sup>st</sup> Airborne. These units fought in North Africa, Utah Beach during D-Day, and the Battle of the Bulge. Fort Bragg is the most intensively used training facility and several Army Reserve and National Guard Divisions train at Fort Bragg annually.

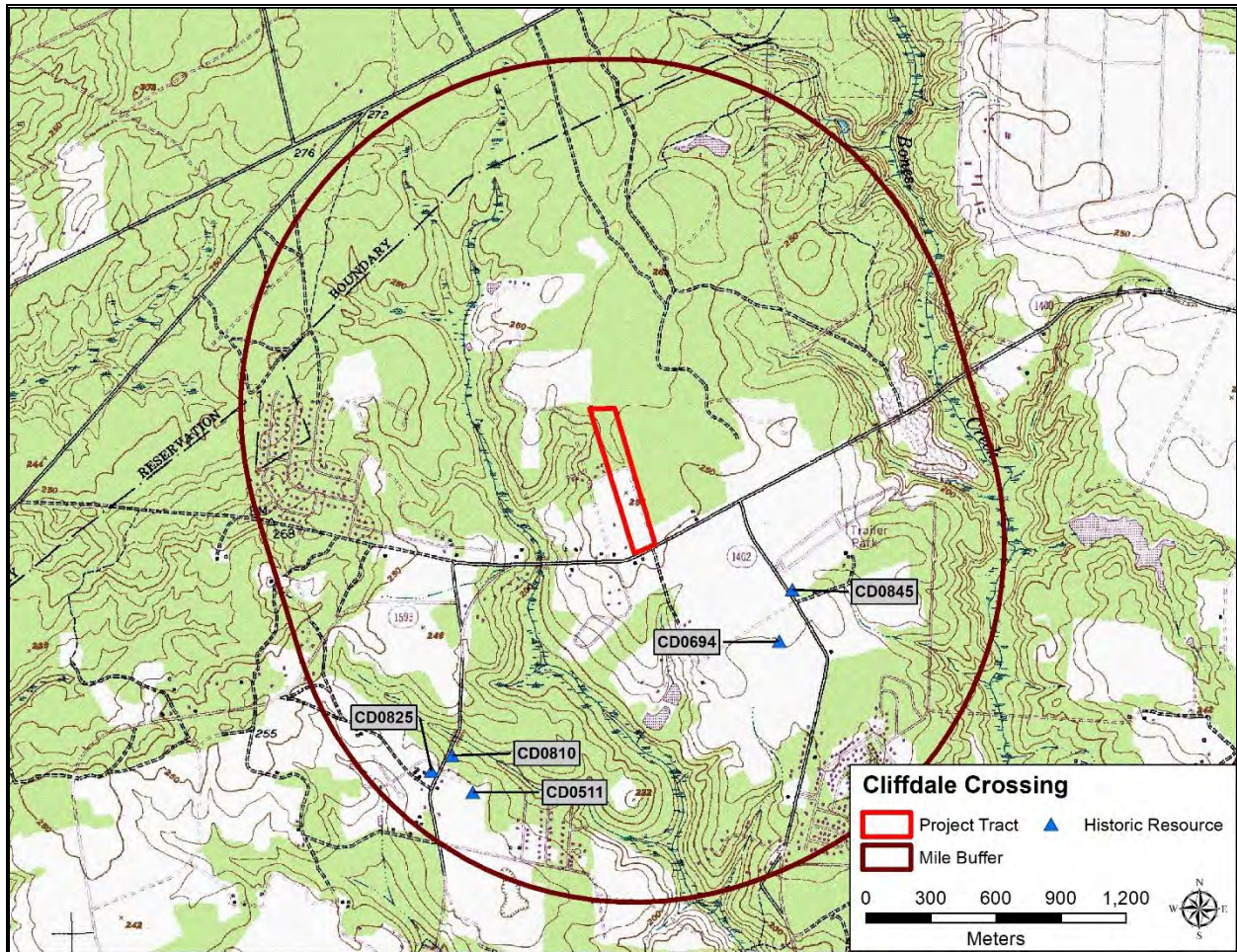
Presently, Cumberland County contains more than 326,000 residents (Cumberland County 2017). Its economy is less dependent now on agriculture. Textiles and Fort Bragg remain important economic forces within the county, although manufacturing and merchandising have come to play an important role as well (Parker 1990).



## Chapter 3. Results of Archival Research

### Previously Recorded Cultural Resources in the Project Vicinity

Cultural and environmental background research was conducted prior to the field visit. No archaeological sites have been recorded within the project tract or within a 1.6-kilometer radius of the tract. Five historic resources are recorded within 1.6 kilometers of the project tract (Figure 3.1, Table 3.1). Resource CD0511 is the approximate site of the Raymount Schoolhouse, a 1-story front-gabled school with a shed porch; it was surveyed in 1979. Its National Register of Historic Places (NHRP) status is listed as Survey Only (SO). The Angus McGill House (CD0694) was placed on the Study List in 1980. Three resources (CD0810, CD0825, and CD0845), all houses, have been destroyed.



**Figure 3.1.** Map showing the locations of historic resources in the project vicinity (1950 *Cliffdale NC* 7.5-minute USGS topographic quadrangle [photorevised 1971]).

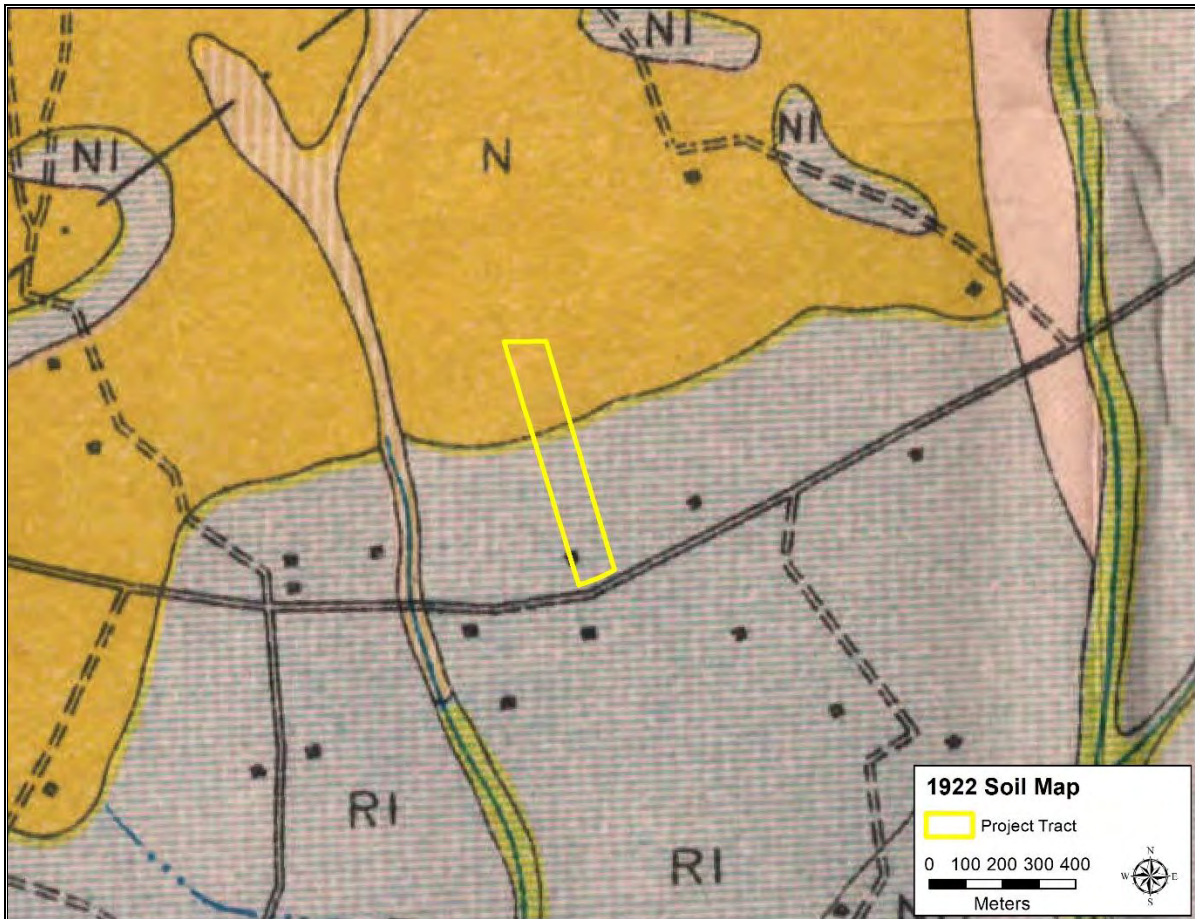
**Table 3.1.** Historic Resources Recorded Within a 1.6-Kilometer Radius of the Project Tract.

Resource Number	Description	NRHP Status
CD0511	c. 1884 Raymount Schoolhouse (approximate site)	SO
CD0694	Angus McGill House	SL
CD0810	Kennedy House (Gone)	SD
CD0825	McGougan House (Gone)	SD
CD0845	R.A. Pate House (Gone)	SD

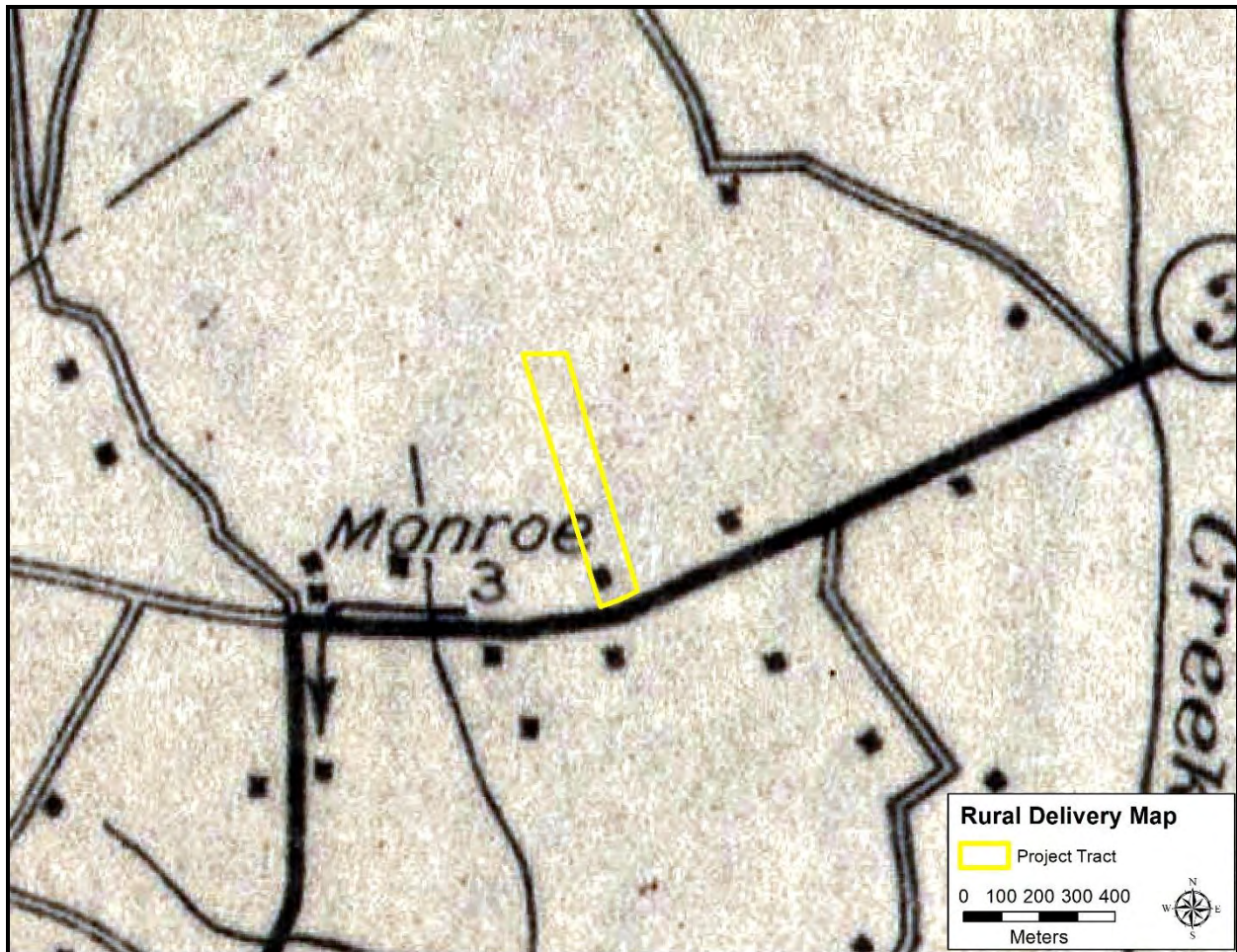
**Historic Map and Aerial Image Review**

Maps reviewed for this project include the 1922 Cumberland County soil map, the 1938 county highway map, and topographic maps dating from 1948 to 1997. The maps were used to determine past land use, the possible presence of structural remains or historic landscape features and known Native American occupations. Aerial images dating back to 1993 were also examined.

The 1922 county soil map (Figure 3.2) and rural delivery map dating circa 1910 to 1920 (Figure 3.3) show one building in the southwestern portion of the project tract. The 1938 county highway map does not show any buildings present within the tract, suggesting the house in the southern portion of the tract was destroyed by late 1930s. The 1948, 1950, and 1974 topographic maps show no buildings present in the project tract.

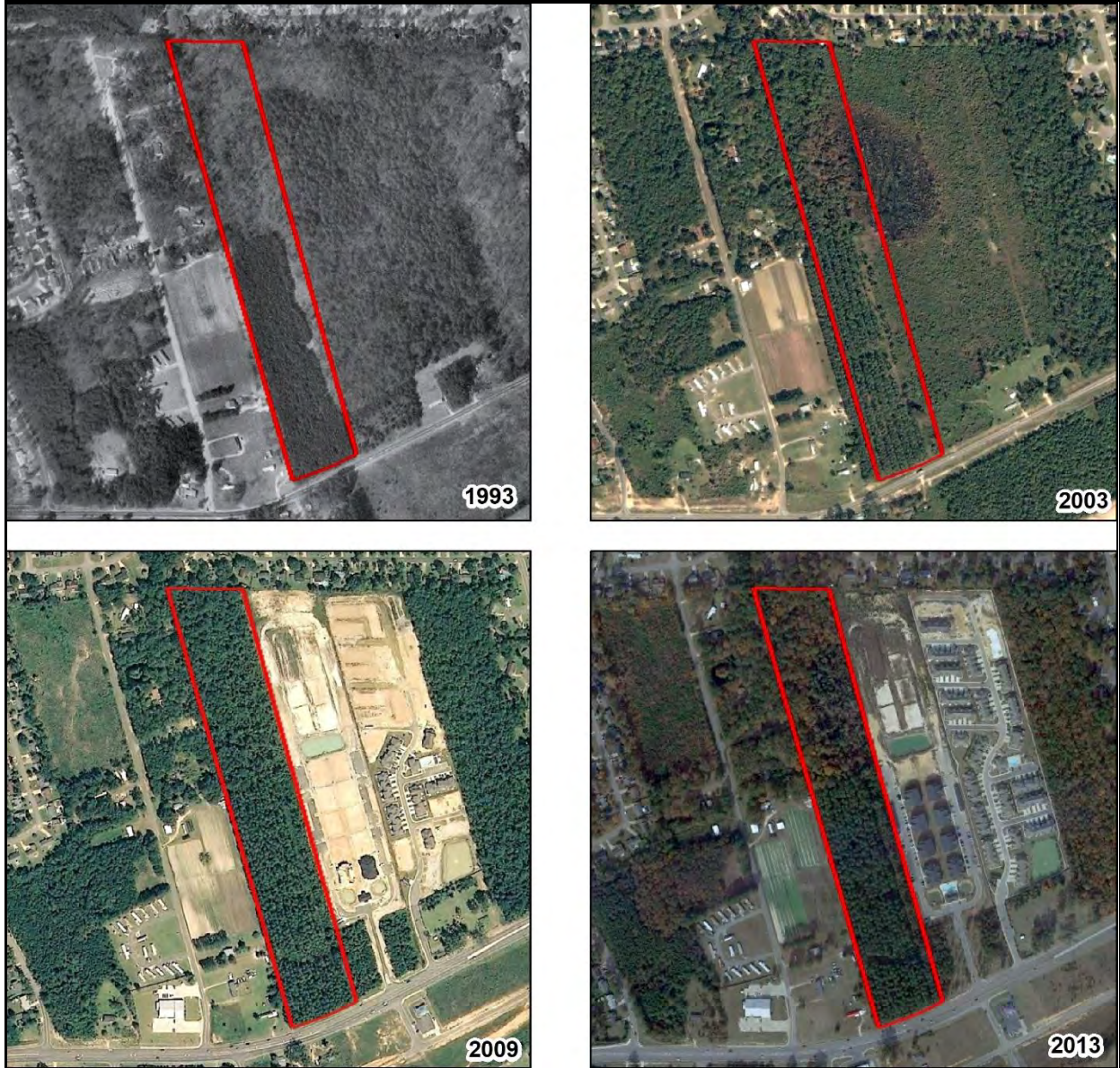


**Figure 3.2.** 1922 soil map showing one building in the project tract.



**Figure 3.3.** Rural delivery map showing buildings in the project tract circa 1910-1920.

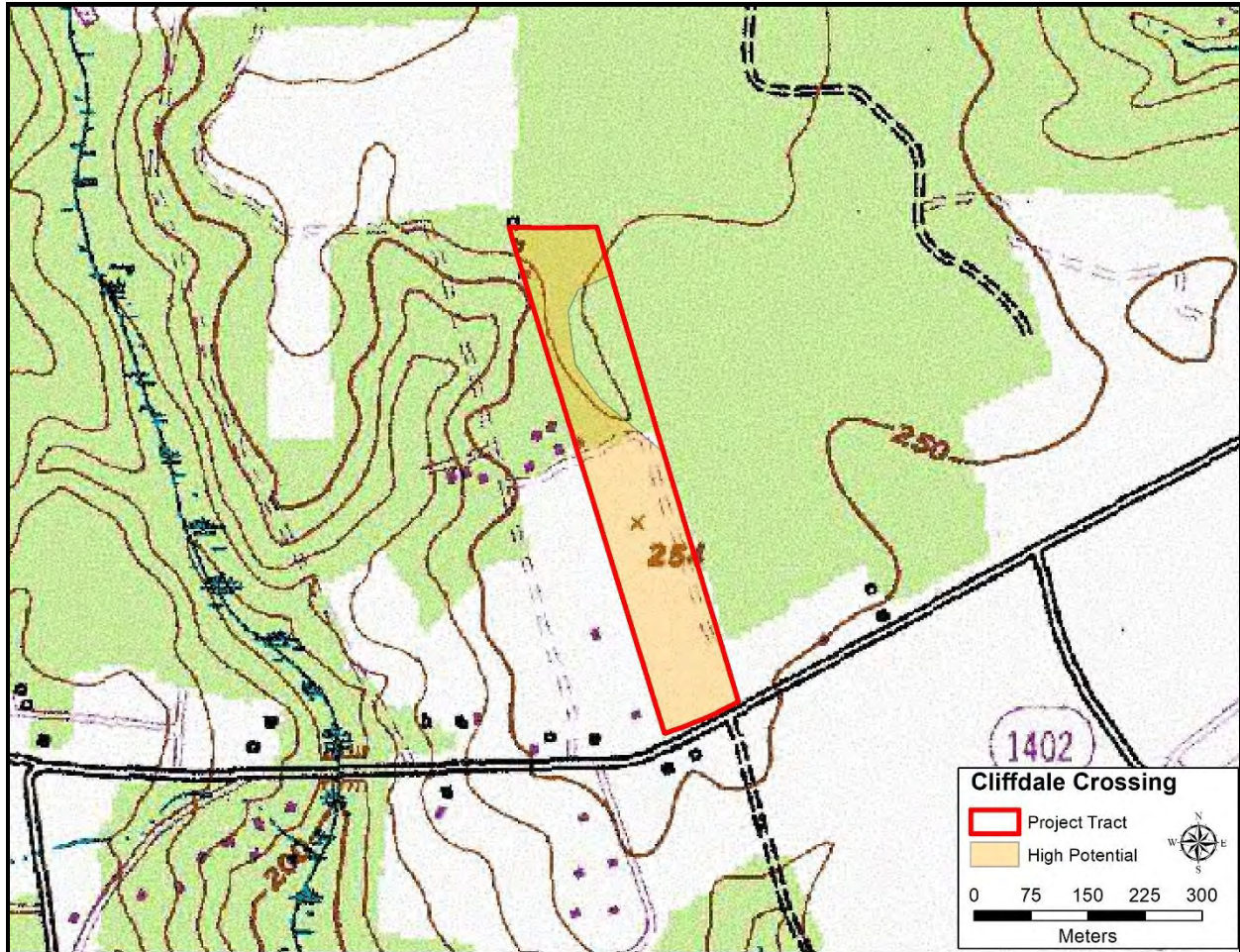
Aerial photographs available through Google Earth show the project tract as wooded since at least 1993 (Figure 3.4). The southern portion of the tract extending from Cliffdale Road to the Carolina Bay appears to be in planted pines. The forest in the Carolina Bay north to the property line appears to be a mixed pine and hardwood forest. The most recent aerial that clearly shows the project tract dates to 2013 when the tract was still wooded. The tract was clear-cut sometime after 2014 (see Figure 1.3). The project tract is currently characterized by young, planted pines and very dense secondary growth.



**Figure 3.4.** Aerial images of the project tract from 1993 to 2013.

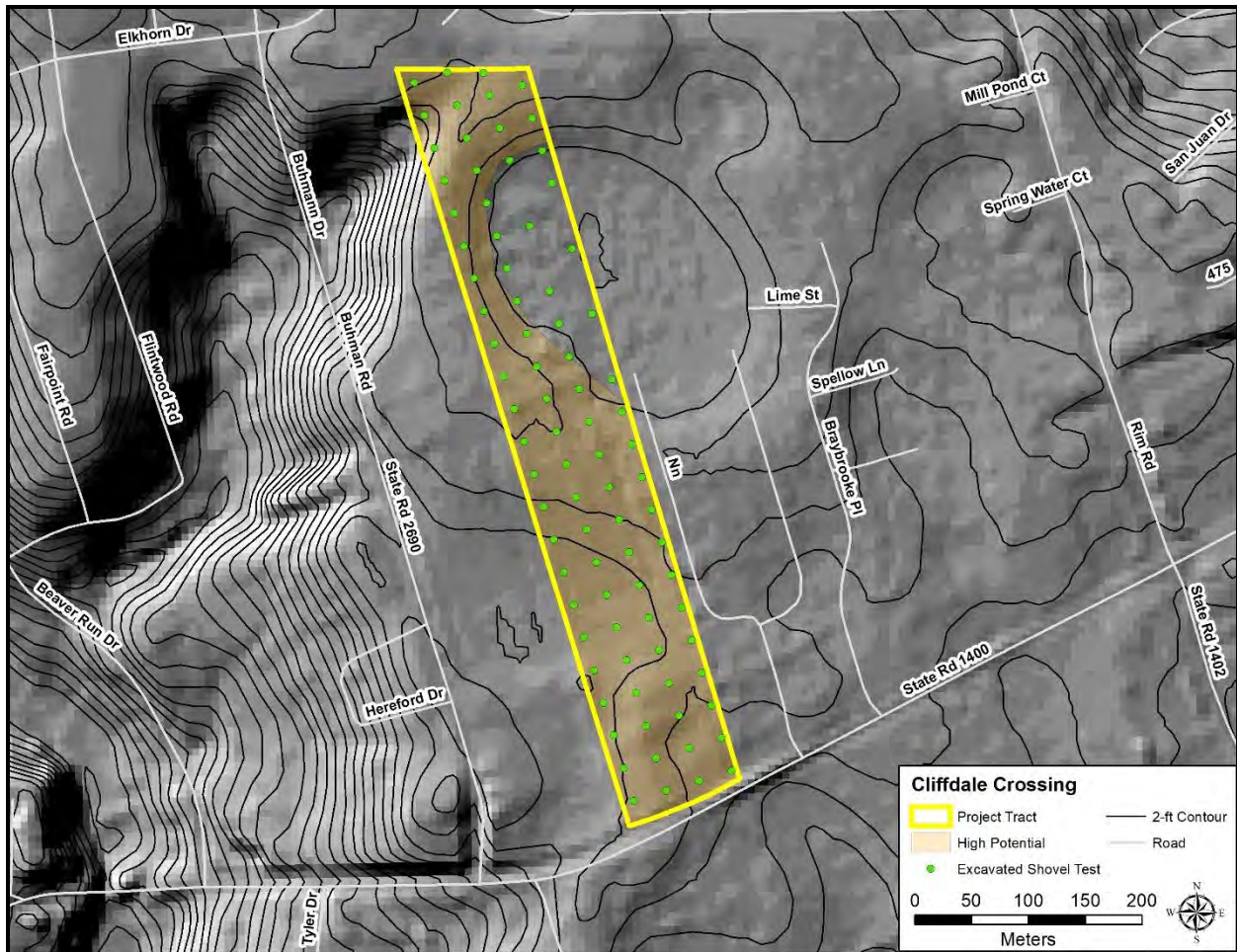
## Chapter 4. Results of the Field Investigation

The Cliffdale Crossing tract encompasses 18 acres (7.3 ha; Figure 4.1) with approximately 16.3 acres (6.6 ha) determined to have a high potential for the presence of archaeological sites. Field survey focused intensively on high potential areas. For these high potential areas, 30-meter interval shovel testing was used as the primary site discovery method. Areas with low potential for the presence of archaeological sites (1.7 acres [0.7 ha]) were given a reconnaissance level examination with shovel tests being excavated at judgmentally determined locations. A total of 86 shovel tests were excavated during this investigation (Figure 4.2).



**Figure 4.1.** Map showing the project tract (1950 *Clifdale NC* 7.5-minute USGS topographic quadrangle [photorevised 1971]).

Soil profiles exposed in shovel tests excavated in the southern portion of the project tract consisted of brown (10YR5/3) sand to a depth of 20 centimeters overlying 10 centimeters of light yellowish brown (10YR6/4) loamy sand. Beneath this zone was pale yellowish brown (10YR7/4) sand. Subsoil of strong brown (7.5YR5/8) clayey sand was encountered at depths ranging from 60 to 90 centimeters. Shovel tests excavated on the Carolina Bay rim and northern portion of the project tract were shallower, exhibiting 8 centimeters of very dark gray (10YR3/2) sand overlying yellowish brown (10YR5/4) sand to a depth of 20 centimeters. Yellowish brown (10YR5/6) sand was present below a depth of 20 centimeters and graded



**Figure 4.2.** Map showing the high potential areas and excavated shovel tests in the project tract.

to strong brown (7.5YR5/8) sandy clay at a depth of 30 centimeters. Soil profiles in the Carolina Bay consisted of dark gray (10YR4/1) sandy clay overlying gray (10YR5/1) sandy clay. Gray (10YR6/1) clay subsoil was encountered at an average depth of 30 centimeters. Figure 4.3 presents views of the soil profiles. No artifacts were recovered from shovel tests. No aboveground features or deposits were observed. No evidence of the building once present in the southern portion of the tract was identified.

This survey has resulted in the intensive investigation of the Cliffdale Crossing development tract. No cultural resources were identified. No further archaeological investigations are advocated for the Cliffdale Crossing tract.





**Figure 4.3.** View of soil profiles in the project tract.

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## **Appendix A. Resume of Principal Investigator**



**Michael Keith O’Neal**  
**Archaeological Consultants of the Carolinas, Inc.**  
121 East First Street  
Clayton, NC 27520  
Voice (919) 553-9007; Fax (919) 553-9077  
michaeloneal@archcon.org

**EDUCATION**

M.A. in Anthropology, University of Arkansas, Fayetteville, 2001.  
B.A. in Anthropology, Appalachian State University, Boone, NC, 1999.

**PROFESSIONAL MEMBERSHIPS**

Register of Professional Archaeologists	North Carolina Archaeological Council
Society for American Archaeology	-Secretary/Treasurer 2013-2015
Southeastern Archaeological Conference	-Chair 2016-2019
Council of South Carolina Professional Archaeologists	-Vice Chair 2019-present

**AREAS OF SPECIALIZATION**

Ground Stone Technology  
Lithic Technology  
Geographic Information Systems (GIS)

**EMPLOYMENT HISTORY**

July 2020-Present	Vice President/Principal Investigator. Archaeological Consultants of the Carolinas, Inc. Clayton, NC
April 2006-Present	Senior Archaeologist/Principal Investigator. Archaeological Consultants of the Carolinas, Inc., Clayton, NC.
August 2004-March 2006	Archaeologist/Project Manager. Archaeological Consultants of the Carolinas, Inc., Clayton, NC.
June 2002-August 2004	Archaeologist/Project Manager. Brockington and Associates, Inc., Raleigh, NC.
July 2001-May 2002	Archaeological Technician. Brockington and Associates, Inc., Raleigh, NC.
August 2000-May 2001	Archaeological Research Assistant, Department of Anthropology, University of Arkansas, Fayetteville.
August 2000-September 2000	Archaeological Technician, Department of Anthropology, University of Arkansas, Fayetteville.
July 2000	Archaeological Field Technician, SPEARS Inc., West Fork, Arkansas.

**Cultural Resource Surveys (Phase I) and Archaeological Site Testing (Phase II)**

- **Utility Corridors** for Duke Energy (Charlotte), FPS (Charlotte), SCE&G (Columbia), and others – serving in all capacities including Principal Investigator



**Cliffdale Crossing Tract**  
**Cumberland County, North Carolina**

- **Transportation Corridors** for South Carolina Department of Transportation (Columbia) – serving as archaeological technician
- **Development Tracts** for numerous independent developers, engineering firms, and local and county governments throughout North Carolina, South Carolina, and Virginia, and federal agencies including the USFS (South Carolina) and the USACE (Wilmington District) – serving in all capacities including Principal Investigator

### **Archaeological Data Recovery (Phase III) - Representative Examples**

- Prehistoric Camp (38HR496) and 19<sup>th</sup> century saw mill (38HR490) in Horry County, South Carolina – serving as Archaeological Technician
- Civil War encampment (44IW0204) for Isle of Wight County, Isle of Wight, VA – serving as Field Director
- Prehistoric village (31ON1578) and late 18<sup>th</sup>/early 19<sup>th</sup> century plantation (31ON1582) for R.A. Management, Charlotte, NC – serving as Field Director/Crew Chief

### **FEDERAL ENERGY REGULATORY COMMISSION RELATED INVESTIGATIONS**

Duke Energy - Lake James and Lake Norman, North Carolina- serving as Field Director/Crew Chief

### **PUBLICATIONS AND PAPERS PRESENTED**

2008 Michael Keith O'Neal

*Putting the Tar in Tar Heels: The Naval Stores Industry and Plantations in North Carolina.* Paper presented at the 65<sup>th</sup> annual Southeastern Archaeological Conference, Charlotte, North Carolina.

2005 Michael K. O'Neal and Dawn Reid

*Who Says There Aren't Rocks in the Coastal Plain?: Local Lithic Resources and Bipolar Reduction Strategies in Horry County, South Carolina.* Paper presented at the 62<sup>nd</sup> annual Southeastern Archaeological Conference, Columbia, South Carolina.

1999 Cheryl Claassen, Michael O'Neal, Tamara Wilson, Elizabeth Arnold, and Brent Lansdell

*Hearing and Reading Southeastern Archaeology: A Review of the Annual Meetings of SEAC from 1983 through 1995 and the Journal Southeastern Archaeology.* *Southeastern Archaeology* 18(2): 85-97.

1998 Cheryl Claassen, Michael O'Neal, Tamara Wilson, Elizabeth Arnold, and Brent Lansdell

*Hearing and Reading Southeastern Archaeology: A Review of the Annual Meetings of SEAC from 1983 through 1995 and the Journal Southeastern Archaeology.* Paper presented at the 55<sup>th</sup> annual Southeastern Archaeological Conference, Greenville, South Carolina.

\*\* A full listing of projects and authored reports available upon request



September 24, 2021

Mr. Taurus Freeman  
Planning Director  
City of Fayetteville  
433 Hay Street  
Fayetteville, NC 28301  
910-433-10437  
[tfreeman@ci.fay.nc.us](mailto:tfreeman@ci.fay.nc.us)

Re: Section 106 Public Outreach  
Cliffdale Crossing  
8368 Cliffdale Road  
Fayetteville, NC 28314  
Nova Project No.: CK21-8848

Dear Mr. Freeman:

Nova Group, GBC (Nova) is writing on behalf of the U.S. Department of Housing and Urban Development (HUD) to solicit your input concerning a proposed development at the above-referenced address.

Smith Duggins Developers, LLC is proposing to construct six two-story buildings with a total of 80 residential units on 8 acres of land.

HUD is identifying organizations with an interest in the project and its potential to affect historic resources. The purpose of this letter is to find out whether you wish to become a consulting party for this project. Consulting parties have certain rights and obligations under the National historic Preservation Act and its implementing regulations at 36 CFR Part 800. The review process, known as Section 106 review, is described at <http://www.achp.gov/citizensguide.html> and at <https://www.onecpd.info/environmental-review/historic-preservation/>. By becoming a consulting party, you will be actively informed of steps in the Section 106 process, including public meetings, and your view will be actively sought.

If you are interested in becoming a consulting party and have any comments or concerns regarding the proposed project, please contact me in writing at Nova, 5320 West 23<sup>rd</sup> Street, Suite 270, St. Louis Park, Minnesota 55416 or at [culturalresources@novagroupgbc.com](mailto:culturalresources@novagroupgbc.com). Please reference the project name and address in your comments. Any responses must be received within 30 days of receipt of this letter. If you do not respond within this time frame, you may request consulting party status in the future; however, the project may advance without your input and you will not have an opportunity to comment on the current steps. If you are requesting consulting party status, we do ask that your organization nominate one



representative and an alternate to participate on behalf of the group. People may also participate in the Section 106 process as members of the public.

Thank you for your time and attention to this matter.

Sincerely,

A handwritten signature in black ink that reads "Laura L. Mancuso".

Laura L. Mancuso  
National Practice Leader-Cultural Resources

Site Drawings sent with the Invitation to Consult Letter(s)  
are not included for clarity.



Print

Publication Date

**2021-09-30**

Subcategory

**Miscellaneous Notices**

PUBLIC NOTICE: Cliffdale Crossing The U.S. Department of Housing and Urban Development is proposing to construct 6 2-story buildings at 8368 Cliffdale Road, Fayetteville, Cumberland County, NC 28314. Public comments regarding the potential effects from this site on historic properties may be submitted within 30-days from the date of this publication to: Laura Mancuso - Nova Group, GBC, 5320 West 23rd Street, Suite 270, St. Louis Park, MN 55416, culturalresources@novagroupgbc.com or 203.240.0077. 9/30 5252956



# North Carolina Department of Public Safety

## Office of Recovery and Resiliency

Roy Cooper, Governor  
Eddie M. Buffaloe, Jr., Secretary

Laura H. Hogshead, Director

January 28, 2022

Chairman John Lowery  
Lumbee Tribe of North Carolina  
P.O. Box 2709  
Pembroke, North Carolina 28372

RE: NCORR - HUD CDBG-DR Program  
Proposed Cliffdale Crossing  
8368 Cliffdale Road  
Fayetteville, NC 28314

Dear Chairman Lowery:

The North Carolina Office of Recovery and Resiliency (NCORR) is notifying you as a representative of the Lumbee Tribe of North Carolina that an affordable housing project is proposed within a potential area of interest to your Tribe. NCORR as a recipient of Community Development Block Grant – Disaster Recovery (CDBG-DR) funds from the United States Department of Housing and Urban Development (HUD) is considering funding this proposed project, Cliffdale Crossing located on an approximately 18.18-acre parcel located at 8368 Cliffdale Road, Fayetteville, Cumberland County, North Carolina 28314 (Subject Property). The State of North Carolina was adversely impacted by the landfall of Hurricanes Matthew (October 8, 2016) and Florence (September 14, 2018). These hurricanes damaged or destroyed hundreds of homes worsening the affordable housing shortage. This proposed project will increase affordable housing inventory for low- and moderate-income families. Therefore, funding for the proposed project will be provided in part by the HUD CDBG-DR program for Hurricane Florence storm recovery activities in North Carolina.

Cliffdale Crossing Associates Limited Partnership has received a conditional award for an RPP loan which will be funded from federal funds under the HUD CDBG-DR Program. This funding is made possible through a subaward to the North Carolina Housing Finance Agency (NCHFA)

**Mailing Address:**  
Post Office Box 110465  
Durham, NC 27709



**Phone: (984) 833-5350**  
[www.ncdps.gov](http://www.ncdps.gov)  
[www.rebuild.nc.gov](http://www.rebuild.nc.gov)

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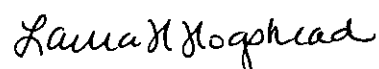
from NCORR. In addition, the proposed project has received a conditional award for an RPP loan funded under the HUD HOME Program. The NCHFA is the Responsible Entity for the HOME funding and NCORR is the Responsible Entity for the CDBG-DR funding. Since the RPP loans are proposed for federal HUD funding, Environmental Assessments (EA) must be completed prior to taking any choice limiting activity on the project (24 CFR Part 58). NCORR and NCHFA will have responsibility for ensuring the adequacy of the level of documentation necessary to satisfy a Finding of No Significant Impact for each respective EA.

The proposed project involves the new construction of 80 units in a growing area of Fayetteville. The development will offer 12 one-bedroom, one-bath unit; 40 two-bedroom, one-bath units; and 28 three-bedroom, two-bath units in six 2-story buildings. The development will also include a leasing/community building, all located on 8 acres of an 18.18-acre parcel. The surrounding area consists of a combined mixed-use residential and commercial properties. Grocery, shopping, restaurants, and schools are located nearby. The proposed units will help fulfill the affordable housing needs of the community.

A Phase I Archaeological Review was completed by the Archaeological Consultants of the Carolinas, Inc which concluded that no cultural resources were identified and no further archaeological investigations were recommended. The proposed project has been officially reviewed by the NC State Historic Preservation Office (SHPO) Office of State Archaeology and the Catawba Indian Nation. The Subject Property consists of one, irregular-shaped parcel that is approximately 18.18 acres in size. Currently, the Subject Property consists of recently cleared vacant land with new growth shrubbery and saplings. According to Google Earth and historic imagery, the project area was clear cut in 2020. Since that time some early successional shrubs were observed within this area. All trees have been removed from the project area. The process of clear cutting the project area has heavily disturbed the existing ground. The Subject Property has consisted of undeveloped land or vacant land utilized for agricultural purposes throughout its known history (researched back to 1937). The proposed development will be a multifamily apartment complex and, therefore, typical clearing and grading will take place on the Subject Property during construction.

We appreciate the support the Lumbee Tribe has provided to the efforts of ReBuild NC and look forward to a continued productive relationship as we assist North Carolinians.

Respectfully,



Laura H. Hogshead



# Tribal Directory Assessment Information



Download Excel

## Contact Information for Tribes with Interests in Cumberland County, North Carolina

Tribal Name		County Name					
Catawba Indian Nation		Cumberland					
Contact Name	Title	Mailing Address	Work Phone	Fax Number	Cell Phone	Email Address	URL
Dr. Wenonah G. Haire	THPO and Catawba Cultural Center Executive Director	1536 Tom Steven Road Rock Hill, SC 29730	(803) 328-2427 ext. 224	(803) 328-5791		wenonah.haire@catawba.com	http://www.catawbaindian.net/
Bill Harris	Chief	996 Avenue of the Nations Rock Hill, SC 29730	(803) 366-4792	(803) 327-4853		bill.harris@catawbaindian.net	http://www.catawbaindian.net/

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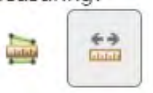
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8368 Cliffdale Rd, Faye

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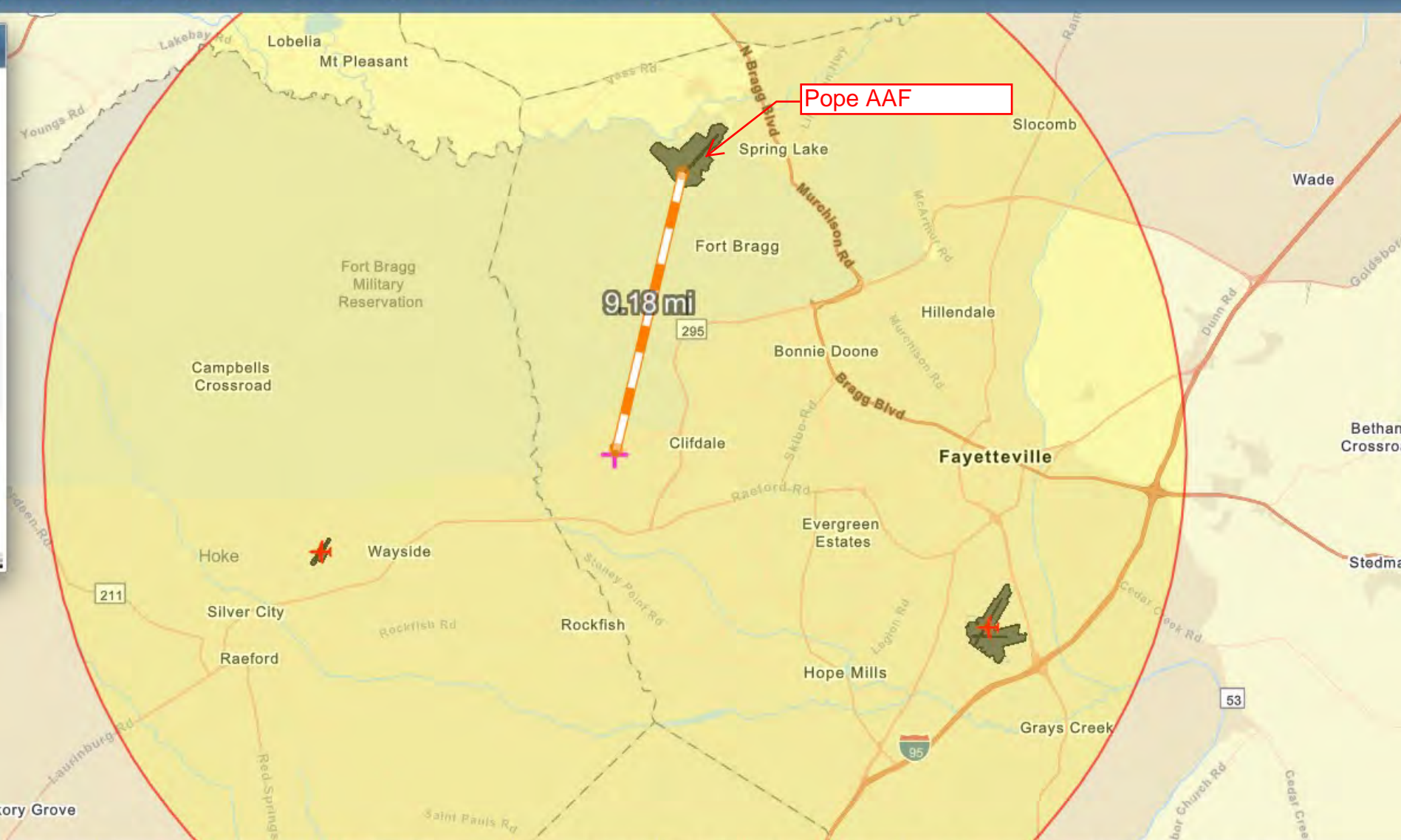


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
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  - Soil Survey Map
  - Critical Habitat
  - NWI Wetlands
  - FEMA Flood
  - Land Cover

8368 Cliffdale Rd, Faye

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
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  - Transportation
    - Airport Points
    - Airport Polygons
  - Railroads
  - Places
  - Soil Survey Map
  - Critical Habitat
  - NWI Wetlands
  - FEMA Flood
  - Land Cover

8368 Cliffdale Rd, Faye

Basemap Imagery Draw Erase Save Session Tools More Data

### Measure

Click one of the following buttons to start measuring:

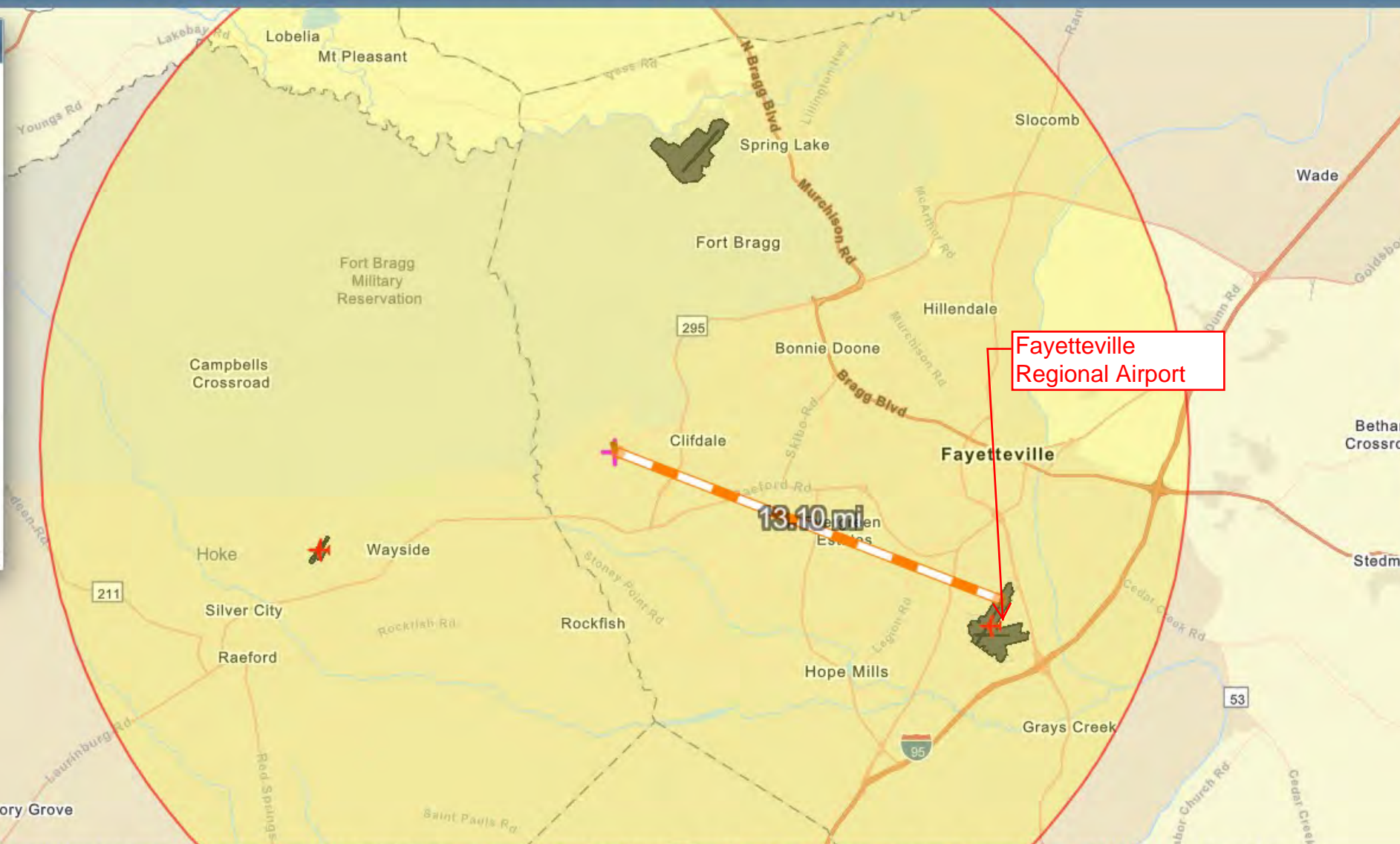
 

**Unit**  
Miles

**Mode**  
Auto

Distance  
**13.10 mi**

[New Measurement](#)



### Select Map Contents

- EPA Facilities
- Water Monitoring Stations
- Boundaries
- Nonattainment Areas
- Water Features
- Transportation
- Airport Points
- Airport Polygons
- Railroads
- Places
- Soil Survey Map
- Critical Habitat
- NWI Wetlands
- FEMA Flood
- Land Cover

View Aviation (✈️), Road (🚗), Rail (🚆) Noise in the U.S. for 2016 and 2018

8368 Cliffdale Roa...

Map:  Dark  Satellite

Year: 2016  2018

Mode:  Aviation  Road  Rail

Campbells Crossroad

Bones Ford

Bizza Ridge

Shaws

Pleasant Acres

Oakland

Cottonade

Tokay

Summer

Lakecrest

Sadie Heights

Beaver Creek

Cambridge

Eccles Park

Lake Valley

Foxfire

Eutaw

The Oaks

Edenroc

Fairview Park

Loch Lommond

Lake Shores

Murray Hills

Haymount

Clifdale

Skibo

Kingsford

Highland Village

Fayetteville

Savoy Heights

Brentwood

Oakdale

Glendale Acres

Clairway

Williams Villa

Fenix

Winter Park

Shadowlawn

Bordeaux

Borden Heights

Johnsons Mill

Quail Ridge

Dogwood Acres

Ducks Landing

Woods Edge

Woodlea

Phoenician Woods

Rockfish

Crossgates

Tanglewood Estat

Noise (dBA)  
24-hr LAeq

- > 90.0
- 80.0 - 89.9
- 70.0 - 79.9
- 60.0 - 69.9
- 55.0 - 59.9
- 50.0 - 54.9
- 45.0 - 49.9

mapbox

Hillcrest

Decker Heights



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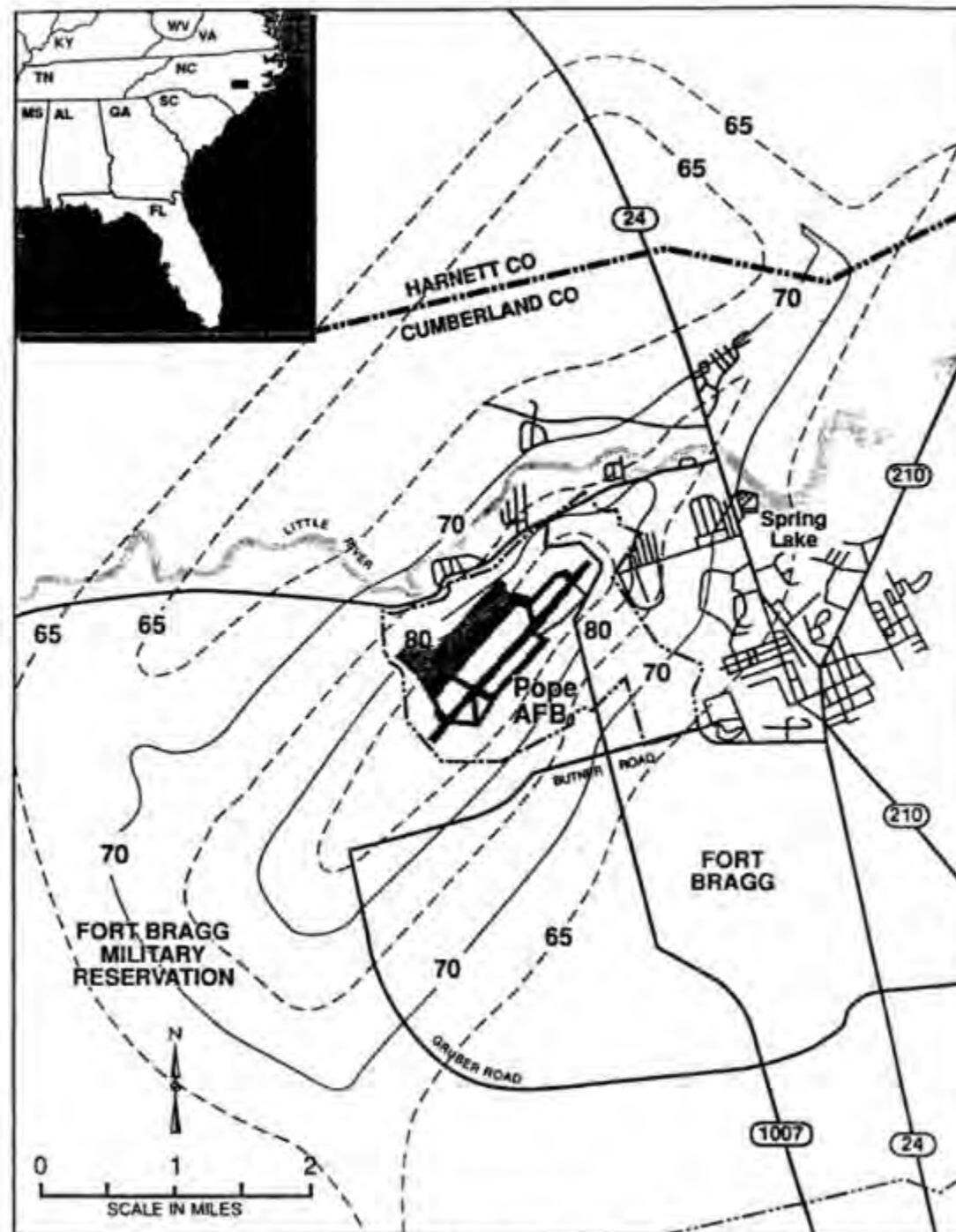


Figure 4.1-2. Noise Contours at Pope AFB Under the Maximum Equipage Scenario

> 1 ASSOC CITY: FAYETTEVILLE 4 STATE: NC LOC ID: POB FAA SITE NR: 16723.03\*A  
 > 2 AIRPORT NAME: POPE AAF 5 COUNTY: CUMBERLAND NC  
 3 CBD TO AIRPORT (NM): 12 NW 6 REGION/ADO: ASO/MEM 7 SECT AERO CHT: CHARLOTTE

**GENERAL**

10 OWNERSHIP: ARMY  
 > 11 OWNER: POPE AAF  
 > 12 ADDRESS: BASE OPERATIONS, 393 SURVEYUR ST BLDG 708  
 FAYETTEVILLE, NC 28308  
 > 13 PHONE NR: 910-396-0011  
 > 14 MANAGER: AIRFIELD MANAGEMENT  
 > 15 ADDRESS: POPE FIELD, 393 SURVEYUR ST BLDG 708  
 FAYETTEVILLE, NC 28308  
 > 16 PHONE NR: 910-396-0371  
 > 17 ATTENDANCE SCHEDULE:

ALL ALL ALL

**SERVICES**

> 70 FUEL: A

**BASED AIRCRAFT**

90 SINGLE ENG: 1  
 91 MULTI ENG: 10  
 92 JET: 2  
 93 HELICOPTERS: 0  
 TOTAL: 13  
 94 GLIDERS: 0  
 95 MILITARY: 3  
 96 ULTRA-LIGHT: 0

**FACILITIES**

> 80 ARPT BCN: CG  
 > 81 ARPT LGT SKED: BCN LGT SKED: SS-SR  
 > 82 UNICOM:  
 > 83 WIND INDICATOR: YES  
 84 SEGMENTED CIRCLE: NONE  
 85 CONTROL TWR: YES  
 86 FSS: RALEIGH  
 87 FSS ON ARPT: NO  
 88 FSS PHONE NR:  
 89 TOLL FREE NR: 1-800-WX-BRIEF

**RUNWAY DATA**

> 30 RUNWAY INDENT:  
 > 31 LENGTH:  
 > 32 WIDTH:  
 > 33 SURF TYPE-COND:

05/23	051/231
7,501	3,000
150	60
PEM-G	ASPH

**LIGHTING/APCH AIDS**

> 40 EDGE INTENSITY:  
 > 42 RWY MARK TYPE-COND:

HIGH	LOW		
PIR - G / PIR - G	NPI - G / NPI - G	- / -	- / -
48 53			

**OBSTRUCTION DATA**

50 FAR 77 CATEGORY  
 > 51 DISPLACED THR:  
 > 52 CTLG OBSTN:  
 > 53 OBSTN MARKED/LGTD:  
 > 54 HGT ABOVE RWY END:  
 > 55 DIST FROM RWY END:

/	/	/	/
/	/	/	/
/	/	/	/
/	/	/	/
/	/	/	/
/	/	/	/

(>) ARPT MGR PLEASE ADVISE FSS IN ITEM 86 WHEN CHANGES OCCUR TO ITEMS PRECEDED BY >

> 110 REMARKS

A 013 BASE OPERATIONS  
 A 017 SEE FLIP AP/1 SUPPLEMENTARY ARPT RMK.  
 A 030 RWY 051/231 RY USED AS AN ASSULT STRIP.  
 A 110-001 BEARING STRENGTH RY 05-23: ST175; TDT760; TRT585.  
 A 110-002 LGT: HIRL LCTD 16 FT FR RY EDGE.  
 A 110-003 JASU: (A/M32A-86) (M32-95)  
 A 110-004 FUEL: JET A++  
 A 110-005 FLUID: SP LPOX LOX  
 A 110-006 OIL: O-128-IN CAN ONLY; -133-148  
 A 110-007 24 HR PPR CTC AMOPS DSN 424-6508/09/10 OR C910 394-6508/09/10. ALL INBD ACFT WITH VIP CTC POPE AMCC 30 MIN OUT. PPR EXC DV ACFT DSN 424-6508/09/10.  
 A 110-008 RSTD: CAT E APCH MIN UNAVBL DUE R5311 LCTD 2.5 NM DEP END RY 23. TWY LEADING TO GOLDEN KNIGHTS RAMP CLSD TO USAF C130 AND LARGER ACFT DUE TO TWY WIDTH LESS THAN 75 FT.

111 INSPECTOR: (N) 112 LAST INSP: 113 LAST INFO REQ: 01/09/2013



> 1 ASSOC CITY: \*\*\*CONTINUED\*\*\* 4 STATE: NC LOC ID: POB FAA SITE NR: 16723.03\*A  
 > 2 AIRPORT NAME: 5 COUNTY:  
 3 CBD TO AIRPORT (NM): 6 REGION/ADO: ASO/MEM 7 SECT AERO CHT:

**GENERAL**

10 OWNERSHIP:  
 > 11 OWNER:  
 > 12 ADDRESS:  
 > 13 PHONE NR:  
 > 14 MANAGER:  
 > 15 ADDRESS:  
 > 16 PHONE NR:  
 > 17 ATTENDANCE SCHEDULE:

**SERVICES**

> 70 FUEL:

**BASED AIRCRAFT**

90 SINGLE ENG:  
 91 MULTI ENG:  
 92 JET:  
 93 HELICOPTERS:  
 TOTAL:  
 94 GLIDERS:  
 95 MILITARY:  
 96 ULTRA-LIGHT:

**FACILITIES**

> 80 ARPT BCN:  
 > 81 ARPT LGT SKED :  
 BCN LGT SKED:  
 > 82 UNICOM:  
 > 83 WIND INDICATOR:  
 84 SEGMENTED CIRCLE:  
 85 CONTROL TWR:  
 86 FSS:  
 87 FSS ON ARPT:  
 88 FSS PHONE NR:  
 89 TOLL FREE NR:

**RUNWAY DATA**

> 30 RUNWAY INDENT:  
 > 31 LENGTH:  
 > 32 WIDTH:  
 > 33 SURF TYPE-COND:

**LIGHTING/APCH AIDS**

> 40 EDGE INTENSITY:  
 > 42 RWY MARK TYPE-COND:

- / - - / - - / - - / -

**OBSTRUCTION DATA**

50 FAR 77 CATEGORY  
 > 51 DISPLACED THR:  
 > 52 CTLG OBSTN:  
 > 53 OBSTN MARKED/LGTD:  
 > 54 HGT ABOVE RWY END:  
 > 55 DIST FROM RWY END:

/	/	/	/
/	/	/	/
/	/	/	/
/	/	/	/
/	/	/	/
/	/	/	/

**(>) ARPT MGR PLEASE ADVISE FSS IN ITEM 86 WHEN CHANGES OCCUR TO ITEMS PRECEDED BY >**

**> 110 REMARKS**

A 110-009 RSTD: AMC/AFRC ACFT OPR RSTD DUR BIRD WATCH COND MODERATE (TKOF OR LDG PERMITTED ONLY WHEN DEP AND ARR RTE AVOID IDENT BIRD ACT. NO LCL IFR/VFR TFC PAT ACT) DUR SEVERE (TKOF AND LDG PROH WO AMOG/CC APVL), CTC AMOPS FOR CURRENT BIRD WATCH COND CODE.  
 A 110-011 CAUTION: DENSE AIR TFC ALL QUAD, ALL ALT. ILS GS ANT 30 FT HI, 1111 FT FR APCH END AND 400 FT LEFT OF CNTRLIN RY 23.  
 A 110-012 CAUTION: RY 23 DEP AND RY 05 ARR, AVOID R5311, 2.5 NM W OF POPE. CTC POPE TWR FOR TRNS THRU SCTR IV. TWR 417 FT LCTD 5780 FT BRG 205DEC FR DEP END RY 23/APCH END RY 05. HILL 313 LCTD 1297 FT BRG 170DEG FR DEP END RY 23/APCH END RY 05.  
 A 110-013 CAUTION: TWR 430 FT LCTD 6878 FT BRG 220 DEG FR DEP END RY 23/APCH END RY 05. ACFT SHOULD EXER EXTREME CAUTION WHEN TAXIING ON THE GREEN, YELLOW AND RED RAMPS DUE TO WG TIP CLNC. UNCTL VEH ON TWY AND RAMPS.  
 A 110-014 TFC PAT: OVHD 2000 FT, RWY 23 ENTER 3 NM INITIAL, R BRK. NO OVHD RWY 05. RECTANGULAR 1500 FT. RWY 23 R TFC, RWY 05 L TFC.  
 A 110-015 CSTMS/AG/IMG: CSTMS AND AG FOR ACTIVE DUTY PERS RQR 3 HR PN TO AMCC DSN 424-9000 OR C910-394-9000.  
 A 110-017 MISC: AMOPS DSN 424-6508/09/10, AFLD MGR DSN 424-0011/0371, C910-396-0011/0371, FAX EXTN 6516/6520.  
 A 110-018 MISC: FIRST 1000 FT RY 23 AND FIRST 300 FT RY 05 ARE CONCRETE. MID 6200 FT ASPHALT. 1000 FT KEELED OVRN, EITHER END, MAY BE USED TO BEGII TKOF AND FOR LDG ROLLOUT.

111 INSPECTOR: (N) 112 LAST INSP: 113 LAST INFO REQ:

> 1 ASSOC CITY: \*\*\*CONTINUED\*\*\* 4 STATE: NC LOC ID: POB FAA SITE NR: 16723.03\*A  
> 2 AIRPORT NAME: 5 COUNTY:  
3 CBD TO AIRPORT (NM): 6 REGION/ADO: ASO/MEM 7 SECT AERO CHT:

**GENERAL**

10 OWNERSHIP:  
> 11 OWNER:  
> 12 ADDRESS:  
  
> 13 PHONE NR:  
> 14 MANAGER:  
> 15 ADDRESS:  
  
> 16 PHONE NR:  
> 17 ATTENDANCE SCHEDULE:

**SERVICES**

> 70 FUEL:

**BASED AIRCRAFT**

90 SINGLE ENG:  
91 MULTI ENG:  
92 JET:  
93 HELICOPTERS:  
TOTAL:  
  
94 GLIDERS:  
95 MILITARY:  
96 ULTRA-LIGHT:

**FACILITIES**

> 80 ARPT BCN:  
> 81 ARPT LGT SKED :  
BCN LGT SKED:  
> 82 UNICOM:  
> 83 WIND INDICATOR:  
84 SEGMENTED CIRCLE:  
85 CONTROL TWR:  
86 FSS:  
87 FSS ON ARPT:  
88 FSS PHONE NR:  
89 TOLL FREE NR:

**RUNWAY DATA**

> 30 RUNWAY INDENT:  
> 31 LENGTH:  
> 32 WIDTH:  
> 33 SURF TYPE-COND:

**LIGHTING/APCH AIDS**

> 40 EDGE INTENSITY:  
> 42 RWY MARK TYPE-COND:

- / - - / - - / - - / -

**OBSTRUCTION DATA**

50 FAR 77 CATEGORY  
> 51 DISPLACED THR:  
> 52 CTLG OBSTN:  
> 53 OBSTN MARKED/LGTD:  
> 54 HGT ABOVE RWY END:  
> 55 DIST FROM RWY END:

/ / / /  
/ / / /  
/ / / /  
/ / / /  
/ / / /  
/ / / /

**(>) ARPT MGR PLEASE ADVISE FSS IN ITEM 86 WHEN CHANGES OCCUR TO ITEMS PRECEDED BY >**

**> 110 REMARKS**

A 110-019 MISC: CTC CTL TWR WITH INTENTION TO BACK TAXI. WHEN BACK TAXIING, TURNING RAD IS LCTD AT END OF SFC. SEE US TERMINAL LOW IAPS, AIRPOR DIAGRAM. WX BRIEFING DSN 424-6543/44. ENG RUNS WILL NML BE CONDUCTED ON TWY 'A' AND 'M' RUN-UP AREAS. ROMEO ROW WILL NOT BE USED FOR ENG RUNS ABV IDLE SPEED.  
A 110-020 MISC: RY 05-23 GROOVED. ALL INBD ACFT CTC TWR ON UHF. RY DIST MKR NOT AVBL EAST SIDE OF RY. REQ FOR CONCURRENT SVCG SHOULD BE MADI TO POPE AMCC AND APVL IS DEPENDENT UPON MSN NEED, STN WORKLOAD, AND CRASH/FIRE/RESCUE AVBL.  
A 110-022 MISC: ASSAULT STRIP PANELS ARE ALL INTL ORANGE IN COLOR. ALL ACFT WITH NON-AIRCREW PAX, CTC ATOC DSN 424-7303 UPON ARR AND PRIOR TC DEP.  
A 110-023 MISC: NO CSMSEC MATERIAL AVBL. TRAN AIRCREWS SHOULD PLAN TO ARR WITH APPROPRIATE AMOUNT OF COMSEC TO COMPLETE ENTIRE MSN.  
A 110-025 CAUTION: AFLD LGTING INTMT BTN SS AND SR DUE TO LCL NGT VISION DEVICE TNG, NON-PARTICIPATING ACFT CTC CTL TWR INCREASE LGTING.  
A 110-026 MISC: ALL ACFT CARRING EXPLOSIVE CARGO ARE RQR TO PASS THE EXPLOSIVE CLASS AND THE NET EXPLOSIVE WT CLASS. NEW ARR CALL POPE AMCC ON INBD.  
A 110-027 AUGMENTED AN/FM-Q-19 IN USE. OPERATING HOURS 0400Z++MON THRU 0400Z++ SAT. DSN 424-6543/6544.

111 INSPECTOR: (N)

112 LAST INSP:

113 LAST INFO REQ:





> 1 ASSOC CITY: ***CONTINUED***	4 STATE: NC	LOC ID: POB	FAA SITE NR: 16723.03*A
> 2 AIRPORT NAME: 3 CBD TO AIRPORT (NM):	6 REGION/ADO: ASO/MEM	5 COUNTY: 7 SECT AERO CHT:	

<p><b>GENERAL</b></p> 10 OWNERSHIP: > 11 OWNER: > 12 ADDRESS:  > 13 PHONE NR: > 14 MANAGER: > 15 ADDRESS:  > 16 PHONE NR: > 17 ATTENDANCE SCHEDULE:	<p><b>SERVICES</b></p> > 70 FUEL:	<p><b>BASED AIRCRAFT</b></p> 90 SINGLE ENG: 91 MULTI ENG: 92 JET: 93 HELICOPTERS: TOTAL:  94 GLIDERS: 95 MILITARY: 96 ULTRA-LIGHT:
--	-----------------------------------	--

18 AIRPORT USE: 19 ARPT LAT: 20 ARPT LONG: 21 ARPT ELEV: 22 ACREAGE: > 23 RIGHT TRAFFIC: > 24 NON-COMM LANDING:	<p><b>FACILITIES</b></p> > 80 ARPT BCN: > 81 ARPT LGT SKED : BCN LGT SKED: > 82 UNICOM: > 83 WIND INDICATOR: 84 SEGMENTED CIRCLE: 85 CONTROL TWR: 86 FSS: 87 FSS ON ARPT: 88 FSS PHONE NR: 89 TOLL FREE NR:	
---	---	--

<p><b>RUNWAY DATA</b></p> > 30 RUNWAY INDENT: > 31 LENGTH: > 32 WIDTH: > 33 SURF TYPE-COND:	
--	--

<p><b>LIGHTING/APCH AIDS</b></p> > 40 EDGE INTENSITY: > 42 RWY MARK TYPE-COND:	- / -	- / -	- / -	- / -
---	-------	-------	-------	-------

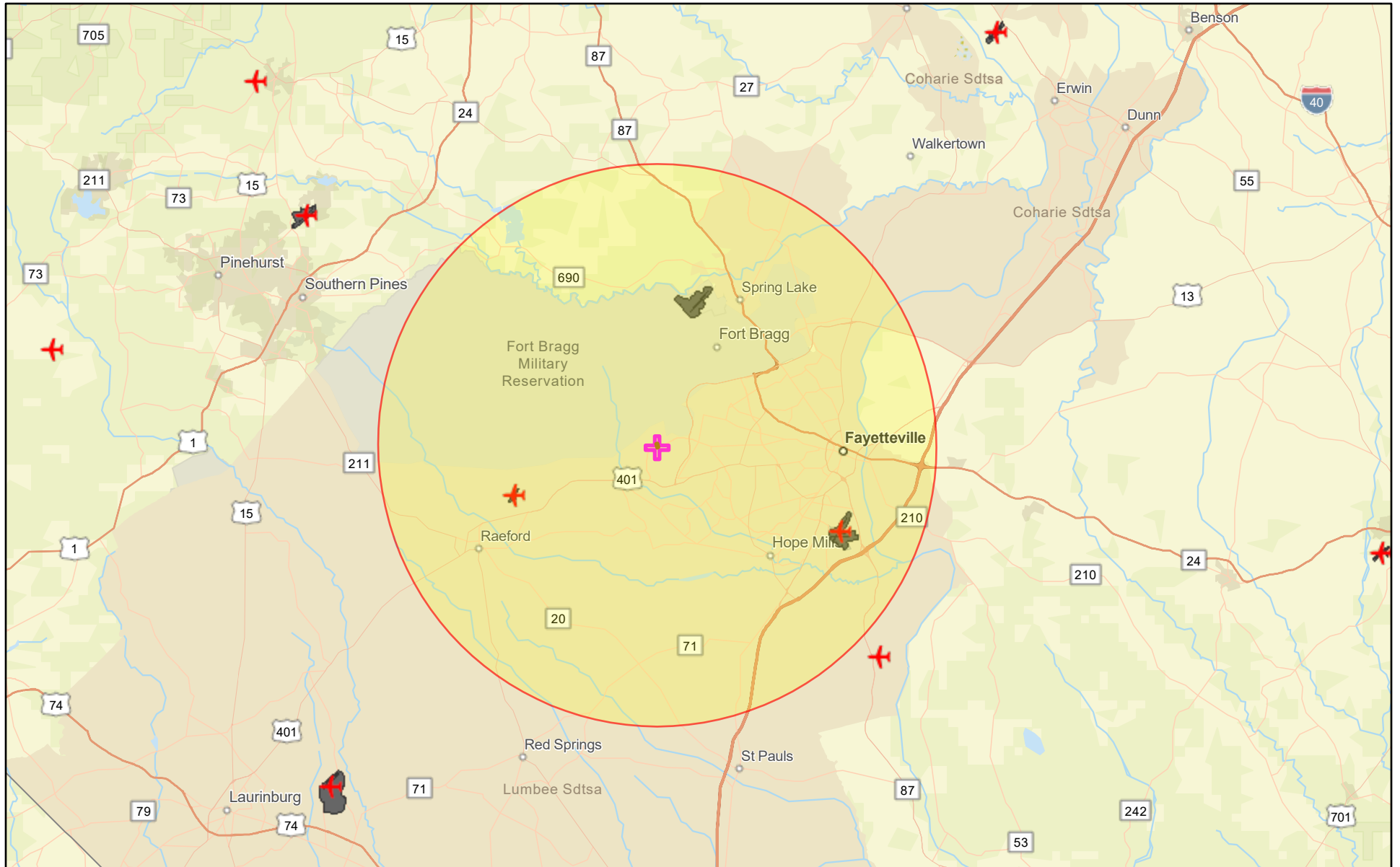
<p><b>OBSTRUCTION DATA</b></p> 50 FAR 77 CATEGORY > 51 DISPLACED THR: > 52 CTLG OBSTN: > 53 OBSTN MARKED/LGTD: > 54 HGT ABOVE RWY END: > 55 DIST FROM RWY END:	/ / / / / /	/ / / / / /	/ / / / / /	/ / / / / /
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(>) ARPT MGR PLEASE ADVISE FSS IN ITEM 86 WHEN CHANGES OCCUR TO ITEMS PRECEDED BY >






> 110 REMARKS

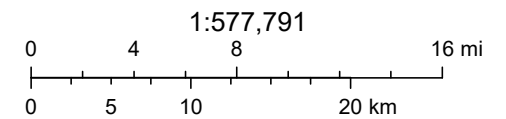
111 INSPECTOR: ( N )	112 LAST INSP:	113 LAST INFO REQ:
----------------------	----------------	--------------------

# HEROS 12 Airport 15 miles



October 22, 2021

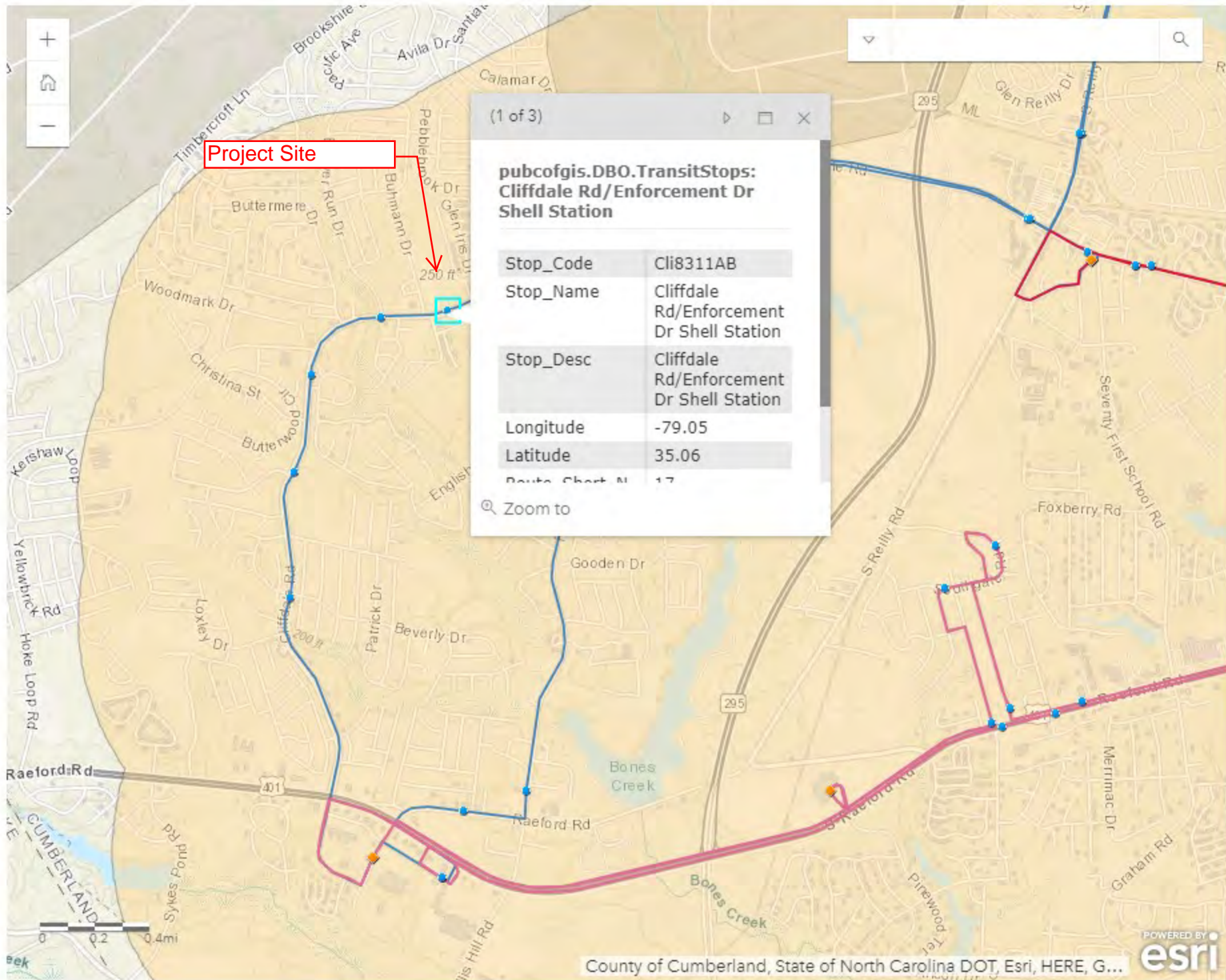
-  Project Buffer
-  Search Result (point)
-  Airport Polygons
-  Cliffdale
-  Airport Points



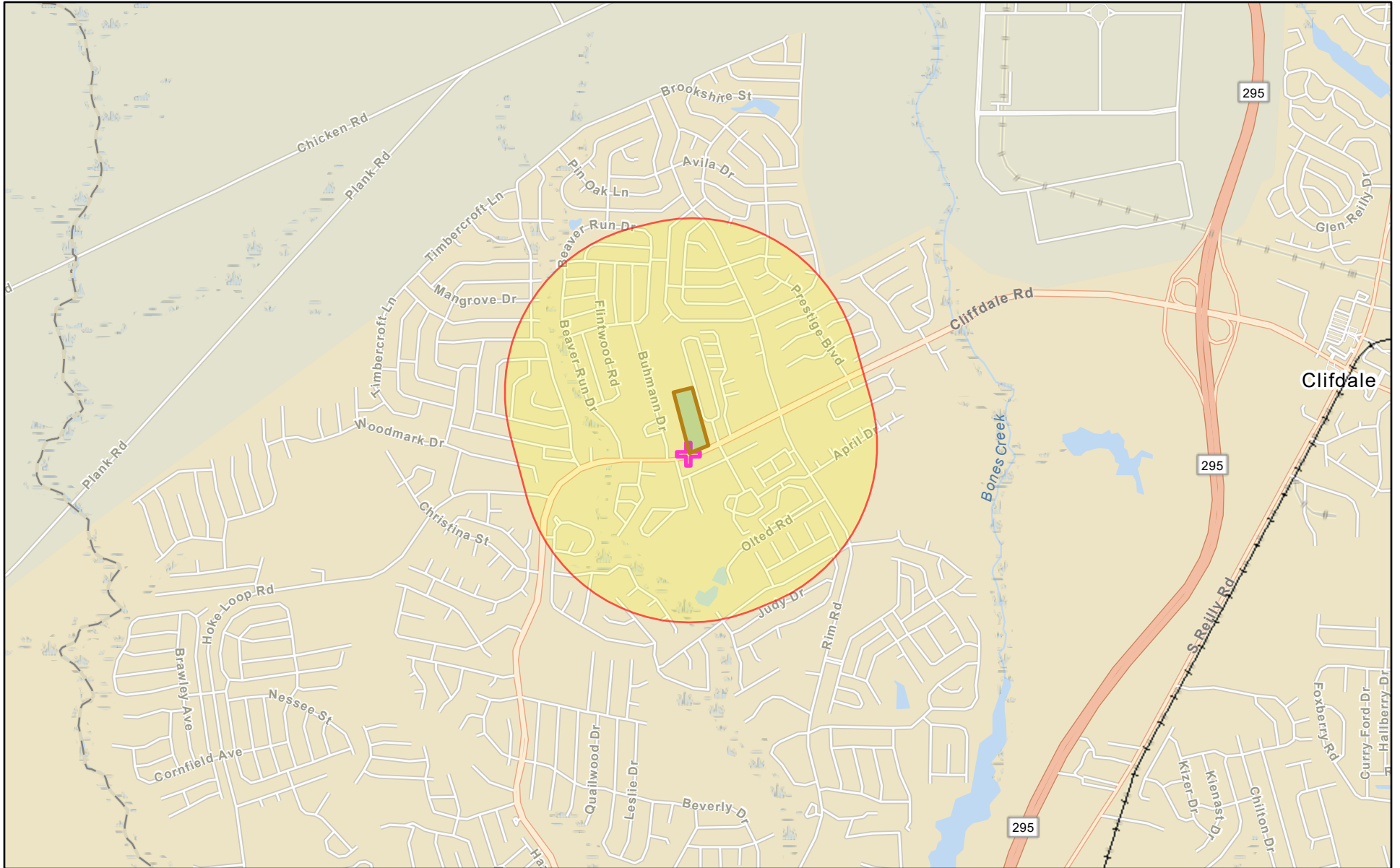
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# Routes





Font Size: [Feedback](#) [Print](#)

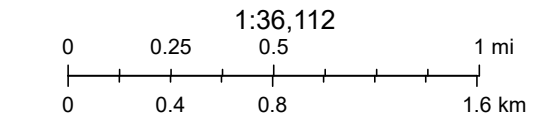


# HEROS 12 Railroad 3000 ft.



October 22, 2021

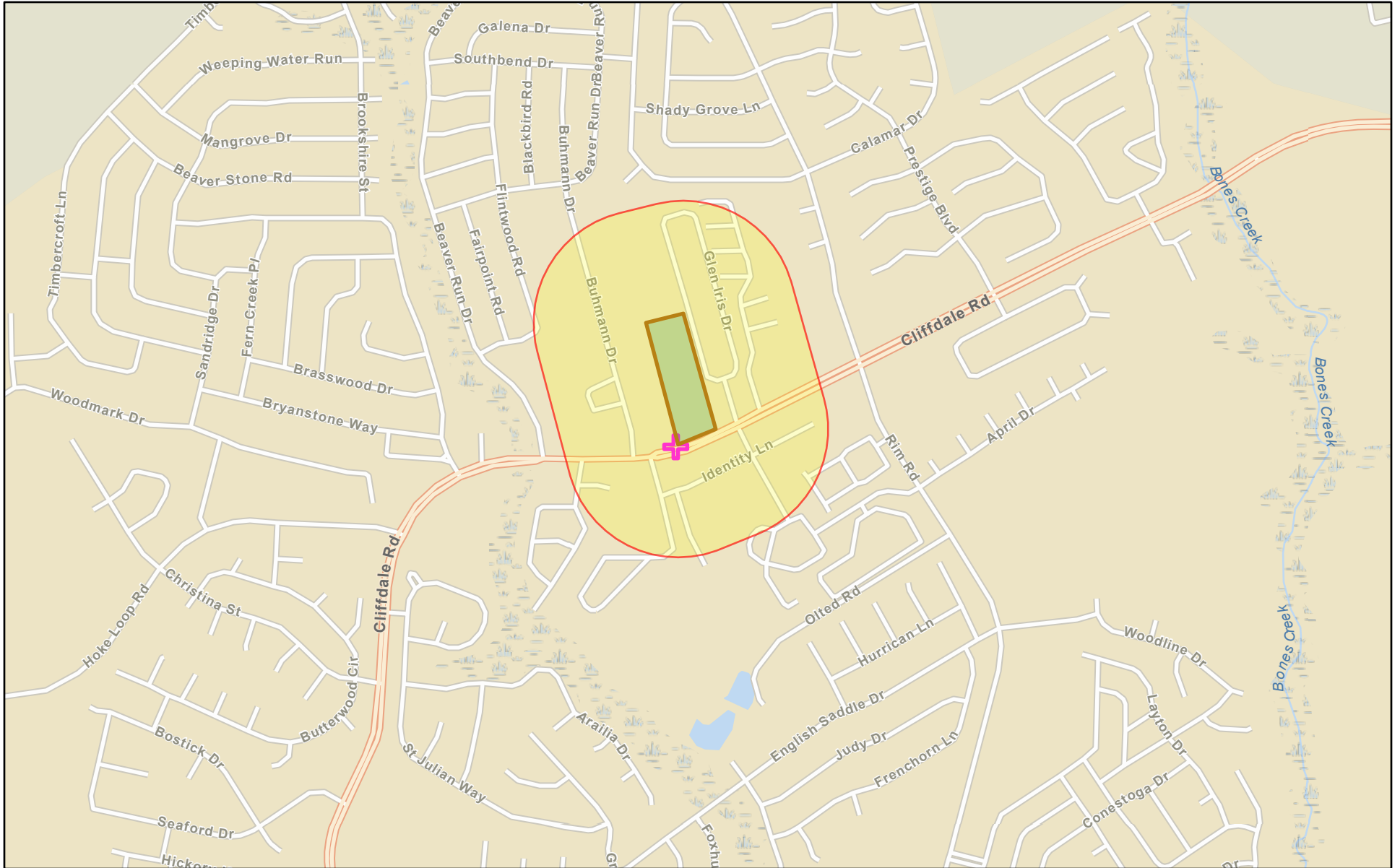
-  Project Buffer
-  Search Result (point)
-  Clifdale
-  Railroads






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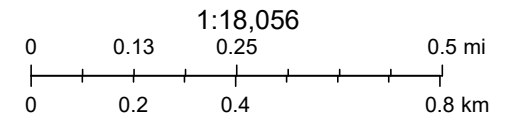


# HEROS 12 Road 1000 ft.



October 22, 2021

-  Project Buffer
-  Search Result (point)
-  Cliffdale



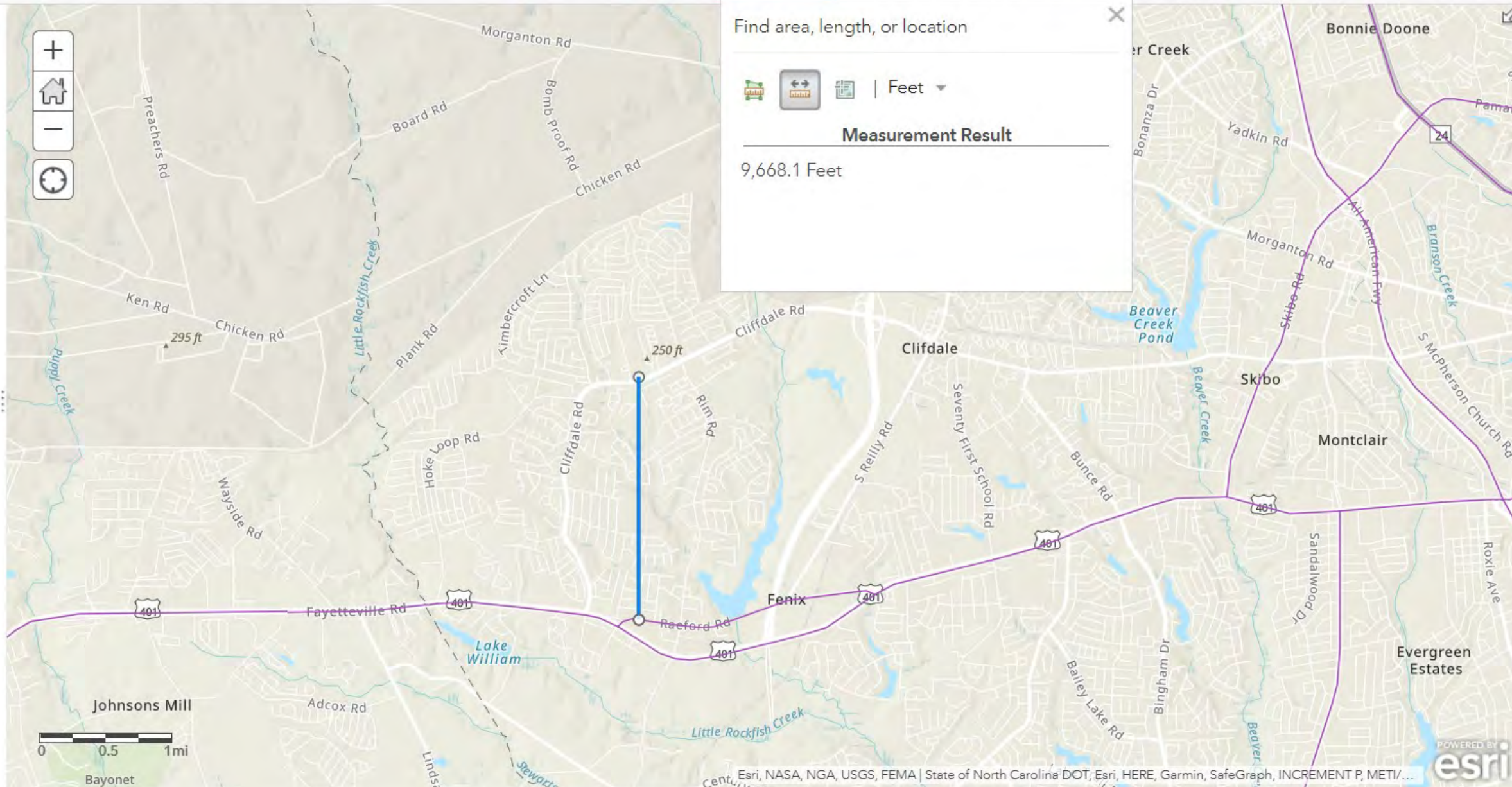
Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Details Add Basemap

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About Content Legend

Legend  
Freight Analysis Framework 2012



Find area, length, or location

Feet

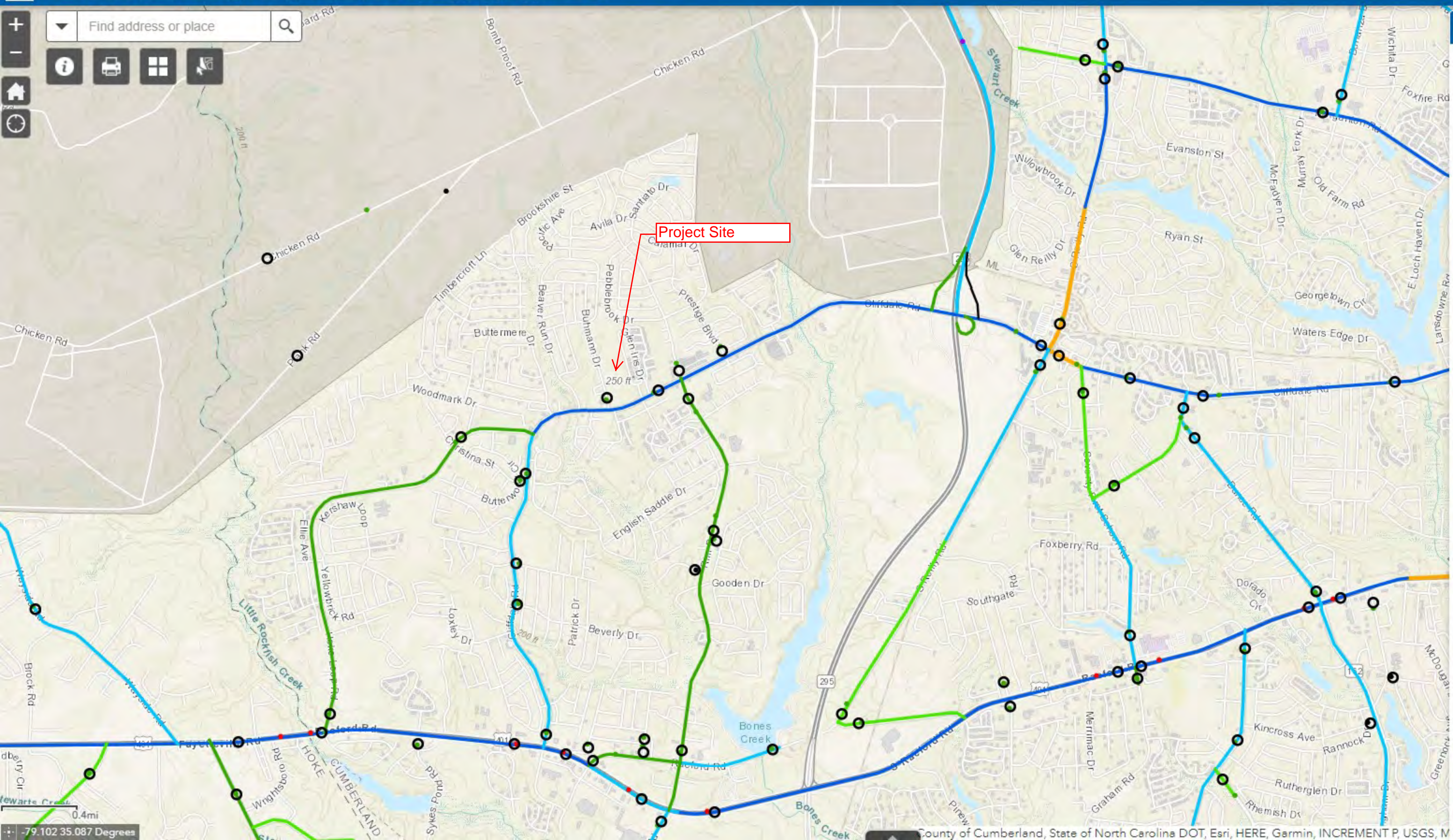
**Measurement Result**

9,668.1 Feet



Find address or place

Map navigation controls: Home, Refresh, Full Screen, Print, Info, Zoom In, Zoom Out



### Legend

**Traffic\_Analysis\_PTC**

- 

**NCDOT\_AADT\_Traffic\_Segmentation - NCDOT\_AADT\_Stations**

- Interstates
- US Routes
- NC Routes
- Secondary Routes
- Non-System Routes

**NCDOT\_AADT\_Traffic\_Segmentation - NCDOT\_AADT\_Traffic\_Segments\_Secondary\_Non-System**

AADT\_2020

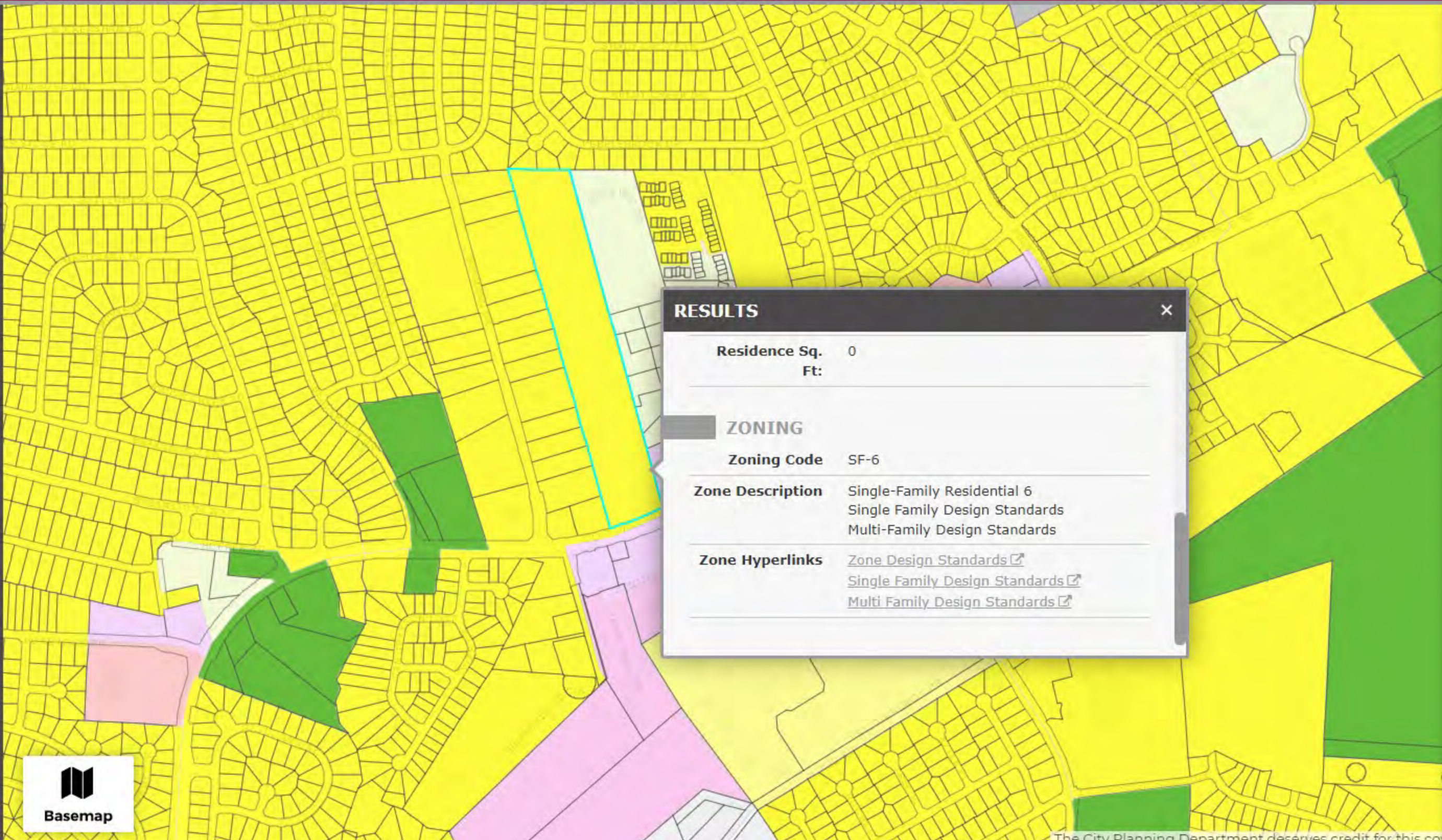
- 175,000+
- 125,000 - 174,999
- 85,000 - 124,999
- 55,000 - 84,999
- 35,000 - 54,999
- 20,000 - 34,999
- 10,000 - 19,999
- 5,000 - 9,999
- 2,000 - 4,999
- 500 - 1,999
- 10 - 499

**NCDOT\_AADT\_Traffic\_Segmentation - NCDOT\_AADT\_Traffic\_Segments\_Primarys**

AADT\_2020

- 175,000+
- 125,000 - 174,999
- 85,000 - 124,999
- 55,000 - 84,999

- HOME
- ZOOM IN
- ZOOM OUT
- DRAW
- MEASURE
- BUFFER
- ADDRESS MAPPING
- PRINT
- HELP
- LOGIN



**RESULTS**

Residence Sq. 0  
Ft:

---

**ZONING**

**Zoning Code** SF-6

**Zone Description** Single-Family Residential 6  
Single Family Design Standards  
Multi-Family Design Standards

**Zone Hyperlinks** [Zone Design Standards](#)  
[Single Family Design Standards](#)  
[Multi Family Design Standards](#)

Commercial Real Estate Listing

Land-Use Lookup Results

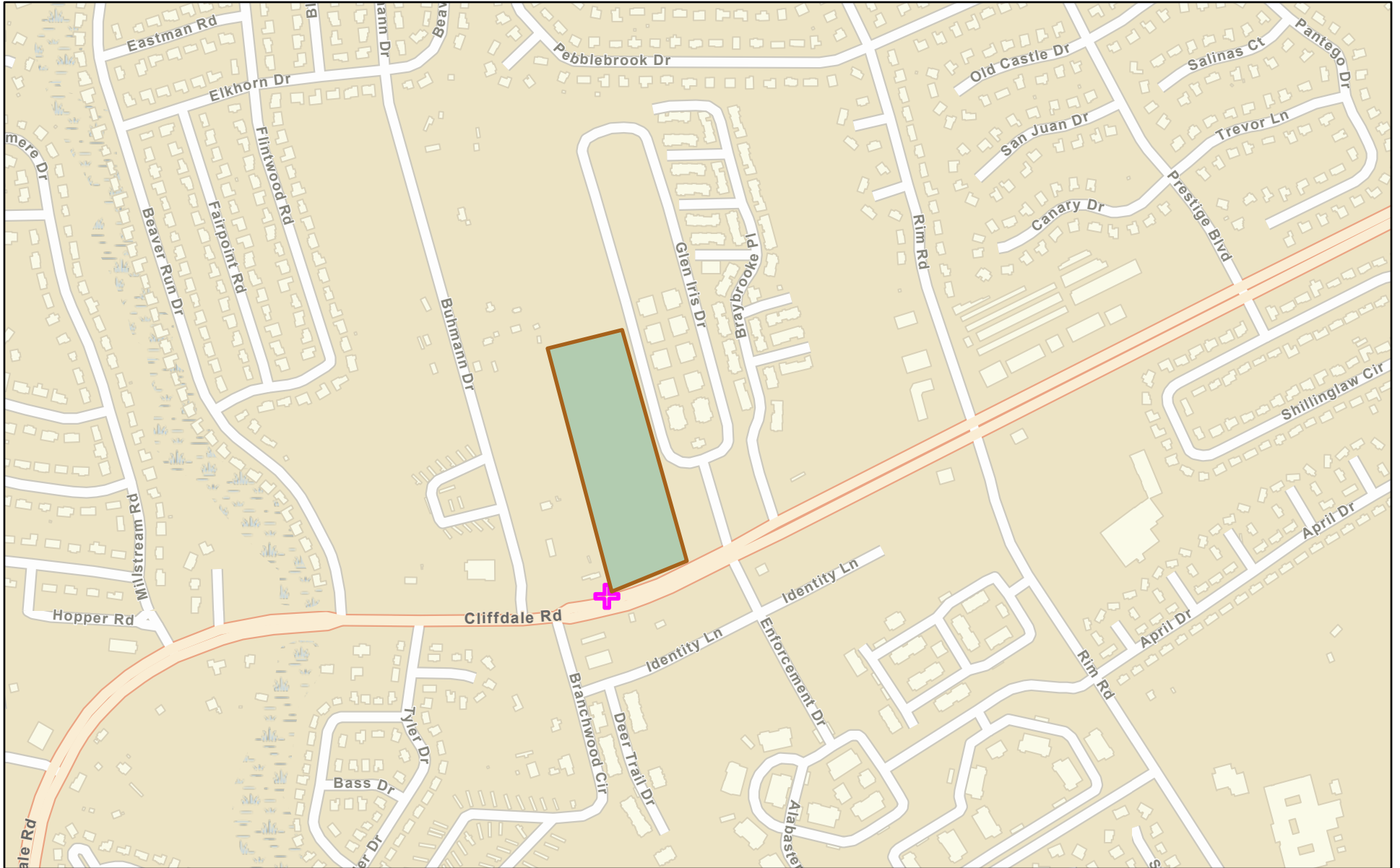
Legend

- OI
- OI / SUP
- OI/C
- OI/CZ
- P2/C
- PND
- R5/C
- R5A/CZ
- R6/C
- R6/CZ
- SF-10
- SF-10-MHO
- SF-15
- SF-15-MHO
- SF-15/CZ
- SF-6
- SF-6-MHO
- SF-6/CZ
- cnty

- Fay\_Parcels
- 



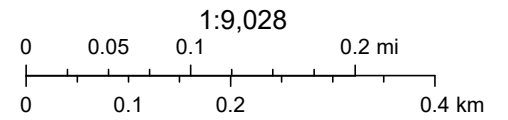
# HEROS 13 SSA



October 22, 2021

 Cliffdale  Sole Source Aquifers

 Search Result (point)








Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community



September 23, 2021

**Wetlands**

- |   |                                |   |                                   |   |       |
|---|--------------------------------|---|-----------------------------------|---|-------|
|  | Estuarine and Marine Deepwater |    | Freshwater Emergent Wetland       |  | Lake  |
|  | Estuarine and Marine Wetland   |    | Freshwater Forested/Shrub Wetland |  | Other |
|  | Freshwater Pond                |  | Riverine                          |   |       |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

# Nationwide Rivers Inventory



This is a listing of more than 3,200 free-flowing river segments in the U.S. that are believed to possess one or more "outstandingly remarkable" values.

Map interface elements:

- Home icon
- Zoom in (+) and zoom out (-) buttons
- Scale bar: 1 mi
- Map Tiles Imagery dropdown menu
- Find a location search bar with search icon
- Inset map of North Carolina showing Fayetteville location
- Attribution: National Park Service | © Mapbox © OpenStreetMap contributors | Geocoding by Esri



NATIONAL SYSTEM | MANAGEMENT | RESOURCES | PUBLICATIONS | CONTACT US | 50 YEARS | SITE INDEX

## NORTH CAROLINA

North Carolina has approximately 37,853 miles of river, of which 144.5 miles are designated as wild & scenic—less than 4/10ths of 1% of the state's river miles.



Choose A State   
Choose A River

*Rivers of the Southeast define diversity, from bayous and rivers pushed by the tides to clear mountain streams with world-class whitewater.*

[+ View larger map](#)

- Chattoga River
- Horsepasture River
- Lumber River
- New River
- Wilson Creek





**Designated Rivers**

About WSR Act  
State Listings  
Profile Pages

**National System**

WSR Table  
Study Rivers  
Stewardship  
WSR Legislation

**River Management**

Council  
Agencies  
Management Plans  
River Mgt. Society  
GIS Mapping

**Resources**

Q & A Search  
Bibliography  
Publications  
GIS Mapping  
Logo & Sign Standards



Location: User-specified polygonal location  
 Ring (buffer): 500-foot radius  
 Description: Cliffdale

Summary of ACS Estimates	2014 - 2018
Population	199
Population Density (per sq. mile)	1,119
People of Color Population	124
% People of Color Population	62%
Households	108
Housing Units	144
Housing Units Built Before 1950	0
Per Capita Income	25,822
Land Area (sq. miles) (Source: SF1)	0.18
% Land Area	100%
Water Area (sq. miles) (Source: SF1)	0.00
% Water Area	0%

	2014 - 2018 ACS Estimates	Percent	MOE (±)
<b>Population by Race</b>			
Total	199	100%	412
Population Reporting One Race	177	89%	693
White	98	49%	300
Black	68	34%	261
American Indian	2	1%	23
Asian	4	2%	40
Pacific Islander	4	2%	44
Some Other Race	1	1%	25
Population Reporting Two or More Races	22	11%	129
Total Hispanic Population	38	19%	209
Total Non-Hispanic Population	161		
White Alone	75	38%	262
Black Alone	62	31%	260
American Indian Alone	1	0%	13
Non-Hispanic Asian Alone	4	2%	40
Pacific Islander Alone	4	2%	44
Other Race Alone	0	0%	12
Two or More Races Alone	15	8%	108
<b>Population by Sex</b>			
Male	97	49%	216
Female	102	51%	257
<b>Population by Age</b>			
Age 0-4	22	11%	126
Age 0-17	60	30%	189
Age 18+	139	70%	254
Age 65+	18	9%	96

**Data Note:** Detail may not sum to totals due to rounding. Hispanic population can be of any race.

N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2014 - 2018



Location: User-specified polygonal location  
 Ring (buffer): 500-feet radius  
 Description: Cliffdale

	2014 - 2018 ACS Estimates	Percent	MOE (±)
<b>Population 25+ by Educational Attainment</b>			
Total	123	100%	221
Less than 9th Grade	0	0%	12
9th - 12th Grade, No Diploma	4	3%	41
High School Graduate	24	20%	109
Some College, No Degree	64	52%	163
Associate Degree	11	9%	66
Bachelor's Degree or more	31	25%	116
<b>Population Age 5+ Years by Ability to Speak English</b>			
Total	178	100%	368
Speak only English	146	82%	289
Non-English at Home <sup>1+2+3+4</sup>	32	18%	149
<sup>1</sup> Speak English "very well"	21	12%	124
<sup>2</sup> Speak English "well"	5	3%	50
<sup>3</sup> Speak English "not well"	5	3%	53
<sup>4</sup> Speak English "not at all"	0	0%	12
<sup>3+4</sup> Speak English "less than well"	5	3%	53
<sup>2+3+4</sup> Speak English "less than very well"	10	6%	72
<b>Linguistically Isolated Households*</b>			
Total	4	100%	37
Speak Spanish	3	74%	32
Speak Other Indo-European Languages	0	0%	12
Speak Asian-Pacific Island Languages	1	26%	13
Speak Other Languages	0	0%	12
<b>Households by Household Income</b>			
Household Income Base	108	100%	128
< \$15,000	10	9%	56
\$15,000 - \$25,000	7	6%	44
\$25,000 - \$50,000	38	35%	107
\$50,000 - \$75,000	14	13%	62
\$75,000 +	40	37%	121
<b>Occupied Housing Units by Tenure</b>			
Total	108	100%	128
Owner Occupied	68	63%	121
Renter Occupied	41	37%	103
<b>Employed Population Age 16+ Years</b>			
Total	144	100%	263
In Labor Force	90	63%	211
Civilian Unemployed in Labor Force	7	5%	63
Not In Labor Force	53	37%	157

**Data Note:** Detail may not sum to totals due to rounding. Hispanic population can be of anyrace.

N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS)

\*Households in which no one 14 and over speaks English "very well" or speaks English only.



Location: User-specified polygonal location

Ring (buffer): 500-foot radius

Description: Cliffdale

	2014 - 2018 ACS Estimates	Percent	MOE (±)
<b>Population by Language Spoken at Home*</b>			
Total (persons age 5 and above)	N/A	N/A	N/A
English	N/A	N/A	N/A
Spanish	N/A	N/A	N/A
French	N/A	N/A	N/A
French Creole	N/A	N/A	N/A
Italian	N/A	N/A	N/A
Portuguese	N/A	N/A	N/A
German	N/A	N/A	N/A
Yiddish	N/A	N/A	N/A
Other West Germanic	N/A	N/A	N/A
Scandinavian	N/A	N/A	N/A
Greek	N/A	N/A	N/A
Russian	N/A	N/A	N/A
Polish	N/A	N/A	N/A
Serbo-Croatian	N/A	N/A	N/A
Other Slavic	N/A	N/A	N/A
Armenian	N/A	N/A	N/A
Persian	N/A	N/A	N/A
Gujarathi	N/A	N/A	N/A
Hindi	N/A	N/A	N/A
Urdu	N/A	N/A	N/A
Other Indic	N/A	N/A	N/A
Other Indo-European	N/A	N/A	N/A
Chinese	N/A	N/A	N/A
Japanese	N/A	N/A	N/A
Korean	N/A	N/A	N/A
Mon-Khmer, Cambodian	N/A	N/A	N/A
Hmong	N/A	N/A	N/A
Thai	N/A	N/A	N/A
Laotian	N/A	N/A	N/A
Vietnamese	N/A	N/A	N/A
Other Asian	N/A	N/A	N/A
Tagalog	N/A	N/A	N/A
Other Pacific Island	N/A	N/A	N/A
Navajo	N/A	N/A	N/A
Other Native American	N/A	N/A	N/A
Hungarian	N/A	N/A	N/A
Arabic	N/A	N/A	N/A
Hebrew	N/A	N/A	N/A
African	N/A	N/A	N/A
Other and non-specified	N/A	N/A	N/A
Total Non-English	N/A	N/A	N/A

**Data Note:** Detail may not sum to totals due to rounding. Hispanic population can be of any race.

N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2014 - 2018.

\*Population by Language Spoken at Home is available at the census tract summary level and up.



Location: User-specified polygonal location  
 Ring (buffer): 500-feet radius  
 Description: Cliffdale

Summary	Census 2010
Population	214
Population Density (per sq. mile)	1,202
People of Color Population	141
% People of Color Population	66%
Households	110
Housing Units	120
Land Area (sq. miles)	0.18
% Land Area	100%
Water Area (sq. miles)	0.00
% Water Area	0%

Population by Race	Number	Percent
Total	214	-----
Population Reporting One Race	197	92%
White	85	40%
Black	97	45%
American Indian	1	1%
Asian	5	2%
Pacific Islander	2	1%
Some Other Race	7	3%
Population Reporting Two or More Races	17	8%
Total Hispanic Population	28	13%
Total Non-Hispanic Population	186	87%
White Alone	73	34%
Black Alone	94	44%
American Indian Alone	1	0%
Non-Hispanic Asian Alone	5	2%
Pacific Islander Alone	2	1%
Other Race Alone	0	0%
Two or More Races Alone	13	6%

Population by Sex	Number	Percent
Male	100	47%
Female	114	53%

Population by Age	Number	Percent
Age 0-4	21	10%
Age 0-17	67	31%
Age 18+	147	69%
Age 65+	8	4%

Households by Tenure	Number	Percent
Total	110	
Owner Occupied	83	76%
Renter Occupied	26	24%

**Data Note:** Detail may not sum to totals due to rounding. Hispanic population can be of any race.

**Source:** U.S. Census Bureau, Census 2010 Summary File 1.

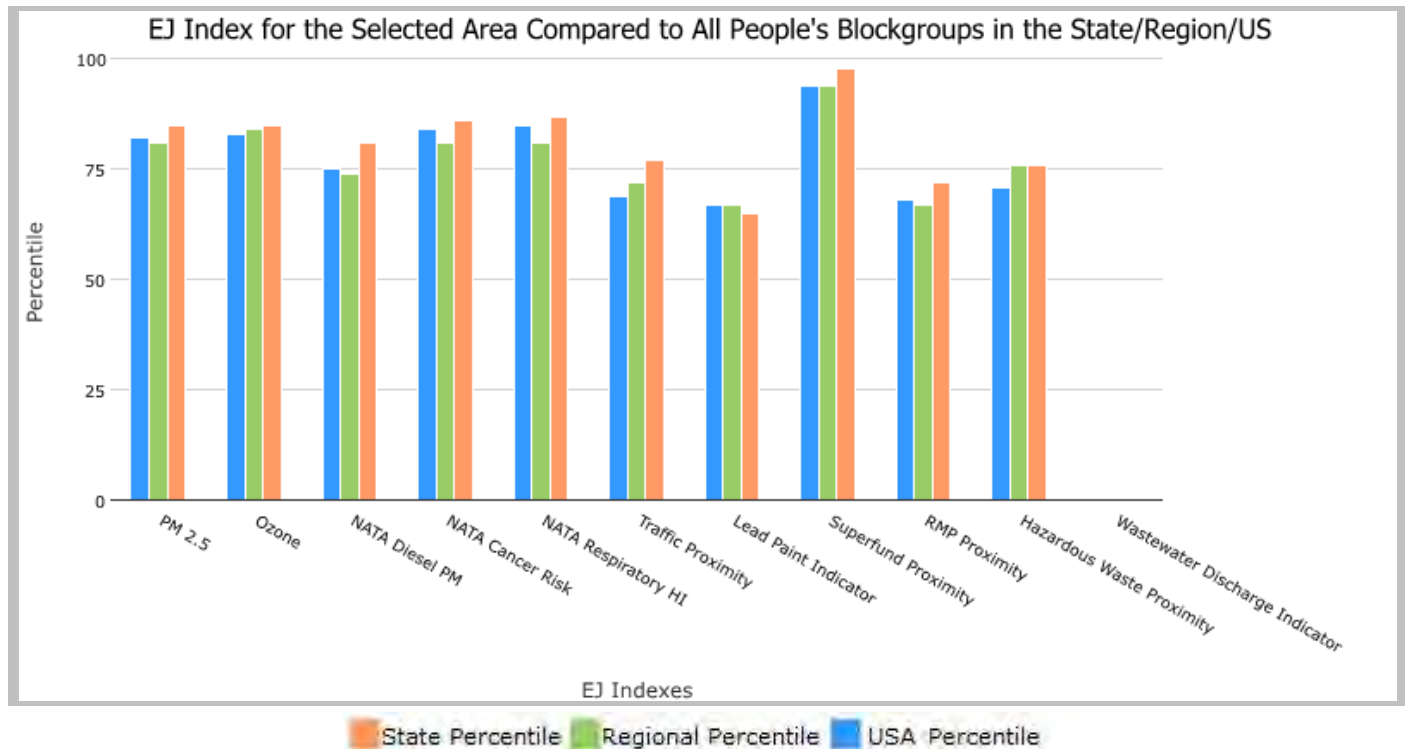
1 mile Ring around the Area, NORTH CAROLINA, EPA Region 4

Approximate Population: 11,374

Input Area (sq. miles): 3.75

Cliffdale

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
<b>EJ Indexes</b>			
EJ Index for PM2.5	85	81	82
EJ Index for Ozone	85	84	83
EJ Index for NATA* Diesel PM	81	74	75
EJ Index for NATA* Air Toxics Cancer Risk	86	81	84
EJ Index for NATA* Respiratory Hazard Index	87	81	85
EJ Index for Traffic Proximity and Volume	77	72	69
EJ Index for Lead Paint Indicator	65	67	67
EJ Index for Superfund Proximity	98	94	94
EJ Index for RMP Proximity	72	67	68
EJ Index for Hazardous Waste Proximity	76	76	71
EJ Index for Wastewater Discharge Indicator	N/A	N/A	N/A



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

1 mile Ring around the Area, NORTH CAROLINA, EPA Region 4

Approximate Population: 11,374

Input Area (sq. miles): 3.75

**Cliffdale**



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

## EJSCREEN Report (Version 2020)



1 mile Ring around the Area, NORTH CAROLINA, EPA Region 4

Approximate Population: 11,374

Input Area (sq. miles): 3.75

Cliffdale

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
<b>Environmental Indicators</b>							
Particulate Matter (PM 2.5 in $\mu\text{g}/\text{m}^3$ )	8.48	8.25	57	8.57	47	8.55	46
Ozone (ppb)	42.8	42.9	39	38	74	42.9	49
NATA* Diesel PM ( $\mu\text{g}/\text{m}^3$ )	0.252	0.309	43	0.417	<50th	0.478	<50th
NATA* Cancer Risk (lifetime risk per million)	36	34	66	36	50-60th	32	70-80th
NATA* Respiratory Hazard Index	0.55	0.46	90	0.52	60-70th	0.44	70-80th
Traffic Proximity and Volume (daily traffic count/distance to road)	74	230	49	350	42	750	30
Lead Paint Indicator (% Pre-1960 Housing)	0.014	0.16	15	0.15	22	0.28	15
Superfund Proximity (site count/km distance)	0.31	0.082	96	0.083	95	0.13	91
RMP Proximity (facility count/km distance)	0.097	0.39	22	0.6	18	0.74	14
Hazardous Waste Proximity (facility count/km distance)	0.35	1.3	40	0.91	50	5	33
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	N/A	0.16	N/A	0.65	N/A	9.4	N/A
<b>Demographic Indicators</b>							
Demographic Index	55%	36%	80	37%	77	36%	78
People of Color Population	73%	37%	87	39%	82	39%	80
Low Income Population	36%	36%	54	36%	52	33%	62
Linguistically Isolated Population	3%	2%	72	3%	68	4%	61
Population With Less Than High School Education	7%	13%	36	13%	34	13%	41
Population Under 5 years of age	8%	6%	77	6%	77	6%	74
Population over 64 years of age	8%	15%	19	17%	18	15%	22

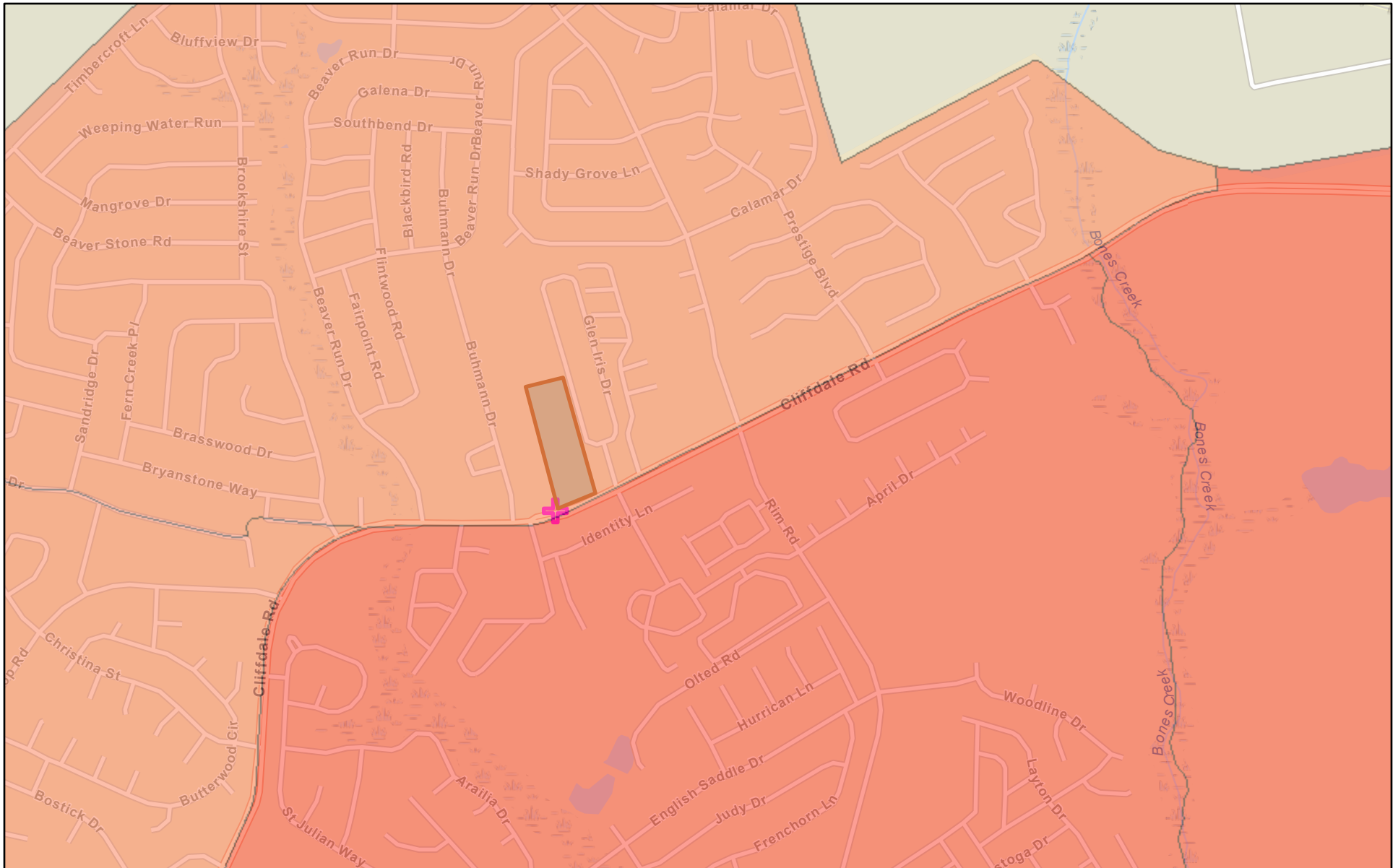
\* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: <https://www.epa.gov/national-air-toxics-assessment>.

For additional information, see: [www.epa.gov/environmentaljustice](http://www.epa.gov/environmentaljustice)

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.



# HEROS 17 Percent Pop Below Poverty Level



October 22, 2021

Source: 2014-2018 ACS (tr)

0 – 5.6

> 5.6 – 9.7

> 9.7 – 15

> 15 – 23.9

> 23.9 – 100

Cliffdale

Search Result (point)

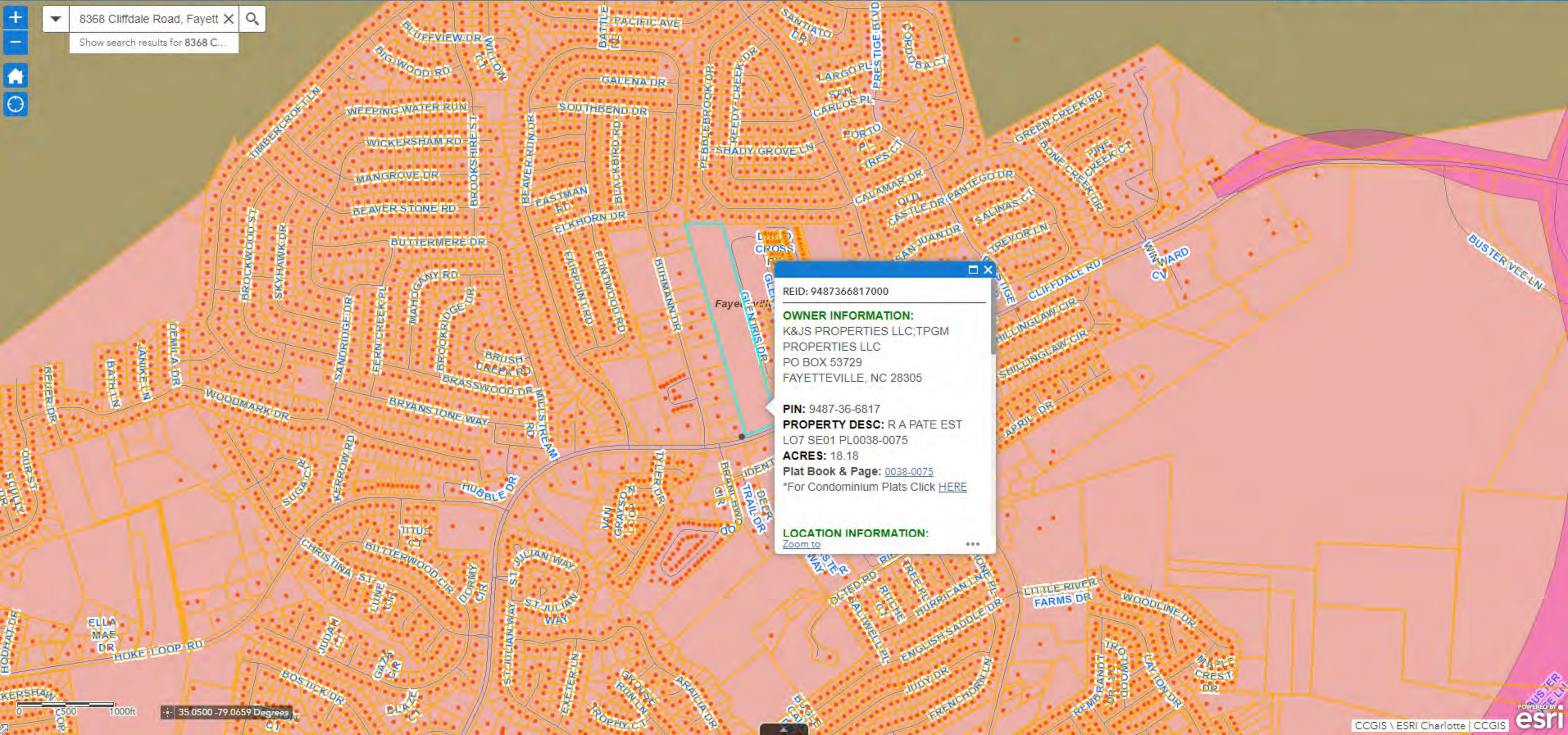
1:18,056

0 0.13 0.25 0.5 mi

0 0.2 0.4 0.8 km

EPA. Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

8368 Cliffdale Road, Fayette X  
Show search results for 8368 C...



REID: 9487366817000

**OWNER INFORMATION:**  
 K&JS PROPERTIES LLC;TPGM PROPERTIES LLC  
 PO BOX 53729  
 FAYETTEVILLE, NC 28305

**PIN:** 9487-36-6817

**PROPERTY DESC:** R A PATE EST  
 L07 SE01 PL0038-0075

**ACRES:** 18.18

**Plat Book & Page:** 0038-0075  
 \*For Condominium Plats Click [HERE](#)

**LOCATION INFORMATION:**  
 Zoom to ...

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CITY OF FAYETTEVILLE, NORTH CAROLINA

**2010-2015 CONSOLIDATED PLAN**

**COMMUNITY DEVELOPMENT BLOCK GRANT  
AND  
HOME INVESTMENT PARTNERSHIP PROGRAM**

**Mayor & City Council**

Anthony G. Chavonne, Mayor  
Darrell J. Haire, Mayor Pro Tem, District 4  
Keith A. Bates, Sr., District 1  
Kady-Ann Davy, District 2  
Robert A. Massey, Jr., District 3  
Robert Thomas Hurst, Jr., District 5  
William Joseph Leon Crisp, District 6  
Valencia A. Applewhite, District 7  
Theodore W. Mohn, District 8  
Wesley A. Meredith, District 9

**Fayetteville Redevelopment Commission**

Charnell Green, Chairman  
Carlos Swinger, Vice Chairman  
Steven Barnard  
Brook Browning  
Cassandra Haire  
Dineen Morton  
Lynne Vick

**City Manager**  
Dale Iman

*Assistant City Managers*  
Kristoff Bauer and Doug Hewitt

*Community Development Director*  
Victor D. Sharpe

**COMMUNITY DEVELOPMENT DEPARTMENT  
433 HAY STREET  
FAYETTEVILLE, NC 28301  
[www.cityoffayetteville.org](http://www.cityoffayetteville.org)  
910-433-1590**

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## **Executive Summary**

The City of Fayetteville's Consolidated Plan is a comprehensive plan addressing the City's housing, homeless, community development, and economic development needs for the five-year period 2010-2015. The plan consists of goals, measurable objectives, and implementing strategies for each of the plan's elements. The plan also includes a One-Year Action Plan program describing the activities to be funded or implemented in the 2010-2011 program year. Also included are the appropriate forms required by the US Department of Housing and Urban Development.

The Consolidated Plan is based on community needs derived from citizen participation, agency consultation and input; staff analysis; recommendations of the Fayetteville Redevelopment Commission; and direction and guidance from the City Council. The 2010-2015 Consolidated Plan builds on existing plans and programs already in place and approved by City Council. The Consolidated Plan is organized and focused on four community priority needs, which includes housing, homelessness, community development and economic development. The 2010-2015 Consolidated Plan continues many of the goals and objectives of the previous consolidated plan. The accompanying One-Year Action Plan is similarly organized and presented.

The plan complies with regulations issued by the U.S. Department of Housing and Urban Development (HUD). HUD requires entitlement communities such as Fayetteville, to consolidate its planning, application, and reporting requirements for HUD programs including the Community Development Block Grant (CDBG) and the HOME Investment Partnership grant programs. This plan must be updated each year, reviewed and recommended by the Fayetteville Redevelopment Commission and adopted by City Council and submitted to HUD 45 days prior to the beginning of the City's fiscal year.

### **Housing**

The following are the core goals that have been identified to address the City's priority housing needs:

1. Improve the condition of the low-income housing stock.
2. Increase the supply of affordable housing.
3. Increase homeownership opportunities.

### **Economic Development**

The following are the core goals that have been identified to address economic development needs of the City:

1. Recruit and develop local businesses.
2. Attract businesses to the downtown plan area and redevelopment plan areas.
3. Retain local businesses in the downtown plan area and redevelopment plan areas.
4. Support economic development activities that create jobs and expand the City's tax base.
5. Identify redevelopment projects that will eliminate blighted commercial properties within the Murchison Rd., HOPE VI, Fayetteville Renaissance Plan and other redevelopment plan areas.

---

### **Community Development**

The following are the core goals that have been identified to address community development needs of the City:

1. Offer training programs that develop job skills to help low to moderate-income persons improve their earning potential.
2. Continue to improve neighborhood accessibility to various human services.
3. Continue to provide support to the City's efforts to extend water and sewer to newly annexed areas, pave remaining unpaved streets within the City limits, and various community improvements.
4. Provide support in the implementation of the recommendations in the City's redevelopment plans.
5. Provide programs for the youth and seniors in low-moderate income areas.
6. Help foster neighborhood pride in low-moderate income areas of the City of Fayetteville.

### **Homeless**

The following are the core goals that have been identified to address the homeless needs of the City:

1. Implement the priorities of the 10-Year Plan to End Homelessness.
2. Provide support to homeless services and programs.
3. Support of a homeless tracking system throughout the continuum of care.
4. Collaborate with local human services agencies to develop programs designed to break the cycle of homelessness.

### **One-Year Action Plan**

This section of the Plan describes how 2010 CDBG, HOME and other funding sources will be used during the year to address the City's housing, economic development, community development and homelessness goals and objectives.

### **Public Comment on the 2010-2015 Consolidated Plan**

The City publicly advertised that draft copies of the proposed 2010-2015 Consolidated Plan would be available for public comment. The period of public comment on the City's Consolidated Plan was for 30 days. The comment period started on April 6, 2010 and ended on May 5, 2010. The Consolidated Plan was made available for public inspection at the City's neighborhood resource centers, all local branches of the public library, all of the City's recreation centers and the offices of the Community Development Department and the Human Relations Department. No comments were received on the Consolidated Plan.

### **Adoption**

The 2010-2015 Consolidated Plan, including the 2010-2011 One Year Action Plan, was presented to the Fayetteville Redevelopment Commission (FRC) at a public hearing on April 15, 2010. The FRC recommended approval. The Consolidated Plan was presented

to City Council at its work session on April 6, 2010 and presented and adopted at its regular meeting on April 26, 2010.

## **PLANNING PROCESS**

### **Citizen Participation**

The City of Fayetteville's community development planning process is designed to encourage maximum citizen participation and input in the development of the consolidated plan. City staff conducted citizen participation meetings in six locations throughout the City. Meeting sites were strategically located in areas that either had concentrations of low to moderate-income persons or were near project sites that might impact the surrounding community. In this manner, bringing the forum to the community encouraged citizen participation. The meetings were advertised through direct mailings, flyers and the local newspaper. Meetings were scheduled as follows:

- January 7, 2010           Massey Hill Recreation Center
- January 12, 2010       Bal Perazim Christian Church
- January 14, 2010       Smith Recreation Center
- January 19, 2010       Cliffdale Recreation Center
- January 21, 2010       Good Hope Missionary Baptist Church
- January 26, 2010       Friendship Missionary Baptist Church

During these meetings City staff made presentations on the Consolidated Planning process, reviewed HUD national objectives, discussed community development activities, programmatic information and reviewed the action plan schedule of events. This format ensured that citizens would be better informed on how community development funds had been used and the impact on the community and provides them with necessary information about the City's Consolidated Plan. A summary of the citizen comments is included on page 106.

### **Public Hearings**

Two official public hearings are held on the Consolidated Plan. City staff held the first hearing on February 25, 2010 at 7:00 p.m. in the Council Chambers at City Hall. This meeting was held after all of the citizen participation meetings had been held. The meeting was advertised in the Fayetteville Observer, on February 15, 2010. This meeting afforded an opportunity for City staff to publicly summarize and review citizen input gathered from throughout the community.

The Fayetteville Redevelopment Commission held the second public hearing on April 15, 2010 at 7:00 p.m. in the Council Chambers at City Hall. The meeting was advertised in the Fayetteville Observer on April 6, 2010. The proposed Consolidated Plan was publicly presented to the Fayetteville Redevelopment Commission for their approval and



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recommendation to City Council. The Commission unanimously approved the plan and recommended it to City Council.

### **Lead Agency**

The City of Fayetteville Community Development Department serves as lead agency in coordinating the preparation of the Consolidated Plan.

### **Consultation with agencies and adjoining jurisdictions**

The City of Fayetteville Community Development Department consulted with the Cumberland County Community Development Department. Jointly the two departments consulted with several County agencies during the planning process of the Consolidated Plan. These agencies include Cumberland County Mental Health, Cumberland County Department of Social Services, Cumberland County Work Force Development, Cumberland County Health Department and the Fayetteville Metropolitan Housing Authority. The City also consulted with its Development Services Department and the Fayetteville Cumberland County Human Relations Department.

Cumberland County is an entitlement jurisdiction and they serve as lead agency of the HOME consortium with the other municipalities in the county such as the Town of Hope Mills, the Town of Spring Lake, Falcon, Godwin and Wade.

The City and County jointly funded a consultant (WFN, Inc.) to prepare its housing needs assessment, market analysis and analysis of impediments to fair housing. This arrangement provided for a great collaborative opportunity for both jurisdictions.

### **Consultation with the Fayetteville Metropolitan Housing Authority**

The City consulted with the Fayetteville Metropolitan Housing Authority (FMHA) to seek opportunities for collaboration and problem solving to achieve community goals.

The City is currently partnering with FMHA with the revitalization of the Old Wilmington Road Community in a HOPE VI Revitalization project. The Fayetteville Metropolitan Housing Authority was awarded a HOPE VI Revitalization Grant in the amount of \$20 million dollars in March 2008. The grant, part of approximately \$113 million in public and private funds, will be used to help in the revitalization of the Old Wilmington Road area in downtown Fayetteville. The grant will support the redevelopment of two public housing developments, Campbell Terrace and Delona Gardens, with modern housing that reflects the architecture of Fayetteville and seamlessly blends the residential and natural environments with the urban center. The 249 units of distressed public housing at Delona Gardens and Campbell Terrace will be replaced with 747 mixed-income rental and homeownership dwellings. It includes 223 units to be built on the current public housing site and an additional 399 units built on other vacant sites in the Old Wilmington Road community. Another 125 units will be built in greater Fayetteville. Working families and elderly citizens will have a variety of

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new accommodation choices including single-family homes, townhouses, senior cottages, walk-up apartments and a senior complex.

## **COMMUNITY DEVELOPMENT PROGRAMS**

### **Community Development Block Grant**

The Community Development Block Grant (CDBG) Program is HUD's primary program for promoting community revitalization throughout the country. CDBG funds are used for a wide range of community development activities directed toward neighborhood revitalization, economic development, and improved community facilities and services.

The CDBG program is authorized under Title I of the Housing and Community Development Act of 1974, as amended. The primary objective of the program is the development of viable urban communities. The CDBG program is designed to provide, principally for low to moderate-income persons decent housing, a suitable living environment, and expanded opportunities. To achieve these goals, the CDBG regulations outline eligible activities and the national objectives that each activity must meet.

The CDBG projects and activities presented in the City's 2010-2015 Consolidated Plan must meet one of the three broad national objectives found in the CDBG regulations. The CDBG national objectives are listed below.

- To benefit low and moderate income persons;
- To aid in the prevention or elimination of slums or blight; and
- To meet community development needs to meet a particular urgency.

The City is responsible for assuring that each eligible activity conducted under the CDBG program meets one of these national objectives.

### **HOME Investment Partnership**

The HOME Investment Partnerships (HOME) program affirms the Federal Government's commitment to provide decent, safe, and affordable housing to all Americans and to alleviate the problems of excessive rent burdens, homelessness, and deteriorating housing stock. HOME provides funds and general guidelines to State and local governments to design affordable housing strategies that address local needs and housing conditions. HOME strives to meet both the short-term goal of increasing the supply and availability of affordable housing and the long-term goal of building partnerships between State and local governments and private and nonprofit housing providers.

HOME was created by the National Affordable Housing Act of 1990 and has been amended several times by subsequent legislation. HOME funds are allocated by formula

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to grantees to operate the program. Grantees must commit and spend their allocated funds within certain time-frames or they lose the funds.

The HOME projects and activities presented in the City's 2010-2015 Consolidated Plan must meet one of the two national objectives found in the HOME regulations. The HOME program national objectives are listed below.

- To expand the supply of decent, safe, sanitary and affordable housing; and
- To strengthen public private partnerships.

The City is responsible for assuring that each eligible activity conducted under the HOME program meets one of these national objectives. The national objectives for these two programs are the foundation for the City's Consolidated and One year Action Plans.

### **Reports on Progress**

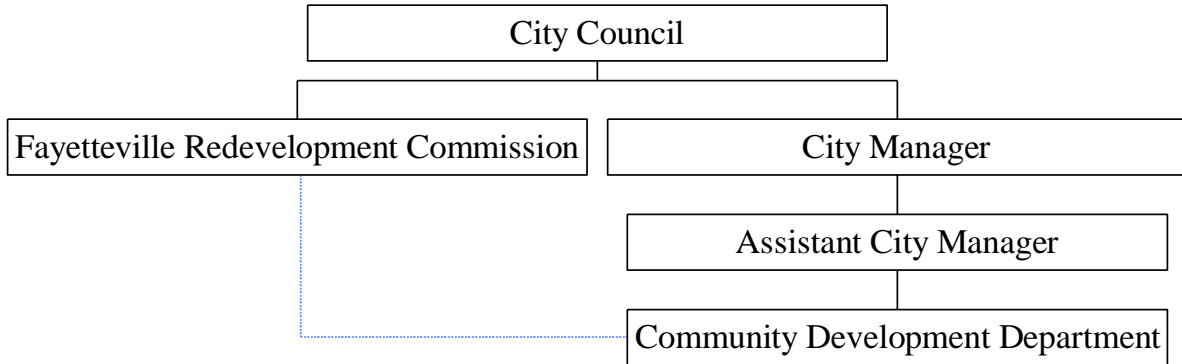
The City prepares a Consolidated Annual Performance and Evaluation Report (CAPER) that informs citizens on the use of the City's Community Development Entitlement funds and their impact in the community. Additionally, HUD makes regular visits to the City to assess and evaluate local programs and practices. The City's Community Development staff provides quarterly reports to the Fayetteville Redevelopment Commission.

## **COMMUNITY DEVELOPMENT DEPARTMENT**

### **Mission Statement**

The Community Development Department is committed to providing quality service and opportunities to citizens in need of decent, safe and affordable housing; creating positive economic development situations resulting in job opportunities for low to moderate-income persons and expansion of the tax base.

The Community Development Department administratively supports the activities of the Fayetteville Redevelopment Commission. The organizational relationship of the Fayetteville Redevelopment Commission to the City is presented in the organizational chart below.



On December 28, 1977, the Fayetteville City Council appointed the Fayetteville Redevelopment Commission as the primary citizen participation mechanism, most specifically, for projects planned and implemented through the City’s Community Development Block Grant and HOME programs. The Fayetteville Redevelopment Commission formulates and recommends policy to the Council on housing and community and economic development issues with emphasis on older, declining lower income neighborhoods; and plans and implements the City’s Community Development programs. The Fayetteville Redevelopment Commission members are listed below.

#### Fayetteville Redevelopment Commission

Steven Barnard  
Brook Browning  
Charnell Green  
Cassandra Haire

Dineen Morton  
Carlos Swinger  
Lynn Vick

The department staffing level is ten (10) full time positions and four (4) part-time. The department also utilizes the services of senior aides through Work Force Development, and volunteers to accomplish department goals and provide employment enhancing and enriching experiences for the participants.

#### Primary Functions

The primary functions of the department are as follows:

- Administer the CDBG and HOME programs;
- Develop programs and facilitate activities consistent with national objectives;
- Manage programs to ensure compliance;
- Gather and analyze information to develop recommendations for programs/activities;
- Manage the City’s Neighborhood Resource Center network (3 NRCs);

- 
- Develop, recommend and implement economic development programs and strategies to attract community investment and expand the tax base;
  - Advocate and facilitate activities by other groups/individuals to fulfill community objectives;
  - Expansion of affordable housing, individual investors and Community Housing Development Organizations (CHDOs);
  - Promotion of capacity building and economic development;
  - Support activities of community organizations;
  - Maintain, coordinate and support the activities of the Fayetteville Redevelopment Commission under the direction of the Community Development Director;
  - Keep the Commission informed of all CDBG/HOME grant and redevelopment activities;
  - Provide technical and analytical support;
  - Process and review requests for assistance;
  - Develop, recommend and implement programs to increase homeownership opportunities to improve the condition of the City's housing stock, and to alleviate the financial burden of City services provided to low to moderate income household; and
  - Provide a liaison with other agencies, organizations and City Departments.  
The Community Development Department is structured to enhance service delivery and improve its effectiveness to implement the strategies and activities arising from its mission statement.

## **HOUSING**

According to the recently conducted housing study, approximately 40% of all households in both Cumberland County and the City of Fayetteville have household incomes at \$35,000 or less or at a median income of around \$26,735. Therefore, the current study still reveals that thousands of households in our area remain poor or nearly poor, and continue to experience housing problems. The wages of these very low to extremely low income households continue to be a major barrier to affordable housing. In addition, the current unemployment rate is at 12%, being the highest amongst the protected classes (females and minorities) which also affect the protective classes' ability to be adequately housed. See the chart below referencing our area's labor force which indicates that of the 52,253 unemployed civilians in our area, 57% are women vs. 43% males and 60% are minorities vs. 40% white civilian labor.

		City of Fayetteville		County Outside City		Cumberland County	North Carolina
<b>Labor Force Characteristics</b>		<b>Total</b>	<b>%</b>	<b>Total</b>	<b>%</b>	<b>%</b>	<b>%</b>
Total Civilian Labor		52,253	100	68,419	100	100	100
Employed		46,173	88.4	64,164	93.8	91.4	94.7
Unemployed		6,080	11.6	4,255	6.2	8.6	5.3
Male Civilian Labor		24,305	100	33,561	100	100	100
Employed		21,669	89.2	31,767	94.7	92.3	95.1
Unemployed		2,636	10.8	1,794	5.3	7.7	4.9
Female Civilian Labor		27,948	100	34,858	100	100	100
Employed		24,504	87.7	32,397	92.9	90.6	94.2
Unemployed		3,444	12.3	2,461	7.1	9.4	5.8
White Civilian Labor		25,815	100	42,575	100	100	100
Employed		23,733	91.9	40,711	95.6	94.2	96.1
Unemployed		2,082	8.1	1,864	4.4	5.8	3.9
Nonwhite Civilian Labor		26,363	100	25,789	100	100	100
Employed		22,365	84.8	23,402	90.7	87.8	90.4
Unemployed		3,998	15.2	2,387	9.3	12.2	9.6
Hispanic Civilian Labor		2,376	100	3,753	100	100	100
Employed		2,116	89.1	3,401	90.6	90	91.8
Unemployed		260	10.9	352	9.4	10	8.2

The City of Fayetteville’s current population is 207,352 with over one third of all households in our area experiencing some type of housing problem. Households considered to have a housing problem are those without a complete kitchen or bathroom, contain more than one person per room, and/or pay more than 30% of their income to cover housing expenses. Housing problems are greatest amongst larger families and lowest amongst the elderly (23% for elderly compared to 58% for all other households). Most affordable housing units developed are one or two bedroom rental units that do not accommodate larger families, causing them to be the largest group that is cost burden as they rent or purchase larger more expensive dwellings.

As housing problems are assessed in general, housing rehabilitation and rental assistance appear to be significant needs of all low-income households (0-80% of Median Family Incomes (MFI)). While many low-income and/or members of the protective classes may have a multitude of problems, the most common housing issue is being cost burden with rent that over stretches a household's budget. The current housing study states that approximately 42% of renters have gross rents 35% or more of their household income. However, while housing rehabilitation funding may assist with the repairs and upgrades of units, it would not impact the degree of cost burden for anyone.

The lower the income, the higher the cost burden is in retaining and maintaining housing. This in turn leads to credit problems that make it difficult to contemplate buying a home, even if income increases to a level that would make that possible. Other contributing factors in preventing low to moderate income persons in owning a home are down payment and closing cost requirements, and little new construction at the affordable end of the price scale within the city limits of Fayetteville. Only a small fraction of homebuyers in the city are low to moderate income.

The retail trade is the largest employer by industry in the region and the accommodation and food services industry is the third largest employer.

**Housing Needs of Lower Income Households (HUD Table 1C)**

Income Category by Housing Problem	Renters					Owners				
	Elderly	Small Families	Large Families	All Others	Total	Elderly	Small Families	Large Families	All Others	Total
<b>0 - 30% of MFI</b>	<b>723</b>	<b>1,735</b>	<b>378</b>	<b>1,350</b>	<b>4,186</b>	<b>856</b>	<b>379</b>	<b>93</b>	<b>284</b>	<b>1,612</b>
% with Any Housing Problem	63%	78%	88%	71%	74%	83%	87%	100%	47%	79%
% Cost Burdened	61%	76%	80%	70%	72%	82%	87%	96%	46%	77%
% Extremely Cost Burdened	37%	69%	69%	56%	59%	57%	80%	96%	41%	62%
<b>&gt;30 - 50% of MFI</b>	<b>404</b>	<b>1,385</b>	<b>229</b>	<b>939</b>	<b>2,957</b>	<b>748</b>	<b>459</b>	<b>87</b>	<b>164</b>	<b>1,458</b>
% with Any Housing Problem	55%	83%	76%	81%	78%	55%	85%	100%	79%	70%
% Cost Burdened	55%	78%	56%	81%	74%	55%	85%	89%	79%	69%
% Extremely Cost Burdened	22%	29%	28%	39%	31%	32%	64%	79%	64%	49%
<b>&gt;50 - 80% of MFI</b>	<b>295</b>	<b>2,270</b>	<b>443</b>	<b>1,599</b>	<b>4,607</b>	<b>1,219</b>	<b>1,304</b>	<b>235</b>	<b>559</b>	<b>3,317</b>
% with Any Housing Problem	48%	48%	65%	57%	53%	40%	75%	72%	62%	60%
% Cost Burdened	44%	43%	25%	56%	46%	40%	73%	51%	61%	57%
% Extremely Cost Burdened	10%	2%	0%	6%	4%	18%	21%	9%	24%	20%
<b>Total</b>	<b>1,422</b>	<b>5,390</b>	<b>1,050</b>	<b>3,888</b>	<b>11,750</b>	<b>2,823</b>	<b>2,142</b>	<b>415</b>	<b>1,007</b>	<b>6,387</b>

Source: HUD CHAS Table 1C

*Housing & Homeless Needs Assessment*

The 2000 U.S. Census reported approximately 134,716 housing units in Cumberland County, a 20.4% increase since the 1990 Census. Currently, it is estimated that there are 53,565 units in the Fayetteville with the most common type of housing being single-family detached units. In the more densely populated City of Fayetteville, there are a larger number of multi-family units. Within the County, mobile homes make up a significant portion of the housing stock, comprising 12.9% of the total housing units.

In 1990, there were 6,860 vacant units in Cumberland County and 11,067 in 2000. The 2006-2008 ACS estimates there are 15,870 vacant units, for a total of 11.8% of the total housing market. This is up 43% from 2000 where the vacancy rate was 9.3%.

There are 71,506 owner-occupied housing units in Cumberland County, which is 60.1% of the 118,846 occupied units. This reflects an increase over the 2000 rate of 59.9%. In the City of Fayetteville, 57.6% of the occupied units are owner-occupied, up from 53.3% in 2000.

The median value of owner-occupied housing in Cumberland County is \$111,600, an increase of 31.4% over the median value of \$84,900 in 2000. The median value of owner-occupied housing in the City of Fayetteville is \$112,000, an increase of 28.4% over the median value of \$87,200 in 2000.

Housing values in Cumberland County continue to rise and the Fayetteville Association of Realtors reports that the average sales price for an existing home in 2009 for Cumberland County was \$156,251. The average sales price for a newly constructed unit in 2009 was \$200,999. The Association reports that existing homes were purchased for an average sales price of \$130,673.

In Cumberland County there are 47,340 renter-occupied units. The City of Fayetteville has 30,540. The FY 2010 Cumberland County Fair Market Rent as determined by HUD is:

- Efficiency: \$580
- One-Bedroom: \$627
- Two-Bedroom: \$700
- Three-Bedroom: \$994
- Four-Bedroom: \$1,176

The following tables provide a detailed overview on housing occupancy, tenure, median value, and median gross rent in Cumberland County according the 2008 Census Estimates.

The Table below shows housing tenure in Cumberland County in 2000 by race of the household and for Hispanic households.

- White households and Native American households own their housing units at a higher rate than all households in Cumberland County. Minorities other than Native Americans, own their units at lower rates than all households in Cumberland County.
- Minority households in the County outside of Fayetteville have higher rates of home ownership than minority households in the City. In fact, the minority households outside the City have rates of home ownership that are higher than minority households State-wide.
- The rate of home ownership among minority households in the City are lower than the rate of home ownership by minority households State-wide.

**Housing Occupancy, Tenure, Median Value, and Median Gross Rent – 2000**

	City of Fayetteville				Co. Outside City				Cumberland Co.	North Carolina
	Owner Occupied		Renter Occupied		Owner Occupied		Renter Occupied			
	Total	%	Total	%	Total	%	Total	%	% Owner-Occupied	% Owner-Occupied
White	15,581	60.6	10,121	39.4	25,298	68.7	11,528	31.3	65.4	75.1
Black	8,731	45.1	10,632	54.9	10,128	58.2	7,270	41.8	51.3	52.6
Am. Ind., Eskimo	302	54.4	253	45.6	852	72.7	320	27.3	66.8	69.6
Asian, Pacific Islander	485	53.7	419	46.3	518	60.9	333	39.1	57.2	50.9
Other Race	342	33.1	691	66.9	671	41.4	948	58.6	36.1	29.2
Two or More Races	368	42.1	507	57.9	472	44.5	588	55.5	6.7	46.0
<b>Total</b>	<b>25,809</b>	<b>53.3</b>	<b>22,623</b>	<b>46.7</b>	<b>37,939</b>	<b>64.4</b>	<b>20,987</b>	<b>35.6</b>	<b>59.9</b>	<b>69.4</b>
Hispanic Origin Any Race	902	38.5	1,442	61.5	1,513	43.6	1,956	56.4	41.5	31.5



Source: U.S. Bureau of the Census

GCT-T9-R: Housing Units (geographies ranked by estimate-Top 10)													Estimates	Census
Data Set: 2008 Population Estimates													Base	2000
Geographic Area: North Carolina -- County														
Rank	Geographic area	Housing Unit Estimates												
		July 1,2008	July 1,2007	July 1,2006	July 1,2005	July 1,2004	July 1,2003	July 1,2002	July 1,2001	July 1,2000	April 1,2000	April 1,2000		
	Carolina	201,378	125,727	103,881	94,265	86,245	79,167	714,357	633,212	543,219	3,522,341	3,523,944		
	<b>COUNTY</b>													
1	Mecklenburg County	403,304	390,330	372,944	360,322	348,227	336,800	324,334	310,776	296,353	292,755	292,780		
2	Wake County	353,143	339,757	325,514	314,137	302,544	292,909	283,987	273,076	261,040	258,956	258,953		
3	Guilford County	213,526	210,023	205,169	200,625	196,085	192,795	188,513	184,138	181,218	180,391	180,391		
4	Forsyth County	154,847	152,237	149,563	146,750	143,839	141,385	138,713	136,636	133,795	133,094	133,093		
5	Cumberland County	136,947	135,191	132,138	128,772	126,030	124,466	122,182	120,820	118,869	118,424	118,425		
6	Durham County	117,884	116,017	113,193	110,905	108,119	105,297	102,480	98,890	96,138	95,452	95,452		
7	Buncombe County	108,795	107,300	105,439	103,264	101,529	100,091	98,143	96,051	94,364	93,966	93,973		
8	New Hanover County	99,628	97,664	95,861	92,685	89,309	86,597	84,317	81,969	80,096	79,634	79,616		
9	Gaston County	88,426	87,205	86,005	84,805	83,701	82,583	81,593	80,527	79,189	78,866	78,842		
10	Brunswick County	76,041	73,010	68,991	64,640	61,111	58,476	55,957	53,807	51,852	51,431	51,431		

## Public & Assisted Rental Housing

Public or assisted housing was created by the Congress of the United States in 1937. Its purpose was to provide decent, safe, sanitary and affordable housing to families unable to pay market rate rents. The assistance was to be temporary in nature, and structured to allow residents to move in, move up and move out. Today, there are approximately 1.5 million U.S. households residing in public housing units, managed and maintained by over 3000 local housing authorities and funded on an annual basis by Congress. The funds are distributed by the Department of Housing and Urban Development who also provides technical assistance and oversees compliance governed by the authority of Federal law and regulations.

The Section 8 Housing Choice Voucher Program is the federal government’s program for assisting very low-income families to include elderly and disabled individuals with renting decent, safe, sanitary and affordable housing in the community. The Housing Authority administers the Voucher Program locally. Participants of the Section 8 Leased Housing Program are allowed to find and lease privately owned single-family homes, apartments and manufactured homes. The participants possessing a Housing Choice Voucher are allowed to choose any housing that meets the Program requirements if the owner agrees to participate.

Funding for the Section 8 Program is provided by HUD. The Fayetteville Metropolitan Housing Authority issues a Voucher to an eligible applicant and the family then locates suitable housing. All units must meet housing quality standards set by HUD regulations

and the Housing Authority’s policies. The Voucher holder’s portion of rent is determined by their income. Once all Program requirements and regulations are met, the Housing Authority pays a subsidy directly to the owner/landlord/agent on behalf of the low-income family. This subsidy is the difference between the actual rent charged by the landlord and the amount paid by the participants.

The Section 8 Leased Housing Program is not currently accepting applications for the City of Fayetteville or Cumberland County. There are in excess of 500 families on the current waiting list. Public notices will be given when applications will be accepted in the future. Eligibility for Section 8 assistance is determined by HUD guidelines and is based on a family’s total gross annual income and family composition.

The principal affordable rental housing resources in Cumberland County include traditional public housing units and non-project based or portable Section 8 assistance. The Fayetteville Metropolitan Housing Authority owns and manages 1,045 public housing units including 921 units in 12 developments and 124 scattered site single-family units. As shown in Table 2-14, all 12 developments are located in the City of Fayetteville.

Within Cumberland County, public housing is predominantly funded through Low Income Housing Tax Credit (LIHTC) developments or USDA developments located in areas of low income or high minority concentrations. Of the 921 public housing units located at the 12 developments, 731 [79%] are located in low income census tracts [CTs] and 413 [56.5%] are located in census tracts with minority concentrations. The following table shows that about one-third of the public housing units are located in CT 2 and 23% are located in CT 1. CT 2 contains a concentration of minority households, a majority of the households are low income, 71% of the households are female headed, and about 70% of the family households have children. In CT 1, the majority of the households are low income, 57% of the households are female headed, and 61% of the population age five and over has a disability.

**Inventory of Public Housing – 2009**

<b>Development</b>	<b>Census Tract</b>	<b>Total Units</b>
Grove View Terrace Apts. (I & II)	1	212
Delona Gardens Apts.	2	55
Campbell Terrace Apts.	2	194
Point Place Apts.	2	52
Stanton Arms Apts.	4	52
Holland Homes	6	60
Murchinson Townhouse Apts.	10	60
Blueberry Place Apts.	12	48
Melvin Place Apts.	12	58
McNeill Apts.	18	50
Lewis Heights Apts.	23	48
Hillside Manor Apts.	25.01	32
Scattered site single-family units	scattered	124
<b>Total</b>		<b>1,045</b>

*Source: Fayetteville Metropolitan Housing Authority*

The North Carolina Indian Housing Authority owns and manages 92 public housing units at Eagles Nest Apartments, which is located in CT 14.

The Fayetteville Metropolitan Housing Authority was awarded a \$20,000,000 HOPE VI grant to revitalize the Old Wilmington Road area by replacing 249 existing distressed public housing units and obsolete infrastructure with 747 new mixed-income rental units (550) and homeownership dwellings (105), and providing 72 new housing units for disadvantaged persons at seven scattered sites as detailed in the map below. The City of Fayetteville has committed to \$10,616,876 in financial support towards the revitalization project. Cumberland County has committed to \$4,000,000 in financial support toward community infrastructure and services.



In addition to Public Housing, the City of Fayetteville and Cumberland County has non-public “assisted rental housing.” The North Carolina Housing Finance Agency has identified 1320 units developed with the use of Low Income Housing Tax Credits [LIHTC]. The US Department of Agriculture Rural Development reports that there are four multi-family housing developments with 275 apartments in Cumberland County. All four Rural Development projects are outside of Fayetteville.

**Inventory of Assisted Rental Housing – 2010**

Development	Census Tract	Total Units	Funding
<i>City of Fayetteville</i>			
Adams Court Apartments	8	40	LIHTC
Haymount Manor Apartments	9	48	LIHTC
Rosehill Gardens	12	100	LIHTC
Eastside Green I	14	60	LIHTC
Eastside Green II	14	48	LIHTC
Blanton Green Apartments	23	48	LIHTC
Blanton Green Apartments II	23	48	LIHTC
Blanton Green Apartments III	23	36	LIHTC

Rosehill West Apartments	24	76	LIHTC
Longview Apartments	25.02	48	LIHTC
Bunce Green Apartments	33.02	80	LIHTC
Bunce Manor Apartments	33.02	48	LIHTC
Maple Ridge I	33.07	48	LIHTC
Maple Ridge III	33.07	80	LIHTC
<b>Total</b>		<b>856</b>	

<b>Development</b>	<b>Census Tract</b>	<b>Total Units</b>	<b>Funding</b>
<i>Cumberland County outside City</i>			
Legion Manor Apartments	16.01	44	LIHTC
Pine Chase	16.01	32	LIHTC
Pineridge Manor	16.01	60	LIHTC
Legion Crossing	16.0	48	LIHTC
Southview Green Apartments	16.02	72	LIHTC
Southview Villas	16.02	64	LIHTC
Crosswinds Green	16.02	48	LIHTC
Crosswinds Green II	16.02	48	LIHTC
Golfview Apartments	16.02	48	LIHTC
Fairview Forest	31	41	USDA
Fairview Forest II	31	48	USDA
Village Green I	31	120	USDA
Village Green II	31	66	USDA
Spring Lake Green	712	48	LIHTC
<b>Total</b>		<b>739</b>	

*Source: North Carolina Housing Finance Agency/USDA, Rural Development*

Of the 856 assisted rental-housing units in the City of Fayetteville, only Rosehill Apartments (100 units) is located within a low income (64% AMI) and high minority (71%) census tract. Of the 739 assisted rental housing units in the County outside of the City, the new Spring Lake Green Apartments (48 units) is located within a low-mod income census tract (81% AMI).

The City and County have facilitated the development of the other assisted rental units by establishing policies in their HUD *Consolidated Plan – FY 2005-2010* and through providing certifications of consistency with their *Consolidated Plan*. The goal is to prevent developing high concentration areas of low income households, many of whom are members of protected classes.

However, the condition of the housing stock in accordance to the most recent study could only be determined using census variables chosen to indicate housing deficiency. The age of a structure is held closely related to the period of time for potential deterioration, and the threshold commonly used to signal a potential deficiency is approximately 50 years. Another variable used to indicate wear and tear is the number persons per room, i.e. whether or not there is overcrowding. Generally, the value of more than one person per room (1.01) is used as the threshold for defining living conditions as overcrowded. According to the most recent housing study, 54% of the City’s housing stock and 48% of the County’s housing stock was built prior to 1980. In addition, census data has historically revealed that older housing units are found in census tracts containing low to

moderate income households and minority persons; and it is at those lower levels of income where the greatest potential for housing deterioration can occur due to less disposable income to pay for regular maintenance and repairs. Also typically, the areas where higher rental rates were identified were also where older rental units and overcrowded households were found. Considering these factors, community input and the findings of the housing study, the City has developed the following priority housing needs and objectives.

## **PRIORITY HOUSING NEEDS AND OBJECTIVES**

### **Priority Housing Need No. 1:**

Improve the condition of the low-income housing stock:

Objective 1: Provide housing rehabilitation services to at least 175 low to moderate-income households and investor-owner units per year.

Strategies:

1. Continue to provide housing rehabilitation services to low to moderate-income households and owner-investors willing to provide safe, sanitary and decent affordable housing.
2. Facilitate and revise eligibility criteria to increase candidacy/applicant approval for the existing Replacement Housing Program; work with City certified-CHDOs, local non-profits, local modular home dealers and realtors, house moving and demolition vendors to pool funding from various programs for replacement homes of dilapidated units that are not cost effective to repair. Seek agreements for the purchase of existing affordable replacement homes.
3. Facilitate and increase marketing/awareness of the newly developed Residential Façade Grant Program that is currently funded with CDBG-R funds in approving the exterior facades and overall appearance of homes and communities within the City.
4. Continue to provide funding to Fayetteville Urban Ministries in providing emergency repairs of up to \$5,000 as a grant to low to moderate income home owners.
5. Eliminate blighted housing stock no longer considered economically feasible to repair by facilitating the Acquisition and Demolition Program.

### **Priority Housing Need No. 2:**

Increase the supply of affordable housing.

Objective 1: Add at least 60 units of new multifamily affordable housing units per year from 2010-2015.

Objective 2: Add 10 new single family affordable housing units per year from 2010-2015.

Strategies:

1. Leverage City funds to encourage and attract developers to invest in new construction of multifamily affordable housing developments, especially in the Hope VI and previously indicated redevelopment areas.
2. Encourage the development of community development housing organizations and other non-profits to expand the supply of single-family affordable housing by providing such organizations with CHDO reservation and other available funds, and conveying City owned vacant parcels acquired from the Acquisition and Demolition Program and other sources free of charge to lower development costs.
3. Continue to facilitate and expand awareness/marketing of the newer developed Acquisition and Demolition Program, promoting the need to acquire additional parcels for future affordable housing development, freeing homeowners of demolition costs while providing some compensation for their lots, and informing them of how their conveyances of property shall benefit a low to moderate income family in obtaining decent, safe and sanitary housing.
4. Research and analyze the feasibility of offering other City provided incentives that will attract developers, community development housing organizations and non-profits to increase production of affordable housing.

**Priority Housing Need No. 3:**

Increase homeownership opportunities.

Objective 1: Provide homebuyer assistance to at least 10 low to moderate-income households per year.

Strategies:

1. Continue to offer homebuyer education classes and credit counseling through partnerships with Consumer Credit Counseling Services (CCCS) and Cumberland County Community Development.
2. Continue to administer the City's Down Payment Assistance Program (D.A.P.) that provides assistance with the required down payment and closing costs needed to purchase a home, and the City's Mortgage Assistance Program (M.A.P.) that provides gap financing needed to reduce the overall cost of financing and to ensure the purchase of an affordable, decent, safe and sanitary home by the homebuyer that would need minimal repairs.
3. Continue to seek additional qualified lenders in addition to the current participating lenders to access the City's D.A.P. and M.A.P. programs to increase the number of low to moderate income homebuyers assisted.
4. Provide additional funding to CCCS to offer free credit assessments and course of action counseling to homebuyers needing assistance in resolving credit issues.
5. Provide funding to Kingdom Community Development Corporation's IDA program to assist a minimum of five persons per year saving to purchase a home.

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## **AVAILABLE RESOURCES, INSTITUTIONAL STRUCTURE, AND GOVERNMENTAL COORDINATION**

Federal programs provide the bulk of resources utilized to provide safe sanitary and affordable housing in Fayetteville. Housing resources are also available from state programs, and community development housing organizations (CHDO's). Other non-profits, churches and foundations are existing, potential resources of affordable housing.

### **Federal Programs**

#### *Community Development Block Grant (CDBG.)*

The City receives an annual allocation of CDBG program funds from HUD. These funds are allocated based on such factors as city population, poverty levels, and the percentage of low-income persons. As previously noted, these funds are intended to develop viable urban communities for low to moderate-income persons. The City's housing activities are primarily funded with HOME funds but significant CDBG resources are utilized to provide housing rehabilitation services (including emergency home repair). The City will receive \$1,568,083 million in CDBG entitlement funds in the 2010-2011 program year. No local match is required.

#### *HOME Investment Partnership*

The City qualifies as a participating jurisdiction to receive an annual allocation of HOME Investment Partnership program (HOME) funds from HUD to conduct housing activities. HOME funds require a local match of non-federal funds. The City has to match 25 % of its HOME allocation. The City will receive \$893,673 in HOME allocation funds during the 2010-2011 program year.

#### *HUD Section 8 Rental voucher and Certificate Program*

HUD assists low- and very low-income families in obtaining decent, safe, and sanitary housing in private accommodations by making up the difference between what they can afford and the approved rent for an adequate housing unit. The Fayetteville Metropolitan Housing Authority operates this program.

#### *Section 202*

The Section 202 Supportive Housing for the Elderly Program helps expand the supply of affordable housing with supportive services for the elderly. The funds are available from HUD as competitive grants. It provides low-income elderly with options that allow them to live independently in the community. The Section 202 program provides capital advances to finance the construction and rehabilitation of structures that will serve as supportive housing for very low-income elderly persons, and the program also provides rent subsidies for the projects to help make them affordable. For the first time this year, a portion of the Section 202 funding has been set-aside to provide grants for converting existing Section 202 independent living residences into assisted living facilities. Eligible

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applicants for this program are private nonprofit organizations and nonprofit consumer cooperatives

*Public Housing Comprehensive Grant*

The comprehensive grant program is the primary source of modernization funds for physical improvements to public housing units and for improvements to the management and operational practices for existing public housing projects for large public housing authorities (PHAs). HUD makes these funds available to help public housing agencies correct physical and management deficiencies and keep units in the housing stock safe and desirable places to live. The Fayetteville Metropolitan Housing Authority receives funding from this program.

*Federal Low-Income Housing Tax Credits*

These tax credits are used to encourage developers to produce rental housing for low-income households by allowing a 10-year federal tax credit, which is calculated on the project's qualified basis. The program is overseen by the N.C. Federal Tax Reform Allocation Committee and is administered by the North Carolina Housing Finance Agency. Multi-family affordable housing developments utilizing this program in Fayetteville include Longview Green, Blanton Green, Rosehill West, Haymont Manor, Bunce Green, and Bunce Manor, and Maple Ridge.

**State Programs**

The North Carolina General Assembly created the North Carolina Housing Finance Agency in 1973. Its mission is to lead in creating affordable housing opportunities through the effective investment of public and private capital, professionalism, and responsiveness to the needs of its partners and the people it serves. The Agency operates federal and state housing programs including the Mortgage Revenue Bond Program, Low-Income Housing Tax Credit Program and N.C. Housing Trust Fund. Using these and other sources of funds, including earnings, the Agency provides a variety of services ranging from low-cost mortgages for first-time homebuyers to helping local governments, nonprofit organizations and private owners develop affordable homes and apartments.

**Local Programs**

*Private Financial Institutions*

Most of the local banks offer affordable mortgage products and first time homebuyer financing programs that offer higher allowable debt ratio's, lower fees and higher loan to value ratios. These programs can be coupled with down-payment and gap financing assistance available from the City, County and the State to low to moderate-income homebuyers.

**INSTITUTIONAL STRUCTURE**



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The housing provider community in Fayetteville is comprised of local government departments, non-profit housing organizations and for profit affordable housing developers.

### **Government Agencies**

#### *City of Fayetteville Community Development Department*

The City's Community Development department develops and administers housing programs designed to finance housing rehabilitation loans, leverage other funds to attract the development of multi-family affordable housing, assist CHDO's to develop single family affordable housing and provides grants for emergency home repairs. The department utilizes HUD entitlement dollars and program income earned from loan proceeds and payoffs to fund its housing activities.

#### *Fayetteville Metropolitan Housing Authority*

The Fayetteville Metropolitan Housing Authority is a public housing organization that administers low-income housing programs. Though the Mayor appoints the board members, it receives funding directly from HUD. The Fayetteville Metropolitan Housing Authority has 1,045 housing units. One hundred twenty-four of these are scattered-site units located inside and outside the city. The remaining 921 are located in 12 project sites. The City is currently partnering with FMHA on its 2008 HOPE VI Revitalization Grant by committing funding, vacant land and waiving of filing fee and permit fee. FMHA received a 20 million dollar grant to revitalize the Old Wilmington Road area by replacing 249 existing distressed public housing units and obsolete infrastructure with 747 new mixed-income rental units (550) and homeownership dwellings (105), and providing 72 new housing units for disadvantaged persons at seven scattered sites.

#### *Cumberland County Community Development Department*

Cumberland County qualifies as an urban county and also receives HUD entitlement funds. The County is the lead agency for a consortium representing the remaining units of local government out side of Fayetteville and offers a slate of programs similar to the City's. Though the County's Community Development programs are designed to benefit non-city residents, the City and County have partnered to jointly fund multi-family housing developments in the city. The City is also currently partnering with the County to develop and share the expense of housing studies and assessments, and with the offering of various workshops and events.

#### *Other Government Agencies*

Several other City of Fayetteville departments also have an impact on housing in Fayetteville. The Inspections department enforces the zoning, building, housing and property maintenance ordinances. The Planning department reviews development plans, reviews and updates zoning and subdivision ordinances and makes recommendations to the Planning Commission on rezoning petitions. The Human Relations Department administers the City's Fair Housing Ordinance and investigates and resolves fair housing complaints.

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## **Nonprofits**

### *Cumberland Community Action Program*

Cumberland Community Action Program (CCAP) develops and operates a diverse group of programs to meet needs of the low-income community. Programs include Consumer Credit Counseling Services, Community Food Bank, Head Start, SHARE and a Weatherization program. CCAP also has been certified as a CHDO (Community Housing Development Organization).

### *Fayetteville Urban Ministry*

Fayetteville Urban Ministry has conducted an emergency repair program for local low to moderate-income homeowners since 1993. The program focus is on repairing substandard housing conditions that require immediate attention. All services are provided without charge to service recipients. The extensive use of volunteers and donated materials maximizes the City's funds. Donated new, surplus and recycled materials and partnerships with other providers leverages resources and helps to lower costs thereby maximizing the number of clients served.

### *Habitat for Humanity*

The Fayetteville Area Habitat for Humanity has been active in the Old Wilmington Road and Massey Hill areas of downtown Fayetteville. Their primary activities include the construction affordable housing to be purchased by low-income homebuyers. Habitat has been certified as a CHDO (Community Housing Development Organization).

### *Kingdom Community Development Corporation*

Kingdom Community Development Corporation (Kingdom) partners with the City to construct affordable single- family housing. For the past several years, the City has been working with Kingdom to complete Phase II of Fairley Estates, a twenty-lot subdivision. The City will continue to partner with Kingdom in the development of an affordable housing.

### *The Women's Center of Fayetteville*

The Women's Center of Fayetteville is the newest certified CHDO for the City that has played an active role in acquiring and rehabilitating single family detached units for either rent or for lease to own, acquiring and rehabilitating multifamily housing units for rent, and very recently in new construction of single family detached units. The City will continue to partner with the Women's Center in various CHDO eligible activities.

## **GOVERNMENTAL COORDINATION**

The City, Cumberland County, non-profits and private developers have partnered on several significant affordable housing developments. These collaborations have enhanced the leveraging of funds to implement projects that would have been difficult to implement individually.

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### **Private Housing Developers**

The City has partnered with United Developers on several affordable housing developments for low-income renters. United Developers is a locally owned company that specializes in low income tax credit projects. During the 2010-2011 program year, the City proposes to partner with United Developers and Evrytanian Association of America “Velouchi” and the North Carolina Housing Foundation, Inc. to provide additional affordable housing units. The City has developed a Request for Proposal (RFP)/Application process to provide for full and open competition in the request for funding for affordable housing development projects constructed by private housing developers.

### **Relationships Among Housing Organizations**

The representation of members on the boards and committees of different housing organizations facilitate cooperation and coordination among local housing organizations. Representatives of the City, the County, local non-profits, bankers and real-estate professionals serve on an affordable housing advocacy group known as the Affordable Housing Network of Fayetteville and Cumberland County. In addition, the Mayor appoints the Fayetteville Metropolitan Housing Authority's board members and reviews the organization's budget prior to submission of their comprehensive grant application. The City also participates in the Cumberland County Continuum of Care planning committee.

## **STRATEGY TO OVERCOME GAPS**

### **Housing Development Capacity**

The City has worked closely with CHDO's and non-profits to facilitate and sponsor the provision of technical assistance. The City currently has four certified CHDO's – Kingdom Community Development Corporation, Cumberland Community Action Program, Fayetteville Area Habitat for Humanity and the Women's Center of Fayetteville. The City works with these organizations to provide affordable housing in the City. The City will continue to work existing housing development organizations and encourage development of other organizations.

### **Public-Private Partnerships**

The City will continue to offer low-interest housing rehabilitation loans to encourage owner investors to provide affordable housing for low-income renters. This method provides program income needed to fund housing development activities. The City continues to expand its partnerships with The Fayetteville Area Habitat for Humanity, Kingdom Community Development Corporation, Cumberland Community Action Program, Fayetteville Urban Ministry and the Women's Center of Fayetteville.

## **COMMUNITY DEVELOPMENT**

The City of Fayetteville has several low income census tract areas that are eligible for certain programs funded by the Community Development Block Grant funds. To address

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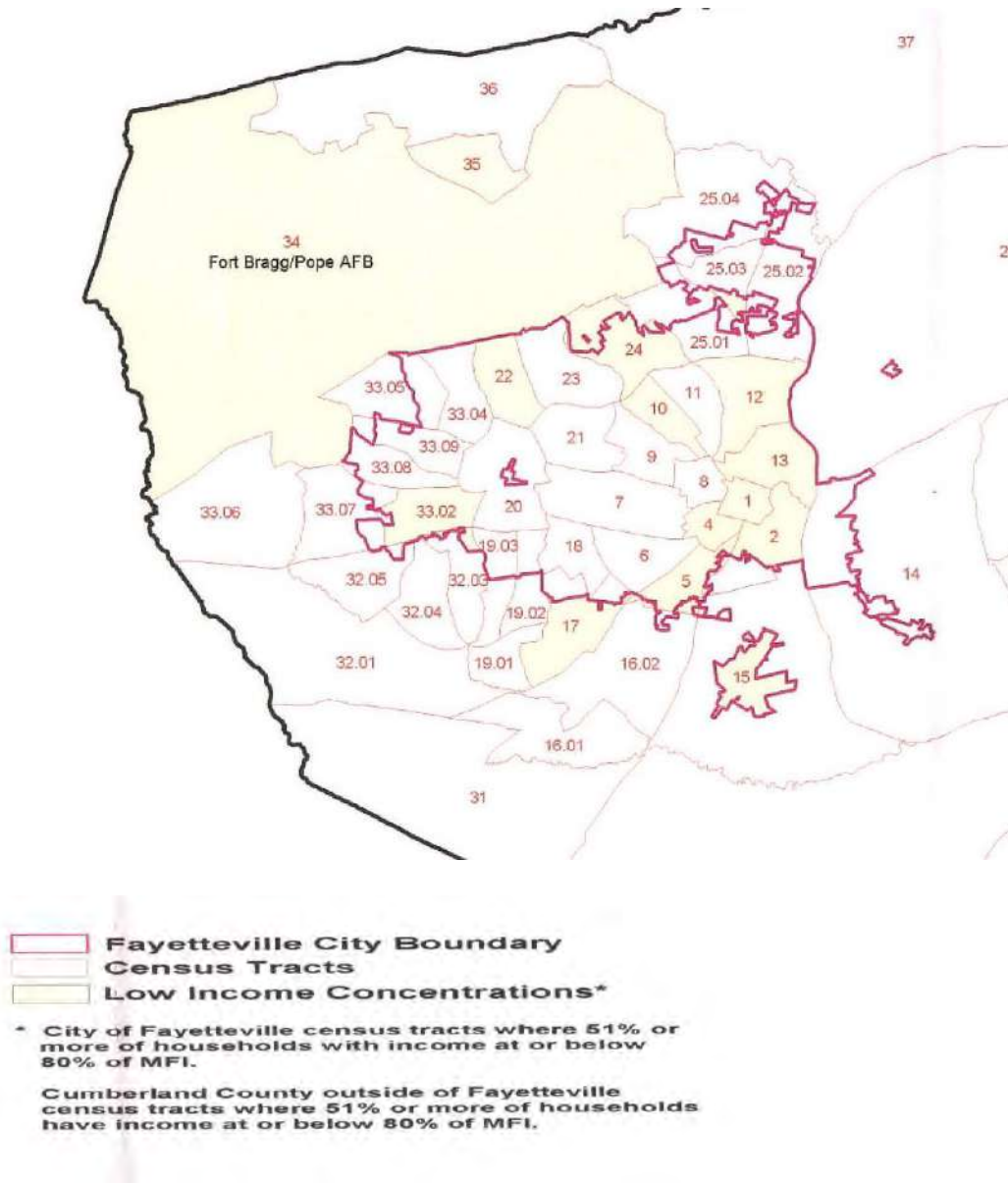
the needs in the area where there is a concentration of low-moderate income citizens, the City's community Development activities will focus on assisting individuals and groups to help improve skill levels needed to obtain a higher quality of life or increase their ability to meet community goals and objectives. The primary vehicle for the delivery of these services is the Neighborhood Resource Center Network. Neighborhood Resource Centers are located in the low wealth communities of Fayetteville and provides educational, self-help and job-training opportunities. The City currently has three Neighborhood Resource Centers.

Over the years, the City has formed partnerships with local non-profits and community organizations as they sought Community Development Block Grant funding. Non-profits have provided services to future homeowners, administered emergency repairs, neighborhood beautification projects, and assistance to homeless shelters. The City will continue to work with local non-profits to provide these programs and activities.

The City's population has continued to grow as a result of annexation. Over the past few years, the City has annexed areas to eliminate potential health hazards through the extension of water and sanitary sewer lines. In order to decrease the financial burden from the installation of the water and sanitary sewer lines and the hook-up to the lines, the City provides assistance to eligible homeowners. The City uses CDBG funds to provide grants in the amount of \$1000 for water assessments, \$1,000 for sewer assessments and \$500 for plumber hook-up fees to homeowners with incomes at or below 80% of the median family income for Fayetteville in annexation areas III-A to IV-B. However due to increased installation costs, the City shall provide grants in the amount of \$2,000 for water assessments, \$2,000 for sewer assessments and \$900 for plumber hook-up fees for income eligible homeowners in annexation area V-A.

To meet the area-wide benefit criteria, the City is able to provide certain programs to areas located in low-income census tract areas. As shown on map below, in the City, 12 census tracts have 51 percent or more low income households. The census tracts are CT 15 – 100 percent (six of six households residing in the census tract, all have a disability, all are age 75 and over), CT 13 – 79.6 percent, CT 2 – 79 percent, CT 10 – 75.6 percent, CT 4 – 66.3 percent, CT 12 – 60.4 percent, CT 1 – 60.3 percent, CT 32.03 – 59.5 percent, CT 5 – 57.4 percent, CT 24 – 54.6 percent, CT 22 – 51.5 percent, and CT 33.02 – 51 percent.

### Low Income Census Tracts



### PRIORITY COMMUNITY DEVELOPMENT NEEDS AND OBJECTIVES

#### Priority Community Development Need No. 1

Offer training programs that develop job skills to help low to moderate-income persons improve their earning potential.

Objective: Provide job skills training opportunities to at least 10,000 clients per year at the neighborhood resource centers.

Strategies:

1. Enhance relationships with local agencies to develop programs in response to community needs.
2. Provide self-help opportunities through job skills training, computer classes, GED certification, and other useful training.
3. Recruit skilled volunteers, in addition to contracting with instructors, to provide training that will benefit job seekers and others wanting to supplement their income.

**Priority Community Development Need No. 2:**

Continue to improve neighborhood accessibility to various human services.

Objective: Continue operation of the Neighborhood Resource Center Network and partner to add additional centers in areas where needed.

Strategies:

1. Seek additional opportunities to co-locate in existing facilities in low to moderate-income areas including the City's redevelopment plan areas.
2. Collaborate with local agencies, service providers and skilled volunteers to provide informational workshops and services in the NRC's.

**Priority Community Development Need No. 3:**

To provide support to the City's efforts to pave remaining unpaved streets within the City limits, extend water and sewer to newly annexed areas, and various community improvement activities.

Objective: Provide assistance to low-income property owners to help offset capital improvement costs associated with street paving and water and sewer installation.

Strategies:

1. Provide up to \$1,000 in assistance to low-income homeowner's to offset paving assessment fees.
2. Provide up to \$2,000 in assistance as a grant to low income homeowner's to offset water and \$2,000 in assistance as a grant to offset sewer installation assessment fees, and an additional \$900 in assistance as a grant to offset private plumber hook-up fees.

**Priority Community Development Need No. 4:**

Provide support in the implementation of the recommendations in the City's redevelopment plans.

Objective: Coordinate implementation of the City's redevelopment plans.

Strategies:

1. Prepare and implement a redevelopment plan for areas along the Murchison Road Corridor.
2. Prepare and implement a redevelopment plan for infill areas within the Old Wilmington Road HOPE VI Revitalization Plan boundary.

3. Coordinate the implementation of feasible recommendations and strategies identified in the Bonnie Doone Redevelopment Plan.
3. Coordinate the implementation of feasible recommendations and strategies identified in the Massey Hill Redevelopment Plan.
4. Coordinate the implementation of feasible recommendations and strategies identified in the Deep Creek Road Redevelopment Plan.
5. Coordinate the implementation of feasible recommendations and strategies identified in the 71<sup>st</sup> District Redevelopment Plan.

**Priority Community Development Need No. 5:**

Provide programs for the youth and seniors in low-moderate income areas

**Objective:** Coordinate with service providers to provide youth and senior programs through the Neighborhood Resource Center Network.

**Strategies:**

1. Offer youth educational programs and activities in the Neighborhood Resource Centers.
2. Coordinate the use of the Neighborhood Resource Centers and Blue St. Senior Citizen Center for senior programs.
3. Coordinate activities to benefit low to moderate income residents with the Fayetteville/Cumberland County Parks & Recreation Department.

**Priority Community Development Need No. 6:**

Help foster neighborhood pride in low-moderate income areas of the City of Fayetteville

**Objective:** Provide grant programs to assist in improving the appearance of the low-moderate income areas of the City.

**Strategies:**

1. Continue Beautification Grant Program in low-moderate income areas.
2. Assist the Inspections Department with demolition and clearance activities.
3. Assist investor-owners with multiple properties rehabilitated by Community Development.

**AVAILABLE RESOURCES, INSTITUTIONAL STRUCTURE, AND GOVERNMENTAL COORDINATION**

The City funds its Community Development activities through the use of the City's CDBG entitlement funds. The City also utilizes partnerships with local Human Service agencies and volunteers to leverage financial and human resources.

**INSTITUTIONAL STRUCTURE**

*Community Development Department*

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The City of Fayetteville Community Development Department develops and coordinates programs that enhance the accessibility of services to at-risk adults. These services are distributed through the Neighborhood Resource Center Network. Ongoing activities in the resource centers include GED classes, job skills training, computer training, medical terminology classes, internet access to the Employment Security Commission, home-buyer education workshops and community meetings. Community Development staff coordinate special activities with the local human service providers in response to community demand.

*Parks and Recreation Department*

The City of Fayetteville/Cumberland Parks and Recreation Department is the primary entity responsible for the provision of recreational programs and facilitates, improving the City's appearance and maintaining streets and storm drainage. They expanded the outreach and accessibility of recreation programs through joint use agreements with the school system. In this manner, the City makes capital improvements on school property that can be utilized by the school and the surrounding community.

*Department of Social Services*

The Department of Social Services provides specific social services, financial and medical assistance to all persons within Cumberland County who demonstrate need and meet eligibility criteria prescribed by state and federal law. Services are available to: all age groups, adult services, Income maintenance services, and family and children's services

*Employment Security Commission*

Employment Security Commission offers services in employer insurance accounts, employment counseling, industrial services, job placement, labor market information, unemployment insurance and veteran's programs.

*Social Security Administration*

The Social Security Administration assist individual in filing for benefits: Medicare, survivors, retirement, disability and supplemental security income; also social security cards.

*Fayetteville Technical Community College*

Fayetteville Technical Community College provides specialized and general education in the following areas: business, engineering technology, general education, health education, public service and vocational education. The City has partnered with Fayetteville Technical Community College to provide GED and ABE classes at all resource centers.

*Fayetteville State University*

Fayetteville State University is a constituent of the University of North Carolina offering baccalaureate programs in 24 disciplines such as accounting, business administration, economics, education, mathematics, computer science, public administration,



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psychology, sociology, etc. It also offers graduate programs in business administration, education, mathematics, history, psychology and teaching.

*Methodist University*

Methodist University offers bachelor's degrees in over 70 fields of studying communications, justice studies, business administration, education, and social work. New majors and concentrations recently added include interdisciplinary studies of clandestine labs, church leadership, and radio communications. The University also offers three master's degree programs.

*Junior League of Fayetteville*

The Junior League of Fayetteville focuses on Child Welfare under their Community Assistance Program Fund. All applicants must be a non-profit organization. They are also committed to supporting and promoting services in the areas of aging, downtown revitalization volunteerism, environmental awareness, substance abuse, education and adolescent pregnancy.

*Florence Rogers Charitable Trust*

The Florence Rogers Charitable Trust was established under the will of Florence L. Rogers and is a private foundation making grants to qualified recipients. The grant seed money is used to try new ideas concerning education, recreation, welfare of children, and the improvement of the quality of life within our geographical area.

*Cumberland Community Foundation, Inc*

Cumberland Community Foundation, Inc. seeks to meet the needs of the community, rather than those of individual organizations. The foundation makes discretionary grants for a wide range of philanthropic purposes in arts and cultural affairs, civic affairs and community development, conservation and the environment, education, health and medical care, social welfare, youth welfare, and other fields for the benefit of Cumberland County.

*Child Care Solutions*

Child Care Solutions offers Subsidy, Quality Improvement, Quality Support, Special Needs and Transportation Grants. These grants are used to provide: financial help to parents with child care assistance on a short term basis; enables licensed homes and centers to progress to 3 star or above rated license within one year; allow child care facilities to maintain spaces for children with special needs and enables child care facilities to offer transportation to and from facility.

*Partnership for Children*

The Partnership for Children of Cumberland County is the nonprofit organization charged with implementing North Carolina's Smart Start and *More-at-Four* school-readiness programs for children from birth through age five. This organization has a successful record of improving the quality of child care, parenting resources, access to health care, and other support systems for Cumberland County's children.

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*United Way of Cumberland County*

United Way of Cumberland County strives to advance the common good by focusing on the building blocks for a good life: education, income, and health. At United Way, we recognize that lasting changes are achieved by addressing the underlying causes of problems. United Way partners with other nonprofit agencies to improve lives right here in Cumberland County.

These agencies teach organizations about the available funding sources; grant writing and how to find grant writing resources on the Web, fundraising, assessing and marketing your business, kinds of loans and choosing the right bank. The coordination of these services will continue to be of utmost importance to this department as we provide citizens and organizations with survival skills.

The City will continue to seek opportunities to develop partnerships with local organizations to meet community development needs of Fayetteville residents. Capacity building workshops have been provided to assist local non-profit organizations, small businesses and the general population in developing skills in grant writing, board development, business skills, budgeting, etc. Local organizations such as The Women's Center and Small Business and Technology Development Center (FSU); the Junior League of Fayetteville, Cumberland Community Foundation, Inc., Child Care Solutions and Florence Rogers Charitable Trust have partnered with the City to conduct capacity building workshops.

## **ECONOMIC DEVELOPMENT**

This section of the plan presents small business development activities with a concentration on economic development activities in the downtown area in support of the Fayetteville Renaissance Plan and the City's other redevelopment plan areas. Small business investment in other areas within the city limits of Fayetteville are not entirely excluded since there is also gap financing or down payment assistance available for qualifying small businesses located anywhere within the City. The Economic Development section has 5 core goals:

1. Recruit and develop local businesses;
2. Attract businesses to the downtown plan area and redevelopment plan areas;
3. Retain local businesses in the downtown plan area and redevelopment plan areas;
4. Support economic development activities that create jobs and expand the City's tax base; and
5. Identify redevelopment projects that will eliminate blighted commercial properties within the Murchison Rd., HOPE VI, Fayetteville Renaissance Plan and other redevelopment plan areas.

### **Fayetteville's Renaissance Plan**

The City of Fayetteville's downtown has transitioned from an assortment of undesirable businesses and vacant storefronts into a vibrant commercial and arts district over the last

decade. Beginning with the implementation of the City's Downtown Loan Program in 1997, the City of Fayetteville has been actively committed to the revitalization of its downtown area. A year earlier, a master development plan was developed for downtown Fayetteville, "A Complete Fayetteville One and For All". Redevelopment activities began to spur downtown with the construction of a military museum, a new police station, as well as, the relocation of a significant number of small businesses in the downtown area.

Five years later, the "Once and For All" master development plan was updated and renamed the Fayetteville Renaissance Plan. A market analysis study was conducted in order to identify priority projects that would be economically viable to downtown Fayetteville. It was concluded that downtown demanded more retail space as well as a demand for restaurant and entertainment space. It was also recommended that downtown Fayetteville has the market potential for residential rental units. As a result of this study, priority projects were identified and successfully completed that brought new retail, entertainment, housing and jobs to the downtown area.

Since 2002, approximately 71 projects have been identified with 24 of those completed; 6 under construction; 17 in the planning stages and the other 17 still being considered. The City of Fayetteville will continue to offer its Downtown Loan Program and other incentives to encourage further investment downtown.

### **Redevelopment Plan Areas**

The City of Fayetteville engaged the assistance of residents, property owners, business owners, consultants, and other community stakeholder groups over the last ten years to complete redevelopment plans of blighted areas within the city limits of Fayetteville. These plan areas include Bonnie Doone, 71<sup>st</sup> Township, Deep Creek Rd., Massey Hill, HOPE VI, and Murchison Road. Each plan identifies issues and opportunities for redevelopment and basically provides a specific plan of action to achieve those recommended future improvements that had been defined in each plan. Each program year the City of Fayetteville identifies projects within these plans that are feasible and that can be funded during that particular program year.

### **PRIORITY ECONOMIC DEVELOPMENT NEEDS**

#### **Priority Economic Development Need No. 1:**

Recruit and develop local businesses.

Objective: Provide technical assistance, training and loan information to new and expanding small businesses within the City limits of Fayetteville.

Strategies:

1. Make the Downtown Loan Program and Business Assistance Loan Program available to qualifying businesses.
2. Support and collaborate with local business centers and other members of the Strategic Alliance of Business Resources for Entrepreneurs (SABRE) to provide

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- technical assistance, training and loan information available to small business entrepreneurs.
3. Continue to guide small businesses through the start-up and expansion process.

**Priority Economic Development Need No. 2:**

Attract businesses to the downtown plan area and redevelopment plan areas.

Objective: Offer incentive programs to support the recruitment of businesses in the downtown plan area and redevelopment plan areas.

Strategies:

1. Provide low interest loans to small businesses interested in locating in the downtown area and redevelopment plan areas.
2. Offer the façade matching grant program to encourage businesses and commercial property owners to improve their building exteriors.
3. Market other loan products available at the local business centers, SBA and local banks.
4. Collaborate with the City’s Downtown Development Manager to market City programs and vacant properties in the downtown area.

**Priority Economic Development Need No. 3:**

Retain local businesses in the downtown plan area and redevelopment plan areas.

Objective: Offer incentive programs to encourage small businesses to remain in the City’s downtown and redevelopment plan areas.

Strategies:

1. Offer the Small Business Retention Grant Program to assist with the operating costs of expanding small businesses.
2. Offer the Business Assistance loan Program and Façade Improvement Grant Program to businesses in the City’s redevelopment plan areas.
3. Offer the Downtown Loan Program, Façade Improvement Grant Program and Business Assistance Loan Program to businesses in the downtown plan area.
4. Collaborate with local business centers and other small business resource partners to provide technical assistance, training and loan information to assist with small business expansions.

**Priority Economic Development Need No. 4:**

Support economic development activities that create jobs and expand the City’s tax base.

Objective: Encourage vacant property re-use and property ownership for small businesses that will create jobs for low to moderate-income residents.

Strategies:

1. Provide low interest loans to qualifying small businesses to acquire, renovate and construct commercial properties in the downtown area.

2. Provide low interest loans that assist with gap financing for qualifying small businesses starting or expanding within the City limits of Fayetteville.
3. Work with the Strategic Alliance of Business Resources for Entrepreneurs (SABRE) and the City's Downtown Development Manager to find properties and buildings for small businesses.

**Priority Economic Development Need No. 5:**

Identify redevelopment opportunities that will eliminate blighted commercial properties within the Murchison Road, HOPE VI, Fayetteville Renaissance Plan, and other redevelopment plan areas.

Objective: Attract developers; investors and small businesses to the downtown and other redevelopment plan areas.

Strategies:

1. Offer a lower interest rate with the Business Assistance Loan Program for small businesses investing in the redevelopment plan areas.
2. Offer the City's Façade Improvement Grant Program to businesses acquiring and leasing property in the redevelopment plan areas.
3. Market the City's Property Tax Grantback Program to qualifying developers, investors and businesses investing in the incentive zone.
4. Seek additional funding sources and implement new program ideas to leverage potential redevelopment projects.

**AVAILABLE RESOURCES, INSTITUTIONAL STRUCTURE, AND GOVERNMENT COORDINATION**

**AVAILABLE RESOURCES**

The City of Fayetteville, County of Cumberland, Fayetteville-Cumberland County Chamber of Commerce, Public Works Commission (PWC), and the Fayetteville Area Convention and Visitors Bureau serve as the major coordinators of strategies addressing economic development for Fayetteville and Cumberland County. Representatives from each of these organizations comprise a group referred to as the "Economic Development Senior Management Team". This committee meets as needed to discuss ongoing and planned economic development projects. This allows for better coordination of all projects within the City and prevents any organization from duplicating projects. Each organization can play a part in all projects and bring their areas of expertise to the table. It is a collaborative effort to market the community to attract new businesses and expand existing businesses to make the City of Fayetteville a more viable community.

**GOVERNMENT AGENCIES**

*The City of Fayetteville Community Development Department*

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The Community Development department plays a major role in coordinating the City's economic development activities. The Community Development department facilitates the Downtown Loan Program, Business Assistance Loan Program, Façade Improvement Grant Program, and the Small Business Retention Grant Program. The department utilizes CDBG HUD entitlement dollars and earned program income from loan program proceeds to fund its economic development programs. The department continues to develop incentive programs to promote economic development citywide, assists businesses locating in the City, promotes the reuse of vacant buildings, and the creation of jobs for low to moderate-income persons. The department collaborates with other agencies to provide the needed technical assistance or loan information to assist small business entrepreneurs with their start-up or expansion needs.

*Cumberland County Community Development Department*

Cumberland County also receives entitlement funds from HUD since it qualifies as an urban county. The County administers a micro-loan program that provides assistance to small business entrepreneurs. Loans are available to assist with the purchase of property, facility or site improvements, capital equipment purchases, inventory, machinery, and working capital for businesses located in Cumberland County.

*Public Works Commission (PWC)*

The Public Works Commission was created on March 4, 1905, through an act of the State Legislature, to manage, operate, and supervise the three utilities electric, water, and sanitary sewer, as well as, to be responsible for operating the city market stalls, and to test weights and measures. The vision of PWC is to improve the quality of life in the Fayetteville/Cumberland County areas providing a range of competitive utility services to the region. Its mission is to be a competitive provider of reliable utility-related services to its customers while providing a reasonable return to the citizens of Fayetteville. PWC's Business Development Department and Special Projects Department serve as major assets on the Senior Management Team. PWC has developed an incentive plan that we hope will help to encourage in-fill development within the City of Fayetteville. The incentives in the form of facility investment fee waivers or credits are available for new construction within the 3,000 acres of the Fayetteville Renaissance Plan area and also identified corridors which have experienced limited new development in recent years. FIF credits are awarded for new construction where the developer is installing water and sanitary sewer mains within the balance of the incorporated area of the City of Fayetteville.

**Other Government Agencies**

Other City and County Departments play a vital role in economic development within the municipal boundaries of Fayetteville and Cumberland County. As development projects evolve, staff from the Inspections, Planning, Transit, Airport and Engineering Departments participates in the economic development process as it relates to their areas of concern and expertise.

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## **NON-PROFIT AGENCIES**

### *Fayetteville-Cumberland County Chamber of Commerce*

The Fayetteville-Cumberland County Chamber of Commerce plays a vital role in the economic development in the community. Their responsibilities include taking a leadership role in defining a view of the future for the business community, reflecting and supporting all elements of the business community, and are governed by a board of directors that is designed to provide strong leadership and effective oversight. The Chamber is also a member of the Strategic Alliance for Business Resources of Entrepreneurs (SABRE).

### *Fayetteville Area Convention and Visitors Bureau (CVB)*

The Fayetteville Area Convention and Visitors Bureau is a private, not-for-profit organization that aggressively promotes and sells Fayetteville and Cumberland County as an attractive destination site for meetings and visitors. The Fayetteville area has experienced an exciting evolution to emerge as a leader in commerce, industry, and agriculture for southeastern North Carolina. Proximity to one of the country's largest military installations impacts the area with a wonderful cultural diversity reflected in every aspect of the community from festivals and museums, dining and shopping, to recreation and golf, theater and nightlife.

### *Downtown Alliance*

The Downtown Alliance of Fayetteville is a non-profit organization made up of downtown merchants. Their mission is to encourage business, residential, and retail growth in downtown Fayetteville, to promote the downtown to the public, and to represent the common interests of downtown merchants, professionals, property owners, and residents. The members that make up this organization can be any corporation, firm or individual subscribing to the purposes of the organization if the person owns property or a business, has offices located in, resides in, or is employed in, the downtown municipal services district area.

## **Small Business Centers**

### **(Members of the Strategic Alliance for Business Resources for Entrepreneurs) (SABRE)**

### *Fayetteville Business Center*

The Fayetteville Business Center is a business incubator that promotes, assists and encourages small business entrepreneurs and fosters economic growth in the City of Fayetteville. The Business Center serves entrepreneurs who reside as tenants with office space and furniture at below market rate rent along with other support services from the faculty at Fayetteville State University's (FSU) School of Business and Economics. The economic development Master Plan of Fayetteville State University originally stated the need to offer various seminars/workshops for individuals seeking information and training to start and grow their business. The seminars offered at the center are marketed to businesses located in the low-income areas of the City. The Business Center also utilizes the Community Developments network of neighborhood resource centers as a

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way of marketing the seminars and as a location to conduct a number of the seminars. The Business Center is also certified to process loan applications for an express loan program called the Small Office Home Office Community Express Loans to assist small business entrepreneurs with start-up or expansion needs.

#### *Women's Business Center*

The Women's Center of Fayetteville (WCOF) is a non-profit organization established to improve the economic environment and create opportunities for individuals and to provide a resource center for women in crisis. The Women's Business Center, a program of the WCOF, has served the community for over eleven years by assisting persons in all phases of small business development. The purpose of the center is to create employment and business opportunities for low to moderate-income individuals through self-employment and increased job opportunities in the area. The center provides counseling and seminars to entrepreneurs in starting and expanding a business. The center has a certified credit counselor on staff that processes loan applications for the Small Office Home Office (SOHO) Community Express Loan Program, the Business Loan Express (BLX) Program and Micro-loan Program to assist small business entrepreneurs with start-up and expansion needs.

#### *Cumberland Regional Improvement Corporation (CRIC)*

Cumberland Regional Improvement Corporation is a non-profit business and community development organization. CRIC assists small business owners in the process of start-up or expansion. They provide counseling services and assists in finding financial aid to meet small business needs. CRIC operates in partnership with the North Carolina Institute of Minority Economic Development, Inc. and the North Carolina Rural Center. CRIC's mission is to create an environment in which North Carolina's diverse population and low-wealth sectors of the population can achieve widely shared prosperity through business and economic development expansion programs, in addition to increasing the affordable housing stock for residents of Cumberland County. CRIC has a staff with over 40 years combined experience in the field of business development assistance, and federal and state procurement assistance. In addition to its staff CRIC participates in a network of other business professional that enables its clients to access information and services across the state.

#### *Fayetteville Technical Community College Small Business Center*

The Center for Business and Industry is designed to serve the employee or prospective employee of our business and industry community. This modern facility is located on Fayetteville Technical Community College's main campus and is primarily used for local business and industry training. Services are generally concerned with educational programs required to upgrade skills in businesses and industries throughout the county. The Small Business Center is located in this facility and offers a variety of services designed to assist small business owners to include specialized seminars, a resource center, business counselor, and a statewide network. The latest in literature and audiovisual materials on operating a small business are available in the Small Business Center's resource room. A small business counselor is available at the Small Business Center to provide advice on starting a new business or operating an existing business.



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Through the Center for Business and Industry, the Continuing Education Division is offering another dimension of customized courses with flexible schedules and quality instruction.

*Fayetteville State University (FSU) Small Business and Technology Development Center (SBTDC)*

The North Carolina Small Business and Technology Development Center (SBTDC) helps small business owners (and those interested in starting a business) meet the challenges of today's business environment, manage that ever-changing world, and plan for the future of their business. They do this by providing management counseling and educational services to small and mid-sized businesses across the state affiliated with a college or university such as Fayetteville State University on Murchison Road in the City of Fayetteville. Their mission is to help North Carolina businesses grow and create new jobs within the state. Most of the services are free of charge, and all SBTDC services are confidential.

**State Programs**

*Urban Progress Zones*

Article 3J Tax Credits offer enhanced tax credits to eligible businesses located in an urban progress zone. This tax credit program narrows its focus on job creation and business investment. Municipalities can apply for one or more zones as long as they meet the guidelines for establishing a zone. The zone is intended to provide economic incentives to simulate new investment and job creation in economically distressed urban areas.

An Urban Progress Zone is defined as an area comprised of one or more contiguous census tracts, census block groups, or both, or parts thereof; all of the area is located in whole within the primary corporate limits of a municipality with a population of more than 10,000 and meet other conditions as defined in the most recent federal decennial census. The City of Fayetteville has two approved zones. The first zone includes Census Tracts 10, 22, 23 and 24 (block groups 1, 2 and 5). Congress amended the program guidelines for establishing a zone in August 2007 and this allowed the City to apply and receive an approval for a second urban progress zone. This second zone includes Census Tracts 12 and 13.

*North Carolina Historic Preservation State Tax Credits*

A 20% state tax credit is available for rehabilitations of income-producing historic properties that also qualify for the 20% federal investment tax credit. In effect, the combined federal-state credits reduce the cost of a certified rehabilitation of an income-producing historic structure by 40%. A new state tax credit of 30% for qualifying rehabilitations of non-income producing historic structures, including owner-occupied personal residences is available. There is no equivalent federal credit for such rehabilitations.

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## **Federal Programs**

### *Federal Historic Preservation Tax Credits*

This tax credit program is one of the nation's most successful and cost-effective community revitalization programs. The program fosters private sector rehabilitation of historic buildings and promotes economic revitalization. This tax incentive is available for buildings that are National Historic Landmarks, that are listed in the National Register, and that contribute to National Register Historic Districts and certain local historic districts. Properties must be income producing and must be rehabilitated according to standards set by the Secretary of Interior. Eligible projects may receive a 20% rehabilitation tax credit equal to 20% of the amount spent to rehabilitate the building. There is also a 10% tax credit for the rehabilitation of non-historic, non-residential buildings built before 1936.

### *Hub Zone Empowerment Program*

The HUB Zone Empowerment Contracting Program provides federal contracting opportunities for qualified small businesses located in distressed areas. This program was enacted into law as part of the Small Business Reauthorization Act of 1997. The program falls under the auspices of the U. S. Small Business Administration. A HUB Zone is a historically underutilized business zone that is located in a qualified census tract (as defined in section 42(d)(5)(C)(i)(1) of the Internal Revenue Code of 1986). Cumberland County has eight census tracts identified as HUB Zones. These census tracts are 1, 2, 4, 10, 12, 13, 24 and 35. The HUB Zone Empowerment Contracting Program stimulates economic development and creates jobs in urban and rural communities by providing federal contracting preferences to small businesses located in distressed areas or HUB Zones. These contracting preferences go to small businesses that obtain HUB Zone certification through the SBA. To qualify a business must be small by SBA size standards, have its principal office located in a HUB Zone, be operated and controlled by a U. S. citizen and at least 35% of its employees must reside in a HUB Zone.

### *U.S. Small Business Administration (SBA)*

The SBA, established in 1953, provides financial, technical and management assistance to help Americans start, run, and grow their businesses. With a portfolio of business loans, loan guarantees, and disaster loans worth more than \$45 billion, in addition to a venture capital portfolio of \$13 billion, SBA is the nation's largest single financial backer of small businesses. Last year, the SBA offered management and technical assistance to more than one million small businesses. The SBA also plays a major role in the government's disaster relief by making low-interest recovery loans to both homeowners and businesses. North Carolina's district office is located in Charlotte and is responsible for the delivery of many of these programs and services to all 100 counties in North Carolina.

## **Local Programs**

### *Downtown Loan Program*

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The City partnered with local banks to create a loan pool of funds to encourage commercial investment in the downtown area. The City puts in 40% of each loan and offers a 4% fixed interest rate and the banks share the other 60% of the loan at a variable prime rate. The loan proceeds can be used to construct, purchase and renovate a downtown commercial building. Available loans range from \$50,000 to \$300,000, but larger loans can be considered. For each \$50,000 borrowed the business must create or retain at least one full-time equivalent job and make it available to a low to moderate-income person.

*Business Assistance Loan Program*

This program was created to stimulate small business start-ups or expansions within the municipal boundaries of the City of Fayetteville, including the City's redevelopment plan areas. Small businesses needing additional equity to qualify for primary financing from a Bank and who meet the City's program guidelines may apply. The City will offer a loan up to 25% or a maximum of \$125,000 of the total loan funds. The City's loan is held at a 5% fixed interest rate unless the business is investing in one of the City's redevelopment plan areas in which case a 3% fixed interest rate is available. The business is required to create or retain at least one full-time equivalent job for each \$50,000 loaned by the City's program.

*City of Fayetteville Façade Improvement Grant Program*

This program is designed to promote the revitalization of facades of active, ongoing for-profit businesses through the rehabilitation of commercial building exteriors and landscapes. This effort will benefit the City by removing blight, expanding the tax base, and increasing the economic vitality of the downtown Fayetteville Renaissance Plan area and the City's redevelopment plan areas. These redevelopment plan areas include Massey Hill, Bonnie Doone, Deep Creek Rd., 71<sup>st</sup> Township and the Old Wilmington Rd. plan areas. An eligible business must be located within the boundaries of any of the plan areas and meet all of the program requirements. The City of Fayetteville will provide a 50% matching reimbursement grant up to \$5,000 for each façade renovated. Each business that participates with this program must meet a job creation requirement and create at least one full time equivalent job and make it available to a low to moderate-income person.

*Small Business Retention Grant Program*

This program is designed to assist with the operating costs of an expanding small business with the objective of retaining businesses in the City's redevelopment plan areas. Each redevelopment plan area is unique with its own issues and opportunities. Funds are available to existing small business owners located within one of the boundaries of the Murchison Rd., Massey Hill, Bonnie Doone, 71<sup>st</sup> Township, Deep Creek Rd., Fayetteville Renaissance and HOPE VI redevelopment plan areas.

The City of Fayetteville will provide a 50% matching reimbursement grant up to \$5,000 for eligible expenses. The business applicant will have to provide an equal match to the grant award being requested. Grants for inventory, furniture, fixtures, equipment, and

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interior and exterior renovations are eligible for this program. Salaries, rent, and building related expenses (phone bills, electricity, etc.) are not eligible expenses for this program. This program frees up operating cash flow to fund the day to day working capital expenditures of the business or to take advantage of other opportunities, such as purchasing additional inventory, etc. Each business must be able to create at least one full time equivalent job and make it available to a low to moderate-income person.

#### *City of Fayetteville Economic Development Incentive Zone*

The City's property tax incentive program is meant to provide incentives to qualifying development projects in the City's Economic Development Incentive Zone. The primary objective of the program is to induce private investment thereby improving the economic health and diversity of the City and increasing the City's property tax base. Given the difficulty in determining the precise economic impact of a particular development project, the City has chosen to base the amount of the incentive on the increase in the taxable value of the property involved in the project, not including land value.

The economic impact of a proposed project within the defined area could also be evaluated using methods that include employment data such as job creation, wages and benefits, and related factors. For this particular incentive program, however, the incentive amount will be based solely on the increase in the taxable value of the property involved in the project. The taxable value of the property after improvements have taken place will be compared to the taxable value of the property before the improvements were made to determine the increase in the taxable value of the property. In order to be eligible for incentives under this program, a project must have improved the taxable value of the associated property by at least \$500,000. For the purposes of this program, increases in the value of land will not be considered in the calculation to determine the incentive payment.

## **HOMELESSNESS**

The City of Fayetteville has developed partnerships to increase the level of care for the homeless individuals in the Fayetteville/Cumberland County Area. Programs and technical assistance have been designed to provide support to homeless shelter providers and the Continuum of Care.

The City of Fayetteville Police Department provides an assigned police officer to assist and monitor homeless persons that spend a majority of their living unsheltered. The program has facilitated an effective communication network between the city and local homeless providers. The homeless service provider assist homeless persons with getting shelter, clothing, food, financial assistance and other services available through the local homeless providers. The Homeless Project Officer program has been in operation since 1993.

The City administers homeless service programs to assist homeless shelter providers and their clients. The Emergency Utility Assistance program designed to assist homeless

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shelters maintain their heat in the winter and cooling in the summer when they have a crisis with paying utility payments. Homeless shelter providers are also able to have funds reimbursed through the Shelter Reimbursement Program for out-of-pocket expenses while caring for homeless clients. For homeless clients that have reached a level independency, and are preparing to move into permanent housing, the city offers a Utility Deposit grant funds to assist with out-of-pocket expenses needed to pay utility deposits (gas, electricity, water and sewer) when leaving transitional housing.

The City works closely with the Cumberland County Continuum of Care Planning Council (CCCCPC), the lead entity for planning and coordinating in homeless needs in the Cumberland County Continuum of Care (CCCOC). The Continuum of Care is comprised of various organizations that service the homeless to include homeless shelter providers, human services agencies, faith organizations, local government and volunteers. The Council's mission is to facilitate the coordination of the County's human services agencies and community-at-large in order to adequately set strategies for addressing the needs of Cumberland County's homeless individuals and families and those at risk of homelessness through the Continuum of Care system. Further, the Continuum of Care conducts the annual homeless count for the Point in Time survey, which helps the council plan strategies and coordinate services for homeless individuals and families. The City also collaborates with other local agencies to develop programs that focus on breaking the cycle of homelessness through job skills training and ultimately permanent employment and housing.

The City is committed to the implementation of a 10 Year Plan to End Homelessness. The 10 Year Plan to End Homelessness Steering Committee is comprised of various stakeholders in the community to include city and county government agencies, the continuum of care, school systems, local businesses, faith organizations and volunteers. Together they work the 10 priorities that have been established in the plan.

According to the 2010 Point in Time survey conducted by the Cumberland County Continuum of Care there were as 1033 people homeless on a given day. Homeless shelter providers continue to maintain waiting list as there are not enough beds to use for the homeless on an average day. Housing providers for the homeless continue to need more ways to subsidize rents for low to no income persons in need of decent housing.

Additionally, the Point in Time survey in January 2010 indicated that there is a high need for emergency, transitional and permanent housing for homeless women and families. The Cumberland County Continuum of Care Planning Council conducted this study of the homeless and housing service providers.

Other conclusions and implications from the January 2010 survey outlined below:

- On the day that the survey was conducted 1033 people were determined to be homeless in the Cumberland County area. This count includes men, women and children. 10% were in emergency shelters, 17.5% were in transitional housing and 71% were unsheltered.

- 48% of the homeless surveyed were comprised of families with children. 0.9% was Men in families, 13.5% were women in families and 33% were children. Shelter housing providers report that there are not enough facilities to accommodate the growing number of families needing temporary housing.
- 3% of the people, who have been homeless more than 4 times in three years, indicated they were utilizing homeless shelters as primary shelter. Although this count was significantly lower than previous years the Continuum believes this number to be much higher. People with disabilities tend to utilize shelters as well.
- Single adults made up 52% of those surveyed. Single males were surveyed at 43%. They are still the primary target group of homelessness in Cumberland County. Single females, which are also in need of more available space made up 9%.
- There is a group of special needs persons who were surveyed as homeless. These are cases of severe mental illness, substance abuse, HIV/AIDS, victims of domestic violence, which were 20% of those surveyed.
- Homeless veterans are becoming a fast growing subpopulation in Cumberland County. At 5% of those surveyed, homeless shelter providers are looking to see more programs for veterans such as the grant per diem program.
- 8% of the surveyed were men and women that were being released for jail or prison. Housing is a major issue for this group as well as employment. Human services providers as well as housing providers seek better ways to provide case management and housing for this population.

The goal of the Continuum of Care is to address the needs expressed above with a direct plan of action to increase housing and services for the homeless while increasing community awareness surrounding the needs of this segment of the local community. In response to this effort the Cumberland County Board of Commissioners and the Fayetteville City Council has developed and implemented a 10-year plan to end homelessness. This plan is designed to address the needs of both the chronically homeless population as well as families who are struggling with the issue of homelessness.

• Homeless Population	• Sheltered			• Unsheltered	• Total
	• Emergency	• Transitional	• Unsheltered		
• Individuals	• 112	• 182	• 739	• 1033	
• Families with Children	• 13	• 44	• 88	• 145	
• Persons in homeless families with	• 40	• 176	• 279	• 495	

children				
• <b>Homeless Subpopulations</b>				
• Chronic Homeless	• 4	• 2	• 28	• 34
• Seriously Mentally Ill	• 1	• 5	• 12	• 18
• Veterans	• 1	• 1	• 51	• 53
• Persons with HIV/AIDS	• 0	• 1	• 9	• 10
• Victims of Domestic Violence (Adults)	• 11	• 13	• 27	• 51
• Criminal Justice System	• 3	• 0	• 79	• 82
• Health Care System (Hospitals)	• 0	• 0	• 22	• 22

\*based on the Cumberland County Continuum of Care 2010 Point in Time

## Homeless Assessment

### Overview

The following provides a description of the nature and extent of homelessness in Fayetteville and Cumberland County. Data is provided for the County as a whole since homelessness is addressed on a county-wide basis through the Continuum of Care Committee.

### Needs of Sheltered and Unsheltered Homeless

Section 103 of the Stewart B. McKinney Homeless Assistance Act of 1987 defines “homeless” or “homeless individuals” to include:

- An individual who lacks a fixed, regular, and adequate night-time residence; and
- An individual who has a primary night-time residence
- A supervised publicly or privately operated shelter designed to provide temporary living accommodations (including welfare hotels, congregate shelters, and transitional housing for the mentally ill);
- An institution that provides a temporary residence for individuals intended to be institutionalized; or
- A public or private place not designed for, or ordinarily used as, a regular sleeping accommodation for human beings.

The needs of the homeless are divided into Sheltered and Unsheltered Homeless, Persons Threatened with Homelessness and Subpopulations of Homelessness. No specific information is available to quantify the population of persons threatened with

homelessness in Fayetteville and Cumberland County. However, certain characteristics describe those most likely to face homelessness.

People without adequate and stable income will be continually at risk of a housing crisis. The majority of jobs now require moderate- to long-term training. Even entry-level positions are more technical than in previous times with widespread use of computer and telecommunication technology. Service and clerical jobs have replaced lower-skilled manufacturing and production jobs. These jobs often pay wages insufficient to support a family.

- Education and training are important to the labor force to sustain employment in decent paying jobs. The 2006 - 2008 Census Estimates reported that 20,785 persons age 25 and over in the County (12,180 for the City) had not finished high school. Persons without a high school diploma represent 11% of the population age 25 and over. People with no or minimum job skills are at risk of repeated housing crises.
- Children in single parent households are at risk of experiencing a housing crisis if they are poor. Women have historically earned less than men, making children in female-headed households the most vulnerable. The 2006 - 2008 Census Estimates reported 16,375 female-headed households with children younger than 18 years of age in Cumberland County (10,618 residing in the City of Fayetteville). Of these, 7,140 (4,343 in Fayetteville) were living below the poverty level.
- Cost burden, particularly among households whose income is less than 80% of the AMFI, is a factor in analyzing the risk of homelessness. When households pay higher proportions of their incomes for housing, they are forced to sacrifice other basic necessities such as food, clothing, and health care. The 2009 CHAS Data identified a total of 11,515 lower income households (80% AMFI or less) in the City and County that were cost burdened and paying more than 30% of their income on housing costs. Of these, 6,810 (59%) were extremely cost burdened and paid 50% or more of their income for housing.
- Others are at risk of becoming homeless include the following:
  - Persons leaving institutions;
  - Households with incomes less than 30% of the AMFI;
  - Victims of domestic violence;
  - Special needs populations (persons with HIV/AIDS, disabilities, drug and alcohol addiction);
  - People who are doubling-up, which is often identified by overcrowding;
  - Large families who are low income; and
  - Residents of rooming houses.

## 10-Year Plan to End Homelessness



Homelessness is a profound social problem. The characteristics of the homeless population in Fayetteville and Cumberland County mirror the multiple facets and special needs of all homeless people in North Carolina and the nation. Addressing the issue of homelessness in our community is a major challenge. Traditionally, the community has addressed these issues individually, whether it's a non-profit providing a place to shower and get a change of clothes, a faith-based group providing meals, private citizens volunteering their time, or through monetary donations. However, there are no simple solutions as the roots of homelessness are constantly changing. In 2008, the Cumberland County Continuum of Care strategized to develop the 10-Year Plan to End Homelessness.

The development of the 10-year Plan to End Homelessness is the result of a nationwide effort to focus community attention on homelessness. The task at hand was for the community to work cohesively in developing solutions that address the needs of the homeless. A series of public forums and agency interviews were held to gather community input during the planning process. Our Plan combines the efforts of a diverse group of stakeholders who are committed to ending homelessness in our community. The Plan outlines strategies to guide us in providing homeless men, women and children with coordinated services and housing options.

**Priority 1: Community Awareness and Education Campaign**

*Goal:* To change the face of homelessness in the community from that of the panhandler on the street to a more sympathetic icon that brings citizens into the support network.

*Objectives:*

- 1) Dispel common myths and misconceptions of the homeless population (emphasis on families and children)
- 2) Garner monetary support and an increased volunteer base to meet the increasing demand for homeless services

**Priority 2: Lobby Congress for special appropriations to assist homeless veterans (and the homeless population in general)**

*Goal:* To have dedicated funding by Congress for homeless assistance to veterans (and other homeless populations) added to the City and County legislative agenda.

1) *Objectives:*

- 1) Funding earmarks for the increasing number of homeless veterans in Cumberland County .
- 2) Funding earmarks for the overall homeless population in Cumberland County.

**Priority 3: Identify additional funding sources for local programs**

*Goal:* Increase available funding for local homeless service/housing providers

*Objective:*

- 1) Provide financial stability for local homeless initiatives in order to eliminate potential gaps in services.

**Priority 4: Create a day resource center**

*Goal:* Provide opportunity for homeless to access needed services and avoid duplication of effort.

*Objectives:*

- 1) To relieve the burden on homeless individuals traveling around the city for services.
- 2) Improve collaboration among service providers and avoiding duplication of effort.
- 3) Increase usage of local Homeless Management Information System (HMIS).

**Priority 5: Establish Childcare Subsidy for Homeless Families**

*Goal:* Provide opportunity for homeless families to obtain employment.

*Objective:*

- 1) Provide financial assistance to homeless families to make safe childcare choices in order to seek employment.

**Priority 6: Additional Shelter Space**

*Goal:* Provide additional shelter to eliminate the number of homeless who spend nights on the street.

*Objective:*

- 1) Increase shelter beds and supportive services available for populations identified by the CoC.

**Priority 7: Transportation**

*Goal:* Increase transportation options for the homeless.

*Objective:*

- 1) Provide transportation to enable the homeless to obtain employment, housing and other needed services.

**Priority 8: Family Reunification Program**

*Goal:* To reunite homeless individuals with family in a permanent housing situation.

*Objective:*

- 1) To reunite homeless individuals with family in a permanent housing situation.

**Priority 9: Development of Additional Affordable Housing Options**

*Goals:*

- 1) Provide housing options by creating new permanent housing beds for the homeless (chronic and/or families).
- 2) Increase the percentage of homeless persons remaining in permanent housing over six months.
- 3) Increase the percentage of homeless persons moving from transitional housing to permanent housing.

*Objectives:*

- 1) To provide immediate housing for individuals and families to get them “off the street.”
- 2) Provide the homeless with needed supportive services to remain in permanent housing (such as obtaining employment, education, etc.).

**Priority 10: Outreach Network**

*Goal:*

Expand outreach network to coordinate annual outreach efforts currently being undertaken.

*Objectives:*

- 1) Bring the homeless into the social support system and work with them to address their needs and help them gain self-sufficiency.
- 2) Media and advertising for coordination of efforts.

**Subpopulations in the Region**

While most organizations that make up the members of the Cumberland County CoC serve and represent the interests of all homeless populations, a number of member organizations focus their activities on specific subpopulations in the region, including the seriously mentally ill, substance abusers, veterans, people with HIV/AIDS, victims of domestic violence and youth. The populations and subpopulations served by the CoC are shown in the following table.

**Table 1: Continuum of Care Homeless Population and Subpopulation Chart**

		Sheltered		Unsheltered	Total
		Emergency	Transitional		
Homeless Population	Homeless Individuals	72	6	460	538
	Homeless Families w/ Children	13	44	88	145
	Persons in Homeless Families w/Children	40	176	279	495
	<b>Total Homeless Persons</b>	<b>112</b>	<b>182</b>	<b>739</b>	<b>1033</b>
Homeless Subpopulations	Chronically Homeless	4	2	28	32
	Severely Mentally Ill	1	5	12	18
	Chronic Substance Abuse	2	6	118	126
	Veterans	1	1	51	53
	Persons with HIV/AIDS	0	1	9	10
	Victims of Domestic Violence	11	13	27	51
	Youth (Under 18 years of age)	0	0	0	0
* Sum of homeless individuals and persons in homeless families with children					

The Cumberland County CoC conducted another point-in-time Count. This Count—completed in January 2010—showed the number of:

- Total homeless people in Cumberland County to be **1033**;
- Homeless people in families to be **495**;
- Homeless individuals to be **538**;
- Homeless veterans to be **53**;
- Homeless people with a history of domestic violence to be **51**; and
- Chronically homeless people to be **32**.

### Homeless Existing Resources and Services

The fundamental components that comprise the Cumberland County Continuum of Care and its member agencies that provide services to the homeless are described below.

<b>Table 2: Existing Services</b>	
<b>Utility Assistance</b>	
Alms House Outreach Ministry	Community outreach ministry providing counseling and emergency food, clothing and financial assistance for Hope Mills and the southern Cumberland county area.
First Baptist Church	Offers Utility Assistance
Salvation Army	Provides a flexible program of emergency services for food, clothing, medical needs, transportation and financial assistance for needy persons. The organization also coordinates an extensive Christmas relief service and operates temporary shelter for transients and the homeless.
Synder Memorial Baptist Church	Offers Utility Assistance
Consumer Credit Counseling Services	Helps clients to budget money and reduce debt. In acute instances, debt liquidation plans are made.
Cumberland County Association for Indian People	Offers employment counseling, classroom training, adult basic education classes and assistance in locating sources for paying utility bills. Operates a senior center, daycare center and housing locator service. Offers rental assistance if eviction is threatened.
<b>Veterans/Workforce Services</b>	
Employment Securities Commission	Veterans Employment Services
Vocational Rehabilitation Services Office	Promotes employment and independence for persons with emotional or physical disabilities. Services include physical and specialist examinations and corrective treatment; vocational evaluation and work adjustment services; vocational training; maintenance and transportation if necessary during training; tools and equipment; job placement and follow-up. Services are for those who have a substantial job handicap caused by a physical or mental condition, and have a favorable prognosis for going to work.

Veterans Administration Hospital	General medical, surgical and short-term psychiatric care for veterans. The Veteran's Administration also operates a program to assist homeless veterans.
Work First	Assists families receiving public assistance in becoming self supporting. Services include job training, job search assistance, child care assistance, transportation and work experience.
<b>Housing Assistance</b>	
Green's Shelter for Women	Offers emergency shelter and food assistance
Cumberland Interfaith Hospitality Network Inc.	Provides shelter, food and assistance to homeless families including temporary housing referral, job referral and limited transportation for homeless families.
Fayetteville Metropolitan Housing Authority	Provides housing for the elderly, disabled and low-income families. Rent is based on income.
Robin's Meadow Apartments	Provides transitional housing for homeless families with children.
Women's Center of Fayetteville	Provides women with information on community services, vocational guidance and education. Sponsors support groups, personal growth seminars, health care and survival skills development workshops for women and youth. Provides legal clinic, Adult Basic Education, crafts training and other services to displaced homemakers.
Homeless Coalition	Monitors the homeless hotline, provides information on available beds and disseminates it to clients as needed, operates a homeless day center at St. Joseph's Episcopal Church and a homeless shelter called the Hope Center.
Ashton W. Lilly & Pat Reese Home	Offers emergency shelter and food assistance
Marantha House	Operates three temporary shelters for homeless men and women in need on a space available basis. Helps residents to become self-sufficient.
Department of Social Services	Offers emergency shelter and food assistance
Emergency Management	Offers emergency shelter and food assistance
Vick's Home	Transitional Housing for men.
Samaritan's Men's House	Offers emergency shelter and food assistance
Roxie Avenue Center	Offers emergency shelter and food assistance
Temporary Shelter - Cumberland County Social Services	Home for teen boys ages 13 – 16
Fayetteville Urban Ministry	Provides services including emergency assistance, Literacy program, Find-a-Friend program, financial assistance and home repair.
<b>Crisis Intervention</b>	
Care Family Violence Center	Provides services to those experiencing physical or mental abuse - crisis intervention, counseling, referral services, re-education and temporary housing for victims
Operation Blessing Crisis Pregnancy Center	Provides confidential counseling and free pregnancy tests
Rape Crisis Center	Provides 24-hour hotline to talk about assault
Save the Babies House of Refuge	Residential maternity home for unwed teenagers and other women in a crisis pregnancy. Offers minors the opportunity to attend public schools, work study programs, vocational training and tutoring.

New Beginnings	Provides safe, transitional housing for women and children in domestic violence situations. Individual and group counseling, children's services and referrals for food and clothing are also provided.
New Directions Transitional House	
<b>Drug Addiction/Recovery/Health</b>	
Hope Harbor Christian Mission	Recovering substance abuse - men only
Myrover Reese Fellowship Homes Inc.	A residential home for males who are alcoholics or chemically dependent.
The Oxford House - Elder	Shared living for substance abusers for men.
The Oxford House - Haymont	Shared living for substance abusers for men.
Stedman Recovery House	Offers emergency shelter and food assistance
Lisa's House of Care	Offers emergency shelter and food assistance
The Oxford House - Sandlewood	Shared living for substance abusers for men.
The Oxford House - Stedman	Shared living for substance abusers for men.
Cumberland County Health Department	Works to maintain the health of county residents through various programs and clinics.
Cumberland County Mental Health	Provides comprehensive treatment and case management for county residents.
The Oxford House - Lyon Road	Shared living for substance abusers for women.
Wade Family Medical Center	Provides family practice medical services. Fees based on family income, according to Department of Health and Human Services guidelines.
Better Health of Cumberland County	Provides assistance to low income individuals with health related emergencies. Services include a direct aid program which provides financial assistance for life-sustaining prescription drugs, medical appliances, vision exams and eyeglasses, supplies and transportation to medical centers and other medical services.
Cape Fear Valley Health System	Provides general medical care, emergency medical, chemotherapy and other health services.
The Care Clinic	Provides free basic primary healthcare for the uninsured who have limited resources
<b>Meal Assistance</b>	
Abney Chapel Community Service Center	Saturdays and Sundays at 1:30 pm also operates a food pantry and clothes closet.
City Rescue Mission	Temporary shelter, food, and clothing for men in need. The mission also provides help for residents in locating employment.
Evans AME Church	Thursdays, 10 a.m. - 12 p.m.
Hands That Help Ministry	Serves breakfast and lunch Monday – Friday
In Jesus' Name Ministry	Serves Monday, Tuesday and Sunday
United Way	Offers emergency shelter and food assistance
Open Arms Community Church	Serve meals Monday - Saturday 10 a.m. - 2 p.m.
Saint Joseph's Episcopal Church Breakfast Program	Provides free breakfast to the poor and homeless.
Praise Fellowship Church of God	Provides non-perishable food items & clothing on Thursdays

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Clifford Christian Center	Offers emergency shelter and food assistance
Catholic Social Ministries	Provides family, personal, and marriage counseling, emergency assistance, a food pantry and baby clothes closet.

### **Homeless Facilities**

The following housing projects and housing assistance programs were current in place or under development at the time of this plan.

Priority Homeless Needs in Cumberland County (2009)  
(HUD Table 2A)  
**Inventory of Homeless Facilities**

Facility or Resource		2009 Year-Round Units/Beds			2009 All Beds		
		Family Units	Family Beds	Individual Beds	Year-Round	Seasonal	
Emergency Shelters	Care Family Violence Center	3	9	5	14	0	
	City Rescue Mission	0	0	6	6	0	
	Cumberland IHN	4	14	0	14	0	
	Green's Shelter for Women	0	0	10	10	0	
	Salvation Army	2	8	48	56	0	
	Gospel Services Benevolent Society	0	0	21	21	0	
	<b>Total</b>	<b>9</b>	<b>31</b>	<b>90</b>	<b>121</b>	<b>0</b>	
Transitional Housing	Cumberland County Comm. Dev.	12	32	0	32	0	
	Cumberland IHN	20	8	0	80	0	
	Lisa House of Care	0	0	5	5	0	
	Salvation Army (Step Up)	0	0	6	6	0	
	Salvation Army (Care Transitional)	14	33	0	33	0	
	Save the Babies House of Refuge	0	0	10	10	0	
	<b>Total</b>	<b>46</b>	<b>77</b>	<b>21</b>	<b>98</b>	<b>0</b>	
Permanent Housing	Current Inventory	Cumberland IHN (Leah)	5	15	0	15	0
		Cumberland IHN (Cedric)	0	0	0	0	0
		Cumberland IHN (Kincaide 1)	2	8	0	8	0
		Cumberland IHN (Kincaide 2)	0	0	0	0	0
		Salvation Army (Bonanza)	0	0	0	0	0
		<b>Total</b>	<b>7</b>	<b>23</b>	<b>0</b>	<b>23</b>	<b>0</b>
		Under Development					
	<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

**Continuum of Care Gaps Analysis**

The point-in-time Count showed a 7% increase in homeless individuals and/or families in Cumberland County from 2009 to 2010. The CoC is increasing its total count by 8.7% to account for this rise in the homeless population. It must taken into account that the point-in-time assessment does not include a Count of every single homeless person in Cumberland County, as this population is transient and difficult to track.

To compile the data for its 2010 Continuum of Care Committee administered a point-in-time survey. The point-in-time survey asked service providers for the actual number of people in emergency shelter, transitional housing, and permanent housing with support services. It also asked the number of persons by sub-populations served on the day of the survey. The Continuum of Care Committee cautions that the results are from just one day, and does not represent the actual need in the community, which can often vary significantly day to day. The following tables show the results of the point-in-time survey

Priority Homeless Needs in Fayetteville/Cumberland County (2009)



**(HUD Table 2A)**

		Beds		
		Current Inventory in 2009	Under Development in 2009	Unmet Need/ Gap
Individuals	Emergency Shelter	90	21	80
	Transitional Housing	21	0	105
	Permanent Supportive Housing	0	0	100
	Total	111	21	285
Persons in Families With Children	Emergency Shelter	31	0	55
	Transitional Housing	77	0	232
	Permanent Supportive Housing	23	0	80
	Total	131	0	467

**Priority Homeless Needs in Fayetteville/Cumberland County (2010)**

**(HUD Table 2A)**

		Sheltered		Unsheltered	Total
		Emergency	Transitional		
Homeless Population	Homeless Individuals	72	6	460	538
	Homeless Families w/ Children	13	44	88	145
	Persons in Homeless Families w/Children	40	176	279	495
	Total Homeless Persons	112	182	739	1033
Homeless Subpopulations	Chronically Homeless	4	2	28	32
	Severely Mentally Ill	1	5	12	18
	Chronic Substance Abuse	2	6	118	126
	Veterans	1	1	51	53
	Persons with HIV/AIDS	0	1	9	10
	Victims of Domestic Violence	11	13	27	51
	Youth (Under 18 years of age)	0	0	0	0

**Supportive Housing for Non-Homeless Persons with Special Needs**

Supportive housing is defined as living units that provide a planned services component with access to a range of services identified as necessary for the residents to achieve personal goals.

In examining supportive housing for persons with special needs, Cumberland County has considered the needs of the elderly, persons with disabilities (including mental, physical and developmental), alcohol and substance abusers and persons with HIV/AIDS. Because it is not always possible to determine the number of person who have supportive housing needs, the Consolidated Plan uses standards recommended by national agencies to determine the number of persons with supportive housing needs. A discussion of the housing needs for these sub-populations follows.

### Elderly and Frail Elderly Persons

A frail elderly person is defined as a person who has one or more limitations of activities of daily living (ADLs) and is a person who may need assistance. Elderly persons may need housing assistance for two reasons – financial and supportive. Supportive housing is needed when an elderly person is both frail and low income, since the housing assistance offers services to compensate for the frailty in addition to financial assistance. By this definition, only the frail elderly require supportive housing.

Since 2000, the number of citizens over the age of 65 in Cumberland County has increased from 20,395 to 28,140 according to the 2006 – 2008 Census Estimates, an increase of 38%. Elderly households represent 20.2% of all households. In 2000 there were 7,164 elderly households in Cumberland County, of which 4,384 households, or 61.2%, were low-income. The following table provides an overview of renter and owner elderly households.

Elderly and Elderly Low-Income Households (2009)

	All Households			Low-Income Households	
	Total	Elderly	Percent of Total	Elderly	Percent Low-Income
Renters	48,920	3,585	7.3%	1,990	55.5%
Owners	68,595	20,240	29.5%	3,600	17.8%
Total	117,515	23,825	20.2%	5,590	23.5%

The majority of elderly renter-occupied households are low-income. Of the 20,240 elderly owner-occupied housing, 3,600 (or 17.8%) are low-income and 55.5% two-thirds of renters are low-income.

The 2008 Census Estimates do not report on disabilities, the 2000 Census reports that of the 28,140 elderly individuals living within Cumberland County:

- 11,266 reported that they had a disability.
- 1,230 (24%) of those elderly with a disability reported that they had a self-care disability that limited their ability to dress, bathe, or get around inside their home without assistance.
- 2,344 (46%) of the elderly with a disability reported that their disability limited their ability to go outside their home alone to shop or visit a doctor’s office.
- 1,261 (13%) of all elderly persons were living below the poverty level; 866 (17%) of all elderly persons with a disability had income levels below poverty.

### Persons with Disabilities

Persons with mental illness, disabilities and substance abuse problems need an array of services. Their housing requires a design that ensures residents maximum independence in the least restrictive setting, including independent single or shared living quarters in communities, with or without onsite support. Options include:

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- Living with family or friends with adequate support and/or respite services
  - Small, home-like facilities in local communities close to families and friends, with the goal of moving to a less structured living arrangement when clinically appropriate

Residential placements need to provide the equipment and supplies necessary to assist in successful, long-term housing stability. Admission to state or private hospitals, mental retardation centers, state schools or alcohol and drug abuse treatment centers must not be considered permanent or long-term residential options.

Because the 2008 Census Estimates do not report on disabilities, the 2000 Census reported on non-institutionalized disabled persons, age five and over. The enumeration excludes institutionalized disabled persons, which consists of persons under formally authorized, supervised care or custody in institutions. The Census specifies that a disability is a long-lasting physical, mental, or emotional condition that can make it difficult for a person to do activities such as walking, climbing stairs, dressing, bathing, learning, or remembering. This condition can also impede a person from being able to go outside the home alone or to work at a job or business.

- The 2000 Census reported that there were 139,497 non-institutionalized persons age 5 and over in Cumberland County outside of Fayetteville. Of these, 29,320 (21%) reported a disability.
- There were 10,127 working age persons between the ages of 16 to 64 with a disability who were unemployed.
- 4,742 (16%) of the 52,909 disabled persons were living below poverty.

The disabled population in the City can be divided into three categories: mentally disabled, developmentally disabled, and physically disabled.

### **Mentally Ill**

Those individuals experiencing severe and persistent mental illness are often financially impoverished due to the long-term debilitating nature of the illness. The majority of these individuals receive their sole source of income from financial assistance programs—Social Security Disability Insurance or Social Security Income. The housing needs for this population are similar to other low-income individuals. However, because of this limited income, many of these individuals may live in either unsafe or substandard housing. The citizens need case management, support services and outpatient treatment services to monitor and treat their mental illness. Facilities in Cumberland County that provide behavioral and/or psychiatric care include the following:

Severe mental illness includes the diagnoses of psychoses and major affective disorders such as bipolar and major depression. The condition must be chronic (i.e. existing for at least one year) to meet the HUD definition for a disability.

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Because the 2008 Census Estimates do not report on disabilities, the 2000 Census reports on the non-institutionalized population with a mental disability. The Census defines mental disability as an emotional condition that makes it difficult to learn, remember, or concentrate.

- There were 7,111 non-institutionalized persons age 5 and over with a mental disability, which is equivalent to 5.1% of the 139,497 non-institutionalized persons age 5 and over in the County outside of the City.
- 1,698 (24%) of persons with mental disabilities were children between the ages of 5 and 15.
- 4,015 (56%) were working-age adults between the ages of 16 and 64.
- 1,398 (20%) were elderly individuals age 65 and over.

Through case management and counseling services available to the homeless mentally ill and substance abuse population within the Cumberland County Local management Entity, homeless persons can receive needed services on demand with the resources of the Project for Assistance in Transition from Homelessness (PATH). This homeless agency address problems through outreach combined with the immediate availability of walk-in, and a non-threatening environment.

Many homeless providers in Cumberland County have indicated that there is a problem with dually diagnosed persons in the community. The service providers report that many of the dually diagnosed are difficult to place and end up falling through the cracks in the system. The service providers reported that the parents and guardians of the dually diagnosed often become burned out, calling the police to take the person away and then rely on the service providers to care for the person.

### **Developmentally Disabled**

Housing for the disabled must include a variety of options to meet the unique needs of persons with diverse types of disabilities. Services must be provided by area programs or contracted privately, including group home placements, intermediate care facilities, supported living programs, supported employment, sheltered workshops, home ownership and rental subsidy. Facilities in Cumberland County that provide housing and services for the Developmentally Disabled include the following:

- Cumberland County Mental Health Local Management Entity
- Cumberland County Health Department
- Wade Family Medical Center
- Cape Fear Valley Health System
- Better Health of Cumberland County

### **Alcohol and Substance Abusers**

The majority of people who suffer from any form of alcohol or substance abuse maintain jobs and homes at the beginning stages of their problem. However, as the problem progresses, the ability to maintain a well-functioning lifestyle diminishes. This problem

touches every income and racial group, but is found to be most prevalent among the lowest income groups. Preventive programs incorporated into housing services provided to low-income persons are necessary to address this problem.

The National Institute of Alcohol Abuse and Alcoholism estimates the number of men with drinking problems at 14% to 16%, and the number of women with similar problems at 6%. No similar statistics exist for abuse of other drugs. However, the National Institute of Alcohol Abuse and Alcoholism estimates that one-third or more of the clients in publicly funded residential group programs are homeless most of the year before entering treatment.

### **Persons with HIV/AIDS**

According to the most recent quarterly update of the North Carolina HIV/STD Surveillance Report, Cumberland County had 73 reported cases of HIV disease in 2009, which represents 4% (1,769) of all the cases reported in North Carolina. With 50 cases reported in 2004, Cumberland County showed a marked decrease in the number of AIDS cases—down from 84 reported cases in 2008 and 51 reported cases in 2007.

#### **Reported Cases of HIV/AIDS in Cumberland**

Year	HIV	AIDS
2007	108	51
2008	167	84
2009	73	50

While prevention, medical and support services are available to people with HIV/AIDS, there is a greater need for permanent supportive housing. Other types of housing assistance needed include rental assistance and transitional supportive housing for patients leaving institutions of physical health or incarceration.

The housing needs of people living with HIV and AIDS are diverse. Housing programs targeting the population need to be flexible enough to address a wide range of needs and problems. Programs should focus on helping people with HIV and AIDS to stay in their own homes. Housing programs may need to find ways to address underlying causes and related problems such as alcohol and drug services, mental health services, benefits counseling, and public transportation.

Housing programs for persons with HIV and AIDS should include the following:

- Direct financial or in-kind assistance to clients, specifically rental and mortgage assistance.
- Direct services, specifically case management and in-home services.
- A flexible indirect assistance component that provides a pool of funds to address multiple housing concerns such as utility assistance, home improvements and renovations.

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The Cumberland County Health Department offers education and tests for HIV, pre- and post-test counseling, and information and referrals. Humans United Giving Greater Services (HUGGS) operates a day center where persons living with HIV/AIDS can access vocational rehabilitation in the form of education and training. Cape Fear Regional Bureau for Community Action offers education and testing for HIV, pre- and post-test counseling. Offers outreach providing information and referrals.

Needs identified by the Cumberland County Continuum of Care for the HIV/AIDS population includes:

- Community based client assessment for early identification of patients infected with HIV/AIDS;
- Short term rental payments to prevent homelessness;
- Permanent housing options for homeless persons;
- Intensive supportive services with individual assessment and case management focusing on preventing homelessness and maintaining permanent housing, access to primary health care, substance abuse treatment, mental health services, social services, and crisis intervention; and
- Transportation to receive medical treatment as most of the treatment is outside of Cumberland County.

### **Priority Homeless Needs**

**Priority Homeless Needs No. 1:** Support a homeless tracking system throughout the continuum of care.

**Objectives:** Strengthen a homeless accountability/tracking system.

**Strategies:**

1. Increase the capacity building and training opportunities for homeless shelters to participate in the Carolina Homeless Information network (CHIN).
2. Provide capacity building training opportunities for homeless services providers and other non-profits to meet minimum standards set by the Cumberland County Continuum of Care.
3. Continue the homeless project officer program provided by the Fayetteville Police Department to work with sheltered and unsheltered homeless persons.

**Priority Homeless Need No. 2:** Support Homeless Services.

**Objective:** Provide support to the Cumberland County Continuum of Care.

**Strategies:**

1. Provide emergency utility assistance and to homeless shelter providers.

2. Provide utility assistance for homeless persons leaving transitional housing for permanent housing.
3. Provide support to the Homeless Project Officer provided by the Fayetteville Police Department.

**Priority Homeless Need No. 3** Collaborate with local human services agencies to develop programs designed to break the cycle of homelessness.

**Objective:** Develop and support programs that provide job skills training to help homeless persons qualify and obtain permanent employment.

**Strategies:**

1. Work with local human service agencies to develop programs that create job opportunities for homeless persons.

**Priority Homeless Need No. 4:** Through partnership with the Cumberland County Community Development and the Continuum of Care implement the 10-year Plan to End Homelessness.

**Objective:** Implement the priorities of the 10-year plan to End Homelessness.

**Strategies:**

1. Work with the Cumberland County Community Development Department and the Continuum of Care to implement the priorities of the 10-year Plan to End Homelessness.

The following is a description of the supportive services available to the homeless in Cumberland County by the population served.

**General Population**

- The Hope Center emergency shelter provides food, shelter and case management referral.
- The City Rescue Mission assists its residents with food, shelter and locating employment.
- Mrs. Green's Home for women is an emergency shelter for women. Food and counseling are also provided.
- New life Mission Shelter for Men provides shelter for men newly released from incarceration, provides referral for employment and mental health support.
- Operation Inasmuch Homeless Day Center provides breakfast meal program, counseling, Job skills training, GED program and employment opportunities assistance.
- The Cumberland Interfaith Hospitality Network provides shelter, food and assistance to homeless families including temporary housing, housing referral, job referral, and limited transportation.

- The Salvation Army of Fayetteville provides emergency, transitional and permanent housing. Other services include food, utility and rental assistance and clothing.
- The Women's Center of Fayetteville serves as a regional, multi-service resource and advocacy center. Their mission is to promote the growth, productiveness and well being of women through counseling, education, and information and advocacy programs.
- The Women's Center's Lease to Home program offers homeless families with low to moderate income the opportunity to move into, and eventually own, their own home. This innovative program is structured to help families transition out of homelessness into permanent housing and home ownership. The program is geared to help families who are homeless, living in shelters, staying with family and friends, or on the verge of eviction. It offers a unique opportunity for families who have a goal of home ownership but need time to save money and work on other issues that have prevented them from becoming homeowners.

### **Anti-poverty activities and substandard and Affordable Housing Needs**

The City has targeted significant CDBG and HOME resources within core low-income areas to execute its anti-poverty strategies. These resources will act as catalysts to invite additional public and private investment of capital and services; increase the quantity and quality of affordable housing; and help low to moderate-income residents acquire needed information, knowledge and skills to improve their employment opportunities. The City will conduct the following activities during the 2010-2015 program years to execute its anti-poverty strategies and address substandard and affordable housing needs:

- **Homeownership Assistance**

Homeownership is a vital factor in wealth creation, neighborhood revitalization and community stability. The City provides down payment assistance to enhance homeownership opportunities for low to moderate-income families. Maximum down payment assistance is \$3,000 per unit. Resale and recapture provisions are included in the terms of the promissory note and deed of trust. If the property is sold or transferred prior to the expiration of the note, the balance of all sums secured by the deed of trust shall be due and payable at the time of transfer.

The City also offers a Mortgage Assistance Program in which 19% of the purchasing price may be obtained up to the maximum assistance of \$20,000 at 2% interest as a second mortgage to reduce the overall cost of financing needed to purchase single-family home. The program was designed to also increase the purchasing power and make the home more affordable to a low to moderate income homebuyer. Resale and recapture provisions are the same as for the City's Down Payment Assistance Program.

The City partners with Consumer Credit Counseling Services (CCCS) to provide homebuyer education to prospective homebuyers. Successful completion of the homebuyer education program is mandatory in order to receive assistance from the City. Program participants receive a credit assessment from CCCS and if needed an



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individualized credit counseling program is setup to help prepare the individual for mortgage qualification. The City also shall also provide funding to CCCS to pay for the application fee for credit counseling to 25 low-income prospective homebuyers for the upcoming program year.

- **Housing Rehabilitation**

The City provides housing rehabilitation assistance through either a revolving loan pool or emergency home repair grants. Homes requiring substantial rehabilitation services are handled through the revolving loan pool. Homeowners requiring immediate housing rehabilitation assistance are referred to the emergency home repair program.

The revolving loan pool makes funds available for low to moderate-income homeowners and investor-owners, to make substantial repairs to deteriorated single-family and multi-family housing units. Income requirements will dictate whether the household will receive a deferred payment loan or low-interest loan

The City offers emergency home repair services for low to moderate-income homeowners. The focus is on repairing substandard housing conditions that require immediate attention. First priority is given to homes that have serious problems such as bad flooring, bad stairs, and roofing needs. Service recipients are low to moderate-income homeowners who reside in the City. The program focus is on repairing substandard housing conditions that require immediate attention. First priority is given to homes that have serious problems such as bad flooring, bad stairs, and roofing needs.

The City also offers the Residential Façade Grant Program for exterior repairs to a low to moderate income families, concentrating on the façade of the home, and in effort to improve the over all look of communities within the city. Eligible exterior repairs include painting, vinyl siding installation, window replacement, roof replacement, soffit and fascia board replacement, awning installation, existing siding repair, porch repair, light fixture replacement or installation, window shutter replacement or installation, door replacement, replacement of torn or deteriorated wood/boards, and decorative fencing repair. The program is currently funded with CDBG-R funds, but is expected to be a continuously funded program by the City even after CDBG-R funds have been expended.

- **Replacement Housing**

This program was designed and implemented during the third quarter of the 2004-2005 program year to provide one-to-one replacement housing units to qualified rehabilitation program applicants whose homes are determined to be in an advanced state of deterioration and economically infeasible to rehabilitate in bringing up to minimum housing code standards. Replacement housing may be provided in either of the following forms: 1) Same site construction: building a new house on the existing lot after demolition of the existing structure; 2) Relocation (existing pre-owned or new construction): applicant to move in a pre-existing dwelling (new or pre-owned) owned by either the City of Fayetteville or one of its City-funded participating CHDOs, relinquishing ownership of the land occupying the previous dilapidated unit to the City of Fayetteville; 3) Moving an existing house to the cleared lot, after demolition of the existing structure. The City shall select the most feasible form of replacement housing

available at the time of need, and in which the homeowner is in agreement.

- **Single Family Housing Development**

The City will continue its partnerships with the Fayetteville Area Habitat for Humanity, Kingdom Community Development Corporation and the Women’s Center of Fayetteville to build and sell or acquire and rehabilitate affordable single family dwellings to low income homebuyers or lease to own tenants. The City shall deed over available vacant parcels at no charge to any of these organizations on a lot by lot basis that were previously acquired with federal funds (old Urban Renewal Program) and/or CDBG funds from the Acquisition and Demolition Program.

- **Multifamily Housing**

The City will continue to seek opportunities to leverage its funds for the construction of affordable multi-family housing. Since 1998, multi-family housing has been provided through the construction of Adams Court Apartments, Longview Green Apartments, Blanton Green Apartments, Blanton Green Apartments II, Blanton Green Apartments III Haymount Manor Apartments, Rosehill West Apartments, Bunce Green Apartments, Bunce Manor Apartments, Eastside Green Apartments, Eastside Green Apartments II, Maple Ridge Apartments and Maple Ridge Apartments III. Eastside Green III and Bunce East Apartments are proposed for the 2010-2011 program year. The City will utilize its HOME funds for these projects.

**Inventory of Assisted Rental Housing – 2010**

Development	Census Tract	Total Units	Funding
<i>City of Fayetteville</i>			
Adams Court Apartments	8	40	LIHTC
Haymount Manor Apartments	9	48	LIHTC
Rosehill Gardens	12	100	LIHTC
Eastside Green I	14	60	LIHTC
Eastside Green II	14	48	LIHTC
Blanton Green Apartments	23	48	LIHTC
Blanton Green Apartments II	23	48	LIHTC
Blanton Green Apartments III	23	36	LIHTC
Rosehill West Apartments	24	76	LIHTC
Longview Apartments	25.02	48	LIHTC
Bunce Green Apartments	33.02	80	LIHTC
Bunce Manor Apartments	33.02	48	LIHTC
Maple Ridge I	33.07	48	LIHTC
Maple Ridge III	33.07	80	LIHTC
<b>Total</b>		<b>856</b>	

- **Transitional/ Housing For Homeless Families**

The City and County has participated in partnerships to create transitional housing at Ashton Woods Transitional Housing Complex and Robins Meadows Transitional Housing.

The City also provided funded to assist with the renovation of the Hope Center Homeless Shelter located on Person Street. The facility is operated by Gospel Service Benevolent

Society; and has provided funding to the Salvation Army to assist with it's emergency shelter operations.

**Housing Objectives to provide affordable rental and homeownership opportunities**

The City's housing programs are designed to benefit residents who have extremely low incomes, low incomes and moderate incomes. The table below projects the number of families that shall benefit from the City's housing activities by income level for the period of 2010-2015.

**2010-2015 Housing Objectives-Affordable Rental and Homeownership**

<b>Activity</b>	<b>Extremely Low-Income Families (0-30% of MFI)</b>	<b>Low-Income Families (31%-50% of MFI)</b>	<b>Moderate Income Families (51%-80% of MFI)</b>	<b>Totals</b>
Existing Owners	250	250	250	750
Renters	50	150	150	400
Home buyers	<u>10</u>	<u>30</u>	<u>80</u>	<u>120</u>
	310	430	480	1270

Extremely low-income families have household incomes between 0 and 30 percent of Fayetteville's median income (determined by HUD annually). Low-income families have household incomes do not exceed 50 percent of the median family income. Moderate-income families have household incomes that do not exceed 80 percent of the median income.

**Barriers to Affordable Housing**

According to the latest Housing Market Analysis, low wages still remain a major barrier to affordable housing in Fayetteville and Cumberland County with many who are employed not earning a living wage. As stated previously, approximately 40% of all households in both Cumberland County and the City have household incomes at \$35,000 or less or with a median income of around \$26,735. In addition, the highest rate of unemployment is amongst the protected classes, with unemployment among non-white being more than double white civilians. Therefore, the higher rate of unemployment by protected classes affects their ability to be adequately housed.

According to the 2006-2008 Census estimates, the median income for a family residing in Cumberland County was \$63,382. Males had a median income of \$38,963 versus \$30,613 for females. The per capita income for the county was \$22,564. As depicted in 2008 estimates, males in the City of Fayetteville had a median income of \$41,808 versus \$30,255 for females.

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Labor Force	149,619	150,601	150,165	151,336	151,740	154,134	151,935	150,326	151,714	153,636	153,009	
Employed	136,446	136,297	136,548	138,619	137,860	139,607	137,495	136,593	138,022	139,775	139,027	
Unemployed	13,173	14,304	13,617	12,717	13,880	14,527	14,440	13,733	13,692	13,861	13,982	
Rate %	8.8	9.5	9.1	8.4	9.1	9.4	9.5	9.1	9.0	9.0	9.1	
<b>Cumberland County, NC 2009 – Labor Force Statistics (through Nov. 2009)</b>												
	J	F	M	A	M	J	J	A	S	O	N	D
Labor Force	130,436	131,284	130,942	131,899	132,325	134,368	132,495	131,081	132,300	133,944	133,402	
Employed	118,842	118,712	118,931	120,735	120,074	121,595	119,756	118,970	120,215	121,741	121,090	
Unemployed	11,594	12,572	12,011	11,164	12,251	12,773	12,739	12,111	12,085	12,203	12,312	
Rate %	8.9	9.6	9.2	8.5	9.3	9.5	9.6	9.2	9.1	9.1	9.2	

Source: [www.ncesc.com](http://www.ncesc.com)

On March 9, 2010, Manpower, an international employment services firm, released the results of its Q2 2010 Manpower Employment Outlook Survey. According to the survey, Fayetteville area employers (including Cumberland County) are expected to hire with a 14% outlook, significantly higher than the 8% outlook for the entire nation. This means that 14% of all employers in the Fayetteville MSA are expecting to hire additional personnel within the next quarter<sup>1</sup>.

The top sectors identified in this report that will be hiring are:

- ◆ Construction
- ◆ Transportation & Utilities
- ◆ Wholesale & Retail Trade
- ◆ Information
- ◆ Professional & Business Services
- ◆ Leisure & Hospitality
- ◆ Government

Employers in Durable Goods Manufacturing plan to reduce personnel while the Education and Health Services job sectors expect to remain at current levels.

Additional barriers to affordable fair housing are poor credit history, insufficient funds for the required down payment, unemployment and under-employment, a lack of flexible underwriting from financial institutions, inability to pay a standard mortgage, lack of governmental funding to subsidize rents and for development of additional affordable housing units sufficient enough to address the needs of lower income households, discrimination in providing fair housing, and predatory/home mortgage lending practices when lending to the protective classes even when loans are offered.

The City’s strategies to mitigate these barriers are represented by its partnership with Consumer Credit Counseling Services, Inc. (CCCS) and training programs offered

<sup>1</sup> Q2 2010 Manpower Employment Outlook Survey. Manpower, March 9, 2010 <http://manpower-employmentreports.mediaroom.com/index.php?s+43&item=409>

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through the City’s Neighborhood Resource Center network. The City and County have partnered with CCCS to provide monthly homebuyer workshops to low to moderate-income families who would like to learn how to buy a home. Workshop topics include preparing for homeownership, shopping for a home, obtaining a mortgage, the closing process, and responsibilities of a homeowner. Programs and training offered at the Neighborhood Resource Centers include, but are not limited to, credit repair; Adult basic Education and GED classes; internet access to the Employment Security Commission.

## **Affirmatively Furthering Fair Housing**

### **Basis for the Analysis of Impediments to Fair Housing Choice**

Each year, the U.S. Department of Housing and Urban Development [HUD] requires Community Development Block Grant [CDBG] entitlement grantees [such as Cumberland County the City of Fayetteville] to submit a certification that they will affirmatively further fair housing and that their grants will be administered in compliance with Title VI of the Civil Rights Act of 1964 and the Fair Housing Act of 1968. Title VIII of the Civil Rights Act of 1968, as amended, commonly known as the Fair Housing Act, prohibits discrimination in the sale or rental of housing on the basis of race, color, religion, sex, and national origin. The Act was amended in 1988 to provide stiffer penalties, establish an administrative enforcement mechanism and to expand its coverage to prohibit discrimination on the basis of familial status and disability. The Act also requires the Secretary of HUD to administer the Department’s Housing and Community Development Programs in a manner that affirmatively furthers fair housing.

Provisions to affirmatively further fair housing (AFFH) are principal and long-standing components of HUD’s housing and community development programs. These provisions flow from the mandate of Section 808(e)(5) of the Fair Housing Act which requires the Secretary of HUD to administer the Department’s housing and urban development programs in a manner<sup>2</sup> to affirmatively further fair housing<sup>2</sup>.

Local entitlement communities meet this obligation by performing an “*Analysis of Impediments to Fair Housing Choice* [AI] within their communities and developing (and implementing) strategies and actions to overcome these barriers based on their history, circumstances, and experiences. In other words, Cumberland County and the City of Fayetteville will define the problems, develop solutions, and be held accountable for meeting the standards they set for themselves. This analysis identifies the impediments to Fair Housing Choice in the jurisdiction, assesses current fair housing initiatives, and describes actions the jurisdiction will take to overcome the identified impediments. If Cumberland County and the City of Fayetteville identify local impediments to fair housing choice, these grantees will take actions that address the impediments, at which

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<sup>2</sup> U.S. Department of Housing and Urban Development Office of Fair Housing and Equal Opportunity. *Fair Housing Planning Guide: Volume 1 (Chapter 1: Fair Housing Planning Historical Overview, Page 13)*. March 1996.

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time HUD will presume that the grantee is meeting its obligation and certifying to affirmatively further fair housing by:

- Analyzing and eliminating housing discrimination within the jurisdiction;
- Promoting fair housing choice for all persons;
- Providing opportunities for racially and ethnically inclusive patterns of housing occupancy;
- Promoting housing that is physically accessible to all persons to include those persons with disabilities;
- And, fostering compliance with the nondiscrimination provisions of the Fair Housing Act.

By following this process, Cumberland County and the City of Fayetteville promote fair housing choice for all persons, to include Protected Classes, as well as providing opportunities for racially and ethnically inclusive patterns of housing occupancy, identifies structural and systemic barriers to fair housing choice, and promoting housing that is physically accessible and usable by persons with disabilities.

Through its Community Planning and Development [CPD] programs, HUD's goal is to expand mobility and widen a person's freedom of choice within an area they choose to live. The Department also requires Community Development Block Grant [CDBG] Program grantees (those Entitlement jurisdictions such as Cumberland County and the City of Fayetteville that administer the above identified CPD Programs) to document AFFH actions in the CDBG and Comprehensive Housing Affordability Strategy [CHAS] annual performance reports that are submitted to HUD.

### **Definitions**

As defined in *The Fair Housing Planning Guide*, the definition of Affirmatively Further Fair Housing [AFFH] requires a grantee to:

- Conduct an analysis to identify impediments to fair housing choice within the jurisdiction;
- Take appropriate actions to overcome the effects of any impediments identified through the analysis;
- And, maintain records reflecting the analysis and actions taken in this regard<sup>3</sup>.

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<sup>3</sup> U.S. Department of Housing and Urban Development Office of Fair Housing and Equal Opportunity. *Fair Housing Planning Guide: Volume 1 (Chapter 1: Fair Housing Planning Historical Overview, Page 14)*. March 1996.

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As described in *The Fair Housing Planning Guide*, the CHAS statute at Section 104(21) defines the term “certification” within the context of the Certification to Affirmatively Further Fair Housing [AFFH] to be:

- A written assertion
- Based on supporting evidence
- Available for inspection by the Secretary, the Inspector General and the public
- Deemed accurate for purposes of this Act unless the Secretary determines otherwise after:
  1. Inspecting the evidence
  2. Providing due notice and opportunity for comment<sup>4</sup>.

In carrying out its local Analysis of Impediments to Fair Housing Choice, Cumberland County and the City of Fayetteville utilized the following definition of Fair Housing Choice as outlined by HUD:

- The ability of persons of similar income levels to have available to them the same housing choices regardless of race, color, religion, sex, national origin, familial status, or handicap.

As defined in *The Fair Housing Planning Guide*, the definitions of impediments to fair housing choice include:

- Any actions, omissions, or decisions taken because of race, color, religion, sex, disability, familial status, or national origin which restrict housing choices or the availability of housing choices
- Any actions, omissions, or decisions which have the effect of restricting housing choices or the availability of housing choices on the basis of race, color, religion, sex, disability, familial status, or national origin<sup>5</sup>.

### **Limitations of This Analysis**

The following information, herein defined as Cumberland County and the City of Fayetteville’s *Analysis of Impediments to Fair Housing Choice*, was prepared for the purposes as previously described. Therefore, this report seeks to identify impediments and develop a proposed Fair Housing Action Plan as proposed solutions. Many of the impediments identified in this report will require additional research and on-going analysis by the City and County’s Community Development Staff. This report does not

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<sup>4</sup> U.S. Department of Housing and Urban Development Office of Fair Housing and Equal Opportunity. *Fair Housing Planning Guide: Volume 1 (Chapter 1: Fair Housing Planning Historical Overview, Page 16)*. March 1996.

<sup>5</sup> U.S. Department of Housing and Urban Development Office of Fair Housing and Equal Opportunity. *Fair Housing Planning Guide: Volume 1 (Chapter 2: Preparing For Fair Housing Planning, Page 26)*. March 1996.

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constitute a comprehensive planning guide but simply provides analysis as to the current situation and prepares a plan of action to address existing impediments.

## **Findings**

The following are findings of the Analysis of Impediments conducted in March of 2010 by WFN, Inc. along with their suggested recommendations:

### ***Impediments and Proposed Fair Housing Action Plan***

#### **Impediment #1 – Accessibility to Effective Public Transportation**

Public transportation plays a role in expanding the supply of affordable housing to groups in need and others protected under fair housing laws. At issue is the ease with which a citizen can travel from home to work if he/she lives in a lower income area or an area of minority concentration. If public transportation from a lower cost neighborhood is inefficient in providing access to employment centers, that neighborhood becomes inaccessible to those without dependable means of transportation, particularly very low-income residents, the elderly, and persons with disabilities.

While the City of Fayetteville does provide public transportation options through its Fayetteville Area System of Transit (FAST), it does not have adequate service routes to all areas of the City or into areas outside of Fayetteville to the rest of Cumberland County; has limited hours of operation which does not provide assistance for those working 2<sup>nd</sup> and 3<sup>rd</sup> shift jobs or on weekends (especially Sunday), and the length of time it takes a citizen to utilize the current bus routes can be quite lengthy according to rider feedback.

#### ***Recommendation***

The City of Fayetteville conducted a Transit Development Plan (TDP) in March 2009. In order to address the issues raised in the TDP and this *Analysis*, the City should proceed to implement the recommendations and begin to expand FAST services, routes and operating hours, to include Sunday and late evening operations.

Cumberland County lacks any form of Public Transportation system aside from the few routes operated through FAST to Fort Bragg and Hope Mills. In order to achieve true Fair Housing Choice, the County should conduct a TDP of its own and look into either assisting the City of Fayetteville expand FAST's services into the County or develop its own transit system.

#### **Impediment #2 - Expanding Affordable Housing Choices**

Although Cumberland County has relatively low-cost housing, not all groups benefit. Much of the housing for sale, even at the lower end, is priced beyond the means of lower-income families. While rental housing is less expensive, the majority of multi-family housing consists of smaller one- and two- bedroom units.



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Historically, the region has had a sufficient stock of single-family home rentals, but where larger households have difficulties is locating housing with three or more bedrooms. The cost to rent these larger single family homes can be expected to increase beyond the reach of many low-income minority households. In fact, according to the 2008 Census Estimates, 48% of all renters pay 30% or more of their incomes on rent alone.

Moreover, demographic data show that minority families on average have lower per capita income and larger household sizes in nearly all communities. These families find themselves in a highly competitive market for the few larger rental units available. Poverty rates for single females with children are high across the county.

There is insufficient financing to develop the amount of affordable housing required to address the needs of lower income households as evidenced by the waiting lists for assisted housing, public housing and Section 8 Rental Assistance Program.

***Recommendation***

While both the City and County have taken recent actions to increase the supply of affordable housing, further steps are needed to develop a viable affordable housing strategy together with effective implementing policies to include more subsidized housing. Continuing to utilize HUD grants to further fund new and existing housing development and rehabilitation projects, especially affordable rental units, is highly recommended for both the City and County.

Another method to remove this impediment would be the study and potential use of inclusionary zoning and density bonuses. Researching successful efforts made in other jurisdictions across would be recommended.

**Impediment #3 – Lack of Public Education/NIMBYism**

The current amount of Fair Housing education classes, workshops, informational materials and programs is limited within both the County and City. Public opposition to affordable rental and for-sale housing suggests that citizens misunderstand the potential benefits.

In fact, in the Fair Housing Survey, 58% of all respondents said they were not familiar with the Fair Housing laws. When asked if they knew how to file a Fair Housing report in Cumberland County and the City of Fayetteville, 77% did not know how. This shows a lack of education in place and needs to be addressed before true Fair Housing Choice can exist in the City and County.

***Recommendation***

While the Fayetteville-Cumberland Human Relations Department already has promotional and information materials readily available, to remove this impediment, they should further conduct an education and outreach campaign targeting housing providers and consumers using multiple media vehicles in English, Spanish, and other major languages common to Cumberland County and the City of Fayetteville residents. The

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Fayetteville-Cumberland Human Relations Department should employ enforcement testing and follow-up investigation of fair housing complaints in a timely manner. If litigated successfully, results should be published in local media to strengthen public knowledge of Fair Housing Law.

**Impediment #4 - Mortgage Lending**

Equal opportunity to credit, or fair lending, is one of the cornerstones of fair housing. It is a step in purchasing a home where discrimination can prevent a qualified buyer from successfully obtaining a home. Lenders continue to more frequently deny minority applicants than White applicants, even when controlling for income. Upper income Black applicants, those earning over 120% of median income, were more likely to be denied home loans than White applicants earning between 50% and 79% of median income.

Unfortunately, origination and denial rates in home lending only tell half the story. Predatory lending, defined by HUD and the U.S. Department of the Treasury as lending involving deception or fraud, manipulation of borrowers through aggressive sales tactics, or taking unfair advantage of a borrower's lack of understanding about loan terms, threatens low-income and minority loan applicants. These practices are often combined with loan terms that, alone or in combination, are abusive or make the borrower more vulnerable to abusive practices.

With an origination rate of less than 50%, the HMDA data suggests discriminatory mortgage lending practices. The data indicates targeting of sub-prime loans towards minorities and other predatory lending practices.

***Recommendation***

The HMDA data indicates targeting of sub-prime loans towards minorities and other predatory lending practices. The Fayetteville-Cumberland Human Relations Department, in conjunction with the North Carolina Human Relations Commission, should distribute educational materials on predatory lending to vulnerable groups, including minorities and seniors.

Further research and testing into the mortgage lending and underwriting practices is required to determine if any "predatory" practices limiting Fair Housing Choice exist. The County and City should initiate a variety of monitoring activities that provide information on the results of policies, practices, and procedures used within the housing industry.

Activities can range from reviewing and analyzing data available to the general public, such as HMDA data, to conducting Fair Housing Audits to determine the extent of discriminatory practices (if any) in a particular segment of the housing market, to sending in testers from different racial, ethnic and income-level backgrounds.

Possible penalties for those found "guilty" of predatory lending practices could be enforcement of fines against the person(s) and/or organization involved, getting HUD,

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the FDIC and FTA involvement in enforcement actions, and seeking to legal actions through class-action/civil lawsuits.

**Impediment #5 - Land Use and Zoning**

Zoning regulations were examined to determine if the entitlement jurisdiction encourages development and maintenance of affordable housing or imposes barriers to the detriment of affordable housing. Planning tools of interest include inclusionary zoning ordinances and density bonuses.

Land use and zoning regulations are sometimes used to discriminate against people under the guise of preserving “neighborhood character”. Zoning and land use policies relating to occupancy restrictions, family definition, and constraints on group homes for persons with disabilities were reviewed for their effect on fair housing choice. No jurisdiction limits the number of occupants in a dwelling beyond the number allowed by the Uniform Housing Code.

The County and City’s definition of family excludes unrelated groups of more than five persons. State statutes that interpret federal disability law give groups of up to six persons the right to live in residential neighborhoods without conditional or special use permits. Furthermore, Fair Housing Law prohibits discrimination on the basis of familial status.

***Recommendation***

Both the City and County need to consider adopting zoning ordinances specifically focusing on reasonable accommodations for persons with disabilities, especially as it relates to housing.

The City already has incorporated a Fair Housing Code into its Code of Ordinances. The County should also adopt a similar code to enforce both private and non-profit housing developers to be held accountable for adhering to Fair Housing laws and regulations.

The County and City should monitor the effectiveness of the policies adopted in the 2030 Growth Vision Plan over the next five years. If they do not appear to be effective in furthering Fair Housing Choice for its residents, then another potential code both the County and City should consider is inclusionary zoning. Inclusionary zoning promotes fair housing choice by directly allocating a percentage of new housing to low and very low-income residents. Its effect is to distribute lower income residents throughout a city, increasing neighborhood diversity. Larger numbers of affordable units can be realized, funded in part by private investment.

**Conclusion**

While the City of Fayetteville and Cumberland County are working towards achieving and furthering Fair Housing Choice for its citizens, there are still potential impediments in place that need to be resolved and further researched. The decision that lies before each jurisdiction is simple:

- 1) Continue towards achieving Fair Housing Choice by being proactive in its approach in systemically reviewing all facets of Fair Housing Choice; or
- 2) Decide that the current efforts and programs in place are sufficient

The recommendations proposed in this analysis to address the issues with Public Transportation, the limited supply of affordable housing, zoning laws, public education and potential predatory lending practices can help both the City of Fayetteville and Cumberland County achieve the reality of a community that truly has Fair Housing Choice.

It's a choice between complacency or proactively affirmatively furthering Fair Housing Choice that will make both the City of Fayetteville and Cumberland County a "better place for all of its citizens."

The City will also pursue the following:

- Expand the City's partnership with Habitat for Humanity and Kingdom Community Development Corporation utilizing their proven capacity as a low price housing producer to effectively lower the price levels;
- Aggressively pursuing multi-family affordable housing projects such as the Eastside Green Apartments III, Bunce East Apartments, and providing funding assistance to the development of units within the designated Hope VI area.
- Making loans designed to create jobs via the Downtown Loan program and the Business Assistance Program;
- Continue to make housing programs available to members of the protected classes;
- Continue relationship with Independent Living Program to cooperatively fund accessibility improvements. Ensure funds are available to renters;
- Include set-a-side of accessible units as a priority for funding development proposals with HOME funds (compatible with North Carolina Housing Finance Agency). Direct developers to Independent Living Program for guidance with design, referral of clients;
- Continue to support the long-term creation of a County-wide transit authority that can provide public transit County-wide; and
- Work with the Planning Department to consider revisions to Zoning Ordinance to ensure low cost housing options be sited widely in community.

## **Lead-Based Paint Hazards**

Lead poisoning is one of the worst environmental threats to children in the United States. While anyone exposed to high concentrations of lead can become poisoned, the effects are most pronounced among young children.

All children are at higher risk to suffer lead poisoning than adults, but children under age six are even more vulnerable because their nervous systems are still developing. At high levels, lead poisoning can cause convulsions, coma and even death. Such severe cases of lead poisoning are now extremely rare, but do still occur. At lower levels, observed adverse health effects from lead poisoning in young children include reduced intelligence, reading and learning disabilities impaired hearing and slowed growth.

Since the 1970s, restrictions on the use of lead have limited the amount of lead being released into the environment. As a result, national blood lead levels for children under the age of six declined by 75% over the 1980s and dropped another 29% through the early 1990s. Despite the decline in blood-lead levels over the past decade, as many as 900,000 children in the United States still have blood lead levels above 10µg/dL (micrograms of lead per deciliter of whole blood). These levels are unacceptable according to the Centers for Disease Control and Prevention (CDC) which lowered blood lead intervention levels for young children from 25µg/dL to 10µg/dL in 1991. Many of these lead-poisoned children live in low-income families and in old homes with heavy concentrations of lead-based paint. The CDC identified the two most important remaining sources of lead hazards to be deteriorated lead-based paint in housing built before 1978 and urban soil and dust contaminated by past emissions of leaded gasoline.

The national goal for blood lead levels among children ages six months to five years is to limit elevations above 15µg/dL to no more than 300,000 per year and to entirely eliminate elevations above 25µg/dL.

### **Housing with Lead-Based Paint Hazards**

According to HUD, lead paint is typically found in homes that were constructed prior to 1978. Since 27% of the housing inventory in the County outside of the City was built prior to 1980, the probability of finding lead paint in existing residential units is very high.

The following table provides estimates of the number of occupied housing units (renter and owner) that are suspected of containing lead based paint.

More than one in three renter units (38%) located in the County outside of the City are suspected of containing lead based paint. The incidence among owner units is closer to one in four units (27%).

The findings listed below are reflective of the data analysis conducted as part of the Housing and Homeless Needs Assessment for Cumberland County outside of Fayetteville. These findings will serve as the basis for developing priorities and implementation strategies for the County's federal entitlement program activities.

Large families were the smallest household type (by number) among extremely low income renters but experienced the highest rates of housing problems and cost burden. However, all household types in this income group have significant housing problems with high rates of cost burden and extreme cost burden. Typically, rental assistance is the

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greatest need among these households, as well as housing rehabilitation of substandard units.

Housing problems ranged from 34% for elderly owners up to 70% for large families. The degree of cost burden ranged from 33% for elderly owners up to 61% for small families. The degree of extreme cost burden ranged from a low of 8% among large families to a high of 26% among all other household types. Similar to other lower income homeowners, housing rehabilitation for these households would be beneficial.

Hispanic households accounted for 5.9% of total households and 4% of all homeowner households in Cumberland County outside of Fayetteville in 2000. They also represented 4% of all lower income homeowners. However, the rate of housing problems experienced by this ethnic group (71% to 100%) were higher than among black non-Hispanics and white non-Hispanics of similar income levels.

Black non-Hispanic households accounted for 37.5% of total households and 28% of all homeowner households in the County outside of the City in 2000. They represented 35% of all lower income homeowners. Rates of housing problems ranged from 66% to 78% for these households.

Twenty-four percent (24%) of the 5,068 elderly with a disability reported that they had a self-care disability that limited their ability to dress, bath, or get around inside their home without assistance. Forty-six percent (46%) of the elderly with a disability reported that their disability limited their ability to go outside their home alone to shop or visit a doctor's office. Thirteen percent (13%) of all elderly persons were living below the poverty level; 866 (17%) of all elderly persons with a disability had income levels below poverty.

Of the 534 elderly and extra-elderly renter households with incomes below 80% of the MFI, 244 (46%) experienced housing problems in 2000. Of the 1,277 elderly and extra-elderly owner households with incomes below 80% of the MFI, 586 (46%) experienced housing problems.

The 2000 Census reported that there were 139,497 non-institutionalized persons age 5 and over in Cumberland County outside of Fayetteville. Of these, 29,320 (21%) reported a disability. There were 10,127 working age persons between the ages of 16 to 64 with a disability who were unemployed. 4,742 (16%) of the 29,320 disabled persons were living below poverty.

More than one in three renter units (38%) located in the County outside of the City are suspected of containing lead based paint. The incidence among owner units is closer to one in four units (27%). HUD's final rule on lead-based paint, effective September 15, 2000, has not significantly impacted the County's housing programs. There has not been a trend of increasing rehabilitation costs required per unit for rehabilitation activities due to lead-based paint. The County will continue to comply with HUD regulations concerning lead-based paint testing, abatement, and education.

Local Estimates

While the prevalence of lead-based paint hazards varies by region, housing unit age and household income among other factors, the national percentages of lead-based paint in occupied housing were applied to the number of housing units in Cumberland County to estimate the percentage of housing units that could contain hazards.

<b>Estimated Incidence of Lead-Based Paint in Housing Stock, 2009 (Cumberland County Outside of Fayetteville)</b>						
	<b>Owner Units Estimated</b>			<b>Renter Units Estimated</b>		
			<b>Units with</b>			<b>Units with</b>
<b>Year Built</b>	<b>Total Units</b>	<b>% with LBP</b>	<b>LBP</b>	<b>Total Units</b>	<b>% with LBP</b>	<b>LBP</b>
1980- Present	34,820	x 0 =	0	25,590	x 0 =	0
1960-1979	26,150	x 0.62 =	16,213	16,265	x 0.62 =	10,084
1940-1959	6,295	x 0.80 =	5,036	5,245	x 0.80 =	4,196
Before 1940	1,330	x 0.90 =	1,197	1,820	x 0.90 =	1,638
Total	68,595		22,446	48,920		15,918

Based on these estimates, as many as 38,364 occupied housing units in Cumberland County could contain lead-based paint. Of these units with lead-based paint, 22,446 are owner-occupied and 15,918 are occupied by renters. Up to 5,276 houses may have deteriorated lead-based paint.

**Lead-Based Paint Hazard Reduction**

The federal Residential Lead-Based Paint Hazard Reduction Act of 1992 (Title X of the Housing and Community Development Act of 1992) amends the Lead-Based Paint Poisoning Prevention Act of 1971, which is the law covering lead-based paint in federally funded housing. These laws and subsequent regulations issued by the U.S. Department of Housing and Urban Development protect young children from lead-based paint hazards in housing that is financially assisted or being sold by the federal government.

In Fayetteville, evaluations of the prevalence of lead-based paint in housing units are conducted by project and lead abatement is prescribed for all dwellings targeted for rehabilitation. In addition, all assisted housing tenants are informed of the hazards of lead-based paint. The Cumberland County Health Department provides ongoing consultation to local housing staff.

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## **HOME Program Recapture Provision**

All units receiving HOME Program funds are required to comply with a designated affordability period as described above. The City of Fayetteville can ensure continued affordability through the recapture of its initial investment. The proceeds will be reprogrammed and used for other HOME eligible activities. Once the HOME funds are repaid, the property is no longer subject to the affordability requirements.

The City will make every effort to preserve affordability and avoid project default; however, in the event of a foreclosure, a transfer in lieu of foreclosure, or an assignment to HUD, the PJ must repay the HOME account. If the ownership of the housing is conveyed pursuant to a foreclosure sale, the amount of recapture due will be only the net proceeds from the sale. The recapture provisions and period of affordability on each HOME-assisted unit are enforced through the deed restrictions that are recorded as a part of each real estate closing.

## **Local monitoring and compliance**

The City of Fayetteville allocates CDBG and HOME funds annually to implement actions designed to accomplish goals and objectives that meet community needs identified in its Consolidated Plan. Consequently the City is responsible for ensuring that funding recipients (i.e., subrecipients and CHDOs) comply with applicable regulations and requirements governing their administrative, financial and programmatic operations. In accordance with 24 CFR 91.230, the City utilizes a local monitoring and compliance plan that describes the standards and procedures that will be used to monitor activities carried out in furtherance of the 2010-2011 One-Year Action Plan and will used to ensure long-term compliance with requirements of the programs involved; the plan also includes a schedule of projected monitoring visits for the program year.

The City's monitoring and compliance plan is designed to accomplish the following objectives:

- To determine if project activities are consistent with the service agreement and conducted in a timely manner.
- To determine eligibility of costs charged to the project under applicable laws and CDBG/HOME regulations and reasonable in light of the services or products delivered.
- To determine if activities are conducted with adequate control over program and financial performance and in a way that minimizes opportunities for waste, mismanagement, fraud and abuse.
- To assess if the subrecipient/CHDO has continuing capacity to carry out the approved project.
- To identify potential problem areas and to assist the subrecipient/CHDO in complying with applicable laws and regulations.



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- To assist subrecipient/CHDO in resolving compliance problems through discussion, negotiation, and the provision of technical assistance and training.
  - To provide adequate follow-up measures to ensure that performance and compliance deficiencies are corrected by subrecipient/CHDO, and not repeated.
  - To ensure that the maintenance of required records is accomplished.

The monitoring visit is followed with written a report detailing concerns, comments and/or recommendations for improvement.

In addition to on-site visits, the City also monitors subrecipient activities through the review of reports and draw requests. Each subrecipient is required to submit monthly or quarterly written reports on the progress of their CDBG-or HOME-funded activities. These reports indicate how well the subrecipient is performing against the targets set in the grant agreement. They submit requests for reimbursement of project expenses as needed (usually monthly) with sufficient back-up detail to support the request (e.g. copies of payrolls or paid invoices). Reimbursements are made after the expense has been incurred and reviewed for eligibility by the City. Particular attention is paid to compliance with eligibility and National Objective requirements. Other areas of emphasis during monitoring visits are project performance, contract compliance, financial management, record management, procurement practices and compliance with civil rights requirements.

### **Subrecipient/CHDO On-Site Monitoring Review Policy**

The City's monitoring activities are designed to determine whether a subrecipient/CHDO is providing services or conducting activities in compliance with local, state and federal regulations and the requirements of the service agreement. The first step is to schedule the on-site review with the respective subrecipient/CHDO. At least one monitoring visit will be conducted with the subrecipient/CHDO during a fiscal year. Additional monitoring visits may be scheduled if the activity is determined to be high risk or at the City's discretion. After the monitoring visit is scheduled, a confirmation letter that identifies the information and items needed in preparation for the visit will be mailed to the subrecipient/CHDO.

An entrance conference is held on-site with executive director and/or appropriate financial/program staff immediately before the monitoring begins. The conference is used to make sure the staff has a clear understanding of the purpose and scope of the monitoring visit from the very beginning. The City will use the following monitoring instruments during the on-site review to assess the subrecipient's compliance with applicable laws and regulations for CDBG/HOME assistance.

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## Annual subrecipient/CHDO On-Site Monitoring Review

The City will utilize the following checklist during onsite monitoring of subrecipient/CHDO activities. Items checked for CHDO only are so indicated.

- Productivity: number of household's assisted/units completed during the fiscal year
- Meeting of national objective
- Meeting of contract statement of work/scope of success.
- Meeting of eligible/ineligible activities compliance
- Verification of income assistance given to low to moderate income persons
- Application/approval process
- General income characteristic of beneficiary
- Racial/ethnic groups served during fiscal year
- Number of female - headed households served during fiscal year
- Financial status
  - Financial management system
  - Payroll records
  - Cost allowability
  - Review of records maintenance
    - Overall accomplishments
- CHDO qualification/recertification
  - Review legal status
    - Confirm organization under state/local law
    - Purpose of organization
    - Confirm no individual benefit
    - Geographical service area
    - Non-profit status
  - Review organizational structure
    - Composition of the Board of Directors
    - Low-income community representation
    - Low-income input
    - Public –sector limits
  - Eligible use of HOME funds

The following items are also indicated on this form: subrecipient's name, telephone number, responsible party/title, and type of activity/description and activity location.

## Monitoring Review Sampling Result Sheet

This form is used to document specific findings of records reviewed (whether sampled or comprehensive) to document national objective requirements, fulfillment of contract objectives, consistency and compliance with the contracted scope of services, test for activity eligibility and low to moderate income verifications for persons assisted. For each record reviewed, the applicant/beneficiary's name, address or location of service, and telephone number are indicated.

### **Contract Objectives Check-Off List**

This document is used to assess whether the scope of services and key contract objectives have been met by respective subrecipient/CHDO. This form enlists the subrecipient contract provisions.

### **Exit Conference**

At the end of the visit, key subrecipient/CHDO staff members are met with again to present the tentative conclusions from the monitoring visit. The conference has four objectives:

- to present preliminary results of the monitoring visit;
- to provide an opportunity for the subrecipient to correct any misconceptions or misunderstandings on the City's part;
- to secure additional information from subrecipient staff to clarify or support their position; and
- To provide an opportunity for the subrecipient/CHDO to report steps they being taken to correct deficiencies identified in the monitoring visit.

### **Follow-Up Letters**

Two-follow up letters shall be mailed to subrecipient regarding the results of the review. The first letter will serve to document requests for additional information not readily available at time of review; concerns; and/or findings (whether subsequently resolved or outstanding.) After receipt of the first follow-up letter, the subrecipient shall be allowed ten working days to satisfy requests and/or to respond to concerns and findings. The subrecipient should then be mailed a final follow up letter that will state whether or not issues stated in the first follow-up letter have been resolved or satisfied. This letter both documents and provides for additional requests by the City for any issues that remain outstanding.

## 2010-2011 One year Action Plan

The 2010-2011 One-Year Action Plan describes the activities to be funded or implemented during the program year. The plan contains goals, objectives, and description of projects and activities that implement the strategies established in the Consolidated Plan. Also included are the appropriate forms required by the US Department of Housing and Urban Development. This One-Year Action Plan constitutes first annual plan of the 2010-2011 five-year Consolidated Plan. It sets forth a description of activities for the use of funds that are expected to become available during the coming fiscal year and establishes goals and objectives for those activities. The City expects the following resources to be available to implement its community development strategies during the 2010-2011 program year.

<b>2010-2011 Funding Sources</b>	<b>Amount</b>
Community Development Block Grant (CDBG)	\$ 1,568,083
CDBG Program Income	\$ 232,685
HOME Investment Partnership (HOME)	\$ 893,673
HOME Program Income	\$ 262,660
CDBG & HOME Prior Year	\$ 1,167,510
Prior Year Program Income	\$ 291,835
<u>City (HOME match)</u>	<u>\$ 178,735</u>
 <b>Total</b>	 <b>\$ 4,595,181</b>

These funds are used to develop a coordinated and comprehensive means of addressing the core goals identified in the plan.

The City's One-Year Action Plan describes 33 projects to be undertaken during the program year; the projects and activities proposed for 2010-2011 are summarized below:

**Summary of 2010-2011 Proposed Action Plan Projects**

<b><u>Housing Activities</u></b>	<b><u>Budget</u></b>	<b><u>Benchmark</u></b>	<b><u>Activity Type</u></b>	<b><u>Funding</u></b>
Down payment Assistance Program	15,000	5	Homes purchased	HOME
Mortgage Assistance Program	75,000	5	Homes purchased	HOME
Housing Rehabilitation Program	1,075,311	165	Homes repaired	HOME/CDBG
Replacement Housing Program	100,000	2	Homes replaced	HOME
Acquisition & Demolition Program	75,000	25	Houses acquired/demolished	CDBG
Residential Façade Grant Program	75,000	15	Homes repaired	CDBG
Eastside Green III Apartments	160,000	40	Apartments built	HOME
Hellenic Agape	100,000	48	Apartments built	HOME
CHDO Activities	427,850	13	Homes built	HOME
Homebuyers Education	8,520	175	Persons assisted	CDBG
HOPE VI Affordable Housing Project(Curtis Lane)	350,000	184	Apartments built	HOME
HOPE VI property acquisition	374,500	30	Acquisition	CDBG
IDA Program	5,000	5	Persons Assisted	CDBG
	<b>2,841,181</b>	<b>717</b>		
<b><u>Economic Development</u></b>				
Business Assistance Program	250,000	6	Jobs created	CDBG
Downtown Loan Pool	450,000	7	Jobs created	CDBG
Women's Center of Fayetteville	46,000	35	Clients Assisted	CDBG
Façade Grant Program	50,000	10	Jobs created	CDBG
Fayetteville Business & Professional League	20,000	75	Clients Assisted	CDBG
Small Business Retention Grant Program	50,000	10	Jobs created	CDBG
Section 108 Payment - Capitol Project	75,000	2	Loan Payments	CDBG
	<b>941,000</b>	<b>145</b>		
<b><u>Community Development</u></b>				
Neighborhood Resource Centers	175,000	10,000	Client Visits	CDBG
Beautification	10,000	5	Projects completed	CDBG
Street Paving Assessment Fee Assistance	10,000	10	Persons assisted	CDBG
Water and Sewer Assessment Fee Assistance	75,000	40	Persons assisted	CDBG
	<b>270,000</b>	<b>10,055</b>		
<b><u>Homeless Services</u></b>				
Homeless Shelter Assistance Program	10,000	25	Utility assistance provided	CDBG
Utility Deposit Assistance Program	3,000	15	Clients assisted	CDBG
Homeless Client Assistance Program	2,000	25	Clients assisted	CDBG
Hope Center Homeless Shelter	8,000	1,000	Clients served	CDBG
Operation Inasmuch Day Center	30,000	1,038	Clients served	CDBG
Salvation Army Homeless Shelter	15,000	1,300	Clients served	CDBG
Gospel Services Benevolent Society, Inc.	15,000	1,000	Clients served	CDBG
Fresh Touch Ministries, Inc.	10,000	7,700	Meals served	CDBG
	<b>93,000</b>	<b>12,108</b>		
Program Administration	<b>450,000</b>			HOME/CDBG
<b>Total All Projects and Activities</b>	<b>4,595,181</b>	<b>15,315</b>	Benchmark	

All of the projects will be located within the municipal limits with the majority taking place within low to moderate-income communities through out the City.

## HOUSING

As was stated in the current housing study, nearly 40% of all households in both Cumberland County and the City of Fayetteville have household incomes at \$35,000 or less or at a median income of around \$26,735. Therefore, the current study still reveals that thousands of households in our area remain poor or nearly poor, and continue to experience housing problems. The wages of these very low to extremely low income households continue to be a major barrier to affordable housing. In addition, the current unemployment rate is at 12%, being the highest amongst the protected classes (females and minorities) and more than double white civilians, which also affects the protective classes' ability to be adequately housed. See the chart below referencing our area's labor force which indicates that of the 52,253 unemployed civilians in our area, 57% are women vs. 43% males and 60% are minorities vs. 40% white civilian labor.

The City of Fayetteville's current population is 207,352, with over one third of all households in our area experiencing some type of housing problem. Households considered to have a housing problem are those without a complete kitchen or bathroom, contain more than one person per room, and/or pay more than 30% of their income to cover housing expenses. Housing problems are greatest amongst larger families and lowest amongst the elderly (23% for elderly compared to 58% for all other households). Most affordable housing units developed are one or two bedroom rental units that do not accommodate larger families, causing them to be the largest group that is cost burden as they rent or purchase larger more expensive dwellings.

Rent that over stretches a household's budget also leads to credit problems that make it difficult to contemplate buying a home, even if income increases to a level that would make that possible. Other contributing factors are down payment and closing cost requirements; and little new construction at the affordable end of the price scale in the city. Considering these factors, community input and the findings of the housing study, the City has identified the following priority housing needs:

1. Increase the supply of affordable housing;
2. Improve the condition of the low-income housing stock; and
3. Increase homeownership opportunities.

Activities in the City's housing activities are designed to meet the needs identified in the 2010-2015 Consolidated Plan. Housing benchmarks for the 2010-2011 One-Year Action Plan are presented below followed by descriptions of each activity.

### 2010-2011 Housing Benchmarks

Description	Estimated Cost	Estimated Units	Percent Budget	Percent Unit	Type
Down payment Assistance	\$15,000	5	1%	1%	Homes purchased
Mortgage Assistance Program	\$75,000	5	3%	1%	Homes purchased

Housing Rehabilitation	\$1,075,311	165	38%	23%	Homes repaired
Replacement Housing	\$100,000	2	4%	1%	Homes replaced
Acquisition and Demolition Program	\$75,000	25	3%	3%	Houses acquired and demolished
Residential Façade Grant Program	\$75,000	15	3%	2%	Homes repaired
Eastside Green III Apartments	\$160,000	40	6%	5%	Apartments built
Hellenic Agape Apartments	\$100,000	48	4%	7%	Apartments built
CHDO activities	\$427,850	12	15%	2%	Homes built or acquired and rehabilitated
Homebuyer's Education	\$8,520	197	.03%	27%	Persons assisted
HOPE VI Affordable Housing Project	\$350,000	184	12%	25%	Apartments built
HOPE VI property acquisition	\$374,500	30	13%	4%	Properties acquired
IDA Program	\$5,000	5	.02%	1%	Homes purchased
<b>Total</b>	<b>\$2,841,181</b>	<b>717</b>	<b>100%</b>	<b>100%</b>	

**Performance Measurements**

<b>Program</b>	<b>Objective</b>	<b>Outcome</b>	<b>Outcome Statement</b>	<b>Indicators</b>
<b>Down payment Assistance Program</b>	Provide decent affordable housing	Affordability	Affordability for the purpose of providing decent affordable housing	Housing units purchased <b>5</b>
<b>Mortgage Assistance Program</b>	Provide decent affordable housing	Affordability	Affordability for the purpose of providing decent affordable housing	Housing units purchased <b>5</b>
<b>Housing Rehabilitation Program</b>	Create suitable living environments	Sustainability	Sustainability for the purpose of creating suitable living environments	Owner occupied and investor owner units rehabilitated <b>165</b>
<b>Replacement Housing Program</b>	Provide decent affordable housing	Sustainability	Sustainability for the purpose of providing decent affordable housing	Housing units replaced <b>2</b>
<b>Acquisition and Demolition Program</b>	Provide decent affordable housing	Affordability	Affordability for the purpose of providing decent affordable housing	Houses rehabilitated <b>25</b>

<b>Residential Façade Grant Program</b>	Create suitable living environments	Sustainability	Sustainability for the purpose of creating suitable living environments	Owner occupied and investor owner units rehabilitated <b>15</b>
Eastside Green III Apartments	Provide decent affordable housing	Affordability	Affordability for the purpose of providing decent affordable housing	Rental housing units constructed <b>40</b>
Hellenic Agape Apartments	Provide decent affordable housing	Affordability	Affordability for the purpose of providing decent affordable housing	Rental housing units constructed <b>48</b>
<b>CHDO Activities</b>	Provide decent affordable housing	Affordability	Affordability for the purpose of providing decent affordable housing	Housing units constructed and sold <b>13</b>
<b>Homebuyer Education</b>	Provide decent affordable housing	Accessibility	Accessibility for the purpose of providing decent affordable housing	Participants receiving counseling <b>175</b>
<b>HOPE VI Affordable Housing Project (Curtis Lane)</b>	Provide decent affordable housing	Affordability	Affordability for the purpose of providing decent affordable housing	Properties acquired <b>184</b>
<b>HOPE VI Property Acquisition</b>	Provide decent affordable housing	Affordability	Affordability for the purpose of providing decent affordable housing	Properties acquired <b>30</b>
<b>Individual Development Accounts Program (IDA)</b>	Provide decent affordable housing	Accessibility	Accessibility for the purpose of providing decent affordable housing	Participants receiving counseling and assistance <b>5</b>

**Down-payment Homeownership Assistance**

**Eligibility Citation - 24 CFR Part 92.205 (a)(1)**

This program provides a low-interest loan at 3% to low to moderate-income homebuyers. The repayment of the loan begins after a five-year period of deferment, and interest is not accrued during the deferment period. The home must be located within the City limits with an approved mortgage from a City participating lender. The maximum amount of assistance the homebuyer can obtain is \$3,000 per housing unit. The loan is to be used to contribute to either the down payment or closing costs required when purchasing a home. The loan is secured by the borrower’s execution of a promissory note and deed of trust that outlines recapture provisions in accordance with 24 CFR Part 92.254. Liens coinciding with loan terms are placed on all properties. The City has partnered with Consumer Credit Counseling Services to provide homebuyer workshops and credit counseling to prospective low to moderate-income homebuyers. The workshops are offered monthly, and applicants must receive workshop certification to participate in the program. The City encourages Kingdom CDC and the Fayetteville Area Habitat for Humanity to make presentations to potential homebuyers during these workshops. The City allocated \$15,000 for this activity, and anticipates 5 low to moderate home buyers will receive assistance during the 2010-2011 program year. This activity meets priority housing need number 3 (HOME).



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## **Mortgage Assistance Program**

### **Eligibility Citation - 24 CFR Part 92.205 (a)(1)**

This program provides a low interest second mortgage at 2% to reduce the overall cost of financing needed to purchase a single-family home. By reducing the cost of financing, purchasing power is increased and homes are made more affordable to low to moderate-income homebuyers. The maximum amount of assistance that the homebuyer can obtain is \$20,000 or 19% of the purchasing price whichever less is. The purchasing price of the home cannot exceed the Federal Housing Administration's (FHA's) current mortgage limit. The home must be located within the City limits with an approved first mortgage from a City participating lender. The repayment term of the loan shall began and be equal to the repayment term of the first mortgage, generally 30 years. The loan is secured by the borrower's execution of a promissory note and deed of trust that outlines recapture provisions in accordance with 24 CFR Part 92.254. Liens coinciding with loan terms are placed on all properties. As with the Down Payment Assistance Program, the applicant must receive the certification from the homebuyer education workshop in order to participate in the program. The City allocated \$75,000 for this activity and anticipates 5 low to moderate home buyers will receive assistance this program year. This activity meets priority housing need number 3 (HOME).

## **Housing Rehabilitation**

### **Eligibility Citation - 24 CFR Part 570.202(b) (1), 24 CFR Part 92.205(a)(1)**

This program provides housing rehabilitation services for substantial home repairs in excess of \$5,000 and for emergency home repairs of \$5,000 or less. Substantial repairs are made with a revolving loan pool that provides low-interest loans to low-to-moderate income homeowners and investor owners with rental property to make necessary repairs. Homeowners requiring immediate or emergency home repair assistance of \$5,000 or less are referred to the emergency home repair program; this assistance is provided as a grant. However, income requirements will dictate whether the household will receive a deferred payment loan or low-interest loan if assistance of more than \$5,000 is provided under the revolving loan pool. Applicants at or below 50% of the Fayetteville's median family income (mfi) are eligible to be recommended for a deferred loan. Applicants at 51% to 80% are eligible for a low-interest loan with interest rates from 0-5% depending upon household income. Investor owners are offered a low interest loan at 5%. Investors must avail their properties to rent to low to moderate-income persons for a period of affordability based upon the amount of funds borrowed to make the repairs. The term of the loan is made equivalent to the period of affordability. Recapture periods for all loans are based upon the loan amount. Liens coinciding with loan terms are placed on all properties. The loan is secured by the borrower's execution of a promissory note and deed of trust that outlines the recapture provisions. This activity meets priority housing needs number 1 (HOME/CDBG).

Under the emergency home repair program, priority is given to homes that have serious problems such as bad flooring, bad stairs, and roofing needs. Services also include modifications to improve accessibility and mobility for disabled residents, and weatherization and energy efficiency services including HVAC installation and

replacement. Fayetteville Urban Ministry has coordinated the program on behalf of the City since the 1995-96 program year. This program effectively leverages City funding through the extensive utilization of volunteers and donated materials.

In addition to the actual repairs, construction management services provided include lead based paint hazard assessments, work write-ups, bid letting and site inspections. The City allocated \$270,000 for this activity, and anticipates repairing 165 homes during the 2010-2011 program year. This activity meets priority housing needs number 1 (HOME/CDBG).

### **Replacement Housing**

#### **Eligibility Citation - 24 CFR Part 570.202, 24 CFR Part 92.205(a)(1)**

This program was designed and implemented to provide one-to-one replacement housing units to qualified rehabilitation program applicants whose homes are determined to be in an advanced state of deterioration and economically infeasible to rehabilitate in bringing up to minimum housing code standards. Replacement housing may be provided in either of the following forms: 1) Same site construction: building a new house on the existing lot after demolition of the existing structure; 2) Relocation (existing pre-owned or new construction): applicant to move in a pre-existing dwelling (new or pre-owned) owned by either the City of Fayetteville or one of its City-funded participating CHDOs, relinquishing ownership of the land occupying the previous dilapidated unit to the City of Fayetteville; 3) Moving an existing house to the cleared lot, after demolition of the existing structure. The City shall select the most feasible form of replacement housing available at the time of need, and in which the homeowner is in agreement. Eligible properties for replacement must fail to conform to minimum housing code standards and receives a repair estimate in excess of 67% of the value of the home and/or \$30,000. The maximum amount of total assistance for replacement housing cannot exceed \$50,000 per housing unit with the use of combined funding sources and services. The loan terms for replacement housing shall be determined on a case-by-case basis, dependent upon the applicant's calculated payment affordability amount and percentage of the area income median (above v s. at or below 50%). The City allocated \$100,000 for this activity, and anticipates replacing 2 homes during the 2010-2011 program year. This activity meets priority housing needs number 3 (HOME/CDBG).

### **Residential Façade Grant Program**

#### **Eligibility Citation - 24 CFR Part 570.202, 24 CFR Part 92.205(a)(1)**

This program was designed to encourage the exterior rehabilitation, renovation and preservation of existing site-built detached single family residential structures within the City limits by offering up to \$5,000 as a grant, minus a 10% contribution, to low to moderate income property owners to renovate their structures. The goals of the program are to 1) preserve and upgrade the City's housing stock, 2) revitalize, stabilize and aesthetically improve the overall appearance of the City's residential neighborhoods by removing blight and 3) stimulate investment, development and interest in our community by families, businesses, investors and developers considering ventures and/or residency in our jurisdiction. The City allocated \$75,000 for this activity, and anticipates providing assistance to at least 15 homes during the 2010-2011 program year. The program was

initially created in making use of CDBG-R funds, but is of great demand and need, and is expected to be continuously funded even after exhaustion of CDBG-R funds. This activity meets priority housing needs number 1 (CDBG-R)

### **Community Housing Development Organization (CHDO) Activities**

#### **Eligibility Citation - 24 CFR Part 92.300**

Community Housing Development Organizations or CHDOs are nonprofit organizations whose purpose is to provide decent and affordable housing to low/mod income persons. In order to be certified as a CHDO, a non-profit organization must meet HUD regulatory requirements pertaining to their legal status, organizational structure and capacity and experience. The City has partnered with and certified four local CHDOs to increase the supply of affordable housing: Kingdom Community Development Corporation (Kingdom); Cumberland Community Action Program (CCAP), Fayetteville Area Habitat for Humanity (FAHFH, a subcontractor of CCAP), and the Women's Center of Fayetteville.

Throughout the years, the City has partnered with CCAP to build and sell affordable single-family dwellings to low to moderate-income homebuyers in Habitat Village located in the Old Wilmington Road area. Since July 6, 1992, the City has conveyed 50 lots to CCAP/FAHFH for the construction of affordable housing in this area, and Habitat Village has been completely built out. The City continues to contract with FAHFH independently to develop affordable single-family homes annually. The City provided assistance to Habitat for Humanity for the construction and infrastructure of five homes during the 2009-2010 program year and shall contract with them to develop five additional homes during the 2010-2011 program year to avail and make affordable to low to moderate income families. All homes to be built by FAHFH beginning with the 2009-2010 program year and the succeeding program years shall be built in the designated Hope VI project area also located in the Old Wilmington Road area until 105 single family homes have been constructed in this area.

The City contracted with Kingdom in 1996 to construct 12 single-family units in the development known as Fairley Estates located on Vanstory Street in the Old Wilmington road area. This CHDO has completed nine homes in Fairley Estates since project inception, with the remaining three lots having later been identified as not being conducive for development. Kingdom since has completed the construction of phase two of the Fairley Estates development located parallel to Vanstory Street of the Old Wilmington Road area, which upon completion added 20 units of mixed income affordable housing to the area at project completion. The City also assisted Kingdom with predevelopment and infrastructure costs for phase two of Fairley Estates. To date, Kingdom has constructed 16 new single-family affordable housing units in Fairley Estates II.

The City also contracted with its newest certified CHDO, the Women's Center of Fayetteville to rehabilitate ten affordable rental housing units that shall be rented to very low income families at or below 30% the area income median during the 2008-2009 program year. Although the City has contracted with the Women's Center of Fayetteville

for many program years to provide assistance for businesses within the area of Economic Development, the City began contracting with this organization for the provision of CHDO services during the prior program year.

The City will continue to work with local CHDOs to build their capacity to produce affordable housing and leverage other resources. CHDO activities are expected to provide 13 additional single-family dwellings during the 2010-2011 program year to include 5 to be developed by FAHFH, 6 to be developed by KCDC, 2 to be acquired and rehabilitated by the Women's Center of Fayetteville. The City has allocated \$427,850 for this activity. The City will also seek the assistance of its CHDO(s) in developing newly constructed homes as replacement housing. This activity meets priority housing need number 3 (HOME).

### **Acquisition and Demolition Program**

#### **Eligibility Citation - 24 CFR Part 570.208 (a)(2) and (3), 24 CFR Part 570.201 (d)**

In effort to eliminate blight within the City limits of Fayetteville and with the use of CDBG funding, the Acquisition and Demolition Program is designed to acquire, demolish, and remove property that is abandoned, unsafe, seriously damaged, or deteriorated beyond reasonable financial costs to effectively rehabilitate so that the vacant parcels may be used for the future affordable housing development. This program may also be used for the demolition of structures in which acquisition is not required. Eligible properties for the most part have to be those that are significantly deteriorated and in uninhabitable and unsafe condition or extensively damaged by fire or natural disaster and/or creating a serious risk to public health and safety. Eligible applicants and participants of the program are investors, developers, subrecipients, CHDOs, non-profits and respective members of various departments relevant to the situation to include the City's Community Development, Inspections, Health, Police and Fire Departments. A grant or an award of up to \$5,000, dependent upon the current market value of the subject structure may be provided for the purpose of acquiring a dilapidated structure from the homeowner that is in need of demolition. On an average, the purchasing offers shall equate to 10% of the property's enlisted real property value, ranging from a minimum offer of \$1,000 and a maximum offer of \$5,000. A grant or an award of up to \$3,000 may also be provided to the lowest bidder to demolish any program eligible properties for demolition. The City allocated \$75,000 for this activity, and anticipates assisting 15 housing units during 2010-2011 program year. This activity shall make vacant parcels available to later meet priority housing need number 2 (CDBG).

### **Eastside Green III Apartments**

#### **Eligibility Citation - 24 CFR Part 92.205(a)(1)**

This project is for the construction of a third phase of Eastside Green Apartments, located off of Cedar Creek Road. The city shall utilize its home funds to leverage other private and public dollars to construct 40 additional affordable rental units for low to moderate families and individuals. Rents are projected to range from \$ 343 to \$ 526 per month dependent upon family size and income.

The City proposes to loan United Developers \$ 320,000 of its HOME funds towards the construction of this multi-million dollar project. The City will distribute loan proceeds over two program years; in amounts of \$160,000 in year 2010-2011 and \$160,000 in year 2011-2012. Construction shall begin during the 2010-2011 program year and is expected to be completed by year end of 2012. This project meets priority housing need number 2(HOME).

**Hellenic Agape**

**Eligibility Citation - 24 CFR Part 92.205(a)(1)**

This project is for the construction of a 48 unit apartment development for the elderly located on Sapona Road. The city shall utilize its home funds to leverage other private and public dollars to construct these units by providing a grant in the amount of \$100,000 to the Evrytarian Association of America “Velouchi” and the North Carolina Housing Foundation, Inc. A HUD Section 202 application has been submitted by the non-profit organizations for the construction of apartments for the elderly aged 62 and over with incomes at or below 50% of the area median. This project meets priority housing need number 2(HOME).

**HOPE VI Affordable Housing Project**

**Eligibility Citation - 24 CFR Part 92.205(a)(1)**

This project is for the construction of the affordable housing in association with the HOPE VI Revitalization Grant received by the Fayetteville Metropolitan Housing Authority. The City proposes to fund this project as part of its commitment to the HOPE VI Revitalization Grant Project.

The Fayetteville Metropolitan Housing Authority was awarded a HOPE VI Revitalization Grant in the amount of \$20 million dollars in March 2008. The grant, part of approximately \$113 million in public and private funds, will be used to help in the revitalization of the Old Wilmington Road area in downtown Fayetteville. The grant will support the redevelopment of two public housing developments, Campbell Terrace and Delona Gardens, with modern housing that reflects the architecture of Fayetteville and seamlessly blends the residential and natural environments with the urban center. The 249 units of distressed public housing at Delona Gardens and Campbell Terrace will be replaced with 747 mixed-income rental and homeownership dwellings. It includes 223 units to be built on the current public housing site and an additional 399 units built on other vacant sites in the Old Wilmington Road community. Another 125 units will be built in greater Fayetteville. Working families and elderly citizens will have a variety of new accommodation choices including single-family homes, townhouses, senior cottages, walk-up apartments and a senior complex.

To date, the City has allocated \$700,000 for the construction of the Bunce East Apartments, which are being built off of Bunce Road in support of the HOPE VI project. The City has allocated an additional \$350,000 to support the construction of the Curtis Lane Apartments. This funding is the third year of the City’s five year commitment. This project meets priority housing need number 2 (HOME).

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## **Homebuyer Education**

### **Eligibility Citation - 24 CFR Part 570.201(e)**

The City will contract with CCAP, which is also a certified CHDO, to offer homebuyer education classes free of charge to low to moderate-income families interested in purchasing a home. The City and Cumberland County jointly fund and sponsor the homebuyer education classes offered by CCAP. Subjects covered include the benefits of homeownership, shopping for a home and obtaining financing; training is provided by certified housing counselors. Homebuyers with credit issues can receive additional credit counseling to develop a repair plan to fit individual needs. In order to maximize accessibility, homebuyer education classes are held monthly; class sites are rotated between the neighborhood resource centers and CCAP's home office in downtown Fayetteville. The City allocated \$6,000 for this activity, and anticipates providing homebuyer education to approximately 125 participants during the 2010-2011 program year. The City also allocated an additional \$2,520 for credit counseling fees to benefit 72 low-to-moderate income applicants, totaling \$8,520. This activity meets priority housing need number 3 (CDBG).

## **Individual Development Accounts (IDA) Program**

### **Eligibility Citation - 24 CFR Part 92.205 (a)(1)**

The City will contract with Kingdom, which is also a certified CHDO, to offer assistance with its Family Financial Success program to provide Individual Development Accounts. The Cumberland County Individual Development Account (CCIDA) is a savings tool that helps low to moderate income families and individual build assets and attain financial stability in effort to obtain homeownership. Guidance and requirements for personal savings are outlined for the participant, as well as funding assistance from the City and other Cumberland County Coalition members to match those funds saved by the homebuyer to purchase a home. The CCIDA program will teach the participant the importance of setting financial goals, saving money, managing credit and debit card, maintaining acceptable credit and reading the credit; and provide an introduction to all banking services. Funding for the participant shall be offered as a \$1,000 grant. The City allocated \$5,000 for this activity to assist 5 homebuyers during the 2010-2011 program year. This activity meets priority housing need number 3 (HOME).

## **Community Development Activities**

The City's Community Development activities are focused on helping low to moderate-income residents acquire needed information, knowledge and skills to improve their employment opportunities, beautification programs to help improve community appearance; and capacity building activities to help non-profit organizations to become more productive. In addition the City provides assistance to help low income residents pay assessment fees for their share of capital improvement costs.

The City has identified the following objectives for its HUD funded community development activities:

1. Offer training programs that develop job skills to help low to moderate-income persons improve their earning potential.
2. Continue to improve neighborhood accessibility to various human services;
3. Continue to provide support to the City's efforts to extend water and sewer to newly annexed areas, pave remaining unpaved streets within the City limits, and various community improvements.
4. Provide support in the implementation of the recommendations in the City's redevelopment plans.
5. Provide programs for the youth and seniors in low-moderate income areas
6. Help foster neighborhood pride in low-moderate income areas of the City of Fayetteville

The City's community development activities are designed to meet the needs identified in the 2010-2015 Consolidated Plan. Community development benchmarks and performance measurements for the 2010-2011 One-Year Action Plan are presented below followed by descriptions of each activity.

**2010-2011 Community Development Benchmarks**

Description	Estimated Cost	Estimated Units	Percent Budget	Percent Unit	Type
Neighborhood Resource Centers	175,000	10,000	64.81%	99%	Client Visits
Beautification	10,000	5	3.71%	.049%	Projects completed
Street Paving Assessment Fee Assistance	10,000	10	3.71%	.099%	Persons assisted
Water and Sewer Assessment Fee Assistance	75,000	40	27.77%	.39%	Persons assisted
<b>Total</b>	<b>270,000</b>	<b>10,055</b>	<b>100%</b>	<b>100%</b>	

**Performance Measurements**

Program	Objective	Outcome	Outcome Statement	Indicators
Neighborhood Resource Centers	Create suitable living environments	Accessibility	Accessibility for the purpose of creating suitable living environments	Participants benefiting from the use of the public facility <b>10,000</b>
Beautification Program	Create suitable living environments	Accessibility	Accessibility for the purpose of creating suitable environments	Improvement projects completed in low income neighborhoods <b>5</b>
Street Paving Assessment Fee	Sustainability for the purpose	Affordability	Affordability for the purpose of	Housing units assisted

Assistance Program	of creating suitable environments		creating suitable living environments	<b>10</b>
Water and Sewer Assessment Fee Assistance Program	Sustainability for the purpose of creating suitable environments	Affordability	Affordability for the purpose of creating suitable living environments	Housing units assisted <b>40</b>

**Neighborhood Resource Centers**

**Eligibility Citation - 24 CFR Part 570.208 (a) (1), 24 CFR Part 570.201 (e)**

Neighborhood Resource Centers (NRCs) are facilities that provide training opportunities for low to moderate-income residents. NRCs are strategically located within the city limits of Fayetteville in areas near the city bus line to benefit citizens and are ideal facilities to accommodate job skills training and informational workshops with a computer lab available daily with free access.

The Community Development staff continues to seek ways to expand the NRC network into other needed areas within the city limits. The City closed the Myers NRC at the end of the prior program year due to low community participation and is considering a potential NRC in the Bonnie Doone Redevelopment Plan area where there is great interest by its residents. The City’s recreation centers are strategically located through out the City and can also be used to carry out similar activities as those held in the NRC’s. The Community Development staff will work with the staff of the recreation centers to coordinate and bring services to these areas within the city limits and extending the NRC Network. The current NRC’s operated by City staff and/or a Senior Aide from Workforce Development are listed below:

- Seabrook NRC, 708 Langdon Street, across from Fayetteville State University;
- Westover NRC, 267 Bonanza Dr., in the Westover Recreation Center; and
- Massey Hill NRC, 1612 Camden Rd., in the Massey Hill Recreation Center

The City has provided funds to assist with the development of affordable housing rental complexes throughout the City and an NRC is located on each of these sites. These NRCs are only available to the residents of the affordable housing complexes and are not managed by the City. The private developer has hired staff to manage these centers. These centers are listed below:

- Longview Green NRC, 117 Longview Drive in the Longview Green Apartment Complex;
- Blanton Green NRC, 1024 Lauren McNeill Loop in the Blanton Green Apartment Complex;
- Haymount Manor NRC 2040 Elvira Street in the Haymount Manor Apartment Complex;
- Rosehill West NRC 1945 James Hammer Way in the Rosehill West Apartment Complex;
- Bunce Manor NRC, 3450 Denise Place in the Bunce Manor Apartment Complex;



- Bunce Green NRC, 34 Distinct Circle in the Bunce Green Apartment Complex; and
- Eastside Green NRC, Cedar Creek Road, in the Eastside Green Apartment Complex

NRCs connect service users with service providers, targeting the unemployed or underemployed citizens ranging in ages from 18-50. Educational opportunities for the youth and activities for senior citizens are also welcome in the centers. Services and training opportunities include, but are not limited to, GED classes, computer classes, various job skills training, small business workshops, medical terminology, and homebuyer education. Local agencies that we encourage to provide services and workshops in the NRCs include the Employment Security Commission, Fayetteville Technical Community College, Fayetteville State University, Consumer Credit Counseling, Workforce Development, Workfirst, the Department of Social Services, Women's Center of Fayetteville, and other City departments and local agencies. The NRC network also partners with local agencies to host bi-annual Job Fairs attracting a minimum of 5,000 job seekers at each event.

The City solicited proposals from qualified instructors and will contract with a minimum of five instructors to provide computer classes and other job skills training throughout the program year, rotating them at the various centers. This will include an after-school youth tutoring program. Daytime and evening computer classes will be provided at all of the NRC's throughout the program year in addition to a daytime class being offered at the Blue St. Senior Citizen Center. There will also be a minimum of 20 other training opportunities and informational workshops scheduled during the program year rotating throughout the centers.

The NRC network operates with one full-time and four part-time city staff persons, two senior aides provided by Workforce Development, and volunteers. The donation of time and services by volunteers performs a very important role in maintaining the NRC network. The Retired Senior Volunteers Program (RSVP) provides volunteers in addition to local citizens volunteering on their own. Tasks conducted by volunteers include, but are not limited to, performing clerical duties, performing light housekeeping tasks, distributing flyers, working with staff members, assisting staff at special events and operating the NRC's in the scheduled absence of assigned staff. The City allocated \$185,000 for this activity and expects approximately 10,000 citizens to utilize the NRCs during the program year. This activity meets prior Community Development needs, numbers 1,2 and 5 (CDBG).

### **Beautification**

#### **Eligibility Citation - 24 CFR Part 570.208 (a)(1), 24 CFR Part 570.201(c)**

This activity is designed to help foster neighborhood pride by helping to improve the appearance of low-moderate income neighborhoods. In order to participate, the neighborhood must have an active community organization that meets regularly. The project may include the installation of neighborhood signs; landscaping for investor-

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owners with multiple units; purchasing shrubs and flowers and code enforced clearance activities. Participation and maintenance of the beautification project must be done by residents. The City has created a standard design for community signs. This will reduce beautification cost and enable the City to work with more communities.

The City allocated \$10,000 for this activity for the 2010-2011 program year. This activity meets priority community development need number 6. (CDBG)

### **Street Paving Assessment Fee Assistance**

#### **Eligibility Citation – 24 CFR Part 570.208 (a)(1), 24 CFR Part 570.201(c)**

The City has implemented a bond-financed street-paving program to upgrade its infrastructure. In order to decrease the financial burden of the street paving assessment fees, the City uses CDBG funds to pay up to \$1,000 towards the fee for low to moderate-income property owners that occupy their homes. Assessment fee assistance is expected to benefit 10 low-moderate income property owners this year. The City allocated \$10,000 for this activity for the 2010-2011 program year. This activity meets priority community development need number 3 (CDBG).

### **Water and Sewer Assessment Fee Assistance**

#### **Eligibility Citation – 24 CFR Part 570.208 (a)(1), 24 CFR Part 570.201(c)**

The City continues an aggressive annexation campaign to eliminate potential health hazards through the extension of water and sanitary sewer lines. In order to decrease the financial burden from the installation of the water and sanitary sewer lines to all low to moderate income persons, the City has increased its income eligibility criteria from 60% or below the area income median to 80% or below the area income median, and has expanded its program to include providing assistance with plumber hook-ups costs. The City uses CDBG funds to provide grants in the amount of \$1000 for water assessments, \$1,000 for sewer assessments and \$500 for plumber hook-up fees to homeowners with incomes at or below 80% of the median family income for Fayetteville in annexation areas III-A to IV-B. However due to increased installation costs, the City shall provide grants in the amount of \$2,000 for water assessments, \$2,000 for sewer assessments and \$900 for plumber hook-up fees for income eligible homeowners in annexation area V-A during the 2010-2011 program year. Assistance is made available to income eligible families living in the following annexation areas 3A (Bonnie Doone, Cottonade, Summer Hill, Fillyaw Rd, Four Seasons, Horseshoe Rd and Ponderosa), 3B (Lafayette Village, South Hills, and Gallup Acres), 4A (Tiffany Pines, Warrenwood, Rollingwood and Pleasant Acres), 4B (Sherwood Park, Quail Ridge, Ashton Forest, Queensdale, Beaver Creek, Beaver Creek South, Arran Lakes West, and Williamsburg Plantation), and 5A (Arran Lakes-east of Bingham Drive, Arran Hills, Arran Lakes West, Arran Park, Blue Springs Woods, Carver Falls Road, Cliffdale Estates, Cliffdale West, Fairfield, Farrington, Green Briar Lake, Kingswood, Lagrange, Lake Point, Lake Rim Estates, McArthur Road/Ramsey Street, Montibello, North Plymouth Street-east of Cape Fear River, Northwood Estates, Porter Place, Ramsey Street, Rayconda, Raynor Drive, Roundtree, Shadowland, Shenandoah, Shenandoah North, Southgate, Summerhill, Turnbridge, Village Hills, Wells Place, Wendover, and Woodmark). Although there shall be no reimbursement of costs already expended by the homeowner for water and sewer assessment, homeowners are eligible to apply for assistance up until two years from the

assessment roll approval date which serves as the official notice, making only area 5A currently still eligible to receive assessment assistance. There is no time limit, however, to apply for plumber hook-up fee assistance. The City allocated \$75,000 for this activity for the 2010-2011 program year. This activity meets priority community development need number 3 (CDBG).

### Economic Development Activities

The City of Fayetteville’s vision includes a vibrant downtown and a strong local economy. The activities included in this section focus on small business development activities with a concentration on economic development activities in the downtown area in support of the Fayetteville Renaissance Plan and the City's redevelopment plans. The Economic Development section has 4 core goals:

1. Recruit and develop local businesses;
2. Attract businesses to the downtown plan area and redevelopment plan areas;
3. Retain local businesses in the downtown plan area and redevelopment plan areas;
4. Support economic development activities that create jobs and expand the City’s tax base; and
5. Identify redevelopment projects that will eliminate blighted commercial properties within the Murchison Rd., HOPE VI, Fayetteville Renaissance Plan and other redevelopment plan areas.

The City’s economic development activities are designed to meet the needs identified in the 2010-2015 Consolidated Plan. Economic development benchmarks for the 2010-2011 One-Year Action Plan presented below followed by descriptions of each activity.

#### 2010-2011 Economic Development Benchmarks

Description	Estimated Cost	Estimated Units	Percent Budget	Percent Unit	Type
Business Assistance Program	\$250,000	6	27%	4.14%	Jobs
Downtown Loan Program	\$450,000	7	48%	4.83%	Jobs
Women’s Business Center	\$46,000	35	4.9%	24/13%	Clients
Facade Improvement Grant Program	\$50,000	10	5.05%	6.9%	Jobs
Fayetteville Business and Professional League	\$20,000	75	2%	51.72%	Clients
Section 108 Loan Payment	\$75,000	2	8%	1.38%	Loan Payments
Small Business Retention Grant Program	\$50,000	10	5.05%	6.9%	Jobs
<b>Total</b>	<b>\$ 921,000</b>	<b>145</b>	<b>100%</b>	<b>100%</b>	

**Performance Measurements**

<b>Program</b>	<b>Objective</b>	<b>Outcome</b>	<b>Outcome Statement</b>	<b>Indicators</b>
Business Assistance Loan Program	Create economic opportunities	Affordability	Affordability for the purpose of creating economic opportunities	Jobs Created <b>6</b>
Downtown Loan Program	Create economic opportunities	Affordability	Affordability for the purpose of creating economic opportunities	Jobs created <b>7</b>
Women’s Business Center	Create economic opportunities	Accessibility	Accessibility for the purpose of creating economic opportunities	Businesses assisted <b>35</b>
Façade Grant Program	Create economic opportunities	Affordability	Affordability for the purpose of creating economic opportunities	Jobs Created <b>10</b>
Fayetteville Business and Professional League	Create economic opportunities	Accessibility	Accessibility for the purpose of creating economic opportunities	Clients assisted <b>75</b>
Section 108 Loan Payment Capitol Project	Create economic opportunities	Accessibility	Accessibility for the purpose of creating economic opportunities	Loan Payments <b>2</b>
Small Business Retention Grant Program	Create economic opportunities	Affordability	Affordability for the purpose of creating economic opportunities	Jobs Created <b>10</b>

**Business Assistance Program: Eligibility Citation - 24 CFR Part 570.203 (b)**

This loan program assists both new and expanding small businesses within the city limits of Fayetteville. Small businesses needing additional equity or down payment assistance in order to qualify for primary financing from a Bank and who meet all of the City’s program guidelines may apply. The City will offer a subordinated loan up to 25% or a maximum of \$125,000 of the total loan funds needed.

The interest rate on approved City loans will be 5% fixed for the term of the loan. As an incentive to encourage business activity in the City’s redevelopment plan areas, the City will offer a 3% fixed interest rate. The business is required to create or retain at least one full-time equivalent job for each \$50,000 loaned by the City’s program. The City

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allocated \$250,000 for this program and anticipates a minimum of two loans will be provided this program year and a minimum of 5 jobs will be created or retained and made available to low to moderate-income persons. The Community Development Department facilitates the program. This activity meets priority economic development objective numbers 1, 2, 3, 4, and 5 (CDBG).

**Downtown Loan Program: Eligibility Citation - 24 CFR Part 570.203 (b)**

This program offers a low interest loan to relocating or expanding small businesses in the downtown area. Loan funds are available to assist with the acquisition, construction or renovation of commercial buildings. Each business that participates with this program is required to create or retain jobs and make them available to low to moderate-income persons. For each \$50,000 loaned, one full-time equivalent job must be created or retained by the business. Since 1997, this program has been funded through the partnership between the City of Fayetteville and local banks. Currently there are five banks that participate with the program. The City commits 40% of its CDBG funds for each approved loan with a 4% fixed interest rate and the participating lenders fund the remaining 60% of each loan at a variable prime rate.

This loan program is available to qualifying businesses that are located within the 3,000 acres identified in the Fayetteville Renaissance Plan, including Murchison Rd (Census Tract 10); the loan program area map is shown in Attachment C. Loan funds range from \$50,000 up to \$300,000. The City allocated \$450,000 for this program and anticipates a minimum of two loans will be provided this program year with a minimum of 6 jobs created or retained by those businesses. The Community Development Department facilitates this program. This activity meets priority economic development objective numbers 2, 3, 4, and 5 (CDBG).

**Women's Business Center: Eligibility Citation - 24 CFR Parts 570.201 (o) (1) & 570.201 (o) (3)**

The Women's Center of Fayetteville (WCOF) is a non-profit organization established to improve the economic environment and create opportunities for individuals and to provide a resource center for women in crisis. Women's Business Center, a program of the WCOF, has served the community for over eleven years by assisting persons in all phases of small business development. The purpose of the center is to create employment and business opportunities for low to moderate-income individuals through self-employment and increased job opportunities in the area. The center provides counseling to entrepreneurs in starting and expanding a business. The City is providing funding to assist with costs associated with a full-time business consultant that has experience in writing business plans and to increase the number of clients able to receive one-on-one counseling. The City allocated \$46,000 for this activity and anticipates at least 50 small business entrepreneurs will be assisted with a business plan resulting in the start-up or expansion of at least 35 businesses this program year. Overall it is anticipated that 450 business clients will be served during the program year. This activity meets priority economic development objective numbers 1 and 4 (CDBG).

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**Façade Improvement Grant Program: Eligibility Citation – 24 CFR Parts 570.202 (a) (3) and 570.203 (b)**

This program is designed to promote the revitalization of facades of active, ongoing for-profit businesses through the rehabilitation of commercial building exteriors and landscapes. This effort will benefit the City by removing blight; expanding the tax base, and increasing the economic vitality of the downtown Fayetteville Renaissance Plan area and the City's redevelopment plan areas. These redevelopment plan areas include Massey Hill, Bonnie Doone, Deep Creek Rd., 71<sup>st</sup> Township, HOPE VI and the Murchison Road plan areas.

An eligible business must be located within the boundaries of any of the plan areas and meet all other program requirements. The City of Fayetteville will provide a 50% matching reimbursement grant up to \$5,000 for each façade renovated. Each business that participates with this program must meet a job creation requirement and create at least one full time equivalent job and make it available to a low to moderate-income person. The City allocated \$50,000 for this activity and anticipates assisting with 10 projects during the program year. The Community Development Department facilitates this program. This activity meets priority economic development objective numbers 2, 3, 4 and 5 (CDBG).

**Fayetteville Business and Professional League: Eligibility Citation - 24 CFR Part 570.201 (o) (1)**

The Fayetteville Business and Professional League (FBPL) is a non-profit agency that is a strong advocate of small businesses for the socially and economically disadvantaged population. The FBPL is a chartered member of the National Business League, a pioneer African-American Trade Association, and was formed in 1967. The current president of the FBPL is the Director of the Fayetteville Business Center. The FBPL has worked as a collaborator and partner with the Fayetteville Business Center to successfully provide technical assistance, entrepreneurial workshops and meet other needs of small businesses that wish to start or expand their business.

The FBPL will host two Youth Financial Literacy Boot Camps during the program year that will provide information to help avoid financial mistakes and to learn about money management. A Youth Entrepreneurship & Investment Camp will also be held during the summer for 5 days of intensive training in business and entrepreneurship. These camps are designed for low-income youth to improve their business, academic and life skills. The targeted participants for both camps come from underserved communities and have little or no working knowledge of financial matters or issues as pertaining to investments, credit issues, financial planning and other related topics.

The FBPL in collaboration with the Fayetteville State University Small Business Technical Development Center (SBTDC) will offer scholarships for ten participants who meet the requirements to enroll in the NXLevel course for business start-ups. Each enrollee will receive 10 weeks of training, a completed business plan and a website for their business.

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In order to take advantage of the BRAC commission relocation to our area, the FBC will host and conduct a HUB Contractor Business Academy for 14 weeks for 15 individuals. The academy teaches essential skills for managing a competitive construction business in today's competitive market. The City allocated \$20,000 to fund these activities. These activities meet priority economic development objective numbers 1 and 4 (CDBG).

**Small Business Retention Grant Program: Eligibility Citation – 24 CFR Part 570.203 (b)**

This program is designed to assist with the operating costs of an expanding small business with the objective of retaining businesses in the City's redevelopment plan areas. Each redevelopment plan area is unique with its own issues and opportunities. Funds are available to existing small business owners located within one of the boundaries of the Murchison Rd., Massey Hill, Bonnie Doone, 71<sup>st</sup> Township, Deep Creek Rd., Fayetteville Renaissance and HOPE VI redevelopment plan areas.

The City of Fayetteville will provide a 50% matching reimbursement grant up to \$5,000 for eligible expenses. The business applicant will have to provide an equal match to the grant award being requested. Grants for inventory, furniture, fixtures, equipment, and interior and exterior renovations are eligible for this program. Salaries, rent, and building related expenses (phone bills, electricity, etc.) are not eligible expenses for this program.

This program frees up operating cash flow to fund the day to day working capital expenditures of the business or to take advantage of other opportunities, such as purchasing additional inventory. Each business must be able to retain or create at least one full time equivalent job and make it available to a low to moderate-income person. The City allocated \$50,000 to fund this activity and anticipates assisting 10 businesses resulting in 10 jobs being created or retained. The Community Development Department facilitates this program. This activity meets priority economic development objective numbers 3 and 4 (CDBG).

**HUD Section 108: Murchison Road Redevelopment Plan**

Murchison Road is the heart of an historic low income African American community. The area is a typical historic commercial area that became obsolete as the result of shopping malls and the flight to suburbia. Property values plummeted such that owners could not rationalize the economics of repair and maintenance. The resultant blight has become an eye sore along one of the City's main corridors and gateways to the City's downtown. These conditions have lingered over decades and the area has been declared a redevelopment area. A plan has been designed to remove blight and increase the quality of life and economic benefits to the area's low to moderate income residents.

Catalyst sites have been identified for redevelopment with the first being a vacant site that will be called Rowan Plaza, which will be a 43,320 SF shopping center that will create 212 permanent and 46 construction jobs. The other site is Jasper Plaza that currently is a blighted strip center housing several businesses. This site will be constructed into a 32,000 SF mixed-use shopping center and will not only remove blight but will create 128 permanent retail and construction jobs.

The City of Fayetteville is applying for a HUD Section 108 loan in the amount of \$2,750,000 to assist with acquisition, demolition, clearance, relocation and economic development costs associated with the two retail centers. The total cost of this activity will be approximately \$12.6 million. This activity will provide jobs for low to moderate income individuals as well as serve a low to moderate income area.

### **Homeless Activities**

The City supports of the Continuum of Care Planning Council, the lead entity for the planning and coordination in the Cumberland County Continuum of Care. The City does not receive Emergency Shelter Grants and therefore the funding of homeless services is very limited. We remain focused on providing technical support for service providers.

As part of the Federal government's stimulus package, the City has received homeless prevention funds through the American Recovery and Reinvestment Act of 2009. These funds will be used for the provision of short term or long term rental assistance; housing relocation and stabilization services, including housing search, mediation or outreach to property owners, credit repair, security or utility cost assistance, utility payments, rental assistance for a final month at a location, moving cost assistance, and case management; or other appropriate activities for homelessness prevention and rapid re-housing of persons who have become homeless. The organizations selected to operate the Homeless Prevention and Rapid Re-Housing Program (HPRP) are Cumberland County Local Management Entity and Gospel Services Benevolent Society.

The City continues its partnership with Cumberland County and local homeless providers to strengthen the Continuum of Care for the homeless. The City will continue to provide technical assistance to organizations that serve the homeless. The Cumberland County Continuum of Care, which is organized by The Cumberland County Community Development Department, covers the entire County including the City of Fayetteville.

The Fayetteville Police Department continues to assign a police officer to provide a uniform way to work with and identify homeless persons. The program has facilitated an effective communication network between the City and local homeless providers. The homeless project officer assists individuals with getting shelter, clothing, food, financial assistance and other services available through local homeless providers. The homeless project officer works closely with the Cumberland County Continuum of Care Planning Council. The City has provided this service since 1993.

The City continues its emergency utility assistance available to homeless shelters and provides assistance to shelters to assist in purchasing supplies for homeless individuals such as hygiene kits, blankets, and other necessities. The City also offers a Homeless Utility Deposit grant program designed to assist homeless clients with out-of-the pocket expenses needed to pay utility deposits (gas, electricity, water and sewer) when leaving transitional housing for private housing.



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The City assisted in the re-opening of an emergency shelter located at 913 Person Street. The homeless shelter formerly known as former HOPE Center is a 21-bed facility that will be operated by Gospel Service Benevolent, Inc. This activity is one of the priorities on the 10-Year Plan to End Homelessness.

The City assists Operation Inasmuch with a breakfast program in their new Homeless Day Center. The Breakfast Program is offered Monday through Fridays and some holidays. Centered on the breakfast are programs and services to assist homeless persons with housing, employment, basic adult education, job skills training and case management.

The City is working closely with the Cumberland County Continuum of Care Planning Council (CCCOPC), the lead entity for planning and coordination in the Cumberland county Continuum of Care. This group was developed from the membership of the Coalition on Services to the Homeless and other homeless services providers. The Council's missions is to facilitate the coordination of the community's human services agencies and the community-at-large in order to adequately set strategies for addressing the needs of Cumberland County's homeless individuals and families and those at risk of homelessness through a Continuum of Care system. The City is also collaborating with local agencies to develop to programs that focus on breaking the cycle of homelessness through job skill training and ultimately permanent employment to transition the homeless to mainstream society.

The service area of the Cumberland County Continuum of Care encompasses the entire county, including the areas within the city limits of Fayetteville. The objectives and strategies implemented by the City to address homeless needs are listed below. They are designed to complement the objectives and strategies identified by the Continuum of Care Planning Committee which are reflected in the County's Consolidated Plan.

The goal of the continuum of care is to address the needs expressed above with a direct plan of action to increase housing and services for the homeless while increasing community awareness surrounding the needs of this segment of the local community.

Once a year the Cumberland Continuum of Care conducts the Point In Time survey, which is a tool used by HUD nationally to count the number of homeless in a local area. The number of homeless counted for Cumberland County in January 2010 was 1033 people.

### **Ten-Year Plan to End Homelessness**

The Cumberland County Board of Commissioners and the Fayetteville City Council have adopted a Ten-Year Plan to End Homelessness and is now working with the continuum of care planning council and volunteers to implement the priorities in the plan. The plan addresses the needs of both the chronically homeless population as well as families who are struggling with the issue of homelessness. Priorities include a public awareness campaign, the opening of more shelter space, and a homeless day center, all which are underway. This activity was started in the 2005-2006 and completed during the 2008-2009 program year.

The City has identified the following objectives for its homeless activities:

1. Implement the priorities of the 10-Year Plan to End Homelessness.
2. Provide support to homeless services and programs.
3. Support of a homeless tracking system throughout the continuum of care.
4. Collaborate with local human services agencies to develop programs designed to break the cycle of homelessness.

Homeless activity benchmarks for the 2010-2011 One-Year Action Plan are presented below followed by activity descriptions.

**2010-2011 Homeless Activity Benchmarks**

<b>Description</b>	<b>Estimated Cost</b>	<b>Estimated Units</b>	<b>Percent Budget</b>	<b>Percent Unit</b>	<b>Type</b>
Homeless Shelter Assistance	\$10,000	25	11%	.2%	Shelters
Utility Deposit Assistance	\$3000	15	3%	.1%	Clients
Homeless Client Assistance	\$2000	25	2%	.2%	Clients
Hope Center Homeless Shelter	\$8,000	1,000	9%	8%	Shelter
Operation Inasmuch Day Center	\$30,000	1,038	32%	9%	Clients
Salvation Army	\$15,000	1,300	16%	11%	Shelter
Gospel Services Benevolent Society	\$15,000	1,000	16%	8%	Shelter
Fresh Touch Ministries, Inc.	\$10,000	7,700	11%	64%	Meals Served
<b>Total</b>	<b>\$93,000</b>	<b>12,103</b>	<b>100%</b>	<b>100%</b>	

**Performance Measurements**

<b>Program</b>	<b>Objective</b>	<b>Outcome</b>	<b>Outcome Statement</b>	<b>Indicators</b>
Homeless Shelter Assistance Program	Create suitable living environments	Accessibility	Accessibility for the purpose of creating suitable living environments	Homeless shelters served <b>25</b>
Utility Deposit for Homeless Clients Program	Create suitable living environments	Accessibility	Accessibility for the purpose of creating suitable living	Homeless clients served <b>15</b>

			environments	
Homeless Assistance Program	Create suitable living environments	Accessibility	Accessibility for the purpose of creating suitable living environments	Homeless clients served <b>25</b>
Hope Center Homeless Shelter	Create suitable living environments	Accessibility	Accessibility for the purpose of creating suitable living environments	Homeless clients served <b>1,000</b>
Operation Inasmuch Day Center	Create suitable living environments	Accessibility	Accessibility for the purpose of creating suitable living environments	Homeless clients Served <b>1,038</b>
Salvation Army	Create suitable living environments	Accessibility	Accessibility for the purpose of creating suitable living environments	Homeless clients served <b>1,300</b>
Gospel Services Benevolent Society	Create suitable living environments	Accessibility	Accessibility for the purpose of creating suitable living environments	Homeless clients served <b>1,000</b>
Fresh Touch Ministries	Create suitable living environments	Accessibility	Accessibility for the purpose of creating suitable living environments	Meals served <b>7,700</b>

**Homeless Shelter Assistance Program**

**Eligibility Citation - 24 CFR Part 570.208 (a)(2), 24 CFR Part 570.201(e)**

In order to provide assistance to local non-profits operating homeless shelters, the Homeless Shelter Assistance program has been established to provide utility assistance to homeless shelters. The demand for assistance is greatest during the extreme temperature of the winter and summer months. The shelter utility assistance is limited to four times a year.

The Homeless Shelter Reimbursement Program is designed to assist homeless shelter providers with supplies and equipment expenses needed to assist the homeless. Local

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non-profits operating homeless shelters may submit current receipts and be reimbursed up to \$500.00 in the program year to assist with operating costs. Shelters must be a member of the Continuum of Care and meet the requirements set by the Community Development Department. The City has allocated \$10,000 for this program. This activity meets priority homeless need 2 and 4 (CDBG)

#### **Utility Deposit for Homeless Clients**

##### **Eligibility Citation - 24 CFR Part 570.208 (a)(2), 24 CFR Part 570.201(e)**

The Homeless Utility Deposit for Homeless Clients is a grant designed to assist homeless clients with out-of-the pocket expenses needed to pay utility deposits (gas, electricity, water and sewer) when leaving transitional housing for private housing. The maximum amount of utility deposit will not exceed \$300.00. The homeless client must successfully complete a transitional housing program administered by a member of the Continuum of Care Planning Council. The client must have been employed and financially stable for six months or more. If not employed, the client should receive monthly financial assistance from another reliable source such as Social Security Administration, Veterans Administration, Government Retirement Program or other sources of income. The City has allocated \$3,000 for this program. This activity meets priority homeless need 2 and 4 (CDBG)

#### **Homeless Assistance Program**

##### **Eligibility Citation – 24 CFR Part 570.208 (a)(2), 24 CFR Part 570.201(e)**

The Homeless Assistance Program is designed to assist homeless persons through the assistance of the City's Homeless Project Police Officer. The City of Fayetteville provides a police officer to assist the homeless with needed services to ensure their safety and well-being. The Homeless Assistance Program will provide funds for the Homeless Project Officer to purchase items such as blankets, toiletries and bus passes to homeless persons who are in need of shelter. The Homeless Project Officer also conducts a Homeless Stand-down to connect homeless persons to immediate services twice a year. The Homeless Assistance Program also is designed to assist in the participation of other homeless efforts as needed by the Community Development Department. The City has allocated \$2000 for this program. This activity meets priority homeless need 2 and 4 (CDBG).

#### **Hope Center Homeless Shelter**

##### **Eligibility Citation – 24 CFR Part 570.208 (a)(2), 24 CFR Part 570.201(e)**

The Hope Center Emergency Shelter is located 913 Person Street. This shelter targets chronically homeless men. The City Council has approved the Gospel Services Benevolent, Inc., as the organization to operate the facility. The facility has 21 beds. The residents are given assistance with housing, employment and counseling. The City provides utilities for the shelter during its operation. The Hope Center also serves as a site for Homeless Prevention and Rapid Re-Housing Program. The City has allocated \$8,000 for this program. This activity meets priority homeless need 1, 2 and 4 (CDBG).

#### **Salvation Army Homeless Shelter**

##### **Eligibility Citation – 24 CFR Part 570.208 (a)(2), 24 CFR Part 570.201(e)**

The City will be providing operating funds to assist in the Salvation Army Homeless Shelter program. The Salvation Army will use these funds to purchase metal bunk beds with drawers, food and supplies. The City has allocated \$15,000 for this program. This activity meets priority homeless need 2 and 4 (CDBG)

**Operation Inasmuch Homeless Day Center**

**Eligibility Citation – 24 CFR Part 570.208 (a)(2), 24 CFR Part 570.201(e)**

The Fayetteville Area Operation Inasmuch operates a homeless day resource center. The Day Center is opened to homeless persons who are looking to increase their self-sufficiency and independence through on-site programs and services. The day center will host a breakfast each morning for the homeless and provide counseling. The City will assist by providing funds for food used for the breakfast meals. The City has allocated \$30,000 for this program. This activity meets priority homeless need 2 and 4 (CDBG).

**Gospel Services Benevolent Society, Inc.**

**Eligible Citation – 24 CFR Part 50.208 (a)(2), 24 CFR Part 570.210 (e)**

The Gospel Services Benevolent Society operates and maintains the Hope Center Homeless Shelter, which is an emergency shelter for homeless single men. This facility provides shelter for 21 individuals. Meals are provided to the homeless in the evenings and in the morning. Homeless persons that receive meals from the Hope Center are not necessarily residents at the shelter. The City has allocated \$15,000 for this program. This activity meets priority homeless need 2 and 4 (CDBG).

**Fresh Touch Ministries**

**Eligibility Citation – 24 CFR Part 570.208 (a)(2), 24 CFR Part 570.201(e)**

Fresh Touch Ministries serves the homeless by offering food preparation services and referral for resources to the homeless population in Fayetteville. The organization's long-term goal is to provide temporary housing, counseling and job training. The City will assist by providing funds for food for the meals that are served. The City has allocated \$10,000 for this program. This activity meets priority homeless need 2 and 4 (CDBG).

**PROGRAM ADMINISTRATION**

HUD regulations allow the City to expend not more than 20 percent of the sum of the grant, including program income for CDBG program activities and 10 percent of the percentage of the sum of the grant including program income for the HOME program for payment of reasonable administrative and planning costs.

**Eligible costs**

Administrative and planning costs include but are not limited to:

- (a) General management, oversight and coordination;
- (b) Salaries, wages, and related costs of the participating jurisdiction's staff;
- (c) Monitoring progress and compliance with program requirements;

- 
- (d) Preparing reports and other documents related to the program for submission to HUD;
  - (e) Coordinating the resolution of audit and monitoring findings;
  - (f) Evaluating program results against stated objectives; and
  - (g) Travel costs incurred for official business in carrying out the program;
  - (h) Administrative services performed under third party contracts or agreements;
  - (i) Capacity building and training activities for staff and non-profits;
  - (j) Fair housing and activities to affirmatively further fair

### **Planning Activities**

The City continues to work with other agencies and nonprofit groups to build partnerships to further the mission of the Community Development Department.

### **Indirect Cost Allocation**

The City utilizes a cost allocation plan prepared in accordance with OMB Circular A-87 to distribute indirect costs to the CDBG and HOME programs. The City anticipates indirect cost allocation charges of \$135,000 during the 2010-2011 program year.

### **HOME Matching Requirements**

Jurisdictions participating in the HOME program are required to make contributions to housing that qualifies as affordable housing. During a fiscal year, the contributions or match must total not less than 25 percent of the HOME funds drawn from the jurisdiction's HOME Investment Trust Fund Treasury account in that fiscal year for project costs, unless the participating jurisdiction has received a reduction in the match requirement. HUD allows for a reduction in the match requirement if the jurisdiction meets certain fiscal distress criteria. The City has appropriated the required funds to match HOME project costs. When the City reimburses itself eligible HOME expenditures, the City draws the sum of total expenditure minus the required match. Consequently the City's required HOME match is realized when the funds are drawn from the treasury.

### **OTHER ACTIONS**

- The Fayetteville Strategic Alliance of Business Resources for Entrepreneurs (SABRE) is a coalition of government supported, not-for-profit organizations whose mission is to help individuals create and grow successful businesses in the Fayetteville area. The alliance continues to expand but current members of this group include staff from the City's Community Development Department, Fayetteville-Cumberland County Chamber of Commerce, Fayetteville Business Center, Business Resource and Development Center, Cumberland Regional Improvement Corporation, FSU's Small Business and Technology Development Center, SCORE, Public Library, FTCC Small Business Center, and SBA. The goal of SABRE is to make it easier for individuals and small businesses to access the resources most suited to their particular needs.

- 
- The City's Downtown Development Manager is responsible for assisting downtown revitalization and business development efforts as well as providing ongoing communication with business and property owners in the downtown area. This position has been incorporated into the Community Development Department.
  - The City of Fayetteville continues to offer a property tax grant back program to provide incentives to qualifying development projects in a designated Economic Development Incentive Zone. The primary objective of the program is to induce private investment thereby improving the economic health and diversity of the City and increasing the City's property tax base. Given the difficulty in determining the precise economic impact of a particular development project, the City has chosen to base the amount of the incentive on the increase in the taxable value of the property involved in the project, not including land value. The taxable value of the property after improvements have taken place will be compared to the taxable value of the property before the improvements were made to determine the increase in the taxable value of the property. In order to be eligible for incentives under this program, a project must have improved the taxable value of the associated property by at least \$500,000.
  - The HUB Zone Empowerment Contracting Program provides federal contracting opportunities for qualified small businesses located in distressed areas. This program was enacted into law as part of the Small Business Reauthorization Act of 1997. The program falls under the auspices of the U. S. Small Business Administration. A HUB Zone is a historically underutilized business zone that is located in a qualified census tract (as defined in section 42(d)(5)(C)(i)(1) of the Internal Revenue Code of 1986). Cumberland County has eight census tracts identified as HUB Zones. These census tracts are 1, 2, 4, 10, 12, 13, 24 and 35. The HUB Zone Empowerment Contracting Program stimulates economic development and creates jobs in urban and rural communities by providing federal contracting preferences to small businesses located in distressed areas or HUB Zones. These contracting preferences go to small businesses that obtain HUB Zone certification through the SBA. To qualify a business must be small by SBA size standards, have its principal office located in a HUB Zone, be operated and controlled by a U. S. citizen and at least 35% of its employees must reside in a HUB Zone.
  - Article 3J Credits offer enhanced tax credits to eligible businesses located in an urban progress zone. This tax credit program narrows its focus on job creation and business investment. Municipalities can apply for one or more zones as long as they meet the guidelines for establishing a zone. The zone is intended to provide economic incentives to simulate new investment and job creation in economically distressed urban areas.

An Urban Progress Zone is defined as an area comprised of one or more contiguous census tracts, census block groups, or both, or parts thereof; all of the area is located in whole within the primary corporate limits of a municipality with a population of

more than 10,000 and meet other conditions as defined in the most recent federal decennial census. The City of Fayetteville has two approved zones. The first zone includes Census Tracts 10, 22, 23 and 24 (block groups 1, 2 and 5). Congress amended the program guidelines for establishing a zone in August 2007 and this allowed the City to apply and receive an approval for a second urban progress zone. This second zone includes Census Tracts 12 and 13.

## **Summary of Citizen Comments 2010-2015 Consolidated Plan and 2010-2011 Annual Action Plan**

### **Massey Hill Recreation Center January 7, 2010**

What do you view as important needs in your community and the City?: Housing

- Referrals to inspections for blighted structures
- Solution for displaced persons of condemned properties
- Rehab boarded structures
- Affordable housing for tenants with pets

What do you view as important needs in your community and the City?: Community Development

- Housing repairs
- Playground equipment for recreation center
- Bigger recreation center/modern
- Closer grocery store

What do you view as important needs in your community and the City?: Economic Development

- Grocery Store and other conveniences

What do you view as important needs in your community and the City?: Homelessness

- Increase interaction in community to prevent homelessness

### **Smith Recreation Center January 14, 2010**

What do you view as important needs in your community and the City?: Housing

- Dilapidated/vacant houses (Nickey Avenue & Jasper Street area; to include Greensboro Street (3 boarded up houses)
- Mixed economic level homes within area; not just low-income and affordable housing

What do you view as important needs in your community and the City?: Community Development

- Stray dogs (Jasper Street)
- Enforce the Leash Law



- 
- Increase law enforcement (issues with drugs (Jasper Street Area))
  - Need additional resources and services in this area
  - Additional staff for Animal Control
  - City digging up streets (Topeka) and not repaving them
  - Make city officials accountable
  - Code Enforcement

What do you view as important needs in your community and the City?: Economic Development

- Need a decent grocery store, drug store, bank, etc.
- Incentives for Small Business Retention (not loans)

**Bal Perazim Christian Center**  
**January 12, 2010**

What do you view as important needs in your community and the City?: Housing

- Grant funding assistance only

What do you view as important needs in your community and the City?: Community Development

- Private dirt roads need to be designated as a public street (Juliette)
- More certificate programs that lead to jobs
- Need a community resource Center/ Community or Recreation Center

What do you view as important needs in your community and the City?: Economic Development

- Create jobs/opportunities in existing vacant buildings

What do you view as important needs in your community and the City?: Homelessness

- A place of occupancy where one could also obtain job training
- Additional public transportation (inner-city)
- On-the-job training program assistance.

**Cliffdale Recreation Center**  
**January 19, 2010**

What do you view as important needs in your community and the City?: Community Development

- Sidewalks at Hoke Loop Road for school zones

**Good Hope Missionary Baptist Church**  
**January 21, 2010**

What do you view as important needs in your community and the City?: Community Development

- Privacy fence needed for local business near railroad tracks (log business on left)-Zoning
- Suggested a One-Stop Service Center for human services
- A place for American Indians for Indian education/culture ( appropriate governing of an AI Center)
- Install speed bumps on Shadbush (like the ones on Little Avenue) – but higher and narrower bumps
- Increased police protection ( suggested formation of a Community Watch)

**Friendship Missionary Baptist Church  
January 26, 2010**

What do you view as important needs in your community and the City?: Housing

- Pre-counseling workshops at the college level on-site at colleges. (suggestions f/CCCS)

What do you view as important needs in your community and the City?: Community Development

- Clean-up campaign funding (possibly revise beautification program)
- Another media form to inform persons of services offered at the NRC's ( PSA's etc., newspaper)

What do you view as important needs in your community and the City?: Economic Development

- City sponsored job fairs (high tech theme).

What do you view as important needs in your community and the City?: Homelessness

- Additional training for homeless and job referrals
- Community service in exchange for receiving meals/services
- Steer the homeless away from revitalization areas

**Public Hearing  
City Hall, Council Chambers  
February 25, 2010**

What do you view as important needs in your community and the City?: Housing

1. Blending of economic status areas to promote mixed-use

What do you view as important needs in your community and the City?: Economic Development

1. Incorporate Fayetteville Renaissance Plan into Murchison Road Plan

**FY2010-2011 Projected Resources and Expenditures**

<b>Anticipated Funding &amp; Sources:</b>		Current FY	PY FY			
Community Development Block Grant (CDBG)	1,568,083					
CDBG Program Income	498,720	232,685	266,035			
Home Investment Partnership (HOME)	893,673					
HOME Program Income	288,460	262,660	25,800			
CDBG Prior Year	880,863					
City (HOME match)	178,735					
HOME Prior Year	286,647					
<b>Total</b>	<b>4,595,181</b>					

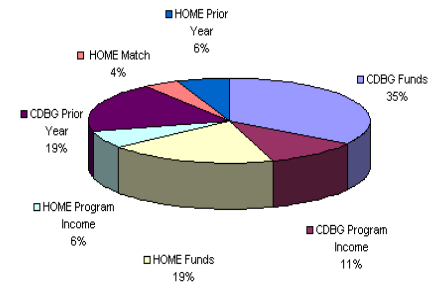
  

<b>Anticipated Funding &amp; Sources:</b>	CDBG		HOME		CDBG & HOME	
	<b>FY '10-'11</b>	<b>FY '10-'11</b>	<b>Prior Years</b>	<b>Total</b>	<b>Forward</b>	<b>Forward</b>
Federal Grant	1,568,083	893,673	1,167,510	3,629,266	880,863	286,647
City Local Funds (HOME Match)	0	178,735	0	178,735	0	0
Program Income	498,720	288,460	0	787,180	0	0
Section 108 Payment (General Fund)	0	0	0	0	0	0
	<b>2,066,803</b>	<b>1,360,868</b>	<b>1,167,510</b>	<b>4,595,181</b>	<b>880,863</b>	<b>286,647</b>

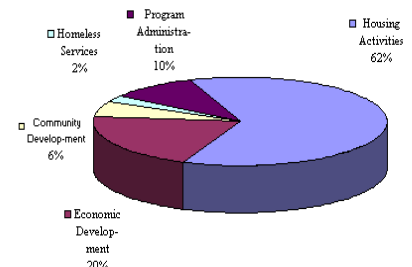
  

<b>Expenditures by Project:</b>	CDBG		HOME		CDBG & HOME	
	<b>FY '10-'11</b>	<b>FY '10-'11</b>	<b>Prior Years</b>	<b>Total</b>	<b>Forward</b>	<b>Forward</b>
<b>Housing Activities</b>						
Downpayment Assistance Program	0	9,000	6,000	15,000	0	6,000
Mortgage Assistance Program	0	75,000	0	75,000	0	0
Housing Rehabilitation Programs	515,004	239,018	321,289	1,075,311	140,642	180,647
Replacement Housing Program	0	0	100,000	100,000	0	100,000
Acquisition & Demolition Program	52,043	0	22,957	75,000	22,957	0
Residential Façade Grant Program	75,000	0	0	75,000	0	0
Eastside Green Apartments III	0	160,000	0	160,000	0	0
Hellenic Agape	0	100,000	0	100,000	0	0
CHDO Activities	0	427,850	0	427,850	0	0
Homebuyers Education & Counseling	4,518	0	4,002	8,520	4,002	0
HOPE VI Affordable Housing Project (Curtis Ln)	0	350,000	0	350,000	0	0
HOPE VI Property Acquisition	187,500	0	187,000	374,500	187,000	0
IDA Program	3,874	0	1,126	5,000	1,126	0
	<b>837,939</b>	<b>1,360,868</b>	<b>642,374</b>	<b>2,841,181</b>	<b>355,727</b>	<b>286,647</b>
<b>Economic Development</b>						
Business Assistance Program	125,000	0	125,000	250,000	125,000	0
Downtown Loan Pool	223,175	0	226,825	450,000	226,825	0
Women's Center of Fayetteville	45,719	0	281	46,000	281	0
Façade Grant Program	11,067	0	38,933	50,000	38,933	0
Fayetteville Business & Professional League	20,000	0	0	20,000	0	0
Small Business Retention Grant Program	50,000	0	0	50,000	0	0
Section 108 Payment - Capitol Project	75,000	0	0	75,000	0	0
	<b>549,961</b>	<b>0</b>	<b>391,039</b>	<b>941,000</b>	<b>391,039</b>	<b>0</b>
<b>Community Development</b>						
Neighborhood Resource Centers	164,761	0	10,239	175,000	10,239	0
Beautification	0	0	10,000	10,000	10,000	0
Street Paving Assessment Fee Assistance	5,370	0	4,630	10,000	4,630	0
Water and Sewer Assessment Fee Assistance	39,827	0	35,173	75,000	35,173	0
	<b>209,958</b>	<b>0</b>	<b>60,042</b>	<b>270,000</b>	<b>60,042</b>	<b>0</b>
<b>Homeless Services</b>						
Homeless Shelter Assistance Program	2,681	0	7,319	10,000	7,319	0
Utility Deposit Assistance Program	3,000	0	0	3,000	0	0
Homeless Assistance Program	900	0	1,100	2,000	1,100	0
Hope Center Homeless Shelter	8,000	0	0	8,000	0	0
Operation Inasmuch Day Center	30,000	0	0	30,000	0	0
Salvation Army Homeless Shelter	15,000	0	0	15,000	0	0
Gospel Services Benevolent Society, Inc.	15,000	0	0	15,000	0	0
Fresh Touch Ministries, Inc.	10,000	0	0	10,000	0	0
	<b>84,581</b>	<b>0</b>	<b>8,419</b>	<b>93,000</b>	<b>8,419</b>	<b>0</b>
<b>General Administration</b>						
Operating costs	249,364	0	65,636	315,000	65,636	0
Cost allocation	135,000	0	0	135,000	0	0
	<b>384,364</b>	<b>0</b>	<b>65,636</b>	<b>450,000</b>	<b>65,636</b>	<b>0</b>
<b>TOTAL</b>	<b>2,066,803</b>	<b>1,360,868</b>	<b>1,167,510</b>	<b>4,595,181</b>	<b>880,863</b>	<b>286,647</b>

**FY 2010-2011 Projected Resources**



**FY 2010-11 Projected Expenditures**



**ATTACHMENT A**

**2010 INCOME GUIDELINES**

<b>Family Size</b>	<b>Very Low Income 30% of Median</b>	<b>Low Income 50% of Median</b>	<b>60% of Median</b>	<b>Moderate Income 80% of Median</b>
<b>1</b>	<b>11,050</b>	<b>18,400</b>	<b>22,080</b>	<b>29,400</b>
<b>2</b>	<b>12,600</b>	<b>21,000</b>	<b>25,200</b>	<b>33,600</b>
<b>3</b>	<b>14,200</b>	<b>23,650</b>	<b>28,380</b>	<b>37,800</b>
<b>4</b>	<b>15,750</b>	<b>26,250</b>	<b>31,500</b>	<b>42,000</b>
<b>5</b>	<b>17,050</b>	<b>28,350</b>	<b>34,020</b>	<b>45,400</b>
<b>6</b>	<b>18,300</b>	<b>30,450</b>	<b>36,540</b>	<b>48,750</b>
<b>7</b>	<b>19,550</b>	<b>32,550</b>	<b>39,060</b>	<b>52,100</b>
<b>8</b>	<b>20,800</b>	<b>34,650</b>	<b>41,580</b>	<b>55,450</b>

Effective June 26, 2010

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## ATTACHMENT B

### Certifications

In accordance with the applicable statutes and the regulations governing the consolidated plan regulations, the jurisdiction certifies that:

**Affirmatively Further Fair Housing** - The jurisdiction will affirmatively further fair housing which means it will conduct an analysis of impediments to fair housing choice within the jurisdiction, take appropriate actions to overcome the effects of any impediments identified through that analysis, and maintain records reflecting that analysis and actions in this regard.

**Anti-displacement and Relocation Plan** - It will comply with the acquisition and relocation requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and implementing regulations at 49 CFR 24; and it has in effect and is following a residential anti-displacement and relocation assistance plan required under section 104(d) of the Housing and Community Development Act of 1974, as amended, in connection with any activity assisted with funding under the CDBG or HOME Programs.

**Drug Free Workplace** - it will or will continue to provide a drug-free workplace by:

1. Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
2. Establishing an ongoing drug-free awareness program to inform employees about -
  - (a) The dangers of drug abuse in the workplace;
  - (b) The grantee's policy of maintaining a drug-free workplace;
  - (c) Any available drug counseling, rehabilitation and employee assistance programs; and
  - (d) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
3. Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph 1;
4. Notifying the employee in the statement required by paragraph 1 that, as a condition of employment under the grant, the employee will -

- (a) Abide by the terms of the statement; and
  - (b) Notify the employer in writing of his or her conviction for a violation a criminal drug statute occurring in the workplace no later that five calendar days after such conviction;
5. Notifying the agency in writing, within ten calendar days after receiving notice under subparagraph 4(b) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;
6. Taking on of the following actions, within 30 calendar days of receiving notice under subparagraph 4(b), with respect to any employee who is so convicted.
  - (a) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or
  - (b) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a federal, state, or local health, law enforcement, or other appropriate agency;
7. Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs 1, 2, 3, 4, 5 and 6.

**Anti-lobbying** - To the best of the jurisdiction's knowledge and belief:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of it, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, it will complete and submit Standard Form - LLL "Disclosure Form to Report Lobbying", in accordance with its instructions; and
3. It will require that the language of paragraph (n) of this certification be included in the

award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

**Authority of Jurisdiction** - The Consolidated Plan is authorized under State and local law (as applicable) and the jurisdiction possesses the legal authority to carry out the programs for which it is seeking funding, in accordance with applicable HUD regulations.

**Consistency With Plan** - The housing activities to be undertaken with CDBG, HOME, ESG and HOPWA funds are consistent with the strategic plan.

**Section 3** - It will comply with Section 3 of the Housing and Urban Development Act of 1968, and implementing regulations at 24 CFR Part 135.

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Signature/Authorized Official  
Title: Mayor

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Date

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## Specific CDBG Certifications

The Entitlement Community certifies that:

**Citizen Participation** - It is in full compliance and following a detailed citizen participation plan that satisfies the requirements of 24 CFR 91.105.

**Community Development Plan** - Its consolidated housing and community development plan identifies community development and housing needs and specifies both short-term and long-term community development objectives that provide decent housing, expand economic opportunities primarily for persons of low and moderate income. (See CFR 24 570.2 and CFR 24 part 570)

**Following a Plan** - It is following a current consolidated plan (or Comprehensive Housing Affordability Strategy) that has been approved by HUD.

**Use of Funds** - It has complied with the following criteria:

1. Maximum Feasible Priority. With respect to activities expected to be assisted with CDBG funds, it certifies that it has developed its Action Plan so as to give maximum feasible priority to activities that benefit low and moderate-income families or aid in the prevention or elimination of slums or blight. The Action Plan may also include activities which the grantee certifies are designed to meet other community development needs having a particular urgency because existing conditions pose a serious and immediate threat to the health or welfare of the community, and other financial resources are not available;
2. Overall Benefit. The aggregate use of CDBG funds including section 108 guaranteed loans during program year(s) 2010-2011, (a period specified by the grantee consisting of one, two, or three specific consecutive program years), shall principally benefit persons of low and moderate income in a manner that ensures that at least 70 percent of the amount is expended for activities that benefit such persons during the designated period;
3. Special Assessments. It will not attempt to recover any capital costs of public improvements assisted with CDBG funds including Section 108 loan guaranteed funds by assessing any amount against properties owned and occupied by persons of low and moderate income, including any fee charged or assessment made as a condition of obtaining access to such public improvements.

However, if CDBG funds are used to pay the portion of a fee or assessment that relates to the capital costs of public improvements (assisted in part with CDBG funds) financed from other revenue sources, an assessment or charge may be made against the property with respect to the public improvements financed by a source other than CDBG funds.



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The jurisdiction will not attempt to recover any capital costs of public improvements assisted with CDBG funds, including Section 108, unless CDBG funds are used to pay the proportion of the fee or assessment attributable to the capital costs of public improvements financed from other revenue sources. In this case, an assessment or charge may be made against the property with respect to the public improvements financed by a source other than CDBG funds. Also, in the case of properties owned and occupied by moderate income (not low-income) families, an assessment or charge may be made against the property for public improvements financed by a source other than CDBG funds if the jurisdiction certifies that it lacks CDBG funds to cover the assessment.

**Excessive Force** - It has adopted and is enforcing:

1. A policy prohibiting the use of excessive force by law enforcement agencies within its jurisdiction against any individuals engaged in non-violent civil rights demonstrations; and
2. A policy of enforcing applicable State and local laws against physically barring entrance to or exit from a facility or location which is the subject of such non-violent civil rights demonstrations within its jurisdiction;

**Compliance With Anti-discrimination Laws** - The grant will be conducted and administered in conformity with Title VI of the Civil Rights Act of 1964 (42 USC 2000d), the Fair Housing Act (42 USC 3601-3619), and implementing regulations.

**Lead-Based Paint** - Its notification, inspection, testing and abatement procedures concerning lead-based paint will comply with the requirements of 24 CFR §570.608;

**Compliance with Laws** - It will comply with all applicable laws.

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Signature/Authorized Official  
Title: Mayor

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Date

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### Specific HOME Certifications

The HOME Participating Jurisdiction certifies that:

**Tenant Based Rental Assistance** - If the participating jurisdiction intends to provide tenant based rental assistance:

The use of HOME funds for tenant-based rental assistance is an essential element of the participating jurisdiction's consolidated plan for expanding the supply, affordability, and availability of decent, safe, sanitary, and affordable housing.

**Eligible Activities and Costs** - it is using and will use HOME funds for eligible activities and costs, as described in 24 CFR § 92.205 through 92.209 and that it is not using and will not use HOME funds for prohibited activities, as described in § 92.214.

**Appropriate Financial Assistance** - before committing any funds to a project, it will evaluate the project in accordance with the guidelines that it adopts for this purpose and will not invest any more HOME funds in combination with other Federal assistance than is necessary to provide affordable housing;

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Signature/Authorized Official  
Title: Mayor

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Date

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## APPENDIX TO CERTIFICATIONS

### INSTRUCTIONS CONCERNING LOBBYING AND DRUG-FREE WORKPLACE REQUIREMENTS:

#### A. Lobbying Certification

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

#### B. Drug-free Workplace Certification

1. By signing and/or submitting this application or grant agreement, the grantee is providing the certification.
2. The certification is a material representation of fact upon which reliance is placed when the agency awards the grant. If it is later determined that the grantee knowingly rendered a false certification, or otherwise violates the requirements of the Drug-Free Workplace Act, HUD, in addition to any other remedies available to the Federal Government may take action authorized under the Drug-free Workplace Act.
3. For grantees other than individuals, Alternate I applies. (This is the information to which jurisdictions certify).
4. For grantees who are individuals, Alternate II applies. (Not applicable jurisdictions.)
5. Workplaces under grants, for grantees other than individuals, need not be identified on the certification. If known, they may be identified in the grant application. If the grantee does not identify the workplaces at the time of application, or upon award, if there is no application, the grantee must keep the identity of the workplace(s) on file in its office and make the information available for Federal inspection. Failure to identify all known workplaces constitutes a violation of the grantee's drug-free workplace requirements.
6. Workplace identifications must include the actual address of buildings (or parts of buildings) or other sites where work under the grant takes place. Categorical descriptions may be used (e.g., all vehicles of a mass transit authority or state highway department while in operation, State employees in each local unemployment office, performers in concert halls or radio stations).
7. If the workplace identified to the agency changes during the performance of the grant, the grantee shall inform the agency of the change(s), if previously identified the

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workplaces in question (see paragraph five).

8. The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance (Street address, city, county, state, zip code):

City of Fayetteville

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433 Hay Street

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Fayetteville NC, 28301

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\_\_\_\_\_ Check if there are workplaces on file that are not identified here; The certification with regard to the drug-free workplace required by 24 CFR part 24, subpart F.

9. Definitions of terms in the Nonprocurement Suspension and Debarment common rule and Drug-Free Workplace common rule apply to this certification. Grantees' attention is called, in particular, to the following definitions from these rules.

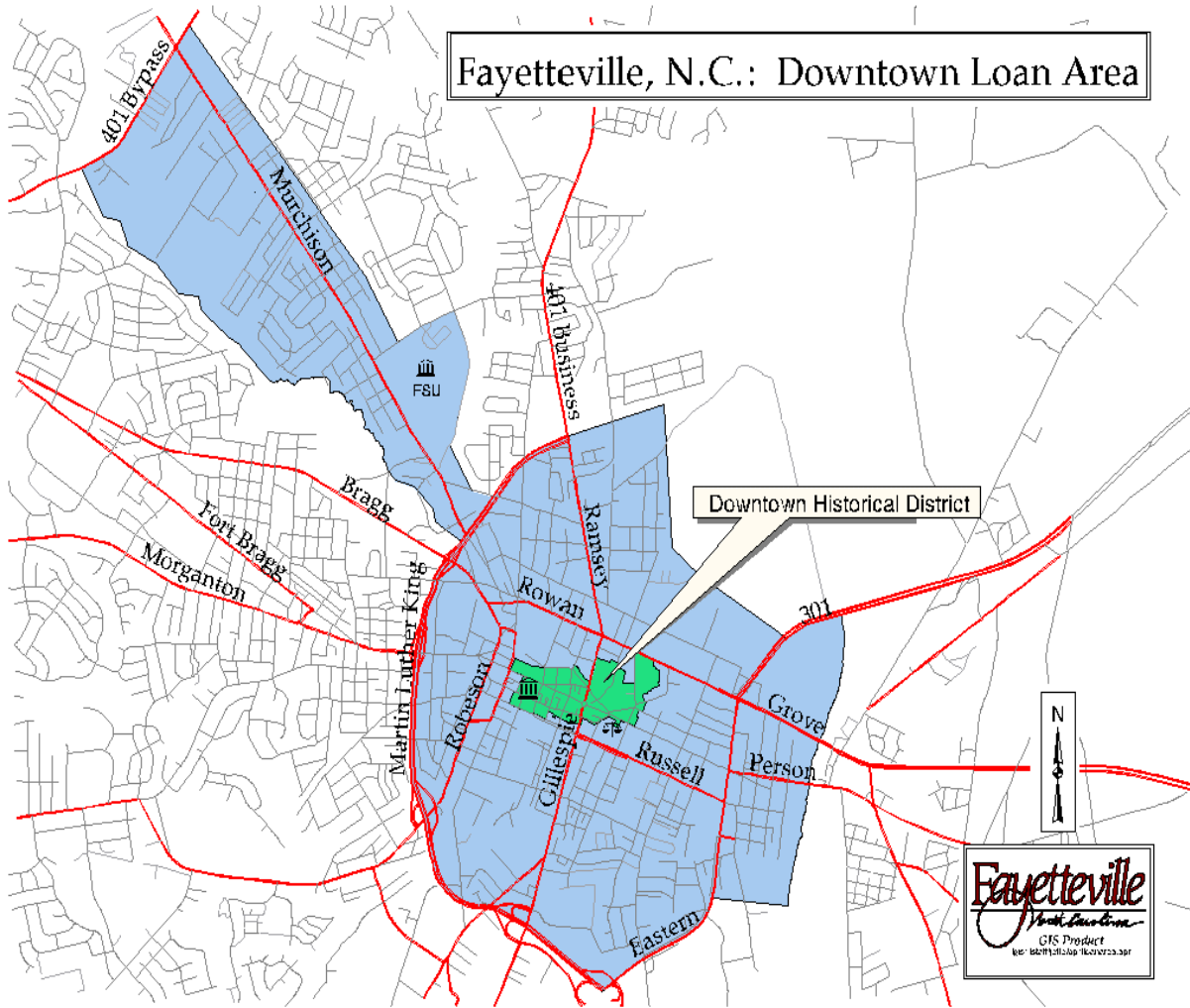
"Controlled substance" means a controlled substance in Schedules I through V of the Controlled Substances Act (21 U.S.C.812) and as further defined by regulation (21 CFR 1308.11 through 1308.15);

"Conviction" means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes;

"Criminal drug statute" means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, use, or possession of any controlled substance;

"Employee" means the employee of a grantee directly engaged in the performance of work under a grant, including: (i) All "direct charge" employees; (ii) all indirect charge" employees unless their impact or involvement is insignificant to the performance of the grant; and (iii) temporary personnel and consultants who are directly engaged in the performance of work under the grant and who are on the grantee's payroll. This definition does not include workers not on the payroll of the grantee (e.g., volunteers, even if used to meet a matching requirement; consultants or independent contractors not on the grantee's payroll; or employees of subrecipients or subcontractors in covered workplaces).

# ATTACHMENT C



## ATTACHMENT D

### HOPE VI Revitalization Project Area



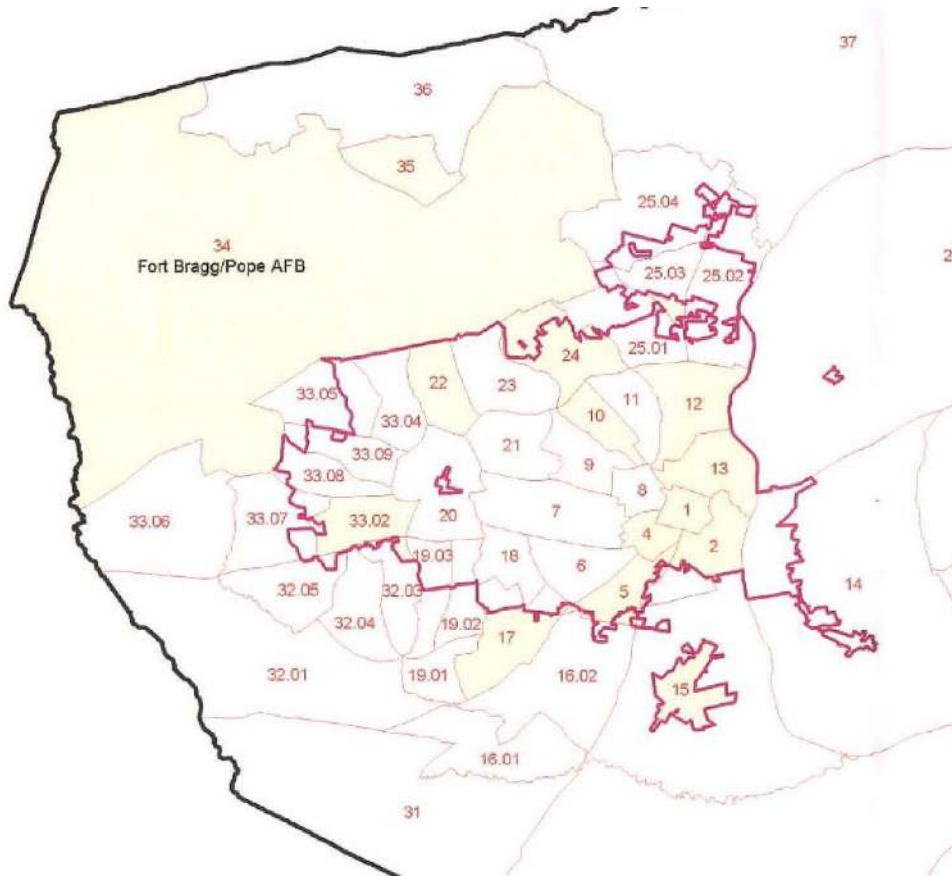
## **ATTACHMENT E**

### **Eastside Green III Apartments**

## ATTACHMENT F

### Low Income Census Tracts

As shown on map below, in the City, 12 census tracts have 51 percent or more low income households. The census tracts are CT 15 – 100 percent (six of six households residing in the census tract, all have a disability, all are age 75 and over), CT 13 – 79.6 percent, CT 2 – 79 percent, CT 10 – 75.6 percent, CT 4 – 66.3 percent, CT 12 – 60.4 percent, CT 1 – 60.3 percent, CT 32.03 – 59.5 percent, CT 5 – 57.4 percent, CT 24 – 54.6 percent, CT 22 – 51.5 percent, and CT 33.02 – 51 percent.



- Fayetteville City Boundary
- Census Tracts
- Low Income Concentrations\*

\* City of Fayetteville census tracts where 51% or more of households with income at or below 80% of MFI.

Cumberland County outside of Fayetteville census tracts where 51% or more of households have income at or below 80% of MFI.



## **ATTACHMENT G**

### **Household by Race and Hispanic Origin**

## **ATTACHMENT I**

### **Housing and Special Needs Assessment**

## Overview of the City of Fayetteville and Cumberland County:

### *County and City Establishment*

Cumberland County began as a settlement in the Upper Cape Fear Valley between 1729 and 1736 by European migrants known as Highland Scots. The area became a vital transportation link to other major settlements. The Colonial Legislature passed an Act in 1754 which resulted in the political division of Bladen County, thus forming Cumberland County. It was named after the Duke of Cumberland (William Augustus) who commanded the English Army. Campbellton was named the County seat during 1778. In 1783 Campbellton was renamed Fayetteville in honor of Marquis De La Fayette, a French general that served in the American Colonies Revolutionary Army.

Fayetteville's growth was set back by a devastating fire in 1831 and by the invasion of General Sherman in 1865. One of the principal factors that boosted the slow recovery of the area was the opening of Camp Bragg as an artillery and temporary training facility in 1918. The base was closed in 1921 and later reopened as a permanent army post and renamed Fort Bragg in honor of Confederate General Braxton Bragg, a North Carolina native. Presently, Cumberland County has a population close to 308,000 and encompasses approximately 661 square miles.<sup>6</sup>

As illustrated in the accompanying map [Labeled Figure 1], Cumberland County encompasses nine Cities to include: Eastover, Falcon, Fayetteville, Godwin, Hope Mills, Linden, Spring Lake, Stedman and Wade. The county is also divided into eleven townships to include: Beaver Dam, Black River, Carvers Creek, Cedar Creek, Cross Creek, Eastover, Gray's Creek, Manchester, Pearces Mill, Rockfish, and Seventy-First.

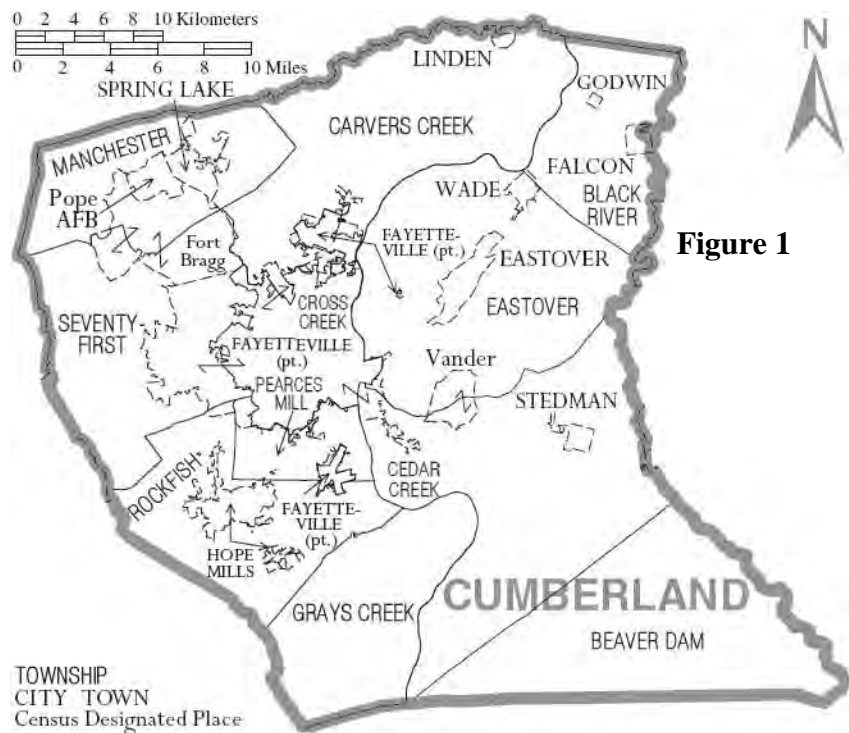


Figure 1

<sup>6</sup> Cumberland County, NC. History. Copyright 2009 Cumberland County, NC.  
<http://www.co.cumberland.nc.us/history.aspx>

## Demographics

According to the 2008 Census Estimates [depicted in Table 1 below], the City of Fayetteville had a population of 173,925 residents. However, according to the State Demographer for the Office of State Budget and Management for North Carolina, the Final Certified Estimate population for Fayetteville was 207,352.

**Table 1: 2008 Census Estimates for the Cumberland County and the City of Fayetteville; 2000 Census Counts for all other Cities**

Cumberland County Demographic Profile Highlights										
	Cumberland County Totals	Fayetteville	Eastover	Falcon	Godwin	Hope Mills	Linden	Spring Lake	Stedman	Wade
<b>Total population</b>	309,542	173,925	1,376	328	112	11,237	127	8,098	664	480
<b>Male</b>	150,274	79,942	634	159	53	5,336	64	4,066	326	219
<b>Female</b>	159,268	93,983	742	169	59	5,901	63	4,032	338	261
<b>One race</b>	295,338	166,274	1,360	320	105	10,891	126	7,673	650	480
<b>White</b>	167,300	79,241	1,139	277	82	8,207	120	2,751	548	347
<b>Black/African American</b>	109,128	76,479	175	31	15	1,979	4	4,139	83	109
<b>American Indian and Alaskan Native</b>	3,059	1,194	24	2	5	228	1	67	7	7
<b>Asian</b>	6,634	4,432	2			142		291	3	3
<b>Native Hawaiian/Other Pacific Islander</b>	861	567				24		30	1	3
<b>Other race</b>	8,356	4,361	20	10	3	311	1	395	8	12
<b>Two or more races</b>	14,204	7,651	16	8	7	346	1	425	14	
<b>Hispanic/Latino</b>	20,261	10,436	48	11	15	719	3	963	16	13

As detailed in the 2006-2008 Census Estimates, Fayetteville’s population is 46% non-Hispanic whites, 44% Black or African-American and 6% Hispanic or Latino. This racial makeup makes the City of Fayetteville one of the most diverse in the nation.

## ***Economic Environment***

The City of Fayetteville and Cumberland County’s largest employers<sup>7</sup> are:

### **Top 25 Employers – Fayetteville and Cumberland County**

Rank	Name	Range	Industry
1	Cumberland County Board of Education	1,000+	Education and Health Services
2	Department of Defense	1,000+	Public Administration
3	Cape Fear Valley Health Systems	1,000+	Education and Health Services
4	Wal-Mart Associates, Inc	1,000+	Trade, Transportation, Utilities
5	Goodyear Tire and Rubber, Inc.	1,000+	Manufacturing
6	County of Cumberland	1,000+	Public Administration
7	City of Fayetteville	1,000+	Public Administration
8	State of North Carolina	1,000+	Public Administration
9	Fayetteville Technical Community College	1,000+	Education and Health Services
10	US Postal Service	1,000+	Trade, Transportation, Utilities
11	Army & Air Force Exchange Services	500-999	Public Administration
12	Cingular Wireless, LLC	500-999	Information
13	Veterans Administration Hospital	500-999	Education and Health Services
14	Fluor Daniel Services Corporation	500-999	Construction
15	Non-Appropriated Fund Activity (Army)	500-999	Leisure and Hospitality
16	Purolator Filters, NA, LLC	500-999	Manufacturing
17	Food Lion, LLC	500-999	Trade, Transportation, Utilities
18	ITT Industries	500-999	Other Services
19	Methodist College Branch	500-999	Education and Health Services
20	MJ Soffe Co, Inc.	500-999	Manufacturing
21	Cutler Hammer, Inc	500-	Manufacturing

<sup>7</sup> Fayetteville Chamber of Commerce – <http://www.fayettevillencchamber.org>

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		999	
22	Public Works Commission	500- 999	Public Administration
23	E I Dupont De Nemours & Co, Inc.	500- 999	Professional and Business Services
24	KCA Corporation	250- 499	Leisure and Hospitality
25	Fayetteville Publishing Co, Inc.	250- 499	Information

The two military bases are the backbone of Fayetteville’s economy. Fort Bragg and Pope Air Force Base bring approximately \$4.5 billion annually into the region's economy, making it one of the best retail markets in the country. Fayetteville has become the region's hub for shopping, restaurants, services, lodging, health care and entertainment.

The median income for a family residing in Fayetteville is \$63,382. As depicted in 2008 estimates, males in the City of Fayetteville had a median income of \$41,808 versus \$30,255 for females.

On March 9, 2010, Manpower, an international employment services firm, released the results of its Q2 2010 Manpower Employment Outlook Survey. According to the survey, Fayetteville area employers (including Cumberland County) are expected to hire with a 14% outlook, significantly higher than the 8% outlook for the entire nation. This means that 14% of all employers in the Fayetteville MSA are expecting to hire additional personnel within the next quarter<sup>8</sup>.

The top sectors identified in this report that will be hiring are:

- ◆ Construction
- ◆ Transportation & Utilities
- ◆ Wholesale & Retail Trade
- ◆ Information
- ◆ Professional & Business Services
- ◆ Leisure & Hospitality
- ◆ Government

Employers in Durable Goods Manufacturing plan to reduce personnel while the Education and Health Services job sectors expect to remain at current levels.

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<sup>8</sup> Q2 2010 Manpower Employment Outlook Survey. Manpower, March 9, 2010 <http://manpower-employmentreports.mediaroom.com/index.php?s+43&item=409>

Cumberland County Cities Economic Profile Highlights									
	Cumberland County Totals	Fayetteville	Eastover	Falcon	Godwin	Hope Mills	Linden	Spring Lake	Stedman
<b>Employment Status [Population 16 years and over]</b>									
Population 16 years and over	<b>232,318</b>	131,944	1,111	212	76	8,026	107	5,927	494
In labor force	156,346	85,194	625	113	59	5,850	73	3,808	338
Civilian labor force	129,493	76,008	613	113	59	5,096	73	2,840	336
Employed	118,448	69,067	597	112	56	4,856	65	2,581	221
Unemployed	11,045	6,941	16	1	3	240	8	259	15
Armed forces	26,853	9,186	12	0	0	754	0	968	2
Not in labor force	75,972	46,750	486	99	17	2,176	34	2,119	156
<b>Commuting to work [Workers 16 and older]</b>									
Workers 16 years and over	<b>141,135</b>	76,126	574	109	56	5,464	65	3,467	313
Car, truck, van - drive alone	111,474	64,145	450	83	46	4,588	53	2,325	249
Car, truck, van - carpool	13,587	7,171	87	14	8	649	6	869	55
Public transportation	733	566	0	0	0	34	0	29	0
Walked	3,338	1,487	8	0	0	31	0	133	3
Other means	1,755	1,152	7	0	2	65	0	36	2
Worked from home	10,248	1,605	22	12	0	97	6	75	4
<b>Income and Benefits [households]</b>									
Total households	<b>118,846</b>	71,949	551	87	41	4,137	46	3,126	241
Less than \$10,000	11,803	7,510	85	7	0	280	4	500	12
\$10,000 - \$14,999	6,634	4,451	29	2	7	270	2	311	12
\$15,000 - \$24,999	14,238	8,512	57	20	0	493	5	595	32
\$25,000 - \$34,999	14,708	8,974	113	22	5	603	5	531	23
\$35,000 - \$49,999	18,508	11,611	78	13	17	1,011	12	647	49
\$50,000 - \$74,999	22,816	13,489	95	11	12	989	10	377	63
\$75,000 - \$99,999	13,290	7,877	61	7	0	375	5	129	28
\$100,000 - \$149,999	12,254	6,745	27	5	0	72	3	28	19
\$150,000 to \$199,999	2,839	1,594	0	0	0	26	0	0	3
\$200,000 or more	1,756	1,186	6	0	0	18	0	8	0
<b>Selected Economic Characteristics</b>									
Median earning for workers [dollars]	\$27,002	\$26,468							
Median earnings for male, fulltime	\$38,963	\$41,808	\$31,515	\$28,750	\$25,417	\$34,120	\$30,625	\$25,016	\$36,250
Median earnings for female, fulltime	\$30,613	\$30,255	\$23,529	\$23,250	\$22,188	\$21,845	\$25,781	\$17,979	\$21,875

**Table 2: 2008 Census Estimates for Cumberland County and the City of Fayetteville; 2000 Census Counts for all other Cities**

As outlined in Table 3, roughly 14.5% of families and 16.9% of the population in the City of Fayetteville were below the poverty line, including 24.4% of those under age 18 and 8.4% of those age 65 or over.

**Table 3: 2008 Census Estimates for Cumberland County and the City of Fayetteville; 2000 Census Counts for all other Cities**

Cumberland County and Cities Economic Poverty Percentages										
	Cumberland County Totals	Fayetteville	Eastover	Falcon	Godwin	Hope Mills	Linden	Spring Lake	Stedman	Wade
<b>Percentage of families and people whose income is below poverty level</b>										
All families	14.0%	14.5%	23	2	3	181	3	490	8	16
With related children under 18 years	20.5%	21.3%	23	0	3	157	0	428	8	9
With related children under 5 years only	22.0%	24.8%	16	0	0	60	0	241	8	5
Married couple families	4.2%	3.9%	0	0	0	0	0	0	0	0
With related children under 18 years	5.9%	5.5%	0	0	0	0	0	0	0	0
With related children under 5 years only	3.3%	3.3%	0	0	0	0	0	0	0	0
Families with female householder, no husband	38.1%	35.6%	0	1	3	146	0	348	3	7
With related children under 18 years	43.6%	40.9%	0	0	3	142	0	328	3	4
With related children under 5 years only	49.5%	49.4%	0	0	0	60	0	165	3	0
All people	16.7%	16.9%	114	48	14	886	10	1,934	63	94
Under 18 years	23.3%	24.4%	0	0	0	0	0	0	0	0
Related children under 18 years	23.1%	24.3%	31	0	11	315	0	804	29	19
Related children under 5 years	26.5%	29.4%	0	0	0	0	0	0	0	0
Related children 5 to 17 years	21.7%	22.2%	15	0	11	225	0	475	17	12
18 years and over	14.0%	14.0%	83	15	3	571	10	1,109	34	73
18 to 64 years	14.6%	14.9%	0	0	0	0	0	0	0	0
65 years and over	10.3%	8.4%	27	2	3	93	4	49	10	23
People in families	14.8%	14.9%	0	0	0	0	0	0	0	0
Unrelated individuals 15 years and over	26.2%	25.1%	52	38	0	299	5	417	16	31



## Employment

Using 2000 Census data, the table below shows the characteristics of Fayetteville’s civilian labor force. The table shows a comparison to the labor force characteristics County and State-wide. The labor force data is presented by sex, race, and persons of Hispanic origin. Employment and unemployment are also shown.

- The highest rates of unemployment in the City and the County are among members of the protected classes. The unemployment rate among the non-white civilian labor force County-wide is more than double the unemployment rate among the white civilian labor force.
- Unemployment among the Hispanic civilian labor force is about one and half times the unemployment rate of the white civilian labor force.
- The rate of unemployment among females is higher than among males.
- In the City of Fayetteville, unemployment among all members of the protected classes exceeds 10%. Among minorities, the unemployment rate is 15.2%.
- The higher rate of unemployment among members of the protected classes is reflected in the lower median household income among minority households as shown in the table.
- The higher rate of unemployment among the protected classes affects their ability to be adequately housed and their location choices.

	City of Fayetteville		County Outside City		Cumberland County	North Carolina
<b>Labor Force Characteristics</b>	<b>Total</b>	<b>%</b>	<b>Total</b>	<b>%</b>	<b>%</b>	<b>%</b>
Total Civilian Labor	52,253	100	68,419	100	100	100
Employed	46,173	88.4	64,164	93.8	91.4	94.7
Unemployed	6,080	11.6	4,255	6.2	8.6	5.3
Male Civilian Labor	24,305	100	33,561	100	100	100
Employed	21,669	89.2	31,767	94.7	92.3	95.1
Unemployed	2,636	10.8	1,794	5.3	7.7	4.9
Female Civilian Labor	27,948	100	34,858	100	100	100
Employed	24,504	87.7	32,397	92.9	90.6	94.2
Unemployed	3,444	12.3	2,461	7.1	9.4	5.8
White Civilian Labor	25,815	100	42,575	100	100	100
Employed	23,733	91.9	40,711	95.6	94.2	96.1
Unemployed	2,082	8.1	1,864	4.4	5.8	3.9
Nonwhite Civilian Labor	26,363	100	25,789	100	100	100
Employed	22,365	84.8	23,402	90.7	87.8	90.4
Unemployed	3,998	15.2	2,387	9.3	12.2	9.6
Hispanic Civilian Labor	2,376	100	3,753	100	100	100

Employed	2,116	89.1	3,401	90.6	90	91.8
Unemployed	260	10.9	352	9.4	10	8.2

As of February 2010, the unemployment rate for the Fayetteville, NC Metropolitan Statistical Area (MSA) was 9.9%, less than the national average of 10.1%, with Fayetteville locking in an unemployment rate of only 8.0%.

The chart below compares Fayetteville’s unemployment rates with the County on a monthly basis since January 2009. As shown, Fayetteville has a much lower unemployment rate, showing economic stability and strength in the City during the current economic situation.

<b>Fayetteville, NC 2009 – February 2010 – Labor Force Statistics</b>							
	Jan-09	Feb-09	Mar-09	Apr-09	May-09	June-09	July-09
Labor Force	74,098	74,512	74,161	74,952	75,162	76,263	75,107
Employed	68,923	68,848	68,975	70,021	69,638	70,520	69,453
Unemployed	5,175	5,664	5,186	4,931	5,524	5,743	5,654
Rate %	7.0	7.6	7.0	6.6	7.3	7.5	7.5
	Aug-09	Sept-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10
Labor Force	74,355	75,127	75,897	75,815	74,872	76,661	76,879
Employed	68,998	69,720	70,558	70,371	69,564	70,624	70,762
Unemployed	5,357	5,339	5,339	5,444	5,308	6,037	6,117
Rate %	7.2	7.2	7.0	7.2	7.1	7.9	8.0
<b>Cumberland County, NC 2009 – February 2010 Labor Force Statistics</b>							
	Jan-09	Feb-09	Mar-09	Apr-09	May-09	June-09	July-09
Labor Force	130,436	131,284	130,942	131,899	132,325	134,368	132,495
Employed	118,842	118,712	118,931	120,735	120,074	121,595	119,756
Unemployed	11,594	12,572	12,011	11,164	12,251	12,773	12,739
Rate %	8.9	9.6	9.2	8.5	9.3	9.5	9.6
	Aug-09	Sept-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10
Labor Force	131,081	132,300	133,834	133,607	132,354	136,026	136,275
Employed	118,970	120,215	121,660	121,339	119,946	122,594	122,834
Unemployed	12,111	12,085	12,174	12,331	12,408	13,432	13,441
Rate %	9.2	9.1	9.1	9.2	9.4	9.9	9.9

Source: [www.ncesc.com](http://www.ncesc.com)

Of the top 25 Employers in Fayetteville and Cumberland County referenced in the table below, the largest areas of occupation are in management, professional and related occupations.

**Top 25 Employers of Cumberland County**

Rank	Name	Number of Employees	Industry
1	Cumberland County Board of Education	1,000+	Education and Health Services
2	Department of Defense	1,000+	Public Administration
3	Cape Fear Valley Health Systems	1,000+	Education and Health Services
4	Wal-Mart Associates, Inc	1,000+	Trade, Transportation, Utilities
5	Goodyear Tire and Rubber, Inc.	1,000+	Manufacturing
6	County of Cumberland	1,000+	Public Administration
7	City of Fayetteville	1,000+	Public Administration
8	State of North Carolina	1,000+	Public Administration
9	Fayetteville Technical Community College	1,000+	Education and Health Services
10	US Postal Service	1,000+	Trade, Transportation, Utilities
11	Army & Air Force Exchange Services	500-999	Public Administration
12	Cingular Wireless, LLC	500-999	Information
13	Veterans Administration Hospital	500-999	Education and Health Services
14	Fluor Daniel Services Corporation	500-999	Construction
15	Non-Appropriated Fund Activity (Army)	500-999	Leisure and Hospitality
16	Purolator Filters, NA, LLC	500-999	Manufacturing
17	Food Lion, LLC	500-999	Trade, Transportation, Utilities
18	ITT Industries	500-999	Other Services
19	Methodist College Branch	500-999	Education and Health Services
20	MJ Soffe Co, Inc.	500-999	Manufacturing
21	Cutler Hammer, Inc	500-999	Manufacturing
22	Public Works Commission	500-999	Public Administration
23	E I Dupont De Nemours & Co, Inc.	500-999	Professional and Business Services
24	KCA Corporation	250-499	Leisure and Hospitality
25	Fayetteville Publishing Co, Inc.	250-499	Information

*\*Fayetteville Chamber of Commerce*

Cumberland County/Fayetteville Employment Highlights		
	Cumberland County	Fayetteville
<b>OCCUPATION</b>		
<b>Civilian employed population 16 years and over</b>	<b>118,448</b>	<b>69,067</b>
Management, professional, and related occupations	39,634	24,615
Service occupations	21,628	13,509
Sales and office occupations	30,151	18,139
Farming, fishing, and forestry occupations	456	63
Construction, extraction, maintenance and repair occupations	10,750	4,503
Production, transportation, and material moving occupations	15,829	8,238
<b>INDUSTRY</b>		
<b>Civilian employed population 16 years and over</b>	<b>118,448</b>	<b>69,067</b>
Agriculture, forestry, fishing and hunting, and mining	943	237
Construction	7,263	3,225
Manufacturing	10,946	5,646
Wholesale trade	3,017	1,647
Retail trade	14,933	8,726
Transportation and warehousing, and utilities	5,647	2,797
Information	3,168	1,785
Finance and insurance, and real estate and rental and leasing	5,416	3,377
Professional, scientific, and management, and administrative and waste management services	8,263	5,154
Educational services, and health care and social assistance	31,845	19,695
Arts, entertainment, and recreation, and accommodation, and food services	10,416	6,617
Other services, except public administration	5,617	3,481
Public administration	10,974	6,680
<b>CLASS OF WORKER</b>		
<b>Civilian employed population 16 years and over</b>	<b>118,448</b>	<b>69,067</b>
Private wage and salary workers	80,575	46,352
Government workers	31,439	19,192
Self-employed workers in own not incorporated business	6,263	3,416
Unpaid family workers	171	107

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## Housing

The 2006-2008 ACS Estimates calculate 81,836 total housing units for an increase of 13.7% over the 2000 Census. The most common type of housing in City of Fayetteville is single-family detached units. In the more densely populated areas of Fayetteville, there are a larger number of multi-family units. Within the City and County, mobile homes make up a significant portion of the housing stock, comprising 12.9% of the total housing units.

The 2006-2008 ACS estimates there are 9,887 vacant units, for a total of 12% of the total housing market. This is up 43% from 2000 where the vacancy rate was 9.3%.

There are 41,409 owner-occupied housing units in Fayetteville, accounting for 60.1% of the 71,949 occupied units. This reflects an increase over the 2000 rate of 53.3%.

The median value of owner-occupied housing in Fayetteville is \$112,000, an increase of 28.4% over the median value of \$87,200 in 2000. Housing values in Fayetteville continue to rise and the Fayetteville Association of Realtors reports that the average sales price for an existing home in 2009 for was \$156,251. The average sales price for a newly constructed unit in 2009 was \$200,999. The Association reports that existing homes were purchased for an average sales price of \$130,673.

The City of Fayetteville has 30,540 renter-occupied units. The FY 2010 Cumberland County Fair Market Rent as determined by HUD is:

- Efficiency: \$580
- One-Bedroom: \$627
- Two-Bedroom: \$700
- Three-Bedroom: \$994
- Four-Bedroom: \$1,176

The tables on the next few pages provide a detailed overview on housing occupancy, tenure, median value, and median gross rent in Cumberland County according the 2008 Census Estimates.

Cumberland County Housing Profile Highlights										
	Cumberland County	Fayetteville	Eastover	Falcon	Godwin	Hope Mills	Linden	Spring Lake	Stedman	Wade
Total housing units	134,716	81,836	621	102	43	4,497	58	3,623	286	220
Occupied housing units	118,846	71,949	566	84	38	4,112	51	3,109	261	196
Owner-occupied housing units	71,506	41,409	422	62	32	2,713	45	1,113	209	133
Renter-occupied housing units	47,340	30,540	144	22	6	1,399	6	1,996	52	63
Vacant housing units	15,870	9,887	55	18	5	385	7	514	25	24
Housing units with a mortgage	52,989	31,010	180	30	17	2,302	27	793	126	20
Housing units without a mortgage	18,517	10,399	92	16	11	227	10	190	43	59
Occupied units paying rent	43,203	29,320		25	4	1,366	6	1,981	43	54
Affordability Snapshot										
Median value of home [in dollar]	\$111,600	\$112,000	\$97,300	\$108,300	\$72,500	\$85,100	\$86,100	\$77,200	\$72,000	\$65,600
<b>Median of selected monthly owner costs</b>										
With a mortgage [dollars]	\$1,176	\$1,178	\$845	\$950	\$690	\$881	\$890	\$843	\$838	\$675
Not mortgaged [dollars]	\$369	\$390	\$229	\$275	\$319	\$271	\$275	\$285	\$263	\$188
Median family income - monthly	\$4,402	\$4,261	\$4,052	\$3,208	\$3,507	\$3,739	\$4,063	\$2,358	\$3,943	\$2,083
<b>Selected monthly owner costs as a % of household income</b>										
Less than 20.0 percent	20,371	11,768	182	22	13	888	16	355	107	42
20.0 to 24.9 percent	8,288	4,648	12	6	3	624	4	147	29	7
25.0 to 29.9 percent	6,244	3,261	24	6	4	225	7	119	7	16
30.0 to 34.9 percent	3,934	2,739	6		4	213	3	76	4	
35.0 percent or more	13,856	8,477	42	10	4	568	7	264	22	14
<b>Gross Rent</b>										
Less than \$200	1,059	930				39		27		
\$200 to \$299	615	489	6			30		115	3	13
\$300 to \$499	5,441	3,370	58	10		344	4	751	24	18
\$500 to \$749	14,928	10,113	6	6		718		738	13	6
\$750 to \$999	15,227	10,181	20		2	157		189		2
\$1,000 or more	6712	4,237				19		9		
<i>No cash rent</i>	3,358	1,220	2	9	2	59	2	152	3	15
<b>Gross Rent as a % of household income</b>										
15.0 to 19.9 percent	12,603	4,122	57	3		515	4	552	27	17
20.0 to 24.9 percent	5,361	4,262		6	2	201		209	2	6
25.0 to 29.9 percent	4,467	3,966	7	3		74		226	2	6
30.0 to 34.9 percent	4,423	2,730				137		135		
35.0 percent or more	16,349	10,847	26	4		371		631	9	10

Cumberland County Selected Housing Characteristics										
	Cumberland County	Fayetteville	Eastover	Falcon	Godwin	Hope Mills	Linden	Spring Lake	Stedman	Wade
<b>Units in structure</b>										
1-unit, detached	87,384	54,975	411	85	37	3,383	56	1,876	223	147
1-unit, attached	5,405	2,160	0	3	0	124	0	184	3	2
2 units	2,939	2,098	0	3	0	108	2	126	9	0
3 or 4 units	6,083	4,730	0	0	0	363	0	286	4	0
5 to 9 units	7,725	6,623	0	0	0	172	0	354	0	0
10 to 19 units	4,201	3,564	0	0	0	9	0	50	0	0
20 or more units	3,542	3,190	0	0	0	8	0	39	0	0
Mobile home	17,401	4,496	219	29	10	325	7	766	45	64
<b>Year Structure Built</b>										
Built 2005 or later	7,253	3,131	0	0	0	0	0	0	0	0
Built 2000 to 2004	13,067	5,771	0	0	0	0	0	0	0	0
Built 1990 to 1999	26,550	13,396	109	19	10	1,471	6	904	36	43
Built 1980 to 1989	23,620	15,611	169	21	5	791	8	873	65	22
Built 1970 to 1979	26,270	16,813	87	32	3	1,344	15	875	63	23
Built 1969 or earlier	37,956	27,114	265	48	29	886	34	1,037	120	125
<b>Rooms</b>										
1 room	1,167	554	0	0	0	0	0	28	0	0
2 rooms	2,076	1,510	11	0	2	51	2	269	0	0
3 rooms	9,147	5,832	67	3	0	294	2	389	0	8
4 rooms	22,371	14,439	153	14	8	747	10	990	33	50
5 rooms	33,838	19,591	179	37	10	1,585	23	1,006	87	76
6 rooms	28,922	16,966	111	14	6	1,102	7	531	64	45
7 rooms	18,680	11,231	87	27	12	398	9	232	63	16
8 rooms	11,238	6,987	8	12	7	165	7	196	19	14
9 or more rooms	7,277	4,726	14	13	2	150	5	48	18	4
<b>Occupants per room</b>										
1 or less	116,561	70,831	547	92	38	4,022	50	2,900	238	189
1.01 to 1.5	1,969	869	13	0	2	80		180	8	4
1.51 or more	316	249	7	0	0	21	0	54	0	0
<b>Selected Characteristics</b>										
Lacking complete plumbing facilities	349	204	6	0	0	17	0	59	0	0
Lacking complete kitchen facilities	400	156	0	0	0	12	0	36	0	0
No telephone service available	5,088	3,296	51	0	2	23	2	176	3	11
<b>Value</b>										
Less than \$50,000	6,139	2,385	18	6	9	111	3	85	17	26
\$50,000 to \$99,999	24,787	15,266	128	15	10	1,664	23	781	115	42
\$100,000 to \$149,999	18,383	11,810	106	14	5	586	8	110	33	8
\$150,000 to \$199,999	11,114	6,339	8	9	2	133	3	7	2	0
\$200,000 to \$299,999	7,176	3,154	12	2	2	28	0	0	2	3
\$300,000 to \$499,999	2,942	1,833	0	0	0	7	0	0	0	0
\$500,000 to \$999,999	756	483	0	0	0	0	0	0	0	0

The Table below shows housing tenure in Fayetteville in 2000 by race of the household and for Hispanic households.

- White households and Native American households own their housing units at a higher rate than all households in Cumberland County. Minorities other than Native Americans, own their units at lower rates than all households in Cumberland County.
- Minority households in Fayetteville have lower rates of home ownership than minority households in the City. In fact, the minority households outside the City have rates of home ownership that are higher than minority households State-wide.
- The rate of home ownership among minority households in the City are lower than the rate of home ownership by minority households State-wide.

**Housing Occupancy, Tenure, Median Value, and Median Gross Rent – 2000**

	City of Fayetteville				Co. Outside City				Cumberland Co.	North Carolina
	Owner Occupied		Renter Occupied		Owner Occupied		Renter Occupied			
	Total	%	Total	%	Total	%	Total	%	% Owner-Occupied	% Owner-Occupied
White	15,581	60.6	10,121	39.4	25,298	68.7	11,528	31.3	65.4	75.1
Black	8,731	45.1	10,632	54.9	10,128	58.2	7,270	41.8	51.3	52.6
Am. Ind., Eskimo	302	54.4	253	45.6	852	72.7	320	27.3	66.8	69.6
Asian, Pacific Islander	485	53.7	419	46.3	518	60.9	333	39.1	57.2	50.9
Other Race	342	33.1	691	66.9	671	41.4	948	58.6	36.1	29.2
Two or More Races	368	42.1	507	57.9	472	44.5	588	55.5	6.7	46.0
<b>Total</b>	<b>25,809</b>	<b>53.3</b>	<b>22,623</b>	<b>46.7</b>	<b>37,939</b>	<b>64.4</b>	<b>20,987</b>	<b>35.6</b>	<b>59.9</b>	<b>69.4</b>
Hispanic Origin Any Race	902	38.5	1,442	61.5	1,513	43.6	1,956	56.4	41.5	31.5

Source: U.S. Bureau of the Census



GCT-T9-R: Housing Units (geographies ranked by estimate-Top 10)												
Data Set: 2008 Population Estimates												
Geographic Area: North Carolina -- County												
Rank	Geographic area	Housing Unit Estimates									Estimates Base	Census 2000
		July 1,2008	July 1,2007	July 1,2006	July 1,2005	July 1,2004	July 1,2003	July 1,2002	July 1,2001	July 1,2000	April 1,2000	April 1,2000
	<b>Carolina</b>	201,378	125,727	103,881	945,265	862,245	790,167	714,357	633,212	543,219	3,522,341	3,523,944
	<b>COUNTY</b>											
1	Mecklenburg County	403,304	390,330	372,944	360,322	348,227	336,800	324,334	310,776	296,353	292,755	292,780
2	Wake County	353,143	339,757	325,514	314,137	302,544	292,909	283,987	273,076	261,040	258,956	258,953
3	Guilford County	213,526	210,023	205,169	200,625	196,085	192,795	188,513	184,138	181,218	180,391	180,391
4	Forsyth County	154,847	152,237	149,563	146,750	143,839	141,385	138,713	136,636	133,795	133,094	133,093
5	Cumberland County	136,947	135,191	132,138	128,772	126,030	124,466	122,182	120,820	118,869	118,424	118,425
6	Durham County	117,884	116,017	113,193	110,905	108,119	105,297	102,480	98,890	96,138	95,452	95,452
7	Buncombe County	108,795	107,300	105,439	103,264	101,529	100,091	98,143	96,051	94,364	93,966	93,973
8	New Hanover County	99,628	97,664	95,861	92,685	89,309	86,597	84,317	81,969	80,096	79,634	79,616
9	Gaston County	88,426	87,205	86,005	84,805	83,701	82,583	81,593	80,527	79,189	78,866	78,842
10	Brunswick County	76,041	73,010	68,991	64,640	61,111	58,476	55,957	53,807	51,852	51,431	51,431

## Supply and Demand—General

### Housing Units

According to the 2000 Census, the total number of housing units in Cumberland County was 118,425 (53,565 in Fayetteville), with 51,927 (48,414 in Fayetteville) owner-occupied homes for a median value of \$88,800. During the period 2000 to 2008, the total number of housing units increased 13.8% to 134,716 (81,836 in Fayetteville) with 71,506 (41,409 in Fayetteville) owner-occupied units for a median value of \$111,600.

In 2000, owner-occupied housing in Cumberland County represented 43.8% of total housing units. This increased to 53.1% of total housing units in 2008, signaling a trend away from renting towards homeownership.<sup>9</sup>

At 64.9%, single-family detached housing units represent the majority of the owner-occupied housing stock in Cumberland County. The number of single-family in 2000 was 64.8%; virtually unchanged Owner-occupied housing has increased 32.4% (6,452 units) between 2000 and 2008. The largest increases were seen in the percentage of three- or four-unit housing (124.4%), one-unit detached (39.4%), five or more units (27.9%) and one-unit attached (24.4%).

<sup>9</sup> 2000 Census & 2008 Census Estimates, U.S. Census Bureau, www.factfinder.census.gov.

Tenure/Number of Units		2000		2008		Change	
		Number	Percent	Number	Percent	Number	Percent
Total Housing Units	1 Unit (detached)	76,784	64.8%	87,384	64.9%	10,600	13.8%
	1 Unit (attached)	4,755	4.0%	5,405	4.0%	650	13.7%
	2 Units	3,162	2.7%	2,939	2.2%	-223	-7.1%
	3 or 4 Units	5,579	4.7%	6,083	4.5%	504	9.0%
	5 or more Units	11,840	9.9%	15,468	11.4%	3,628	32.2%
	Mobile Home or Trailer	16,264	13.7%	17,401	12.9%	1,137	7.0%
	Other	41	0.0%	36	0.0%	-5	-12.2%
	<b>Total</b>	<b>118,425</b>	<b>100.0%</b>	<b>134,716</b>	<b>100.0%</b>	<b>6,452</b>	<b>13.8%</b>

### Age of Housing

Most of the occupied housing in Fayetteville (40.1%) was built between 1980 and 1999. Almost 11.5% of the occupied housing (13,285 units) was built between since 2000. Only 12.5% of the housing stock is much older with 14,690 units built prior to 1960; with less than 25% of those built before 1940.

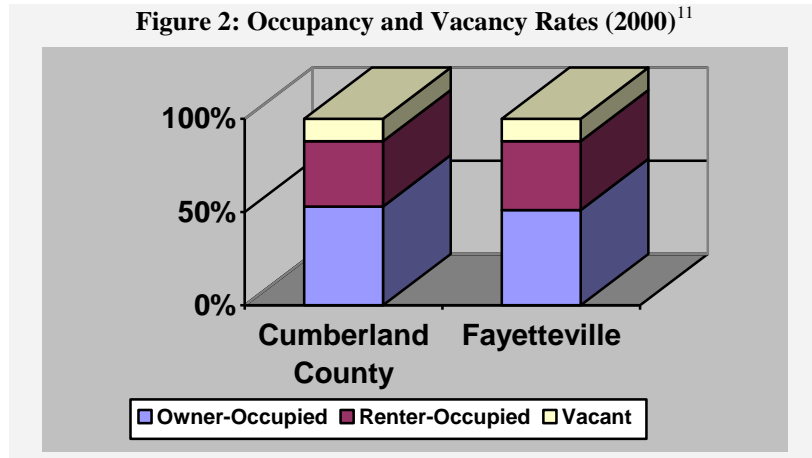
According to the data, rental housing is older than owner-occupied housing; with 14.4% of renter-occupied housing built before 1960 compared to 11.0% of owner-occupied housing. The median year that owner-occupied housing was built is 1971; the median year that rental housing was built is 1969.

Year Built	Owner-Occupied		Renter Occupied	
	Units	Percent	Units	Percent
2000 or Later	7,545	11.0%	5,740	11.7%
1980 to 1999	27,275	39.8%	19,850	40.6%
1960 to 1979	26,150	38.1%	16,265	33.2%
1940 to 1959	6,295	9.2%	5,245	10.7%
1939 to Earlier	1,330	1.9%	1,820	3.7%
<b>Total</b>	<b>68,595</b>	<b>100.0%</b>	<b>48,920</b>	<b>100.0%</b>

<sup>10</sup> U.S. Department of Commerce, Bureau of the Census (Census 2000 Summary File 3)

## Vacancy Rates

Even though the vacancy rate dropped from 12.8% in 2000 to 11.9% in 2008, the total number of vacant units rose significantly. Vacant rentals increased 1% while For Sale vacancies actually decreased by 27.6%, Rental housing, with a vacancy rate of 44.4% in 2000, has more unoccupied units than



owner-occupied housing, which has a vacancy rate of only 2.7%. The percentage of vacant units for sale has fallen from 15.9% of all vacant housing in 2000 to 8.0% in 2009 (see Table 6) while the total number of vacant rental units has remained about the same at 4,965 in 2009.

The vacancy rates for both owner- and renter-occupied housing are in line with the North Carolina state average. Both the County and State have higher For Rent vacancies compared to nation, but the For Sale vacancies are significantly lower.

	2000 <sup>12</sup>		2009 <sup>13</sup>		Change	
	Number	Percent	Number	Percent	Number	Percent
For sale only	1,760	15.9%	1,275	8.0%	-485	-27.6%
For rent	4,914	44.4%	4,965	31.3%	51	1.0%
For seasonal, recreational, or occasional use	299	2.7%	N/A	N/A	N/A	N/A
Other Vacancies	4,094	37%	9,630	60.7%	5,536	135.2%
Homeowner Vacancy Rate	XX	2.7%	XX	3.0%	XX	11.1%
Rental Vacancy Rate	XX	10.1%	XX	8.9%	XX	-11.9%
<b>Total</b>	<b>11,067</b>	<b>100%</b>	<b>15,870</b>	<b>100%</b>	<b>4,803</b>	<b>43.3%</b>

<sup>11</sup> 2008 Census Estimates, U.S. Census Bureau, [www.factfinder.census.gov](http://www.factfinder.census.gov).

<sup>12</sup> 2000 Census, U.S. Census Bureau, [www.factfinder.census.gov](http://www.factfinder.census.gov).

<sup>13</sup> 2009 CHAS Data Set, Table 14A, U.S. Department of Housing and Urban Development, [www.huduser.org](http://www.huduser.org).

## Housing Costs

### Owner-Occupied Housing

**Figure 3: MLS Total Statistics by Year (1998 – 2009)<sup>14</sup>**

<b>Closed</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>
Total Closed - Existing	2285	2325	2309	2685
Total Value	\$231,846,463	\$232,555,545	\$225,461,610	\$264,117,804
Average Price	\$101,465	\$100,024	\$97,645	\$98,478
Total Closed - New	1021	954	835	1067
Total Value	\$108,542,762	\$109,351,053	\$101,382,657	\$135,776,652
Average Price	\$106,310	\$114,624	\$121,416	\$127,251
<b>Total Listings Closed</b>	<b>3306</b>	<b>3279</b>	<b>3144</b>	<b>3752</b>
<b>Total Value</b>	<b>\$ 340,389,225</b>	<b>\$ 341,906,598</b>	<b>\$ 326,844,267</b>	<b>\$ 399,894,456</b>

<b>Closed</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
Total Closed - Existing	3061	3552	4763	4914
Total Value	\$298,637,473	\$359,757,470	\$472,488,226	\$526,475,505
Average Price	\$97,562	\$101,283	\$99,200	\$106,493
Total Closed - New	1217	1562	1756	2417
Total Value	\$162,254,612	\$230,485,347	\$290,210,096	\$434,844,972
Average Price	\$133,323	\$147,558	\$165,268	\$179,353
<b>Total Listings Closed</b>	<b>4278</b>	<b>5114</b>	<b>6519</b>	<b>7331</b>
<b>Total Value</b>	<b>\$ 460,892,085</b>	<b>\$590,242,817</b>	<b>\$762,698,322</b>	<b>\$961,320,477</b>

<b>Closed</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
Total Closed - Existing	5708	4893	4553	3,820
Total Value	\$673,819,969	\$612,269,226	\$588,374,827	\$499,955,921
Average Price	\$117,504	\$124,547	\$127,629	\$130,185
Total Closed - New	2702	2307	2063	2,166
Total Value	\$528,453,337	\$480,027,489	\$429,361,175	\$435,364,635
Average Price	\$195,557	\$207,591	\$207,113	\$200,718
<b>Total Listings Closed</b>	<b>8410</b>	<b>7200</b>	<b>6570</b>	<b>5,986</b>
<b>Total Value</b>	<b>\$ 1,202,273,306</b>	<b>\$ 1,092,296,715</b>	<b>\$ 1,017,736,002</b>	<b>\$935,320,556</b>

<sup>14</sup> *MLS Statistics by Year*, Fayetteville Regional Association of Realtors, <http://www.fayettevillerealtors.com>.

Average and median sales prices of both new and existing homes in Fayetteville for 2009 exceeded \$130,000. The average existing home sales price in 2009 was \$130,185 (28% increase from 1998) while new homes averaged \$200,718, a huge increase of 88.8% over 1998 sales prices.

***Absorption Rates* March 1, 2009 - February 28, 2010**  
**New Construction**

Price Range	# Active Listings	# Closed Last 12 Months	12 Month Average Closed Per Month	Available # Months Supply
<74,999	0	1	0.08	0.00
\$75,000-99,999	0	0	0.00	0.00
\$100,000-124,999	42	47	3.92	10.72
\$125,000-149,999	140	220	18.33	7.64
\$150,000-174,999	275	516	43.00	6.40
\$175,000-199,999	281	456	38.00	7.39
\$200,000-224,999	208	350	29.17	7.13
\$225,000-249,999	171	206	17.17	9.96
\$250,000-299,999	131	173	14.42	9.09
\$300,000-349,999	50	69	5.75	8.70
\$350,000-399,999	23	39	3.25	7.08
\$400,000-499,999	18	12	1.00	18.00
\$500,000-749,999	11	9	0.75	14.67
\$750,000-999,999	4	0	0.00	4.00
\$1,000,000 and up	1	0	0.00	1.00
<b>Totals</b>	<b>1,355</b>	<b>2,098</b>	<b>174.83</b>	<b>7.75</b>

**Existing Homes**

Price Range	# Active Listings	# Closed Last 12 Months	12 Month Average Closed Per Month	Available # Months Supply
<74,999	417	811	67.58	6.17
\$75,000-99,999	420	536	44.67	9.40
\$100,000-124,999	353	589	49.08	7.19
\$125,000-149,999	434	563	46.92	9.25
\$150,000-174,999	306	389	32.42	9.44
\$175,000-199,999	294	268	22.33	13.16
\$200,000-224,999	155	146	12.17	12.74
\$225,000-249,999	142	117	9.75	14.56
\$250,000-299,999	193	136	11.33	17.03
\$300,000-349,999	74	50	4.17	17.76
\$350,000-399,999	74	41	3.42	21.66
\$400,000-499,999	63	30	2.50	25.20
\$500,000-749,999	52	7	0.58	89.14
\$750,000-999,999	23	2	0.17	138.00
\$1,000,000 and up	12	0	0.00	12.00
<b>Totals</b>	<b>3,012</b>	<b>3,685</b>	<b>307.08</b>	<b>9.81</b>

**Rental Housing**

Rental units consist of a combination of single-family homes (attached or detached), various types of small complexes (one to four units) and larger apartment developments (five or more units). Census statistics classify all occupied units which are not owner occupied, whether they are rented for cash rent or occupied without payment of cash rent, as renter-occupied.

Single unit detached homes account for the majority of rental housing. Mobile homes accounted for the 2<sup>nd</sup> largest unit of the renter-occupied housing in Cumberland County.

Amount of Rent	Rent	
	Units	Percent
Less than \$200		
\$200 to \$299	1,059	2.4%
\$300 to \$499	615	1.4%
\$500 to \$749	5,441	12.4%
\$750 to \$999	14,928	33.9%
\$1,000 to \$1,499	15,227	34.6%
\$1,500 or More	303	0.7%
No Cash Rent	3,358	0%

As shown in Table 7, gross rents (rent plus utility expenses) range between \$500 and \$999 for most of the rental housing (68.4%) in Cumberland County. Less than one-quarter of all rental units (16.2%) have gross rents below \$500. The median gross rent for 2008 was \$749.

<sup>15</sup> U.S. Department of Commerce, Bureau of the Census (Census 2008 Estimate)

The Fair Market Rents (FMRs) for Cumberland County<sup>16</sup> have increased on average 2% per year since 2000. Table 8 provides the FMRs by number of bedrooms for the last 10 years.

Year	Number of Bedrooms				
	Zero	One	Two	Three	Four
2000	\$376	\$427	\$479	\$663	\$788
2001	\$382	\$434	\$487	\$674	\$801
2002	\$393	\$447	\$501	\$694	\$824
2003	\$403	\$458	\$513	\$711	\$845
2004	\$404	\$460	\$515	\$713	\$848
2005	\$476	\$509	\$574	\$820	\$965
2006	\$487	\$526	\$588	\$835	\$988
2007	\$507	\$548	\$612	\$869	\$1,028
2008	\$546	\$591	\$660	\$937	\$1,109
2009	\$561	\$607	\$678	\$963	\$1,139
2010	\$580	\$627	\$700	\$994	\$1,176

### ***Public & Assisted Rental Housing***

Public or assisted housing was created by the Congress of the United States in 1937. Its purpose was to provide decent, safe, sanitary and affordable housing to families unable to pay market rate rents. The assistance was to be temporary in nature, and structured to allow residents to move in, move up and move out. Today, there are approximately 1.5 million U.S. households residing in public housing units, managed and maintained by over 3000 local housing authorities and funded on an annual basis by Congress. The funds are distributed by the Department of Housing and Urban Development who also provides technical assistance and oversees compliance governed by the authority of Federal law and regulations.

The Section 8 Housing Choice Voucher Program is the federal government’s program for assisting very low-income families to include elderly and disabled individuals with renting decent, safe, sanitary and affordable housing in the community. The Fayetteville Metropolitan Housing Authority administers the Voucher Program locally. Participants of the Section 8 Leased Housing Program are allowed to find and lease privately owned single-family homes, apartments and manufactured homes. The participants possessing a Housing Choice Voucher are allowed to choose any housing that meets the Program requirements if the owner agrees to participate.

Funding for the Section 8 Program is provided by HUD. The Fayetteville Metropolitan Housing Authority issues a Voucher to an eligible applicant and the family then locates suitable housing. All units must meet housing quality standards set by HUD regulations and the Housing Authority’s policies. The Voucher holder’s portion of rent is determined

<sup>16</sup> Cumberland County is part of the Fayetteville, North Carolina Metropolitan Statistical Area (MSA)

<sup>17</sup> U.S. Department of Housing and Urban Development, Policy Development and Research (Data Sets: Fair Market Rents)

by their income. Once all Program requirements and regulations are met, the Housing Authority pays a subsidy directly to the owner/landlord/agent on behalf of the low-income family. This subsidy is the difference between the actual rent charged by the landlord and the amount paid by the participants.

The Section 8 Leased Housing Program is not currently accepting applications for the City of Fayetteville or Cumberland County. There are in excess of 500 families on the current waiting list. Public notices will be given when applications will be accepted in the future. Eligibility for Section 8 assistance is determined by HUD guidelines and is based on a family's total gross annual income and family composition.

The principal affordable rental housing resources in Cumberland County include traditional public housing units and non-project based or portable Section 8 assistance. The Fayetteville Metropolitan Housing Authority owns and manages 1,045 public housing units including 921 units in 12 developments and 124 scattered site single-family units. As shown in Table 2-14, all 12 developments are located in the City of Fayetteville.

Within Cumberland County, subsidized housing is predominantly funded through Low Income Housing Tax Credit (LIHTC) developments or USDA developments located in areas of low income or high minority concentrations. Of the 921 public housing units located at the 12 developments, 731 [79%] are located in low income census tracts [CTs] and 413 [56.5%] are located in census tracts with minority concentrations. The following table shows that about one-third of the public housing units are located in CT 2 and 23% are located in CT 1. CT 2 contains a concentration of minority households, a majority of the households are low income, 71% of the households are female headed, and about 70% of the family households have children. In CT 1, the majority of the households are low income, 57% of the households are female headed, and 61% of the population age five and over has a disability.

**Table  
Inventory of Public Housing – 2009**

<b>Development</b>	<b>Census Tract</b>	<b>Total Units</b>
Grove View Terrace Apts. (I & II)	1	212
Delona Gardens Apts.	2	55
Campbell Terrace Apts.	2	194
Point Place Apts.	2	52
Stanton Arms Apts.	4	52
Holland Homes	6	60
Murchinson Townhouse Apts.	10	60
Blueberry Place Apts.	12	48
Melvin Place Apts.	12	58
McNeill Apts.	18	50
Lewis Heights Apts.	23	48
Hillside Manor Apts.	25.01	32
Scattered site single-family units	scattered	124
<b>Total</b>		<b>1,045</b>

*Source: Fayetteville Metropolitan Housing Authority*



The North Carolina Indian Housing Authority owns and manages 92 public housing units at Eagles Nest Apartments, which is located in CT 14, within the city limits of Fayetteville.

The Fayetteville Metropolitan Housing Authority was awarded a \$20,000,000 HOPE VI grant to revitalize the Old Wilmington Road area by replacing 249 existing distressed public housing units and obsolete infrastructure with 747 new mixed-income rental units (550) and homeownership dwellings (105), and providing 72 new housing units for disadvantaged persons at seven scattered sites as detailed in the map below. The City of Fayetteville has committed to \$10,616,876 in financial support towards the revitalization project. Cumberland County has committed to \$4,000,000 in financial support toward community infrastructure.



In addition to Public Housing, the City of Fayetteville and Cumberland County has non-public “assisted rental housing.” The North Carolina Housing Finance Agency has identified 1320 units developed with the use of Low Income Housing Tax Credits [LIHTC]. The US Department of Agriculture Rural Development reports that there are four multi-family housing developments with 275 apartments in Cumberland County. All four Rural Development projects are outside of Fayetteville.

**Table  
Inventory of Assisted Rental Housing – 2010**

<b>Development</b>	<b>Census Tract</b>	<b>Total Units</b>	<b>Funding</b>
<i>City of Fayetteville</i>			
Adams Court Apartments	8	40	LIHTC
Haymount Manor Apartments	9	48	LIHTC
Rosehill Gardens	12	100	LIHTC
Eastside Green I	14	60	LIHTC
Eastside Green II	14	48	LIHTC

Blanton Green Apartments	23	48	LIHTC
Blanton Green Apartments II	23	48	LIHTC
Blanton Green Apartments III	23	36	LIHTC
Rosehill West Apartments	24	76	LIHTC
Longview Apartments	25.02	48	LIHTC
Bunce Green Apartments	33.02	80	LIHTC
Bunce Manor Apartments	33.02	48	LIHTC
Maple Ridge I	33.07	48	LIHTC
Maple Ridge III	33.07	80	LIHTC
<b>Total</b>		<b>856</b>	

<b>Development</b>	<b>Census Tract</b>	<b>Total Units</b>	<b>Funding</b>
<i>Cumberland County outside City</i>			
Legion Manor Apartments	16.01	44	LIHTC
Pine Chase	16.01	32	LIHTC
Pineridge Manor	16.01	60	LIHTC
Legion Crossing	16.0	48	LIHTC
Southview Green Apartments	16.02	72	LIHTC
Southview Villas	16.02	64	LIHTC
Crosswinds Green	16.02	48	LIHTC
Crosswinds Green II	16.02	48	LIHTC
Golfview Apartments	16.02	48	LIHTC
Fairview Forest	31	41	USDA
Fairview Forest II	31	48	USDA
Village Green I	31	120	USDA
Village Green II	31	66	USDA
Spring Lake Green	712	48	LIHTC
<b>Total</b>		<b>739</b>	

*Source: North Carolina Housing Finance Agency/USDA, Rural Development*

Of the 856 assisted rental-housing units in the City of Fayetteville, only Rosehill Apartments (100 units) is located within a low income (64% AMI) and high minority (71%) census tract. Of the 739 assisted rental housing units in the County outside of the City, the new Spring Lake Green Apartments (48 units) is located within a low-mod income census tract (81% AMI).

The City and County have facilitated the development of the other assisted rental units by establishing policies in their HUD *Consolidated Plan – FY 2005-2010* and through providing certifications of consistency with their *Consolidated Plan*. The goal is to prevent developing high concentration areas of low income households, many of whom are members of protected classes.

The Cumberland County Planning Department has identified the following areas of “blight” for redevelopment as derived from Code Enforcement personnel:

**Cedar Creek**

- Scary Creek
- Twisted Oak
- Mack Simmons Road

### **Gray's Creek**

- Shem Creek/Canadian Avenue
- Sand Hill Road/Chickenfoot Road
- Thunder Road

### **Hope Mills**

- Crystal Park
- Colonial Heights
- Gilcrest Sands
- Upchurch Sands
- Parkton Road/Muscat Road

### **Spring Lake**

- Balsawood Community

## ***Housing Needs Assessment***

### **Overall Needs**

A large percentage of extremely low-income and very low-income households in the City of Fayetteville experience one or more housing problems. Households with housing problems are those households occupying units without a complete kitchen or bathroom, that contain more than one person per room and/or that pay more than 30% of their income to cover housing expenses. Table 9 provides a summary breakdown of the percentage of households with housing problems by type of housing problem and income level. Over one-third (34.9%) of all households (at any income level) experience a housing problem and nearly one-third (32.6%) experience a cost burden of 30% or more. Nearly 16% of all households experience a cost burden of 50% or more; more than half (56%) of these are extremely low-income households (those earning 30% or less of the area median income). The following table provides a detailed breakdown of households with housing problems by housing problem, income level, housing tenure and household composition.

<b>Table 9: Households with Housing Problems (2009)<sup>18</sup></b>				
Housing Problem	Income Level	Households (117,515)		
		Renter (48,920)	Owner (68,595)	Total
Any Housing Problems	30% or Less of Median	8,730	3,555	12,285
	31% to 50% of Median	6,260	3,745	10,005
	51% to 80% of Median	5,490	4,450	9,940
	All Income Levels	22,340	18,735	41,075
Cost Burden Over 30%	30% or Less of Median	590	750	1,340
	31% to 50% of Median	2,830	1,150	3,980
	51% to 80% of Median	4,940	2,705	7,645
	All Income Levels	9,750	10,245	19,995
Cost Burden Over 50%	30% or Less of Median	7,690	2,635	10,325
	31% to 50% of Median	2,965	2,400	5,365
	51% to 80% of Median	245	1,910	2,155
	All Income Levels	10,910	7,510	18,420

<sup>18</sup> The 2009 Comprehensive Housing Affordability (CHAS) Database, U.S. Department of Housing and Urban Development, www.huduser.org.

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The following sections describe characteristics of low-income households experiencing housing problems in Cumberland County. Looking at renter-occupied and owner-occupied housing separately, census data shows important distinctions based on the following income levels:

- **Extremely low-income households** are households earning 30% or less of the area median income (AMI) (adjusted for family size). Given the area median household income for Cumberland County in 2008 was \$52,828 (\$51,132 in Fayetteville), households earning \$15,484 (\$15,339 in Fayetteville) or less annually are considered extremely low-income.
- **Very low-income households** are households earning between 31% and 50% of the AMI. Households earning \$26,414 (\$25,566 in Fayetteville) or less annually are considered very low-income.
- **Low-income households** are those earning between 51% and 80% of the AMI. Households earning \$42,262 (\$40,905 in Fayetteville) or less annually are considered low-income.

### **Renter Households**

According to the HUD CHAS data, renter households in Cumberland County outside of Fayetteville numbered 20,848 in 2000. Of these, 54% had incomes up to 80% of the MFI. Among all lower income renter households, those with incomes between >50-80% of the MFI were the largest group at 5,601. Among household types, small families were the most numerous (68%).

### **Extremely Low Income (0-30% of MFI)**

Extremely low income households were the second-largest category of renters, accounting for 25% of renters with incomes up to 80% of the MFI. Small families were the largest sub-category and accounted for 52% of this income group, while elderly households accounted for 14%. Large families were the smallest subcategory at 6%. All other household types comprised 28% of all extremely low income renter households.

Overall, 66% of these households reported housing problems. The occurrence of cost burden was slightly lower at 64%, and extreme cost burden was reported by 54% of all extremely low income renter households.

Housing problems reported by renters in this income group were high, ranging from 83% among large families to 60% among all other household types. Similarly, households in this income group reported high rates of cost burden where renters were paying more than 30% of their income toward housing costs. Cost-burdened households ranged from 78% among large families to 59% among all other household types. The rates of

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households experiencing extreme cost burden were highest among large families at 63% and lowest among all other household types at 49%.

In summary, large families were the smallest household type (by number) among extremely low income renters but experienced the highest rates of housing problems and cost burden. However, all household types in this income group have significant housing problems with high rates of cost burden and extreme cost burden. Typically, rental assistance is the greatest need among these households, as well as housing rehabilitation of substandard units.

### **Very Low Income (>30-50% of MFI)**

Very low income households accounted for 25% of all lower income renter households and were the smallest income group. Elderly households represented 7% of this income group, large families represented 11%, and all other household types accounted for 24%. Small families were the largest group with 58%.

As a group, these households experienced housing problems at a rate of 62%. Cost burden rates were significantly lower than among extremely low income households: 57% of very low income renter households paid 30% or more of their income on housing costs, while 18% paid 50% or more.

Housing problems reported among the household types within this income group were also lower than among extremely low income renters. The rate of housing problems ranged from 48% among elderly households up to 78% among all other household types. In all categories of housing problems and cost burden, all other household types were the most severely impacted and had the highest rates in this income group. In summary, large families were the smallest household type (by number) among extremely low income renters but experienced the highest rates of housing problems and cost burden. However, all household types in this income group have significant housing problems with high rates of cost burden and extreme cost burden.

Typically, rental assistance is the greatest need among these households, as well as housing rehabilitation of substandard units.

### **Low Income (>50-80% of MFI)**

As the income level rises among renter households, the degree of housing problems and cost burden decrease but at varying rates among the various household types. Low income renters account for 50% of all lower income renters but have lower rates of housing needs than other renters. Of all low income renter households in the County outside of the City, 36% experienced some type of housing problem, 27% experienced cost burden and only 3% of these households were extremely cost burdened.

Housing problems ranged from 25% among elderly households and small families to a high of 37% among small families. Cost burden continued to decline among households in this income group from the higher rates noted in extremely low income and very

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income renter households. Rates ranged from 18% for large families to a high of 30% for all other household types.

Extreme cost burden remained a problem for some groups, though, ranging from 0% among large families to a high of 12% among elderly households. In summary, housing rehabilitation and rental assistance appear to be significant needs for low income households, but at a lower rate than among extremely low and very low income renter households in Cumberland County outside of Fayetteville.

### **Owners**

According to the HUD CHAS data, owner households of any type and income level numbered 37,457 in Cumberland County outside of Fayetteville in 2000. Of these, 9,752 households with incomes up to 80% of the MFI and classified as lower income. This represented 26% of all owner households. Lower income renters outnumbered lower homeowners in the County outside of the City by 14%.

### **Extremely Low Income (0-30% of MFI)**

Extremely low income homeowners were the smallest group of homeowners and accounted for 22% of all lower income owner households. Overall, this income group experienced the greatest degree of housing problems and cost burden than both owner and renter households of higher income groups. Seventy-two percent (72%) of extremely low income owner households had housing problems of one type or another; 71% experienced cost burden; and, another 59% were extremely cost burdened.

Large family households experienced the highest rate of housing problems (83%) even though they constituted the smallest household type (by number) in this income group. Small families follow with 76% and all other household types with 72%. Elderly households had the lowest rate at 66%.

The rate of cost burden among this income group was also quite severe. Rates of cost burden ranged from 75% among small families and large families to a low of 66% for elderly households.

Extreme cost burden for owners in this income group was also very severe with 69% of all large families impacted as well as 52% of all elderly households affected. In summary, the high rates of cost burden on these households will impact their ability to perform routine as well as major maintenance and repairs on their housing units.

Housing rehabilitation funding could assist with the repair and upgrade work, but would not impact the degree of cost burden.

### **Very Low Income (>30-50% of MFI)**

Very low income homeowners accounted for 27% of all lower income homeowners. Overall, this income group was only slightly better off financially than extremely low income homeowners. Housing problems were reported by 64% of all owners. Cost burden was a problem for 64% of owners, while 42% were extremely cost burdened.

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Housing problems were greatest among large families (96%) and lowest among the elderly (43%). Cost burden was also greatest among large families (88%) and lowest among the elderly (43%). Extreme cost burden ranged from 23% among the elderly up to 58% for all other household types.

Similar to extremely low income homeowners, housing rehabilitation for these households would be beneficial.

**Low Income (>50-80%)**

Low income owners accounted for 51% of all lower income owners in the County outside of the City, and comprised the largest income category of homeowners. Rates of housing problems and cost burden were lower in this group but still significant. Fifty-seven percent (57%) of the households reported housing problems, 54% were cost burdened and 16% were extremely cost burdened.

Housing problems ranged from 34% for elderly owners up to 70% for large families. The degree of cost burden ranged from 33% for elderly owners up to 61% for small families. The degree of extreme cost burden ranged from a low of 8% among large families to a high of 26% among all other household types.

Similar to other lower income homeowners, housing rehabilitation for these households would be beneficial.

**Supportive Housing for Non-Homeless Persons with Special Needs**

Supportive housing is defined as living units that provide a planned services component with access to a range of services identified as necessary for the residents to achieve personal goals.

In examining supportive housing for persons with special needs, Cumberland County has considered the needs of the elderly, persons with disabilities (including mental, physical and developmental), alcohol and substance abusers and persons with HIV/AIDS. Because it is not always possible to determine the number of people who have supportive housing needs, the Consolidated Plan uses standards recommended by national agencies to determine the number of persons with supportive housing needs. A discussion of the housing needs for these sub-populations follows.

**Elderly and Frail Elderly Persons**

A frail elderly person is defined as a person who has one or more limitations of activities of daily living (ADLs) and is a person who may need assistance. Elderly persons may need housing assistance for two reasons – financial and supportive. Supportive housing is needed when an elderly person is both frail and low income, since the housing assistance offers services to compensate for the frailty in addition to financial assistance. By this definition, only the frail elderly require supportive housing.



Since 2000, the number of citizens over the age of 65 in Cumberland County has increased from 20,395 to 28,140 according to the 2006 – 2008 Census Estimates, an increase of 38%. Elderly households represent 20.2% of all households. In 2000 there were 7,164 elderly households in Cumberland County, of which 4,384 households, or 61.2%, were low-income. Table 10 provides an overview of renter and owner elderly households.

**Table 10: Elderly and Elderly Low-Income Households (2009)<sup>19</sup>**

	All Households			Low-Income Households	
	Total	Elderly	Percent of Total	Elderly	Percent Low-Income
Renters	48,920	3,585	7.3%	1,990	55.5%
Owners	68,595	20,240	29.5%	3,600	17.8%
Total	117,515	23,825	20.2%	5,590	23.5%

The majority of elderly renter-occupied households are low-income. Of the 20,240 elderly owner-occupied housing, 3,600 (or 17.8%) are low-income and 55.5% two-thirds of renters are low-income.

The 2008 Census Estimates do not report on disabilities, the 2000 Census reports that of the 28,140 elderly individuals living within Cumberland County:

- 11,266 reported that they had a disability.
- 1,230 (24%) of those elderly with a disability reported that they had a selfcare disability that limited their ability to dress, bathe, or get around inside their home without assistance.
- 2,344 (46%) of the elderly with a disability reported that their disability limited their ability to go outside their home alone to shop or visit a doctor’s office.
- 1,261 (13%) of all elderly persons were living below the poverty level; 866 (17%) of all elderly persons with a disability had income levels below poverty.

**Persons with Disabilities**

Persons with mental illness, disabilities and substance abuse problems need an array of services. Their housing requires a design that ensures residents maximum independence in the least restrictive setting, including independent single or shared living quarters in communities, with or without onsite support. Options include:

- Living with family or friends with adequate support and/or respite services

<sup>19</sup> *Comprehensive Housing Affordability (CHAS) Data Report, 2009*, U.S. Department of Housing and Urban Development, www.huduser.org.

- Small, home-like facilities in local communities close to families and friends, with the goal of moving to a less structured living arrangement when clinically appropriate

Residential placements need to provide the equipment and supplies necessary to assist in successful, long-term housing stability. Admission to state or private hospitals, mental retardation centers, state schools or alcohol and drug abuse treatment centers must not be considered permanent or long-term residential options.

Because the 2008 Census Estimates do not report on disabilities, the 2000 Census reported on non-institutionalized disabled persons, age five and over. The enumeration excludes institutionalized disabled persons, which consists of persons under formally authorized, supervised care or custody in institutions. The Census specifies that a disability is a long-lasting physical, mental, or emotional condition that can make it difficult for a person to do activities such as walking, climbing stairs, dressing, bathing, learning, or remembering. This condition can also impede a person from being able to go outside the home alone or to work at a job or business.

- The 2000 Census reported that there were 139,497 non-institutionalized persons age 5 and over in Cumberland County outside of Fayetteville. Of these, 29,320 (21%) reported a disability.
- There were 10,127 working age persons between the ages of 16 to 64 with a disability who were unemployed.
- 4,742 (16%) of the 52,909 disabled persons were living below poverty.

The disabled population in the City can be divided into three categories: mentally disabled, developmentally disabled, and physically disabled.

### *Mentally Ill*

Those individuals experiencing severe and persistent mental illness are often financially impoverished due to the long-term debilitating nature of the illness. The majority of these individuals receive their sole source of income from financial assistance programs—Social Security Disability Insurance or Social Security Income. The housing needs for this population are similar to other low-income individuals. However, because of this limited income, many of these individuals may live in either unsafe or substandard housing. The citizens need case management, support services and outpatient treatment services to monitor and treat their mental illness. Facilities that provide behavioral and/or psychiatric care include the following:<sup>20</sup>

- Cumberland County Mental Health Center
- Alternative Care Treatment Systems, Inc.
- Envisions of Life, LLC
- Peterkin & Associates, Inc.

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<sup>20</sup> Extended Care Information Network ([www.extendedcare.com](http://www.extendedcare.com))

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Severe mental illness includes the diagnoses of psychoses and major affective disorders such as bipolar and major depression. The condition must be chronic (i.e. existing for at least one year) to meet the HUD definition for a disability.

Because the 2008 Census Estimates do not report on disabilities, the 2000 Census reports on the non-institutionalized population with a mental disability. The Census defines mental disability as an emotional condition that makes it difficult to learn, remember, or concentrate.

- There were 7,111 non-institutionalized persons age 5 and over with a mental disability, which is equivalent to 5.1% of the 139,497 non-institutionalized persons age 5 and over in the County outside of the City.
- 1,698 (24%) of persons with mental disabilities were children between the ages of 5 and 15.
- 4,015 (56%) were working-age adults between the ages of 16 and 64.
- 1,398 (20%) were elderly individuals age 65 and over.

### *Developmentally Disabled*

Housing for the disabled must include a variety of options to meet the unique needs of persons with diverse types of disabilities. Services must be provided by area programs or contracted privately, including group home placements, intermediate care facilities, supported living programs, supported employment, sheltered workshops, home ownership and rental subsidy. Facilities in Cumberland County that provide housing and services for the Developmentally Disabled include the following:<sup>21</sup>

- Cumberland County Mental Health Local Management Entity - provides comprehensive treatment and case management for county residents.
- Cumberland County Health Department - works to maintain the health of county residents through various programs and clinics.
- Wade Family Medical Center - Provides family practice medical services. Fees based on family income, according to Department of Health and Human Services guidelines.
- Cape Fear Valley Health System - provides general medical care, emergency medical, chemotherapy and other health services.
- Better Health of Cumberland County - Provides assistance to low income individuals with health related emergencies. Services include a direct aid program which provides financial assistance for life-sustaining prescription drugs, medical appliances, vision exams and eyeglasses, supplies and transportation to medical centers and other medical services.

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<sup>21</sup> Cumberland County Department on Aging, "Elder Care Guide 2002," (n.d.) and Extended Care Information Network ([www.extendedcare.com](http://www.extendedcare.com))

**Alcohol and Substance Abusers**

The majority of people who suffer from any form of alcohol or substance abuse maintain jobs and homes at the beginning stages of their problem. However, as the problem progresses, the ability to maintain a well-functioning lifestyle diminishes. This problem touches every income and racial group, but is found to be most prevalent among the lowest income groups. Preventive programs incorporated into housing services provided to low-income persons are necessary to address this problem.

The National Institute of Alcohol Abuse and Alcoholism estimates the number of men with drinking problems at 14% to 16%, and the number of women with similar problems at 6%. No similar statistics exist for abuse of other drugs. However, the National Institute of Alcohol Abuse and Alcoholism estimates that one-third or more of the clients in publicly funded residential group programs are homeless most of the year before entering treatment.

<b>Drug Addiction/Recovery</b>	
Hope Harbor Christian Mission	Recovering substance abuse - men only
Myrover Reese Fellowship Homes Inc.	A residential home for males who are alcoholics or chemically dependent.
The Oxford House - Elder	shared living for substance abusers for men.
The Oxford House - Haymont	shared living for substance abusers for men.
Stedman Recovery House	Offers emergency shelter and food assistance
The Oxford House - Sandlewood	shared living for substance abusers for men.
The Oxford House - Stedman	shared living for substance abusers for men.
Cumberland County Health Department	works to maintain the health of county residents through various programs and clinics.
The Oxford House - Lyon Road	shared living for substance abusers for women.

**Persons with HIV/AIDS**

According to the most recent quarterly update of the North Carolina HIV/STD Surveillance Report, Cumberland County had 73 reported cases of HIV disease in 2009, which represents 4% (1,769) of all the cases reported in North Carolina. With 50 cases reported in 2004, Cumberland County showed a marked decrease in the number of AIDS cases—down from 84 reported cases in 2008 and 51 reported cases in 2007. The following are health institutions that provide services to residents with HIV/AIDS:

- Adult Health Clinic
- Communicable Diseases Control

**Table 11: Reported Cases of HIV/AIDS in Cumberland County<sup>22</sup>**

Year	HIV	AIDS
2007	108	51
2008	167	84
2009	73	50

<sup>22</sup> North Carolina Department of Health and Human Services, HIV/STD Prevention & Care Branch, North Carolina HIV/STD Quarterly Surveillance Report, Volume 2004, Number 4

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While prevention, medical and support services are available to people with HIV/AIDS, there is a greater need for permanent supportive housing. Other types of housing assistance needed include rental assistance and transitional supportive housing for patients leaving institutions of physical health or incarceration.

The housing needs of people living with HIV and AIDS are diverse. Housing programs targeting the population need to be flexible enough to address a wide range of needs and problems. Programs should focus on helping people with HIV and AIDS to stay in their own homes. Housing programs may need to find ways to address underlying causes and related problems such as alcohol and drug services, mental health services, benefits counseling, and public transportation.

Housing programs for persons with HIV and AIDS should include the following:

- Direct financial or in-kind assistance to clients, specifically rental and mortgage assistance.
- Direct services, specifically case management and in-home services.
- A flexible indirect assistance component that provides a pool of funds to address multiple housing concerns such as utility assistance, home improvements and renovations.

### **Lead-Based Paint Hazards**

Lead poisoning is one of the worst environmental threats to children in the United States. While anyone exposed to high concentrations of lead can become poisoned, the effects are most pronounced among young children.

All children are at higher risk to suffer lead poisoning than adults, but children under age six are even more vulnerable because their nervous systems are still developing. At high levels, lead poisoning can cause convulsions, coma and even death. Such severe cases of lead poisoning are now extremely rare, but do still occur. At lower levels, observed adverse health effects from lead poisoning in young children include reduced intelligence, reading and learning disabilities impaired hearing and slowed growth.

Since the 1970s, restrictions on the use of lead have limited the amount of lead being released into the environment. As a result, national blood lead levels for children under the age of six declined by 75% over the 1980s and dropped another 29% through the early 1990s. Despite the decline in blood-lead levels over the past decade, as many as 900,000 children in the United States still have blood lead levels above 10µg/dL (micrograms of lead per deciliter of whole blood). These levels are unacceptable according to the Centers for Disease Control and Prevention (CDC) which lowered blood lead intervention levels for young children from 25µg/dL to 10µg/dL in 1991. Many of these lead-poisoned children live in low-income families and in old homes with heavy concentrations of lead-based paint. The CDC identified the two most important remaining sources of lead hazards to be deteriorated lead-based paint in housing built before 1978 and urban soil and dust contaminated by past emissions of leaded gasoline.

The national goal for blood lead levels among children ages six months to five years is to limit elevations above 15µg/dL to no more than 300,000 per year and to entirely eliminate elevations above 25µg/dL.<sup>23</sup>

### **Housing with Lead-Based Paint Hazards**

According to HUD, lead paint is typically found in homes that were constructed prior to 1978. Since 27% of the housing inventory in the County outside of the City was built prior to 1980, the probability of finding lead paint in existing residential units is very high.

The following table provides estimates of the number of occupied housing units (renter and owner) that are suspected of containing lead based paint.

More than one in three renter units (38%) located in the County outside of the City are suspected of containing lead based paint. The incidence among owner units is closer to one in four units (27%).

The findings listed below are reflective of the data analysis conducted as part of the Housing and Homeless Needs Assessment for Cumberland County outside of Fayetteville. These findings will serve as the basis for developing priorities and implementation strategies for the County's federal entitlement program activities.

Large families were the smallest household type (by number) among extremely low income renters but experienced the highest rates of housing problems and cost burden. However, all household types in this income group have significant housing problems with high rates of cost burden and extreme cost burden. Typically, rental assistance is the greatest need among these households, as well as housing rehabilitation of substandard units.

Housing problems ranged from 34% for elderly owners up to 70% for large families. The degree of cost burden ranged from 33% for elderly owners up to 61% for small families. The degree of extreme cost burden ranged from a low of 8% among large families to a high of 26% among all other household types. Similar to other lower income homeowners, housing rehabilitation for these households would be beneficial.

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<sup>23</sup> Westat, Inc. under contract with the U.S. Department of Housing and Urban Development and the Environmental Protection Agency, *Report on the National Survey of Lead-Based Paint In Housing*, (June 1995).

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Hispanic households accounted for 5.9% of total households and 4% of all homeowner households in Cumberland County outside of Fayetteville in 2000. They also represented 4% of all lower income homeowners. However, the rate of housing problems experienced by this ethnic group (71% to 100%) were higher than among black non-Hispanics and white non-Hispanics of similar income levels.

Black non-Hispanic households accounted for 37.5% of total households and 28% of all homeowner households in the County outside of the City in 2000. They represented 35% of all lower income homeowners. Rates of housing problems ranged from 66% to 78% for these households.

Twenty-four percent (24%) of the 5,068 elderly with a disability reported that they had a self-care disability that limited their ability to dress, bath, or get around inside their home without assistance. Forty-six percent (46%) of the elderly with a disability reported that their disability limited their ability to go outside their home alone to shop or visit a doctor's office. Thirteen percent (13%) of all elderly persons were living below the poverty level; 866 (17%) of all elderly persons with a disability had income levels below poverty.

Of the 534 elderly and extra-elderly renter households with incomes below 80% of the MFI, 244 (46%) experienced housing problems in 2000. Of the 1,277 elderly and extra-elderly owner households with incomes below 80% of the MFI, 586 (46%) experienced housing problems.

The 2000 Census reported that there were 139,497 non-institutionalized persons age 5 and over in Cumberland County outside of Fayetteville. Of these, 29,320 (21%) reported a disability. There were 10,127 working age persons between the ages of 16 to 64 with a disability who were unemployed. 4,742 (16%) of the 29,320 disabled persons were living below poverty.

More than one in three renter units (38%) located in the County outside of the City are suspected of containing lead based paint. The incidence among owner units is closer to one in four units (27%). HUD's final rule on lead-based paint, effective September 15, 2000, has not significantly impacted the County's housing programs. There has not been a trend of increasing rehabilitation costs required per unit for rehabilitation activities due to lead-based pain. The County will continue to comply with HUD regulations concerning lead-based paint testing, abatement, and education.

While the prevalence of lead-based paint hazards varies by region, housing unit age and household income among other factors,<sup>24</sup> the national percentages of lead-based paint in

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<sup>24</sup> David E. Jacobs, Robert P. Clickner, Joey Y. Zhou, Susan M. Viet, David A. Marker, John W. Rogers, Darryl C. Zeldin, Pamela Broene and Warren Friedman, "The Prevalence of Lead-Based Paint Hazards in U.S. Housing," *Environmental Health Perspectives*, Volume 110, Number 10, (October 2002).

occupied housing were applied to the number of housing units in Cumberland County to estimate the percentage of housing units that could contain hazards.<sup>25</sup>

<b>Estimated Incidence of Lead-Based Paint in Housing Stock, 2009 (Cumberland County Outside of Fayetteville)</b>						
<b>Year Built</b>	<b>Owner Units (Estimated)</b>			<b>Renter Units (estimated)</b>		
	<b>Total Units</b>	<b>% with LBP</b>	<b>Units with LBP</b>	<b>Total Units</b>	<b>% with LBP</b>	<b>Units with LBP</b>
1980-Present	34,820	x 0 =	0	25,590	x 0 =	0
1960-1979	26,150	x 0.62 =	16,213	16,265	x 0.62 =	10,084
1940-1959	6,295	x 0.80 =	5,036	5,245	x 0.80 =	4,196
Before 1940	1,330	x 0.90 =	1,197	1,820	x 0.90 =	1,638
<b>Total</b>	<b>68,595</b>		<b>22,446</b>	<b>48,920</b>		<b>15,918</b>

Based on these estimates, as many as 38,364 occupied housing units in Cumberland County could contain lead-based paint. Of these units with lead-based paint, 22,446 are owner-occupied and 15,918 are occupied by renters. Up to 5,276 houses may have deteriorated lead-based paint.

<b>State of North Carolina Lead Poisoning Statistics – 1998-2006<sup>26</sup></b>										
<b>Year</b>	<b>Population &lt; 72 months old</b>	<b>Number of Children Tested</b>	<b>Total Confirmed Children</b>	<b>Confirmed EBLs as % of Children Tested</b>	<b>Number of Confirmed Children By Highest Blood Lead Level (µg/dL) at or Following Confirmation</b>					
					<b>10-14 µg/dL</b>	<b>15-19 µg/dL</b>	<b>20-24 µg/dL</b>	<b>25-44 µg/dL</b>	<b>45-69 µg/dL</b>	<b>&gt;=70 µg/dL</b>
1998	636,257	96,729	1,067	1.10%	641	257	78	83	8	0
1999	641,514	107,096	1,039	0.97%	628	235	100	72	4	0
2000	647,879	116,947	1,261	1.08%	772	287	108	83	8	3
2001	651,034	121,940	995	0.82%	616	215	79	78	5	2
2002	651,034	122,501	921	0.75%	584	196	75	62	3	1
2003	651,034	122,911	908	0.74%	611	187	57	47	5	1
2004	651,034	123,586	688	0.56%	452	146	47	38	5	0
2005	651,034	129,290	595	0.46%	375	121	45	47	7	0
2006	651,034	136,409	504	0.37%	328	101	38	28	8	1

<sup>25</sup> For example, the national study conducted in 2000 indicated that 50% of housing units built before 1980 contained lead-based paint. By multiplying the number of housing units in Cumberland County built before 1980 by 50% provides an estimate of the number of housing units in Cumberland County that contain lead-based paint (24,245 x 50% = 12,058).

<sup>26</sup> North Carolina Lead Data and Statistics, Centers for Disease Control and Prevention, <http://www.cdc.gov/nceh/lead/data/state/ncdata.htm>.



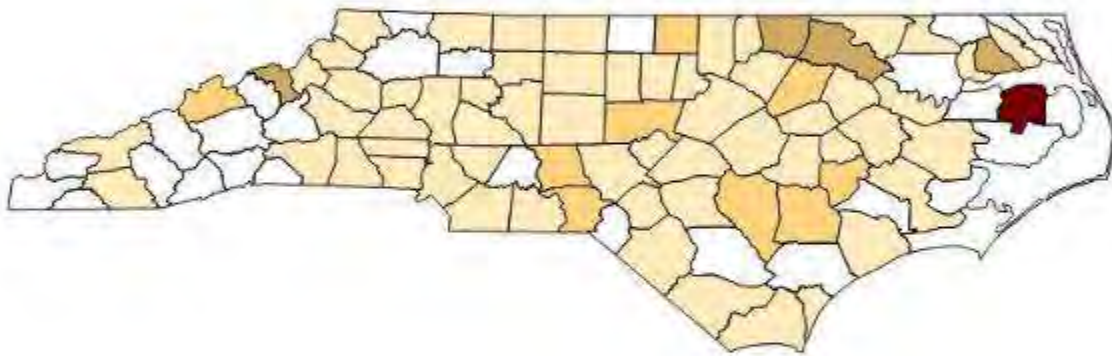
According to the table above, the total number of confirmed children with lead poisoning has decreased by more than 50%. This is a direct result of increased testing and elimination of lead-based paint hazards. The map below shows the percentage of lead poisoning cases across the State of North Carolina. Cumberland County falls within the 0.1 – 0.6% range.



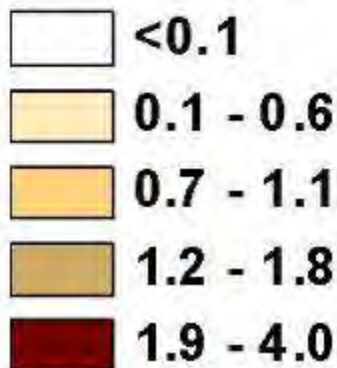
## Lead Poisoning Prevention Branch



### Case Rate\* by County North Carolina, 2006



#### Legend (%)



\*Case Rate = # children <6 years old with confirmed EBLL  $\geq 10$   $\mu\text{g/dL}$  divided by # children <6 years old tested for BLL

#### Lead-Based Paint Hazard Reduction

The federal Residential Lead-Based Paint Hazard Reduction Act of 1992 (Title X of the Housing and Community Development Act of 1992) amends the Lead-Based Paint

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Poisoning Prevention Act of 1971, which is the law covering lead-based paint in federally funded housing. These laws and subsequent regulations issued by the U.S. Department of Housing and Urban Development protect young children from lead-based paint hazards in housing that is financially assisted or being sold by the federal government.

In Cumberland County, evaluations of the prevalence of lead-based paint in housing units are conducted by project and lead abatement is prescribed for all dwellings targeted for rehabilitation. In addition, all assisted housing tenants are informed of the hazards of lead-based paint. The Cumberland County Health Department provides ongoing consultation to local housing staff.

## **Barriers to Affordable Housing**

### **Fayetteville – Cumberland County Human Relations Department**

The Fayetteville - Cumberland County Human Relations Department was established in 2003. Prior to the establishment of the joint Department, the Department was operated by the City alone. Cumberland County had a Fair Housing Officer who was responsible for promoting equal opportunity and fair treatment among all residents. The Human Relations Department provides the following services and programs.

Staff support for the Human Relations Commission.

Develops and fosters program and activities aimed at addressing and improving race and human relations.

Provides training on equal opportunity and human relations matters.

Administers the City's Fair Housing Ordinance.

The Department also is the initial point of contact for any and all complaints relating to housing issues in Cumberland County. Staff records complaints and make referrals to appropriate agencies for assistance. When it is determined that a person has a complaint that falls within the scope of the fair housing laws, staff work with the individual to resolve the issue.

**Fort Bragg and Pope Air Force Base**

Both military bases are authorized to enforce the Fair Housing Act on behalf of military personnel living off base. Staffs at the military bases are able to conduct investigations, negotiations, and mediations. If they are unable to resolve a complaint, they may elect to have the claims and issues asserted in the reasonable grounds determination decided in a civil action, which they can commence and enforce. Fort Bragg uses an Armed Forces Military Board while at Pope Air Base; the Wing Commander is the responsible party. Both military bases report that over the last few years they have not received any fair housing complaints. Generally, they are involved in resolving landlord tenant disputes.

***Complaints Filed With HUD***

HUD's Office of Fair Housing and Equal Opportunity [FHEO] receives complaints by households regarding alleged violations of the Fair Housing Act. The table below describes the 14 complaints filed against the City of Fayetteville and Cumberland County from January 1, 2005 through December 31, 2009.

The table identifies the basis for the complaint and the status as a member of the protected classes under the Fair Housing Laws, a brief description, as provided by HUD, of the complaint, and the case's resolution.

Half of the complaints involved race, nearly half involved a physical disability, and two involved sex (gender) with one of these addressing harassment

In 10 of the complaints, HUD found "No Cause." Two were successfully mediated, and one of the cases was withdrawn without resolution...

Half of the complaints involved rental properties, three for sales, three for disabilities and reasonable accommodations. One of the cases even cited discriminatory advertising.

Because the information provided by HUD is brief and generalized, it is difficult to draw conclusions from the data, but can be considered in combination with the additional information gathered highlighting any areas of concern.

**HUD Fair Housing Complaints - 2005 through 2009**

<b>Basis</b>	<b>Issue</b>	<b>Location</b>	<b>Disposition</b>
<b>2005</b>			
<b>Race</b>	300 – Discriminatory refusal to sell	Fayetteville	No Cause Determination
<b>Race</b>	381 – Discrimination in terms/conditions/privileges relating to sale	Fayetteville	No Cause Determination
<b>Disability</b>	382 – Discrimination in terms/conditions/privileges relating to rental	Fayetteville	No Cause Determination
<b>Disability</b>	510 – Failure to make reasonable accommodation	Fayetteville	Conciliation/Settlement Successful
<b>2006</b>			
<b>Race, Disability</b>	382 – Discrimination in terms/conditions/privileges relating to rental	Cumberland	Conciliation/Settlement Successful
<b>2007</b>			
<b>Sex, Harrassment</b>	382 – Discrimination in terms/conditions/privileges relating to rental	Fayetteville	No Cause Determination
<b>2008</b>			
<b>Sex</b>	322 – Discriminatory advertisement – rental	Fayetteville	No Cause Determination
	382 – Discrimination in terms/conditions/privileges relating to rental		No Cause Determination
	450 – Discriminatory acts under Section 818 (coercion, etc.)		No Cause Determination
<b>Disability</b>	381 – Discrimination in terms/conditions/privileges relating to sale	Fayetteville	Open Investigation
	472 – Failure to provide accessible and usable public and common user areas		
<b>Race</b>	322 – Discriminatory advertisement – rental	Fayetteville	No Cause Determination
<b>Race</b>	310 – Discriminatory refusal to rent	Fayetteville	No Cause Determination
<b>Disability</b>	310 – Discriminatory refusal to rent	Fayetteville	Complaint Withdrawn by Complainant Without Resolution
<b>2009</b>			
<b>Race</b>	380 – Discriminatory terms, conditions, privileges, or services and facilities	Fayetteville	Open Investigation
<b>Race</b>	380 – Discriminatory terms, conditions, privileges, or services and facilities	Fayetteville	Open Investigation
<b>Disability</b>	510 – Failure to make reasonable accommodation	Fayetteville	Open Investigation

Source: U.S. Department of Housing and Urban Development

HUD reports that nationwide, 70% of fair housing complaints are related to rental transactions. While race is still the primary reason why people are discriminated against, HUD finds that more

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complaints are being filed on the basis of disability. HUD notes that if current trends continue, fair housing complaints based on disability will exceed those based on race.

The review of complaints shows that the number of complaints in violation of the Fair Housing Act is limited. A lack of filed complaints does not, however, indicate lack of a problem. HUD estimates that only a little more than 1% of households experiencing housing discrimination file complaints. Households do not file complaints because they are not aware of how to go about filing a complaint or where to go. However, there are households aware that they are being discriminated against, but they are not aware that the discrimination is against the law. Finally, most households are more interested in achieving their first priority of finding decent housing and prefer to avoid going through the process of filing a complaint and following it up.

Housing discrimination is often subtle. While not specifically cited as problems in Cumberland County nor explicitly apparent in the complaints that have been filed, the following issues impact the members of the protected classes that may result in impediments to housing choice.

Discriminatory practices against minority home seekers often include rude or hostile treatment, withheld information about housing availability, differing terms and conditions of rental or sale, and lack of follow-up.

A 2003 study by the McAuley Institute's National Women and Housing Task Force [NWHTF], found that "...[W]omen of color bear the brunt of anti-family sentiments among landlords and realtors," since 80% of black and Hispanic women heads of household have children, compared with 60% of all female headed household nationwide.

Women, whose source of income includes child support and alimony, are viewed as less reliable and creditworthy than a full-time salary, putting them at higher risk of discrimination.

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Among the disabled, it has been found that housing discrimination is exacerbated by a widespread lack of understanding of the reasonable accommodation standards of the Fair Housing Act.

*How Much Do We Know?* published by HUD in 2002, reports that only half of the public could correctly identify as unlawful six or more of eight scenarios describing illegal fair housing conduct. Less than one-fourth of the public knows the law in two or fewer of the eight cases. In addition, 14% of the adult population claims to have experienced some form of housing discrimination at one point or another in their lives. Of those who thought they had been discriminated against, 83% indicate they had done nothing about it, while 17% say they had done something. Among those with a high level of awareness of fair housing laws, however, 22% had done something compared with only eight% of those with a low level of awareness.

Hence, people with more knowledge are over two-and-one-half times as likely to do something as those with less knowledge. There is than, some association between knowledge of the law, the discernment of discrimination, and attempts to do something about it. Therefore, education, information, and referral regarding fair housing issues are critical to equip persons with the ability to reduce impediments. The availability of assistance locally to ensure follow-up is also important.

***Complaints Filed With the North Carolina Human Relations Commission***

The North Carolina Human Relations Commission (through its Fair Housing Unit) is responsible for enforcing the North Carolina State Fair Housing Act. The Commission is substantially equivalent with HUD's Division of Fair Housing. The Commission

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investigates housing discrimination complaints and attempts to conciliate the dispute. If the parties are unable to conciliate the complaint and the evidence demonstrates that discrimination has occurred, the Commission enforces the Fair Housing Act through court action or an administrative hearing.

Parties are encouraged to resolve fair housing complaints on mutually acceptable terms, including compensation to the complainants for emotional distress, humiliation, embarrassment, and expenses resulting from a discriminatory housing practice. The Commission also incorporates provisions to redress past discrimination and to ensure future compliance with the housing laws, including modification of the housing practices that led to the complaint, fair housing training, and the posting of fair housing informational posters. When the Commission is unable to conciliate a complaint, it makes a determination of “no reasonable cause” or “reasonable cause” to believe a violation of the Fair Housing Act occurred. If the Commission finds that reasonable grounds exist, the complainants may request a right-to-sue letter to litigate the case on their own behalf, or they may opt for the Commission to file and try the case before an administrative law judge or before a state Superior Court jury.

The table below shows fair housing complaints received by the North Carolina Fair Housing Commission from January 1, 2008 to December 31, 2009 for alleged violations of the Fair Housing Act in Cumberland County. The information was provided by the complainant’s status as a member of the protected classes. The information does not



describe the issue that was charged. The North Carolina Housing Commission did not identify where the complainant resided, so it is not possible to distinguish between those in the City from those outside. Table 3-1 shows nine complaints were received during 2008 and 2009.

No cause has been found for five of the cases and four still remain open pending investigation.

Five complaints involved race, two cited handicap issues, two cited national origin, and one complaint regarded religion and another cited sex (gender).

**North Carolina Fair Housing Commission Fair Housing Complaints – 2008 - 2009**

Basis	Decision
<b>2008</b>	
Religion, National Origin, Race	Closed
National Origin	Closed
Sex	Closed
Handicap	Open
Race	Open
Race	Closed – No Cause
Handicap	Closed
<b>2009</b>	
Race	Open
Race	Open

*Source: North Carolina Human Relations Commission*

***Existence of Fair Housing Discrimination Suit***

No Fair Housing discrimination suits have been filed or are pending litigation in Cumberland County or the City of Fayetteville.

***Determination of Unlawful Segregation***

There has been no determination of unlawful segregation or other housing discrimination by a court or a finding of noncompliance by HUD under Title VI of the Civil Rights Act of 1964 or Section 504 of the Rehabilitation Act of 1973 in the City of Fayetteville or in Cumberland County. Additionally, the Secretary has not issued a charge under the Fair Housing Act regarding assisted housing in Cumberland County or the City of Fayetteville.

### Home Mortgage Lending Practices

Historically, barriers to Fair Housing Choice have included the practices of the lending community that have denied mortgages to minorities, especially African Americans, at a substantially higher rate than Caucasians. An analysis of Home Mortgage Disposition Act [HMDA] from 2005 through 2008 reveals this trend exists in Cumberland County and the City of Fayetteville.

Since 2005, less than 50% of all African Americans were able to originate a housing loan/mortgage while whites have had closer to 60% of all applications result in loan origination. The table below gives a detailed loan application origination/denial rate by racial group.

**Table: HMDA Data 2005-2008 by Race**

Mortgage/Loan Applications by Race		Apps Received	Loans Originated	Origination Percentage	Apps Approved - Not Accepted	Apps Denied	Denial Percentage	Apps Withdrawn	Files Closed For Incompleteness
2005 Totals	American Indian/Alaska Native	337	128	38.0%	33	120	35.6%	43	13
	Asian	344	215	62.5%	25	54	15.7%	40	10
	Black/African American	8,404	3,554	42.3%	703	2,902	34.5%	994	251
	Nat. Hawaiian/Other Pac. Islander	139	60	43.2%	13	49	35.3%	13	4
	White	12,712	7,524	59.2%	820	2,795	22.0%	1,200	373
	2 or More Minority Races	34	24	70.6%	1	8	23.5%	1	0
	Joint (White/Minority)	454	277	61.0%	20	115	25.3%	34	8
	Race Not Available	5,752	1,640	28.5%	362	2,186	38.0%	945	618
	Hispanic	1,359	704	51.8%	102	381	28.0%	130	42
	<b>Totals</b>	<b>28,176</b>	<b>13,422</b>	<b>47.6%</b>	<b>1,977</b>	<b>8,229</b>	<b>29.2%</b>	<b>3,270</b>	<b>1,277</b>
2006 Totals	American Indian/Alaska Native	317	119	37.5%	23	134	42.3%	30	9
	Asian	418	278	66.5%	26	79	18.9%	24	10
	Black/African American	8,127	3,738	46.0%	643	2,893	35.6%	899	235
	Nat. Hawaiian/Other Pac. Islander	171	78	45.6%	21	57	33.3%	6	9
	White	12,566	7,501	59.7%	913	2,656	21.1%	1,145	278
	2 or More Minority Races	46	16	34.8%	0	25	54.3%	5	0
	Joint (White/Minority)	476	233	48.9%	36	137	28.8%	62	8
	Race Not Available	5,674	2,109	37.2%	437	1,989	35.1%	869	361

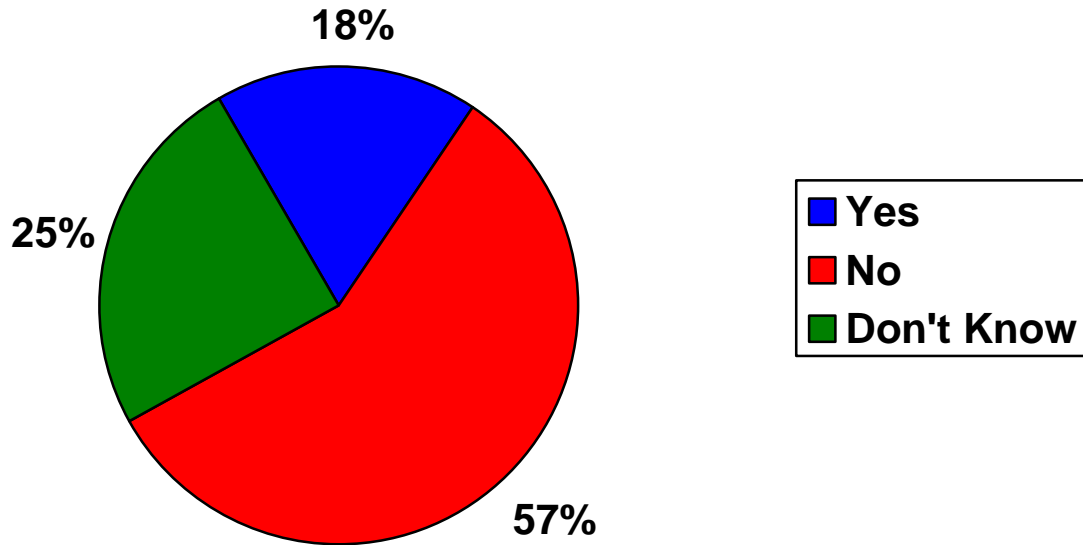
	<b>Hispanic</b>	1,529	872	57.0%	126	352	23.0%	129	38
	<b>Totals</b>	<b>27,795</b>	<b>14,072</b>	<b>50.6%</b>	<b>2,099</b>	<b>7,970</b>	<b>28.7%</b>	<b>3,040</b>	<b>910</b>
<b>2007 Totals</b>	<b>American Indian/Alaska Native</b>	267	130	48.7%	25	92	34.5%	19	1
	<b>Asian</b>	361	212	58.7%	32	70	19.4%	34	13
	<b>Black/African American</b>	7,717	3,243	42.0%	640	2,812	36.4%	871	151
	<b>Nat. Hawaiian/Other Pac. Islander</b>	147	60	40.8%	17	57	38.8%	13	0
	<b>White</b>	11,476	6,838	59.6%	883	2,468	21.5%	1,020	267
	<b>2 or More Minority Races</b>	56	23	41.1%	5	19	33.9%	8	1
	<b>Joint (White/Minority)</b>	468	228	48.7%	33	154	32.9%	45	8
	<b>Race Not Available</b>	4,435	1,502	33.9%	432	1,571	35.4%	766	164
	<b>Hispanic</b>	1,458	751	51.5%	125	434	29.8%	129	19
	<b>Totals</b>	<b>24,927</b>	<b>12,236</b>	<b>49.1%</b>	<b>2,067</b>	<b>7,243</b>	<b>29.1%</b>	<b>2,776</b>	<b>605</b>
<b>2008 Totals</b>	<b>American Indian/Alaska Native</b>	224	98	43.8%	11	95	42.4%	17	2
	<b>Asian</b>	308	167	54.2%	22	70	22.7%	46	9
	<b>Black/African American</b>	5,299	2,385	45.0%	371	1,924	36.3%	533	87
	<b>Nat. Hawaiian/Other Pac. Islander</b>	134	65	48.5%	12	40	29.9%	16	3
	<b>White</b>	9,946	6,134	61.7%	528	2,162	21.7%	956	164
	<b>2 or More Minority Races</b>	43	17	39.5%	1	20	46.5%	5	1
	<b>Joint (White/Minority)</b>	359	186	51.8%	25	91	25.3%	47	12
	<b>Race Not Available</b>	2,798	978	35.0%	198	1,113	39.8%	417	90
	<b>Hispanic</b>	1,220	665	54.5%	69	336	27.5%	140	10
	<b>Totals</b>	<b>19,111</b>	<b>10,030</b>	<b>52.5%</b>	<b>1,168</b>	<b>5,515</b>	<b>28.9%</b>	<b>2,037</b>	<b>368</b>

Even African Americans in the 120% and high Area Median Income since 2005 haven't had more than 50% of loan applications approved. However, Asians have experienced good loan origination rates with low denial rates.

While there is a clear trend present, it is not, however, possible to determine if the lending sector could be considered an impediment based on HMDA data alone. It is unclear if these minority applicants were denied for authentic economic reasons and merits further study by Cumberland County and the City of Fayetteville.

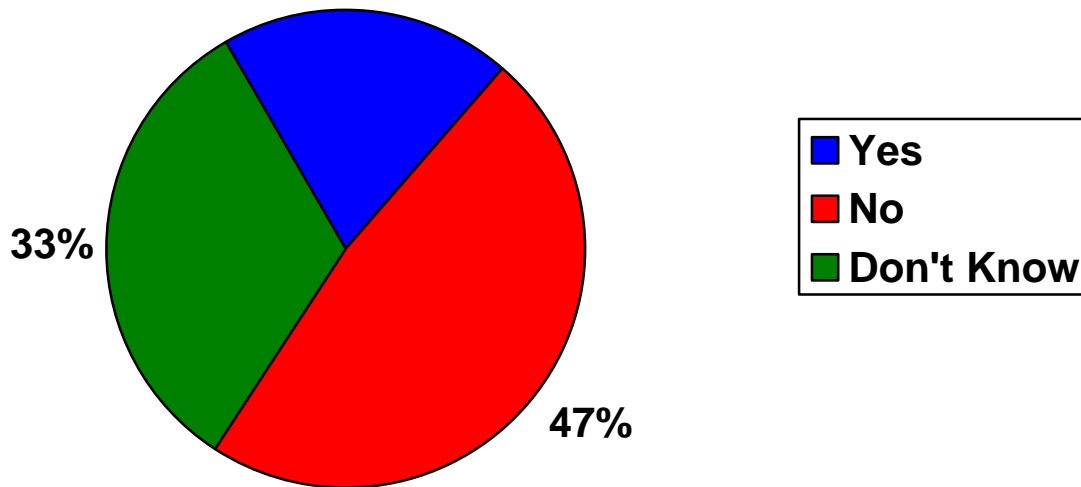
The City of Fayetteville and Cumberland County conducted a Fair Housing Survey over 30 days in November and December 2009. The survey was made available to citizens at each of the local libraries and the County Regional Centers. An online version was also available. While the HMDA data seems to reflect a trend in potential discrimination towards minorities, particularly African Americans, 57% of the City of Fayetteville and Cumberland County residents who participated in the Fair Housing Survey stated that they were not aware of any problems faced by minorities in securing a mortgage loan as shown in the following pie chart.

**Are You Aware of Problems Faced by Minorities  
in Securing a Mortgage Loan?**



Of the same sample surveyed, more than 47% stated they didn't see any "Predatory" practices amongst the mortgage or underwriting practices.

**Have You or Someone You Know Experienced  
"Predatory" Practices in Mortgage Lending or  
Underwriting?**



However, further research and testing into the mortgage lending and underwriting practices is required to determine if any impediments to Furthering Fair Housing Choice exist. The County and city can initiate a variety of monitoring activities that provide information about the results of policies, practices, and procedures used within the housing industry.

Activities can range from reviewing and analyzing data available to the general public, such as HMDA data, to conducting carefully designed systematic fair housing audits to determine the extent of discriminatory practices (if any) in a particular segment of the housing market.

***Home Appraisal Practices***

There was not any evidence of discriminatory practices by home appraisers regarding properties Cumberland County or the City of Fayetteville.

**Impediments to Fair Housing**

The most substantial impediments to Fair Housing Choice in Cumberland County and the City of Fayetteville result from a combination of both the private and public sector. Transportation issues, lack of affordable rental housing, and an overall lack of general education about citizens' rights as it relates to Fair Housing Choice and its laws, are the overarching impediments.

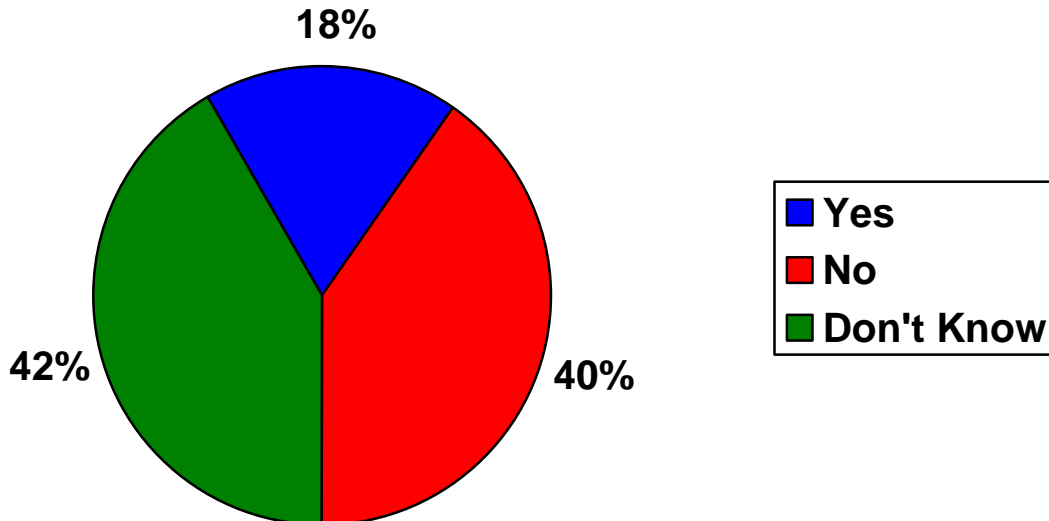
## ***Impediments and Proposed Fair Housing Action Plan***

### **Impediment #1 – Accessibility to Effective Public Transportation**

Public transportation plays a role in expanding the supply of affordable housing to groups in need and others protected under fair housing laws. At issue is the ease with which a citizen can travel from home to work if he/she lives in a lower income area or an area of minority concentration. If public transportation from a lower cost neighborhood is inefficient in providing access to employment centers, that neighborhood becomes inaccessible to those without dependable means of transportation, particularly very low-income residents, the elderly, and persons with disabilities.

While the City of Fayetteville does provide public transportation options through its Fayetteville Area System of Transit (FAST), it does not have adequate service routes to all areas of the City or into areas outside of Fayetteville to the rest of Cumberland County; has limited hours of operation which does not provide assistance for those working 2<sup>nd</sup> and 3<sup>rd</sup> shift jobs or on weekends (especially Sunday), and the length of time it takes a citizen to utilize the current bus routes can be quite lengthy according to rider feedback.

### **Does FAST Offer Easy Access to Cumberland County & Fayetteville Employers?**



### ***Recommendation***

The City of Fayetteville conducted a Transit Development Plan (TDP) in March 2009. In order to address the issues raised in the TDP and this *Analysis*, the City should proceed to implement the recommendations and begin to expand FAST services, routes and operating hours, to include Sunday and late evening operations.

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Cumberland County lacks any form of Public Transportation system aside from the few routes operated through FAST to Fort Bragg and Hope Mills. In order to achieve true Fair Housing Choice, the County should conduct a TDP of its own and look into either assisting the City of Fayetteville expand FAST's services into the County or develop its own transit system.

### **Impediment #2 - Expanding Affordable Housing Choices**

Although Cumberland County has relatively low-cost housing, not all groups benefit. Much of the housing for sale, even at the lower end, is priced beyond the means of lower-income families. While rental housing is less expensive, the majority of multi-family housing consists of smaller one- and two- bedroom units.

Historically, the region has had a sufficient stock of single-family home rentals, but where larger households have difficulties is locating housing with three or more bedrooms. The cost to rent these larger single family homes can be expected to increase beyond the reach of many low-income minority households. In fact, according to the 2008 Census Estimates, 48% of all renters pay 30% or more of their incomes on rent alone.

Moreover, demographic data show that minority families on average have lower per capita income and larger household sizes in nearly all communities. These families find themselves in a highly competitive market for the few larger rental units available. Poverty rates for single females with children are high across the county.

There is insufficient financing to develop the amount of affordable housing required to address the needs of lower income households as evidenced by the waiting lists for assisted housing, public housing and Section 8 Rental Assistance Program.

#### ***Recommendation***

While both the City and County have taken recent actions to increase the supply of affordable housing, further steps are needed to develop a viable affordable housing strategy together with effective implementing policies to include more subsidized housing. Continuing to utilize HUD grants to further fund new and existing housing development and rehabilitation projects, especially affordable rental units, is highly recommended for both the City and County.

Another method to remove this impediment would be the study and potential use of inclusionary zoning and density bonuses. Researching successful efforts made in other jurisdictions across would be recommended.

### **Impediment #3 – Lack of Public Education/NIMBYism**

The current amount of Fair Housing education classes, workshops, informational materials and programs is limited within both the County and City. Public opposition to affordable rental and for-sale housing suggests that citizens misunderstand the potential benefits.

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In fact, in the Fair Housing Survey, 58% of all respondents said they were not familiar with the Fair Housing laws. When asked if they knew how to file a Fair Housing report in Cumberland County and the City of Fayetteville, 77% did not know how. This shows a lack of education in place and needs to be addressed before true Fair Housing Choice can exist in the City and County.

***Recommendation***

While the Fayetteville-Cumberland Human Relations Department already has promotional and information materials readily available, to remove this impediment, they should further conduct an education and outreach campaign targeting housing providers and consumers using multiple media vehicles in English, Spanish, and other major languages common to Cumberland County and the City of Fayetteville residents. The Fayetteville-Cumberland Human Relations Department should employ enforcement testing and follow-up investigation of fair housing complaints in a timely manner. If litigated successfully, results should be published in local media to strengthen public knowledge of Fair Housing Law.

**Impediment #4 - Mortgage Lending**

Equal opportunity to credit, or fair lending, is one of the cornerstones of fair housing. It is a step in purchasing a home where discrimination can prevent a qualified buyer from successfully obtaining a home. Lenders continue to more frequently deny minority applicants than White applicants, even when controlling for income. Upper income Black applicants, those earning over 120% of median income, were more likely to be denied home loans than White applicants earning between 50% and 79% of median income.

Unfortunately, origination and denial rates in home lending only tell half the story. Predatory lending, defined by HUD and the U.S. Department of the Treasury as lending involving deception or fraud, manipulation of borrowers through aggressive sales tactics, or taking unfair advantage of a borrower's lack of understanding about loan terms, threatens low-income and minority loan applicants. These practices are often combined with loan terms that, alone or in combination, are abusive or make the borrower more vulnerable to abusive practices.

With an origination rate of less than 50%, the HMDA data suggests discriminatory mortgage lending practices. The data indicates targeting of sub-prime loans towards minorities and other predatory lending practices.

***Recommendation***

The HMDA data indicates targeting of sub-prime loans towards minorities and other predatory lending practices. The Fayetteville-Cumberland Human Relations Department, in conjunction with the North Carolina Human Relations Commission, should distribute educational materials on predatory lending to vulnerable groups, including minorities and seniors.



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Further research and testing into the mortgage lending and underwriting practices is required to determine if any “predatory” practices limiting Fair Housing Choice exist. The County and City should initiate a variety of monitoring activities that provide information on the results of policies, practices, and procedures used within the housing industry.

Activities can range from reviewing and analyzing data available to the general public, such as HMDA data, to conducting Fair Housing Audits to determine the extent of discriminatory practices (if any) in a particular segment of the housing market, to sending in testers from different racial, ethnic and income-level backgrounds.

Possible penalties for those found “guilty” of predatory lending practices could be enforcement of fines against the person(s) and/or organization involved, getting HUD, the FDIC and FTA involvement in enforcement actions, and seeking to legal actions through class-action/civil lawsuits.

### **Impediment #5 - Land Use and Zoning**

Zoning regulations were examined to determine if the entitlement jurisdiction encourages development and maintenance of affordable housing or imposes barriers to the detriment of affordable housing. Planning tools of interest include inclusionary zoning ordinances and density bonuses.

Land use and zoning regulations are sometimes used to discriminate against people under the guise of preserving “neighborhood character”. Zoning and land use policies relating to occupancy restrictions, family definition, and constraints on group homes for persons with disabilities were reviewed for their effect on fair housing choice. No jurisdiction limits the number of occupants in a dwelling beyond the number allowed by the Uniform Housing Code.

The County and City’s definition of family excludes unrelated groups of more than five persons. State statutes that interpret federal disability law give groups of up to six persons the right to live in residential neighborhoods without conditional or special use permits. Furthermore, Fair Housing Law prohibits discrimination on the basis of familial status.

### ***Recommendation***

Both the City and County need to consider adopting zoning ordinances specifically focusing on reasonable accommodations for persons with disabilities, especially as it relates to housing.

The City already has incorporated a Fair Housing Code into its Code of Ordinances. The County should also adopt a similar code to enforce both private and non-profit housing developers to be held accountable for adhering to Fair Housing laws and regulations.

The County and City should monitor the effectiveness of the policies adopted in the 2030 Growth Vision Plan over the next five years. If they do not appear to be effective in

furthering Fair Housing Choice for its residents, then another potential code both the County and City should consider is inclusionary zoning. Inclusionary zoning promotes fair housing choice by directly allocating a percentage of new housing to low and very low-income residents. Its effect is to distribute lower income residents throughout a city, increasing neighborhood diversity. Larger numbers of affordable units can be realized, funded in part by private investment.

## ***Homeless Assessment***

### **Overview**

The following provides a description of the nature and extent of homelessness in Cumberland County. Data is provided for the County as a whole since homelessness is addressed on a county-wide basis through the Fayetteville / Cumberland County Continuum of Care Planning Council (COCPC). The COCPC is the lead entity for combining the efforts of a diverse group of stakeholders who are committed to ending homelessness in the community by providing homeless men, women and children with coordinated services and housing options.

### **Needs of Sheltered and Unsheltered Homeless**

Section 103 of the Stewart B. McKinney Homeless Assistance Act of 1987 defines “homeless” or “homeless individuals” to include:

- An individual who lacks a fixed, regular, and adequate night-time residence; and
- An individual who has a primary night-time residence that is
- A supervised publicly or privately operated shelter designed to provide temporary living accommodations (including welfare hotels, congregate shelters, and transitional housing for the mentally ill);
- An institution that provides a temporary residence for individuals intended to be institutionalized; or
- A public or private place not designed for, or ordinarily used as, a regular sleeping accommodation for human beings.

The needs of the homeless are divided into Sheltered and Unsheltered Homeless, Persons Threatened with Homelessness and Subpopulations of Homelessness. No specific information is available to quantify the population of persons threatened with homelessness in Fayetteville and Cumberland County. However, certain characteristics describe those most likely to face homelessness.

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People without adequate and stable income will be continually at risk of a housing crisis. The majority of jobs now require moderate- to long-term training. Even entry-level positions are more technical than in previous times with widespread use of computer and telecommunication technology. Service and clerical jobs have replaced lower-skilled manufacturing and production jobs. These jobs often pay wages insufficient to support a family.

- Education and training are important to the labor force to sustain employment in decent paying jobs. The 2006 - 2008 Census Estimates reported that 20,785 persons age 25 and over in the County (12,180 for the City) had not finished high school. Persons without a high school diploma represent 11% of the population age 25 and over. People with no or minimum job skills are at risk of repeated housing crises.
- Children in single parent households are at risk of experiencing a housing crisis if they are poor. Women have historically earned less than men, making children in female-headed households the most vulnerable. The 2006 - 2008 Census Estimates reported 16,375 female-headed households with children younger than 18 years of age in Cumberland County (10,618 residing in the City of Fayetteville). Of these, 7,140 (4,343 in Fayetteville) were living below the poverty level.
- Cost burden, particularly among households whose income is less than 80% of the AMFI, is a factor in analyzing the risk of homelessness. When households pay higher proportions of their incomes for housing, they are forced to sacrifice other basic necessities such as food, clothing, and health care. The 2009 CHAS Data identified a total of 11,515 lower income households (80% AMFI or less) in the City and County that were cost burdened and paying more than 30% of their income on housing costs. Of these, 6,810 (59%) were extremely cost burdened and paid 50% or more of their income for housing.
- Others are at risk of becoming homeless include the following:
  - Persons leaving institutions;
  - Households with incomes less than 30% of the AMFI;
  - Victims of domestic violence;
  - Special needs populations (persons with HIV/AIDS, disabilities, drug and alcohol addiction);
  - People who are doubling-up, which is often identified by overcrowding;
  - Large families who are low income; and

- 
- Residents of rooming houses.

## 10-Year Plan to End Homelessness

Homelessness is a profound social problem. The characteristics of the homeless population in Fayetteville and Cumberland County mirror the multiple facets and special needs of all homeless people in North Carolina and the nation. Addressing the issue of homelessness in the community is a major challenge. Traditionally, the community has addressed these issues individually, whether it's a non-profit providing a place to shower and get a change of clothes, a faith-based group providing meals, private citizens volunteering their time, or through monetary donations. However, there are no simple solutions as the roots of homelessness are constantly changing. In 2008, the Fayetteville and Cumberland County elected bodies appointed a steering committee to develop a unified plan to address this issue.

The development of the 10-year Plan to End Homelessness is the result of a nationwide effort to focus community attention on homelessness. The task at hand was for the community to work cohesively in developing solutions that address the needs of the homeless. A series of public forums and agency interviews were held to gather community input during the planning process. The Plan combines the efforts of a diverse group of stakeholders who are committed to ending homelessness in our community by addressing 10 identified priority areas as listed below:

### **Priority 1: Community Awareness and Education Campaign**

*Goal:* To change the face of homelessness in the community from that of the panhandler on the street to a more sympathetic icon that brings citizens into the support network.

*Objectives:*

- 3) Dispel common myths and misconceptions of the homeless population (emphasis on families and children)
- 4) Garner monetary support and an increased volunteer base to meet the increasing demand for homeless services

### **Priority 2: Lobby Congress for special appropriations to assist homeless veterans (and the homeless population in general)**

*Goal:* To have dedicated funding by Congress for homeless assistance to veterans (and other homeless populations) added to the City and County legislative agenda.

3) *Objectives:*

- 1) Funding earmarks for the increasing number of homeless veterans in Cumberland County.
- 4) Funding earmarks for the overall homeless population in Cumberland County.

### **Priority 3: Identify additional funding sources for local programs**

*Goal:* Increase available funding for local homeless service/housing providers

*Objective:*

- 2) Provide financial stability for local homeless initiatives in order to eliminate potential gaps in services.

**Priority 4: Create a day resource center**

*Goal:* Provide opportunity for homeless to access needed services and avoid duplication of effort.

*Objectives:*

- 4) To relieve the burden on homeless individuals traveling around the city for services.
- 5) Improve collaboration among service providers and avoiding duplication of effort.
- 6) Increase usage of local Homeless Management Information System (HMIS).

**Priority 5: Establish Childcare Subsidy for Homeless Families**

*Goal:* Provide opportunity for homeless families to obtain employment.

*Objective:*

- 2) Provide financial assistance to homeless families to make safe childcare choices in order to seek employment.

**Priority 6: Additional Shelter Space**

*Goal:* Provide additional shelter to eliminate the number of homeless who spend nights on the street.

*Objective:*

- 2) Increase shelter beds and supportive services available for populations identified by the CoC.

**Priority 7: Transportation**

*Goal:* Increase transportation options for the homeless.

*Objective:*

- 2) Provide transportation to enable the homeless to obtain employment, housing and other needed services.

**Priority 8: Family Reunification Program**

*Goal:* To reunite homeless individuals with family in a permanent housing situation.

*Objective:*

- 2) To reunite homeless individuals with family in a permanent housing situation.

**Priority 9: Development of Additional Affordable Housing Options**

*Goals:*

- 4) Provide housing options by creating new permanent housing beds for the homeless (chronic and/or families).
- 5) Increase the percentage of homeless persons remaining in permanent housing over six months.
- 6) Increase the percentage of homeless persons moving from transitional housing to permanent housing.

*Objectives:*

- 3) To provide immediate housing for individuals and families to get them “off the street.”
- 4) Provide the homeless with needed supportive services to remain in permanent housing (such as obtaining employment, education, etc.).

**Priority 10: Outreach Network**

*Goal:*

Expand outreach network to coordinate annual outreach efforts currently being undertaken.

*Objectives:*

- 3) Bring the homeless into the social support system and work with them to address their needs and help them gain self-sufficiency.
- 4) Media and advertising for coordination of efforts.

**Subpopulations in the Region**

While most organizations that make up the members of the Cumberland County CoC serve and represent the interests of all homeless populations, the table below identifies the number of homeless that fall within specific subpopulations in the region, including the seriously mentally ill, substance abusers, veterans, people with HIV/AIDS, victims of domestic violence and youth. Note: The CoC does not have a member organization focuses exclusively certain subpopulations text reworded.

		Sheltered		Unsheltered	Total
		Emergency	Transitional		
Homeless Population	Homeless Individuals	72	6	460	538
	Homeless Families w/ Children	13	44	88	145
	Persons in Homeless Families w/Children	40	176	279	495
	<b>Total Homeless Persons</b>	<b>112</b>	<b>182</b>	<b>739</b>	<b>1033</b>
Homeless Subpopulations	Chronically Homeless	4	2	28	32
	Severely Mentally Ill	1	5	12	18
	Chronic Substance Abuse	2	6	118	126
	Veterans	1	1	51	53
	Persons with HIV/AIDS	0	1	9	10
	Victims of Domestic Violence	11	13	27	51
	Youth (Under 18 years of age)	0	0	0	0
* Sum of homeless individuals and persons in homeless families with children					

This Count—completed in January 2010—showed the number of: Note the data in table 22 is actually from the January 2010 point in time.

- Total homeless people in Cumberland County to be **1033**;

<sup>27</sup> *Cumberland County Continuum of Care 2010 Point-In-Time Count Reporting Form*, North Carolina Coalition to End Homelessness, <http://www.ncceh.org>.

- Homeless people in families to be **495**;
- Homeless individuals to be **538**;
- Homeless veterans to be **53**;
- Homeless people with a history of domestic violence to be **51**; and
- Chronically homeless people to be **32**.

**Existing Resources and Services**

The fundamental components that comprise the Fayetteville/Cumberland County Continuum of Care and its member agencies that provide services to the homeless are described below.

<b>Existing Services<sup>28</sup></b>	
<b>Utility Assistance</b>	
Alms House Outreach Ministry	Community outreach ministry providing counseling and emergency food, clothing and financial assistance for Hope Mills and the southern Cumberland county area.
First Baptist Church	Offers Utility Assistance
Salvation Army	Provides a flexible program of emergency services for food, clothing, medical needs, transportation and financial assistance for needy persons. The organization also coordinates an extensive Christmas relief service and operates temporary shelter for transients and the homeless.
Synder Memorial Baptist Church	Offers Utility Assistance
Consumer Credit Counseling Services	Helps clients to budget money and reduce debt. In acute instances, debt liquidation plans are made.
Cumberland County Association for Indian People	Offers employment counseling, classroom training, adult basic education classes and assistance in locating sources for paying utility bills. Operates a senior center, daycare center and housing locator service. Offers rental assistance if eviction is threatened.
<b>Veterans/Workforce Services</b>	
Employment Securities Commission	Veterans Employment Services

<sup>28</sup> Compiled from the 10-Year Plan to End Homelessness and a Homeless Service Provider Directory provided by the Continuum of Care Planning Council.

Vocational Rehabilitation Services Office	Promotes employment and independence for persons with emotional or physical disabilities. Services include physical and specialist examinations and corrective treatment; vocational evaluation and work adjustment services; vocational training; maintenance and transportation if necessary during training; tools and equipment; job placement and follow-up. Services are for those who have a substantial job handicap caused by a physical or mental condition, and have a favorable prognosis for going to work.
Veterans Administration Hospital	General medical, surgical and short-term psychiatric care for veterans. The Veteran's Administration also operates a program to assist homeless veterans.
Workfirst	Assists families receiving public assistance in becoming self supporting. Services include job training, job search assistance, child care assistance, transportation and work experience.
<b>Housing Assistance</b>	
Green's Shelter for Women	Offers emergency shelter and food assistance
Cumberland Interfaith Hospitality Network Inc.	Provides shelter, food and assistance to homeless families including temporary housing referral, job referral and limited transportation for homeless families.
Fayetteville Metropolitan Housing Authority	provides housing for the elderly, disabled and low-income families. Rent is based on income.
Robin's Meadow Apartments	provides transitional housing for homeless families with children.
Women's Center of Fayetteville	provides women with information on community services, vocational guidance and education. Sponsors support groups, personal growth seminars, health care and survival skills development workshops for women and youth. Provides legal clinic, Adult Basic Education, crafts training and other services to displaced homemakers.
Ashton W. Lilly & Pat Reese Home	Offers emergency shelter and food assistance
Marantha House	Operates three temporary shelters for homeless men and women in need on a space available basis. Helps residents to become self-sufficient.
Department of Social Services	Offers emergency shelter and food assistance
Emergency Management	Offers emergency shelter and food assistance
Temporary Shelter - Cumberland County Social Services	Home for teen boys ages 13 - 16



Fayetteville Urban Ministry	provides services including emergency assistance, Literacy program, Find-a-Friend program, financial assistance and home repair.
<b>Crisis Intervention</b>	
Care Family Violence Center	Provides services to those experiencing physical or mental abuse - crisis intervention, counseling, referral services, re-education and temporary housing for victims
Operation Blessing Crisis Pregnancy Center	Provides confidential counseling and free pregnancy tests
Rape Crisis Center	Provides 24-hour hotline to talk about assault
Save the Babies House of Refuge	Residential maternity home for unwed teenagers and other women in a crisis pregnancy. Offers minors the opportunity to attend public schools, work study programs, vocational training and tutoring.
New Directions Transitional House	
<b>Drug Addiction/Recovery/Health</b>	
Hope Harbor Christian Mission	Recovering substance abuse - men only
Myrover Reese Fellowship Homes Inc.	A residential home for males who are alcoholics or chemically dependent.
The Oxford House - Elder	shared living for substance abusers for men.
The Oxford House - Haymont	shared living for substance abusers for men.
Stedman Recovery House	Offers emergency shelter and food assistance
The Oxford House - Sandlewood	shared living for substance abusers for men.
The Oxford House - Stedman	shared living for substance abusers for men.
Cumberland County Health Department	works to maintain the health of county residents through various programs and clinics.
Cumberland County Mental Health	provides comprehensive treatment and case management for county residents.
The Oxford House - Lyon Road	shared living for substance abusers for women.
Wade Family Medical Center	Provides family practice medical services. Fees based on family income, according to Department of Health and Human Services guidelines.
Better Health of Cumberland County	Provides assistance to low income individuals with health related emergencies. Services include a direct aid program which provides financial assistance for life-sustaining prescription drugs, medical appliances, vision exams and eyeglasses, supplies and transportation to medical centers and other medical services.

Cape Fear Valley Health System	provides general medical care, emergency medical, chemotherapy and other health services.
The Care Clinic	Provides free basic primary healthcare for the uninsured who have limited resources
<b>Meal/Food Assistance</b>	
Abney Chapel Community Service Center	Saturdays and Sundays at 1:30 pm also operates a food pantry and clothes closet.
City Rescue Mission	temporary shelter, food, and clothing for men in need. The mission also provides help for residents in locating employment.
Evans AME Church	Thursdays, 10 a.m. - 12 p.m.
Hands That Help Ministry	Serves breakfast and lunch Monday - Friday
In Jesus' Name Ministry	Serves Monday, Tuesday and Sunday
United Way	Offers emergency shelter and food assistance
Open Arms Community Church	Serve meals Monday - Saturday 10 a.m. - 2 p.m.
Saint Joseph's Episcopal Church Breakfast Program	Provides free breakfast to the poor and homeless.
Praise Fellowship Church of God	Provides non-perishable food items & clothing on Thursdays
Clifford Christian Center	Offers emergency shelter and food assistance
Catholic Social Ministries	provides family, personal, and marriage counseling, emergency assistance, a food pantry and baby clothes closet.
The Salvation Army	Provides a flexible program of emergency services for food, clothing, medical needs, transportation and financial assistance for needy persons. The organization also coordinates an extensive Christmas relief service and operates temporary shelter for transients and the homeless.
Fayetteville Area Operation In As Much	Serve the homeless and struggling of our community with a hot nutritious breakfast. Runs in-house training programs to gain tools for employment.
Second Harvest Food Bank	Established in 1982 and is an affiliate of Feeding America. The Food Bank's primary service area includes Bladen, Cumberland, Duplin, Harnett, Hoke, Robeson, and Sampson counties. The Food Bank provides nutritious food to those at risk of hunger through a network of over 200 non-profit members. There are over 200,000 individuals or 18% at risk of hunger within the 7 counties our partner agencies call home.



## Homeless Facilities

The following housing projects and housing assistance programs were current in place or under development at the time of this plan.

Facility or Resource			2009 Year-Round Units/Beds			2009 All Beds	
			Family Units	Family Beds	Individual Beds	Year-Round	Seasonal
Emergency Shelters	Care Family Violence Center		3	9	5	14	0
	City Rescue Mission		0	0	6	6	0
	Cumberland IHN		4	14	0	14	0
	Green's Shelter for Women		0	0	10	10	0
	Salvation Army		2	8	48	56	0
	Gospel Services Benevolent Society		0	0	21	21	0
	Total		9	31	90	121	0
Transitional Housing	Cumberland County Comm. Dev.		12	32	0	32	0
	Cumberland IHN		20	8	0	80	0
	Lisa House of Care		0	0	5	5	0
	Salvation Army (Step Up)		0	0	6	6	0
	Salvation Army (Care Transitional)		14	33	0	33	0
	Save the Babies House of Refuge		0	0	10	10	0
	Total		46	77	21	98	0
Permanent Housing	Current Inventory	Cumberland IHN (Leah)	5	15	0	15	0
		Cumberland IHN (Cedric)	0	0	0	0	0
		Cumberland IHN (Kincaide 1)	2	8	0	8	0
		Cumberland IHN (Kincaide 2)	0	0	0	0	0
		Salvation Army (Bonanza)	0	0	0	0	0
		Total	7	23	0	23	0
		Under Development					
	Total	0	0	0	0	0	

## Continuum of Care Gaps Analysis

The Continuum of Care Planning Council conducts an annual point-in-time survey in January of each year (as prescribed by HUD). The point-in-time survey asks service providers for the actual number of people in emergency shelter, transitional housing, and permanent housing with support services. It also asked the number of persons by sub-populations served on the day of the survey. The Continuum of Care Committee cautions that the results are from just one day, and does not represent the actual need in the community, which can often vary significantly day to day. However, analysis of the

<sup>29</sup> *Cumberland County Continuum of Care 2009 electronic Housing Inventory Chart*, North Carolina Coalition to End Homelessness, <http://www.ncceh.org>.

survey results assists the CoC in assessing gaps in the current inventory. The following tables show the results of the most recent Gaps Analysis conducted in Fall 2009 and Point in Time Survey conducted in January 2010. The first table represents the total number of beds available and the current areas of greatest needs:

**Transitional Housing:**

- For Families with Children – 232 Additional beds needed
- For Individuals – 105 additional beds needed.

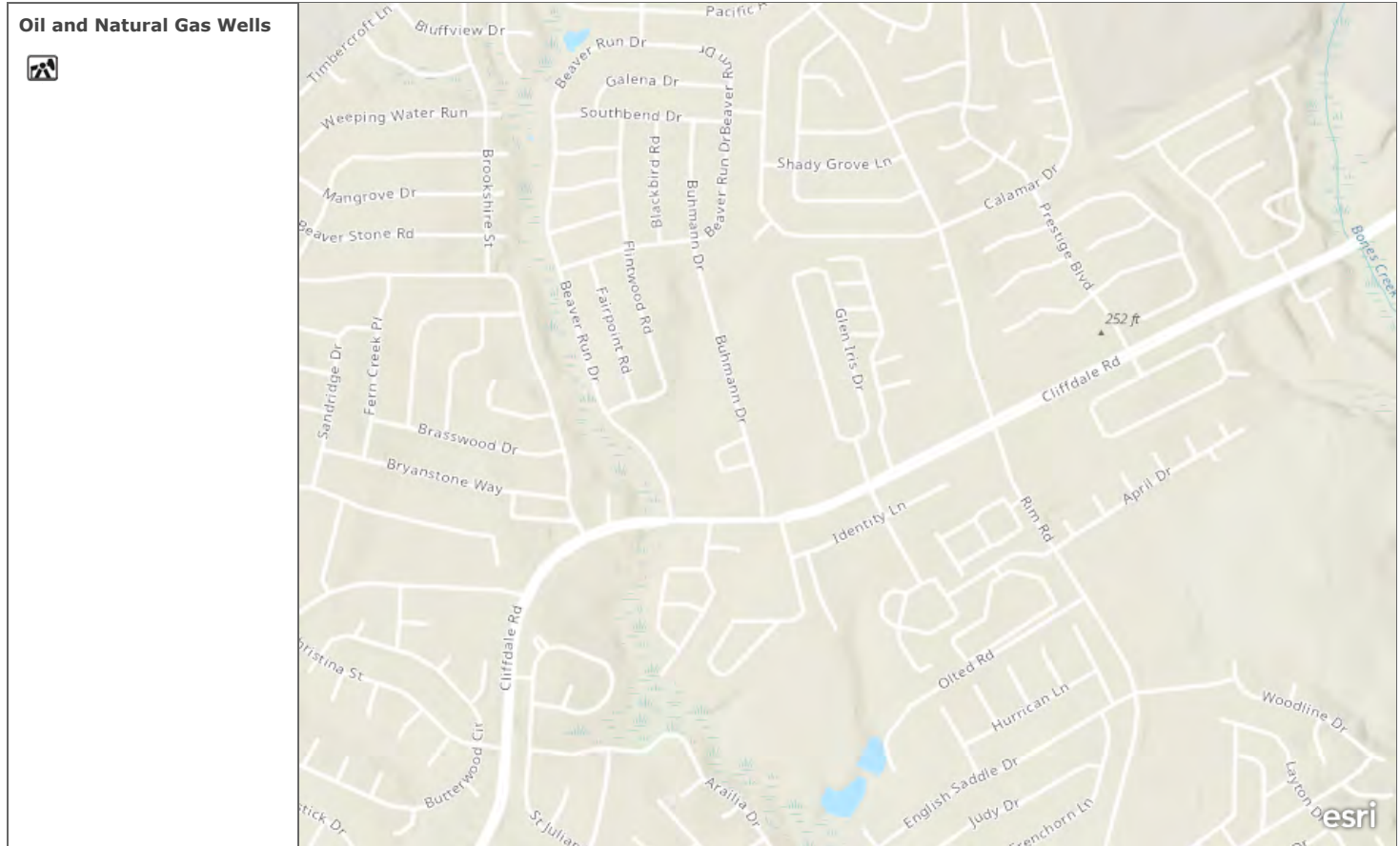
<b>Priority Homeless Needs in Cumberland County (2009)<sup>30</sup></b> <b>(HUD Table 2A)</b>					
		Beds			
		Current Inventory in 2009	Under Development in 2009	Unmet Need/ Gap	
Individuals	Emergency Shelter	90	21	80	
	Transitional Housing	21	0	105	
	Permanent Supportive Housing	0	0	100	
	<b>Total</b>	<b>111</b>	<b>21</b>	<b>285</b>	
Persons in Families With Children	Emergency Shelter	31	0	55	
	Transitional Housing	77	0	232	
	Permanent Supportive Housing	23	0	80	
	<b>Total</b>	<b>131</b>	<b>0</b>	<b>467</b>	
<b>2010 Point in Time Survey Results – Fayetteville/ Cumberland County CoC</b> <b>(HUD Table 2A)</b>					
		Sheltered		Unsheltered	Total
		Emergency	Transitional		
Homeless Population	Homeless Individuals	72	6	460	538
	Homeless Families w/ Children	13	44	88	145
	Persons in Homeless Families w/Children	40	176	279	495
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	Veterans	1	1	51	53
	Persons with HIV/AIDS	0	1	9	10
	Victims of Domestic Violence	11	13	27	51
	Youth (Under 18 years of age)	0	0	0	0
* Sum of homeless individuals and persons in homeless families with children					

The point-in-time Count showed a 7% increase in homeless individuals and/or families in Cumberland County from 2009 to 2010. The CoC is increasing its total count by 8.7% to

<sup>30</sup> *Cumberland County Continuum of Care 2009 electronic Housing Inventory Chart*, North Carolina Coalition to End Homelessness, <http://www.ncceh.org>.

account for this rise in the homeless population. It must be taken into account that the point-in-time assessment does not include a Count of every single homeless person in Cumberland County, as this population is transient and difficult to track.

### Oil and Natural Gas Wells



This feature class/shapefile contains Oil and Natural Gas Wells for the Homeland Infrastructure Foundation-Level (HIFLD) Database (<https://gii.dhs.gov/HIFLD>) as well as the Energy modeling and simulation community.

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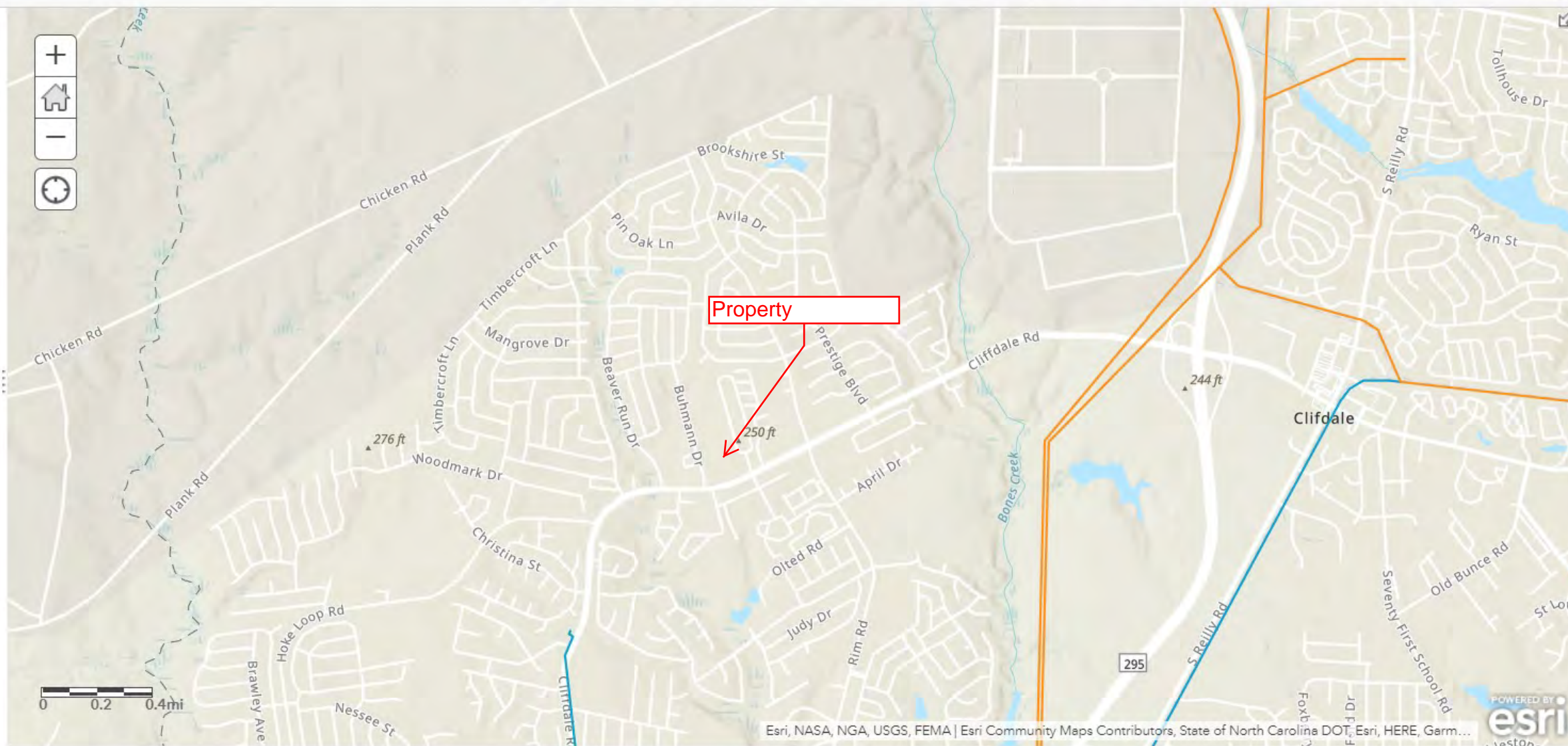
**HEROS 16d Pipelines**  
Cliffdale Crossing  
8368 Cliffdale Road  
Fayetteville, NC  
Project Number: CK21-8848





Legend  
Electric\_Power\_Transmission\_Lines - Transmission\_Lines

- AC, OVERHEAD
- OVERHEAD
- AC
- NOT AVAILABLE
- AC; OVERHEAD
- AC, UNDERGROUND
- UNDERGROUND
- AC; UNDERGROUND
- DC, OVERHEAD
- DC



Appendix Q  
State Clearinghouse Comments



STATE OF NORTH CAROLINA  
DEPARTMENT OF ADMINISTRATION

Roy Cooper  
GOVERNOR

Pamela B. Cashwell  
Secretary

December 9, 2021

Claudia Young  
NC Housing Finance Agency  
Post Office Box 28066  
Raleigh, NC 27611-8066

Re: SCH File # 22-E-4600-0099 Proposed project is for the construction of Cliffdale Crossing.  
Project will consist of an 80 unit apartment community for low to moderate income families.  
The development will offer 12 one bedroom, one bath units, 40 two-bedroom, one bath units  
and 28 three bedroom, two bath units in six 2 story

Dear Claudia Young:

The above referenced environmental impact information has been submitted to the State Clearinghouse under the provisions of the National Environmental Policy Act. According to G.S. 113A-10, when a state agency is required to prepare an environmental document under the provisions of federal law, the environmental document meets the provisions of the State Environmental Policy Act. Attached to this letter for your consideration are comments made by the agencies in the review of this document.

If any further environmental review documents are prepared for this project, they should be forwarded to this office for intergovernmental review.

Should you have any questions, please do not hesitate to call.

Sincerely,

CRYSTAL BEST  
State Environmental Review Clearinghouse

Attachments

Mailing Address:  
NC DEPARTMENT OF ADMINISTRATION  
1301 MAIL SERVICE CENTER  
RALEIGH, NC 27699-1301

Telephone: (919)807-2425  
Fax: (919)733-9571  
COURIER: #51-01-00  
Email: [state.clearinghouse@doa.nc.gov](mailto:state.clearinghouse@doa.nc.gov)  
Website: [www.ncadmin.nc.gov](http://www.ncadmin.nc.gov)

Location:  
116 WEST JONES STREET  
RALEIGH, NORTH CAROLINA

Control No.: 22-E-4600-0099  
County.: CUMBERLAND

Date Received: 11/8/2021  
Agency Response: 12/8/2021  
Review Closed: 12/8/2021

LYN HARDISON  
CLEARINGHOUSE COORDINATOR  
DEPT OF ENVIRONMENTAL QUALITY

Project Information

Type: National Environmental Policy Act Environmental Assessment  
Applicant: NC Housing Finance Agency  
Project Desc.: Proposed project is for the construction of Cliffdale Crossing. Project will consist of an 80 unit apartment community for low to moderate income families. The development will offer 12 one bedroom, one bath units, 40 two-bedroom, one bath units and 28 three bedroom, two bath units in six 2 story buildings. The development will also include a leasing/community building, all located on 8 acres.

As a result of this review the following is submitted:

No Comment       Comments Below       Documents Attached

Reviewed By: LYN HARDISON

Date: 12/8/2021



NORTH CAROLINA  
Environmental Quality

ROY COOPER  
Governor

ELIZABETH S. BISER  
Secretary

To: Crystal Best  
State Clearinghouse  
NC Department of Administration

From: Lyn Hardison  
Division of Environmental Assistance and Customer Service  
Washington Regional Office

RE: 22-0099  
Environmental Assessment - Proposed project is for the construction of Cliffdale Crossing, which will consist of an 80-unit apartment community for low to moderate income families.  
Cumberland County

Date: December 8, 2021

The Department of Environment Quality has reviewed the proposal for the referenced project. Based on the information provided, several of our agencies have identified permits that may be required and offered some valuable guidance to minimize impacts to aquatic and terrestrial wildlife resources. The comments are attached for the applicant's review.

The Department will continue to be available to assist the applicant with any question or concerns.

Thank you for the opportunity to respond.

Attachments



North Carolina Department of Environmental Quality

217 West Jones Street | 1601 Mail Service Center | Raleigh, North Carolina 27699-1601

919.707.8600



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☒ NORTH CAROLINA WILDLIFE RESOURCES COMMISSION ☒

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Cameron Ingram, Executive Director

**MEMORANDUM**

**TO:** Lyn Hardison, Environmental Assistance Coordinator  
NCDEQ Division of Environmental Assistance and Customer Services

**FROM:** Gabriela Garrison  
Eastern Piedmont Coordinator *Gabriela Garrison*  
Habitat Conservation

**DATE:** December 8, 2021

**SUBJECT:** Request for Environmental Scoping for Cliffdale Crossing Apartments, Cumberland County, DEQ Project No. 22-0099.

Biologists with the North Carolina Wildlife Resources Commission (NCWRC) have reviewed the subject document. Comments are provided in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667e), North Carolina Environmental Policy Act (G.S. 113A-1 through 113A-10; 1 NCAC 25) and North Carolina General Statutes (G.S. 113-131 et seq.).

A new development, Cliffdale Crossing Apartments, is proposed for construction along Cliffdale Road, west of its intersection with Rim Road in Fayetteville. The site is currently 8 acres and undeveloped. Planned construction includes 12, one-bedroom units, 40, two-bedroom units, and 28 three-bedroom units in six, two-story buildings, as well as a community building.

The NCWRC offers the following recommendations to minimize impacts to aquatic and terrestrial wildlife resources:

1. The project footprint should be surveyed for wetlands and streams to ensure there are no impacts to surface waters. In addition to providing wildlife habitat, wetland areas and streams aid in flood control and water quality protection. United States Army Corps of Engineers Section 404 Permits and NC Division of Water Resources Section 401 Certifications are required for any impacts to jurisdictional streams or wetlands.
2. Maintain or establish a minimum 100-foot undisturbed, native forested buffer along each side of perennial streams and 50-foot undisturbed, native forested buffer along each side of intermittent streams and wetlands. Forested riparian buffers protect habitat areas and travel corridors for wildlife species. In addition, forested riparian buffers protect water quality by stabilizing stream banks and filtering stormwater runoff.
3. Stormwater runoff to receiving surface waters can be minimized by reducing impervious surfaces and increasing infiltration on site using Low Impact Development (LID). Using LID technology in landscaping will not only help maintain the predevelopment hydrologic regime, but also enhance the aesthetic and habitat value of the site. LID techniques include bioretention areas that can collect

December 8, 2021  
Cliffdale Crossing Apartments  
DEQ Project No.: 22-0099

stormwater from driveways and parking areas. Additional alternatives include narrower roads, swales versus curbs/gutters and permeable surfaces such as turf stone, brick, and cobblestone. Compared to conventional developments, implementing appropriate LID techniques can be more cost-effective, increase property values, provide space-saving advantages, reduce runoff, and protect water quality (Roseen et al. 2011). Additional information on LID can be found at the NC State University LID guide: [http://www.onsiteconsortium.org/npsdeal/NC\\_LID\\_Guidebook.pdf](http://www.onsiteconsortium.org/npsdeal/NC_LID_Guidebook.pdf).

4. Consider using native shrubs, grasses, and wildflower seed mixes that are beneficial to wildlife for stabilization and beautification. The NCWRC strongly recommends against the use of fescue-based mixtures and *Sericea lespedeza* (*Lespedeza cuneata*) as stabilizing groundcovers. *Sericea lespedeza* in particular is an egregious and invasive, non-native species that is very hard to eradicate. Using native plant species instead of ornamentals should reduce the need for water, fertilizers, and pesticides. Free technical assistance from NCWRC biologists is available for ideas on establishing vegetation or incorporating other measures that are beneficial for wildlife.
5. Insecticides and herbicides should not be used within 100 feet of perennial streams and 50 feet of intermittent streams, or within floodplains and wetlands associated with these streams.
6. Stringent sediment and erosion control measures should be installed prior to any land-disturbing activity. The use of biodegradable and wildlife-friendly sediment and erosion control devices is strongly recommended. Silt fencing, fiber rolls and/or other products should have loose-weave netting that is made of natural fiber materials with movable joints between the vertical and horizontal twines. Silt fencing and similar materials that have been reinforced with plastic or metal mesh should be avoided as they impede the movement of terrestrial wildlife species. Excessive silt and sediment loads can have detrimental effects on aquatic resources including destruction of spawning habitat, suffocation of eggs and clogging of gills.

The NCWRC encourages the applicant to consider additional measures to protect aquatic and terrestrial wildlife species in developing landscapes. The NCWRC's *Guidance Memorandum to Address and Mitigate Secondary and Cumulative Impacts to Aquatic and Terrestrial Wildlife Resources and Water Quality* (August 2002; [http://www.ncwildlife.org/Portals/0/Conserving/documents/2002\\_GuidanceMemorandumforSecondaryandCumulativeImpacts.pdf](http://www.ncwildlife.org/Portals/0/Conserving/documents/2002_GuidanceMemorandumforSecondaryandCumulativeImpacts.pdf)) details measures to minimize secondary and cumulative impacts to aquatic and terrestrial wildlife resources; in addition, the NCWRC's Green Growth Toolbox (<https://www.ncwildlife.org/conserving/programs/Green-Growth-Toolbox>) provides information on nature-friendly planning.

Thank you for the opportunity to review and comment on this project. If I can be of further assistance, please contact me at (910) 409-7350 or [gabriela.garrison@ncwildlife.org](mailto:gabriela.garrison@ncwildlife.org).

#### Literature Cited

Roseen, R. M., T. V. Janeski, J. J. Houle, M. H. Simpson, and J. Gunderson. 2011. Forging the Link: Linking the Economic Benefits of Low Impact Development and Community Decisions. Available at: <https://owl.cwp.org/mdocs-posts/roseen-et-al-2011-forging-the-link/>.

ROY COOPER  
Governor  
ELIZABETH S. BISER  
Secretary  
MICHAEL SCOTT  
Director



## MEMORANDUM

TO: Michael Scott, Division Director through Sharon Brinkley

FROM: Drew Hammonds, Eastern District Supervisor - Solid Waste Section

DATE: December 6, 2021

SUBJECT: Review: SW 22-0099 – Cumberland County (EA – NC Housing Finance Agency – Proposed project is for the construction of Cliffdale Crossing which will consist of an 80-unit apartment community for low to moderate income families)

---

The Division of Waste Management, Solid Waste Section (Section) has reviewed the documents submitted for the subject project in Cumberland County, NC. Based on the information provided in these documents, the Section at this time does not see an adverse impact on the surrounding communities and likewise knows of no situations in the communities, which would affect this project.

As always for any planned or proposed projects, it is recommended that during any land clearing, demolition and construction, the responsible party and/or its contractors would make every feasible effort to minimize the generation of waste, to recycle materials for which viable markets exist, and to use recycled products and materials in the development of this project where suitable. **Any waste generated by and of the projects that cannot be beneficially reused or recycled must be disposed of at a solid waste management facility permitted by the Division. The Section strongly recommends that the responsible party require all contractors to provide proof of proper disposal for all generated waste to permitted facilities.**

Permitted solid waste management facilities are listed on the Division of Waste Management, Solid Waste Section portal site at: <https://deq.nc.gov/about/divisions/waste-management/waste-management-rules-data/solid-waste-management-annual-reports/solid-waste-permitted-facility-list>

Questions regarding solid waste management for this project should be directed to Mr. David Powell, Environmental Senior Specialist, Solid Waste Section, at (910) 433-3350.

cc: David Powell, Environmental Senior Specialist



North Carolina Department of Environmental Quality | Division of Waste Management  
Fayetteville Regional Office | 225 Green Street, Suite 714 | Fayetteville, North Carolina 28301  
910.433.3300



ROY COOPER  
Governor  
ELIZABETH S. BISER  
Secretary  
MICHAEL SCOTT  
Director



Date: December 8, 2021

To: Michael Scott, Director  
Division of Waste Management

Through: Janet Macdonald  
Inactive Hazardous Sites Branch – Special Projects Unit

From: Bonnie S. Ware  
Inactive Hazardous Sites Branch

Subject: NEPA Project # 22-0099, NC Housing Finance Agency, Cumberland County, North Carolina

The Superfund Section has reviewed the proximity of sites under its jurisdiction to the NC Housing Finance Agency project. Proposed project is for the construction of Cliffdale Crossing which will consist of an 80-unit apartment community for low to moderate income families. The development will offer 12 one bedroom, one bath units, 40 two-bedroom, one bath units and 28 three bedroom, two bath units in six 2 story buildings, and a leasing/community building.

Two (2) Superfund Section sites were identified within one mile of the project as shown on the attached report. The Superfund Section recommends that site files be reviewed to ensure that appropriate precautions are incorporated into any construction activities that encounter potentially contaminated soil or groundwater. Superfund Section files can be viewed at: <http://deq.nc.gov/waste-management-laserfiche>.

Please contact Janet Macdonald at 919.707.8349 if you have any questions concerning the Superfund Section review portion of this SEPA/NEPA inquiry.



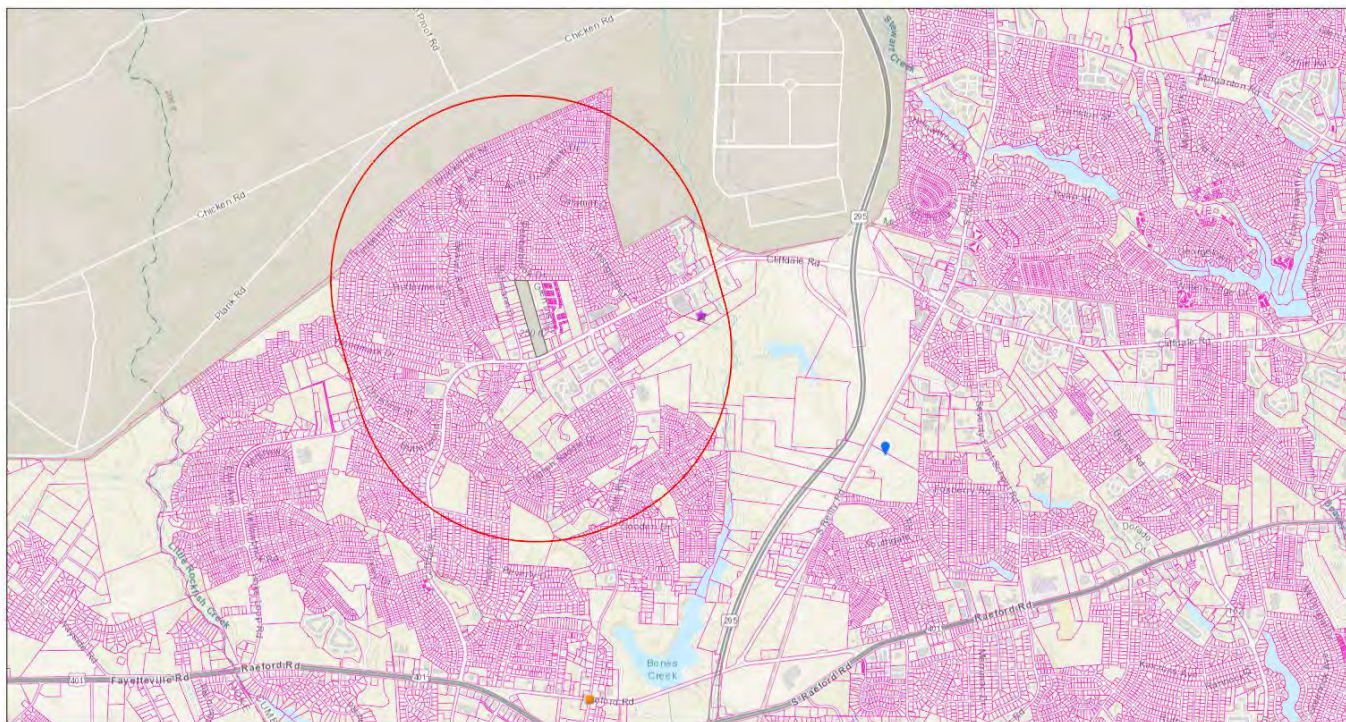
North Carolina Department of Environmental Quality | Division of Waste Management  
217 West Jones Street | 1646 Mail Service Center | Raleigh, North Carolina 27699-1646  
919.707.8200





# SUPERFUND SECTION SITES ONLY : SEPA/NEPA

## Area of Interest (AOI) Information

Area : 2,651.53 acres

Dec 8 2021 14:01:07 Eastern Standard Time



-  Federal Remediation Branch
-  Pre Regulatory Landfill Sites
-  Inactive Hazardous Sites
-  Parcels (Polygons) - Parcels

1:36,112  
0 0.38 0.75 1.5 mi  
0 0.5 1 2 km  
County of Cumberland, State of North Carolina DOT, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA

Superfund Section Sites Only : 22-0099 Cumberland County

## Summary

Name	Count	Area(acres)	Length(mi)
Certified DSCA Sites	0	N/A	N/A
Federal Remediation Branch Sites	0	N/A	N/A
Inactive Hazardous Sites	0	N/A	N/A
Pre-Regulatory Landfill Sites	2	N/A	N/A
Brownfields Program Sites	0	N/A	N/A

## Pre-Regulatory Landfill Sites

#	EPAID	SITENAME	Count
1	NCD980502900	Cumberland County/Cliffdale LF	1
2	NONCD0000733	Cumberland County Landfill - Bones Creek	1

State of North Carolina Department of Environmental Quality  
 INTERGOVERNMENTAL REVIEW PROJECT COMMENTS

Reviewing Regional Office: FRO  
 Project Number: 22-0099 Due Date: 12/08/2021  
 County: Cumberland

After review of this project it has been determined that the DEQ permit(s) and/or approvals indicated may need to be obtained in order for this project to comply with North Carolina Law. Questions regarding these permits should be addressed to the Regional Office indicated on the reverse of the form. All applications, information and guidelines relative to these plans and permits are available from the same Regional Office.

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
<input checked="" type="checkbox"/>	Permit to construct & operate wastewater treatment facilities, non-standard sewer system extensions & sewer systems that do not discharge into state surface waters.	Application 90 days before begins construction or award of construction contracts. On-site inspection may be required. Post-application technical conference usual.	30 days (90 days)
<input checked="" type="checkbox"/>	Permit to construct & operate, sewer extensions involving gravity sewers, pump stations and force mains discharging into a sewer collection system	Fast-Track Permitting program consists of the submittal of an application and an engineer's certification that the project meets all applicable State rules and Division Minimum Design Criteria.	30 days (N/A)
<input checked="" type="checkbox"/>	NPDES - permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into state surface waters.	Application 180 days before begins activity. On-site inspection. Pre-application conference usual. Additionally, obtain permit to construct wastewater treatment facility-granted after NPDES. Reply time, 30 days after receipt of plans or issue of NPDES permit-whichever is later.	90-120 days (N/A)
<input type="checkbox"/>	Water Use Permit	Pre-application technical conference usually necessary.	30 days (N/A)
<input type="checkbox"/>	Well Construction Permit	Complete application must be received and permit issued prior to the installation of a groundwater monitoring well located on property not owned by the applicant, and for a large capacity (>100,000 gallons per day) water supply well.	7 days (15 days)
<input type="checkbox"/>	Dredge and Fill Permit	Application copy must be served on each adjacent riparian property owner. On-site inspection. Pre-application conference usual. Filling may require Easement to Fill from N.C. Department of Administration and Federal Dredge and Fill Permit.	55 days (90 days)
<input type="checkbox"/>	Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15 A NCAC (2Q.O100 thru 2Q.0300)	Application must be submitted and permit received prior to construction and operation of the source. If a permit is required in an area without local zoning, then there are additional requirements and timelines (2Q.0113).	90 days
<input checked="" type="checkbox"/>	Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900	N/A	60 days (90 days)
<input type="checkbox"/>	Demolition or renovations of structures containing asbestos material must be in compliance with 15 A NCAC 20.1110 (a) (1) which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-707-5950	Please Note - The Health Hazards Control Unit (HHCU) of the N.C. Department of Health and Human Services, must be notified of plans to demolish a building, including residences for commercial or industrial expansion, even if no asbestos is present in the building.	60 days (90 days)
<input checked="" type="checkbox"/>	The Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An erosion & sedimentation control plan will be required if one or more acres are to be disturbed. Plan must be filed with and approved by applicable Regional Office (Land Quality Section) at least 30 days before beginning activity. A NPDES Construction Stormwater permit (NCG010000) is also usually issued should design features meet minimum requirements. A fee of \$65 for the first acre or any part of an acre. An express review option is available with additional fees.		20 days (30 days)
<input type="checkbox"/>	Sedimentation and erosion control must be addressed in accordance with NCDOT's approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable Stormwater conveyances and outlets.		(30 days)
<input type="checkbox"/>	Sedimentation and erosion control must be addressed in accordance with _____ <b>Local Government's</b> approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable Stormwater conveyances and outlets.		Based on Local Program
<input type="checkbox"/>	Compliance with 15A NCAC 2H .0126 - NPDES Stormwater Program which regulates three types of activities: Industrial, Municipal Separate Storm Sewer System & Construction activities that disturb ≥1 acre.		30-60 days (90 days)
<input type="checkbox"/>	Compliance with 15A NCAC 2H 1000 -State Stormwater Permitting Programs regulate site development and post-construction stormwater runoff control. Areas subject to these permit programs include all 20 coastal counties, and various other counties and watersheds throughout the state.		45 days (90 days)

State of North Carolina Department of Environmental Quality  
 INTERGOVERNMENTAL REVIEW PROJECT COMMENTS

Reviewing Regional Office: FRO  
 Project Number: 22-0099 Due Date: 12/08/2021  
 County: Cumberland

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
<input type="checkbox"/>	Mining Permit	On-site inspection usual. Surety bond filed with DEQ Bond amount varies with type mine and number of acres of affected land. Affected area greater than one acre must be permitted. The appropriate bond must be received before the permit can be issued.	30 days (60 days)
<input type="checkbox"/>	Dam Safety Permit	If permit required, application 60 days before begin construction. Applicant must hire N.C. qualified engineer to: prepare plans, inspect construction, and certify construction is according to DEQ approved plans. May also require a permit under mosquito control program. And a 404 permit from Corps of Engineers. An inspection of site is necessary to verify Hazard Classification. A minimum fee of \$200.00 must accompany the application. An additional processing fee based on a percentage or the total project cost will be required upon completion.	30 days (60 days)
<input type="checkbox"/>	Oil Refining Facilities	N/A	90-120 days (N/A)
<input type="checkbox"/>	Permit to drill exploratory oil or gas well	File surety bond of \$5,000 with DEQ running to State of NC conditional that any well opened by drill operator shall, upon abandonment, be plugged according to DEQ rules and regulations.	10 days N/A
<input type="checkbox"/>	Geophysical Exploration Permit	Application filed with DEQ at least 10 days prior to issue of permit. Application by letter. No standard application form.	10 days N/A
<input type="checkbox"/>	State Lakes Construction Permit	Application fee based on structure size is charged. Must include descriptions & drawings of structure & proof of ownership of riparian property	15-20 days N/A
<input checked="" type="checkbox"/>	401 Water Quality Certification	Compliance with the T15A 02H .0500 Certifications are required whenever construction or operation of facilities will result in a discharge into navigable water as described in 33 CFR part 323.	60 days (130 days)
<input type="checkbox"/>	Compliance with Catawba, Goose Creek, Jordan Lake, Randleman, Tar Pamlico or Neuse Riparian Buffer Rules is required. Buffer requirements: <a href="http://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/401-wetlands-buffer-permits/401-riparian-buffer-protection-program">http://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/401-wetlands-buffer-permits/401-riparian-buffer-protection-program</a>		
<input type="checkbox"/>	Nutrient Offset: Loading requirements for nitrogen and phosphorus in the Neuse and Tar-Pamlico River basins, and in the Jordan and Falls Lake watersheds, as part of the nutrient-management strategies in these areas. DWR nutrient offset information: <a href="http://deq.nc.gov/about/divisions/water-resources/planning/nonpoint-source-management/nutrient-offset-information">http://deq.nc.gov/about/divisions/water-resources/planning/nonpoint-source-management/nutrient-offset-information</a>		
<input type="checkbox"/>	CAMA Permit for MAJOR development	\$250.00 - \$475.00 fee must accompany application	75 days (150 days)
<input type="checkbox"/>	CAMA Permit for MINOR development	\$100.00 fee must accompany application	22 days (25 days)
<input checked="" type="checkbox"/>	Abandonment of any wells, if required must be in accordance with Title 15A. Subchapter 2C.0100.		
<input checked="" type="checkbox"/>	Notification of the proper regional office is requested if "orphan" underground storage tanks (USTS) are discovered during any excavation operation.		
<input checked="" type="checkbox"/>	Plans and specifications for the construction, expansion, or alteration of a public water system must be approved by the Division of Water Resources/Public Water Supply Section prior to the award of a contract or the initiation of construction as per 15A NCAC 18C .0300 et. seq., Plans and specifications should be submitted to 1634 Mail Service Center, Raleigh, North Carolina 27699-1634. All public water supply systems must comply with state and federal drinking water monitoring requirements. For more information, contact the Public Water Supply Section, (919) 707-9100.		30 days
<input type="checkbox"/>	If existing water lines will be relocated during the construction, plans for the water line relocation must be submitted to the Division of Water Resources/Public Water Supply Section at 1634 Mail Service Center, Raleigh, North Carolina 27699-1634. For more information, contact the Public Water Supply Section, (919) 707-9100.		30 days
<input type="checkbox"/>	Plans and specifications for the construction, expansion, or alteration of the _____ water system must be approved through the _____ delegated plan approval authority. Please contact them at _____ for further information.		

State of North Carolina Department of Environmental Quality  
 INTERGOVERNMENTAL REVIEW PROJECT COMMENTS

Reviewing Regional Office: FRO  
 Project Number: 22-0099 Due Date: 12/08/2021  
 County: Cumberland

Other Comments (attach additional pages as necessary, being certain to comment authority)

Division	Initials	No comment	Comments	Date Review
DAQ	JDC	<input checked="" type="checkbox"/>		12/2/2021
DWR-WQROS	KMB	<input checked="" type="checkbox"/>		12/2/2021
DWR-PWS	HLC	<input type="checkbox"/>	See above comments	11/30/2021
DEMLR (LQ & SW)	LHB	<input type="checkbox"/>	Please note the Sedimentation Fee is now \$100.00 per acre.	12/7/2021
DWM – UST	KEC	<input type="checkbox"/>	The UST Section, Fayetteville Regional Office, does not have record of a petroleum release in the general area of concern for this project number, nor are there any records of registered USTs. The nearest registered USTs are located at 8385 Cliffdale Road, Facility ID 00-0-0000037127). There are no records of a reported petroleum release for this facility.	11/30/2021
Other Comments		<input type="checkbox"/>		/ /

**REGIONAL OFFICES**

Questions regarding these permits should be addressed to the Regional Office marked below.

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> <b>Asheville Regional Office</b><br>2090 U.S. 70 Highway<br>Swannanoa, NC 28778-8211<br>Phone: 828-296-4500<br>Fax: 828-299-7043 | <input checked="" type="checkbox"/> <b>Fayetteville Regional Office</b><br>225 Green Street, Suite 714,<br>Fayetteville, NC 28301-5043<br>Phone: 910-433-3300<br>Fax: 910-486-0707 | <input type="checkbox"/> <b> Mooresville Regional Office</b><br>610 East Center Avenue, Suite 301,<br>Mooresville, NC 28115<br>Phone: 704-663-1699<br>Fax: 704-663-6040 |
| <input type="checkbox"/> <b>Raleigh Regional Office</b><br>3800 Barrett Drive,<br>Raleigh, NC 27609<br>Phone: 919-791-4200<br>Fax: 919-571-4718           | <input type="checkbox"/> <b>Washington Regional Office</b><br>943 Washington Square Mall,<br>Washington, NC 27889<br>Phone: 252-946-6481<br>Fax: 252-975-3716                      | <input type="checkbox"/> <b>Wilmington Regional Office</b><br>127 Cardinal Drive Ext.,<br>Wilmington, NC 28405<br>Phone: 910-796-7215<br>Fax: 910-350-2004              |
|   | <input type="checkbox"/> <b>Winston-Salem Regional Office</b><br>450 Hanes Mill Road, Suite 300,<br>Winston-Salem, NC 27105<br>Phone: 336-776-9800<br>Fax: 336-776-9797            |   |

# Department of Environmental Quality Project Review Form

**Project Number: 22-0099**

**County: Cumberland**

**Date Received: 11-8-2021**

**Due Date: 12-3-2021**

**Project Description:** *Environmental Assessment - Proposed project is for the construction of Cliffdale Crossing which will consist of an 80-unit apartment community for low to moderate income families. The development will offer 12 one bedroom, one bath units, 40 two-bedroom, one bath units and 28 three bedroom, two bath units in six 2 story buildings, and a leasing/community building.*

This Project is being reviewed as indicated below:

Regional Office	Regional Office Area	In-House Review	
<input type="checkbox"/> Asheville	<input checked="" type="checkbox"/> Air	<input type="checkbox"/> Air Quality	<input type="checkbox"/> Coastal Management
<input checked="" type="checkbox"/> Fayetteville	<input checked="" type="checkbox"/> DWR	<input type="checkbox"/> Parks & Recreation	<input type="checkbox"/> Marine Fisheries
<input type="checkbox"/> Mooresville	<input checked="" type="checkbox"/> DWR - Public Water	<input checked="" type="checkbox"/> Waste Mgmt	<input type="checkbox"/> Military Affairs
<input type="checkbox"/> Raleigh	<input checked="" type="checkbox"/> DEMLR (LQ & SW)	<input type="checkbox"/> Water Resources Mgmt (Public Water, Planning & Water Quality Program)	<input type="checkbox"/> DMF-Shellfish Sanitation
<input type="checkbox"/> Washington	<input checked="" type="checkbox"/> DWM	<input type="checkbox"/> DWR-Transportation Unit	<input checked="" type="checkbox"/> Wildlife <u>Gabriela</u>
<input type="checkbox"/> Wilmington			<input type="checkbox"/> Wildlife/DOT
<input type="checkbox"/> Winston-Salem			

Manager Sign-Off/Region:	Date: 12/8/21	In-House Reviewer/Agency: Melodi Deaver, Hazardous Waste Section
--------------------------	------------------	---

Response (check all applicable)

No objection to project as proposed.
  No Comment

Insufficient information to complete review
  Other (specify or attach comments)

If you have any questions, please contact:  
**Lyn Hardison at [lyn.hardison@ncdenr.gov](mailto:lyn.hardison@ncdenr.gov) or (252) 948-3842**  
**943 Washington Square Mall Washington NC 27889**  
**Courier No. 16-04-01**

Control No.: 22-E-4600-0099  
County.: CUMBERLAND

Date Received: 11/8/2021  
Agency Response: 12/8/2021  
Review Closed: 12/8/2021

JEANNE STONE  
CLEARINGHOUSE COORDINATOR  
DEPT OF TRANSPORTATION

Project Information

Type: National Environmental Policy Act ironmental Assessment  
Applicant: NC Housing Finance Agency  
Project Desc.: Proposed project is for the construction of Cliffdale Crossing. Project will consist of an 80 unit apartment community for low to moderate income families. The development will offer 12 one bedroom, one bath units, 40 two-bedroom, one bath units and 28 three bedroom, two bath units in six 2 story buildings. The development will also include a leasing/community building, all located on 8 acres.

As a result of this review the following is submitted:

No Comment       Comments Below       Documents Attached

Reviewed By: JEANNE STONE

Date: 11/8/2021



Control No.: 22-E-4600-0099  
County.: CUMBERLAND

Date Received: 11/8/2021  
Agency Response: 12/8/2021  
Review Closed: 12/8/2021

JINTAO WEN  
CLEARINGHOUSE COORDINATOR  
DPS - DIV OF EMERGENCY MANAGEMENT

Project Information

Type: National Environmental Policy Act ironmental Assessment  
Applicant: NC Housing Finance Agency  
Project Desc.: Proposed project is for the construction of Cliffdale Crossing. Project will consist of an 80 unit apartment community for low to moderate income families. The development will offer 12 one bedroom, one bath units, 40 two-bedroom, one bath units and 28 three bedroom, two bath units in six 2 story buildings. The development will also include a leasing/community building, all located on 8 acres.

As a result of this review the following is submitted:

No Comment       Comments Below       Documents Attached

Reviewed By: JINTAO WEN

Date: 11/22/2021