

**Appendix A**

**I-73 North Alternative  
Development Technical  
Memorandum**

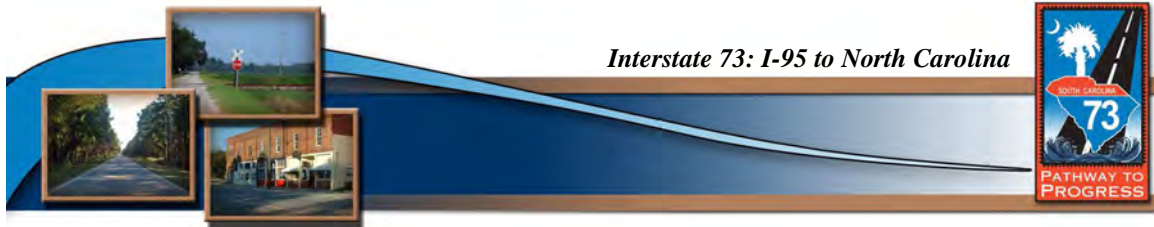
# Alternative Development Technical Memorandum

From I-95 to Future Interstate 74  
in North Carolina



U.S. Department of Transportation  
**Federal Highway  
Administration**

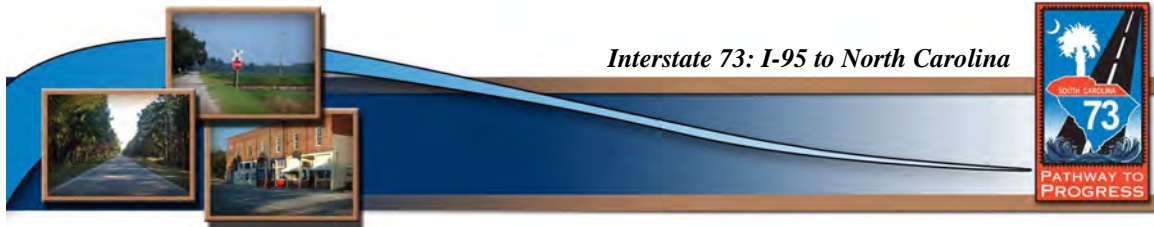




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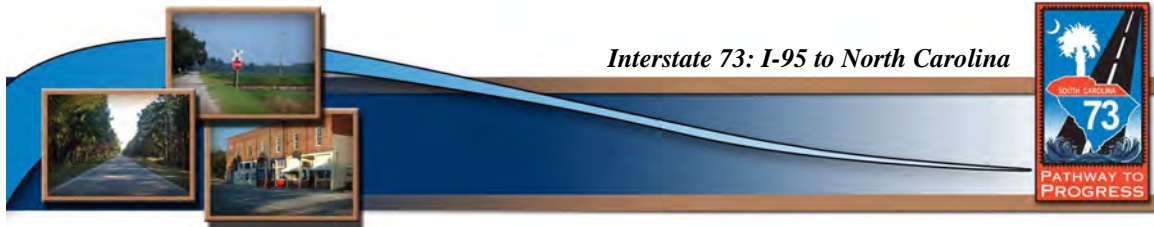




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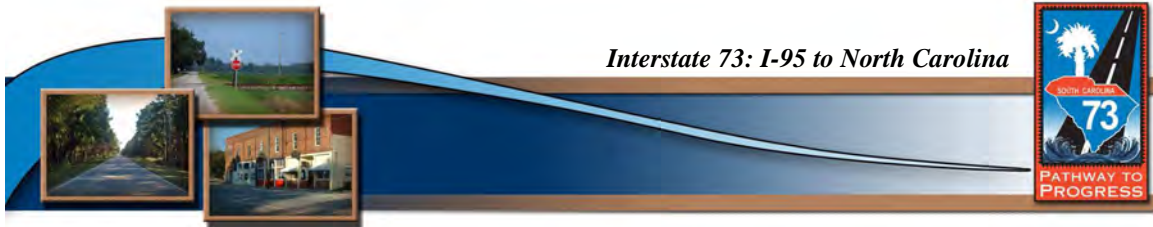
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*Interstate 73: I-95 to North Carolina*

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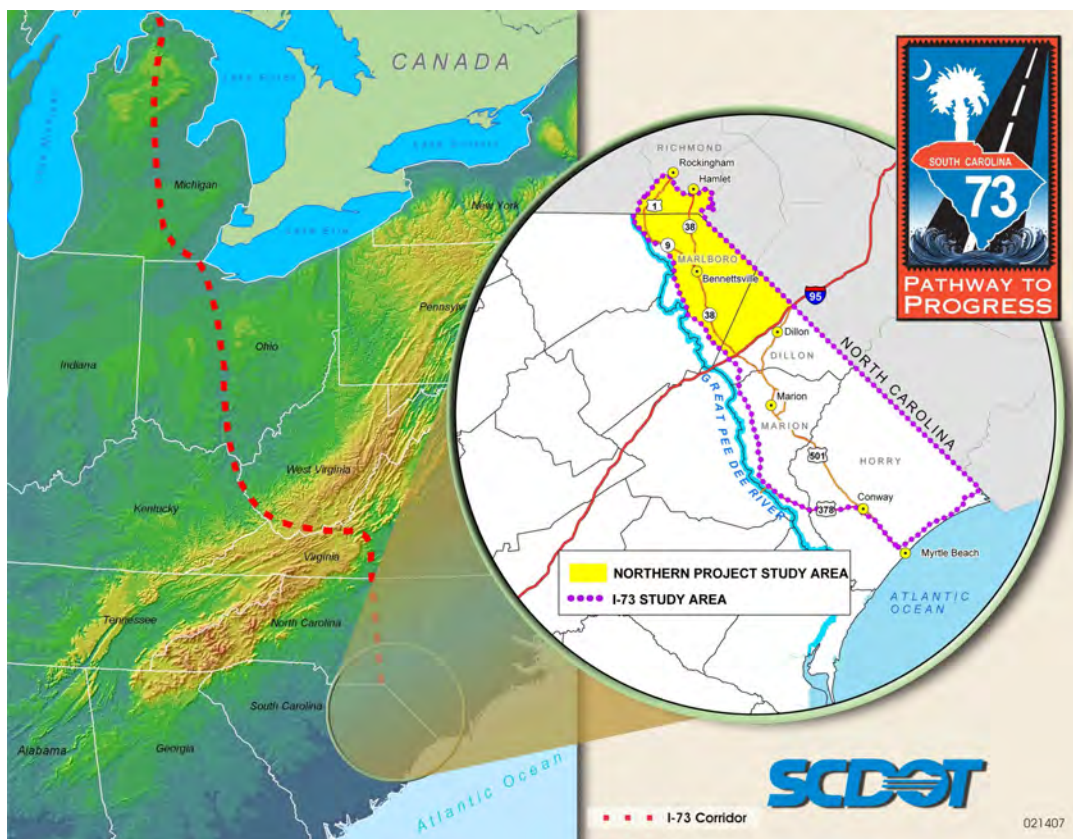
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A	Roadway and Bridge Design Criteria
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## CHAPTER 1 - INTRODUCTION

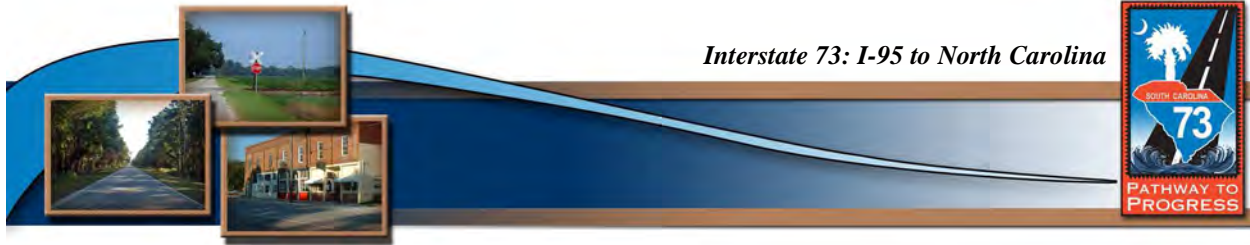
I-73 is a national highway project that will provide a transportation corridor from Michigan to South Carolina. The national I-73 project starts at Sault Ste. Marie, Michigan, and proceeds through portions of Ohio, West Virginia, Virginia, and North Carolina, before terminating near the Myrtle Beach, South Carolina area (refer to Figure 1-1).



**Figure 1-1**  
**Interstate Corridor**

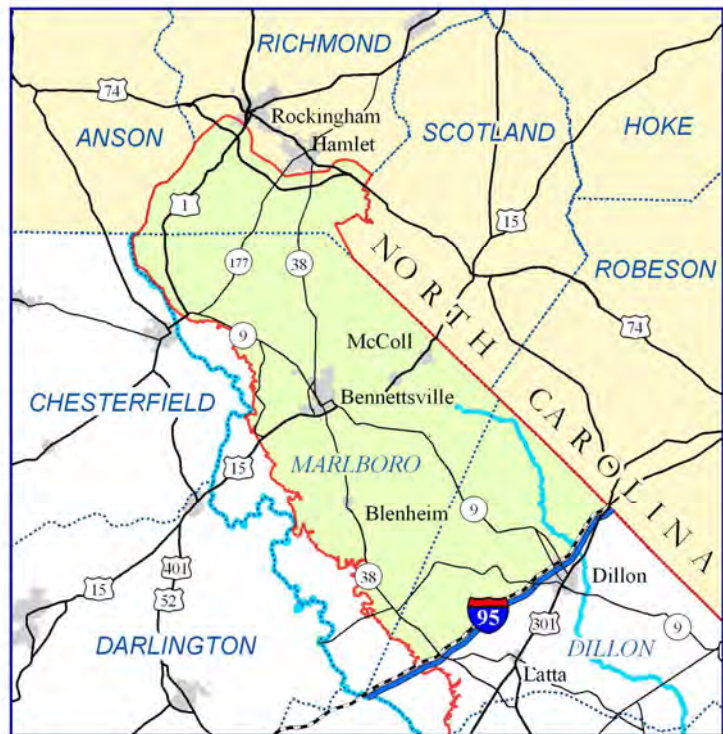
Currently, Michigan has upgraded existing roads to interstate standards and has one 50-mile segment remaining to construct. Twenty miles of this segment has received funding to complete design and begin purchasing right-of-way. Since the route would follow existing roadways along the I-73 corridor, Ohio has decided not to construct a new facility for I-73. Instead, Ohio is addressing individual congestion issues along the existing roadways. West Virginia has completed a small portion of I-73, also known as the King Coal Highway and Tolsia Highway.





West Virginia is waiting on additional funding prior to completing the I-73 corridor project. Virginia has completed a Final Environmental Impact Statement (EIS) for its portion of I-73 that was approved by the Federal Highway Administration (FHWA) on December 1, 2006. FHWA issued a Record of Decision (ROD) for the I-73 Final EIS in Virginia on March 30, 2007, allowing the final design process to begin for the project.<sup>1</sup> The Virginia Department of Transportation is currently re-signing the portion of I-73 along the existing roadway and will proceed with construction of I-73 on new alignment as funding becomes available.<sup>2</sup> North Carolina has also completed portions of I-73 by the re-signing of existing roads to interstate facility. The North Carolina Department of Transportation (NCDOT) is currently completing environmental analyses, planning phases, and right-of-way acquisitions for its portion of I-73 on new alignment. In South Carolina, a Draft Environmental Impact Statement (EIS) was completed in May 2006 for the portion of I-73 that would extend from I-95 to the Myrtle Beach Region, referred to as the I-73 South project.

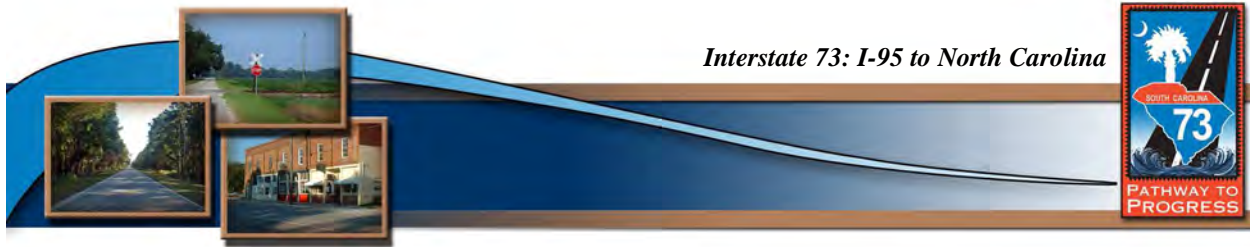
The EIS from the Northern project has been prepared to evaluate and document the potential benefits and impacts that would result from the construction of I-73 from I-95 north to Future I-73/I-74 (I-74) in North Carolina. The project study area encompasses 399,792 acres and extends northwest from I-95, is bounded to the east by the North Carolina/South Carolina state line, extends northeast into southern Richmond County (North Carolina) and eastern Scotland County (North Carolina), is bounded to the north by I-74, and to the west by the eastern edge of the Great Pee Dee River floodplain (refer to Figure 1-2). Based on a resolution, the NCDOT and South Carolina Department of Transportation (SCDOT) have agreed to work together to extend I-73 from the South Carolina state border to Rockingham,



**Figure 1-2**  
**Project Study Area**

<sup>1</sup> VDOT Website. I-73 Project Webpage, <http://www.virginiadot.org/news/newsrelease.asp?ID=SAL-07-127> Last accessed April 16, 2007.

<sup>2</sup> VDOT Website. I-73 Project Webpage, <http://virginiadot.org/news/newsrelease.asp?ID=SAL-06-69> Last accessed December 26, 2006.



## *Interstate 73: I-95 to North Carolina*

North Carolina, where it would connect to I-74. The NCDOT also agreed to participate in the environmental and planning phases of the project as well as share a proportionate cost of the studies needed to complete the project.

The purpose of the proposed project is to provide an interstate link between the southernmost proposed segment of I-73 (between I-95 and the Myrtle Beach area) and the North Carolina I-73/I-74 corridor, to serve residents, businesses, and travelers while fulfilling congressional intent in an environmentally responsible and community sensitive manner.

### **Project Approach**

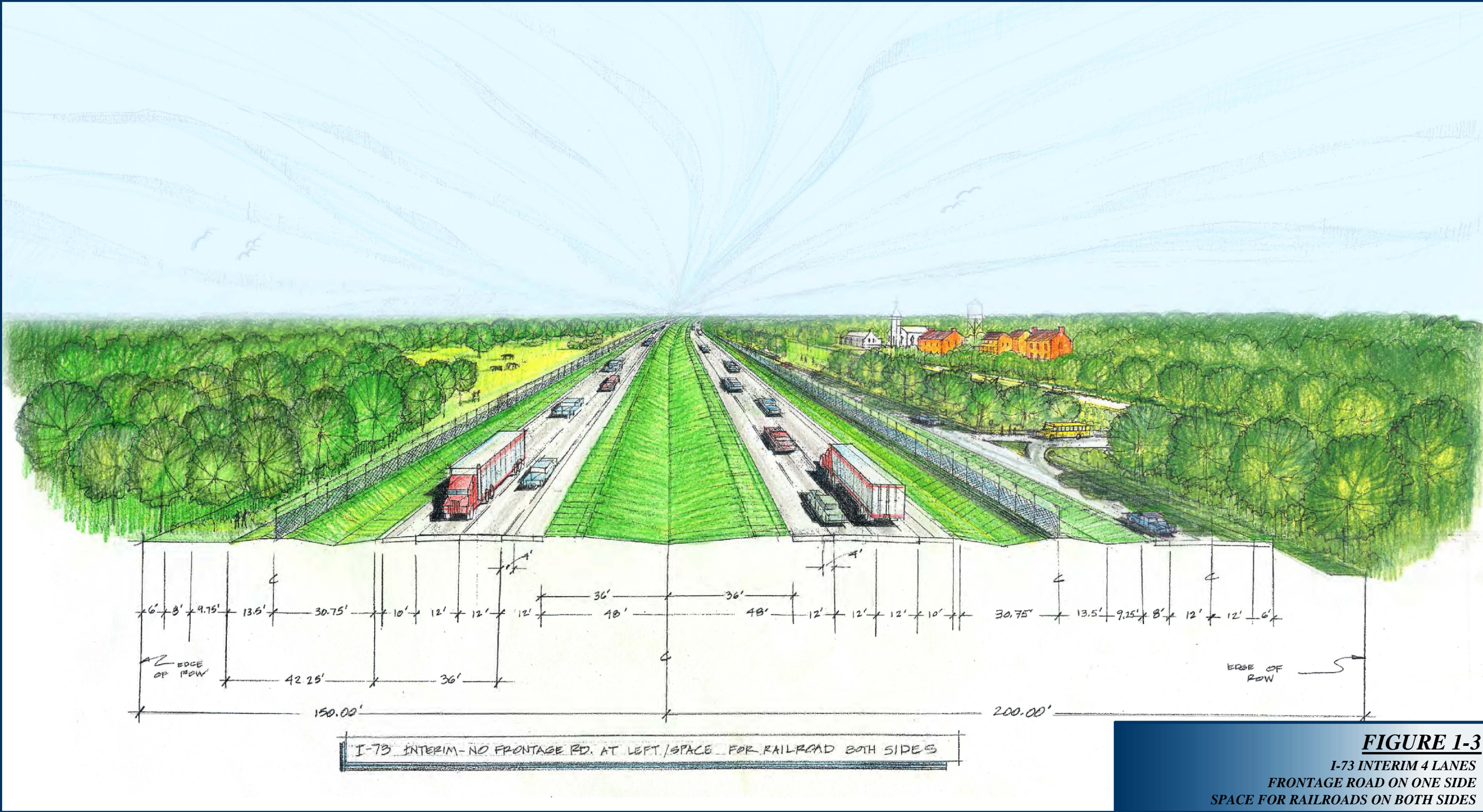
The roadway and bridge design criteria that were established early in the development phase of the I-73 South project and were used to guide the road design on the I-73 North project are detailed in Appendix A. The proposed I-73 facility would be a high speed, divided, fully controlled access roadway that would require interchanges for access. Existing access to properties would be maintained by the use of frontage roads. Existing traffic patterns would be maintained by providing overpasses for east and west traffic flow.

Two typical sections were developed to accommodate the number of lanes needed for the future traffic volumes, as well as, a multimodal corridor. Figure 1-3 represents the interim design, which is proposed to be constructed initially and would accommodate two lanes of traffic in each direction. In the future, when traffic volumes increase to a point that additional lanes are necessary in order to maintain an acceptable level of service, an additional lane in each direction could be added. This ultimate design would accommodate three lanes of traffic in each direction (refer to Figure 1-4.) A 400-foot right-of-way would be acquired in the vicinity of frontage roads so that additional right-of-way would not be required when the ultimate design was needed. Where frontage roads are not required, a 300-foot right-of-way would be adequate.

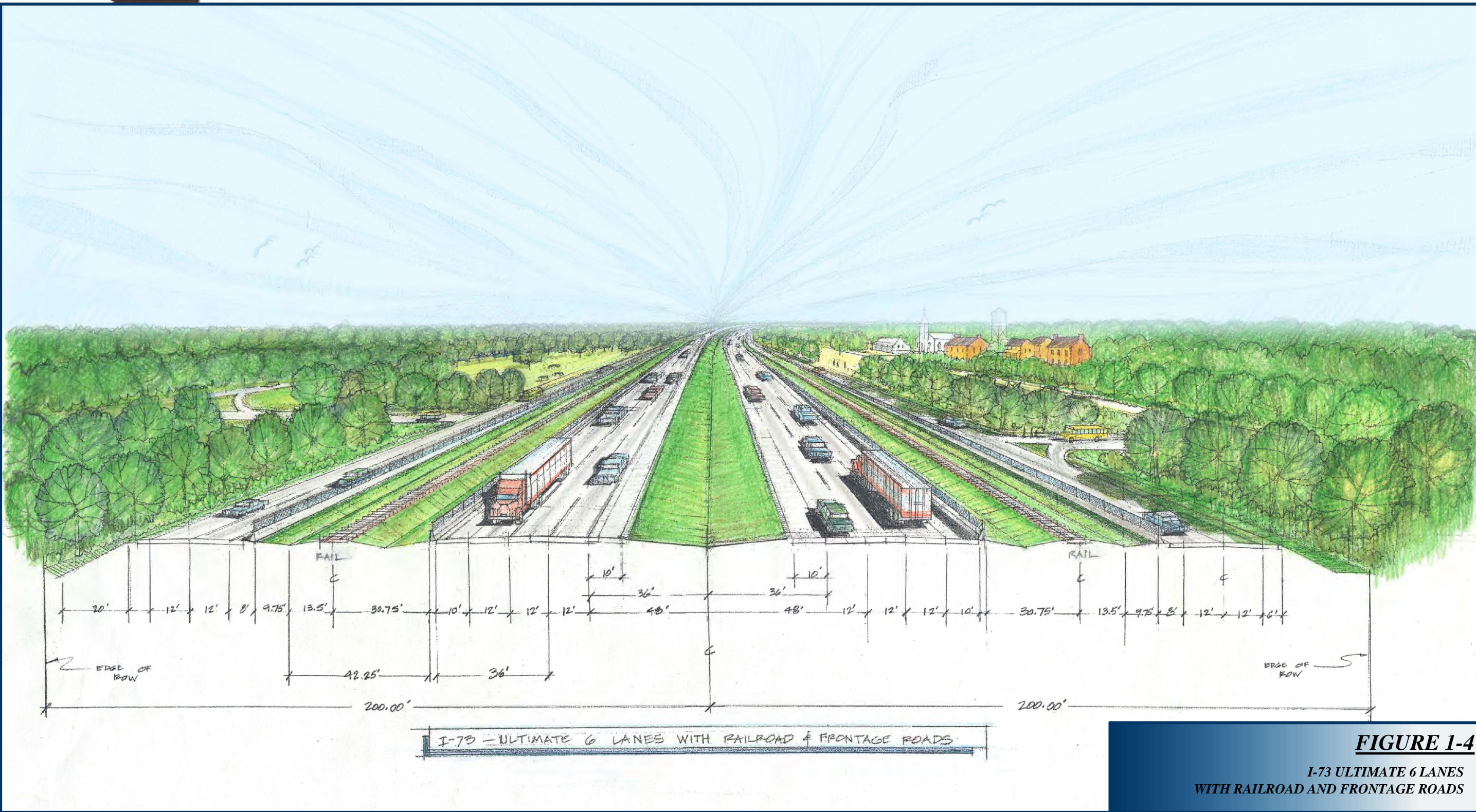
Utilizing the design criteria and environmental data, preliminary Build Alternatives were developed using a Geographic Information System (GIS) based corridor evaluation tool. Approximately 1,910 preliminary Build Alternatives were developed. These preliminary Build Alternatives were compared and three reasonable Build Alternatives emerged during the process and were selected for further study in the Draft Environmental Impact Statement (DEIS). The following document details the process and the results of the various refinement iterations.

Alternative Evaluation Categories were developed during the I-73 South project and used to address the types and extent of potential impacts for the I-73 North project. The issues covered by the Alternative Evaluation Categories were evaluated at various levels of detail over the course of the process, beginning at a very broad level and ending with more detailed evaluations. The primary and secondary needs of the project provided general guidelines for establishing the Alternative Evaluation Categories.



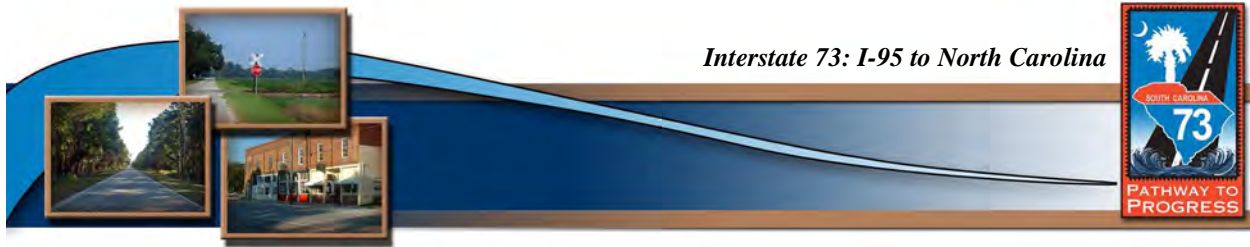






**FIGURE 1-4**  
 I-73 ULTIMATE 6 LANES WITH RAILROAD AND FRONTAGE ROADS





*Interstate 73: I-95 to North Carolina*

The primary needs of the project are:

- ❖ **System Linkage** – Improve national and regional connectivity of northeastern South Carolina by providing a direct link between the future I-73 segment from I-95 to the Myrtle Beach area and the I-73/I-74 Corridor in North Carolina.
- ❖ **Economic Development** – Enhance economic opportunities and development in counties with high unemployment and low income in northeastern South Carolina and southeastern North Carolina.

The secondary needs are:

- ❖ **Improved Access for Tourism** – This project would allow improved access to and from tourist destinations in the eastern part of South Carolina as well as the Hamlet area in North Carolina.
- ❖ **Increased Safety on Existing Roads** – This project would increase the safety of the current roads through the project study area by moving a significant volume of local, out-of-state, and commercial traffic to an interstate designed for a higher volume of traffic.
- ❖ **Multimodal Planning** – This project would accommodate the future provision of a multimodal facility within the interstate corridor.

The Alternative Evaluation Categories were utilized to identify alternative alignments that best serve the project’s purpose and needs. Utilizing the categories ensured that alternatives were developed that satisfied the project Purpose and Need, while at the same time attempted to conserve the natural environment (including wetlands), community values, and cultural resources. This was accomplished by minimizing impacts to the natural and human environment. The Alternative Evaluation Categories are shown in Table 1.1 (refer to page 7).

**Public and Agency Involvement**

The FHWA and SCDOT developed a three-tiered process for public involvement, which included agency involvement through the formation of an Agency Coordination Team (ACT), special interest and local involvement through the Stakeholder Working Group, and public input through meetings, mailings, website, and the telephone hotline. The public, agencies, and other interests (such as local and county organizations) had extensive project involvement during this process. In addition, the North Carolina agencies were also involved through a series of meetings and a field visit.





**Table 1.1  
Alternative Evaluation Categories**

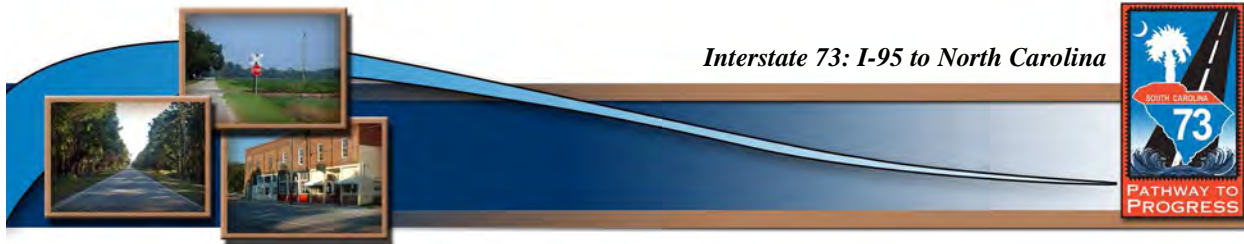
<b><u>Purpose and Need</u></b>	
System Linkage	
Economic Development	
Improved Access for Tourism	
Increased Safety on Existing Roads	
Multimodal Planning	
<b><u>Engineering Criteria &amp; Constructability</u></b>	
<b><u>Economics</u></b>	
Travel Efficiency	
Development Opportunities	
<b><u>Existing and Future Development</u></b>	
<b><u>Indirect and Cumulative Impacts</u></b>	
<b><u>Current and Future Land Use</u></b>	
<b><u>Traffic</u></b>	
<b><u>Construction Cost</u></b>	
Length	
Bridges	
Frontage Roads (length)	
Interchanges	
<b><u>Infrastructure</u></b>	
Airports	
Fire Stations	
Schools	
Others	
<b><u>Environmental Factors</u></b>	
<b><i>Natural Features</i></b>	
Threatened and Endangered Species	
Species of Concern	
Wetlands	
Streams	
Water Quality	
Habitat	
Floodplains	
<b><i>Man-made Features</i></b>	
Hazardous Material Sites	
Parks & Wildlife Refuges (Sec. 4(f)/6(f))	
Historic & Archaeological Sites (Sec. 106)	
Noise	
Farmlands	
<b><u>Socio-economic Issues</u></b>	
Communities	
<b><i>Relocations</i></b>	
Residential	
Business	
Environmental Justice	
<b><u>Utility Impacts</u></b>	
<b><u>Consideration of Existing Transportation Infrastructure</u></b>	
<b><u>Toll Feasibility/Financial Feasibility</u></b>	

Comments and recommendations that were gathered through coordination with the ACT, North Carolina agencies, the Stakeholder Working Group, and the public were reviewed and taken into consideration during alternative development.

**Agency Coordination Team**

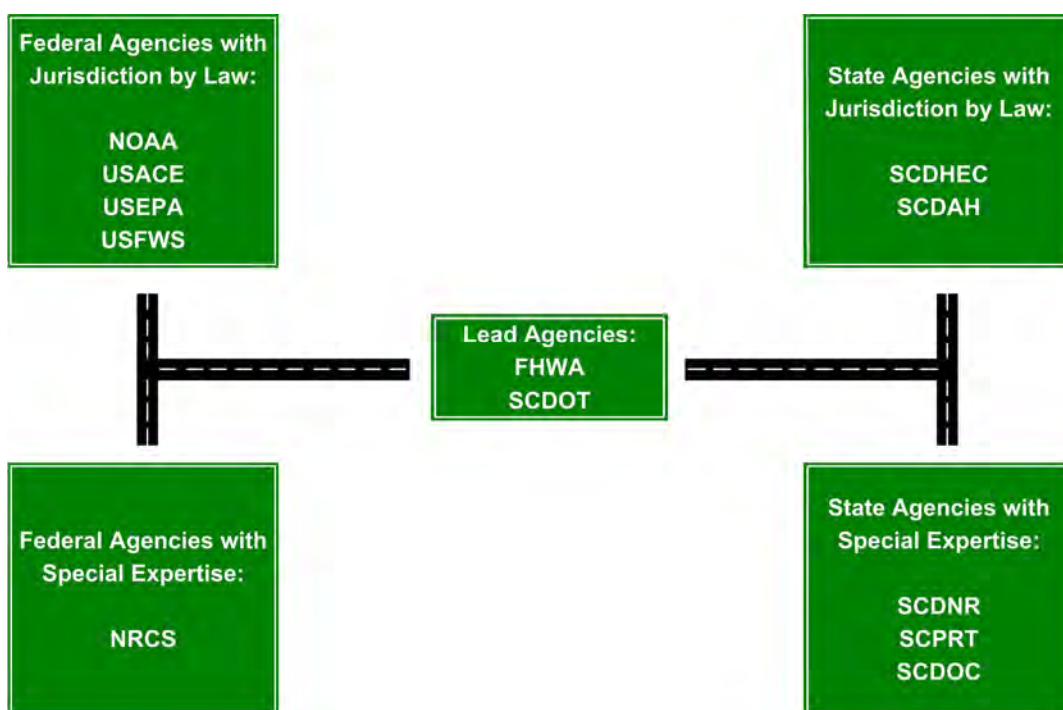
The ACT is an enhancement of the cooperating agency process found in 40 CFR §1501.6. Lead agencies, in this case FHWA and SCDOT, are those with the primary responsibility for the project. Lead agencies can invite other agencies that have special expertise or jurisdiction by law over a resource to be cooperating agencies. Due to the large project study area and array of resources, FHWA and SCDOT invited the National Oceanic and Atmospheric Administration – National Marine Fisheries Service (NOAA), United States Army Corps of Engineers (USACE), United States Department of





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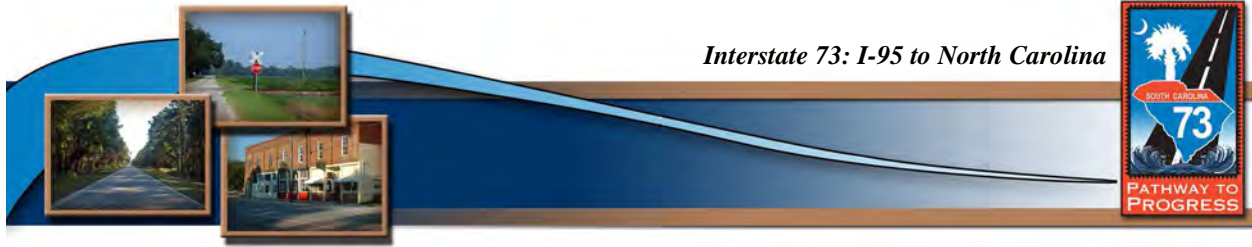
Agriculture – Natural Resources Conservation Service (NRCS), United States Environmental Protection Agency (USEPA), United States Fish and Wildlife Service (USFWS), South Carolina Department of Archives and History (SCDAH), South Carolina Department of Health and Environmental Control (SCDHEC), South Carolina Department of Natural Resources (SCDNR), South Carolina Department of Commerce (SCDOC), and the South Carolina Department of Parks, Recreation, and Tourism (SCPRT) to be cooperating agencies on this project.



The ACT enhances the cooperating agency process by allowing extensive agency involvement and collaboration on the project. The main goals of the ACT were the following:

- to increase agency involvement;
- reach decisions by consensus;
- improve process efficiency of the National Environmental Policy Act (NEPA) of 1969, as amended;
- to meet or exceed agency mandates; and,
- to improve communications and relationships between agencies.

The purpose of the ACT was to offer multiple opportunities for the agencies to be involved in the development of the project. These opportunities were on-going



throughout the process and included agency participation in identifying the project study area, defining the purpose and need of the project, developing analysis criteria, developing alternatives, selecting alternatives for further study, identifying a preferred alternative, mitigating unavoidable impacts, and project design features. The ACT met on a regular basis over the life of the project. The ACT developed a Process Agreement and Dispute Resolution Procedure for the I-73 South project to ensure an efficient process and an expeditious resolution of conflicts. This Process Agreement and Dispute Resolution was also applied to the I-73 North project.

### **Stakeholder Working Group**

A Stakeholder Working Group was organized to create a forum for discussion with, transfer of information to, and to receive feedback from a diverse group of constituent representatives potentially impacted by the proposed project. Stakeholders were engaged in a series of meetings throughout the entire process and provided perspectives that represented the diverse demographics of the project study area as well as various organizations and special interest groups.

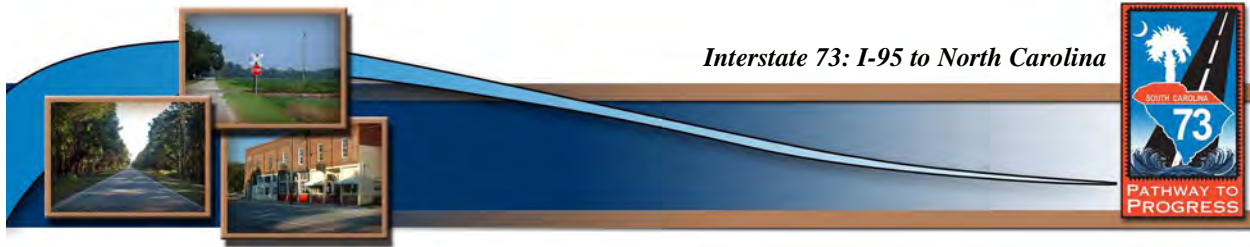
### **Public Involvement**

The public was involved extensively on the project through scoping and information meetings, a telephone hotline, and a project website.

Public Scoping Meetings were held at two locations at the initiation of the project. A meeting was held in Bennettsville, South Carolina, on August 30, 2005, and the second was held in Hamlet, North Carolina, on November 28, 2005. The scoping meetings were an informal, drop-in style format that allowed citizens to ask questions and receive information on an individual basis. A comment card and an informational brochure were distributed to each attendee, which included a brief description of the project, the official website address, and the toll-free hotline number. Once corridors were developed, public information meetings were held to provide information to the public and seek input on the potential corridors.

Two public information meetings were held, with one in Bennettsville, South Carolina, on September 7, 2006, and the second in Hamlet, North Carolina, on September 12, 2006.

A project website was developed and updated periodically with new information and upcoming meeting times and locations. In addition, a toll-free telephone hotline was established for citizens without internet access to receive project updates and find out about meeting times and locations. The website and telephone hotline also allowed citizens to provide comments via email or in a recorded format, respectively. Furthermore, a project newsletter was available on the project website.



## CHAPTER 2 – PRELIMINARY BUILD ALTERNATIVES

### The Corridor Analysis Tool

The Corridor Analysis Tool (CAT) is a computer program that was developed to identify potential road corridors. The CAT program allowed GIS data to be analyzed in a shorter period of time, allowing more time to be spent on interpretation, discussion, and comparison of potential corridors.

The CAT program uses GIS data to identify conceptual corridors among known community and environmental resources available from public databases. Site-specific resources were given an assigned value by ACT members. The CAT developed corridors through weighting the values that were assigned for socioeconomic, engineering, environmental, and infrastructure resources in the project study area. For improved model efficiency, the CAT uses a grid- or cell-based format. The program finds the corridor of least impact between the endpoints and summarizes the impacts for each corridor. A more detailed explanation of how the CAT program operates can be found in Appendix B.

### Data Collection

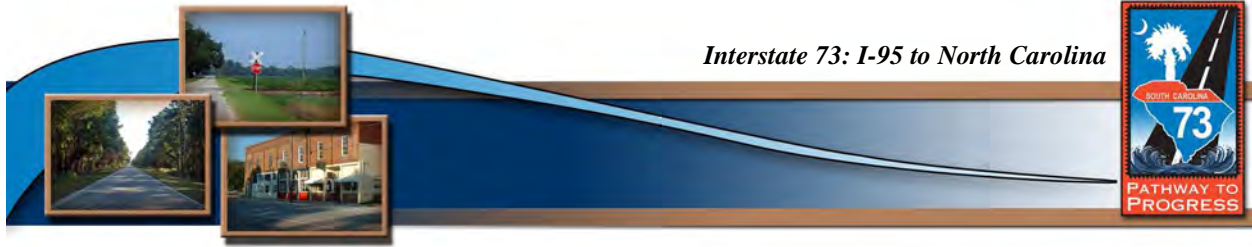
In conjunction with the I-73 South project, multiple government agencies were identified as possible sources of GIS data and six information categories were identified that would be necessary to include in the CAT program. These categories were identified as the following:

- socioeconomic/demographic;
- engineering;
- environmental;
- infrastructure;
- physical/cultural; and,
- reference.

Numerous federal, state, and local agencies along with non-governmental organizations were contacted for their available GIS data (refer to Table 2.1). Some of the agencies that provided the GIS data requested letters of agreement or license agreements, which stated that the data was not to be distributed or utilized for other projects.

A detailed list of the data layers obtained in conjunction with the I-73 South project can be found in the *GIS and Data Collection Activities Technical Memorandum* completed for the I-73 South project. Information about the data layers includes the supplying agency, data coordinate system, date of publication, and date of receipt. Although many of the data layers collected for the I-73 South project were utilized for the I-73 North project, approximately 67 additional GIS





data layers and 635 additional aerial photographs were collected. Data that was obtained specifically for the I-73 North project is detailed in Table 2.2.

**Table 2.1**  
**Agencies Contacted Regarding GIS Data**

<b>LEVEL</b>	<b>AGENCY</b>
<b>National</b>	Federal Emergency Management Agency (FEMA)
	U.S. Census Bureau
	U.S. Department of Agriculture, Natural Resources Conservation Service (S.C. and N.C. Offices)
	U.S. Environmental Protection Agency
	U.S. Geological Survey
	U.S. Fish and Wildlife Service
<b>State</b>	SC Budget and Control Board
	SC Department of Commerce
	SC Department of Health and Environmental Control
	SC Department of Natural Resources
	SC Department of Parks, Recreation, and Tourism
	SC Department of Transportation
	SC Emergency Management Division
	SC Geodetic Survey
	SC Institute of Archaeology and Anthropology
	SC State Historic Preservation Office
	NC Department of Transportation
	NC State Historic Preservation Office
	NC Department of Environment and Natural Resources
<b>County</b>	Dillon County, SC
	Marlboro County, SC
	Richmond County, NC
	Scotland County, NC
	Pee Dee Council of Governments
<b>City</b>	City of Bennettsville
	City of Dillon
<b>Other</b>	Pee Dee Resource Conservation and Development Council
	The Nature Conservancy
	University of South Carolina - Columbia



**Table 2.2  
DATA OBTAINED FOR I-73 NORTH PROJECT**

Data Layer	Contact Agency
<b>A. Demographic/Socioeconomic</b>	
<b>Census Data</b>	
Congressional Districts	Richmond County Government
CMSA/MSA Polygons	Richmond County Government
Designated Places	Richmond County Government
Census Regions	Richmond County Government
Census Tracts - Richmond County	Richmond County Government
Census Tracts - North Carolina	Richmond County Government
School Districts	Richmond County Government
State Legislative Districts	Richmond County Government
Urban Areas - Richmond County	Richmond County Government
5-Digit Zip code Tabulation Area	Richmond County Government
Tribal Subdivision	Richmond County Government
<b>Historical Resources</b>	
National Historic Register Sites	NC State Historic Preservation Office
State Historic Register Sites	NC State Historic Preservation Office
National Historic Register Districts	NC Department of Transportation
National Historic Register Structures	NC Department of Transportation
Community Colleges	NC Department of Transportation
Private Colleges	NC Department of Transportation
Hospitals	NC Department of Transportation
Libraries	NC Department of Transportation
Schools - Non Public	NC Department of Transportation
Schools - Public	NC Department of Transportation
Parks - City of Rockingham	Richmond County Government
Libraries - City of Rockingham	Richmond County Government
Police Department - City of Rockingham	Richmond County Government
Hospital - Richmond Memorial	Richmond County Government
<b>B. Engineering</b>	
Airports - Points	NC Department of Transportation
NCDOT Airports - Arc	Richmond County Government
Aerial Photography (Black/White)	Richmond County Government
Aerial Photography (Natural Color, 2005)	Richmond County Government
Aerial Photography (Color Infrared, 2006)	SC Department of Natural Resources
Tax Parcels	Richmond County Government
Tax Parcels	Scotland County Government
Zoning	Richmond County Government
Topography (2 ft, 5 ft, 10 ft, and 20 ft intervals)	Richmond County Government
Topography Images (USGS 7.5' DRG Quadrangles)	NC Department of Transportation
Topography (5 ft intervals)	Scotland County Government
<b>C. Environmental</b>	
Land Trust Priority Areas	NC Department of Transportation
Managed Land for Conservation Interest	NC Department of Environment and Natural Resources
Managed Land for Conservation Interest	NC Department of Transportation
National Wetland Inventory	NC Department of Transportation
National Wetland Inventory	US Fish and Wildlife Service
National Wetland Inventory	Richmond County Government
Natural Heritage Element Occurrences - Arcs	NC Department of Transportation
Natural Heritage Element Occurrences - Arcs	NC Department of Environment and Natural Resources
Natural Heritage Element Occurrences - Points	NC Department of Transportation
Natural Heritage Element Occurrences - Points	NC Department of Environment and Natural Resources
Natural Heritage Element Occurrences - Polygons	NC Department of Transportation
Natural Heritage Element Occurrences - Polygons	NC Department of Environment and Natural Resources
Preliminary Diadromous Fish Data	NC State University
Significant Natural Heritage Areas	NC Department of Transportation
Significant Natural Heritage Areas	NC Department of Environment and Natural Resources
Water Supply Watersheds	NC Department of Transportation
Water Quality Monitoring Stations	NC Department of Environment and Natural Resources
Soils - Detailed	Richmond County Government
Soils - General	Richmond County Government
Gamelands	Richmond County Government
Streams	Richmond County Government
Watershed Boundaries	Richmond County Government
Watershed Boundaries - Arcs	US Department of Agriculture
Watershed Boundaries - Polygons	US Department of Agriculture
US Fish and Wildlife Conservation Easements	NC Department of Transportation
<b>D. Infrastructure</b>	
Fire Hydrants	Richmond County Government
Railroads	NC Department of Transportation
Railroads	Richmond County Government
Roads	NC Department of Transportation
Roads - Richmond County	Richmond County Government
Sewer Lines	Richmond County Government
Sewer Treatment Plants	NC Department of Transportation
Sewer Treatment Plants	Richmond County Government
Water Lines	Richmond County Government
Water Tanks	Richmond County Government
Water Treatment Plants	NC Department of Transportation
Water Treatment Plants	Richmond County Government
Fire Stations	Richmond County Government
Fire Response Areas	Richmond County Government
Industrial Locations	Richmond County Government
NCDOT Primary Roads	Richmond County Government



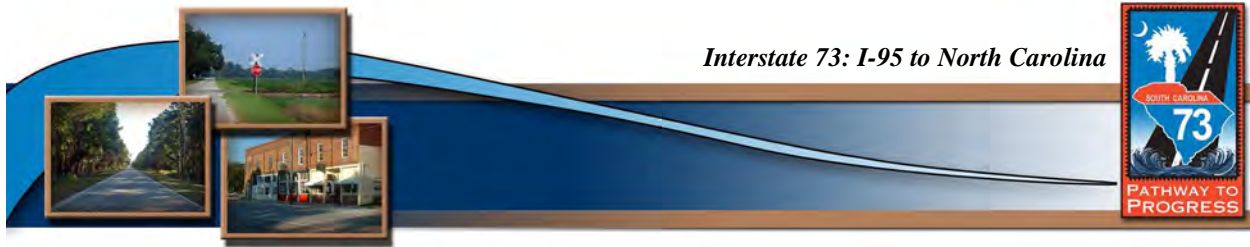


**Table 2.2 (Continued)  
DATA OBTAINED FOR I-73 NORTH PROJECT**

Data Layer	Contact Agency
NCDOT Railroads	Richmond County Government
NCDOT Roads	Richmond County Government
NCDOT Secondary Roads	Richmond County Government
Street Ownership - City of Rockingham	Richmond County Government
Street Centerlines - Scotland County	Scotland County Government
Transmission Lines, Pipe Lines	US Geologic Survey
<b>E. Physical/Cultural</b>	
<b>RICHMOND COUNTY</b>	
Airport	US Geologic Survey
Bridge	US Geologic Survey
Building	US Geologic Survey
Canal	US Geologic Survey
Cemetery	US Geologic Survey
Dam	US Geologic Survey
Lake	US Geologic Survey
Locale	US Geologic Survey
Park	US Geologic Survey
Post Office	US Geologic Survey
Populated Place	US Geologic Survey
Reservoir	US Geologic Survey
School	US Geologic Survey
Stream	US Geologic Survey
Swamp	US Geologic Survey
Tower	US Geologic Survey
<b>SCOTLAND COUNTY</b>	
Airport	US Geologic Survey
Basin	US Geologic Survey
Bridge	US Geologic Survey
Building	US Geologic Survey
Canal	US Geologic Survey
Cemetery	US Geologic Survey
Church	US Geologic Survey
Civil	US Geologic Survey
Crossing	US Geologic Survey
Dam	US Geologic Survey
Gut	US Geologic Survey
Hospital	US Geologic Survey
Reservoir	US Geologic Survey
School	US Geologic Survey
Stream	US Geologic Survey
Swamp	US Geologic Survey
Tower	US Geologic Survey
<b>F. Reference</b>	
County Boundary - Polygon	NC Department of Transportation
City ETJ Boundary	Richmond County Government
City Limits Boundary	Richmond County Government
County Boundary - Polygon	Richmond County Government
County Boundary - Arcs	Richmond County Government
Aerial Index - B/W Aerials	Richmond County Government
Aerial Index - Color Aerials	Richmond County Government
NCDOT City Boundary - Arcs	Richmond County Government
NCDOT County Boundary - Arcs	Richmond County Government







The greatest limitation was the availability of data, especially on a local government level. Although a large amount of data was collected, many of the GIS layers were found to have poor metadata or no metadata at all. This lack of adequate metadata made it difficult to utilize all the data. In addition, the quality and accuracy of the data also made it difficult to use other GIS layers within the CAT program. Due to these limitations, 53 GIS layers were determined to be complete and accurate for possible inclusion in the CAT program; refer to Table 2.3. The metadata for the layers acquired for the I-73 North project and included in the CAT program are detailed in Appendix C. In addition, communities were identified within the project study area and approximate boundaries were established based on public input, aerial photography, and field visits. These communities were incorporated into the CAT program and given a value (10) so the alternatives would avoid these communities.

The 53 potential data layers were organized into four categories entitled environmental, roadways, infrastructure, and demographic/socioeconomic. As part of the I-73 South project, the data layers were presented to the ACT for review and comment. The ACT selected layers and assigned numerical values, on a scale of one to ten (ten representing the most valuable to avoid), to each feature within the 53 potential data layers utilized by the CAT; refer to Table 2.4. For example, the environmental category included wetlands from the National Wetland Inventory (NWI) Mapping. Each wetland type in the NWI layer was assigned a numerical value in consultation with the ACT. All the numerical values assigned by the agencies for the I-73 South project were utilized by the CAT for the I-73 North project, except the values for Evergreen Irregularly Flooded Uplands and Evergreen Forested Uplands, which were changed from a four to a value of one as agreed upon by the ACT. This modification was made because the majority of Evergreen Irregularly Flooded Uplands and Evergreen Forested Uplands within the project study area were found to be planted pine plantations. It was determined by the ACT that these areas would be better to impact by an alternative since they had been previously disturbed.

The ACT also designated some of the GIS layers as constraints, which resulted in the information within the layer being removed from consideration by the CAT when generating alternative corridors. A potential alignment did not pass through a feature designated as a constraint. The following layers were designated as constraints by the ACT;

- Intact Carolina bays;
- Mitigation Banks and Sites;
- Known Federal Threatened and Endangered Species Locations;
- Known State Threatened and Endangered Species Locations;
- Archaeology Sites Potentially Eligible, Eligible, or Listed on National Register of Historic Places;
- Historic Resources Potentially Eligible, Eligible, or Listed on National Register of Historic Places;
- SCDNR Heritage Preserves;



**Table 2.3  
Possible GIS Layers for CAT Program**

<b>LAYER</b>
<b>ENVIRONMENTAL</b>
National Wetland Inventory Mapping (Wetlands and Uplands)
Little Pee Dee River in Dillon County
Soils
Mitigation Banks and Sites
Species of Concern
Federal and State Threatened and Endangered Species
Archaeology Sites
Historic Resources (Architectural)
National Historic Register Sites
Heritage Preserves
Parks (federal, state, and local)
Wildlife Refuges
Federal Lands (Over 640 acres)
Land Stewardship
Hazardous Sites
Landfills
NPDES Sites
Streams/Rivers/Lakes
Streams/Rivers/Lakes-Special Designation
Watersheds
Floodplain for Great Pee Dee River
Floodplains
Land cover
Mines/Geologic Features
<b>ROADWAYS</b>
Roads (Urban and Rural)
<b>INFRASTRUCTURE</b>
Railroads
Transmission Lines
Oil Pipelines
Bridges
Airports
Buildings (Industrial Vacant)
Dams (Hazardous)
Fire Stations
Administrative Buildings (Government)
Churches
Community Facilities
Health Facilities
Hospitals
Libraries
Mental Health Facilities
Schools
Cemeteries
Incorporated Areas
Municipalities
Sewer Infrastructure
Pipelines
Treatment Plants
Surface Withdrawal Locations
Storage Sites
<b>DEMOGRAPHIC/SOCIOECONOMIC</b>
Minority Areas/Density
Low Income Areas/Density
Population Density
Community Boundaries



**Table 2.4  
LAYER INFLUENCE AND ATTRIBUTE RANKING WORKSHEET**

Layer No.	Status	Layer Name	Layer Influence (%)	Feature (Sub Layer)	Attribute Ranking (1 to 10)	Buffer	Comments
<b>A. Environmental</b>							
1a	In	<b>Wetlands (NWI based)</b>	40	Freshwater Lakes & Impoundments	3		
				Rivers & Canals			
				Artificial/Canal	5		
				Natural	8		
				Ponds & Borrow Pits			
				Impacted	2		
				Not Impacted	8		
				Unvegetated Flats			
				Impacted	2		
				Not Impacted	7		
				Savannahs & Wet Meadows			
				Impacted	7		
				Not Impacted	10		
				Freshwater Marshes			
				Impacted	7		
				Not Impacted	10		
				Aquatic Beds			
				Impacted	2		
				Not Impacted	10		
				Pine Savannahs & Wet Flatwoods			
				Impacted	4		
				Not Impacted	8		
				Bottomland Hardwoods			
				Impacted	6		
				Not Impacted	9		
				Hardwood Swamp			
				Impacted	6		
				Not Impacted	9		
				Bay Forests			
				Impacted	4		
				Not Impacted	7		
				Evergreen Shrub Bogs/Pocosins			
				Impacted	4		
				Not Impacted	7		
				Deciduous Shrub Swamps			
				Impacted	3		
				Not Impacted	5		
				Flooded Swamp/Beaver Ponds			
				Impacted	3		
				Not Impacted	5		
		<b>Constraint</b>		<b>Carolina Bays</b>			<b>Aerial photography will be used to identify non impacted Carolina Bays</b>
		<b>Uplands (NWI based)</b>		Upland Residential	1		
				Upland Commercial/ Services	1		
				Upland Industrial	1		
				Upland Transportation & Utilities	1		
				Upland Industrial & Commercial Complex	1		
				Other Urban	1		
				Upland Agriculture (Cropland/Pasture)	1		
				Upland Orchards/ Nurseries	1		
				Upland Confined Feed Operations	1		
				Upland Herbaceous Rangeland	1		
				Deciduous Forest	5		
				Upland Evergreen Forest	1		
				Upland Evergreen Forest (Irregularly Flooded)	1		
				Upland Mixed Forest	4		
				Quarries	1		
				Unknown (non-categorized uplands)	1		
		Little Pee Dee River			10	Buffer	
		Streams		Streams (3rd Order)	8		
2a	Out	Soils					May use later in process for more detailed analyses
3a	Constrain	Mitigation Banks & Sites					Rank Scale Value High
4a	In	State Species of Concern	10		10		provided by SCDNR
5a	Constrain	Federal and State Threatened & Endangered Species				Buffer	Buffer based on species' habitat requirements
6a	In	Archaeology Sites					
	Constrain			Listed on NRHP/Eligible			
	Constrain			Potentially Eligible for NRHP			
	Out			Others			No impact to project
7a	In	Historic Resources					
	Constrain			Listed on NRHP/Eligible			
	Constrain			Potentially Eligible for NRHP			
	Out			Others			No impact to project
9a	Constrain	Heritage Preserves					Cross check with Land Stewardship; Duplication
10a	Constrain	Parks (Federal, state and local)					
11a	Constrain	Wildlife Refuges					Duplication; Data in Heritage Preserves
12a	Constrain	Federal Lands (>640 acres)					None present in study area
13a	Constrain	Land Stewardship/DNR Gap Analysis					Cross check with Heritage Preserves
14a	Constrain	Hazardous Sites					Use only NPS/SPL
15a	Constrain	Landfills					
16a	Out	NPDES Sites					No impact to project
19a	Out	Watersheds					No impact to project
20a	Constrain	Floodplain for Great Pee Dee River					Great Pee Dee River designated Constraint; others out
21a	Out	Flood Plains					All other floodplains
23a	Constrain	Mines/Geologic Features					
<b>Environmental Total</b>			<b>50</b>				



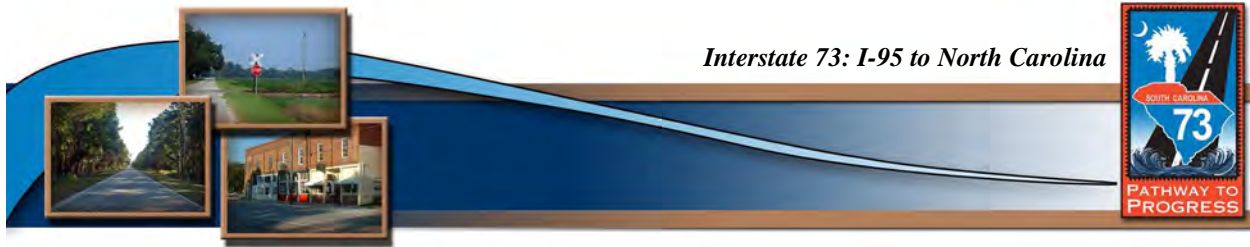




**Table 2.4 (Continued)  
LAYER INFLUENCE AND ATTRIBUTE RANKING WORKSHEET**

Layer No.	Status	Layer Name	Layer Influence (%)	Feature (Sub Layer)	Attribute Ranking (1 to 10)	Buffer	Comments
<b>B. Roadways</b>							
1b	In	Roads	10	Urban			Break out into Functional Class and Urban/Rural
				Principal Arterial - Other	1		4 or more lanes
				Minor Arterial	2		2 to 4 lanes
				Major Collector	2		2 to 3 lanes
				Minor Collector	3		2 lanes
				Local	3		2 lanes
				Rural			
				Principal Arterial - Other Freeways & Expressways	1		4 or more lanes
				Principal Arterial - Other	1		4 or more lanes
				Minor Arterial	3		2 lanes
				Collector	3		2 lanes
				Local	3		2 lanes
<b>Roadways Total</b>			<b>10</b>				
<b>C. Infrastructure</b>							
1c	In	Infrastructure	20			Buffer	Evaluating buffer for infrastructure point features
	Out			Railroads			No impact to project
	Out			Transmission Lines			No impact to project
	Out			Oil Pipelines			No impact to project
	Out			Bridges			No impact to project
	Out			Airports			No impact to project
	Out			Buildings (industrial/vacant)			No impact to project
	Out			Dams (Haz)			No impact to project
	In			Fire Stations	6	Buffer	Rank Scale Value Med/High
	In			Administrative Buildings (government)	4	Buffer	Rank Scale Value Low/Med
	In			Churches	9	Buffer	Rank Scale Value High
	In			Community Facilities (City Hall, etc.)	8	Buffer	Rank Scale Value High
	In			Health Facilities (licensed)	5	Buffer	Rank Scale Value Med
	In			Hospitals	8	Buffer	Rank Scale Value High
	In			Libraries	8	Buffer	Rank Scale Value Med
	In			Mental Health Facilities	5	Buffer	Rank Scale Value Med
	In			Schools	5	Buffer	Rank Scale Value Med
	Constraint			Cemeteries			
	In			Incorporated Areas	6	Buffer	
	In			Municipalities / Major			Duplication; Used Incorporated Areas data
	In			Sewer Infrastructure	9		
	Out			Pipe lines			No impact to project
	In			Treatment Plants	9	Buffer	Rank Scale Value High
	Out			Discharge Points			No impact to project
	In			Water Infrastructure	9		
	In			Surface Withdrawal Locations	8	Buffer	Rank Scale Value High
	In			Storage Sites	7	Buffer	Rank Scale Value Med
<b>Infrastructure Total</b>			<b>20</b>				
<b>D. Demographic/Socioeconomic</b>							
1d	In	Minority Areas/Density	5	High Density	9		Determine density values/range and Scale Value
				Moderate Density	6		Determine density values/range and Scale Value
				Low Density	2		Determine density values/range and Scale Value
2d	In	Low Income Areas/Density	5	High Density	9		Determine density values/range and Scale Value
				Moderate Density	6		Determine density values/range and Scale Value
				Low Density	2		Determine density values/range and Scale Value
3d	In	Population Density	10	High Density	9		Determine density values/range and Scale Value
				Moderate Density	6		Determine density values/range and Scale Value
				Low Density	2		Determine density values/range and Scale Value
<b>Demographic/Socioeconomic Total</b>			<b>20</b>				
<b>Grand Total</b>			<b>100</b>				





- Publicly owned Parks (Federal, State, and Local);
- Hazardous Sites on National and State Priority Lists;
- Landfills;
- Mines/Geologic Features;
- Airports;
- Schools;
- Cemeteries; and,
- Sandy Ridge Girl Scout Camp.

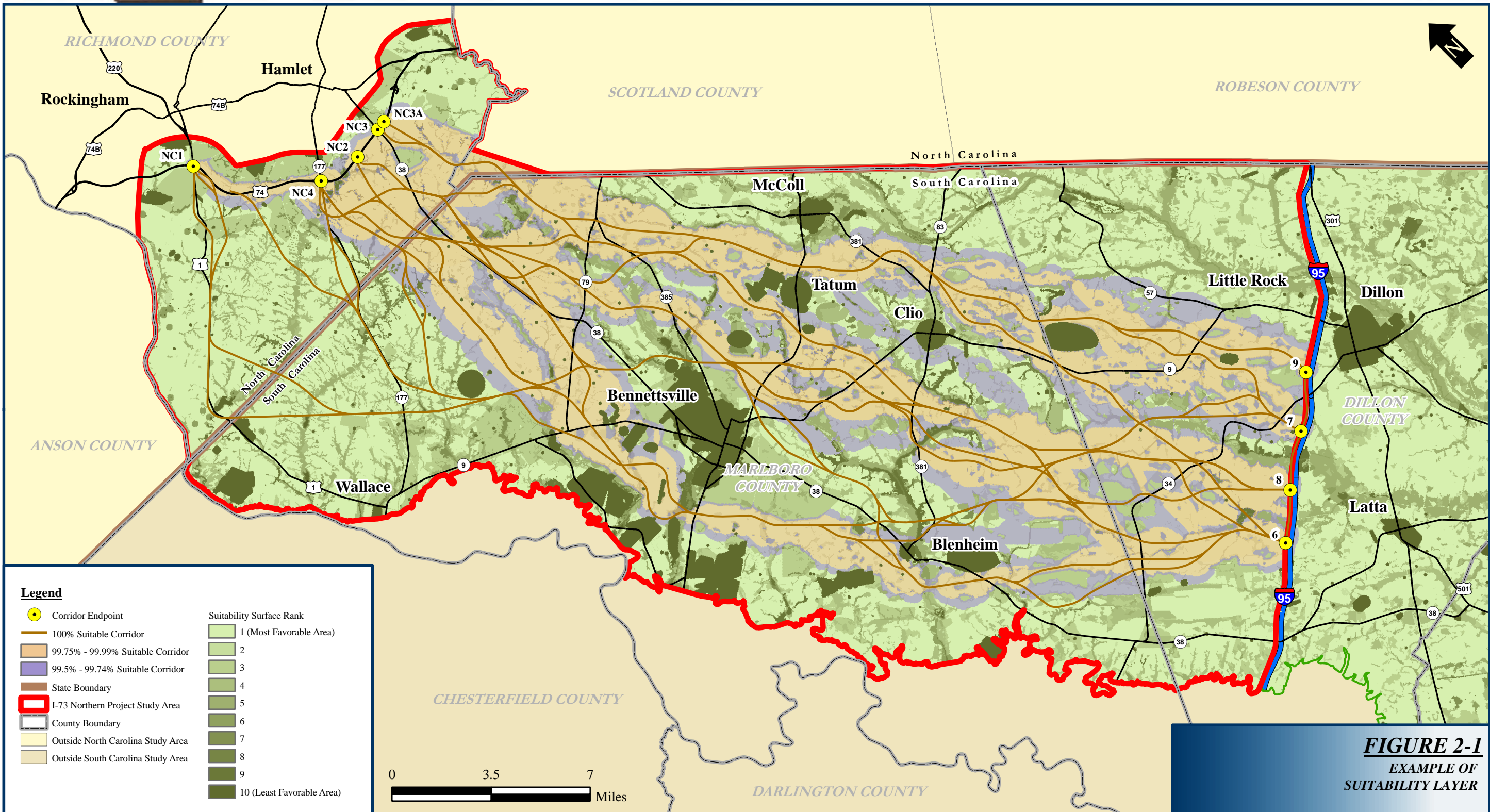
The four categories were given an overall importance value that totaled 100 for the CAT program. They were given a value based upon the relative importance given to each category; environmental (50), roadways (10), infrastructure (20), and demographics/socioeconomic (20). The ACT agreed to run the CAT program with the values as shown in Table 2.4. The criteria weighting and constraints identified by the ACT were then programmed into the CAT and used to generate preliminary Build Alternatives.

### **Testing of CAT Program**

To test the accuracy of the CAT program, evaluations were completed to verify that the CAT was selecting the path that minimized potential impacts to the environment. A CAT Workshop was held with the ACT to discuss potential changes in the value of upland categories (Evergreen Irregularly Flooded Uplands and Evergreen Forested Uplands), analysis of how the CAT program was valuing power line easements, and to recommend potential waypoints. Three methods, suggested by ACT members, were evaluated for combining the CAT values:

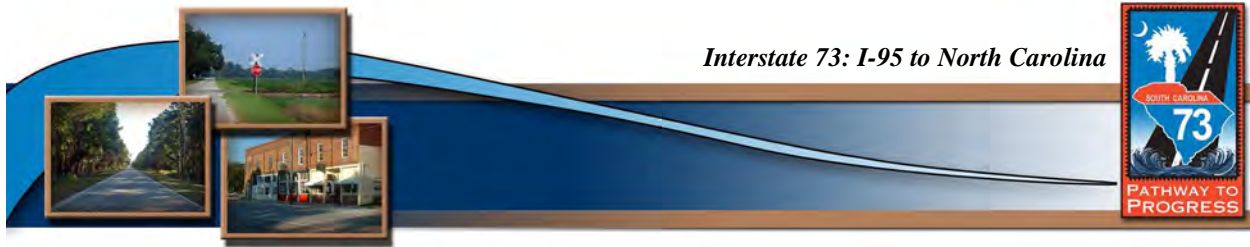
- Baseline – the “no-value” cells were combined in the total value;
- Modified Average – the “no-value” cells were not combined into the total value, and;
- Max – the highest category value in each cell was counted as the total value.

The CAT used a grid- or cell-based format. The program found the corridor of least impact between the endpoints of each alignment (starting and ending points) and summarized the impacts for each alignment corridor. Endpoints were set along existing roads in North Carolina and starting points along I-95 in South Carolina. The program then developed a “least impact” line that connected the two points. Surrounding this line was a “suitability grid” that illustrates areas that are within a designated percentage (one to two percent) of the “least impact” line (refer to Figure 2-1). When the CAT was run for all of the starting and ending points there were two wide corridors developed by the suitability grids, one on the eastern side of the study area and one more centrally located (refer to Figure 2-1). A “waypoint”, or point midway between the start points along I-95 and endpoints in North Carolina, was inserted west of Bennettsville. This



**FIGURE 2-1**  
EXAMPLE OF  
SUITABILITY LAYER



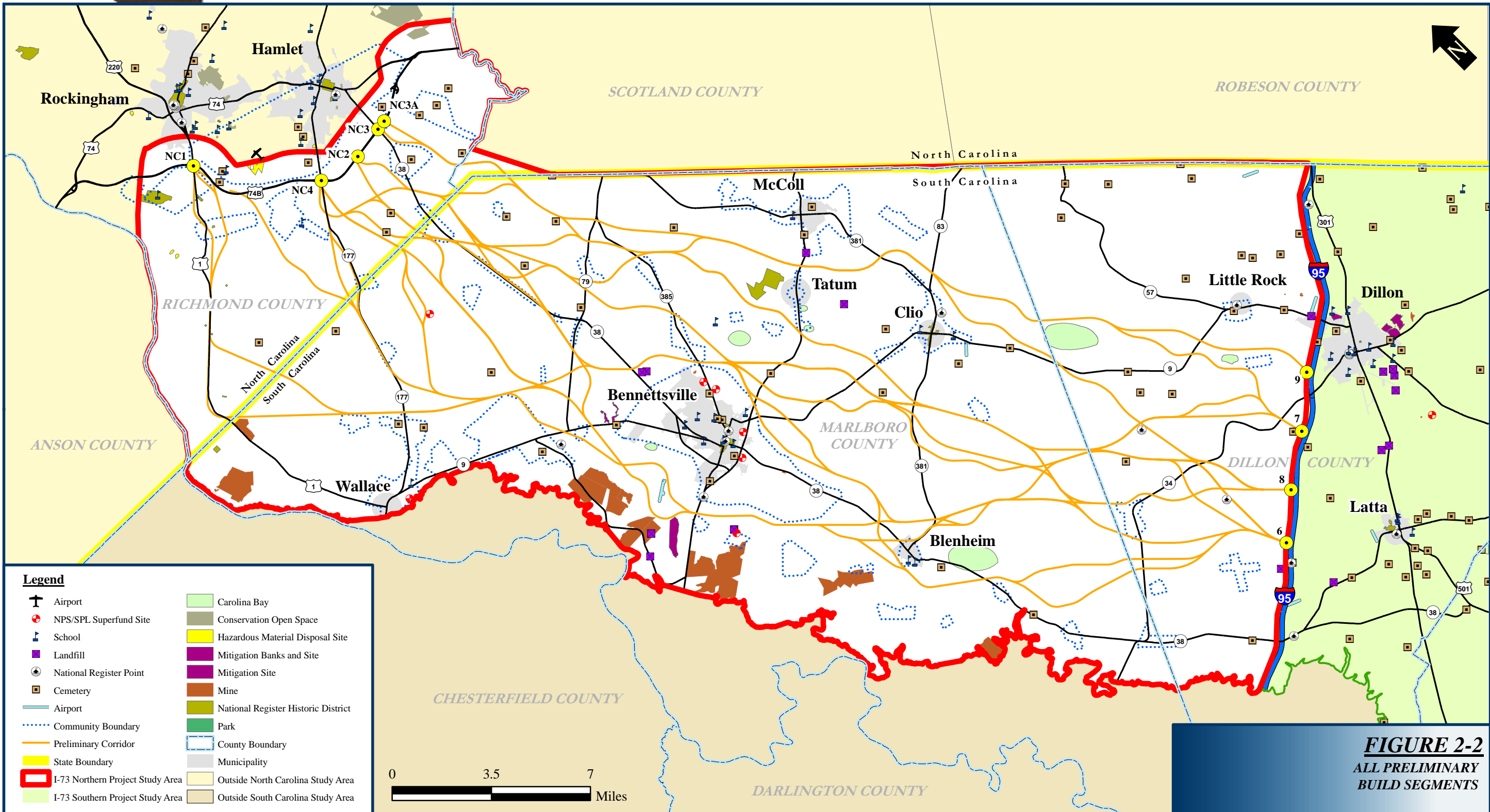


*Interstate 73: I-95 to North Carolina*

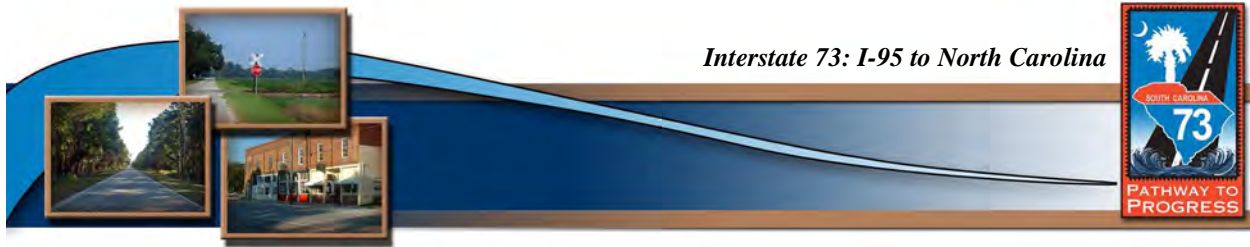
resulted in a third corridor west of Bennettsville. This was partially in response to many of the public comments at the Public Scoping Meeting urging a western alignment and partially to provide a fuller range of alternatives for evaluation at this early stage of the alternative development. To ensure that the alignment would be functional as a roadway, the “least impact” line was adapted to accommodate a 75-mile per hour design speed using roadway design criteria.

Further analysis was also completed on the methods suggested at the CAT Workshop by ACT members. For each of the suggested methods, the CAT program was run and suitability surfaces were generated. The suitability surfaces were determined to be very similar and would all be used to develop alternatives. Engineers used the suitability layers to review the project study area at a larger scale, taking into consideration wetland systems and larger developed areas. Additional segments were developed that were incorporated into the overall preliminary Build Alternatives. In addition, the ACT agreed by consensus to change the upland value for Evergreen Irregularly Flooded Uplands and Evergreen Forested Uplands from a four to a value of one.

Overall, the CAT and the suitability layer analysis, developed approximately 122 preliminary Build segments, which were combined to form 1,896 possible preliminary Build Alternatives, refer to Figure 2-2. The CAT-quantified impacts for each of the 1,896 preliminary Build Alternatives are summarized in Appendix D.







## **CHAPTER 3 – REASONABLE ALTERNATIVES**

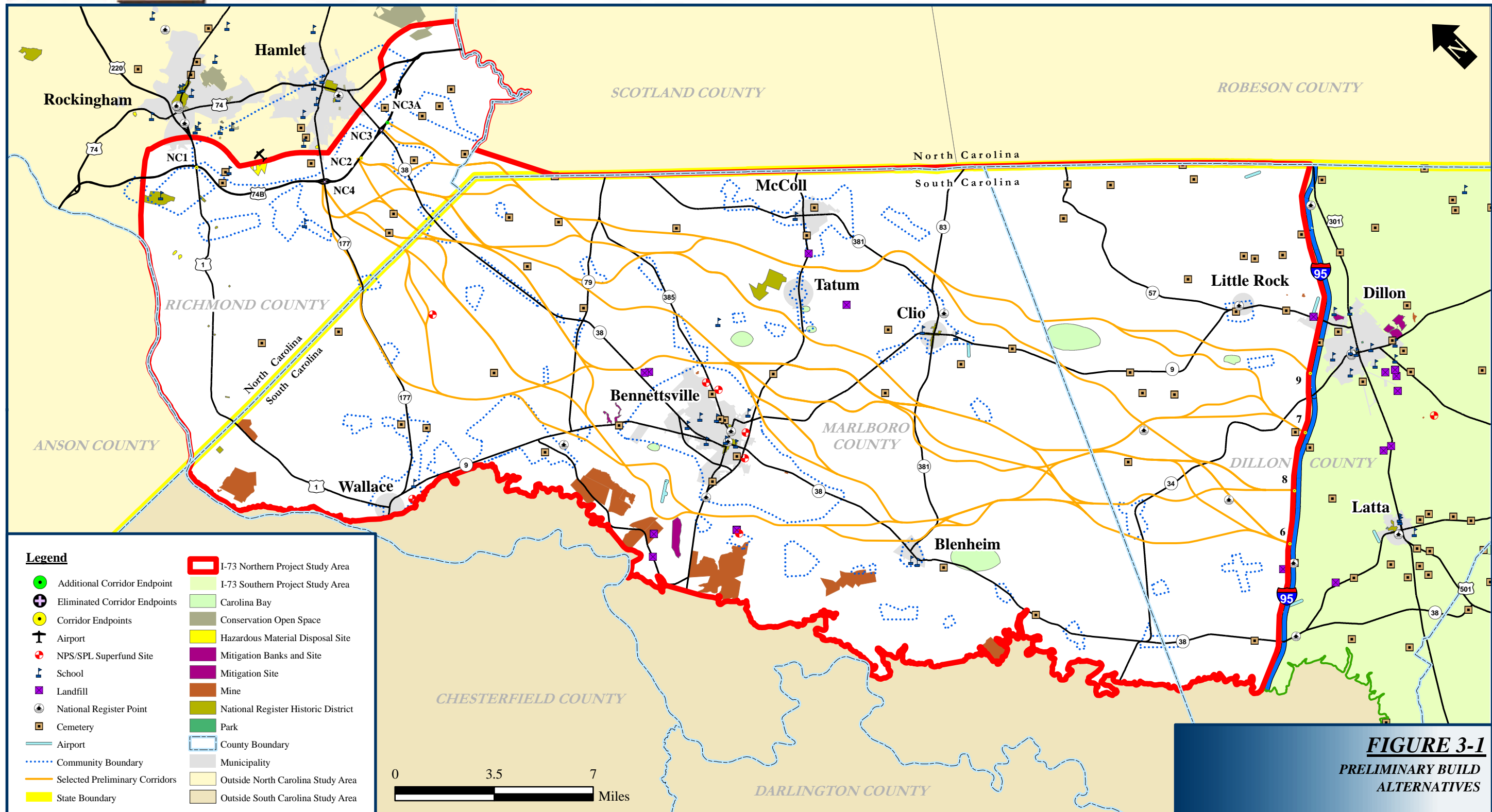
The Alternative Evaluation Categories were used to compare the 1,896 preliminary Build Alternatives. The alternatives were first screened using the Purpose and Need. The primary needs, system linkage and economic development, were used as the first level of screening. For the project need to be fulfilled, the alternatives had to improve national and regional connectivity by providing a direct link between future I-73 and I-95 to the I-73/I-74 Corridor, as well as enhance economic opportunities in South Carolina. No preliminary Build Alternatives were eliminated due to failure to meet the primary needs of the project.

It was determined that secondary needs of the project would be met indirectly after completion of the project and when the primary needs are fulfilled. The secondary needs of the project were identified as improved access for tourism, increased safety on existing roads, and multimodal planning. The project would allow easy access to tourist destinations in the northeastern part of the state or from the northeastern part of the state to the coast, improve safety on roads by moving a significant volume of traffic to an interstate designed to handle a higher volume of traffic, and allow planning for future provision of a multimodal facility within the Interstate Corridor. No preliminary Build Alternatives were eliminated due to failure to meet the secondary needs of the project.

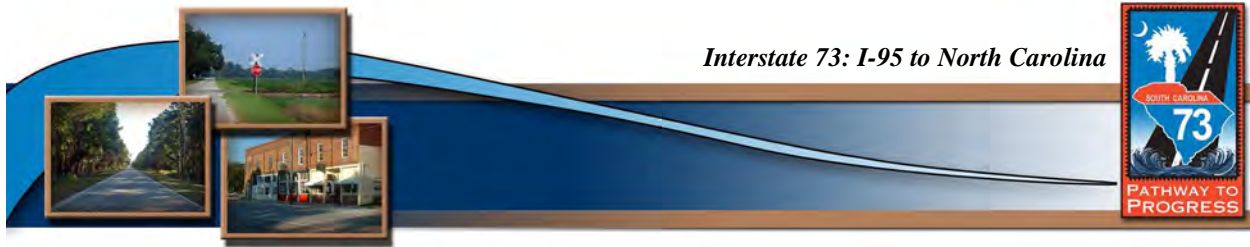
Once it was determined that the preliminary Build Alternatives met the Purpose and Need, they were next screened by the potential impacts to the natural environment. At this early part of the process, potential impacts from interchanges were accounted for by using a 500-foot corridor to quantify impacts. Data designated as constraints were not impacted by any of the 1,896 preliminary Build Alternatives developed by the CAT. Because there was a large number of preliminary Build Alternatives, many with high potential wetland impacts, all alternatives with wetland acreage impacts over 300 acres were eliminated to reduce the number of preliminary Build Alternatives. This resulted in 474 preliminary Build Alternatives to evaluate further (refer to Figure 3-1 and Appendix D).

Following the elimination of these preliminary Build Alternatives that would impact over 300 acres of wetlands, the locations of the proposed interchanges with I-74 in North Carolina were reviewed. Interchanges were initially proposed at:

- Endpoint NC 1, located where U.S. Route 1 and I-74 intersect;
- Endpoint NC 2, midway between existing interchanges with N.C. Route 177 and N.C. Route 38;
- Endpoint NC 3, located where N.C. Route 38 intersects I-74; and,
- Endpoint NC 4, located at the intersection of N.C. Route 177 and I-74.







The interchange at endpoint NC 1 was eliminated because the segments that connected at this point were longer and had high wetland impacts. The interchange at endpoint NC 2 was kept because it appeared to have sufficient distance between the two existing interchanges to allow a functional interchange. The interchange at endpoint NC 3 was shifted to the east to avoid being right on top of the N.C. Route 38/I-74 interchange, but not so far east as to interfere with the existing N.C. Route 381/I-74 interchange. The interchange at endpoint NC 4 was eliminated because of the difficulty of developing a new interchange on top of the existing one with N.C. Route 177. At this point in the development of the alternatives it was preferable to avoid putting a new interchange on top of an existing one to simplify design and keep potential costs lower. As a result, 269 alternatives were eliminated with endpoint NC 4, which left 205 preliminary Build Alternatives for further evaluation (refer to Appendix E).

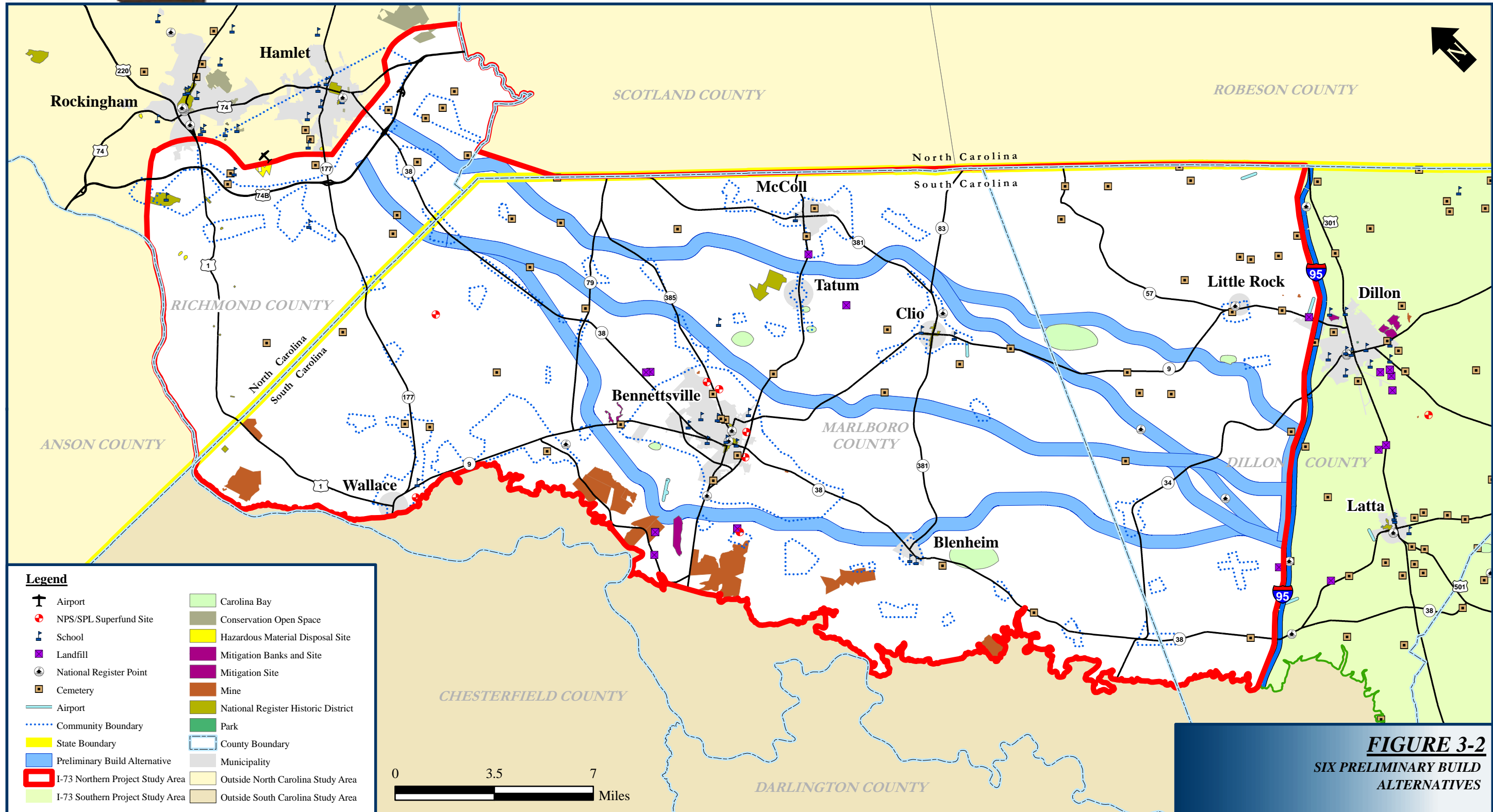
The following impacts were quantified by the CAT and compared in an effort to reduce the remaining 205 preliminary Build Alternatives:

- Wetland acreage (classified by previously impacted or not impacted);
- Wetland value (determined by ACT-assigned valuation and acreage impacted);
- Upland acreage (total acreage);
- Species of concern;
- Infrastructure (i.e. churches or fire stations); and,
- Corridor length (used to estimate potential cost).

During the evaluation of the 205 preliminary Build Alternatives, they were mapped and compared with the suitability grids. It was determined that all the alternatives were contained within the three corridors (refer to Figure 2-1). Engineers used the suitability grids to review the alignments, taking into consideration constraints, wetland systems, and larger developed areas. Additional segments were developed and those that reduced impacts were incorporated into the overall preliminary Build Alternatives. Each of the three corridors was evaluated to determine the alternatives that had the lowest potential impact. Six preliminary Build Alternatives were selected from the three corridors and had the least potential impacts to the above referenced categories, as well as to communities (refer to Figure 3-2). The six preliminary Build Alternatives were presented to the ACT and after extensive discussion and analysis, the ACT reached consensus to further evaluate the six preliminary Build Alternatives.

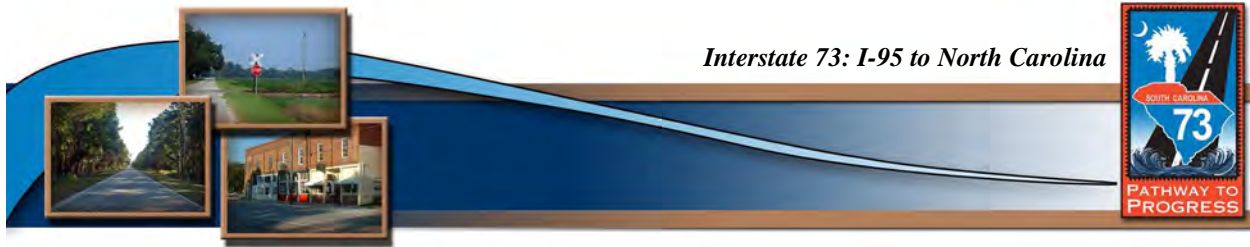
### **Public Information Meetings**

Following the designation of the six preliminary Build Alternatives by the ACT, the alternatives were presented to the public for review and comment. Each alternative was presented as an approximately 2,500-foot wide corridor. Two public information meetings were held, the first in Bennettsville, South Carolina, and the other was held in Hamlet, North Carolina, to present the six preliminary Build Alternatives.



**FIGURE 3-2**  
SIX PRELIMINARY BUILD ALTERNATIVES





## *Interstate 73: I-95 to North Carolina*

The first meeting was at Bennettsville Middle School on September 7, 2006. At this meeting, 398 people attended and 97 left comments during the meeting. On September 12, 2006, the second public information meeting was held at the Cole Auditorium on the campus of Richmond County Community College in North Carolina where 73 people attended and five left comments at the meeting.

Approximately 191 comments were received at the two public information meetings and submitted by mail following the meetings. Each written comment was reviewed by the Project Team, as were the verbal comments heard at each of the public involvement meetings. The alternatives were then modified in response to these comments.

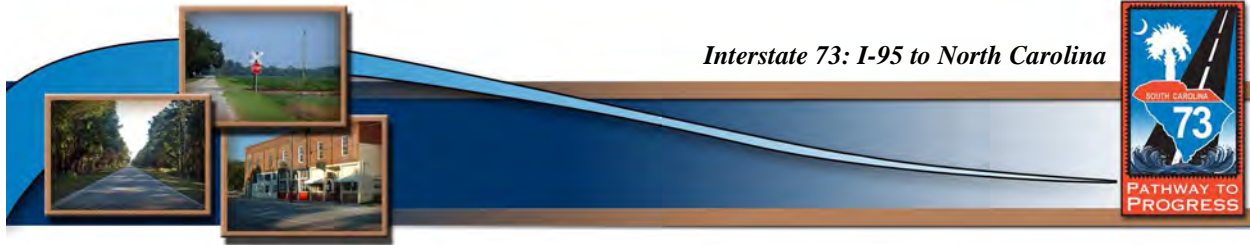
In addition to the public information meetings, representatives of the Project Team attended other meetings to generate interest and participation within the project study area.

Public comments were received regarding the use of existing S.C. Route 38, including intersecting with I-95 at the existing S.C. Route 38 interchange. The existing interchange at S.C. Route 38 and I-95 would have required expansion to accommodate a larger design of an interstate to interstate connection, I-73 to I-95. Four commercial establishments that provide approximately \$7 million annually for Dillon County would have been impacted. The businesses could not be relocated at the same interchange, potentially losing this annual revenue for Dillon County, since both I-73 and I-95 would have fully controlled access. In addition, utilizing the existing S.C. Route 38 north of I-95 would have impacted the communities of Oak Grove, Brownsville, Bristow, Blenheim, and Monroe Crossroads before entering downtown Bennettsville. The potential impacts to the residences, churches, and cemeteries in these communities would have been much higher than those associated with the six preliminary Build Alternatives. Maximum use of existing S.C. Route 38 was attempted north of Bennettsville, but existing communities such as Brightsville, Aarons Temple, and Prevatts Chapel would have been severely impacted.

### **Designation of Reasonable Alternatives**

The design of the six preliminary Build Alternatives was refined and the alternatives were then given greater scrutiny in the environmental evaluation. The evaluation categories were expanded. More specific data was reviewed for each alternative, including preliminary interchange locations along I-95, to provide a more accurate representation of potential impacts. The categories discussed previously were utilized, as well as the following resources to evaluate the six preliminary Build Alternatives in further detail:

- Streams (total crossings, perennial crossings, and intermittent crossings);
- Water Quality (Protected/Special Designation and 303(d) impaired waters);
- Floodplain Acreage;
- Parks and Wildlife Refuges;
- Historical Structures;
- Community Impacts;



## Interstate 73: I-95 to North Carolina

- Relocations;
- Uplands;
- Farmland (Prime, Unique, and Statewide Important); and,
- Infrastructure.

Recent aerial photography (2004 and 2006 for South Carolina and 2005 for North Carolina) was used to update the NWI mapping for a more accurate representation of potential wetland boundaries. In areas where wetland boundaries could not be readily distinguished on the aerial photography, ground-truthing was performed. Due to the wetland value being dependent on the type and size of the wetland being impacted, these categories were also updated with the modified wetland information for each alternative.

The six preliminary Build Alternatives were presented to the ACT with details of potential impacts for a 500-foot wide corridor with interchanges at I-95, refer to Table 3.1. The six preliminary Build Alternatives connected to I-95 at three different locations, which required three distinct interchange designs. Alternatives 1, 2, and 6 did not tie directly into the Southern Preferred Alternative. Each of these would require two interchanges with I-95, both of which would allow for traffic moving between the two interstates to travel at 70 miles per hour. This would require larger, more expensive interchanges than would be needed for Alternative 3, 4, and 5. The distance between where Alternatives 1 and 2 and where I-73 South would connect to I-95 was approximately 4,300 feet, which was not long enough to combine I-73 and I-95 into one facility. Attempting to drop a lane and introduce additional lanes would create a dangerous situation for drivers. Instead, Alternatives 1 and 2 were designed to be parallel facilities, with I-95 on the inside and I-73 on the outside, which would require more right-of-way (refer to Figure 3-3).

Alternative 6 had a distance of approximately 12,800 feet between where it would intersect with I-95 and where the Southern Preferred Alternative would connect to I-95. This allowed for two interchanges with four lanes in each direction on I-95 to function and meet level of service demands (refer to Figure 3-4). Alternatives 3, 4, and 5 tied directly into the Southern Preferred Alternative, which was the least complex and least costly interchange to construct (refer to Figure 3-5). Alternatives 3, 4, and 5 did not require a second interchange along I-95 or additional lanes to be constructed along I-95, which resulted in lower costs and impacts to resources. In addition, Alternative 1 was very similar to Alternative 3, while Alternatives 2 and 6 were similar to Alternative 4. The major differences between Alternatives 1 and 3, as compared to Alternatives 2, 4, and 6, were where they connected to I-95.

After extensive discussion and evaluation, the ACT reached consensus on designating three of the six preliminary Build Alternatives, Alternatives 3, 4, and 5, as reasonable Build Alternatives for further study. Table 3.2 presents the six preliminary Build Alternatives and the reason for the elimination of three. Three of the six preliminary Build Alternatives, referred to as reasonable Build Alternatives, remain to be evaluated further in the Environmental Impact Statement.

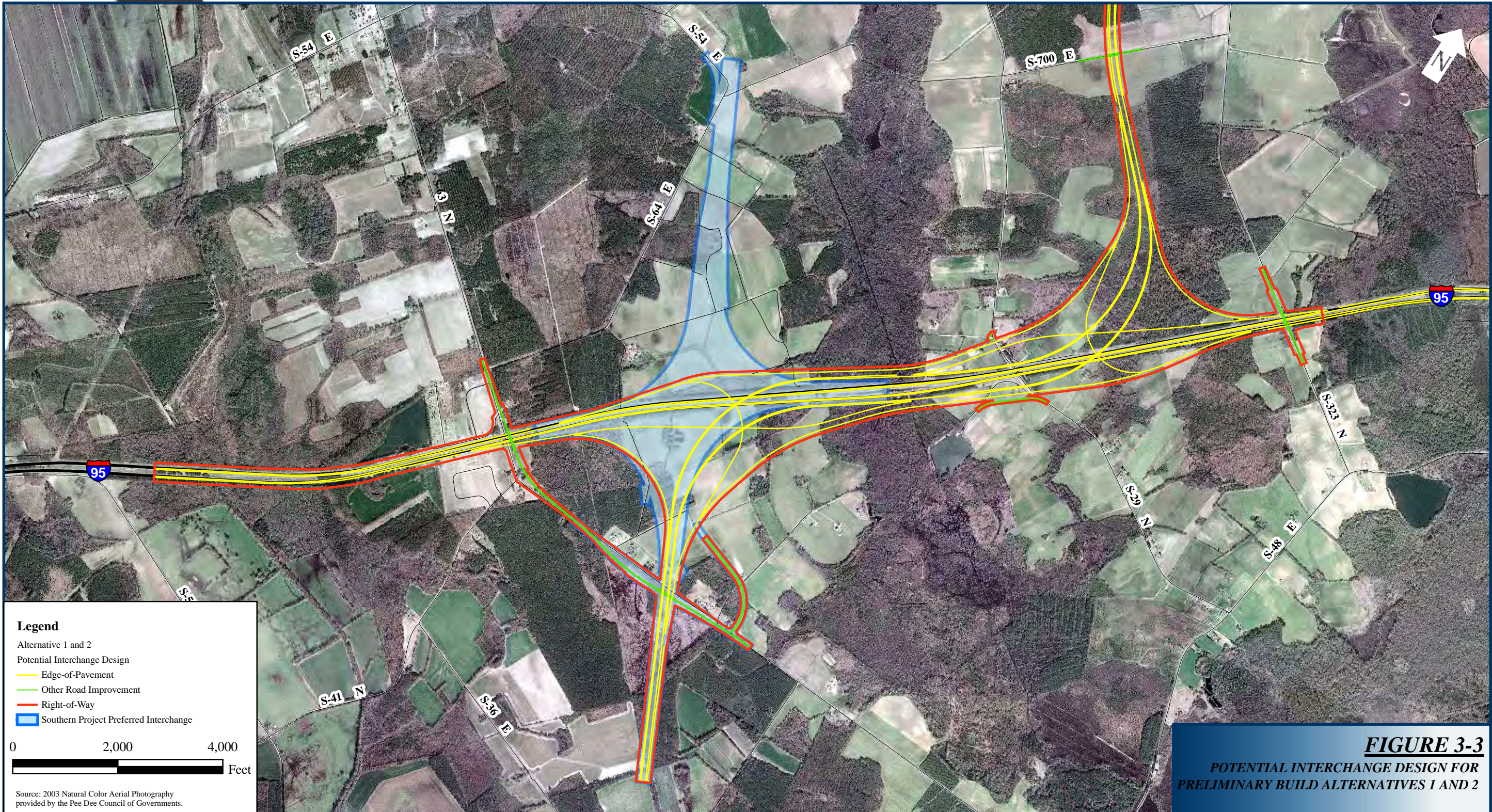


**Table 3.1  
Six Preliminary Build Alternatives  
Interstate 73 EIS: North Carolina to I-95**

Category	Unit of Measure	Alternative						
		1	2	3	4	5	6	
<b>Purpose And Need</b>	System Linkage	Yes	Yes	Yes	Yes	Yes	Yes	
	Improved Access for Tourism	Yes	Yes	Yes	Yes	Yes	Yes	
	Increased Safety on Existing Roads	Yes	Yes	Yes	Yes	Yes	Yes	
	Multimodal Planning	Yes	Yes	Yes	Yes	Yes	Yes	
<b>Engineering Criteria</b>	Length	Miles	38.8	39.0	37.6	37.8	41.3	41.0
	Constructability	Ranking	3	3	1	1	1	6
	Construction Cost	\$ Millions	746	796	647	685	704	825
<b>Natural Features</b>	Threatened and Endangered Species	Yes (#) / No	No	No	No	No	No	No
	Wetlands	Acreage	294.4	291.7	229.0	256.5	280.7	289.2
	Wetland Quality	Value	1,858.7	1,933.8	1,330.9	1,675.9	1,651.9	1,674.2
	Streams							
	Total Crossings	# of Crossings (Linear Feet)	22(11,851)	38(23,743)	17(7,721)	39(22,467)	16(9,623)	52(27,058)
	Perennial	# (Linear Feet)	16(9,357)	16(10,135)	10(4,665)	17(8,859)	8(4,438)	24(10,364)
	Intermittent	# (Linear Feet)	6(2,494)	22(13,608)	7(3,056)	22(13,608)	8(5,185)	28(16,694)
	Water Quality							
	Outstanding Resource Water	# of Crossings	0	0	0	0	0	0
	303(d) Impaired (2006 Draft List)	# of Crossings	0	0	0	0	0	0
	Habitat	Unique	No	No	No	No	No	No
	Uplands	Acreage	2,604	2,621	2,336	2,311	2,519	2,646
	Floodplains	Acreage	78	59	67	58	112	52
	<b>Man-Made Features</b>	Hazardous Material Sites	#	INA	INA	INA	INA	INA
Parks and Wildlife Refuges		Yes (#) / No	No	No	No	No	No	No
Historical Structures		Yes (#) / No	2 & IV	4	2 & IV	4	4	3 & IV
High Potential Area for Archaeological Sites		Acreage	INA	INA	INA	INA	INA	INA
Noise (R= Residential, C= Church)		#	INA	INA	INA	INA	INA	INA
Farmland		Acreage	2,432	2,455	2,128	2,133	2,374	2,488
Prime		Acreage	1,357	1,497	1,125	1,261	1,102	1,486
Unique		Acreage	0	0	0	0	0	0
Statewide Important		Acreage	1,075	958	1,003	872	1,272	1,002
Chicken Farm		#	0	2	0	2	0	2
Hog Farm	#	0	0	0	0	0	1	
<b>Socioeconomic Issues</b>	Community Impacts	#	1	2	1	2	3	1
	Total Relocations	#	49	45	49	42	52	40
	Residential Relocations	#	45	41	47	39	52	36
	Commercial Relocations	#	4	4	2	3	0	4
	Environmental Justice	Yes / No	INA	INA	INA	INA	INA	INA
<b>Infrastructure</b>	Airports	#	0	0	0	0	0	0
	Fire Stations	#	0	0	0	0	0	0
	Schools	#	0	0	0	0	0	0
	Churches	#	2	1	1	0	1	0
	Cemeteries	#	0	0	0	0	0	0
	Railroad Crossings	#	1	3	1	3	1	3
	Gas Line Crossings	#	1	1	1	1	2	1
Notes: INA - Information Not Available at this time V - potential Visual impact								

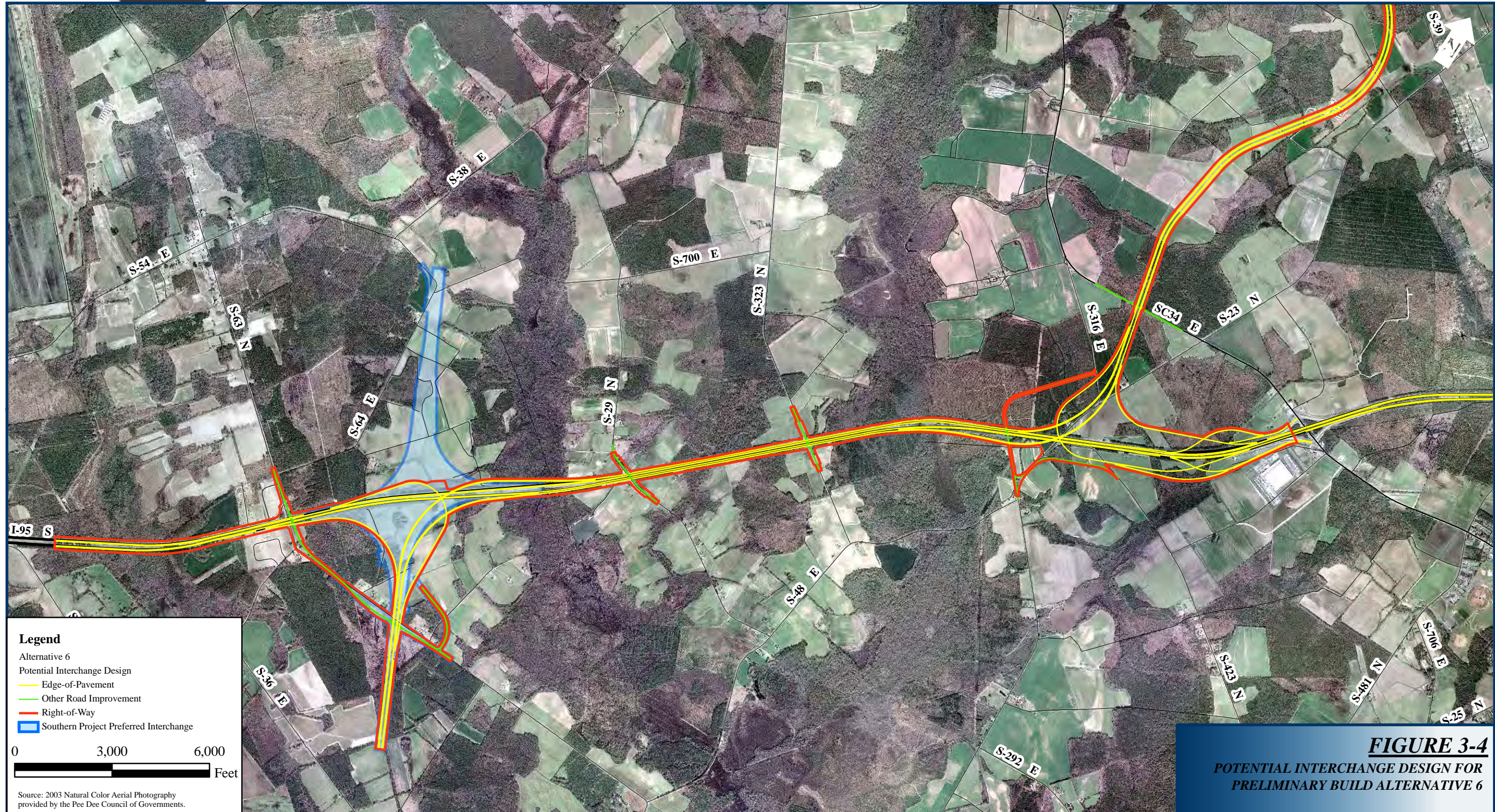






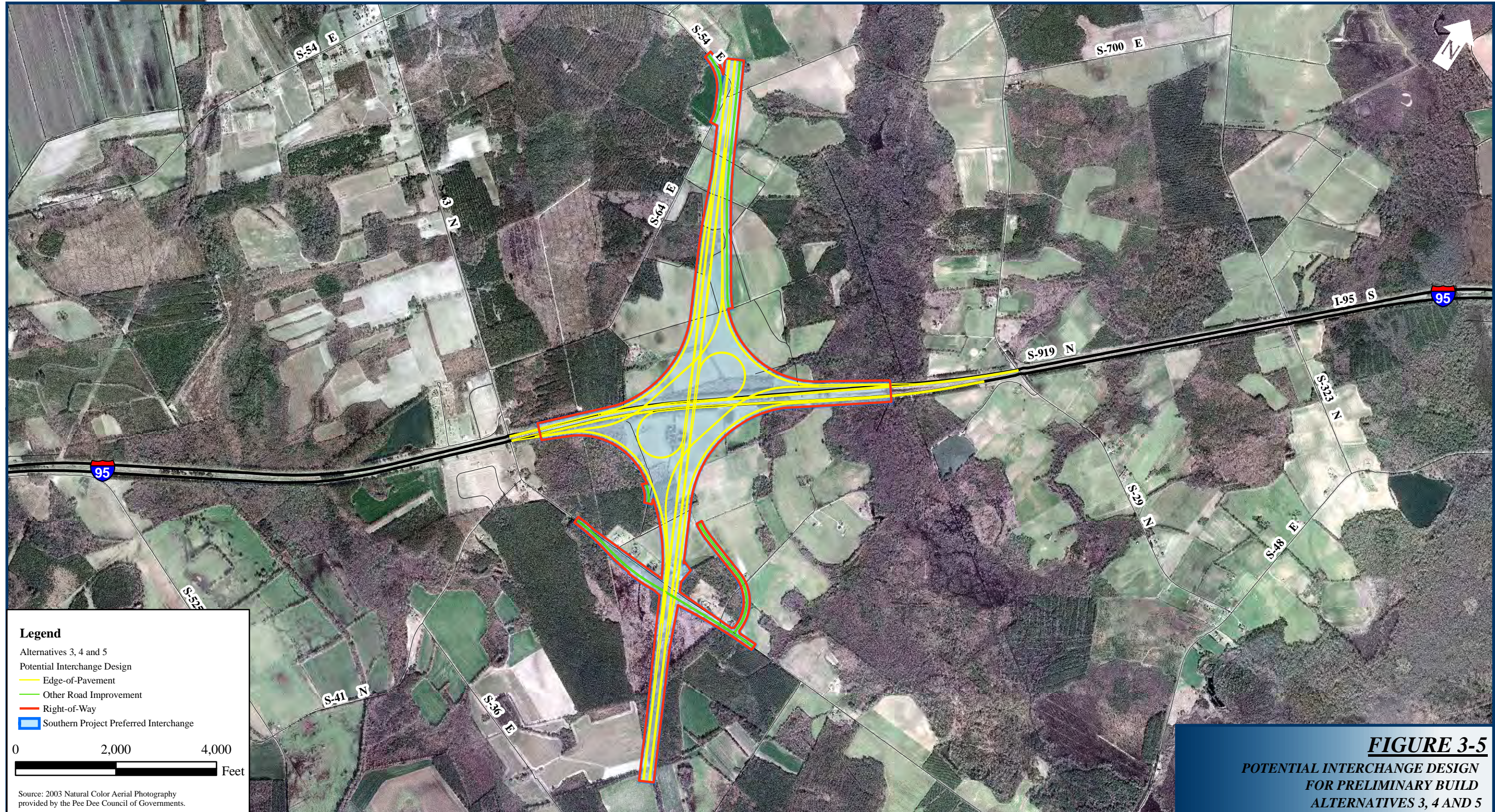
**FIGURE 3-3**  
POTENTIAL INTERCHANGE DESIGN FOR  
PRELIMINARY BUILD ALTERNATIVES 1 AND 2





**FIGURE 3-4**  
POTENTIAL INTERCHANGE DESIGN FOR  
PRELIMINARY BUILD ALTERNATIVE 6





**Legend**

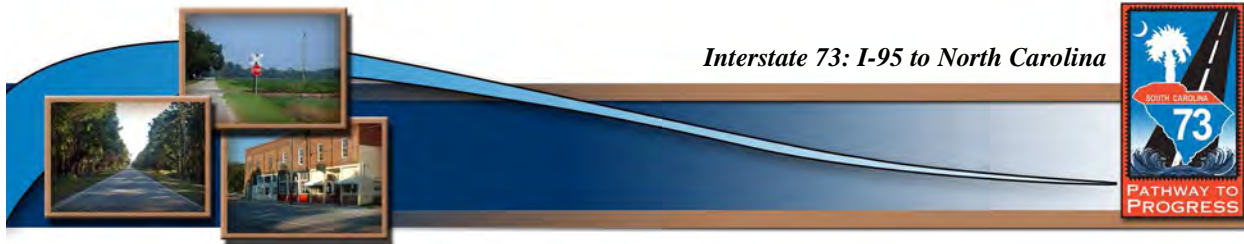
- Alternatives 3, 4 and 5
- Potential Interchange Design
- Edge-of-Pavement
- Other Road Improvement
- Right-of-Way
- Southern Project Preferred Interchange

0      2,000      4,000  
Feet

Source: 2003 Natural Color Aerial Photography provided by the Pee Dee Council of Governments.

**FIGURE 3-5**  
POTENTIAL INTERCHANGE DESIGN  
FOR PRELIMINARY BUILD  
ALTERNATIVES 3, 4 AND 5





As a result of the designation of Alternatives 3, 4, and 5 as reasonable Build Alternatives, the alternatives were renumbered as follows:

<u>NAME</u>	<u>REVISED NAME</u>
Alternative 3 (central alternative)	Alternative 2
Alternative 4 (eastern alternative)	Alternative 3
Alternative 5 (western alternative)	Alternative 1

<b>ALTERNATIVE</b>	<b>REASON FOR ELIMINATION</b>
<b>1</b>	Eliminated in favor of keeping Alternative 3 that had lower overall impacts
<b>2</b>	Eliminated in favor of keeping Alternative 4 that had lower overall impacts
<b>3</b>	Recommended for further study
<b>4</b>	Recommended for further study
<b>5</b>	Recommended for further study
<b>6</b>	Eliminated in favor of keeping Alternative 4 that had lower overall impacts

### Designation of Preliminary Interchange Locations

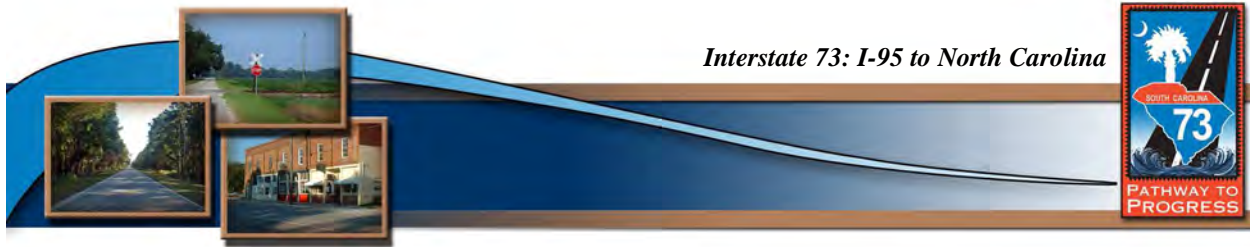
Initial criteria for developing preliminary interchange locations were proposed as follows:

- To provide access to primary roadway routes, i.e. Interstates, U.S. Routes, and S.C./N.C. Routes;
- Provide a minimum spacing of two miles between interchanges;
- Ensure a reasonable expenditure of public funds;
- Provide a maximum spacing of eight miles between interchanges to provide system linkage, ease of maintenance, increased safety, and opportunities for economic development;
- Provide interchanges where higher traffic volumes warrant; and,
- Minimize impacts.

The reasonable Build Alternatives were then evaluated with the preliminary locations of interchanges taken into consideration to determine potential impacts to the categories listed previously, as well as potential impacts to communities and relocations.

### Reasonable Alternative Modifications Based on Public and ACT Input

As a result of the public and agency comments, the reasonable Build Alternatives were evaluated to further minimize impacts and to respond to input. The CAT identified several communities



that were assigned a high value to avoid potential impact, however not every community in the project study area had been identified prior to the Public Information Meetings. At the Public Information Meetings, citizens were asked to define the communities in which they lived. As a result, several communities were identified that were not included in the CAT. This public input resulted in the modification of alternatives to avoid communities that were not previously identified, such as Aarons Temple. A field visit was conducted with the ACT on September 13 and 14, 2006, and with the North Carolina resource agencies on December 6, 2007, to review areas of special interest indicated by the agencies. Agency comments and information collected during the field visits were also used to modify the reasonable Build Alternatives.

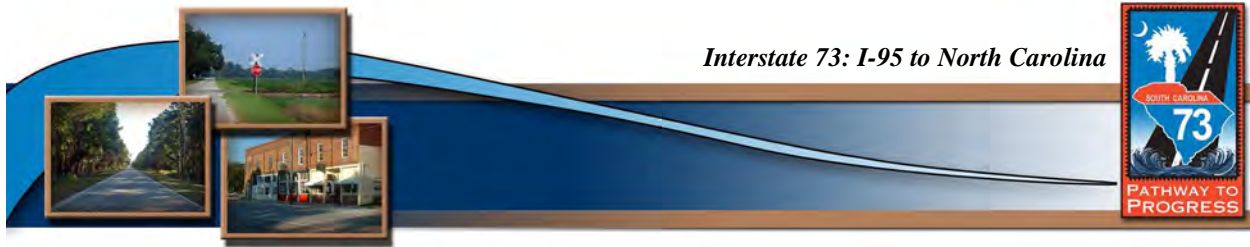
As discussed previously, while the anticipated right-of-way would be between 300 and 400 feet depending on the use of frontage roads, a 2,500-foot wide corridor was used to illustrate each alignment and to provide adequate space for modifications based on public input, agency comments, and the results of field surveys. Modifications made within the 2,500-foot corridor could be done without consultation with the ACT. Major modifications that would fall outside the 2,500-foot corridor would be presented to the ACT for discussion.

### **Alternative 1**

Alternative 1 was modified in the vicinity of Blenheim at the crossing of S.C. Route 38 and S.C. Route 381. This modification was implemented to provide an improved angle for the proposed interchange. The revision was necessary to improve constructability and safety. The angle at which Alternative 1 would have crossed S.C. Route 38 and S.C. Route 381 would have created a complex interchange design that would have been more costly to construct and not provided the best situation for drivers.

Several comments were received suggesting that Alternative 1 be modified to traverse west of Blenheim, further west of Bennettsville, and to parallel State Road 257 north of Bennettsville. It was determined that the majority of the routes proposed had been evaluated by alternatives previously eliminated due to potentially higher impacts or kept for further evaluation. Proposed routes that were not covered by previous alternatives were evaluated. Two routes were developed in the vicinity of Aarons Temple and quantified for comparison against the segment contained within the reasonable Build Alternative. The first route would have seven additional relocations and increase potential wetland impacts by approximately 32 acres above the segment within the reasonable Build Alternative. The second route would have reduced potential relocations by 17, but increased wetland impacts by over 70 acres as compared to the reasonable Build Alternative. Based on the quantifications, the reasonable Build Alternative was not modified.





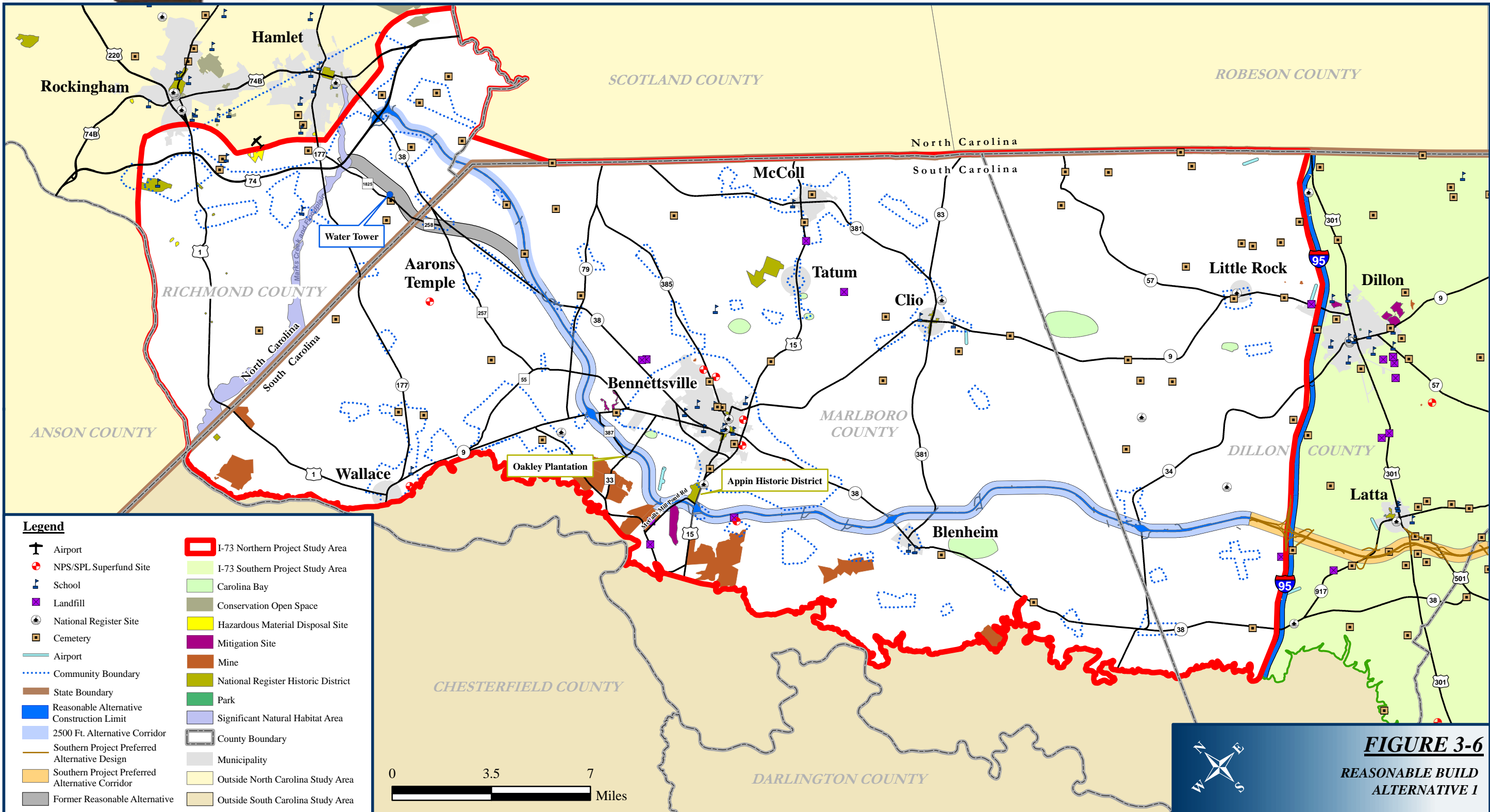
## Interstate 73: I-95 to North Carolina

The Appin farmhouse is a site currently listed on the NRHP that is located west of Bennettsville on U.S. Route 15/U.S. Route 401 (refer to Figure 3-6). Comments received from local residents requested that an area west of the Appin farmhouse, which includes a mill race/spillway, be evaluated for its potential historic significance. It was determined that the boundary for the Appin farmhouse would be expanded to encompass McCall's Mill Pond and the mill race/spillway. Since the property was determined eligible for listing on the NRHP, avoidance was required unless it was demonstrated that no prudent or feasible alternative existed to avoid the property. The design in this area was limited due to close proximity of the airport to the north, a mitigation site to the west, a residential area to the southwest, and Bennettsville to the east. Despite these limitations, the alternative was modified to avoid potential impacts to the mill race/spillway.

The Oakley Plantation is located northwest of Bennettsville at the intersection of State Road 33 (Waffer Road) and State Road 387 (David's Pond Road), refer to Figure 3-6. This site was determined eligible for listing on the NRHP and as such modification was developed to avoid potential impacts to the property. This modification was determined to be approximately 0.1 mile longer, have 3.2 acres less of wetland impact, and impact one additional residence.

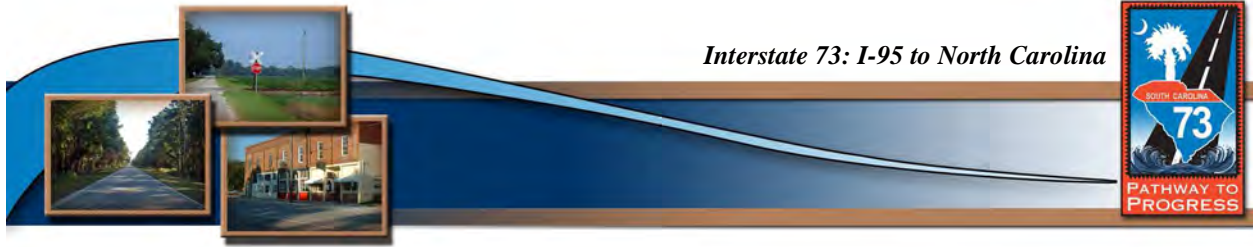
A modification was developed approximately 1.5 miles south of I-74 in the vicinity of State Road 258 to avoid the potential relocation of a church, multiple residences, and a water tower (refer to Figure 3-6). The proposed modification was implemented to avoid these relocations.

A concern was expressed by NCDOT and N.C. Natural Resource Agencies that Alternatives 1 and 2 would impact Mark's Creek, which is a significant natural heritage area in North Carolina (refer to Figure 3-6). During quantifications of the reasonable Build Alternatives, it was determined that the western interchange that connected Alternative 1 and Alternative 2 to I-74 would impact more wetlands, streams, farmlands, relocations, and floodplains than the eastern interchange. A modified alignment was developed to connect Alternative 1 to the eastern interchange. This resulted in a savings of approximately 37 acres of wetlands, 2,190 linear feet of streams, 164 acres of total farmland, 96 acres of prime farmland, seven relocations, and 24.5 acres of floodplains. In addition, the Richmond County Industrial Park located on the northern side of I-74 in North Carolina would not be impacted with the revised alternative. Approximately 69 acres of additional uplands would be impacted due to the modification. The proposed change was presented to the ACT on May 9, 2007, and unanimous consensus was reached to accept the proposed modification. Alternative 1 was revised to eliminate use of the western interchange in favor of the eastern interchange (refer to Figure 3-6).



**FIGURE 3-6**  
REASONABLE BUILD  
ALTERNATIVE 1





### **Alternative 2**

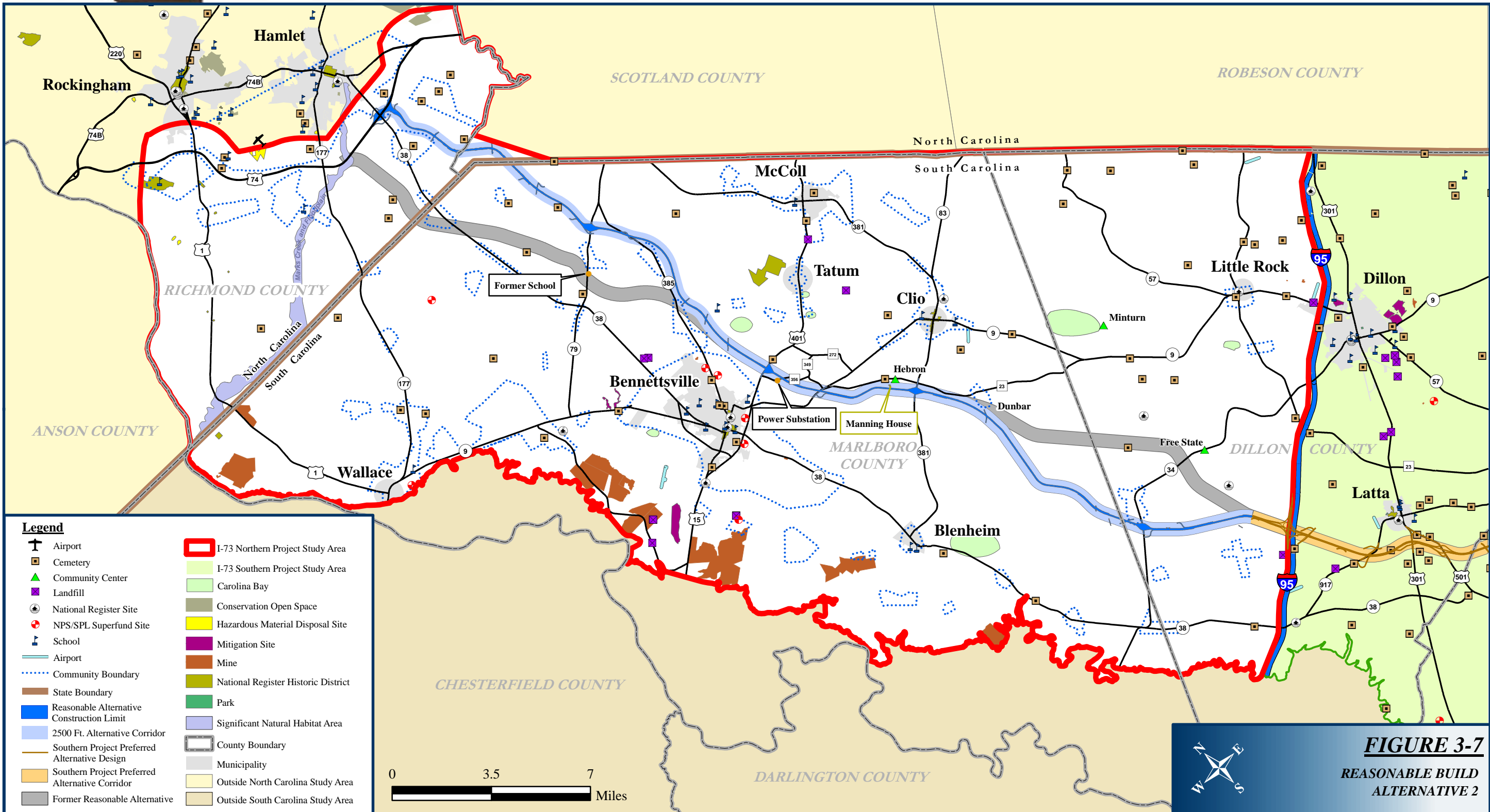
A meeting was held with the community of Minturn on January 9, 2007. At this meeting, it was suggested that Alternative 2 be modified from I-95 to south of Dunbar to follow the alignment of Alternative 1 and then crossover eastward to connect to the existing Alternative 2 alignment (refer to Figure 3-7). The modified Alternative 2 was determined to minimize potential impacts to all categories with the exception of 62.1 additional acres of impact to farmland of statewide importance. The modification would impact 15.2 less acres of wetlands, 51.3 fewer acres of prime farmland, one acre less of floodplains, and save four relocations. In addition, the modified alignment was anticipated to avoid any potential impacts to Free State, a minority community along S.C. Route 34. The comparison was presented to the ACT on February 22, 2007, and the modification to Alternative 2 was approved by a unanimous consensus vote.

Another modification was developed south of U.S. Route 15/U.S. Route 401 along State Road 356, between Bennettsville and Tatum. The modified alignment would avoid a power substation, avoid impacting a minority community located in the vicinity of S.C. Route 9 and State Road 23, and improve the design of Alternative 2.

A former school, located northeast of Bennettsville on the southern side of S.C. Route 79 was determined to be potentially eligible for listing on the NRHP (refer to Figure 3-7). A modification was developed to avoid potential impacts to the property due to its NRHP eligibility.

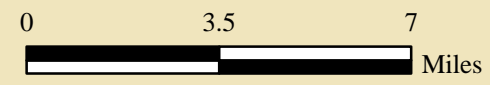
As discussed previously for Alternative 1, Alternative 2 also would have impacted Mark's Creek, which is a significant natural heritage area in North Carolina (refer to Figure 3-7). A modified alignment was developed to connect Alternative 2 to the eastern interchange. The modified alternative would impact approximately 44 less acres of wetlands, 2,391 fewer linear feet of streams, 122 fewer acres of total farmland, 90 less acres of prime farmland, save six relocations, and impact 23.9 less acres of floodplains. Similar to Alternative 1, the modification would avoid impacting the Industrial Park located on the northern side of I-74 in North Carolina. Approximately 79 acres of additional uplands would be impacted due to the modification. The proposed change was presented to the ACT on May 9, 2007, and unanimous consensus was reached to accept the proposed modification. Alternative 2 was revised to eliminate use of the western interchange in favor of the eastern interchange (refer to Figure 3-7).





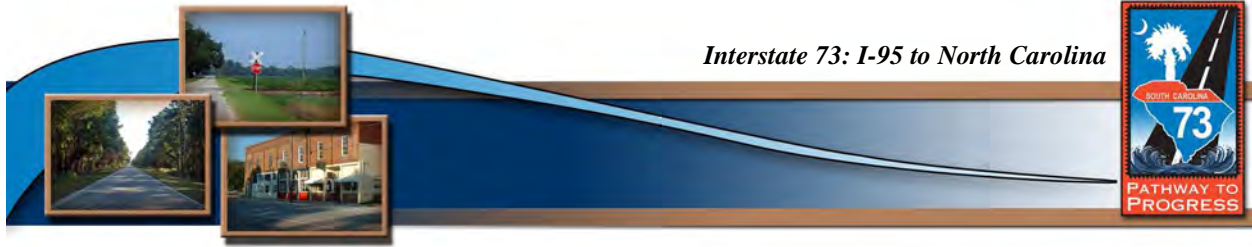
**Legend**

Airport	I-73 Northern Project Study Area
Cemetery	I-73 Southern Project Study Area
Community Center	Carolina Bay
Landfill	Conservation Open Space
National Register Site	Hazardous Material Disposal Site
NPS/SPL Superfund Site	Mitigation Site
School	Mine
Airport	National Register Historic District
Community Boundary	Park
State Boundary	Significant Natural Habitat Area
Reasonable Alternative Construction Limit	County Boundary
2500 Ft. Alternative Corridor	Municipality
Southern Project Preferred Alternative Design	Outside North Carolina Study Area
Southern Project Preferred Alternative Corridor	Outside South Carolina Study Area
Former Reasonable Alternative	



**FIGURE 3-7**  
REASONABLE BUILD  
ALTERNATIVE 2





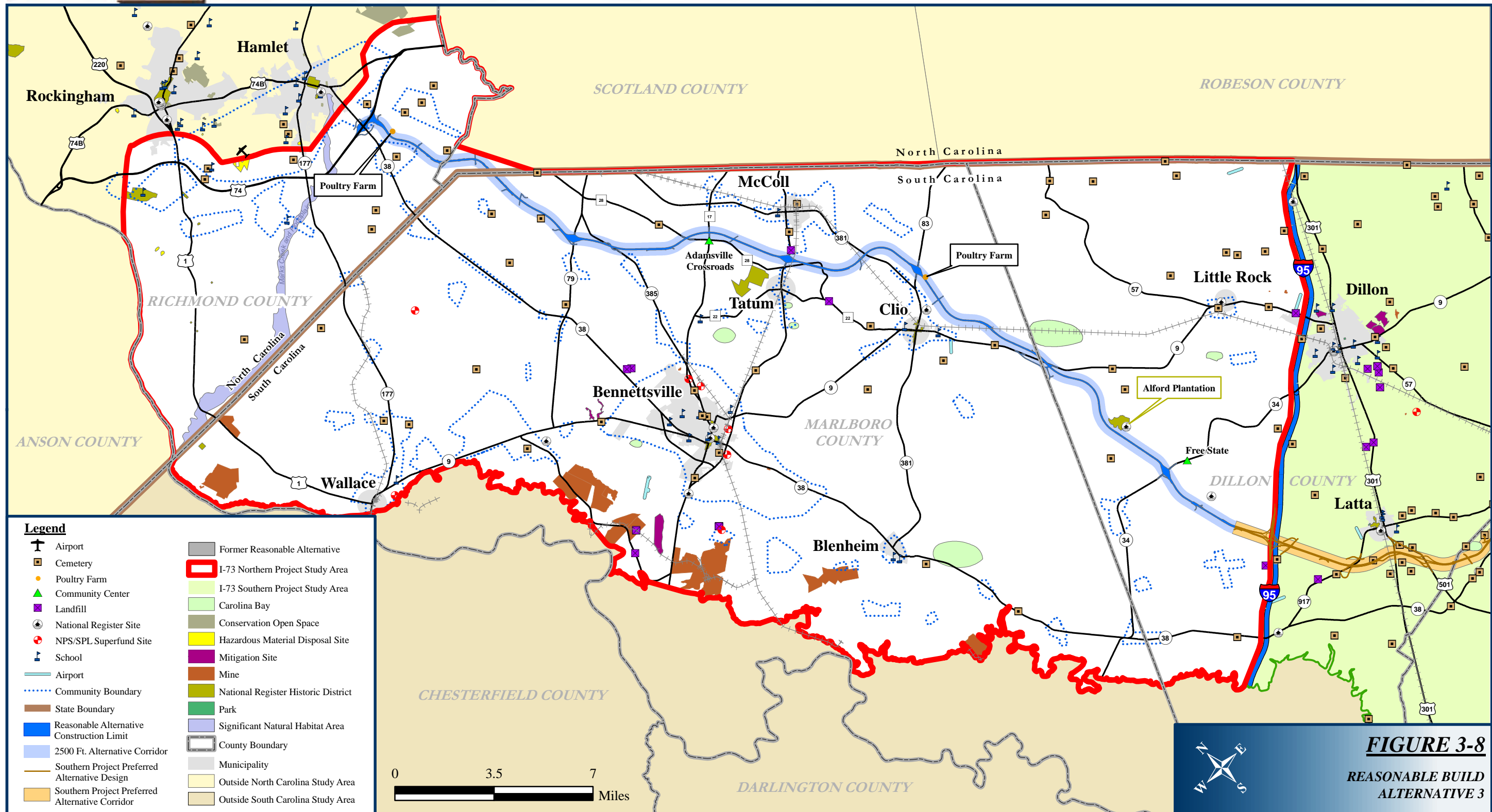
### **Alternative 3**

The original alignment of Alternative 3 would have impacted the Alford Plantation, which had been determined to be eligible for listing on the NRHP (refer to Figure 3-8). Since the property is eligible, avoidance is required unless it is demonstrated that no prudent or feasible alternative exists to avoid the property. As a result, a modification was developed to avoid impact to the Alford Plantation. The modification resulted in an 11.6 acre reduction in wetland impacts, lowered the wetland value by 187.5, 81.3 acres less prime farmlands, 3.6 acres less of farmland of statewide importance, lowered floodplain impacts by 9.3 acres, and would relocate one less resident.

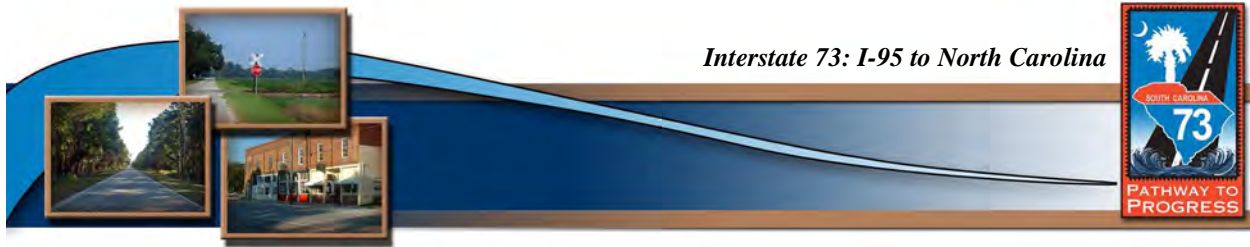
The modified Alternative 3 minimized potential impacts to all categories. In addition, the modified alignment was anticipated to avoid potential impacts to Free State, a minority community east along S.C. Route 34. The comparison was presented to the ACT on February 22, 2007, and the modification to Alternative 3 was approved by a unanimous consensus vote.

Alternative 3 was modified east of Bennettsville near the intersection of State Road 17 and State Road 28 (refer to Figure 3-8). A poultry farm located on S.C. Route 83 could not be avoided due to the presence of wetlands on both sides of the proposed route. The modification minimized potential relocations in the vicinity of Adamsville Crossroads and provided a better crossing of the railroad near U.S. Route 15/U.S. Route 401 between Tatum and McColl.

A modification was developed to avoid the potential impact of Alternative 3 on a large poultry operation. The facility is located approximately one mile south of I-74 in the vicinity of N.C. Route 38 (refer to Figure 3-8). The relocation of such a large farming facility would increase the cost of the project and could negatively affect the economy of the area. Since one of the project's primary needs is economic development, a modification was developed to avoid potential impacts to the poultry farm.







## **CHAPTER 4 – DESIGNATION OF THE PREFERRED ALTERNATIVE**

Following the modifications of the three reasonable Build Alternatives, in coordination with the ACT, the evaluation was expanded to include the comprehensive list of categories. In addition, more specific data about each alternative, including preliminary construction limits and bridge lengths were estimated to provide a more accurate representation of potential impacts. The categories discussed previously were utilized, as well as the following resources to evaluate the three reasonable Build Alternatives in further detail:

- Hazardous Material Sites;
- Areas with a High Probability for Archaeological Sites (acres);
- More detailed information from Community Impact Assessment;
- Land Use;
- Economics;
- Noise;
- Biotic Communities;
- Species of Concern;
- Air Quality;
- Indirect Impacts;
- Cumulative Impacts; and,
- Cost.

Based on the information presented in Table 4.1, each of the three reasonable Build Alternatives was evaluated to determine the Preferred Alternative. The Alternative Evaluation Categories was used to compare the reasonable Build Alternatives against one another. The reasonable Build Alternatives were first evaluated against how well they addressed the needs for the project. In that regard, the Reasonable Build Alternatives were generally very similar, they all provided interstate connectivity, the traffic benefits were relatively similar, they all provided similar economic benefits, and they each provided for multimodal planning. Next, the reasonable Build Alternatives were evaluated based upon public input, agency concerns, as well as quantitative and qualitative benefits and impacts that would result from each of them. After careful consideration of all of these factors, a Preferred Alternative was identified.

### **Primary Needs of the Project**

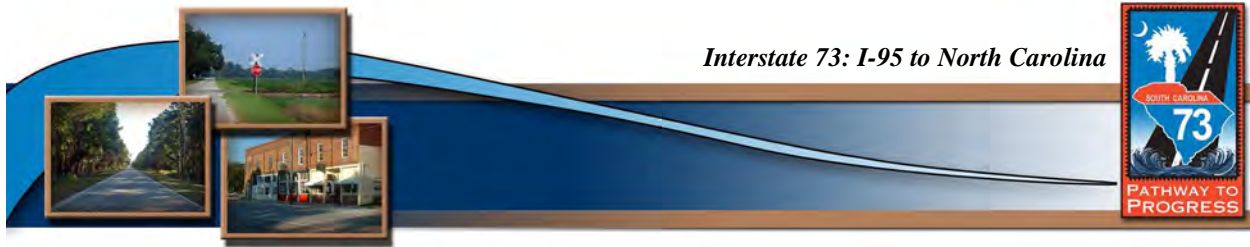
There are three reasonable Build Alternatives and the No-build Alternative. The No-build Alternative does not satisfy the Purpose and Need for the project, but would avoid some of the impacts that the reasonable Build Alternatives would have. The purpose of the project is to provide an interstate link between proposed I-73, between I-95 and the Myrtle Beach region, and the North Carolina I-73/I-74 corridor to improve economic opportunities, access for tourism,

**Table 4.1  
Three Reasonable Build Alternatives  
Interstate 73 EIS: North Carolina to I-95**

Category	Unit of Measure	Alternative		
		1	2	3
<b>Purpose And Need</b>				
System Linkage		Yes	Yes	Yes
Economic Development		Yes	Yes	Yes
Improved Access for Tourism		Yes	Yes	Yes
Increased Safety on Existing Roads		Yes	Yes	Yes
Multimodal Planning		Yes	Yes	Yes
<b>Engineering Criteria</b>				
Length	Miles	40.6	36.8	37.2
Design Criteria	Meets/Does Not Meet	Meet	Meet	Meet
Constructability	Ranking	1	1	1
Construction Cost	\$ Millions	1,210	1,080	1,190
<b>Natural Features</b>				
Threatened and Endangered Species	Yes (#) / No	No	No	No
Species of Concern	Yes (#) / No	No	No	No
Wetlands	Acreage	167.7	114.3	116.0
Fill	Acreage	161.9	107.0	114.4
Bridge	Acreage	5.8	7.3	1.6
Wetland Quality	Value	1,205.2	768.1	729.3
Fill	Value	1,157.6	736.2	714.6
Bridge	Value	47.6	31.9	14.7
Streams				
Total Crossings	# of Crossings (Linear Feet)	15 (4,566)	24 (8,143)	24 (10,062)
Perennial	# (Linear Feet)	6 (1,666)	10 (3,778)	7 (3,555)
Intermittent	# (Linear Feet)	9 (2,900)	14 (4,365)	17 (6,507)
Water Quality				
Outstanding Resource Water	# of Crossings	0	0	0
303(d) Impaired (2006 Draft List)	# of Crossings	0	0	0
Habitat	Unique	No	No	No
Uplands (Fill Only)	Acreage	1,952.6	1,800.8	1,845.6
Floodplains	Acreage	64.0	25.0	23.0
<b>Man-Made Features</b>				
Hazardous Material Sites	#	1	1	2
		Auction Water - Hamlet	Auction Water - Hamlet	Auction Water - Hamlet & Red Bluff Grocery
Parks and Wildlife Refuges	Yes (#) / No	No	No	No
Historical Structures	#	1 Visual Impact S-18 House	0	1 Direct Impact McLaurin House
High Potential Area for Archaeological Sites	Acreage	993.0	804.9	1297.9
Noise (R= Residential)	#	6 R	3 R	2 R
Farmland	Acreage	1,705	1,505	1,582
Prime	Acreage	824	805	961
Unique	Acreage	0	0	0
Statewide Important	Acreage	881	700	621
Chicken Farm	#	0	0	1
Hog Farm	#	0	0	0
<b>Socioeconomic Issues</b>				
Community Impacts	#	7	8	6
		Aaron's Temple, Bennettsville, Blenheim, Brightsville, Chavistown, Hamlet, Salem	Adamsville, Bennettsville, Brightsville, Clio, Dunbar, Hamlet, Hebron, Newtonville	Adamsville, Bennettsville, Brightsville, Clio, Hamlet, Newtonville
Total Relocations	#	71	41	40
Residential Relocations	#	69	35	36
Commercial Relocations	#	2	6	4
Environmental Justice	# of Block Groups	7	8	10
<b>Infrastructure</b>				
Airports	#	0	0	0
Fire Stations	#	0	0	0
Schools	#	0	0	0
Churches	#	0	0	1 Community House of Prayer
Cemeteries	#	0	0	0
Railroad Crossings	#	4	4	5
Gas Line Crossings	#	3	2	1







improve safety of existing roadways, and provide multimodal planning. The No-build Alternative would not fulfill the purpose of the project or any identified needs. At the same time, the changes of land use, impacts to wetlands, and noise impacts anticipated from the reasonable Build Alternatives would not occur with the No-build Alternative.

**System Linkage**

It is essential that the project improve national and regional connectivity by providing a direct link between proposed I-73, from I-95 and the Myrtle Beach region, and the I-73/I-74 corridor in North Carolina. Each of the three Build Alternatives would provide the direct link stated as one of the project’s primary needs. This direct link would reduce the travel time between I-95 and I-74. As shown Table 4.2, the travel times between I-95 and I-74 would decrease from between 5 to 20 minutes for the approximate 40 mile distance. A trip from I-95 to I-74, without I-73, would take approximately 45 to 50 minutes, whereas with I-73 the trip would take 30 to 40 minutes. Alternative 1 would save 10 minutes per vehicle for an estimated 29,600 vehicles per day, while Alternatives 2 and 3 would save 15 minutes per vehicle for an estimated 33,100 and 32,800 vehicles per day, respectively. This would result in a savings of approximately 1.79 million, 2.97 million, and 2.98 million vehicle hours traveled (VHT) per year for Alternatives 1, 2, and 3 respectively. The travel efficiency improvement results in economic benefits to the users of the facility are outlined in Table 4.3.

<b>Table 4.2</b>				
<b>Minimum Trip Time Between I-95 and I-74 in Year 2030</b>				
	No-build Alternative	Alternative 1	Alternative 2	Alternative 3
Minimum Travel Time (Minutes)	45-50	35-40	30-35	30-35
Average Annual Daily Traffic Volume (vehicles per day)	--	29,570	33,108	32,815

**Economic Development**

The other primary need identified was the ability to enhance economic opportunities in South Carolina. An analysis was performed that examined two sources of potential economic impacts arising from I-73: travel efficiencies and strategic development benefits. The economic impact evaluation involves the estimation of the nature and magnitude of potential transportation efficiency gains and an assessment of the strategic development economic impact.



**Table 4.3  
Economic Impact Summary in 2030 from Travel Efficiencies  
(Alternatives compared to No-build)**

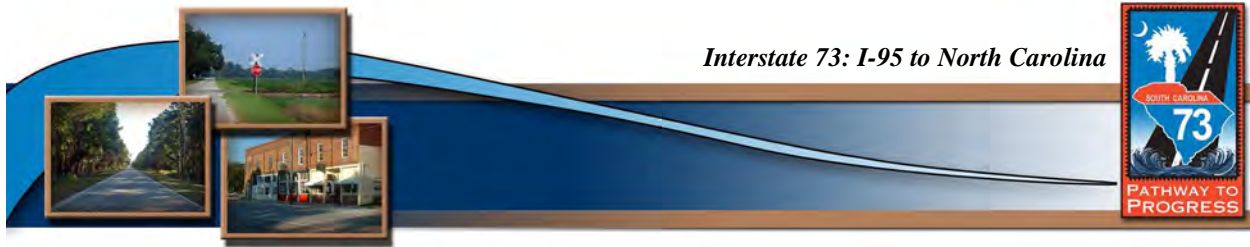
Variable	Alternative 1	Alternative 2	Alternative 3
Gross Regional Product (Millions of Dollars, 2007)	563	695	597
Personal Income (Millions of Dollars, 2007)	208	256	223
Total Employment (Permanent full-time)	606	787	668
Population	836	1,032	862

In general, there are four categories of benefits that arise from transportation investments including:

- **Travel Efficiencies:** Benefits that accrue to potential facility users upon project completion. These are measured in terms of travel time savings, vehicle operating cost savings, accident savings and emission benefits.
- **Construction Impacts:** Impacts that arise as a result of the expenditures on local labor and materials to build the facility.
- **Operating and Maintenance Impacts:** Benefits that arise from the expenditures on local labor and supplies to operate and maintain the facility upon completion.
- **Strategic Development Impacts:** The economic development impacts associated with attracting and retaining business activity as a result of increased accessibility, mobility and connectivity.

The results are based on a forecast period between 2015 and 2035. These estimates represent only the economic impacts arising from travel efficiency savings and strategic development opportunities. They do not include benefits arising from construction and operations and maintenance impacts due to data limitations, as well as the short-term nature of construction benefits and the substitution effects related to operating and maintenance. It should be noted that the analysis of travel efficiency savings does not include Richmond County, North Carolina, due to the lack of a traffic model for the area. Because the forecasts presented in this report represent only two categories of the above-listed benefits (travel efficiencies and strategic development impacts), the results of this study should be considered as conservative estimates.





## Interstate 73: I-95 to North Carolina

The travel efficiency benefits arose as a result of savings accruing to users of the facility such as travel time savings, vehicle operating costs savings and accident savings. The Project Team used output generated by the travel demand model to model the economic impacts of travel changes using a regional economic model developed by Regional Economic Models Incorporated (REMI). This model estimated the economic impacts associated with travel efficiencies, i.e., reduced travel time, vehicle operating costs and other direct user benefits.

In general, Table 4.3 shows that all I-73 reasonable Build Alternatives yield substantial economic benefits arising from travel efficiencies. The impacts indicated for each alternative are increases over the No-Build Alternative. The economic benefits from the increased travel efficiency would result in \$563 to \$695 million over a 15-year time period. Table 4.3 shows the changes for two economic indicators: gross regional product (GRP) and personal income. The GRP is the regional counter part of Gross Domestic Product at the national level that represents final products and services sold to domestic and international markets. It is defined as the dollar value of all final goods and services that are produced within a given period of time. The GRP includes such economic generators as employee compensation, commercial taxes, and property income. The GRP over the 20-year period is forecasted to range between about \$74.6 million (Alternative 1) and \$78.1 million (Alternative 3). Among the three reasonable Build Alternatives, Alternative 2 potentially generates more benefits than the other reasonable Build Alternatives.

The estimation of development benefits that arise as a result of improved accessibility and connectivity was assessed using the Economic Development and Growth Evaluation (EDGE) model. Strategic development benefits arise as a result of improving the accessibility and connectivity to regions which may currently be underserved. These benefits result from the ability of the new facility to generate more traffic as opposed to moving existing traffic more efficiently. Since access to the proposed interstate would be fully controlled, interchanges were anticipated to be the main points of development. Existing water and sewer infrastructure, as well as current development, were determined to be features that would attract development. Table 4.4 presents the estimated GRP impact for each reasonable Build Alternative based on the area's economic output. Table 4.5 quantifies the projected employment impact from the reasonable Build Alternatives between 2015 and 2030. The product of the number of jobs and the industrial wage yields an increase in income ranging from \$27.3 million to \$30.5 million annually (refer to Table 4.6).



**Table 4.4**  
**Cumulative Economic Output Impact from 2015-2030**  
**(Alternatives compared to No-build)**

	Alternative 1	Alternative 2	Alternative 3
Gross Regional Product (Millions of Dollars, 2007)	74.6	76.4	78.1

**Table 4.5**  
**Strategic Development Employment Increases by Alternative and County**  
**(permanent full-time jobs)**

County	Alternative 1	Alternative 2	Alternative 3
Dillon County, South Carolina	74	77	81
Marlboro County, South Carolina	356	386	326
Richmond County, North Carolina	95	95	95
Total	525	558	502

**Table 4.6**  
**Strategic Development Annual Income Increases by Alternative and County**  
**(millions of dollars)**

County	Alternative 1	Alternative 2	Alternative 3
Dillon County, South Carolina	6.3	4.6	8.6
Marlboro County, South Carolina	21.1	21.4	20.6
Richmond County, North Carolina	1.3	1.3	1.3
Total	28.7	27.3	30.5



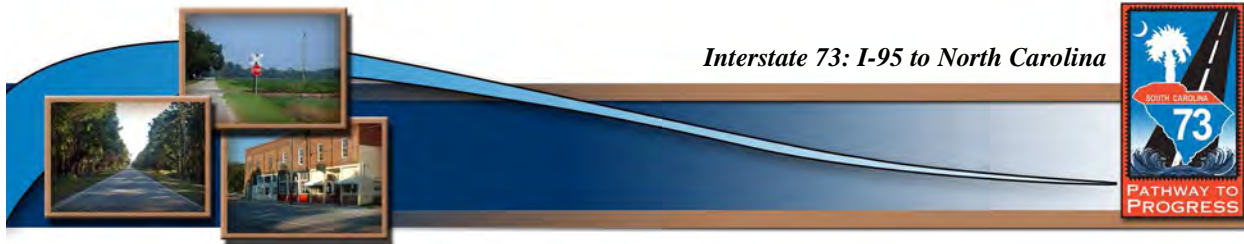
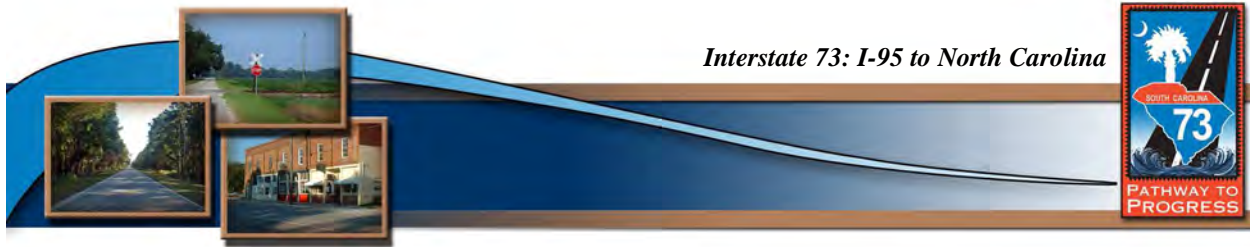


Table 4.7 displays the combined income and employment impacts for each of the three reasonable Build Alternatives. The impacts indicated for each reasonable Build Alternative are increases over the No-Build Alternative. As indicated, all reasonable Build Alternatives give rise to substantial economic benefits for the region. Alternative 2 would have the highest increase to annual personal income and higher benefits to the area for total employment. All reasonable Build Alternatives are projected to have a positive economic impact on the region, while the magnitude of that impact between alternatives is similar, Alternative 2 is slightly higher than the other alternatives. However, given the magnitude of the impacts relative to the overall area economy, the difference between the reasonable Build Alternatives is not enough to be the deciding factor in determining which reasonable Build Alternative is preferred.

<b>Table 4.7</b>			
<b>Economic Impact Summary in 2030 by Alternative</b>			
	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>
<b>Travel Efficiency</b>			
<b>Personal Income (Millions of Dollars, 2007)</b>	208	256	223
<b>Total Employment (Permanent full-time)</b>	606	787	668
<b>Strategic Development</b>			
<b>Personal Income (Millions of Dollars, 2007)</b>	28.7	27.3	30.5
<b>Total Employment (Permanent full-time)</b>	525	558	502
<b>Total</b>			
<b>Personal Income (Millions of Dollars, 2007)</b>	236.7	283.3	253.5
<b>Total Employment (Permanent full-time)</b>	1,131	1,345	1,170



## Secondary Needs of the Project

### Access for Tourism

Improved access is often measured in terms of increased capacity or travel efficiency. One measure typically used to gauge the effectiveness of proposed roadway improvements is the volume to capacity ratio (V/C). The volume of current or projected traffic is compared with the capacity of a roadway or a system of roadways. The roadway network that was modeled for this project is not a congested network. That means that the traffic volume on the roadways in the network is below the capacity of the roadways. Thus, the V/C ratio would not measure the traffic benefits.

For this project, the traffic benefits result from increased efficiency in travel. To measure the effectiveness of the proposed facility to improve access for tourism, the Vehicle Hours Traveled (VHT) for the average annual daily traffic (AADT) on the project study area roadway network was determined for each reasonable Build Alternative (refer to Table 4.8). For a congested network, the VHT should decrease with the addition of a new roadway facility.

The VHT for this project increased. This is because I-73 would induce more trips into the project study area, thus more vehicle hours of travel. These are vehicles that would alter travel routes to take advantage of the improved efficiency (shorter travel times) of I-73. The improved efficiency is demonstrated by

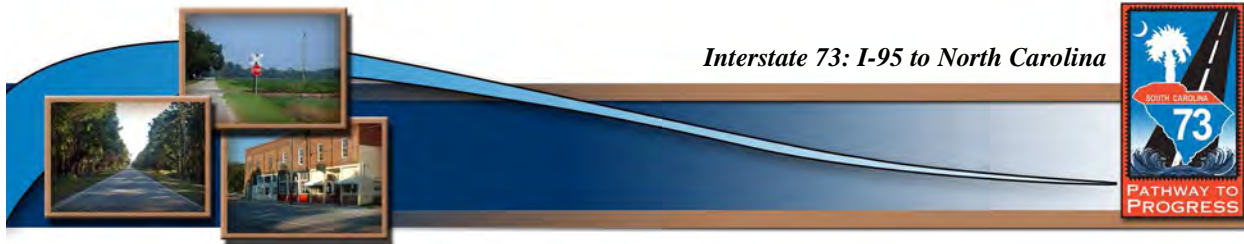
**Table 4.8**  
**Vehicle Miles Traveled (VMT) and Vehicle Hours Traveled (VHT) in Network for Alternatives using Average Annual Daily Traffic Volumes (Year 2030)**

Alternative	VMT	VHT	VMT/VHT
No-build	3,381,078	59,698	56.6
1	4,062,263	67,430	60.2
2	4,247,924	69,996	60.7
3	4,168,522	68,842	60.6

the ratio of vehicle miles traveled (VMT) to VHT, shown in Table 4.8. This shows the average speed of each trip in the network within the study area increased. Although the difference between the highest speed (60.7) and the lowest (60.2) for the entire traffic network of the reasonable Build Alternatives is slight, the difference between the No-build (56.6) and the lowest of the reasonable Build Alternatives (60.2) demonstrates the increase in efficiency of travel. This results in a substantial savings, especially when evaluated in light of the number of miles per day traveled on the network.

This impact on the local road network is even more evident when the I-73 trips are taken out of the calculations. The reduction in VMT and VHT without I-73 shows the amount of traffic taken off the rest of the network (reduction in vehicle hours traveled) because of





I-73 (refer to Table 4.9). The influence of I-73 on travel speed is shown in the drop in the average network speeds with the I-73 trips removed.

**Table 4.9**  
**Vehicle Miles Traveled (VMT) and Vehicle Hours Traveled (VHT) in Network for Alternatives using Average Annual Daily Traffic Volumes with I-73 Traffic Removed (Year 2030)**

Alternative	VMT	VHT	Difference from No-build		VMT/VHT
			VMT	VHT	
No-Build	3,381,078	59,698	--	--	56.6
1	2,874,387	49,633	-506,691	-10,065	57.9
2	3,028,802	51,842	-352,276	-7,856	58.4
3	2,927,326	50,735	-453,752	-8,963	57.7

The ability to reduce the time required to travel to a destination is a benefit to the traveling public, which includes tourist traffic.

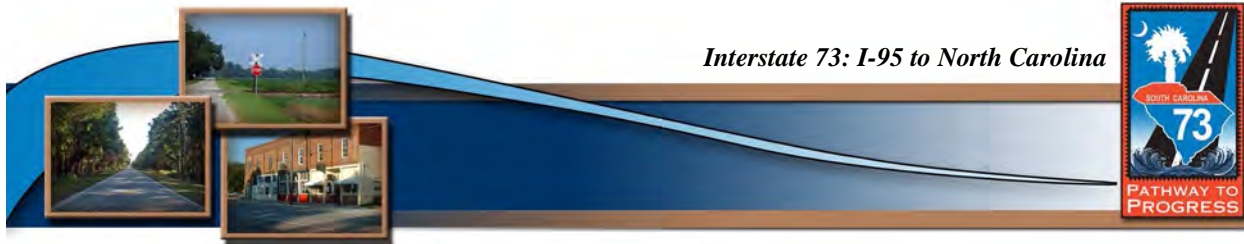
### **Multimodal Planning**

Planning for future provision of a multimodal facility within the interstate corridor was identified as a secondary need for the project. An ultimate 400-foot typical section was developed to accommodate the number of lanes needed for the future traffic volumes as well as a multi-modal corridor (refer to Figure 1-4, page 1-5). Overpasses, interchanges, and access ramps would require modification when installing a future multimodal facility, such as rail. Bridges and overpasses would be retrofitted to accommodate the increased height and length that would be needed to meet installation criteria for rail, while the railroad would be designed out of the existing right-of-way at the interchanges. Alignment of the rail would pose additional challenges for access ramps and frontage roads.

In terms of multimodal planning, the reasonable Build Alternatives would have the ability to accommodate future facilities equally. Each of the three reasonable Build Alternatives would be primarily on new location, which would provide the most flexible design for installing future multimodal facilities due to the use of conventional interchanges.

### **Human and Environmental Impacts**

Each of the reasonable Build Alternatives would have different types of impacts and somewhat different benefits. Indirect and cumulative impacts for the reasonable Build Alternatives were evaluated and had similar impacts for each category evaluated.



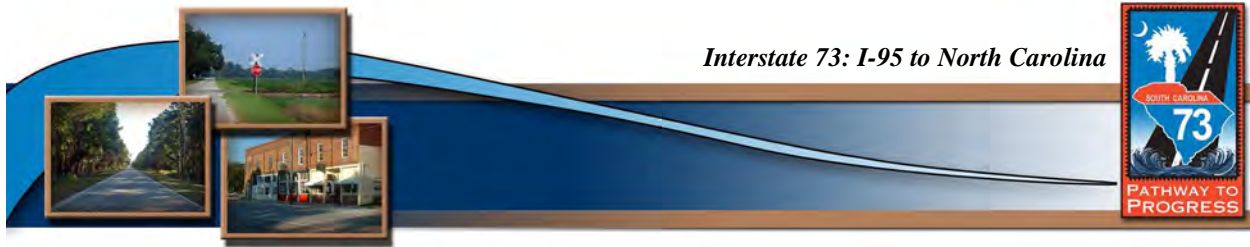
Guidelines established by the USEPA and the USACE pursuant to Section 404(b)(1) of the *Clean Water Act* were followed during the development of each of the reasonable Build Alternatives. No practicable alternative exists that would avoid wetland impacts yet satisfy the Purpose and Need for the project. This is due to the fact that the project is a linear transportation project that would traverse a relatively long distance (approximately 40 miles) across a landscape in which wetlands and streams are abundant. In some cases they are present as unavoidable linear features that cross the entire project study area in an orientation that is perpendicular to the path of the reasonable Build Alternatives (i.e. the Crooked Creek System and the Three Creeks System). The methodology that was utilized to develop the reasonable Build Alternatives placed greater importance on avoidance of wetland impacts than on avoidance of any other single impact category. The project has been designed and would be constructed in such a way that it would be in conformance with applicable State and Federal laws and regulations. A plan for mitigating unavoidable wetland impacts has been developed that will replace impacted wetlands so that there will be no net loss in wetland function or value as a result of the project. This mitigation plan has been developed in close coordination with interested State and Federal resource and regulatory agencies.

### **USACE Public Interest Review Factors**

The USACE evaluates the direct, secondary, and cumulative impacts of a proposed project upon Waters of the United States and how this impact would affect the interests of the public. Factors used when evaluating the public interest include conservation, safety, economics, aesthetics, wetlands, general environmental concerns, land use, historic properties, fish and wildlife values, flood hazards, floodplain values, navigation, shore erosion and accretion, recreation, water quality, water supply and conservation, energy needs, food and fiber production, mineral needs, considerations of property ownership, and the general needs and welfare of the people. Each factor is weighted based on the importance and relevance of the factor in relation to the proposed project. In addition, comments from federal, state, and local agencies, especially those who have special expertise and the public are evaluated and given appropriate weighting. The USACE balances the public interest factors, weighing the benefits of the proposed project against its detriments. Along with this public interest review, the USACE will also evaluate a permit application for all work that occurs in Waters of the United States, including wetlands, pursuant to requirements of Section 10 of the *Rivers and Harbors Act* and/or Section 404 of the *Clean Water Act*. Once the public interest review and the regulatory review are completed, a final decision is made on the permit application. A permit application would be approved unless the proposed project was found to be contrary to the public interest and/or the applicable regulatory requirements of Section 10 of the *Rivers and Harbors Act* and/or Section 404 of the *Clean Water Act*.

The USACE's Public Interest Factors were used to evaluate the potential impacts upon the Waters of the United States and how this impact would affect the interests of the public. Many





of the USACE's Public Interest Factors were quantified and compared during the designation of preliminary Build Alternatives and reasonable Build Alternatives, including; wetlands, historic properties, fish and wildlife, floodplains, land use, recreation, water supply, water quality, food and fiber production (farmland), and considerations of property ownership (relocations) (refer to Table 3.1 and Table 4.1).

The guidance provided by the USACE entitled *Environmental Assessment, 404(B)(1) Analysis, Finding of No Significant Impact (FONSI), and Statement of Findings* explains aesthetics as to whether the project "generally fit(s) the current state of the area," whether the "project is a 'first', (as) it could cause disharmony from aerial or adjacent property view," and in terms of landscaping. The land use of the project study area is primarily rural in character, dotted with small towns and cities such as Bennettsville, Blenheim, Clio, McColl, and Tatum. The construction of any reasonable Build Alternative would alter the current state of the area as it would be the first multi-lane controlled access facility in the area. It is anticipated that the adjacent property would have an altered view, as the proposed facility may be in view.

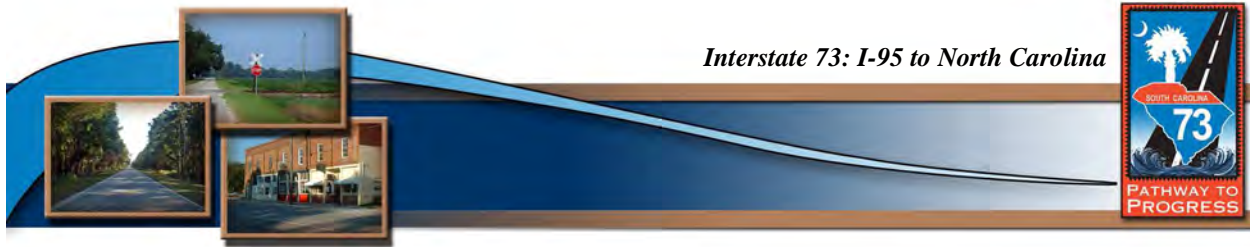
The remaining factors of shore erosion and accretion, as well as flood hazards (i.e. hurricane evacuation) would not be impacted by the project. The project would not be located in the vicinity of the ocean shore.

### **No-build Alternative**

The No-build Alternative would fail to satisfy the stated Purpose and fulfill the primary and secondary Needs for the project. The Purpose of the proposed project is to provide an interstate link between proposed I-73, between I-95 and the Myrtle Beach region, and the North Carolina I-73/I-74 corridor. The primary Needs for the project are to provide system linkage and to enhance economic opportunities in the study area, while the secondary Needs are to improve access for tourism, improve safety of existing roadways, and provide multimodal planning.

The No-build Alternative would not provide:

- A direct link between I-95 and the North Carolina I-73/I-74 corridor to improve system linkage. I-73 has been named as a High Priority Corridor (number five) by the U.S. Congress. This section of I-73 is needed to provide the connection between North Carolina and I-95. Without this link, the planned High Priority Corridor between Michigan and South Carolina would not be completed;
- Opportunities for economic growth. The interstate would provide economic opportunities to the project study area that would result from the connectivity to the interstate system. Marlboro and Dillon Counties in South Carolina are two of the most economically depressed counties in the state. They have high unemployment and low income levels. The trend in Marlboro County has been for negative population growth over the past 20 years. I-73 is seen locally as a key to improving the economic prospects within the study area;



## *Interstate 73: I-95 to North Carolina*

- Improve access for tourism. The construction of the interstate would result in savings to the traveling public resulting from increased travel efficiency. This travel efficiency is reflected in reduced travel times. A key to maintaining and improving tourism is the ability of the tourist to readily access destinations. The connection provided by I-73 would increase the travel efficiency for tourists traveling through South Carolina;
- Improved safety on local roads. The diversion of traffic to the interstate from the local road network that would result from the construction of the proposed interstate would improve safety on the local network by removing the through trips. This would take persons unfamiliar with the local roads off of that network and put them on the interstate, a more familiar situation for those traveling long distances. It would also remove truck traffic from the local network; or,
- A future provision for a multimodal facility. The I-73 corridor includes within the proposed right-of-way the potential for two rail corridors that would allow for future passenger and/or freight rail. This has the potential for providing additional rail connectivity to northeastern South Carolina.

The No-build Alternative would not provide the interstate link between I-95 and the North Carolina I-73/I-74 corridor. Failure to provide this link would lead to the loss of economic opportunities, the potential loss of tourism, no improvement in local traffic congestion, longer travel times, and the loss of the multimodal opportunities provided by the corridor.

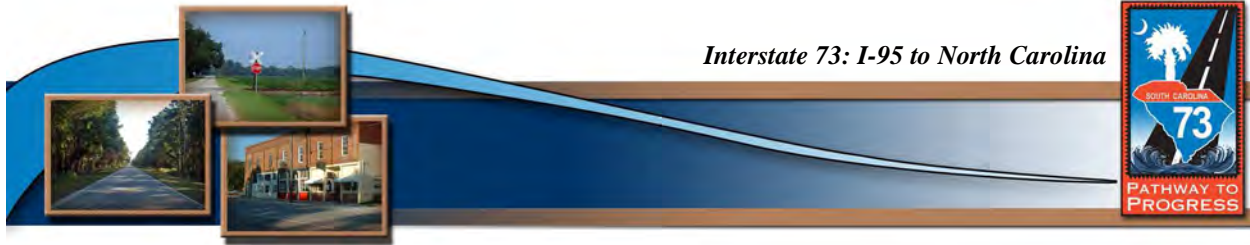
The projected economic benefits from constructing I-73 are summarized previously. This analysis shows that the project study area would benefit in terms of the number of jobs and money flowing into the area from any of the reasonable Build Alternatives.

The No-build Alternative in 2030 provides the benchmark for impacts against which the Build Alternatives are measured. In all cases, the No-build Alternative was evaluated along with the Build Alternatives. For some categories of impacts the No-build may be more negative than the Build Alternatives. The economic scenario for Marlboro County is more negative with the No-build Alternative than it would be for the Build Alternatives. In other categories the No-build may have different impacts than the Build Alternatives that can be positive from one sense, but negative for another. For example, land uses will change by the Year 2030, even for the No-build Alternative. The projected land use changes for the No-build were lower, when compared against the Build Alternatives. This would be positive from a natural resource standpoint, but negative from an economic development viewpoint.

### **Reasonable Build Alternatives**

All of the reasonable Build Alternatives satisfied the Purpose and Needs for the project. System linkage and multimodal planning would be provided by any of the reasonable Build Alternatives. As previously indicated, all alternatives give rise to substantial economic benefits for the region. Alternative 2 would have the highest increase to annual personal income and higher benefits to





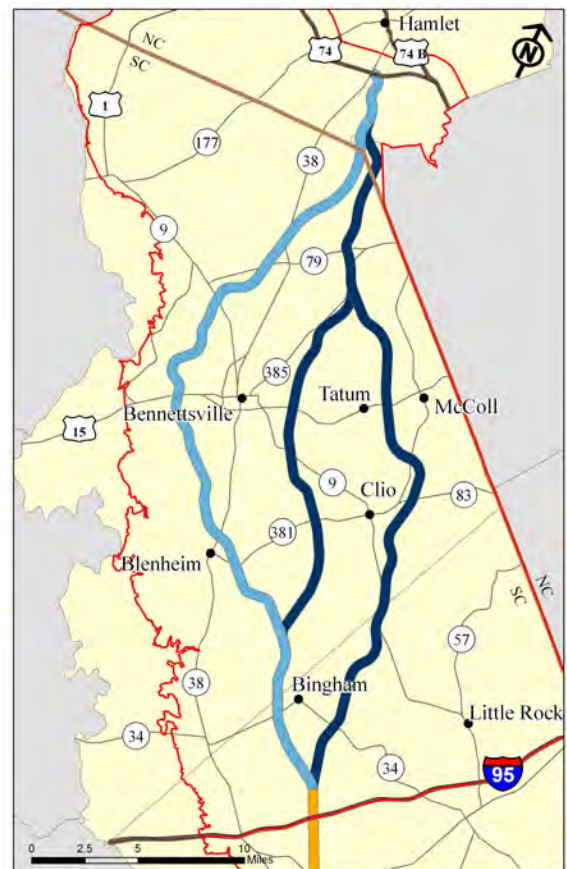
the area for total employment. However, this variability was not enough to set any one above the other reasonable Build Alternatives.

Induced impacts for several categories were also looked at between the reasonable Build Alternatives. Potential land use, wildlife habitat, wetlands, streams, and water quality impacts were all areas that showed very little differentiation between the alternatives. In fact, based upon past and current growth trends, the No-build Alternative, which served as a baseline for future impacts, showed substantially more land use impacts than did any of the reasonable Build Alternatives by themselves. The categories that served to distinguish the alternatives from one another were natural resource related (wetlands, streams, and farmland) and human resource related (communities, public input, and cost).

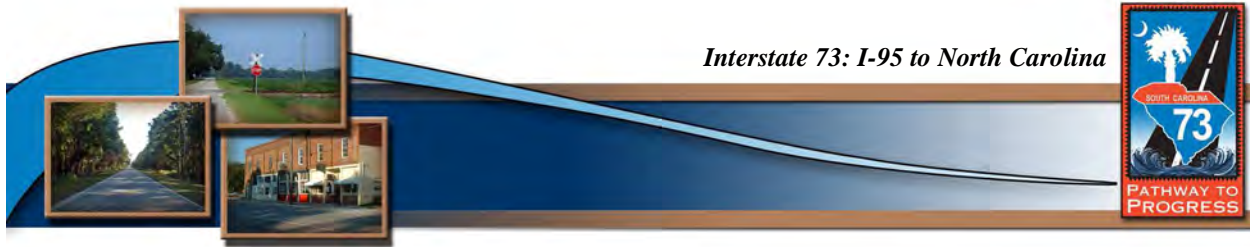
**Alternative 1**

Alternative 1 is the western route. It begins at the northern end of the interchange with I-95, which is the terminus of the Southern project of I-73. It extends to the northwest to the western side of Bingham where it has an interchange with S.C. Route 34. It continues northwest where it has an interchange with S.C. Route 38 on the eastern side of Blenheim and another with U.S. Route 15/401 west of Bennettsville. North of Bennettsville it continues in a northern direction where it has an interchange at S.C. Route 9. It extends north to an interchange with I-74 near Hamlet, North Carolina. It is approximately 40.6 miles in length, the longest of three reasonable Build Alternatives (3.8 miles longer than the Preferred Alternative).

This alternative would have 167.7 acres of wetland impacts, over 50 acres more than the Preferred Alternative, and the wetlands potentially impacted have the highest value rating (1,205.2). Alternative 1 would have the most total relocations (71), 30 additional than the Preferred Alternative. It would have the highest cost (1.21 billion, 2012 dollars) over \$130 million more than the Preferred Alternative. It would impact the greatest amount of total farmland (1,705 acres), approximately 200 acres more than the Preferred Alternative and would impact 824 acres of prime farmland. It would have 15 stream crossings impacting an estimated 4,566 linear feet of streams, which is the least amount of all the reasonable Build Alternatives. It



**Figure 4-1  
Alternative 1**



*Interstate 73: I-95 to North Carolina*

would impact 39 additional acres of floodplain than the Preferred Alternative. It would cross major stream/wetland systems such as Little Reedy Creek, Three Creeks, Muddy Creek, Crooked Creek, and Herndon Branch. It would also impact approximately 914.3 acres of wildlife habitat. The USFWS and SCDNR expressed concern that Alternative 1 crosses major stream/wetland systems and could have a potential for more habitat fragmentation than the other reasonable Build Alternatives.

This alternative would provide better access to the Marlboro County Industrial Park, and Chesterfield and Darlington Counties than the other reasonable Build Alternatives. Since it is located adjacent to Bennettsville, existing infrastructure would be available for economic development. The SCDOC supported Alternative 1 due to its location near Bennettsville and available infrastructure. However, the close proximity of the alternative to the Marlboro County Airport could limit future expansion of the facility. Alternative 1 is located closer to the floodplain of the Great Pee Dee River that may encourage development in the floodplain, which was a concern of the USFWS and SCDNR.

The citizens of Minturn submitted a petition with 106 signatures (refer to *Public Involvement Technical Memorandum*) requesting that this route, the far western route, be selected as the Preferred Alternative. Other comments were received from local governments adjacent to the project study area. Chesterfield County Council, Chesterfield Town Council, Cheraw Town Council, and Society Hill Town Council all passed resolutions endorsing the western route of Alternative 1.

Based upon coordination with the State Historic Preservation Office (SHPO), this alternative would also be expected to have the potential for negative visual impacts to a potentially eligible home located on S-18 on the southern side of Bennettsville. In addition, SCDAH stated that Alternative 1 and Alternative 3 had the most potential for impacts to historic structures.

### **Alternative 2**

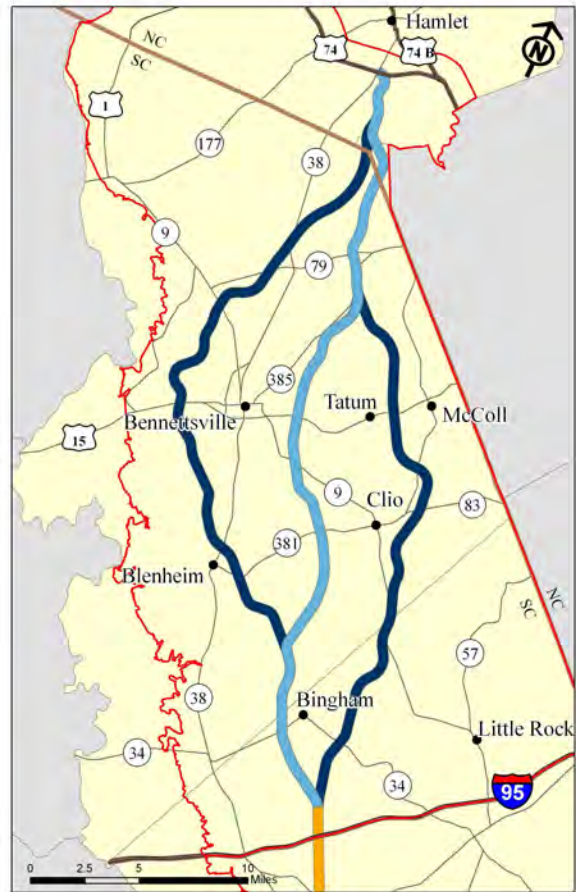
Alternative 2 is the central route. It also starts at the northern end of the interchange with I-95, which is the terminus of the Southern project of I-73. It extends to the northwest following the alignment of Alternative 1 on the western side of Bingham where it has an interchange with S.C. Route 34. It follows the alignment of Alternative 1 approximately 3.5 miles north of Bingham where it turns north and has an interchange with S.C. Route 381 between Blenheim and Clio. It continues northwest where it has another interchange with U.S. Route 15/401 east of Bennettsville. An interchange is also provided at S.C. Route 79, north of Bennettsville, and with I-74 near Hamlet, North Carolina. It is approximately 36.8 miles in length, the shortest of three reasonable Build Alternatives.





This alternative would have the least amount of wetland impacts (114.3 acres), the least amount of total farmland (1,505 acres), and the least amount of prime farmland (805 acres), and low total relocations (41). It would have the least cost (1.08 billion, 2012 dollars) and would have 24 stream crossings impacting 8,143 linear feet of streams. It would impact 25 acres of floodplain due to its crossing stream/wetland systems such as Little Reedy Creek, Hagins Prong, Cottingham Creek, and Beverly Creek. This alternative would also cross Crooked Creek in the northern portion of the project study area, but would avoid a second, wider, crossing of the Crooked Creek system north of Bennettsville. It would also impact approximately 869.3 acres of wildlife habitat.

This alternative is located adjacent to Bennettsville on the east side and has existing infrastructure available for economic development. In addition, it is centrally located within the project study area to more equally serve the population centers of Bennettsville, Tatum, Blenheim, and Clio. The SCDOC supported Alternative 2 due to its location near Bennettsville and available infrastructure.



**Figure 4-2**  
**Alternative 2**

The citizens of Minturn, along with their petition (refer to *Public Involvement Technical Memorandum*) requesting that the far western route be selected as the Preferred Alternative, stated that Alternative 2 was unanimously endorsed if the far western route was not chosen. The City of Bennettsville and the Town of Blenheim submitted letters from their respective mayors unanimously supporting the central route, Alternative 2.

**Alternative 3**

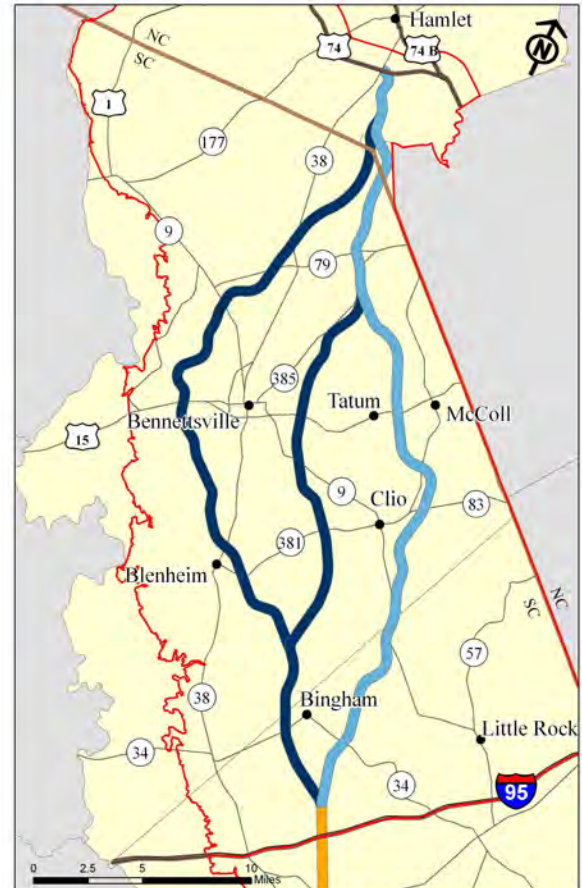
Like the other reasonable Build Alternatives, Alternative 3 begins at the northern end of the interchange with I-95, which is the terminus of the Southern project of I-73. Alternative 3, the eastern route, extends to the north crossing between Bingham and Little Rock where it has an interchange with S.C. Route 9. It continues to the north, passing west of the Alford Plantation, to an interchange with S.C. Route 83 east of Clio. Alternative 3 continues northwest to an interchange between Tatum and McColl on U.S. Route 15/401 and then follows the same alignment as Alternative 2, including an interchange at S.C. Route 79 and another at I-74 near



Hamlet, North Carolina. It is approximately 37.2 miles in length (0.4 mile longer than the Preferred Alternative).

Alternative 3 would have 116.0 acres of wetland impacts, only 1.7 acres more than the Preferred Alternative, and the wetlands potentially impacted have the lowest value rating (729.3). Although Alternative 3 would have the fewest relocations (40), it would impact the Red Bluff Grocery, located at the intersection of S.C. Route 83 and State Road 40, and the Community House of Prayer located on S.C. Route 34. Both of these facilities are considered to be important community assets and would result in a negative affect on each associated community. In addition, the property associated with the McLaurin House, which is listed on the NRHP, would be impacted by Alternative 3. This property includes four poultry barns that would require relocation as an additional cost to the project.

Alternative 3 would have a high cost similar to Alternative 1 (1.19 billion, 2012 dollars), over \$100 million more than the Preferred Alternative. It would impact the 1,582 acres total farmland, and the highest amount of prime farmland (961 acres), which is 156 acres more than the Preferred Alternative. It would have 24 stream crossings impacting the 10,062 linear feet of streams, which is 1,919 linear feet more than the Preferred Alternative and the highest amount of all the reasonable Build Alternatives. It would have the least impact to floodplains (23 acres) and would also impact approximately 668.4 acres of wildlife habitat. Alternative 3 would cross the stream/wetland systems of Little Reedy Creek, Reedy Creek, Beverly Creek, and Crooked Creek. Alternative 3 would be located over five miles from Bennettsville, therefore existing infrastructure would not be readily available for economic development.

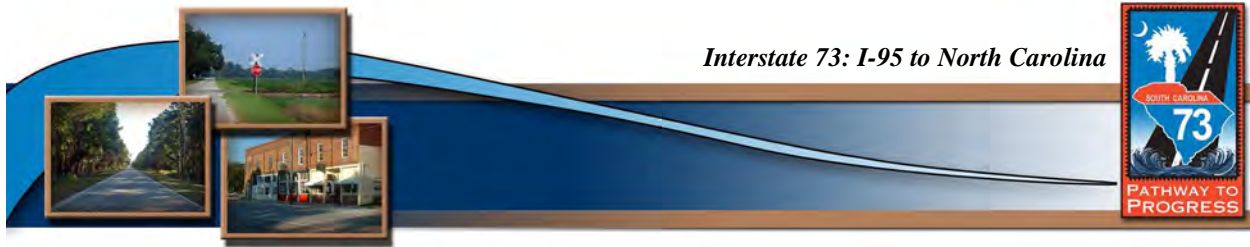


**Figure 4-3**  
**Alternative 3**

The citizens of Minturn submitted a petition with 106 signatures (refer to *Public Involvement Technical Memorandum*) requesting that this route, the far eastern route, not be selected as the Preferred Alternative. Other comments were received from the members of the ACT including:

- USDA NRCS did not support the potential impact of Alternative 3 to the poultry operation associated with the McLaurin House;





- SCDOC stated that Alternative 3 would have the least potential for economic development due to its location and that a major investment would be necessary to upgrade and install the infrastructure needed to attract economic development;
- SCDAH stated that Alternative 1 and Alternative 3 had the most potential for indirect impacts to historic structures; and,
- SCDNR stated concern about the crossing of Reedy Creek by Alternative 3, while the other reasonable Build Alternatives did not impact Reedy Creek.

### **Preferred Alternative**

As discussed previously, each of the reasonable Build Alternatives would equally meet the primary needs of the project by providing a the direct link between future I-73 South (from I-95 to the Myrtle Beach area) and the I-73/I-74 Corridor in North Carolina, while providing economic development opportunities. The secondary needs of the project, improved access for tourism, increased safety on existing roads, and multimodal planning, would be met by all of the reasonable Build Alternatives. The reasonable Build Alternatives were then compared based upon public input, agency concerns, potential impacts to the human and natural environment, and qualitative benefits and impacts that would result from each of them. After careful consideration of all of these factors, a Preferred Alternative was identified.

Alternative 2 is the Preferred Alternative because it would have the least amount of wetland impacts (114.3 acres), the least impact to total farmland (1,505 acres), the least impact to prime farmland (805 acres), the lowest cost, low relocations, be in close proximity to existing infrastructure, would be centrally located to serve the communities of the project study area more equally, and is supported by agencies, local governments, and the public. The three reasonable Build Alternatives all have some features that are favorable and advantageous, but when compared with Alternative 2, the other reasonable Build Alternatives were less suitable.

Alternative 1 would have the highest wetland impacts (167.7 acres), the highest cost (\$1.21 billion), the most relocations (71), the highest impact to farmland (1,705 acres), the most floodplain impacts (64 acres), and would potentially have a visual impact to a historic home located on S-18. Concerns were expressed by USFWS and SCDNR concerning the crossing of major wetland systems and the potential for habitat fragmentation that would be caused by Alternative 1. At public meetings many people spoke against Alternative 1 due to the potentially detrimental impacts to farming operations in the area.

Alternative 3 would have the highest linear feet of stream impact (10,062), the greatest impact to prime farmland (961 acres), would impact the property associated with the McLaurin House that listed on the NRHP resulting in a Section 4(f) impact, would impact a poultry operation, the Red Bluff Grocery, the Community House of Prayer, and would be removed from existing infrastructure that would limit potential future economic development. Concerns were expressed by SCDOC regarding Alternative 3 based on its distance from available infrastructure.



# Appendix A Roadway and Bridge Design Criteria



From I-95 to Future Interstate 74  
in North Carolina



U.S. Department of Transportation  
**Federal Highway  
Administration**





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I-73  
South Carolina  
*Design Criteria*

PROJECT CONCEPT REPORT/ROADWAY DESIGN CRITERIA

February 21, 2005

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**Section 1**

**INTENT OF DESIGN CRITERIA**

**Section 1: Intent of Design Criteria**

This project entails the preliminary design of the new **Interstate Highway 73 (I-73)** in South Carolina for access between South Carolina/North Carolina State Line near Rockingham, North Carolina and South Carolina Route 22 (SC 22, called “Conway Bypass”) near Conway, S.C., with an approximate length of eighty (80) miles. Design criteria were derived primarily from:

1. Highway Design Manual, 2003 edition, South Carolina Department of Transportation (SCDOT), and
2. A Policy on Geometric Design of Highways and Streets (the “Green Book”), 2001 edition, American Association of State Highway and Transportation Officials (AASHTO),
3. A Policy on Design Standards-Interstate System (AASHTO) July, 1991

Inasmuch as freight and/or passenger rail service may one day closely parallel I-73, the following will also pertain:

4. Manual for Railway Engineering, 2001, 4 volumes, American Railway Engineering and Maintenance-of-Way Association (AREMA), and
5. Grade criteria currently employed by the two major regional carriers, Norfolk Southern and CSX.

**Section 2**  
**DESIGN SPEED**

**2.1 MAINLINE (INTERSTATE)**

Level (Coastal) Terrain 75 mph

**2.2 CROSS-OVER ROADS**

Secondary Level (Coastal) Terrain 35 mph to 55 mph (varies dependent  
on type of road)

Primary Level (Coastal) Terrain 60 mph

**2.3 FRONTAGE ROADS AND SIDE ROADS**

Level (Coastal) Terrain 45 mph

**2.4 COLLECTOR/DISTRIBUTOR ROADS (If Necessary)**

55 mph

**2.5 INTERCHANGES**

**2.5.1a** Ramps (Conventional) 40 mph-55 mph\*

**2.5.1b** Ramps (Full Directional) 55 mph

**2.5.2** Loops 30 mph-40 mph\*

\* Varies depending on merging and diverging roadways, see Figure 16.5B SCDOT Design Manual.

**2.6 RAIL**



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I-73  
South Carolina  
*Design Criteria*

**2.6.1**

Conventional

79 mph

**Section 3**  
**PAVEMENT, SHOULDER AND MEDIAN WIDTH**

For pavement and shoulder widths Chapters 16 and 19, in the SCDOT Design Manual, will be used. For median widths Chapter 13 will be used.

**3.1 MAINLINE (INTERSTATE)**

**3.1.1 New Location**

Thru Lanes	12 ft (2 lanes each way immediate, 3 lanes each way ultimate)
Shoulder (Outside)	12 ft total widths 10 ft paved 2 ft earth (add 3.5 ft for guardrail)
Shoulder (Inside)(immediate)	24 ft total width 4 ft paved (full depth) 20 ft earth
Shoulder (Inside)(ultimate)	12 ft total widths 10 ft paved
Median- shoulder section	96 ft grassed-immediate 72 ft grassed-ultimate

**3.1.2 Existing Location**

Thru Lanes	12 ft (2 lanes each way immediate, 3 lanes each way ultimate)
Shoulder (Outside)	12 ft total widths 10 ft paved 2 ft earth (add 3.5 ft for guardrail)
Shoulder (Inside)(immediate)	10 ft total width



I-73  
**South Carolina**  
*Design Criteria*

Shoulder (Inside)	4 ft paved 6 ft earth
Shoulder (Inside)(ultimate)	10 ft total widths 10 ft paved
Median- shoulder section	96 ft grassed-immediate 72 ft grassed-ultimate

**3.2 CROSS-OVER ROADS**

Lanes	12 ft
Turning Lanes	11 ft
Shoulder	*4 ft paved/10 ft total (add 3.5 ft for guardrail)
Median	15 ft
*For bicycle accommodations	

**3.3 FRONTAGE ROADS AND SIDE ROADS**

Lanes	12 ft
Shoulder	*4 ft paved/6 ft total (add 3.5 ft for guardrail)
*For bicycle accommodations	

**3.4 COLLECTOR/DISTRIBUTOR ROADS (If Necessary)**

Lanes	12 ft
Shoulder (Outside)	10 ft paved/12 ft total
Shoulder (Inside)	4 ft paved/10 ft total 10 ft paved, if against barrier

**3.5 INTERCHANGES**

**3.5.1 Ramps**

Lanes	16 ft
Shoulder	10 ft total widths (add 3.5 ft for guardrail)
Shoulder (Inside)	4 ft paved
Shoulder (Outside)	6 ft paved

**3.6 RAIL**

Rail Width	4 ft - 8½ in.
------------	---------------



**Section 4**  
**HORIZONTAL CURVES**

Exhibit 3-14, [pg 145] in AASHTO's 2001 "A Policy on Geometric Design of Highways and Streets", and the SCDOT "Standard of Superelevation," Drawing No. 100-6 will be used.

**4.1 MAINLINE (INTERSTATE)**

Minimum Radius (Governed by required Railroad Minimum Radius)	3000 ft
Superelevation	max 0.08 ft/ft

Note: Point of rotation is inside pavement edge of future lane.

**4.2 CROSS-OVER ROADS**

Minimum Radius (45 mph)	600 ft
Minimum Radius (55 mph)	965 ft
Superelevation	0.06 ft/ft 45 mph or less 0.08 ft/ft greater than 45 mph

**4.3 FRONTAGE AND SIDE ROADS**

Minimum Radius (45 mph)	600 ft
Superelevation	0.06 ft/ft 45 mph or less 0.08 ft/ft greater than 45 mph

**4.4 COLLECTOR/DISTRIBUTOR (If Necessary)**

Minimum Radius (55 mph)	965 ft
Superelevation	max 0.08 ft/ft

**4.5 INTERCHANGES**

**4.5.1 Ramps**

Minimum Radius (40 mph)	465 ft
Superelevation	max 0.08 ft/ft

\*Note: If directional interchange is used:

Minimum Radius (55 mph)	955 ft
Superelevation	max 0.08 ft/ft

**4.5.2 Loops**

Minimum Radius (30 mph)	250 ft
Superelevation	max 0.08 ft/ft

**4.6 RAIL**

**4.6.1 Conventional**

Minimum Radius	2865 ft (2° 00')
----------------	------------------



**Section 5**  
**GRADES**

The SCDOT Design Manual Chapters 19 through 22 and chapter 10, AASHTO green book, will be used.

**5.1 MAINLINE (INTERSTATE)**

Desirable Maximum	4%
Allowable Minimum	0.3%

**5.2 CROSS-OVER ROADS**

Desirable Maximum	6%
Allowable Minimum	0.3%

**5.3 FRONTAGE ROADS AND SIDE ROADS**

Desirable Maximum	8%
Allowable Minimum	0.3%

**5.4 COLLECTOR/DISTRIBUTOR ROADS (If Necessary)**

Desirable Maximum	4%
Allowable Minimum	0.3%

**5.5 INTERCHANGE RAMPS AND LOOPS**

Ascending Gradients	5%
Descending Gradients	7%

---

I-73  
South Carolina  
*Design Criteria*

<b>5.6</b>	<b>RAIL</b>	
<b>5.6.1</b>	Conventional	1%
<b>5.6.2</b>	Passenger	3.5%



**Section 6**  
**VERTICAL CURVES**

The AASHTO's "*A Policy on Geometric Design of Highways and Streets*" Exhibit 3-75 Page No. 273, "Design Controls for Crest Vertical Curves" and Exhibit 3-78 Page No. 278, "Design Controls for Sag Vertical Curves" will be used to determine minimum lengths of curves.

**Section 7**  
**SIDE SLOPES**

**7.1** **FILL SLOPES** - The SCDOT Design Manual Chapter 13 will be used.

**7.1.1** **Ditch Section**

Height of Fill

≤ 5 ft	6:1
5 ft - 10 ft	4:1
≥ 10 ft	2:1 *

\*3.5' will be added to shoulder for guardrail

**7.1.2** **Curb & Gutter Section**

**7.1.2a** **Outside** 2:1

**7.2** **CUT SLOPES**

**7.2.1** **Ditch Section**

**7.2.1a** **Mainline, Interstate, Interchange**

Shoulder (paved)	24:1
Shoulder (unpaved)	12:1
Fore Slope	6:1
Back Slope	3:1

**7.2.1b** **Crossover Roads**

Shoulder (paved)	24:1
Shoulder (unpaved)	12:1
Fore Slope	6:1
Back Slope	3:1



**7.2.1c**      **Frontage Roads and Side Roads**

Shoulder	12:1
Fore Slope	4:1
Back Slope	3:1

**7.2.2**      **Curb and Gutter Section**

2:1 or flatter in special cases

**Section 8**  
**CROSS SLOPES**

**8.1 ROADS**

Tangent Section	48:1
Superelevated Section	as described in Section 4

**8.2 PAVED SHOULDER**

All	24:1 except in superelevated sections
-----	---------------------------------------

**8.2a** Paved shoulders on high side of Superelevation will continue the traveled way cross slope.

**8.2b** Paved shoulder on low side of Superelevation will maintain a 24:1 slope.



**Section 9**  
**RIGHT-OF-WAY**

**9.1 RIGHT OF WAY MAINLINE**

Shoulder Section	400 ft min. (with dual Frontage Roads)
	300 ft min. (without Frontage Roads)

**9.2 CONTROL OF ACCESS**

Follow guidelines as prescribed in:

- A Policy on Design Standards-Interstate System (AASHTO), publication dated July 1991
- SCDOT Highway Design Manual, (2003 edition), Sections 9.8 and 30.3.6

**Section 10**  
**INTERSECTIONS/INTERCHANGES**

All intersections will be designed individually to accommodate traffic volumes with twenty-year growth projections at the time of Right of Way Plan development and turning movements at critical locations within the project limit. Sight distance and design speed will be considered in Intersection Design.

The SCDOT Design Manual, Figure 15.2D “Selection of Design Vehicle at Intersections” [pg 15.2(8)] will be used to determine design vehicle.



**Section 11**  
**Clear Zone**

The SCDOT “Design Manual”, Chapter 14 will be used in conjunction with AASHTO’s Roadside Design Guide (year 2002)

**11.1 MAINLINE INTERSTATE, AND COLLECTOR/DISTRIBUTOR ROAD**

**11.1.1 Fill/Fore Slopes**

6:1 or flatter	34'
5:1 to 4:1	38'

**11.1.2 Back Slopes**

6:1 or flatter	28'
5:1 to 4:1	26'
3:1	22'

**11.2 SIDE ROADS**

The following design criteria are for 45 mph with ADT over 6000 for side roads. For different design speeds and ADT’s, see SCDOT Design Manual, Chapter 14.

**11.2.1 Fill/Fore Slopes**

6:1 or flatter	20'
5:1 to 4:1	28'

**11.2.2 Back Slopes**

6:1 or flatter	20'
5:1 to 4:1	20'
3:1	16'

**11.3 FACILITIES WITH CURBS**

Clear zone for any facilities using curbs on this project will comply with the SCDOT Design Manual (2003), Chapter 14, paragraph 14.3.2.6.



**Section 12**  
**SIGHT DISTANCE**

The SCDOT Design Manual Chapter 10 – Sight Distance, Section 10.1 – Sight Distance will be used.

The upper range value established in the current edition of AASHTO's "A Policy on Geometric Design of Highways and Streets," 2001, for the appropriate design speed will be used.

**Section 13**  
**PEDESTRIAN/BICYCLE FACILITIES**

Pedestrian facilities will be evaluated on a case-by-case basis along selected side roads and crossovers. Bicyclists are being accommodated by 4' paved shoulders on selected side roads and crossovers in accordance with the Guide for the Development of Bicycle Facilities (AASHTO) edition 1999.

**Section 14**  
**BRIDGE CRITERIA**

- The 2000 edition of the **DEPARTMENT**'s Standard Specifications for Highway Construction;
- AASHTO's LRFD Bridge Design Specifications, 2<sup>nd</sup> Edition, 1998, with latest interims;
- Seismic design and detailing will be in accordance with SCDOT "Seismic Design Specifications", October 2001 with latest interims;
- Standard special provisions, as already prepared by **DEPARTMENT** for bridge construction;
- Bridge Design Memorandums, issued by **DEPARTMENT**, as may be applicable to the project; and,
- The latest edition of the ANSI/AASHTO/AWS D1.5 Bridge Welding Code, with additions and revisions as stated in the special provisions.

<b>14</b>	<b>0.1 VERTICAL CLEARANCE</b>	
<b>14.1</b>	<b><u>Roads</u></b>	17 ft
	<b><u>Railroad Track</u></b>	23 ft
	<b><u>Stream Crossing</u></b>	As required by hydrological analysis (typical 2 ft above 50-year flood)



**Section 15**

**UPDATE OF S.C. ROUTE 22 (VETERANS HIGHWAY) FOR ADOPTION INTO THE  
INTERSTATE SYSTEM**

- Protect median width less than 72 feet wide with physical barrier.
- Retain existing main line design speed of 70 mph.
- Retain existing interchange ramp and loops design speed.
- Extend acceleration lane of the Southwest Loop at the U.S. Route 701 (Baywater Interchange) from 823 feet to 1,350 feet.
- Existing should widths are 10 feet with 2 feet being paved. Shoulder width to 12 feet (10' paved, 2' unpaved) outside and 10' (4' paved, 6' unpaved) inside. Shift traffic lanes 2 feet-to inside. See Typical Section A6.
- Place rumble strips as shown by SCDOT Standard Drawing 403-3.
- Overlay existing route with Open Graded Friction Course.

# Appendix B The Corridor Analysis Tool (CAT)



From I-95 to Future Interstate 74  
in North Carolina

## **Appendix B**

### **The Corridor Analysis Tool (CAT)**

*Source: GIS and Data Collection Activities Technical Memorandum completed for the I-73 South project.*

The CAT was developed to identify potential corridors for the I-73 project that would provide the best facility for travelers while minimizing environmental impacts. While corridor analyses have been conducted for years using manual methods and GIS, these methods were often time-consuming, cumbersome, and involved tedious, repetitive steps. The creation of the CAT has addressed the technical challenges of processing numerous large data sets quickly and flexibly. Users are able to perform analyses in a short time, thus allowing more time to be spent on interpretation, discussion, and comparison of alternatives.

The CAT is a series of GIS-based functions designed to route conceptual corridors among the identified community and environmental resources available from both public databases and project-derived databases. These corridors are developed through a simple “opportunities and constraints” approach. In this approach, values are assigned to site-specific resources by technical experts in specific fields. The computer model routes preferred paths between user-selected endpoints through an artificial ‘terrain’ created by the weighting of socioeconomic, engineering, environmental, and infrastructure values that have been assigned in the study area. The system determines the shortest route with the least amount of impacts. The CAT uses a grid or cell based format for improved model efficiency. Due to the resolution of many of the initial data layers, the I-73 study area will be divided into 30 meter x 30 meter cells. The resolution or grid cell size may be further refined as viable corridor alternatives are identified and higher resolution field data is acquired and incorporated into the system. The CAT will find the least-cost (least impact) path between endpoints and summarize the impacts for each corridor selection.

The tool has been developed using Microsoft’s Visual Basic and the VBA capabilities included in the latest ESRI products. The tool incorporates the functions of ArcGIS 9, ArcGIS Spatial Analyst, and geodatabases to maintain information and perform the complex spatial calculations needed to effectively analyze each model run. The following briefly describes the major components and functions of the CAT tool.

#### **Scenario Manager**

Each model run is stored in the Scenario Manager. A scenario contains the specifications for each model run including:

1. Scenario Description/Creator/Date of Creation;
2. Layer Inputs;
3. Layer Influence Values;
4. Attribute Rankings;
5. Constraint Areas;
6. Corridor Endpoints; and,
7. Engineering Criteria.

Since it is anticipated that a large project such as I-73 will require many model runs, it is important that each run is tracked, documented and archived. That is the purpose of the Scenario Manager.



### Suitability Modeling

Within each scenario, user-defined criteria are stored which define the parameters of each model run. Suitability modeling functions of the system allow the user to define which data layers are included in the analysis and the level of influence each layer will have in the overall model run. It is important that the sum of the influence percentages for all of the included data layers equals 100.

Within each data layer, each attribute is given a ranking between 1 and 10. If an attribute is given a ranking of 1, then that attribute is considered to be the most suitable for the proposed corridor and least costly in the amount of unwanted impacts. In comparison, an attribute given a ranking of 10 would be considered the least suitable for the proposed corridor and would represent the most cost in unwanted impacts.

In addition to the ranked data layers, a data layer constraining certain areas of the study area is also included. These constraints were designated in cooperation with the Agency Coordination Team comprised of state and federal agencies with expertise in particular resource areas. This data layer will effectively ‘mask out’ any areas where a corridor should not be considered.

Finally, the layers are combined to produce a single suitability grid or layer (Figure 1). This data layer represents the “Combined Suitability Grid” that will be the basis of the analysis in determining the best (least impact) corridor.

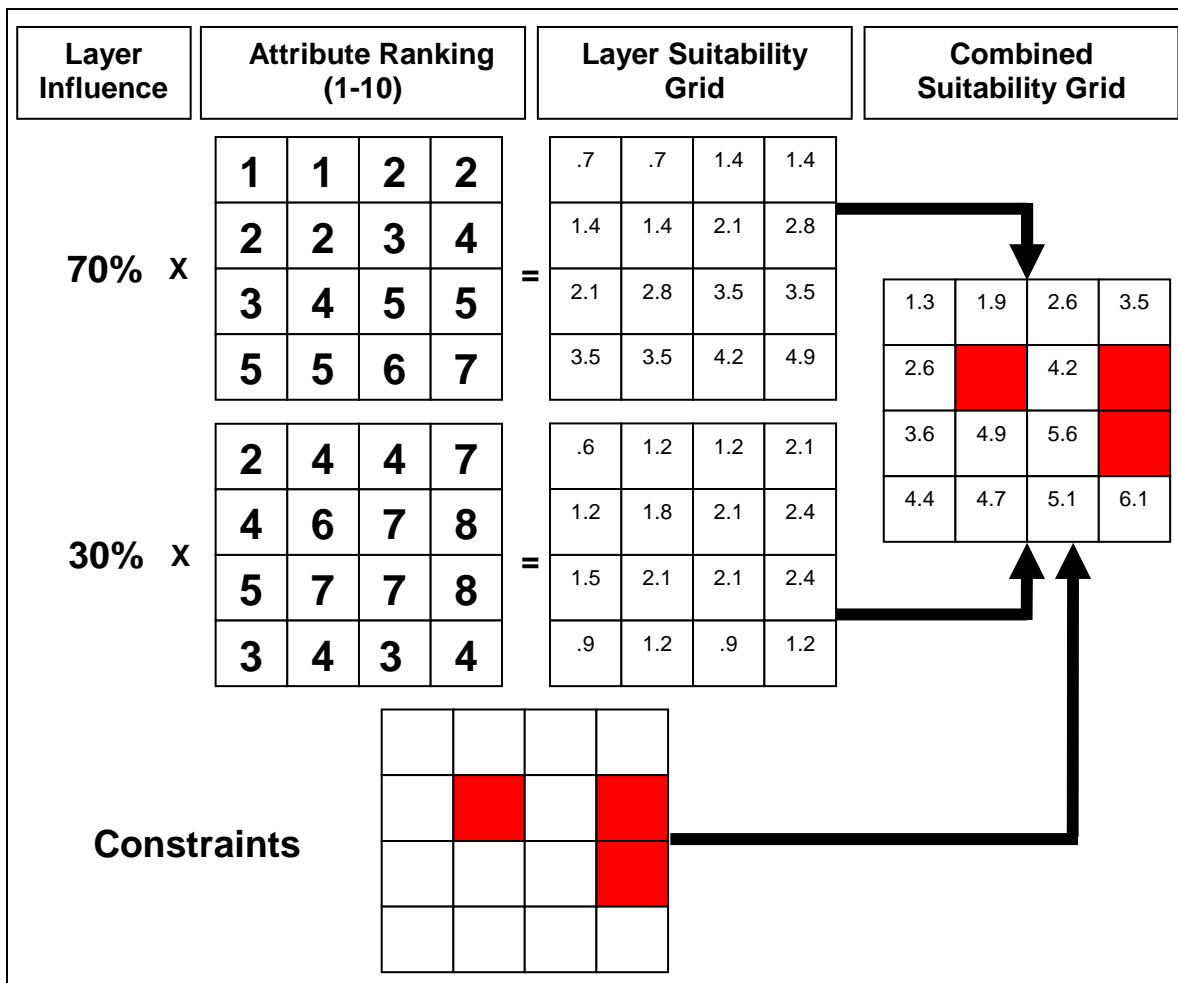


Figure 1. Suitability Grid

### Cost Weighted Distance/Shortest Path

When creating a scenario, the user must enter the endpoints of a potential corridor segment. Based on these points and the values in the Combined Suitability Grid, the CAT program creates the cost-weighted distance raster for each point. This raster defines the least accumulated cost from each cell to the corridor end point. Next, the system creates a direction raster that specifies the direction to travel from every cell in the cost-weighted distance raster to the corridor endpoints.

Finally, using the cost-weighted distance raster and the direction raster, the program then computes the least-cost (least impact) path.

### Engineering Design Criteria

After the least-cost path has been determined, the user may refine the path to conform to basic engineering design curvature standards and define the corridor widths. The CAT program then adjusts the least-cost path to meet the design standards as closely as possible. Note that due to software limitations the adjusted path may not be of the same quality as an engineering alignment. However, it should be of sufficient quality to provide impact calculations.

### Corridor Definition

The user may define corridor boundaries by choosing left and right buffer widths. The result is a new corridor buffer that can be viewed with other scenario data layers and can be used to approximate impacts.

#### 1.2.1 Impact Analysis

Finally, the CAT program uses the corridor buffer as an overlay and calculates the areas of impact by layer and layer attribute. Summaries of the impacted areas as well as other statistics including river crossings, road crossings, railroad crossings, and path length are included in the Final Scenario Report (Figure 2).

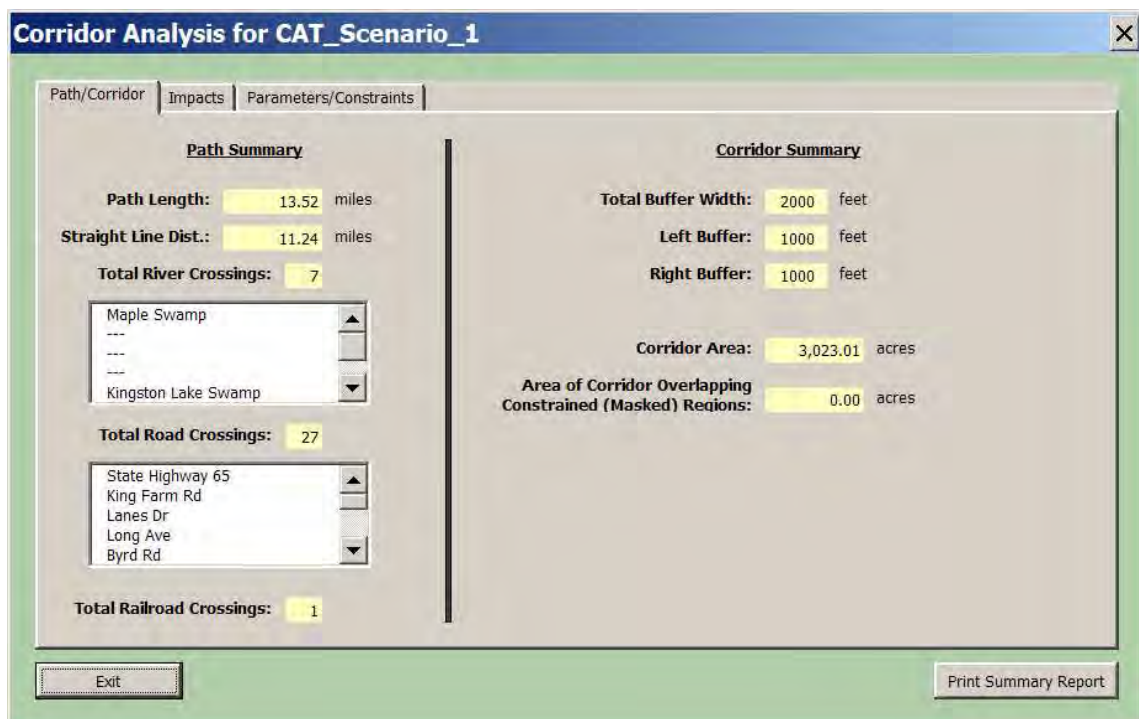


Figure 2. Final Scenario Report





# Appendix C

## Data Dictionary for Acquired GIS Layers Included in CAT Program



From I-95 to Future Interstate 74  
in North Carolina



U.S. Department of Transportation  
**Federal Highway  
Administration**



# Data Dictionary for Acquired GIS Layers Included in the CAT Program

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**DEMOGRAPHIC/SOCIO-ECONOMIC LAYERS**

# Census Blocks - Richmond County

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

#### *Citation\_Information:*

*Originator:* U.S. Department of Commerce Bureau of the Census Geography Division

*Publication\_Date:* 2001

#### *Title:*

Census Blocks - Richmond County

*Edition:* Redistricting Census 2000

*Geospatial\_Data\_Presentation\_Form:* vector digital data

#### *Series\_Information:*

*Series\_Name:* TIGER/Line Files

*Issue\_Identification:* Version (MMYY) represents the month and year file created

#### *Publication\_Information:*

*Publication\_Place:* Washington, DC

*Publisher:* U.S. Department of Commerce Bureau of the Census Geography Division

*Online\_Linkage:* <\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\tgr37153blk00.shp>

### *Description:*

#### *Abstract:*

TIGER, TIGER/Line, and Census TIGER are registered trademarks of the Bureau of the Census. The Redistricting Census 2000 TIGER/Line files are an extract of selected geographic and cartographic information from the Census TIGER data base. The geographic coverage for a single TIGER/Line file is a county or statistical equivalent entity, with the coverage area based on January 1, 2000 legal boundaries. A complete set of Redistricting Census 2000 TIGER/Line files includes all counties and statistically equivalent entities in the United States and Puerto Rico. The Redistricting Census 2000 TIGER/Line files will

not include files for the Island Areas. The Census TIGER data base represents a seamless national file with no overlaps or gaps between parts. However, each county-based TIGER/Line file is designed to stand alone as an independent data set or the files can be combined to cover the whole Nation. The Redistricting Census 2000 TIGER/Line files consist of line segments representing physical features and governmental and statistical boundaries. The Redistricting Census 2000 TIGER/Line files do NOT contain the ZIP Code Tabulation Areas (ZCTAs) and the address ranges are of approximately the same vintage as those appearing in the 1999 TIGER/Line files. That is, the Census Bureau is producing the Redistricting Census 2000 TIGER/Line files in advance of the computer processing that will ensure that the address ranges in the TIGER/Line files agree with the final Master Address File (MAF) used for tabulating Census 2000. The files contain information distributed over a series of record types for the spatial objects of a county. There are 17 record types, including the basic data record, the shape coordinate points, and geographic codes that can be used with appropriate software to prepare maps. Other geographic information contained in the files includes attributes such as feature identifiers/census feature class codes (CFCC) used to differentiate feature types, address ranges and ZIP Codes, codes for legal and statistical entities, latitude/longitude coordinates of linear and point features, landmark point features, area landmarks, key geographic features, and area boundaries. The Redistricting Census 2000 TIGER/Line data dictionary contains a complete list of all the fields in the 17 record types.

*Purpose:*

In order for others to use the information in the Census TIGER data base in a geographic information system (GIS) or for other geographic applications, the Census Bureau releases to the public extracts of the data base in the form of TIGER/Line files. Various versions of the TIGER/Line files have been released; previous versions include the 1990 Census TIGER/Line files, the 1992 TIGER/Line files, the 1994 TIGER/Line files, the 1995 TIGER/Line files, the 1997 TIGER/Line files, the 1998 TIGER/Line files, and the 1999 TIGER/Line files. The Redistricting Census 2000 TIGER/Line files were originally produced to support the Census 2000 Redistricting Data Program.

*Supplemental Information:*

To find out more about TIGER/Line files and other Census TIGER



data base derived data sets visit <http://www.census.gov/geo/www/tiger>.

*Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Currentness\_Reference:*

2000

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* TIGER/Line files are extracted from the Census TIGER data base when needed for geographic programs required to support the census and survey programs of the Census Bureau. No changes or updates will be made to the Redistricting Census 2000 TIGER/Line files. Future releases of TIGER/Line files will reflect updates made to the Census TIGER data base and will be released under a version numbering system based on the month and year the data is extracted.

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* +131.000000

*East\_Bounding\_Coordinate:* -64.000000

*North\_Bounding\_Coordinate:* +72.000000

*South\_Bounding\_Coordinate:* -15.000000

*Keywords:*

*Theme:*

*Theme\_Keyword\_Thesaurus:* None

*Theme\_Keyword:* Line Feature

*Theme\_Keyword:* Feature Identifier

*Theme\_Keyword:* Census Feature Class Code (CFCC)

*Theme\_Keyword:* Address Range

*Theme\_Keyword:* Geographic Entity

*Theme\_Keyword:* Point/Node

*Theme\_Keyword:* Landmark Feature

*Theme\_Keyword:* Political Boundary

*Theme\_Keyword:* Statistical Boundary

*Theme\_Keyword:* Polygon

*Theme\_Keyword:* County/County Equivalent

*Theme\_Keyword:* TIGER/Line

*Theme\_Keyword:* Topology

*Theme\_Keyword:* Street Centerline

*Theme\_Keyword:* Latitude/Longitude

*Theme\_Keyword:* ZIP Code

*Theme\_Keyword:* Vector

*Theme\_Keyword:* TIGER/Line Identification Number (TLID)

*Theme\_Keyword:* Street Segment

*Theme\_Keyword:* Coordinate

*Theme\_Keyword:* Boundary

*Place:*

*Place\_Keyword\_Thesaurus:* FIPS Publication 6-4 FIPS Publication 55

*Place\_Keyword:* United States

*Place\_Keyword:* Puerto Rico

*Place\_Keyword:* County

*Access\_Constraints:* None

*Use\_Constraints:*

None. Acknowledgment of the U.S. Bureau of the Census would be appreciated for products derived from these files. TIGER, TIGER/Line, and Census TIGER are registered trademarks of the Bureau of the Census.

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog 9.2.2.1350

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*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

Accurate against Federal information Processing Standards (FIPS), FIPS Publication 6-4, and FIPS-55 at the 100% level for the codes and base names. The remaining attribute information has been examined but has not been fully tested for accuracy.

*Logical\_Consistency\_Report:*

The feature network of lines (as represented by Record Types 1 and 2) is complete for census purposes. Spatial objects in TIGER/Line belong to the "Geometry and Topology" (GT) class of objects in the "Spatial Data Transfer Standard" (SDTS) FIPS Publication 173 and are topologically valid. Node/geometry and topology (GT)-polygon/chain relationships are collected or generated to satisfy topological edit requirements. These requirements include:

- \* Complete chains must begin and end at nodes.
- \* Complete chains must connect to each other at nodes.
- \* Complete chains do not extend through nodes.
- \* Left and right GT-polygons are defined for each complete chain element and are consistent throughout the extract process.
- \* the chains representing the limits of the files are free of gaps.

The Census Bureau performed automated tests to ensure logical consistency and limits

of files. All polygons are tested for closure. The Census Bureau uses its internally developed Geographic Update System to enhance and modify spatial and attribute data in

the Census TIGER data base. Standard geographic codes, such as FIPS codes for states,

counties, municipalities, and places, are used when encoding spatial entities. The Census Bureau performed spatial data tests for logical consistency of the codes during

the compilation of the original Census TIGER data base files. Most of the Codes

themselves were provided to the Census Bureau by the USGS, the agency responsible for maintaining FIPS 55. Feature attribute information has been examined but has not been fully tested for consistency.

*Completeness\_Report:*

Data completeness of the TIGER/Line files reflects the contents of the Census TIGER data base at the time the TIGER/Line files (Redistricting Census 2000 version) were created.

*Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy\_Report:*

The information present in these files is provided for the purposes of statistical analysis and census operations only. Coordinates in the TIGER/Line files have six implied decimal places, but the positional accuracy of these coordinates is not as great as the six decimal places suggest. The positional accuracy varies with the source materials used, but generally the information is no better than the established national map Accuracy standards for 1:100,000-scale maps from the U.S. Geological Survey (USGS); thus it is NOT suitable for high-precision measurement applications such as engineering problems, property transfers, or other uses that might require highly accurate measurements of the earth's surface. The USGS 1:100,000-scale maps met national map accuracy standards and use coordinates defined by the North American Datum, 1983. For the contiguous 48 States, the cartographic fidelity of most of the Redistricting Census 2000 TIGER/Line files, in areas outside the 1980 census Geographic Base File/Dual Independent map Encoding (GBF/DIME) file coverage and selected other large metropolitan areas, compare favorably with the USGS 1:100,000-scale maps. The Census Bureau cannot specify the accuracy of features inside of what was the 1980 GBF/DIME-File coverage or selected metropolitan areas. The Census Bureau added updates to the TIGER/Line files that enumerators annotated on maps sheets prepared from the Census TIGER data base as



they attempted to traverse every street feature shown on the Census 2000 map sheets; the Census Bureau also made other corrections from updated map sheets supplied by local participants for Census Bureau programs. The locational accuracy of these updates is of unknown quality. In addition to the Federal, State, and local sources, portions of the files may contain information obtained in part from maps and other materials prepared by private companies. Despite the fact the TIGER/Line data positional accuracy is not as high as the coordinate values imply, the six-decimal place precision is useful when producing maps. The precision allows features that are next to each other on the ground to be placed in the correct position, on the map, relative to each other, without overlap.

*Lineage:*

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* U.S. Department of Commerce Bureau of the Census  
Geography Division

*Publication\_Date:* Unpublished material

*Title:*

Census TIGER data base

*Edition:* Redistricting Census 2000

*Type\_of\_Source\_Media:* On line

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:*

Date the file was made available to create TIGER/Line File extracts.

*Source\_Citation\_Abbreviation:*

TIGER

*Source\_Contribution:*

Selected geographic and cartographic information (line segments) from the Census TIGER data base.

*Process\_Step:*

*Process\_Description:*

In order for others to use the information in the Census TIGER data base in a GIS or for other geographic applications, the Census Bureau releases

periodic  
extracts of selected information from the Census TIGER data base,  
organized as  
topologically consistent networks. Software (TIGER DB routines)  
written by the  
Geography Division allows for efficient access to Census TIGER  
system data.  
TIGER/Line files are extracted from the Census TIGER data base by  
county or  
statistical equivalent area. Census TIGER data for a given county or  
statistical  
equivalent area is then distributed among 17 fixed length record ASCII  
files, each  
one containing attributes for either line, polygon, or landmark  
geographic data  
types. The Census Bureau has released various versions of the  
TIGER/Line files  
since 1988, with each version having more updates (feature and feature  
names,  
address ranges and ZIP Codes, coordinate updates, revised field  
definitions, etc.)  
than the previous version.

*Source\_Used\_Citation\_Abbreviation:*

Census TIGER data base

*Process\_Date:* 2000

*Process\_Step:*

*Process\_Description:*

Metadata imported.

*Source\_Used\_Citation\_Abbreviation:*

C:\DOCUME~1\dgrigg\LOCALS~1\Temp\xml4D.tmp

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*Spatial\_Data\_Organization\_Information:*

*Indirect\_Spatial\_Reference\_Method:*

Federal Information Processing Standards (FIPS) and feature names and addresses.

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* G-polygon

*Point\_and\_Vector\_Object\_Count:* 0

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Entity point

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Complete chain

*Point\_and\_Vector\_Object\_Count:* 790 to 83,000

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type*: GT-polygon composed of chains  
*Point\_and\_Vector\_Object\_Count*: 290 to 33,000

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*Spatial\_Reference\_Information*:

*Horizontal\_Coordinate\_System\_Definition*:

*Geographic*:

*Latitude\_Resolution*: 0.000458

*Longitude\_Resolution*: 0.000458

*Geographic\_Coordinate\_Units*: Decimal degrees

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*Entity\_and\_Attribute\_Information*:

*Detailed\_Description*:

*Entity\_Type*:

*Entity\_Type\_Label*: tgr37153blk00

*Attribute*:

*Attribute\_Label*: Shape

*Attribute\_Definition*:

Feature geometry.

*Attribute\_Definition\_Source*:

ESRI

*Attribute\_Domain\_Values*:

*Unrepresentable\_Domain*:

Coordinates defining the features.

*Attribute*:

*Attribute\_Label*: ID

*Attribute*:

*Attribute\_Label*: FIPSSTCO

*Attribute*:

*Attribute\_Label*: TRACT2000

*Attribute*:

*Attribute\_Label*: BLOCK2000

*Attribute*:

*Attribute\_Label*: Shape\_Area

*Attribute\_Definition*:

Area of feature in internal units squared.

*Attribute\_Definition\_Source*:

ESRI

*Attribute\_Domain\_Values*:

*Unrepresentable\_Domain*:

Positive real numbers that are automatically generated.

*Attribute*:

*Attribute\_Label*: STFID



*Attribute:*

*Attribute\_Label:* FID

*Attribute\_Definition:*

Internal feature number.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Sequential unique whole numbers that are automatically generated.

*Attribute:*

*Attribute\_Label:* Shape\_Leng

*Overview\_Description:*

*Entity\_and\_Attribute\_Overview:*

The TIGER/Line files contain data describing three major types of features/entities;

Line Features -

1) Roads

2) Railroads

3) Hydrography

4) Miscellaneous transportation features and selected power lines and pipe lines

5) Political and statistical boundaries

Landmark Features -

1) Point landmarks, e.g., schools and churches.

2) Area landmarks, e.g., Parks and cemeteries.

3) Key geographic locations (KGLs), e.g., shopping centers and factories.

Polygon features -

1) Geographic entity codes for areas used to tabulate the Census 2000 census statistical data and 1990 geographic areas

2) Locations of area landmarks

3) Locations of KGLs

The line features and polygon information form the majority of data in the TIGER/Line

files. Some of the data/attributes describing the lines include coordinates, feature

identifiers (names), CFCCs (used to identify the most noticeable characteristic of a

feature), address ranges, and geographic entity codes. The TIGER/Line files contain

point and area labels that describe landmark features and provide locational reference.

Area landmarks consist of a feature name or label and feature type assigned to a polygon

or group of polygons. Landmarks may overlap or refer to the same set of polygons.

The Census TIGER data base uses collections of spatial objects (points, lines, and

polygons) to model or describe real-world geography. The Census Bureau uses these spatial objects to represent features such as streets, rivers, and political boundaries and assigns attributes to these features to identify and describe specific features such as the 500 block of Market Street in Philadelphia, Pennsylvania.

*Entity\_and\_Attribute\_Detail\_Citation:*

U.S. Bureau of the Census, TIGER/Line files, Redistricting Census 2000 Technical Documentation. The TIGER/Line documentation defines the terms and definitions used within the files.

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*Distribution\_Information:*

*Distributor:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* U.S. Department of Commerce Bureau of the Census Geography Division Products and Services Staff

*Contact\_Address:*

*Address\_Type:* Physical address

*Address:*

8903 Presidential Parkway, WP I

*City:* Upper Marlboro

*State\_or\_Province:* Maryland

*Postal\_Code:* 20772

*Contact\_Address:*

*Address\_Type:* Mailing address

*Address:*

Bureau of the Census

*City:* Washington

*State\_or\_Province:* District of Columbia

*Postal\_Code:* 20233-7400

*Contact\_Voice\_Telephone:* (301) 457-1128

*Contact\_Voice\_Telephone:* (301) 457-1128

*Contact\_Facsimile\_Telephone:* (301) 457-4710 *Contact\_Electronic*

*\_Mail\_Address:* tiger@census.gov

*Resource\_Description:* Redistricting Census 2000 TIGER/Line Files

*Distribution\_Liability:*

No warranty, expressed or implied is made and no liability is assumed by the U.S. Government in general or the U.S. Census Bureau in specific as to the positional or attribute accuracy of the data. The act of distribution shall not constitute any such warranty and no responsibility is assumed by the U.S. Government in the use of these files.

*Standard\_Order\_Process:*

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Format\_Name:* TGRLN (compressed)

*Format\_Version\_Number:* Redistricting Census 2000

*File-Decompression\_Technique:* PK-ZIP, version 1.93A or higher

*Transfer\_Size:* 0.000

*Digital\_Transfer\_Option:*

*Online\_Option:*

*Computer\_Contact\_Information:*

*Network\_Address:*

*Network\_Resource\_Name:*

[www.census.gov/geo/www/tiger](http://www.census.gov/geo/www/tiger)

*Fees:* The online copy of the TIGER/Line files may be accessed without charge. See <http://www.census.gov/geo/www/tiger> for information on availability on CD-ROM/DVD and associated costs for these products.

*Ordering\_Instructions:*

To obtain more information about ordering TIGER/Line files visit

<http://www.census.gov/geo/www/tiger>.

*Technical\_Prerequisites:* The Redistricting Census 2000 TIGER/Line files contain geographic

data only and do not include display or mapping software or statistical data.

A

list of vendors who have developed software capable of processing TIGER/Line files

can be found by visiting <http://www.census.gov/geo/www/tiger>

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20070625

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* U.S. Department of Commerce Bureau of the Census Geography Division Products and Services Staff

*Contact\_Person:* REQUIRED: The person responsible for the metadata information.

*Contact\_Address:*

*Address\_Type:* Physical Address

*Address:*

8903 Presidential Parkway, WP I

*City:* Upper Marlboro

*State\_or\_Province:* Maryland

*Postal\_Code:* 20772

*Contact\_Voice\_Telephone:* (301) 457-1128

*Contact\_Electronic\_Mail\_Address:* [tiger@census.gov](mailto:tiger@census.gov)

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata



*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

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# Census Blocks - Scotland County

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

#### *Citation\_Information:*

*Originator:* U.S. Department of Commerce Bureau of the Census Geography Division

*Publication\_Date:* 2001

#### *Title:*

Census Blocks - Scotland County

*Edition:* Redistricting Census 2000

*Geospatial\_Data\_Presentation\_Form:* vector digital data

#### *Series\_Information:*

*Series\_Name:* TIGER/Line Files

*Issue\_Identification:* Version (MMYY) represents the month and year file created

#### *Publication\_Information:*

*Publication\_Place:* Washington, DC

*Publisher:* U.S. Department of Commerce Bureau of the Census Geography Division

*Online\_Linkage:* <\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\tgr37165blk00.shp>

### *Description:*

#### *Abstract:*

TIGER, TIGER/Line, and Census TIGER are registered trademarks of the Bureau of the Census. The Redistricting Census 2000 TIGER/Line files are an extract of selected geographic and cartographic information from the Census TIGER data base. The geographic coverage for a single TIGER/Line file is a county or statistical equivalent entity, with the coverage area based on January 1, 2000 legal boundaries. A complete set of Redistricting Census 2000 TIGER/Line files includes all counties and statistically equivalent entities in the United States and Puerto Rico. The Redistricting Census 2000 TIGER/Line files will

not include files for the Island Areas. The Census TIGER data base represents a seamless national file with no overlaps or gaps between parts. However, each county-based TIGER/Line file is designed to stand alone as an independent data set or the files can be combined to cover the whole Nation. The Redistricting Census 2000 TIGER/Line files consist of line segments representing physical features and governmental and statistical boundaries. The Redistricting Census 2000 TIGER/Line files do NOT contain the ZIP Code Tabulation Areas (ZCTAs) and the address ranges are of approximately the same vintage as those appearing in the 1999 TIGER/Line files. That is, the Census Bureau is producing the Redistricting Census 2000 TIGER/Line files in advance of the computer processing that will ensure that the address ranges in the TIGER/Line files agree with the final Master Address File (MAF) used for tabulating Census 2000. The files contain information distributed over a series of record types for the spatial objects of a county. There are 17 record types, including the basic data record, the shape coordinate points, and geographic codes that can be used with appropriate software to prepare maps. Other geographic information contained in the files includes attributes such as feature identifiers/census feature class codes (CFCC) used to differentiate feature types, address ranges and ZIP Codes, codes for legal and statistical entities, latitude/longitude coordinates of linear and point features, landmark point features, area landmarks, key geographic features, and area boundaries. The Redistricting Census 2000 TIGER/Line data dictionary contains a complete list of all the fields in the 17 record types.

*Purpose:*

In order for others to use the information in the Census TIGER data base in a geographic information system (GIS) or for other geographic applications, the Census Bureau releases to the public extracts of the data base in the form of TIGER/Line files. Various versions of the TIGER/Line files have been released; previous versions include the 1990 Census TIGER/Line files, the 1992 TIGER/Line files, the 1994 TIGER/Line files, the 1995 TIGER/Line files, the 1997 TIGER/Line files, the 1998 TIGER/Line files, and the 1999 TIGER/Line files. The Redistricting Census 2000 TIGER/Line files were originally produced to support the Census 2000 Redistricting Data Program.

*Supplemental Information:*

To find out more about TIGER/Line files and other Census TIGER



data base derived data sets visit <http://www.census.gov/geo/www/tiger>.

*Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Currentness\_Reference:*

2000

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* TIGER/Line files are extracted from the Census TIGER data base when needed for geographic programs required to support the census and survey programs of the Census Bureau. No changes or updates will be made to the Redistricting Census 2000 TIGER/Line files. Future releases of TIGER/Line files will reflect updates made to the Census TIGER data base and will be released under a version numbering system based on the month and year the data is extracted.

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* +131.000000

*East\_Bounding\_Coordinate:* -64.000000

*North\_Bounding\_Coordinate:* +72.000000

*South\_Bounding\_Coordinate:* -15.000000

*Keywords:*

*Theme:*

*Theme\_Keyword\_Thesaurus:* None

*Theme\_Keyword:* Line Feature

*Theme\_Keyword:* Feature Identifier

*Theme\_Keyword:* Census Feature Class Code (CFCC)

*Theme\_Keyword:* Address Range

*Theme\_Keyword:* Geographic Entity

*Theme\_Keyword:* Point/Node

*Theme\_Keyword:* Landmark Feature

*Theme\_Keyword:* Political Boundary

*Theme\_Keyword:* Statistical Boundary

*Theme\_Keyword:* Polygon

*Theme\_Keyword:* County/County Equivalent

*Theme\_Keyword:* TIGER/Line

*Theme\_Keyword:* Topology

*Theme\_Keyword:* Street Centerline

*Theme\_Keyword:* Latitude/Longitude

*Theme\_Keyword:* ZIP Code

*Theme\_Keyword:* Vector

*Theme\_Keyword:* TIGER/Line Identification Number (TLID)

*Theme\_Keyword:* Street Segment

*Theme\_Keyword:* Coordinate

*Theme\_Keyword:* Boundary

*Place:*

*Place\_Keyword\_Thesaurus:* FIPS Publication 6-4 FIPS Publication 55

*Place\_Keyword:* United States

*Place\_Keyword:* Puerto Rico

*Place\_Keyword:* County

*Access\_Constraints:* None

*Use\_Constraints:*

None. Acknowledgment of the U.S. Bureau of the Census would be appreciated for products derived from these files. TIGER, TIGER/Line, and Census TIGER are registered trademarks of the Bureau of the Census.

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog 9.2.2.1350

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*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

Accurate against Federal information Processing Standards (FIPS), FIPS Publication 6-4, and FIPS-55 at the 100% level for the codes and base names. The remaining attribute information has been examined but has not been fully tested for accuracy.

*Logical\_Consistency\_Report:*

The feature network of lines (as represented by Record Types 1 and 2) is complete for census purposes. Spatial objects in TIGER/Line belong to the "Geometry and Topology" (GT) class of objects in the "Spatial Data Transfer Standard" (SDTS) FIPS Publication 173 and are topologically valid. Node/geometry and topology (GT)-polygon/chain relationships are collected or generated to satisfy topological edit requirements. These requirements include:

- \* Complete chains must begin and end at nodes.
- \* Complete chains must connect to each other at nodes.
- \* Complete chains do not extend through nodes.
- \* Left and right GT-polygons are defined for each complete chain element and are consistent throughout the extract process.
- \* the chains representing the limits of the files are free of gaps.

The Census Bureau performed automated tests to ensure logical consistency and limits

of files. All polygons are tested for closure. The Census Bureau uses its internally developed Geographic Update System to enhance and modify spatial and attribute data in

the Census TIGER data base. Standard geographic codes, such as FIPS codes for states,

counties, municipalities, and places, are used when encoding spatial entities. The Census Bureau performed spatial data tests for logical consistency of the codes during

the compilation of the original Census TIGER data base files. Most of the Codes

themselves were provided to the Census Bureau by the USGS, the agency responsible for maintaining FIPS 55. Feature attribute information has been examined but has not been fully tested for consistency.

*Completeness\_Report:*

Data completeness of the TIGER/Line files reflects the contents of the Census TIGER data base at the time the TIGER/Line files (Redistricting Census 2000 version) were created.

*Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy\_Report:*

The information present in these files is provided for the purposes of statistical analysis and census operations only. Coordinates in the TIGER/Line files have six implied decimal places, but the positional accuracy of these coordinates is not as great as the six decimal places suggest. The positional accuracy varies with the source materials used, but generally the information is no better than the established national map Accuracy standards for 1:100,000-scale maps from the U.S. Geological Survey (USGS); thus it is NOT suitable for high-precision measurement applications such as engineering problems, property transfers, or other uses that might require highly accurate measurements of the earth's surface. The USGS 1:100,000-scale maps met national map accuracy standards and use coordinates defined by the North American Datum, 1983. For the contiguous 48 States, the cartographic fidelity of most of the Redistricting Census 2000 TIGER/Line files, in areas outside the 1980 census Geographic Base File/Dual Independent map Encoding (GBF/DIME) file coverage and selected other large metropolitan areas, compare favorably with the USGS 1:100,000-scale maps. The Census Bureau cannot specify the accuracy of features inside of what was the 1980 GBF/DIME-File coverage or selected metropolitan areas. The Census Bureau added updates to the TIGER/Line files that enumerators annotated on maps sheets prepared from the Census TIGER data base as



they attempted to traverse every street feature shown on the Census 2000 map sheets; the Census Bureau also made other corrections from updated map sheets supplied by local participants for Census Bureau programs. The locational accuracy of these updates is of unknown quality. In addition to the Federal, State, and local sources, portions of the files may contain information obtained in part from maps and other materials prepared by private companies. Despite the fact the TIGER/Line data positional accuracy is not as high as the coordinate values imply, the six-decimal place precision is useful when producing maps. The precision allows features that are next to each other on the ground to be placed in the correct position, on the map, relative to each other, without overlap.

*Lineage:*

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* U.S. Department of Commerce Bureau of the Census  
Geography Division

*Publication\_Date:* Unpublished material

*Title:*

Census TIGER data base

*Edition:* Redistricting Census 2000

*Type\_of\_Source\_Media:* On line

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:*

Date the file was made available to create TIGER/Line File extracts.

*Source\_Citation\_Abbreviation:*

TIGER

*Source\_Contribution:*

Selected geographic and cartographic information (line segments) from the Census TIGER data base.

*Process\_Step:*

*Process\_Description:*

In order for others to use the information in the Census TIGER data base in a GIS or for other geographic applications, the Census Bureau releases

periodic  
extracts of selected information from the Census TIGER data base,  
organized as  
topologically consistent networks. Software (TIGER DB routines)  
written by the  
Geography Division allows for efficient access to Census TIGER  
system data.  
TIGER/Line files are extracted from the Census TIGER data base by  
county or  
statistical equivalent area. Census TIGER data for a given county or  
statistical  
equivalent area is then distributed among 17 fixed length record ASCII  
files, each  
one containing attributes for either line, polygon, or landmark  
geographic data  
types. The Census Bureau has released various versions of the  
TIGER/Line files  
since 1988, with each version having more updates (feature and feature  
names,  
address ranges and ZIP Codes, coordinate updates, revised field  
definitions, etc.)  
than the previous version.

*Source\_Used\_Citation\_Abbreviation:*

Census TIGER data base

*Process\_Date:* 2000

*Process\_Step:*

*Process\_Description:*

Metadata imported.

*Source\_Used\_Citation\_Abbreviation:*

C:\DOCUME~1\dgrigg\LOCALS~1\Temp\xml50.tmp

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*Spatial\_Data\_Organization\_Information:*

*Indirect\_Spatial\_Reference\_Method:*

Federal Information Processing Standards (FIPS) and feature names and addresses.

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* G-polygon

*Point\_and\_Vector\_Object\_Count:* 0

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Entity point

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Complete chain

*Point\_and\_Vector\_Object\_Count:* 790 to 83,000

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type*: GT-polygon composed of chains  
*Point\_and\_Vector\_Object\_Count*: 290 to 33,000

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*Spatial\_Reference\_Information*:

*Horizontal\_Coordinate\_System\_Definition*:

*Geographic*:

*Latitude\_Resolution*: 0.000458

*Longitude\_Resolution*: 0.000458

*Geographic\_Coordinate\_Units*: Decimal degrees

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*Entity\_and\_Attribute\_Information*:

*Detailed\_Description*:

*Entity\_Type*:

*Entity\_Type\_Label*: tgr37165blk00

*Attribute*:

*Attribute\_Label*: Shape

*Attribute\_Definition*:

Feature geometry.

*Attribute\_Definition\_Source*:

ESRI

*Attribute\_Domain\_Values*:

*Unrepresentable\_Domain*:

Coordinates defining the features.

*Attribute*:

*Attribute\_Label*: ID

*Attribute*:

*Attribute\_Label*: FIPSSTCO

*Attribute*:

*Attribute\_Label*: TRACT2000

*Attribute*:

*Attribute\_Label*: BLOCK2000

*Attribute*:

*Attribute\_Label*: Shape\_Area

*Attribute\_Definition*:

Area of feature in internal units squared.

*Attribute\_Definition\_Source*:

ESRI

*Attribute\_Domain\_Values*:

*Unrepresentable\_Domain*:

Positive real numbers that are automatically generated.

*Attribute*:

*Attribute\_Label*: STFID



*Attribute:*

*Attribute\_Label:* FID

*Attribute\_Definition:*

Internal feature number.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Sequential unique whole numbers that are automatically generated.

*Attribute:*

*Attribute\_Label:* Shape\_Leng

*Overview\_Description:*

*Entity\_and\_Attribute\_Overview:*

The TIGER/Line files contain data describing three major types of features/entities;

Line Features -

1) Roads

2) Railroads

3) Hydrography

4) Miscellaneous transportation features and selected power lines and pipe lines

5) Political and statistical boundaries

Landmark Features -

1) Point landmarks, e.g., schools and churches.

2) Area landmarks, e.g., Parks and cemeteries.

3) Key geographic locations (KGLs), e.g., shopping centers and factories.

Polygon features -

1) Geographic entity codes for areas used to tabulate the Census 2000 census statistical data and 1990 geographic areas

2) Locations of area landmarks

3) Locations of KGLs

The line features and polygon information form the majority of data in the TIGER/Line

files. Some of the data/attributes describing the lines include coordinates, feature

identifiers (names), CFCCs (used to identify the most noticeable characteristic of a

feature), address ranges, and geographic entity codes. The TIGER/Line files contain

point and area labels that describe landmark features and provide locational reference.

Area landmarks consist of a feature name or label and feature type assigned to a polygon

or group of polygons. Landmarks may overlap or refer to the same set of polygons.

The Census TIGER data base uses collections of spatial objects (points, lines, and

polygons) to model or describe real-world geography. The Census Bureau uses these spatial objects to represent features such as streets, rivers, and political boundaries and assigns attributes to these features to identify and describe specific features such as the 500 block of Market Street in Philadelphia, Pennsylvania.

*Entity\_and\_Attribute\_Detail\_Citation:*

U.S. Bureau of the Census, TIGER/Line files, Redistricting Census 2000 Technical Documentation. The TIGER/Line documentation defines the terms and definitions used within the files.

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*Distribution\_Information:*

*Distributor:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* U.S. Department of Commerce Bureau of the Census Geography Division Products and Services Staff

*Contact\_Address:*

*Address\_Type:* Physical address

*Address:*

8903 Presidential Parkway, WP I

*City:* Upper Marlboro

*State\_or\_Province:* Maryland

*Postal\_Code:* 20772

*Contact\_Address:*

*Address\_Type:* Mailing address

*Address:*

Bureau of the Census

*City:* Washington

*State\_or\_Province:* District of Columbia

*Postal\_Code:* 20233-7400

*Contact\_Voice\_Telephone:* (301) 457-1128

*Contact\_Voice\_Telephone:* (301) 457-1128

*Contact\_Facsimile\_Telephone:* (301) 457-4710 *Contact\_Electronic*

*\_Mail\_Address:* tiger@census.gov

*Resource\_Description:* Redistricting Census 2000 TIGER/Line Files

*Distribution\_Liability:*

No warranty, expressed or implied is made and no liability is assumed by the U.S. Government in general or the U.S. Census Bureau in specific as to the positional or attribute accuracy of the data. The act of distribution shall not constitute any such warranty and no responsibility is assumed by the U.S. Government in the use of these files.

*Standard\_Order\_Process:*

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Format\_Name:* TGRLN (compressed)

*Format\_Version\_Number:* Redistricting Census 2000

*File-Decompression\_Technique:* PK-ZIP, version 1.93A or higher

*Transfer\_Size:* 0.000

*Digital\_Transfer\_Option:*

*Online\_Option:*

*Computer\_Contact\_Information:*

*Network\_Address:*

*Network\_Resource\_Name:*

[www.census.gov/geo/www/tiger](http://www.census.gov/geo/www/tiger)

*Fees:* The online copy of the TIGER/Line files may be accessed without charge. See <http://www.census.gov/geo/www/tiger> for information on availability on CD-ROM/DVD and associated costs for these products.

*Ordering\_Instructions:*

To obtain more information about ordering TIGER/Line files visit

<http://www.census.gov/geo/www/tiger>.

*Technical\_Prerequisites:* The Redistricting Census 2000 TIGER/Line files contain geographic

data only and do not include display or mapping software or statistical data.

A

list of vendors who have developed software capable of processing TIGER/Line files

can be found by visiting <http://www.census.gov/geo/www/tiger>

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20070625

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* U.S. Department of Commerce Bureau of the Census Geography Division Products and Services Staff

*Contact\_Person:* REQUIRED: The person responsible for the metadata information.

*Contact\_Address:*

*Address\_Type:* Physical Address

*Address:*

8903 Presidential Parkway, WP I

*City:* Upper Marlboro

*State\_or\_Province:* Maryland

*Postal\_Code:* 20772

*Contact\_Voice\_Telephone:* (301) 457-1128

*Contact\_Electronic\_Mail\_Address:* [tiger@census.gov](mailto:tiger@census.gov)

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata



*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

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# City Boundaries

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

*Publication\_Date:* Unknown

##### *Title:*

City Boundaries

*Geospatial\_Data\_Presentation\_Form:* vector digital data

*Online\_Linkage:* <\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\muni.shp>

#### *Description:*

##### *Abstract:*

City boundaries for Richmond County, North Carolina.

#### *Time\_Period\_of\_Content:*

##### *Time\_Period\_Information:*

##### *Single\_Date/Time:*

*Calendar\_Date:* unknown

#### *Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* Unknown

#### *Spatial\_Domain:*

##### *Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -79.802824

*East\_Bounding\_Coordinate:* -79.524411

*North\_Bounding\_Coordinate:* 35.179421

*South\_Bounding\_Coordinate:* 34.865594

#### *Keywords:*

##### *Theme:*

#### *Point\_of\_Contact:*

##### *Contact\_Information:*

##### *Contact\_Organization\_Primary:*

*Contact\_Organization:* Richmond County GIS Department

*Contact\_Person:* James Armstrong

*Contact\_Position:* Director of Planning and GIS Services

*Contact\_Address:*

*Address\_Type:* mailing address

*Address:*

P.O. Box 504

*City:* Rockingham

*State\_or\_Province:* NC

*Postal\_Code:* 28380

*Country:* USA

*Contact\_Voice\_Telephone:* (910) 417-4904

*Contact\_Facsimile\_Telephone:* (910) 417-4905

*Data\_Set\_Credit:*

Richmond County Government, North Carolina

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog  
9.2.2.1350

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*Data\_Quality\_Information:*

*Lineage:*

*Process\_Step:*

*Process\_Description:*

Metadata imported.

*Source\_Used\_Citation\_Abbreviation:*

C:\DOCUME~1\dgrigg\LOCALS~1\Temp\xml67.tmp

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* G-polygon

*Point\_and\_Vector\_Object\_Count:* 0

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Map\_Projection:*

*Map\_Projection\_Name:* Lambert Conformal Conic

*Lambert\_Conformal\_Conic:*

*Standard\_Parallel:* 34.333333



*Standard\_Parallel:* 36.166667  
*Longitude\_of\_Central\_Meridian:* -79.000000  
*Latitude\_of\_Projection\_Origin:* 33.750000  
*False\_Easting:* 2000000.002617  
*False\_Northing:* 0.000000  
*Planar\_Coordinate\_Information:*  
*Planar\_Coordinate\_Encoding\_Method:* coordinate pair  
*Coordinate\_Representation:*  
*Abscissa\_Resolution:* 0.000000  
*Ordinate\_Resolution:* 0.000000  
*Planar\_Distance\_Units:* survey feet  
*Geodetic\_Model:*  
*Horizontal\_Datum\_Name:* North American Datum of 1983  
*Ellipsoid\_Name:* Geodetic Reference System 80  
*Semi-major\_Axis:* 6378137.000000  
*Denominator\_of\_Flattening\_Ratio:* 298.257222

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*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* muni

*Attribute:*

*Attribute\_Label:* Shape

*Attribute\_Definition:*

Feature geometry.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Coordinates defining the features.

*Attribute:*

*Attribute\_Label:* AREA

*Attribute:*

*Attribute\_Label:* PERIMETER

*Attribute:*

*Attribute\_Label:* Shape\_Area

*Attribute\_Definition:*

Area of feature in internal units squared.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Positive real numbers that are automatically generated.

*Attribute:*

*Attribute\_Label:* CITY\_LIMIT

*Attribute:*  
    *Attribute\_Label:* ACRES  
*Attribute:*  
    *Attribute\_Label:* NAME  
*Attribute:*  
    *Attribute\_Label:* MILE  
*Attribute:*  
    *Attribute\_Label:* FID  
    *Attribute\_Definition:*  
        Internal feature number.  
    *Attribute\_Definition\_Source:*  
        ESRI  
    *Attribute\_Domain\_Values:*  
        *Unrepresentable\_Domain:*  
            Sequential unique whole numbers that are automatically  
            generated.  
*Attribute:*  
    *Attribute\_Label:* Shape\_Leng

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*Distribution\_Information:*  
    *Distributor:*  
        *Contact\_Information:*  
            *Contact\_Organization\_Primary:*  
                *Contact\_Organization:* Richmond County Government, North Carolina  
                *Contact\_Person:* James Armstrong  
                *Contact\_Position:* Director of Planning and GIS Services  
            *Contact\_Address:*  
                *Address\_Type:* mailing address  
                *Address:*  
                    P.O. Box 504  
                    City: Rockingham  
                    *State\_or\_Province:* NC  
                    *Postal\_Code:* 28380  
    *Resource\_Description:* Downloadable Data  
    *Standard\_Order\_Process:*  
        *Digital\_Form:*  
            *Digital\_Transfer\_Information:*  
                *Transfer\_Size:* 0.000

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*Metadata\_Reference\_Information:*  
    *Metadata\_Date:* 20070625  
    *Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* The LPA GROUP, INCORPORATED

*Contact\_Address:*

*Address\_Type:* mailing and physical address

*Address:*

700 Huger Street

*City:* Columbia

*State\_or\_Province:* SC

*Postal\_Code:* 29201

*Country:* USA

*Contact\_Voice\_Telephone:* 803-254-2211

*Contact\_Facsimile\_Telephone:* 803-779-8749

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

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# County Boundary - Richmond County

## Metadata:

- [Identification Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

###### *Title:*

County Boundary - Richmond County

*Geospatial\_Data\_Presentation\_Form:* vector digital data

*Online\_Linkage:* [\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\county\\_poly.shp](\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\county_poly.shp)

### *Description:*

#### *Abstract:*

County boundary for Richmond County, North Carolina.

### *Time\_Period\_of\_Content:*

#### *Time\_Period\_Information:*

##### *Single\_Date/Time:*

*Calendar\_Date:* unknown

### *Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* Unknown

### *Spatial\_Domain:*

#### *Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -80.076151

*East\_Bounding\_Coordinate:* -79.457639

*North\_Bounding\_Coordinate:* 35.185906

*South\_Bounding\_Coordinate:* 34.802115

### *Keywords:*

#### *Theme:*

### *Point\_of\_Contact:*

#### *Contact\_Information:*

##### *Contact\_Organization\_Primary:*

*Contact\_Organization:* Richmond County GIS Department

*Contact\_Person:* James Armstrong

*Contact\_Position:* Director of Planning and GIS Services

*Contact\_Address:*

*Address\_Type:* mailing address

*Address:*

P.O. Box 504

*City:* Rockingham

*State\_or\_Province:* NC

*Postal\_Code:* 28380

*Country:* USA

*Contact\_Voice\_Telephone:* (910) 417-4904

*Contact\_Facsimile\_Telephone:* (910) 417-4905

*Data\_Set\_Credit:*

Richmond County Government, North Carolina

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog  
9.2.2.1350

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* G-polygon

*Point\_and\_Vector\_Object\_Count:* 0

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Map\_Projection:*

*Map\_Projection\_Name:* Lambert Conformal Conic

*Lambert\_Conformal\_Conic:*

*Standard\_Parallel:* 34.333333

*Standard\_Parallel:* 36.166667

*Longitude\_of\_Central\_Meridian:* -79.000000

*Latitude\_of\_Projection\_Origin:* 33.750000

*False\_Easting:* 2000000.002617

*False\_Northing:* 0.000000

*Planar\_Coordinate\_Information:*

*Planar\_Coordinate\_Encoding\_Method:* coordinate pair

*Coordinate\_Representation:*

*Abscissa\_Resolution:* 0.000000

*Ordinate\_Resolution:* 0.000000

*Planar\_Distance\_Units:* survey feet

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* North American Datum of 1983

*Ellipsoid\_Name:* Geodetic Reference System 80  
*Semi-major\_Axis:* 6378137.000000  
*Denominator\_of\_Flattening\_Ratio:* 298.257222

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*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* county\_poly

*Attribute:*

*Attribute\_Label:* Shape

*Attribute\_Definition:*

Feature geometry.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Coordinates defining the features.

*Attribute:*

*Attribute\_Label:* AREA

*Attribute:*

*Attribute\_Label:* PERIMETER

*Attribute:*

*Attribute\_Label:* COUNTY\_

*Attribute:*

*Attribute\_Label:* COUNTY\_ID

*Attribute:*

*Attribute\_Label:* FEET

*Attribute:*

*Attribute\_Label:* MILES

*Attribute:*

*Attribute\_Label:* X\_COORD

*Attribute:*

*Attribute\_Label:* Shape\_Area

*Attribute\_Definition:*

Area of feature in internal units squared.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Positive real numbers that are automatically generated.

*Attribute:*

*Attribute\_Label:* Y\_COORD

*Attribute:*

*Attribute\_Label:* FID

*Attribute\_Definition:*



Internal feature number.  
*Attribute\_Definition\_Source:*  
ESRI  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Sequential unique whole numbers that are automatically  
generated.  
*Attribute:*  
*Attribute\_Label:* Shape\_Leng

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*Distribution\_Information:*  
*Distributor:*  
*Contact\_Information:*  
*Contact\_Organization\_Primary:*  
*Contact\_Organization:* Richmond County Government, North Carolina  
*Contact\_Person:* James Armstrong  
*Contact\_Position:* Director of Planning and GIS Services  
*Contact\_Address:*  
*Address\_Type:* mailing address  
*Address:*  
P.O. Box 504  
City: Rockingham  
*State\_or\_Province:* NC  
*Postal\_Code:* 28380  
*Resource\_Description:* Downloadable Data  
*Standard\_Order\_Process:*  
*Digital\_Form:*  
*Digital\_Transfer\_Information:*  
*Transfer\_Size:* 0.000

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*Metadata\_Reference\_Information:*  
*Metadata\_Date:* 20070625  
*Metadata\_Contact:*  
*Contact\_Information:*  
*Contact\_Organization\_Primary:*  
*Contact\_Organization:* The LPA GROUP, INCORPORATED  
*Contact\_Address:*  
*Address\_Type:* mailing and physical address  
*Address:*  
700 Huger Street  
City: Columbia  
*State\_or\_Province:* SC

*Postal\_Code: 29201*  
*Country: USA*  
*Contact\_Voice\_Telephone: 803-254-2211*  
*Contact\_Facsimile\_Telephone: 803-779-8749*  
*Metadata\_Standard\_Name: FGDC Content Standards for Digital Geospatial Metadata*  
*Metadata\_Standard\_Version: FGDC-STD-001-1998*  
*Metadata\_Time\_Convention: local time*  
*Metadata\_Extensions:*  
*Online\_Linkage: <http://www.esri.com/metadata/esriprof80.html>*  
*Profile\_Name: ESRI Metadata Profile*

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# Designated Places

## Metadata:

- [Identification Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

*Originator:* US Census Bureau

*Publication\_Date:* 2000

*Title:*

Designated Places

*Geospatial\_Data\_Presentation\_Form:* vector digital data

*Online\_Linkage:* [\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\pl37\\_d00.shp](\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\pl37_d00.shp)

#### *Description:*

##### *Abstract:*

Designated Places from 2000 US Census

#### *Time\_Period\_of\_Content:*

##### *Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

##### *Currentness\_Reference:*

publication date

#### *Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* Unknown

#### *Spatial\_Domain:*

##### *Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -84.044774

*East\_Bounding\_Coordinate:* -75.562983

*North\_Bounding\_Coordinate:* 36.543305

*South\_Bounding\_Coordinate:* 33.844517

#### *Keywords:*

*Theme:*

#### *Point\_of\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*



*Contact\_Organization:* Richmond County Government, North Carolina  
*Contact\_Person:* James Armstrong  
*Contact\_Position:* Director of Planning and GIS Services  
*Contact\_Address:*  
*Address\_Type:* mailing address  
*Address:*  
P.O. Box 504  
City: Rockingham  
*State\_or\_Province:* NC  
*Postal\_Code:* 28380  
*Country:* USA  
*Contact\_Voice\_Telephone:* (910) 417-4904  
*Contact\_Facsimile\_Telephone:* (910) 417-4905  
*Native\_Data\_Set\_Environment:*  
Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog  
9.2.2.1350

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*Spatial\_Data\_Organization\_Information:*  
*Direct\_Spatial\_Reference\_Method:* Vector  
*Point\_and\_Vector\_Object\_Information:*  
*SDTS\_Terms\_Description:*  
*SDTS\_Point\_and\_Vector\_Object\_Type:* G-polygon  
*Point\_and\_Vector\_Object\_Count:* 0

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*Spatial\_Reference\_Information:*  
*Horizontal\_Coordinate\_System\_Definition:*  
*Geographic:*  
*Latitude\_Resolution:* 0.000000  
*Longitude\_Resolution:* 0.000000  
*Geographic\_Coordinate\_Units:* Decimal degrees  
*Geodetic\_Model:*  
*Horizontal\_Datum\_Name:* North American Datum of 1983  
*Ellipsoid\_Name:* Geodetic Reference System 80  
*Semi-major\_Axis:* 6378137.000000  
*Denominator\_of\_Flattening\_Ratio:* 298.257222

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*Entity\_and\_Attribute\_Information:*  
*Detailed\_Description:*  
*Entity\_Type:*

*Entity\_Type\_Label:* pl37\_d00  
*Attribute:*  
     *Attribute\_Label:* LSAD\_TRANS  
*Attribute:*  
     *Attribute\_Label:* Shape  
     *Attribute\_Definition:*  
         Feature geometry.  
     *Attribute\_Definition\_Source:*  
         ESRI  
     *Attribute\_Domain\_Values:*  
         *Unrepresentable\_Domain:*  
             Coordinates defining the features.

*Attribute:*  
     *Attribute\_Label:* AREA  
*Attribute:*  
     *Attribute\_Label:* PERIMETER  
*Attribute:*  
     *Attribute\_Label:* PL37\_D00\_  
*Attribute:*  
     *Attribute\_Label:* PL37\_D00\_I  
*Attribute:*  
     *Attribute\_Label:* STATE  
*Attribute:*  
     *Attribute\_Label:* PLC  
*Attribute:*  
     *Attribute\_Label:* PLACEFP  
*Attribute:*  
     *Attribute\_Label:* NAME  
*Attribute:*  
     *Attribute\_Label:* Shape\_Area  
     *Attribute\_Definition:*  
         Area of feature in internal units squared.  
     *Attribute\_Definition\_Source:*  
         ESRI  
     *Attribute\_Domain\_Values:*  
         *Unrepresentable\_Domain:*  
             Positive real numbers that are automatically generated.

*Attribute:*  
     *Attribute\_Label:* LSAD  
*Attribute:*  
     *Attribute\_Label:* FID  
     *Attribute\_Definition:*  
         Internal feature number.  
     *Attribute\_Definition\_Source:*  
         ESRI  
     *Attribute\_Domain\_Values:*  
         *Unrepresentable\_Domain:*  
             Sequential unique whole numbers that are automatically

generated.

*Attribute:*

*Attribute\_Label:* Shape\_Leng

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*Distribution\_Information:*

*Resource\_Description:* Downloadable Data

*Standard\_Order\_Process:*

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Transfer\_Size:* 0.000

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20070625

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* THE LPA GROUP, INC.

*Contact\_Address:*

*Address\_Type:* mailing and physical address

*Address:*

700 Huger Street

*City:* Columbia

*State\_or\_Province:* SC

*Postal\_Code:* 29201

*Country:* USA

*Contact\_Voice\_Telephone:* (803) 254-2211

*Contact\_Facsimile\_Telephone:* (803) 779-8749

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

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# National Historic Register Districts

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

##### *Title:*

National Historic Register Districts

*Geospatial\_Data\_Presentation\_Form:* vector digital data

*Online\_Linkage:* [\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\HistoricNationalRegisterDistricts\\_polys.shp](\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\HistoricNationalRegisterDistricts_polys.shp)

### *Description:*

#### *Abstract:*

National Register of Historic Places - Districts

### *Time\_Period\_of\_Content:*

#### *Time\_Period\_Information:*

##### *Single\_Date/Time:*

*Calendar\_Date:* unknown

### *Status:*

### *Spatial\_Domain:*

#### *Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -79.924425

*East\_Bounding\_Coordinate:* -79.696998

*North\_Bounding\_Coordinate:* 35.157229

*South\_Bounding\_Coordinate:* 34.881595

### *Keywords:*

#### *Theme:*

### *Point\_of\_Contact:*

#### *Contact\_Information:*

##### *Contact\_Organization\_Primary:*

*Contact\_Organization:* NC Department of Transportation

### *Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog 9.2.2.1350

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*Data\_Quality\_Information:*

*Lineage:*

*Process\_Step:*

*Process\_Description:*

Dataset copied.

*Source\_Used\_Citation\_Abbreviation:*

O:\GIS

Distribution\Shapefiles\Restricted\HistoricNationalRegisterDistricts\_polys

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* G-polygon

*Point\_and\_Vector\_Object\_Count:* 0

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Map\_Projection:*

*Map\_Projection\_Name:* Lambert Conformal Conic

*Lambert\_Conformal\_Conic:*

*Standard\_Parallel:* 34.333333

*Standard\_Parallel:* 36.166667

*Longitude\_of\_Central\_Meridian:* -79.000000

*Latitude\_of\_Projection\_Origin:* 33.750000

*False\_Easting:* 2000000.002617

*False\_Northing:* 0.000000

*Planar\_Coordinate\_Information:*

*Planar\_Coordinate\_Encoding\_Method:* coordinate pair

*Coordinate\_Representation:*

*Abscissa\_Resolution:* 0.000000

*Ordinate\_Resolution:* 0.000000

*Planar\_Distance\_Units:* survey feet

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* North American Datum of 1983

*Ellipsoid\_Name:* Geodetic Reference System 80

*Semi-major\_Axis:* 6378137.000000

*Denominator\_of\_Flattening\_Ratio:* 298.257222

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*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* HistoricNationalRegisterDistricts\_polys

*Attribute:*

*Attribute\_Label:* Shape\_Area

*Attribute\_Definition:*

Area of feature in internal units squared.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Positive real numbers that are automatically generated.

*Attribute:*

*Attribute\_Label:* Shape

*Attribute\_Definition:*

Feature geometry.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Coordinates defining the features.

*Attribute:*

*Attribute\_Label:* ACRES

*Attribute:*

*Attribute\_Label:* Shape\_Leng

*Attribute:*

*Attribute\_Label:* SITE\_NAME

*Attribute:*

*Attribute\_Label:* FID

*Attribute\_Definition:*

Internal feature number.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Sequential unique whole numbers that are automatically generated.

*Attribute:*

*Attribute\_Label:* Shape\_Le\_1

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*Distribution\_Information:*

*Resource\_Description:* Downloadable Data

*Standard\_Order\_Process:*

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Transfer\_Size:* 0.000

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20070625

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* THE LPA GROUP, INC.

*Contact\_Address:*

*Address\_Type:* mailing and physical address

*Address:*

700 Huger Street

*City:* Columbia

*State\_or\_Province:* SC

*Postal\_Code:* 29201

*Country:* USA

*Contact\_Voice\_Telephone:* (803) 254-2211

*Contact\_Facsimile\_Telephone:* (803) 779-8749

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

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# National Historic Register Structures

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

##### *Title:*

National Historic Register Structures

*Geospatial\_Data\_Presentation\_Form:* vector digital data

*Online\_Linkage:* [\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\HistoricNationalRegisterStructures\\_points.shp](\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\HistoricNationalRegisterStructures_points.shp)

#### *Description:*

##### *Abstract:*

National Register of Historic Places - Structures

#### *Time\_Period\_of\_Content:*

##### *Time\_Period\_Information:*

##### *Single\_Date/Time:*

*Calendar\_Date:* unknown

#### *Status:*

*Maintenance\_and\_Update\_Frequency:* Unknown

#### *Spatial\_Domain:*

##### *Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -79.777953

*East\_Bounding\_Coordinate:* -79.698395

*North\_Bounding\_Coordinate:* 34.971510

*South\_Bounding\_Coordinate:* 34.883387

#### *Keywords:*

##### *Theme:*

#### *Point\_of\_Contact:*

##### *Contact\_Information:*

##### *Contact\_Organization\_Primary:*

*Contact\_Organization:* NC Department of Transportation

#### *Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog 9.2.2.1350

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*Data\_Quality\_Information:*

*Lineage:*

*Process\_Step:*

*Process\_Description:*

Dataset copied.

*Source\_Used\_Citation\_Abbreviation:*

O:\GIS

Distribution\Shapefiles\Restricted\HistoricNationalRegisterStructures\_points

*Process\_Step:*

*Process\_Description:*

Dataset copied.

*Source\_Used\_Citation\_Abbreviation:*

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Entity point

*Point\_and\_Vector\_Object\_Count:* 0

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Map\_Projection:*

*Map\_Projection\_Name:* Lambert Conformal Conic

*Lambert\_Conformal\_Conic:*

*Standard\_Parallel:* 34.333333

*Standard\_Parallel:* 36.166667

*Longitude\_of\_Central\_Meridian:* -79.000000

*Latitude\_of\_Projection\_Origin:* 33.750000

*False\_Easting:* 2000000.002617

*False\_Northing:* 0.000000

*Planar\_Coordinate\_Information:*

*Planar\_Coordinate\_Encoding\_Method:* coordinate pair

*Coordinate\_Representation:*

*Abscissa\_Resolution:* 0.000000

*Ordinate\_Resolution:* 0.000000

*Planar\_Distance\_Units:* survey feet

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* North American Datum of 1983

*Ellipsoid\_Name:* Geodetic Reference System 80

*Semi-major\_Axis:* 6378137.000000

*Denominator\_of\_Flattening\_Ratio:* 298.257222

*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* HistoricNationalRegisterStructures\_points

*Attribute:*

*Attribute\_Label:* angle3

*Attribute:*

*Attribute\_Label:* Angle2

*Attribute:*

*Attribute\_Label:* Shape

*Attribute\_Definition:*

Feature geometry.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Coordinates defining the features.

*Attribute:*

*Attribute\_Label:* SITE\_

*Attribute:*

*Attribute\_Label:* SITE\_NAME

*Attribute:*

*Attribute\_Label:* QUAD\_NAME

*Attribute:*

*Attribute\_Label:* PA\_LEVEL

*Attribute:*

*Attribute\_Label:* DESCRIPTIO

*Attribute:*

*Attribute\_Label:* STATUS

*Attribute:*

*Attribute\_Label:* X\_DD

*Attribute:*

*Attribute\_Label:* Y\_DD

*Attribute:*

*Attribute\_Label:* Angle

*Attribute:*

*Attribute\_Label:* FID

*Attribute\_Definition:*

Internal feature number.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Sequential unique whole numbers that are automatically generated.

*Distribution\_Information:*

*Resource\_Description:* Downloadable Data

*Standard\_Order\_Process:*

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Transfer\_Size:* 0.000

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20070625

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* THE LPA GROUP, INC.

*Contact\_Address:*

*Address\_Type:* mailing and physical address

*Address:*

700 Huger Street

*City:* Columbia

*State\_or\_Province:* SC

*Postal\_Code:* 29201

*Country:* USA

*Contact\_Voice\_Telephone:* (803) 254-2211

*Contact\_Facsimile\_Telephone:* (803) 779-8749

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

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# Urban Areas - Richmond County

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

#### *Citation\_Information:*

*Originator:* U.S. Department of Commerce Bureau of the Census Geography Division

*Publication\_Date:* 2001

#### *Title:*

Urban Areas - Richmond County

*Edition:* Redistricting Census 2000

*Geospatial\_Data\_Presentation\_Form:* vector digital data

#### *Series\_Information:*

*Series\_Name:* TIGER/Line Files

*Issue\_Identification:* Version (MMYY) represents the month and year file created

#### *Publication\_Information:*

*Publication\_Place:* Washington, DC

*Publisher:* U.S. Department of Commerce Bureau of the Census Geography Division

*Online\_Linkage:* [\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\urbanareas\\_richty.shp](\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\urbanareas_richty.shp)

### *Description:*

#### *Abstract:*

TIGER, TIGER/Line, and Census TIGER are registered trademarks of the Bureau of the Census. The Redistricting Census 2000 TIGER/Line files are an extract of selected geographic and cartographic information from the Census TIGER data base. The geographic coverage for a single TIGER/Line file is a county or statistical equivalent entity, with the coverage area based on January 1, 2000 legal boundaries. A complete set of Redistricting Census 2000 TIGER/Line files includes all counties and statistically equivalent entities in the United States and Puerto Rico. The Redistricting Census 2000 TIGER/Line files will

not include files for the Island Areas. The Census TIGER data base represents a seamless national file with no overlaps or gaps between parts. However, each county-based TIGER/Line file is designed to stand alone as an independent data set or the files can be combined to cover the whole Nation. The Redistricting Census 2000 TIGER/Line files consist of line segments representing physical features and governmental and statistical boundaries. The Redistricting Census 2000 TIGER/Line files do NOT contain the ZIP Code Tabulation Areas (ZCTAs) and the address ranges are of approximately the same vintage as those appearing in the 1999 TIGER/Line files. That is, the Census Bureau is producing the Redistricting Census 2000 TIGER/Line files in advance of the computer processing that will ensure that the address ranges in the TIGER/Line files agree with the final Master Address File (MAF) used for tabulating Census 2000. The files contain information distributed over a series of record types for the spatial objects of a county. There are 17 record types, including the basic data record, the shape coordinate points, and geographic codes that can be used with appropriate software to prepare maps. Other geographic information contained in the files includes attributes such as feature identifiers/census feature class codes (CFCC) used to differentiate feature types, address ranges and ZIP Codes, codes for legal and statistical entities, latitude/longitude coordinates of linear and point features, landmark point features, area landmarks, key geographic features, and area boundaries. The Redistricting Census 2000 TIGER/Line data dictionary contains a complete list of all the fields in the 17 record types.

*Purpose:*

In order for others to use the information in the Census TIGER data base in a geographic information system (GIS) or for other geographic applications, the Census Bureau releases to the public extracts of the data base in the form of TIGER/Line files. Various versions of the TIGER/Line files have been released; previous versions include the 1990 Census TIGER/Line files, the 1992 TIGER/Line files, the 1994 TIGER/Line files, the 1995 TIGER/Line files, the 1997 TIGER/Line files, the 1998 TIGER/Line files, and the 1999 TIGER/Line files. The Redistricting Census 2000 TIGER/Line files were originally produced to support the Census 2000 Redistricting Data Program.

*Supplemental Information:*

To find out more about TIGER/Line files and other Census TIGER

data base derived data sets visit <http://www.census.gov/geo/www/tiger>.

*Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Currentness\_Reference:*

2000

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* TIGER/Line files are extracted from the Census TIGER data base when needed for geographic programs required to support the census and survey programs of the Census Bureau. No changes or updates will be made to the Redistricting Census 2000 TIGER/Line files. Future releases of TIGER/Line files will reflect updates made to the Census TIGER data base and will be released under a version numbering system based on the month and year the data is extracted.

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -79.827627

*East\_Bounding\_Coordinate:* -79.655826

*North\_Bounding\_Coordinate:* 34.980346

*South\_Bounding\_Coordinate:* 34.858215

*Keywords:*

*Theme:*

*Theme\_Keyword\_Thesaurus:* None

*Theme\_Keyword:* Line Feature

*Theme\_Keyword:* Feature Identifier

*Theme\_Keyword:* Census Feature Class Code (CFCC)

*Theme\_Keyword:* Address Range

*Theme\_Keyword:* Geographic Entity

*Theme\_Keyword:* Point/Node

*Theme\_Keyword:* Landmark Feature

*Theme\_Keyword:* Political Boundary

*Theme\_Keyword:* Statistical Boundary

*Theme\_Keyword:* Polygon

*Theme\_Keyword:* County/County Equivalent

*Theme\_Keyword:* TIGER/Line

*Theme\_Keyword:* Topology

*Theme\_Keyword:* Street Centerline

*Theme\_Keyword:* Latitude/Longitude

*Theme\_Keyword:* ZIP Code

*Theme\_Keyword:* Vector

*Theme\_Keyword:* TIGER/Line Identification Number (TLID)

*Theme\_Keyword:* Street Segment

*Theme\_Keyword:* Coordinate

*Theme\_Keyword:* Boundary

*Place:*

*Place\_Keyword\_Thesaurus:* FIPS Publication 6-4 FIPS Publication 55

*Place\_Keyword:* United States

*Place\_Keyword:* Puerto Rico

*Place\_Keyword:* County

*Access\_Constraints:* None

*Use\_Constraints:*

None. Acknowledgment of the U.S. Bureau of the Census would be appreciated for products derived from these files. TIGER, TIGER/Line, and Census TIGER are registered trademarks of the Bureau of the Census.

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog 9.2.2.1350

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*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

Accurate against Federal information Processing Standards (FIPS), FIPS Publication 6-4, and FIPS-55 at the 100% level for the codes and base names. The remaining attribute information has been examined but has not been fully tested for accuracy.

*Logical\_Consistency\_Report:*

The feature network of lines (as represented by Record Types 1 and 2) is complete for census purposes. Spatial objects in TIGER/Line belong to the "Geometry and Topology" (GT) class of objects in the "Spatial Data Transfer Standard" (SDTS) FIPS Publication 173 and are topologically valid. Node/geometry and topology (GT)-polygon/chain relationships are collected or generated to satisfy topological edit requirements. These requirements include:

- \* Complete chains must begin and end at nodes.
- \* Complete chains must connect to each other at nodes.
- \* Complete chains do not extend through nodes.
- \* Left and right GT-polygons are defined for each complete chain element and are consistent throughout the extract process.
- \* the chains representing the limits of the files are free of gaps.

The Census Bureau performed automated tests to ensure logical consistency and limits

of files. All polygons are tested for closure. The Census Bureau uses its internally developed Geographic Update System to enhance and modify spatial and attribute data in

the Census TIGER data base. Standard geographic codes, such as FIPS codes for states,

counties, municipalities, and places, are used when encoding spatial entities. The Census Bureau performed spatial data tests for logical consistency of the codes during

the compilation of the original Census TIGER data base files. Most of the Codes



themselves were provided to the Census Bureau by the USGS, the agency responsible for maintaining FIPS 55. Feature attribute information has been examined but has not been fully tested for consistency.

*Completeness\_Report:*

Data completeness of the TIGER/Line files reflects the contents of the Census TIGER data base at the time the TIGER/Line files (Redistricting Census 2000 version) were created.

*Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy\_Report:*

The information present in these files is provided for the purposes of statistical analysis and census operations only. Coordinates in the TIGER/Line files have six implied decimal places, but the positional accuracy of these coordinates is not as great as the six decimal places suggest. The positional accuracy varies with the source materials used, but generally the information is no better than the established national map Accuracy standards for 1:100,000-scale maps from the U.S. Geological Survey (USGS); thus it is NOT suitable for high-precision measurement applications such as engineering problems, property transfers, or other uses that might require highly accurate measurements of the earth's surface. The USGS 1:100,000-scale maps met national map accuracy standards and use coordinates defined by the North American Datum, 1983. For the contiguous 48 States, the cartographic fidelity of most of the Redistricting Census 2000 TIGER/Line files, in areas outside the 1980 census Geographic Base File/Dual Independent map Encoding (GBF/DIME) file coverage and selected other large metropolitan areas, compare favorably with the USGS 1:100,000-scale maps. The Census Bureau cannot specify the accuracy of features inside of what was the 1980 GBF/DIME-File coverage or selected metropolitan areas. The Census Bureau added updates to the TIGER/Line files that enumerators annotated on maps sheets prepared from the Census TIGER data base as

they attempted to traverse every street feature shown on the Census 2000 map sheets; the Census Bureau also made other corrections from updated map sheets supplied by local participants for Census Bureau programs. The locational accuracy of these updates is of unknown quality. In addition to the Federal, State, and local sources, portions of the files may contain information obtained in part from maps and other materials prepared by private companies. Despite the fact the TIGER/Line data positional accuracy is not as high as the coordinate values imply, the six-decimal place precision is useful when producing maps. The precision allows features that are next to each other on the ground to be placed in the correct position, on the map, relative to each other, without overlap.

*Lineage:*

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* U.S. Department of Commerce Bureau of the Census  
Geography Division

*Publication\_Date:* Unpublished material

*Title:*

Census TIGER data base

*Edition:* Redistricting Census 2000

*Type\_of\_Source\_Media:* On line

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2000

*Source\_Currentness\_Reference:*

Date the file was made available to create TIGER/Line File extracts.

*Source\_Citation\_Abbreviation:*

TIGER

*Source\_Contribution:*

Selected geographic and cartographic information (line segments) from the Census TIGER data base.

*Process\_Step:*

*Process\_Description:*

In order for others to use the information in the Census TIGER data base in a GIS or for other geographic applications, the Census Bureau releases

periodic  
extracts of selected information from the Census TIGER data base,  
organized as  
topologically consistent networks. Software (TIGER DB routines)  
written by the  
Geography Division allows for efficient access to Census TIGER  
system data.  
TIGER/Line files are extracted from the Census TIGER data base by  
county or  
statistical equivalent area. Census TIGER data for a given county or  
statistical  
equivalent area is then distributed among 17 fixed length record ASCII  
files, each  
one containing attributes for either line, polygon, or landmark  
geographic data  
types. The Census Bureau has released various versions of the  
TIGER/Line files  
since 1988, with each version having more updates (feature and feature  
names,  
address ranges and ZIP Codes, coordinate updates, revised field  
definitions, etc.)  
than the previous version.

*Source\_Used\_Citation\_Abbreviation:*

Census TIGER data base

*Process\_Date:* 2000

*Process\_Step:*

*Process\_Description:*

Metadata imported.

*Source\_Used\_Citation\_Abbreviation:*

C:\DOCUME~1\dgrigg\LOCALS~1\Temp\xml59.tmp

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*Spatial\_Data\_Organization\_Information:*

*Indirect\_Spatial\_Reference\_Method:*

Federal Information Processing Standards (FIPS) and feature names and addresses.

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* G-polygon

*Point\_and\_Vector\_Object\_Count:* 0

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Entity point

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Complete chain

*Point\_and\_Vector\_Object\_Count:* 790 to 83,000

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type*: GT-polygon composed of chains  
*Point\_and\_Vector\_Object\_Count*: 290 to 33,000

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Geographic:*

*Latitude\_Resolution*: 0.000000

*Longitude\_Resolution*: 0.000000

*Geographic\_Coordinate\_Units*: Decimal degrees

*Geodetic\_Model:*

*Horizontal\_Datum\_Name*: North American Datum of 1927

*Ellipsoid\_Name*: Clarke 1866

*Semi-major\_Axis*: 6378206.400000

*Denominator\_of\_Flattening\_Ratio*: 294.978698

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*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label*: urbanareas\_richcty

*Attribute:*

*Attribute\_Label*: Shape

*Attribute\_Definition:*

Feature geometry.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Coordinates defining the features.

*Attribute:*

*Attribute\_Label*: AREA

*Attribute:*

*Attribute\_Label*: PERIMETER

*Attribute:*

*Attribute\_Label*: UA99\_D00\_

*Attribute:*

*Attribute\_Label*: UA99\_D00\_I

*Attribute:*

*Attribute\_Label*: UA

*Attribute:*

*Attribute\_Label*: NAME

*Attribute:*

*Attribute\_Label*: LSAD



*Attribute:*

*Attribute\_Label:* Shape\_Area

*Attribute\_Definition:*

Area of feature in internal units squared.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Positive real numbers that are automatically generated.

*Attribute:*

*Attribute\_Label:* LSAD\_TRANS

*Attribute:*

*Attribute\_Label:* FID

*Attribute\_Definition:*

Internal feature number.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Sequential unique whole numbers that are automatically generated.

*Attribute:*

*Attribute\_Label:* Shape\_Leng

*Overview\_Description:*

*Entity\_and\_Attribute\_Overview:*

The TIGER/Line files contain data describing three major types of features/entities;

Line Features -

1) Roads

2) Railroads

3) Hydrography

4) Miscellaneous transportation features and selected power lines and pipe lines

5) Political and statistical boundaries

Landmark Features -

1) Point landmarks, e.g., schools and churches.

2) Area landmarks, e.g., Parks and cemeteries.

3) Key geographic locations (KGLs), e.g., shopping centers and factories.

Polygon features -

1) Geographic entity codes for areas used to tabulate the Census 2000 census statistical data and 1990 geographic areas

2) Locations of area landmarks

3) Locations of KGLs

The line features and polygon information form the majority of data in the TIGER/Line

files. Some of the data/attributes describing the lines include coordinates, feature

identifiers (names), CFCCs (used to identify the most noticeable characteristic

of a feature), address ranges, and geographic entity codes. The TIGER/Line files contain point and area labels that describe landmark features and provide locational reference. Area landmarks consist of a feature name or label and feature type assigned to a polygon or group of polygons. Landmarks may overlap or refer to the same set of polygons. The Census TIGER data base uses collections of spatial objects (points, lines, and polygons) to model or describe real-world geography. The Census Bureau uses these spatial objects to represent features such as streets, rivers, and political boundaries and assigns attributes to these features to identify and describe specific features such as the 500 block of Market Street in Philadelphia, Pennsylvania.

*Entity\_and\_Attribute\_Detail\_Citation:*

U.S. Bureau of the Census, TIGER/Line files, Redistricting Census 2000 Technical Documentation. The TIGER/Line documentation defines the terms and definitions used within the files.

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*Distribution\_Information:*

*Distributor:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* U.S. Department of Commerce Bureau of the Census Geography Division Products and Services Staff

*Contact\_Address:*

*Address\_Type:* Physical address

*Address:*

8903 Presidential Parkway, WP I

*City:* Upper Marlboro

*State\_or\_Province:* Maryland

*Postal\_Code:* 20772

*Contact\_Address:*

*Address\_Type:* Mailing address

*Address:*

Bureau of the Census

*City:* Washington

*State\_or\_Province:* District of Columbia

*Postal\_Code:* 20233-7400

*Contact\_Voice\_Telephone:* (301) 457-1128

*Contact\_Voice\_Telephone:* (301) 457-1128

*Contact\_Facsimile\_Telephone:* (301) 457-4710 *Contact\_Electronic*

*\_Mail\_Address:* tiger@census.gov

*Resource\_Description:* Redistricting Census 2000 TIGER/Line Files

*Distribution\_Liability:*

No warranty, expressed or implied is made and no liability is assumed by the U.S. Government in general or the U.S. Census Bureau in specific as to the positional or attribute accuracy of the data. The act of distribution shall not constitute any such warranty and no responsibility is assumed by the U.S. Government in the use of these files.

*Standard\_Order\_Process:*

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Format\_Name:* TGRLN (compressed)

*Format\_Version\_Number:* Redistricting Census 2000

*File-Decompression\_Technique:* PK-ZIP, version 1.93A or higher

*Transfer\_Size:* 0.000

*Digital\_Transfer\_Option:*

*Online\_Option:*

*Computer\_Contact\_Information:*

*Network\_Address:*

*Network\_Resource\_Name:*

[www.census.gov/geo/www/tiger](http://www.census.gov/geo/www/tiger)

*Fees:* The online copy of the TIGER/Line files may be accessed without charge. See <http://www.census.gov/geo/www/tiger> for information on availability on CD-ROM/DVD and associated costs for these products.

*Ordering\_Instructions:*

To obtain more information about ordering TIGER/Line files visit <http://www.census.gov/geo/www/tiger>.

*Technical\_Prequisites:* The Redistricting Census 2000 TIGER/Line files contain geographic data only and do not include display or mapping software or statistical data.

A

list of vendors who have developed software capable of processing TIGER/Line files

can be found by visiting <http://www.census.gov/geo/www/tiger>

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20070625

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* U.S. Department of Commerce Bureau of the Census Geography Division Products and Services Staff

*Contact\_Person:* REQUIRED: The person responsible for the metadata

information.

*Contact\_Address:*

*Address\_Type:* Physical Address

*Address:*

8903 Presidential Parkway, WP I

*City:* Upper Marlboro

*State\_or\_Province:* Maryland

*Postal\_Code:* 20772

*Contact\_Voice\_Telephone:* (301) 457-1128

*Contact\_Electronic\_Mail\_Address:* tiger@census.gov

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

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## **ENGINEERING LAYERS**

# 2003 Natural Color Orthophotography - Marlboro County

Metadata also available as

## Metadata:

- [Identification Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

*Originator:* Kucera International Inc.

*Publication\_Date:* 2003

*Title:* 2003 Natural Color Orthophotography - Marlboro County

*Geospatial\_Data\_Presentation\_Form:* remote-sensing image

*Online\_Linkage:* \\LPA30652\G\$\I-73 Marlboro County\3027.tif

#### *Description:*

##### *Abstract:*

2003 True Color Aerial Photography for Marlboro County (1 foot pixel resolution)

#### *Time\_Period\_of\_Content:*

##### *Time\_Period\_Information:*

##### *Single\_Date/Time:*

*Calendar\_Date:* 2003

*Currentness\_Reference:* ground condition

#### *Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* As needed

#### *Spatial\_Domain:*

##### *Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* 2320000.000000

*East\_Bounding\_Coordinate:* 2330000.000000

*North\_Bounding\_Coordinate:* 1080000.000000

*South\_Bounding\_Coordinate:* 1070000.000000

#### *Keywords:*

##### *Theme:*

#### *Use\_Constraints:*

Permission must be obtained by the Pee Dee Regional Council of Governments

*Point\_of\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* Johnny Brown

*Contact\_Organization:* Pee Dee Regional Council of Governments

*Contact\_Position:* Executive Director

*Contact\_Address:*

*Address\_Type:* mailing address

*Address:* P.O. Box 5719

*City:* Florence

*State\_or\_Province:* SC

*Postal\_Code:* 29502

*Country:* USA

*Contact\_Voice\_Telephone:* (843) 669-3138

*Contact\_Electronic\_Mail\_Address:* jjbrown@peedeecog.org

*Data\_Set\_Credit:* Pee Dee Regional Council of Governments

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog  
9.2.2.1350

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Raster

*Raster\_Object\_Information:*

*Raster\_Object\_Type:* Pixel

*Row\_Count:* 10000

*Column\_Count:* 10000

*Vertical\_Count:* 1

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Grid\_Coordinate\_System:*

*Grid\_Coordinate\_System\_Name:* State Plane Coordinate System 1983

*State\_Plane\_Coordinate\_System:*

*SPCS\_Zone\_Identifier:* 3900

*Lambert\_Conformal\_Conic:*

*Standard\_Parallel:* 32.500000

*Standard\_Parallel:* 34.833333

*Longitude\_of\_Central\_Meridian:* -81.000000

*Latitude\_of\_Projection\_Origin:* 31.833333

*False\_Easting:* 1999996.000000

*False\_Northing:* 0.000000

*Planar\_Coordinate\_Information:*

*Planar\_Coordinate\_Encoding\_Method:* row and column

*Coordinate\_Representation:*  
*Abscissa\_Resolution:* 1.000000  
*Ordinate\_Resolution:* 1.000000  
*Planar\_Distance\_Units:* survey feet  
*Geodetic\_Model:*  
*Horizontal\_Datum\_Name:* North American Datum of 1983  
*Ellipsoid\_Name:* Geodetic Reference System 80  
*Semi-major\_Axis:* 6378137.000000  
*Denominator\_of\_Flattening\_Ratio:* 298.257222

---

*Distribution\_Information:*

*Distributor:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Organization:* South Carolina Geodetic Survey

*Contact\_Address:*

*Address\_Type:* physical address

*Address:* 5 Geology Road

*City:* Columbia

*State\_or\_Province:* SC

*Postal\_Code:* 29212

*Country:* USA

*Contact\_Voice\_Telephone:* (803) 896-7700

*Contact\_Facsimile\_Telephone:* (803) 896-7695

*Resource\_Description:* Downloadable Data

*Standard\_Order\_Process:*

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Transfer\_Size:* 0.000

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20070626

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* THE LPA GROUP, INC.

*Contact\_Address:*

*Address\_Type:* mailing and physical address

*Address:* 700 Huger Street

*City:* Columbia

*State\_or\_Province:* SC

*Postal\_Code:* 29201

*Country:* USA

*Contact\_Voice\_Telephone:* (803) 254-2211



*Contact\_Facsimile\_Telephone:* (803) 779-8749  
*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata  
*Metadata\_Standard\_Version:* FGDC-STD-001-1998  
*Metadata\_Time\_Convention:* local time  
*Metadata\_Extensions:*  
*Online\_Linkage:* <<http://www.esri.com/metadata/esriprof80.html>>  
*Profile\_Name:* ESRI Metadata Profile

---

Generated by [mp](#) version 2.8.6 on Tue Jun 26 12:03:54 2007

# 1993 Black and White Orthophotography - Richmond County

Metadata also available as

## Metadata:

- [Identification Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

*Originator:* Unknown

*Publication\_Date:* 1993

*Title:* 1993 Black and White Orthophotography - Richmond County

*Geospatial\_Data\_Presentation\_Form:* raster digital data

##### *Online\_Linkage:*

Y:\Planning\Roadway Projects\I73-SC9\Data

Collection\NC\richmondcnty\_all\CD\_richmondcty\400 scale\6479R.sid

### *Description:*

#### *Abstract:*

1993 Black and White Orthophotography for Richmond County, North  
Carolina

### *Time\_Period\_of\_Content:*

#### *Time\_Period\_Information:*

##### *Single\_Date/Time:*

*Calendar\_Date:* 1993

*Currentness\_Reference:* ground condition

### *Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* Unknown

### *Spatial\_Domain:*

#### *Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -80.103593

*East\_Bounding\_Coordinate:* -80.069793

*North\_Bounding\_Coordinate:* 35.119106

*South\_Bounding\_Coordinate:* 35.091330

### *Keywords:*

#### *Theme:*

*Point\_of\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* James Armstrong

*Contact\_Organization:* Richmond County Government

*Contact\_Position:* Director of Planning and GIS Services

*Contact\_Address:*

*Address\_Type:* mailing address

*Address:* P.O. Box 504

*City:* Rockingham

*State\_or\_Province:* NC

*Postal\_Code:* 28380

*Country:* USA

*Contact\_Voice\_Telephone:* (910) 417-4904

*Contact\_Facsimile\_Telephone:* (910) 417-4905

*Data\_Set\_Credit:* Richmond County Government, North Carolina

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog  
9.2.2.1350

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Raster

*Raster\_Object\_Information:*

*Raster\_Object\_Type:* Pixel

*Row\_Count:* 5000

*Column\_Count:* 5000

*Vertical\_Count:* 1

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Map\_Projection:*

*Map\_Projection\_Name:* Lambert Conformal Conic

*Lambert\_Conformal\_Conic:*

*Standard\_Parallel:* 34.333333

*Standard\_Parallel:* 36.166667

*Longitude\_of\_Central\_Meridian:* -79.000000

*Latitude\_of\_Projection\_Origin:* 33.750000

*False\_Easting:* 2000000.002617

*False\_Northing:* 0.000000

*Planar\_Coordinate\_Information:*

*Planar\_Coordinate\_Encoding\_Method:* row and column

*Coordinate\_Representation:*

*Abscissa\_Resolution:* 2.000000

*Ordinate\_Resolution:* 2.000000  
*Planar\_Distance\_Units:* survey feet  
*Geodetic\_Model:*  
*Horizontal\_Datum\_Name:* North American Datum of 1983  
*Ellipsoid\_Name:* Geodetic Reference System 80  
*Semi-major\_Axis:* 6378137.000000  
*Denominator\_of\_Flattening\_Ratio:* 298.257222

---

*Distribution\_Information:*

*Distributor:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* James Armstrong

*Contact\_Organization:* Richmond County Government

*Contact\_Position:* Director of Planning and GIS Services

*Contact\_Address:*

*Address\_Type:* mailing address

*Address:* P.O. Box 504

*City:* Rockingham

*State\_or\_Province:* NC

*Postal\_Code:* 28380

*Country:* USA

*Contact\_Voice\_Telephone:* (910) 417-4904

*Contact\_Facsimile\_Telephone:* (910) 417-4905

*Resource\_Description:* Downloadable Data

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20070626

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* THE LPA GROUP, INC.

*Contact\_Address:*

*Address\_Type:* mailing and physical address

*Address:* 700 Huger Street

*City:* Columbia

*State\_or\_Province:* SC

*Postal\_Code:* 29201

*Country:* USA

*Contact\_Voice\_Telephone:* (803) 254-2211

*Contact\_Facsimile\_Telephone:* (803) 779-8749

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time



*Metadata\_Extensions:*

*Online\_Linkage:* <<http://www.esri.com/metadata/esriprof80.html>>

*Profile\_Name:* ESRI Metadata Profile

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# 2005 Natural Color Orthophotography - Richmond County

Metadata also available as

## Metadata:

- [Identification Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

*Publication\_Date:* 2005

*Title:* 2005 Natural Color Orthophotography - Richmond County

*Geospatial\_Data\_Presentation\_Form:* remote-sensing image

*Online\_Linkage:* \\LPA30652\J\ortho\_nc\7328\_01.tif

#### *Description:*

*Abstract:* 2005 True Color Orthophotos for Richmond County, North Carolina

#### *Time\_Period\_of\_Content:*

##### *Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2005

*Currentness\_Reference:* ground condition

#### *Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* As needed

#### *Spatial\_Domain:*

##### *Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -79.932933

*East\_Bounding\_Coordinate:* -79.916120

*North\_Bounding\_Coordinate:* 34.818103

*South\_Bounding\_Coordinate:* 34.804237

#### *Keywords:*

*Theme:*

#### *Point\_of\_Contact:*

##### *Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* Richmond County Government

*Contact\_Person:* James Armstrong

*Contact\_Position:* Director of Planning and GIS Services

*Contact\_Address:*

*Address\_Type:* mailing address

*Address:* P.O. Box 504

*City:* Rockingham

*State\_or\_Province:* NC

*Postal\_Code:* 28380

*Country:* USA

*Contact\_Voice\_Telephone:* (910) 417-4904

*Contact\_Facsimile\_Telephone:* (910) 417-4905

*Data\_Set\_Credit:* Richmond County Government, North Carolina

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog  
9.2.2.1350

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Raster

*Raster\_Object\_Information:*

*Raster\_Object\_Type:* Pixel

*Row\_Count:* 10000

*Column\_Count:* 10000

*Vertical\_Count:* 1

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Map\_Projection:*

*Map\_Projection\_Name:* Lambert Conformal Conic

*Lambert\_Conformal\_Conic:*

*Standard\_Parallel:* 34.333333

*Standard\_Parallel:* 36.166667

*Longitude\_of\_Central\_Meridian:* -79.000000

*Latitude\_of\_Projection\_Origin:* 33.750000

*False\_Easting:* 2000000.002617

*False\_Northing:* 0.000000

*Planar\_Coordinate\_Information:*

*Planar\_Coordinate\_Encoding\_Method:* row and column

*Coordinate\_Representation:*

*Abscissa\_Resolution:* 0.500000

*Ordinate\_Resolution:* 0.500000

*Planar\_Distance\_Units:* survey feet

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* North American Datum of 1983

*Ellipsoid\_Name:* Geodetic Reference System 80

*Semi-major\_Axis:* 6378137.000000  
*Denominator\_of\_Flattening\_Ratio:* 298.257222

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*Distribution\_Information:*

*Distributor:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* James Armstrong

*Contact\_Organization:* Richmond County Government

*Contact\_Position:* Director of Planning and GIS Services

*Contact\_Address:*

*Address\_Type:* mailing address

*Address:* P.O. Box 504

*City:* Rockingham

*State\_or\_Province:* NC

*Postal\_Code:* 28380

*Country:* USA

*Contact\_Voice\_Telephone:* (910) 417-4904

*Contact\_Facsimile\_Telephone:* (910) 417-4905

*Resource\_Description:* Downloadable Data

*Standard\_Order\_Process:*

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Transfer\_Size:* 0.000

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20070626

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* THE LPA GROUP, INC.

*Contact\_Address:*

*Address\_Type:* mailing and physical address

*Address:* 700 Huger Street

*City:* Columbia

*State\_or\_Province:* SC

*Postal\_Code:* 29201

*Country:* USA

*Contact\_Voice\_Telephone:* (803) 254-2211

*Contact\_Facsimile\_Telephone:* (803) 779-8749

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time

*Metadata\_Extensions:*



*Online\_Linkage:* <<http://www.esri.com/metadata/esriprof80.html>>  
*Profile\_Name:* ESRI Metadata Profile

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## **ENVIRONMENTAL LAYERS**

# Hazardous Substance Disposal Sites

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### Identification\_Information:

#### Citation:

##### Citation\_Information:

*Originator:* NC DEHNR - Division of Waste Management, Superfund Section

*Publication\_Date:* 19981201

#### Title:

Hazardous Substance Disposal Sites

*Geospatial\_Data\_Presentation\_Form:* vector digital data

#### Publication\_Information:

*Publication\_Place:* Raleigh, North Carolina

*Publisher:* NC DEHNR - Division of Waste Management, Superfund Section

#### Other\_Citation\_Details:

NCCGIA distributes this dataset

*Online\_Linkage:* [\\dot-csfs01\DataLibrary\GIS Distribution\Hazardous Materials.mdb](#)

### Description:

#### Abstract:

The North Carolina Department of Environment, Health, and Natural Resources, Division of Waste Management, Superfund Section in cooperation with the North Carolina Center for Geographic Information and Analysis developed the GIS data set, Hazardous Substance Disposal Sites, to enhance planning, siting, and impact analysis in areas directly affected by Hazardous Substance Disposal Sites. The arc and polygon data identifies locations of uncontrolled and unregulated, hazardous waste sites (formerly called superfund sites) in North Carolina. The file includes sites on the CERCLA Information System (CERCLIS), the National Priorities List, the State Inactive Hazardous Sites List, the Sites Priority List, and some Department of Defense sites. Attributes describe the state or federal status, facility name, coordinate location, and site id numbers. .

#### Purpose:

This data was created to assist governmental agencies and others in making resource management decisions through use of a Geographic Information System (GIS).

#### Supplemental\_Information:

```
>system filename: hsd1      file size = 0.7 mb
>
>Revisions and updates to this layer include:
>4.) filename: hsd1298 The December 1998 update to this layer
>consisted of projecting the data from NAD27 datum, State Plane
>projection, units of measure feet TO: NAD83 DATUM, State Plane
>PROJECTION, UNITS OF MEASURE METERS. This was done to comply
>with the NC Geographic Information Coordinating Council's
>"Statement of Direction for North Carolina Corporate Geographic
>Database Horizontal Reference, Datum and Unit of Measure".
>This reprojecting was done in various ways depending on the data
>type and content. Vector data was projected using the 'project'
>command in ESRI's Arc software and topology was cleaned and
```

>built based on coverage needs. Raster data was projected using  
>ESRI's Grid module and various steps as applicable.  
>  
>3.) filename: hsds396 The March 29, 1996 revisions consisted  
>of changing the name of the data layer from Superfund Sites, to  
>Hazardous Substance Disposal Sites. This was done at the request  
>of the custodian agency.  
>ALL FILES PRIOR TO THE MARCH 29, 1996 VERSION WERE NAMED  
>SUPERFUND SITES. (SUPFND, OR NC.SUPFND)  
>  
>2.) filename: hsds395 (previously named nc.supfnd695)  
>On June 21, 1995, the New Hanover County  
>landfill was moved approximately .5 mile south of the original  
>digitized location. The 1:24,000-scale Carolina Beach 7.5 Minute  
>series topographic map was affected. Coordinate information in  
>the PAT was altered.  
>  
>1.) filename: hsds395 (previously named nc.supfnd)  
>March 1995 was the original release date for this file.

*Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* REQUIRED: The year (and optionally month, or month and day) for which the data set corresponds to the ground.

*Currentness\_Reference:*

Data creation and revision dates

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* Irregular

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -84.050413

*East\_Bounding\_Coordinate:* -75.486978

*North\_Bounding\_Coordinate:* 36.527820

*South\_Bounding\_Coordinate:* 33.845835

*Keywords:*

*Theme:*

*Theme\_Keyword\_Thesaurus:* None

*Theme\_Keyword:* hazardous waste

*Theme\_Keyword:* superfund sites

*Theme\_Keyword:* disposal sites

*Theme\_Keyword:* hazardous substance

*Place:*

*Place\_Keyword\_Thesaurus:* William S. Powell, The North Carolina GAZETTEER, A Dictionary of Tar Heel Places,(Chapel Hill: University of North Carolina Press, August 1984.

*Place\_Keyword:* North Carolina

*Access\_Constraints:* None

*Use\_Constraints:*

Acknowledgement of products derived from this data set should cite the following: The source of the Hazardous Substance Disposal Sites data is the North Carolina Corporate Geographic Database. Earlier versions of this dataset may exist. The user must be sure to use the appropriate data set for the time period of interest. While efforts have been made to ensure that these data are accurate and reliable within the state of the art, CGIA cannot assume liability for any damages or misrepresentation caused by any inaccuracies in the data or as a result of changes to the data caused by system transfers.

*Point\_of\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* Grover Nicholson

*Contact\_Organization:* NC DEHNR-Div of Waste Management, Superfund Section

*Contact\_Address:*

*Address\_Type:* Mailing and physical address



*Address:*

401 Oberlin Road, Suite 150  
*City:* Raleigh  
*State\_or\_Province:* North Carolina  
*Postal\_Code:* 27605-1350  
*Country:* U.S.A.  
*Contact\_Voice\_Telephone:* (919) 733-2801, extension 291  
*Contact\_Facsimile\_Telephone:* (919) 733-4811  
*Contact\_Electronic\_Mail\_Address:* N/A  
*Hours\_of\_Service:* 8am to 5pm  
*Contact\_Instructions:*  
Preferred contact is by mail or telephone.

*Data\_Set\_Credit:*

>Div. of Waste Management Director, William L. Meyer  
>Superfund Section staff, Grover Nicholson  
>NC Dept. of Environment, Health, and Natural Resources  
>401 Oberlin Road, Suite 150  
>Raleigh, NC 27605-1350  
>  
>NCCGIA Director, Karen Siderelis  
>Database Administration, Zsolt Nagy  
>Database Management, Ken Shaffer  
>Project Manager, David Giordano  
>North Carolina Center for Geographic Information and Analysis  
>Governor's Office  
>Office of State Planning  
>301 North Wilmington Street, Suite 700  
>Raleigh, NC 27601-2825

*Native\_Data\_Set\_Environment:*

Microsoft Windows NT Version 4.0 (Build 1381) Service Pack 6; ESRI ArcCatalog 9.0.0.535

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*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

The Hazardous Substance Disposal Sites were originally supplied to NCCGIA by NC DEHNR-Div of Waste Management, Superfund Section with the locations delineated on USGS 1:24,000-scale 7.5 Minute series maps. The sites were digitized and attributed with a Superfund Section id number and a facility name, both of which were provided by the Superfund Section on the quad. Checkplots were made and overlaid on the USGS maps for review. Any necessary label corrections were made and new checkplots were run.

*Logical\_Consistency\_Report:*

Using ESRI's Arc/Info GIS software, the data set was built for arc and polygon topology using the "build" command. Topology has not been edited since the last build or clean.

*Completeness\_Report:*

These data represent the locations and identities of the Hazardous Substance Disposal Sites listed on both the National Priority List and the State Priority List as of June 21, 1995.

*Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy\_Report:*

Site locations were marked on 7.5 Minute USGS topographic maps which match National Map Accuracy Standards, using a best estimate with reference to surrounding features. All sites digitized as points were given a 50 foot buffer, so it would be possible to include all sites in one coverage (points and polygons cannot exist in the same coverage).

*Lineage:*

*Source\_Information:*  
*Source\_Citation:*  
*Citation\_Information:*  
*Originator:* NC DEHNR-Div of Waste Management, Superfund Section  
*Publication\_Date:* 1994  
*Title:*  
Hazardous Substance Disposal Sites  
*Geospatial\_Data\_Presentation\_Form:* Map  
*Publication\_Information:*  
*Publication\_Place:* Raleigh, North Carolina  
*Publisher:* NC DEHNR-Div of Waste Management, Superfund Section  
*Other\_Citation\_Details:*  
None  
*Source\_Scale\_Denominator:* 24000  
*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*  
*Time\_Period\_Information:*  
*Range\_of\_Dates/Times:*  
*Beginning\_Date:* 1982  
*Ending\_Date:* 19950621  
*Source\_Currentness\_Reference:*  
Original release and update date  
*Source\_Citation\_Abbreviation:*  
None  
*Source\_Contribution:*  
Locations of sites and facility names supplied  
on USGS quadrangles

*Source\_Information:*  
*Source\_Citation:*  
*Citation\_Information:*  
*Originator:* US Geological Survey  
*Publication\_Date:* 1938-1990  
*Title:*  
USGS 7.5 Minute series quadrangles  
*Geospatial\_Data\_Presentation\_Form:* Map  
*Publication\_Information:*  
*Publication\_Place:* Reston, Virginia  
*Publisher:* US Geological Survey  
*Other\_Citation\_Details:*  
None  
*Source\_Scale\_Denominator:* 24000  
*Type\_of\_Source\_Media:* Paper  
*Source\_Time\_Period\_of\_Content:*  
*Time\_Period\_Information:*  
*Range\_of\_Dates/Times:*  
*Beginning\_Date:* 1938  
*Ending\_Date:* 1990  
*Source\_Currentness\_Reference:*  
Publication dates of quadrangles  
*Source\_Citation\_Abbreviation:*  
None  
*Source\_Contribution:*  
Paper maps used to delineate the Hazardous  
Substance Disposal Sites

*Process\_Step:*  
*Process\_Description:*  
Digitization of Hazardous Substance Disposal Sites;  
handdrawn delineations of sites were supplied by the Superfund  
Section on USGS 7.5 Minute series basemaps for digitization. The  
data were digitized on Calcomp digitizing tables. Points were given  
a 50-foot buffer, so they could be included in the same coverages as

polygons. The files were attributed and checkplots were created for review by the Superfund Section. Necessary correction were made and new plots were run. Post processing of digitized data involved edgematching and mapjoining of USGS 7.5 Minute series maps used to create the digitized data. This process generated one statewide polygon coverage.

*Process\_Date:* 199503

*Process\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* David Giordano

*Contact\_Organization:* NCCGIA

*Contact\_Position:* GIS Analyst

*Contact\_Address:*

*Address\_Type:* Mailing and physical address

*Address:*

301 North Wilmington Street, Suite 700

*City:* Raleigh

*State\_or\_Province:* North Carolina

*Postal\_Code:* 27601-2825

*Country:* U.S.A.

*Contact\_Voice\_Telephone:* (919) 733-2090

*Contact\_Facsimile\_Telephone:* (919) 715-0725

*Contact\_Electronic\_Mail\_Address:* dataq@cgia.state.nc.us

*Hours\_of\_Service:* 8:30AM - 5:30PM

*Contact\_Instructions:*

Phone and electronic mail preferred

*Process\_Step:*

*Process\_Description:*

Metadata imported.

*Source\_Used\_Citation\_Abbreviation:*

C:\TEMP\xml105E.tmp

*Process\_Step:*

*Process\_Description:*

Dataset copied.

*Source\_Used\_Citation\_Abbreviation:*

\\dot-csfs01\DataLibrary\GISDistribution\Environmental.mdb

*Process\_Step:*

*Process\_Description:*

Dataset copied.

*Source\_Used\_Citation\_Abbreviation:*

O:\GIS Distribution\Shapefiles\Hazardous Materials\HazardousSubstanceDisposalSites\_polys

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*Spatial\_Data\_Organization\_Information:*

*Indirect\_Spatial\_Reference\_Method:*

*\_Method:* Facility name (company)

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Entity point

*Point\_and\_Vector\_Object\_Count:* 884

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* GT-polygon composed of chains

*Point\_and\_Vector\_Object\_Count:* 885

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Node, planar graph

*Point\_and\_Vector\_Object\_Count:* 902

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Area point

*Point\_and\_Vector\_Object\_Count:* 884

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Map\_Projection:*

*Map\_Projection\_Name:* Lambert Conformal Conic

*Lambert\_Conformal\_Conic:*

*Standard\_Parallel:* 34.333333

*Standard\_Parallel:* 36.166667

*Longitude\_of\_Central\_Meridian:* -79.000000

*Latitude\_of\_Projection\_Origin:* 33.750000

*False\_Easting:* 2000000.002617

*False\_Northing:* 0.000000

*Planar\_Coordinate\_Information:*

*Planar\_Coordinate\_Encoding\_Method:* coordinate pair

*Coordinate\_Representation:*

*Abscissa\_Resolution:* 0.004096

*Ordinate\_Resolution:* 0.004096

*Planar\_Distance\_Units:* survey feet

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* North American Datum of 1983

*Ellipsoid\_Name:* Geodetic Reference System 80

*Semi-major\_Axis:* 6378137.000000

*Denominator\_of\_Flattening\_Ratio:* 298.257222

*Vertical\_Coordinate\_System\_Definition:*

*Altitude\_System\_Definition:*

*Altitude\_Resolution:* 0.000010

*Altitude\_Encoding\_Method:* Explicit elevation coordinate included with horizontal coordinates

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*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* HazardousSubstanceDisposalSites\_points

*Entity\_Type\_Definition:*

Sites designated as superfund cleanup sites

*Entity\_Type\_Definition\_Source:*

NC DEHNR-Div of Waste Management, Superfund Section

*Attribute:*

*Attribute\_Label:* Shape\_Area

*Attribute\_Definition:*

Area of feature in internal units squared.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Positive real numbers that are automatically generated.

*Attribute:*

*Attribute\_Label:* Shape

*Attribute\_Definition:*

Feature geometry.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 95.612



*Range\_Domain\_Maximum:* 891394.875  
*Attribute\_Units\_of\_Measure:* meters  
*Attribute\_Measurement\_Resolution:* 0.001  
*Unrepresentable\_Domain:*  
Coordinates defining the features.

*Attribute\_Measurement\_Frequency:*  
None planned

*Attribute:*

*Attribute\_Label:* SSF\_  
*Attribute\_Definition:*  
Superfund id number  
*Attribute\_Definition\_Source:*  
NC DEHNR-Div of Waste Management, Superfund Section

*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Superfund Section id used internally  
*Attribute\_Measurement\_Frequency:*  
None planned

*Attribute:*

*Attribute\_Label:* CODE\_  
*Attribute\_Definition:*  
Describes whether site is State or Federal  
*Attribute\_Definition\_Source:*  
NC DEHNR-Div of Waste Management, Superfund Section

*Attribute\_Domain\_Values:*  
*Enumerated\_Domain:*  
*Enumerated\_Domain\_Value:* 1  
*Enumerated\_Domain\_Value\_Definition:*  
Federal site  
*Enumerated\_Domain\_Value\_Definition\_Source:*  
NC DEHNR-Div of Waste Management, Superfund Section  
*Enumerated\_Domain:*  
*Enumerated\_Domain\_Value:* 2  
*Enumerated\_Domain\_Value\_Definition:*  
State site  
*Enumerated\_Domain\_Value\_Definition\_Source:*  
NC DEHNR-Div of Waste Management, Superfund Section

*Attribute\_Measurement\_Frequency:*  
None planned

*Attribute:*

*Attribute\_Label:* SIS\_  
*Attribute\_Definition:*  
Superfund id number  
*Attribute\_Definition\_Source:*  
NC DEHNR-Div of Waste Management, Superfund Section

*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Superfund Section id used internally  
*Attribute\_Measurement\_Frequency:*  
None planned

*Attribute:*

*Attribute\_Label:* NCD\_  
*Attribute\_Definition:*  
Superfund id #  
*Attribute\_Definition\_Source:*  
NC DEHNR-Div of Waste Management, Superfund Section

*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Superfund Section id used internally  
*Attribute\_Measurement\_Frequency:*  
None planned

*Attribute:*

*Attribute\_Label:* LAT  
*Attribute\_Definition:*  
 Latitude coordinate  
*Attribute\_Definition\_Source:*  
 software computed  
*Attribute\_Domain\_Values:*  
*Range\_Domain:*  
*Range\_Domain\_Minimum:* 33 56 31.194590  
*Range\_Domain\_Maximum:* 83 57 59.211296  
*Attribute\_Measurement\_Frequency:*  
 None planned  
*Attribute:*

*Attribute\_Label:* X\_COORD  
*Attribute\_Definition:*  
 Stateplane x-coordinate  
*Attribute\_Definition\_Source:*  
 Software computed  
*Attribute\_Domain\_Values:*  
*Range\_Domain:*  
*Range\_Domain\_Minimum:* 514520.500  
*Range\_Domain\_Maximum:* 3032687.000  
*Attribute\_Measurement\_Frequency:*  
 None planned  
*Attribute:*

*Attribute\_Label:* COMPANY  
*Attribute\_Definition:*  
 Facility name  
*Attribute\_Definition\_Source:*  
 NC DEHNR-Div of Waste Management, Superfund Section  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
 Facility names are variable in length and number of words.  
*Attribute\_Measurement\_Frequency:*  
 None planned  
*Attribute:*

*Attribute\_Label:* NONCD\_  
*Attribute\_Definition:*  
 Superfund id  
*Attribute\_Definition\_Source:*  
 NC DEHNR-Div of Waste Management, Superfund Section  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
 Superfund Section id used internally  
*Attribute\_Measurement\_Frequency:*  
 None planned  
*Attribute:*

*Attribute\_Label:* LONG\_  
*Attribute:*

*Attribute\_Label:* Shape\_Leng  
*Attribute:*

*Attribute\_Label:* Y\_COORD  
*Attribute\_Definition:*  
 Stateplane y-coordinate  
*Attribute\_Definition\_Source:*  
 Software computed  
*Attribute\_Domain\_Values:*  
*Range\_Domain:*  
*Range\_Domain\_Minimum:* 71431.450  
*Range\_Domain\_Maximum:* 1010982.000  
*Attribute\_Measurement\_Frequency:*  
 None planned  
*Attribute:*

*Attribute\_Label:* FID  
*Attribute\_Definition:*  
Internal feature number.  
*Attribute\_Definition\_Source:*  
ESRI  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Sequential unique whole numbers that are automatically generated.

*Attribute:*  
*Attribute\_Label:* Shape\_Le\_1

*Detailed\_Description:*

*Entity\_Type:*  
*Entity\_Type\_Label:* Hazardous Substance Disposal Sites  
*Entity\_Type\_Definition:*  
Sites designated as superfund cleanup sites  
*Entity\_Type\_Definition\_Source:*  
NC DEHNR-Div of Waste Management, Superfund Section

*Attribute:*  
*Attribute\_Label:* FNODE#  
*Attribute\_Definition:*  
From node identification number  
*Attribute\_Definition\_Source:*  
software computed  
*Attribute\_Domain\_Values:*  
*Range\_Domain:*  
*Range\_Domain\_Minimum:* 1  
*Range\_Domain\_Maximum:* 902  
*Attribute\_Measurement\_Frequency:*  
None planned

*Attribute:*  
*Attribute\_Label:* TNODE#  
*Attribute\_Definition:*  
To node identification number  
*Attribute\_Definition\_Source:*  
software computed  
*Attribute\_Domain\_Values:*  
*Range\_Domain:*  
*Range\_Domain\_Minimum:* 1  
*Range\_Domain\_Maximum:* 902  
*Attribute\_Measurement\_Frequency:*  
None planned

*Attribute:*  
*Attribute\_Label:* LPOLY#  
*Attribute\_Definition:*  
Left arc identification number of polygon  
*Attribute\_Definition\_Source:*  
software computed  
*Attribute\_Domain\_Values:*  
*Range\_Domain:*  
*Range\_Domain\_Minimum:* 1  
*Range\_Domain\_Maximum:* 880  
*Attribute\_Measurement\_Frequency:*  
None planned

*Attribute:*  
*Attribute\_Label:* RPOLY#  
*Attribute\_Definition:*  
Right arc identification number of polygon  
*Attribute\_Definition\_Source:*  
software computed  
*Attribute\_Domain\_Values:*  
*Range\_Domain:*  
*Range\_Domain\_Minimum:* 1

*Range\_Domain\_Maximum:* 885  
*Attribute\_Measurement\_Frequency:*  
 None planned  
*Attribute:*  
*Attribute\_Label:* LENGTH  
*Attribute\_Definition:*  
 Length of arc in coverage units  
*Attribute\_Definition\_Source:*  
 software computed  
*Attribute\_Domain\_Values:*  
*Range\_Domain:*  
*Range\_Domain\_Minimum:* 53.412  
*Range\_Domain\_Maximum:* 15395.658  
*Attribute\_Measurement\_Frequency:*  
 None planned

*Attribute:*  
*Attribute\_Label:* HSDS#  
*Attribute\_Definition:*  
 Internal identification number  
*Attribute\_Definition\_Source:*  
 software computed  
*Attribute\_Domain\_Values:*  
*Range\_Domain:*  
*Range\_Domain\_Minimum:* 1  
*Range\_Domain\_Maximum:* 913  
*Attribute\_Measurement\_Frequency:*  
 None planned

*Attribute:*  
*Attribute\_Label:* HSDS-ID  
*Attribute\_Definition:*  
 User identification number  
*Attribute\_Definition\_Source:*  
 software computed  
*Attribute\_Domain\_Values:*  
*Range\_Domain:*  
*Range\_Domain\_Minimum:* 0  
*Range\_Domain\_Maximum:* 32  
*Attribute\_Measurement\_Frequency:*  
 None planned

*Attribute:*

*Attribute:*

*Attribute:*

*Attribute:*

*Attribute:*

*Attribute:*

*Attribute:*

*Attribute:*

*Overview\_Description:*

*Entity\_and\_Attribute\_Overview:*

This data layer has a polygon attribute table. AREA, PERIMETER, HSDS#, and HSDS-ID are computer defaults. The remaining attributes were supplied by the Superfund Section of the Div. of Waste Management. CODE# identifies the site as State or Federal; COMPANY supplies the facility name; SIS#, NCD#, NONCD#, and SSF# are all superfund id numbers; LONG, LAT, X-COORDINATE, and Y-COORDINATE represent latitude/longitude and Stateplane coordinates, respectively.

```

>PAT - Polygon Attribute Table
>COLUMN ITEM NAME          WIDTH OUTPUT TYPE DEC DESCRIPTION
>1 AREA                    4      12   F    3    Total area in meters
>5 PERIMETER                4      12   F    3    Total perimeter in meters
>9 HSDS#                    4       5   B    -    Poly internal id number
  
```



```

>13 HSDS-ID          4      5      B      -      Poly user id number
>17 CODE#           2      2      B      -      State or Federal
>19 SIS#            15     15     C      -      Superfund id number
>34 NCD#            15     15     C      -      Superfund id number
>49 LONG            20     20     C      -      Longitude coordinate
>69 LAT             20     20     C      -      Latitude coordinate
>89 X-COORD         4      12     F      3      Stateplane x-coordinate
>93 Y-COORD         4      12     F      3      Stateplane x-coordinate
>97 COMPANY         80     80     C      -      Facility name
>177 NONCD#         15     15     C      -      Superfund id number
>192 SSF#           15     15     C      -      Superfund id number

```

```

>This layer has an arc attribute table.
>The items FNODE#, TNODE#, LPOLY#, RPOLY#, LENGTH, HSDS#, and
>HSDS-ID are computer generated defaults. A deductive estimate was used
>to determine the attribute accuracy value.

```

```

>AAT - Arc Attribute Table
>COLUMN ITEM NAME      WIDTH OUTPUT  TYPE  DEC  DESCRIPTION
>1  FNODE#              4      5      B      -      From node identification number
>5  TNODE#              4      5      B      -      To node identification number
>9  LPOLY#              4      5      B      -      Left arc identification number
>of polygon
>13 RPOLY#             4      5      B      -      Right arc identification number
>of polygon
>17 LENGTH             4     12     F      3      Length of arc in coverage units
>21 HSDS#              4      5      B      -      Internal identification number
>25 HSDS-ID            4      5      B      -      User identification number

```

*Entity\_and\_Attribute\_Detail\_Citation:*  
None

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*Distribution\_Information:*

*Distributor:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NC Center for Geographic Information and Analysis

*Contact\_Position:* Production Services

*Contact\_Address:*

*Address\_Type:* Mailing and physical address

*Address:*

301 North Wilmington Street, Suite 700

*City:* Raleigh

*State\_or\_Province:* North Carolina

*Postal\_Code:* 27601-2825

*Country:* USA

*Contact\_Voice\_Telephone:* (919) 733-2090

*Contact\_Facsimile\_Telephone:* (919) 715-0725

*Contact\_Electronic\_Mail\_Address:* dataq@cgia.state.nc.us

*Hours\_of\_Service:* 8:30AM - 5:30PM

*Contact\_Instructions:*

Phone and electronic mail preferred

For current price information use a web browser:

COST INFORMATION - <http://www.cgia.state.nc.us/cost.html>

*Resource\_Description:* Hazardous Substance Disposal Sites

*Distribution\_Liability:*

NCCGIA is charged with the development and maintenance of the State's corporate geographic database and, in

cooperation with other mapping organizations, is committed to offering its users accurate, useful, and current information about the state. Although every effort has been made to ensure the accuracy of information, errors and conditions originating from physical sources used to develop the corporate database may be reflected in the data supplied. The client must be aware of data conditions and bear responsibility for the appropriate use of the information with respect to possible errors, original map scale, collection methodology, currency of data, and other conditions specific to certain data. NCCGIA does not support secondary distribution of this data. The use of trade names or commercial products does not constitute their endorsement by the NCCGIA or North Carolina State Government.

*Standard\_Order\_Process:*

*Non-digital\_Form:*

FOR DIGITAL OR NON-DIGITAL DATA, Contact NC CGIA, Data Distribution to order data, Phone 919.733.2090 ... Email dataq@cgia.state.nc.us ... Web Page order form  
<http://www.cgia.state.nc.us/cgdb/index.html>

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Transfer\_Size:* 0.000

*Fees:* For current FORMAT/MEDIA INFORMATION, use a web browser:

<http://www.cgia.state.nc.us/cost.html> or phone NC CGIA Data Distribution 919.733.2090

*Custom\_Order\_Process:*

Data creation and large data analysis jobs contact Database Administration P:(919)733-2090. All data is available through standard ordering procedures on a cost recovery basis.

*Technical\_Prerequisites:*

All formats supplied are created using ARC/INFO GIS software on Unix workstations. Other formats are available. Format compatibility is the user's responsibility. For more information on formats and media, use a web browser: FORMAT/MEDIA INFORMATION - <http://www.cgia.state.nc.us/cost.html>

*Available\_Time\_Period:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 199503

*Ending\_Date:* Present

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20050614

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* North Carolina Center for Geographic Information and Analysis

*Contact\_Person:* REQUIRED: The person responsible for the metadata information.

*Contact\_Position:* Database Management

*Contact\_Address:*

*Address\_Type:* Mailing and physical address

*Address:*

301 North Wilmington Street, Suite 700

*City:* Raleigh

*State\_or\_Province:* North Carolina

*Postal\_Code:* 27601-2825

*Country:* USA

*Contact\_Voice\_Telephone:* (919) 733-2090

*Contact\_Facsimile\_Telephone:* (919) 715-0725

*Contact\_Electronic\_Mail\_Address:* dataq@cgia.state.nc.us

*Hours\_of\_Service:* 8:30AM - 5:30PM

*Contact Instructions:*

Phone and electronic mail preferred

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time

*Metadata\_Access\_Constraints:* None

*Metadata\_Use\_Constraints:*

This metadata file is to accompany the data set identified and received from NCCGIA. NCCGIA does not support secondary distribution. If this data file was received from anyone besides NCCGIA, this metadata file and the data set it describes may contain discrepancies.

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

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# Hydrology - Arcs

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

##### *Title:*

Hydrology - Arcs

*Geospatial\_Data\_Presentation\_Form:* vector digital data

*Online\_Linkage:* [\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\Hydro24k\\_arcs.shp](\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\Hydro24k_arcs.shp)

#### *Description:*

##### *Abstract:*

Linear Hydrology for Richmond County, North Carolina

#### *Time\_Period\_of\_Content:*

##### *Time\_Period\_Information:*

##### *Single\_Date/Time:*

*Calendar\_Date:* unknown

#### *Status:*

*Maintenance\_and\_Update\_Frequency:* Unknown

#### *Spatial\_Domain:*

##### *Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -80.075379

*East\_Bounding\_Coordinate:* -79.457914

*North\_Bounding\_Coordinate:* 35.185427

*South\_Bounding\_Coordinate:* 34.802278

#### *Keywords:*

##### *Theme:*

#### *Point\_of\_Contact:*

##### *Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NC Department of Transportation

#### *Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog 9.2.2.1350



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*Data\_Quality\_Information:*

*Lineage:*

*Process\_Step:*

*Process\_Description:*

Dataset copied.

*Source\_Used\_Citation\_Abbreviation:*

O:\GIS Distribution\Shapefiles\Hydrography 24k\Hydro24k\_arcs

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* String

*Point\_and\_Vector\_Object\_Count:* 0

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Map\_Projection:*

*Map\_Projection\_Name:* Lambert Conformal Conic

*Lambert\_Conformal\_Conic:*

*Standard\_Parallel:* 34.333333

*Standard\_Parallel:* 36.166667

*Longitude\_of\_Central\_Meridian:* -79.000000

*Latitude\_of\_Projection\_Origin:* 33.750000

*False\_Easting:* 2000000.002617

*False\_Northing:* 0.000000

*Planar\_Coordinate\_Information:*

*Planar\_Coordinate\_Encoding\_Method:* coordinate pair

*Coordinate\_Representation:*

*Abscissa\_Resolution:* 0.000000

*Ordinate\_Resolution:* 0.000000

*Planar\_Distance\_Units:* survey feet

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* North American Datum of 1983

*Ellipsoid\_Name:* Geodetic Reference System 80

*Semi-major\_Axis:* 6378137.000000

*Denominator\_of\_Flattening\_Ratio:* 298.257222

*Vertical\_Coordinate\_System\_Definition:*

*Altitude\_System\_Definition:*

*Altitude\_Resolution:* 0.000010

*Altitude\_Encoding\_Method:* Explicit elevation coordinate included with horizontal coordinates

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*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* Hydro24k\_arcs

*Attribute:*

*Attribute\_Label:* Shape\_Le\_1

*Attribute:*

*Attribute\_Label:* Shape

*Attribute\_Definition:*

Feature geometry.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Coordinates defining the features.

*Attribute:*

*Attribute\_Label:* OBJECTID

*Attribute:*

*Attribute\_Label:* LENGTH

*Attribute:*

*Attribute\_Label:* MAJOR1

*Attribute:*

*Attribute\_Label:* MINOR1

*Attribute:*

*Attribute\_Label:* MAJOR2

*Attribute:*

*Attribute\_Label:* MINOR2

*Attribute:*

*Attribute\_Label:* MAJOR3

*Attribute:*

*Attribute\_Label:* MINOR3

*Attribute:*

*Attribute\_Label:* STREAM\_NAM

*Attribute:*

*Attribute\_Label:* RIV\_BASIN

*Attribute:*

*Attribute\_Label:* SUBBASIN\_

*Attribute:*

*Attribute\_Label:* DWQ\_INDEX\_

*Attribute:*

*Attribute\_Label: DWQ\_CLASS*  
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*Attribute\_Label: DWQ\_CLDATE*  
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*Attribute\_Label: DESCRIP\_CL*  
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*Attribute\_Label: INDEX\_305B*  
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*Attribute\_Label: INDEX\_303D*  
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*Attribute\_Label: BASIS\_SWIM*  
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*Attribute:*  
*Attribute\_Label: RATING\_OTH*  
*Attribute:*  
*Attribute\_Label: BASIS\_OTHR*  
*Attribute:*  
*Attribute\_Label: DESCRIP\_UR*  
*Attribute:*

*Attribute\_Label:* USE\_LENGTH  
*Attribute:*  
*Attribute\_Label:* CL\_LENGTH  
*Attribute:*  
*Attribute\_Label:* CGIA\_FMS  
*Attribute:*  
*Attribute\_Label:* COMMENT  
*Attribute:*  
*Attribute\_Label:* Shape\_Leng  
*Attribute:*  
*Attribute\_Label:* FID  
*Attribute\_Definition:*  
Internal feature number.  
*Attribute\_Definition\_Source:*  
ESRI  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Sequential unique whole numbers that are automatically  
generated.  
*Attribute:*  
*Attribute\_Label:* Shape\_Le\_2

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*Distribution\_Information:*  
*Resource\_Description:* Downloadable Data  
*Standard\_Order\_Process:*  
*Digital\_Form:*  
*Digital\_Transfer\_Information:*  
*Transfer\_Size:* 0.000

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*Metadata\_Reference\_Information:*  
*Metadata\_Date:* 20070625  
*Metadata\_Contact:*  
*Contact\_Information:*  
*Contact\_Organization\_Primary:*  
*Contact\_Organization:* THE LPA GROUP, INC.  
*Contact\_Address:*  
*Address\_Type:* mailing and physical address  
*Address:*  
700 Huger Street  
*City:* Columbia  
*State\_or\_Province:* SC  
*Postal\_Code:* 29201



*Country:* USA  
*Contact\_Voice\_Telephone:* (803) 254-2211  
*Contact\_Facsimile\_Telephone:* (803) 779-8749  
*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata  
*Metadata\_Standard\_Version:* FGDC-STD-001-1998  
*Metadata\_Time\_Convention:* local time  
*Metadata\_Extensions:*  
*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>  
*Profile\_Name:* ESRI Metadata Profile

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# Hydrology - Polygons

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

##### *Title:*

Hydrology - Polygons

*Geospatial\_Data\_Presentation\_Form:* vector digital data

*Online\_Linkage:* [\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\Hydro24k\\_polys.shp](\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\Hydro24k_polys.shp)

#### *Description:*

##### *Abstract:*

Polygonal Hydrology for Richmond County, North Carolina

#### *Time\_Period\_of\_Content:*

##### *Time\_Period\_Information:*

##### *Single\_Date/Time:*

*Calendar\_Date:* unknown

#### *Status:*

*Maintenance\_and\_Update\_Frequency:* Unknown

#### *Spatial\_Domain:*

##### *Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -80.076134

*East\_Bounding\_Coordinate:* -79.458089

*North\_Bounding\_Coordinate:* 35.178221

*South\_Bounding\_Coordinate:* 34.805418

#### *Keywords:*

##### *Theme:*

#### *Point\_of\_Contact:*

##### *Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NC Department of Transportation

#### *Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog 9.2.2.1350

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*Data\_Quality\_Information:*

*Lineage:*

*Process\_Step:*

*Process\_Description:*

Dataset copied.

*Source\_Used\_Citation\_Abbreviation:*

O:\GIS Distribution\Shapefiles\Hydrography 24k\Hydro24k\_polys

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* G-polygon

*Point\_and\_Vector\_Object\_Count:* 0

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Map\_Projection:*

*Map\_Projection\_Name:* Lambert Conformal Conic

*Lambert\_Conformal\_Conic:*

*Standard\_Parallel:* 34.333333

*Standard\_Parallel:* 36.166667

*Longitude\_of\_Central\_Meridian:* -79.000000

*Latitude\_of\_Projection\_Origin:* 33.750000

*False\_Easting:* 2000000.002617

*False\_Northing:* 0.000000

*Planar\_Coordinate\_Information:*

*Planar\_Coordinate\_Encoding\_Method:* coordinate pair

*Coordinate\_Representation:*

*Abscissa\_Resolution:* 0.000000

*Ordinate\_Resolution:* 0.000000

*Planar\_Distance\_Units:* survey feet

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* North American Datum of 1983

*Ellipsoid\_Name:* Geodetic Reference System 80

*Semi-major\_Axis:* 6378137.000000

*Denominator\_of\_Flattening\_Ratio:* 298.257222

*Vertical\_Coordinate\_System\_Definition:*

*Altitude\_System\_Definition:*

*Altitude\_Resolution:* 0.000010

*Altitude\_Encoding\_Method:* Explicit elevation coordinate included with horizontal coordinates

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*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* Hydro24k\_polys

*Attribute:*

*Attribute\_Label:* Shape\_Area

*Attribute\_Definition:*

Area of feature in internal units squared.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Positive real numbers that are automatically generated.

*Attribute:*

*Attribute\_Label:* Shape

*Attribute\_Definition:*

Feature geometry.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

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Coordinates defining the features.

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*Attribute\_Label:* OBJECTID

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*Attribute:*

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*Attribute:*  
    *Attribute\_Label:* RATING\_OTH  
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    *Attribute\_Label:* DESCRIP\_UR  
*Attribute:*  
    *Attribute\_Label:* CGIA\_FMS  
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*Attribute:*  
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            Sequential unique whole numbers that are automatically  
            generated.  
*Attribute:*  
    *Attribute\_Label:* Shape\_Le\_2

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*Distribution\_Information:*  
    *Resource\_Description:* Downloadable Data  
    *Standard\_Order\_Process:*  
        *Digital\_Form:*  
            *Digital\_Transfer\_Information:*  
                *Transfer\_Size:* 0.000

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*Metadata\_Reference\_Information:*  
    *Metadata\_Date:* 20070625  
    *Metadata\_Contact:*  
        *Contact\_Information:*  
            *Contact\_Organization\_Primary:*  
                *Contact\_Organization:* THE LPA GROUP, INC.  
    *Contact\_Address:*  
        *Address\_Type:* mailing and physical address

*Address:*

700 Huger Street

*City:* Columbia

*State\_or\_Province:* SC

*Postal\_Code:* 29201

*Country:* USA

*Contact\_Voice\_Telephone:* (803) 254-2211

*Contact\_Facsimile\_Telephone:* (803) 779-8749

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

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# Lands Managed Conservation Open Space

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### Identification\_Information:

#### Citation:

##### Citation\_Information:

*Originator:* NC Center for Geographic Information and Analysis

*Publication\_Date:* 20020228

##### Title:

Lands Managed Conservation Open Space

*Geospatial\_Data\_Presentation\_Form:* vector digital data

##### Publication\_Information:

*Publication\_Place:* Raleigh, North Carolina

*Publisher:* NC Center for Geographic Information and Analysis

##### Other\_Citation\_Details:

NCCGIA distributes this dataset

*Online\_Linkage:* [\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\LandsManagedConservationOpenSpace\\_polys.shp](\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\LandsManagedConservationOpenSpace_polys.shp)

### Description:

#### Abstract:

This GIS data layer consists of lands managed for conservation and open space based on multiple source layers. This is a composite inventory that integrates digital depictions of lands from multiple sources and resolves boundary discrepancies among sources. Partners in the creation of this data layer included the Department of Environment and Natural Resources (the Division of Parks and Recreation, the Wildlife Resources Commission, the Division of Coastal Management, and the Conservation Tax Credit program), the State Property Office, the Land Trust for North Carolina and its associated land trusts, the Department of Agriculture and Consumer Services, the Clean Water Management Trust Fund, the Conservation Fund, the Nature Conservancy, the US Forest Service, the US Fish and Wildlife Service, the NC GAP Analysis program, and the Triangle J Council of Governments and its associated local governments. The source layers are:

```
>From the NC Corporate Geographic Database:
> State-owned complexes (soc) selected for the following use codes and
> descriptions:
> 1 (Arboretums/Botanical Gardens)
> 5 (Boat Access Sites)
> 12 (Estuarine Sanctuary)
> 19 (Forestry)
> 21 (Game lands)
> 29 (Historic Sites)
> 35 (Wildlife Management Areas)
> 39 (Natural/Historic Preserves)
> 41 (Nursery)
> 43 (Parks/Recreational Areas)
> 46 (Public Beach Access)
> 54 (Submerged Lands)
> 61 (Zoo)
> 62 (OTHER: Div-Name = "ENR PARKS AND RECREATION")
> State Parks (stprk)
> Recreation Projects - Land and Water Conservation Fund (rplwcf)
> Game Lands - Wildlife Resources Commission (gmlwrc) selected for
> ownership = public
> Conservation Tax Credit Properties (ctcp)
```

- > Land Trust Conservation Properties (ltcp)
- > Coastal Reserves (cresb)
- >From project files:
  - > Preserved Farmland - mapped by CGIA from files of the Piedmont Land Conservancy, the Triangle Land Conservancy, and the Land Trust for Central Carolina
  - > Triangle Open Space - compiled by the Triangle J Council of Governments for properties and easements held by local governments and non-profit organizations
  - > US Fish and Wildlife Service Wildlife Refuges - mapped by CGIA from the files of FWS
  - > Clean Water Management Trust Fund Projects - mapped by CGIA from the files of CWMTF Managed Areas - compiled and mapped by the Division of Parks and Recreation, including updates to Federal Land Ownership (flo) from the NC Corporate Geographic Database

Definitions:

"Lands Managed for Conservation and Open Space" are a combination of lands that are permanently protected open space and farmland and other lands that are managed as "open space" as defined by North Carolina General Statute §160A-407 (see below). For example, a wildlife conservation area that is owned by a public or non-profit land managing organization would count as permanently protected open space. Farmland that is preserved under the state's Farmland Preservation Trust Fund would count as permanently protected land. Permanently protected lands purchased or brought under an easement beginning in January 1999 count toward the state's goal of protecting one million acres of open space by 2009-the Million Acre Initiative. In addition, the Lands Managed for Conservation and Open Space database includes state-owned property that is used for recreational open space including areas reserved for boating access.

160A-407. Definitions.

(a) For the purpose of this Part an "open space" or "open area" is any space or area (i) characterized by great natural scenic beauty or (ii) whose existing openness, natural condition, or present state of use, if retained, would enhance the present or potential value of abutting or surrounding urban development, or would maintain or enhance the conservation of natural or scenic resources.

(b) For the purposes of this Part "open space" or "open area" and the "public use and enjoyment" of interests or rights in real property shall also include open space land and open space uses. The term "open space land" means any undeveloped or predominantly undeveloped land in an urban area that has value for one or more of the following purposes: (i) park and recreational purposes, (ii) conservation of land and other natural resources, or (iii) historic or scenic purposes. The term "open space uses" means any use of open space land for (i) park and recreational purposes, (ii) conservation of land and other natural resources, or (iii) historic or scenic purposes. (1963, c. 1129, s. 7; 1969, c. 35, s. 1; 1971, c. 698, s. 1.)

Lands Managed for Conservation and Open Space encompass many land categories and purposes: including but not limited to:

- >Parks and Greenways
- >Natural Hazard Mitigation ("buy-out" properties)
- >Watershed Protection
- >Farmland Preservation
- >Cultural and Historic Lands
- >State Park
- >State Recreation Area
- >State Natural Area
- >State Nature Preserve
- >State Lake
- >State Historic Site
- >State Gamelands
- >State Coastal Reserve
- >>Submerged Lands
- >>Public Beach & Coastal Water Access
- >NC Wetlands Restoration Program
- >Conservation Reserve Enhancement Program

>National Wildlife Refuge  
>National Forest, National Park  
>NRCS Wetlands Reserve  
>Other Nature Preserves  
>  
>Exclusions:

Not all land that has recreational, historic, scenic and natural resource value is defined as "open space and preserved farmland" for this project. The Lands Managed for Conservation and Open Space database does NOT include privately owned green spaces, homeowner association green spaces, public leases of private land, school yards, university and college campus land, athletic fields, golf courses, utility-owned land, privately owned forests, prison property, university campuses, research farms or military bases. Private land that is leased or managed by the state for gameland reserves is not included in the database and does not count toward the Million Acre goal. These types of property all have value as areas that are free of buildings and parking lots, but they lack the permanency and purposes required for this project's working definitions.

*Purpose:*

These data were created for the Farmland Preservation Trust Fund and the Million Acre Initiative to establish an inventory of protected lands, open space, and preserved farmland. The goal was to create a database and GIS layer for consistency and completeness. The intended users of these data are state and federal agencies, local governments, land trusts, and other private entities that have an interest in land conservation, open space and farmland preservation. Planners, land managers, and trust funds, in particular, are in need of comprehensive data for decision-making.

*Supplemental\_Information:*

>system filename : lmcos file size = 10.28 mb  
>  
>Revisions and updates to this layer include:  
>2) filename: lmcos202 The 2/28/02 version update:  
>A) Addition of the Lampe-Woodard Tract (Pamlico County easement  
>managed by Piedmont Land Conservancy).  
>B) Addition of the Duncan Hunt Club Tract (Hyde County easement  
>managed by Land Trust for Central NC).  
>C) Boundary correction for Lake Waccamaw National Wildlife Refuge.  
>1) filename: lmcos801 The 8/30/01 version was the first verion  
>of this data.

*Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* REQUIRED: The year (and optionally month, or month and day) for which the data set corresponds to the ground.

*Currentness\_Reference:*

Data creation and revision dates

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* As needed

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -80.046735

*East\_Bounding\_Coordinate:* -79.488300

*North\_Bounding\_Coordinate:* 35.143369

*South\_Bounding\_Coordinate:* 34.868551

*Keywords:*

*Theme:*

*Theme\_Keyword\_Thesaurus:* None

*Theme\_Keyword:* North Carolina

*Theme\_Keyword:* conservation

*Theme\_Keyword:* lands

*Theme\_Keyword:* open space

*Theme\_Keyword:* easement

*Theme\_Keyword:* fee simple

*Theme\_Keyword:* river basin



*Theme\_Keyword:* county  
*Theme\_Keyword:* acres  
*Theme\_Keyword:* steward  
*Theme\_Keyword:* manager  
*Theme\_Keyword:* million acres  
*Theme\_Keyword:* DENR region  
*Theme\_Keyword:* COG region  
*Theme\_Keyword:* farmland preservation  
*Theme\_Keyword:* state park  
*Theme\_Keyword:* gamelands  
*Theme\_Keyword:* wildlife refuge  
*Theme\_Keyword:* coastal reserve  
*Theme\_Keyword:* land trust  
*Theme\_Keyword:* quadrangle  
*Theme\_Keyword:* national forest  
*Theme\_Keyword:* national park

*Place:*

*Place\_Keyword\_Thesaurus:* William S. Powell, The North Carolina GAZETTEER, A Dictionary of Tar Heel Places, (Chapel Hill: University of North Carolina Press), August 1984.

*Place\_Keyword:* North Carolina

*Access\_Constraints:* None

*Use\_Constraints:*

Acknowledgement of products derived from this data set should cite the following: The boundaries of polygons in this data layer may not be consistent with the source data layers, particularly where multiple sources depicted the same property from different primary or secondary sources. Efforts have been made and will continue to be made to improve the boundaries in areas where multiple sources differ. Sources of the Lands for Conservation and Open Space data include data layers in the North Carolina Corporate Geographic Database. Earlier versions of source data sets may exist. The user must be sure to use the appropriate data set for the time period of interest. While efforts have been made to ensure that these data are accurate and reliable within the state of the art, CGIA cannot assume liability for any damages or misrepresentation caused by any inaccuracies in the data or as a result of changes to the data caused by system transfers.

*Point\_of\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* Jeffrey Brown

*Contact\_Organization:* NC Center for Geographic Information and Analysis

*Contact\_Address:*

*Address\_Type:* Mailing and physical address

*Address:*

301 North Wilmington Street, Suite 700

*City:* Raleigh

*State\_or\_Province:* North Carolina

*Postal\_Code:* 27601

*Country:* U.S.A.

*Contact\_Voice\_Telephone:* (919)733-2090

*Contact\_Facsimile\_Telephone:* (919)715-0725

*Contact\_Electronic\_Mail\_Address:* jeff@cgia.state.nc.us

*Hours\_of\_Service:* 8:30 am to 5:30 pm

*Contact\_Instructions:*

Preferred contact is by Electronic\_Mail

*Data\_Set\_Credit:*

>Project funding provided through the North Carolina Department  
>of Agriculture and Consumer Services.  
>Technical assistance provided by the North Carolina Department  
>of Environment and Natural Resources and project partners  
>listed below:  
>  
>North Carolina Center for Geographic Information and Analysis  
>301 North Wilmington Street, Suite 700  
>Raleigh, NC 27601-2825  
>  
>Project Partners:  
>The following agencies directly participated in the design,

>creation, and review of this data layer:  
>NC Department of Environment and Natural Resources  
> Division of Parks and Recreation  
> Division of Coastal Management  
> Wildlife Resources Commission  
> Clean Water Management Trust Fund  
>NC Department of Administration  
> State Property Office  
>Center for Geographic Information and Analysis  
>NC Department of Agriculture and Consumer Services  
>NC GAP Analysis, NC State University  
>Conservation Trust for North Carolina  
>Triangle J Council of Governments  
>US Fish and Wildlife Service

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog 9.2.2.1350

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*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

This composite data layer relies on the attribute accuracy of the source files. Attributes were checked for spelling consistency (e.g., managing agency name). Five locational attributes (quad name, county, river basin, DENR region, COG region) were computed by the GIS based on the centroid of each polygon (one-to-one relationship). Acres were computed by the GIS and converted to hectares.

All polygons have a unique "land\_id" computed by the GIS from the metric state plane coordinates (x,y) of the center point (centroid) of the polygon. Land\_id is 12-character string made up of alternating digits from each of six non-decimal x and y characters (with leading zero in y string if necessary to fill six places).

*Logical\_Consistency\_Report:*

Using ESRI's ARC/INFO GIS software, the data set was built for arc and polygon topology using the "build" command. The data set was then cleaned with a fuzzy tolerance of (1 meter.) Topology has not been edited since the last build or clean.

*Completeness\_Report:*

Polygons identified as "in-holdings"-privately held property that is not protected for conservation but is surrounded by protected land-are not included in the final data layer, nor are water areas within protected areas. Some public lands are not included as open space: military bases and facilities, state university campuses, research farms, and highway corridors.

Nearly all of the state-owned lands managed for conservation and open space are included in this dataset. A few properties may have been missed because of coding anomalies in the state-owned complexes file (i.e., this project selected properties based on complex use code and would have missed properties that were not coded as one of the selected code values). For the most part, the state properties are accurate, up-to-date, and complete. Federal lands are mostly complete in this dataset, including recently mapped properties that have permanent wildlife refuge easements. Recent boundary changes may not have been included in this dataset. Note that, like state properties, a selected set of federal properties was consistent with the definition of lands managed for conservation and open space.

The Local government lands managed for conservation and open space are most complete in the Triangle region where the Triangle J Council of Governments has an active "green space" mapping program. In other parts of the state, local government recreation projects and greenways may have been missed in the absence of an intensive local data collection effort.

Private lands are incomplete owing to inconsistent mapping capability among private organizations, though the majority of properties are included in this inventory with credit to the Conservation Fund and the Land Trust for

North Carolina.

*Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy\_Report:*

Boundaries in source files were created at a scale of 1:24,000 in most cases. Local government properties in the Triangle J region were derived from larger scale parcel boundaries in many instances. State property boundaries were created at a scale of 1:24,000 or from multiple sources on a base of 1:24,000.

In some cases, state properties were mapped at a scale of 1:100,000 and not yet edited for a base of 1:24,000. Federal properties vary in scale, from the wildlife refuge areas (1:24,000) to some of the national forest boundaries that were mapped at a scale of 1:100,000 or smaller.

Some land trust and Fish and Wildlife Service property boundaries were hand-drawn on USGS 1:24,000 scale quadrangles and then manually digitized. Easements funded by the Farmland Preservation Trust fund and Conservation Tax Credit properties were generated from deed descriptions and/or survey plats. Unique land identification numbers were created for each property and data attributes were managed in a Microsoft Access database to take advantage of relational database features and accommodate one-to-many relationships. For example, a single property may have multiple funding sources and multiple land categories. Attributes were related to the spatial data by the unique land\_id.

*Lineage:*

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* US Geological Survey

*Publication\_Date:* Unknown

*Title:*

USGS 7.5 Minute series paper maps

*Geospatial\_Data\_Presentation\_Form:* Map

*Publication\_Information:*

*Publication\_Place:* Reston, Virginia

*Publisher:* US Geological Survey

*Other\_Citation\_Details:*

Published map series

*Source\_Scale\_Denominator:* 24000

*Type\_of\_Source\_Media:* Paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 1949

*Ending\_Date:* 1993

*Source\_Currentness\_Reference:*

Publication dates of quadrangles

*Source\_Citation\_Abbreviation:*

None

*Source\_Contribution:*

In some cases, paper maps were used to delineate land trust boundaries

*Process\_Step:*

*Process\_Description:*

CGIA created digital spatial data for properties funded by the Farmland Preservation Trust Fund, and for Wildlife Refuge Area easements based on source materials including manually digitized the paper 1:24,000 USGS quadrangles creating digital files. Processing of these files included: editing linework, edgematching, map-joining, labeling, attributing, running checkplots, submitting questions to source agencies, correcting discrepancies, and creating metadata.

The integration of these new sources and existing sources followed the following procedure:

Using the 13 source files noted above, analysts integrated the polygon coverages into a single coverage, while retaining the original attributes of the sources with source ids retained in the integrated coverage. In many cases, a single property was included in multiple

sources owing to multiple funding sources, management that differs from ownership, and different purposes among sources. Where a property was depicted by multiple sources, analysts selected the most reliable polygon to represent the property based on a rule set that reflected the scale and methods used for mapping each of the sources. In some cases, analysts created additional polygons or deleted small portions of polygons to resolve discrepancies between sources. In many cases, slivers representing the difference between sources were eliminated. The integrated coverage represented each property once with source ids to which source attributes could be joined. More detail on the process is available from CGIA. The integrated coverage is not fully consistent with any one source, but it represents a composite of the various sources.

*Process\_Date:* 2001

*Process\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* Jeffrey Brown

*Contact\_Organization:* NC Center for Geographic Information and Analysis

*Contact\_Position:* Project Manager

*Contact\_Address:*

*Address\_Type:* Mailing and physical address

*Address:*

301 North Wilmington Street, Suite 700

*City:* Raleigh

*State\_or\_Province:* North Carolina

*Postal\_Code:* 27601

*Country:* U.S.A.

*Contact\_Voice\_Telephone:* (919) 733-2090

*Contact\_Facsimile\_Telephone:* (919)715-0725

*Contact\_Electronic\_Mail\_Address:* jeff@cgia.state.nc.us

*Hours\_of\_Service:* 8:30AM - 5:30PM

*Contact\_Instructions:*

Phone or electronic mail

*Process\_Step:*

*Process\_Description:*

Metadata imported.

*Source\_Used\_Citation\_Abbreviation:*

C:\DOCUME~1\david\LOCALS~1\Temp\xml49E.tmp

*Process\_Step:*

*Process\_Description:*

Dataset copied.

*Source\_Used\_Citation\_Abbreviation:*

Server=cgiatdb; Service=5151; Database=onemap\_test; User=sdeadmin; Version=sde.DEFAULT

*Process\_Step:*

*Process\_Description:*

Metadata imported.

*Source\_Used\_Citation\_Abbreviation:*

C:\DOCUME~1\dgrigg\LOCALS~1\Temp\xml9B.tmp

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*Spatial\_Data\_Organization\_Information:*

*Indirect\_Spatial\_Reference\_Method:*

None

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* G-polygon

*Point\_and\_Vector\_Object\_Count:* 0

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* GT-polygon composed of chains

*Point\_and\_Vector\_Object\_Count:* 4845

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Node, planar graph

*Point\_and\_Vector\_Object\_Count:* 6096

*SDTS\_Terms\_Description:*  
*SDTS\_Point\_and\_Vector\_Object\_Type:* Area point  
*Point\_and\_Vector\_Object\_Count:* 4844

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Map\_Projection:*

*Map\_Projection\_Name:* Lambert Conformal Conic

*Lambert\_Conformal\_Conic:*

*Standard\_Parallel:* 34.333333

*Standard\_Parallel:* 36.166667

*Longitude\_of\_Central\_Meridian:* -79.000000

*Latitude\_of\_Projection\_Origin:* 33.750000

*False\_Easting:* 2000000.002617

*False\_Northing:* 0.000000

*Planar\_Coordinate\_Information:*

*Planar\_Coordinate\_Encoding\_Method:* coordinate pair

*Coordinate\_Representation:*

*Abscissa\_Resolution:* 0.000000

*Ordinate\_Resolution:* 0.000000

*Planar\_Distance\_Units:* survey feet

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* North American Datum of 1983

*Ellipsoid\_Name:* Geodetic Reference System 80

*Semi-major\_Axis:* 6378137.000000

*Denominator\_of\_Flattening\_Ratio:* 298.257222

*Vertical\_Coordinate\_System\_Definition:*

*Altitude\_System\_Definition:*

*Altitude\_Resolution:* 1.000000

*Altitude\_Encoding\_Method:* Explicit elevation coordinate included with horizontal coordinates

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*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* LandsManagedConservationOpenSpace\_polys

*Entity\_Type\_Definition:*

Land parcel boundaries for properties managed for conservation and open space purposes by federal, state, local and private organizations in North Carolina

*Entity\_Type\_Definition\_Source:*

NCCGIA

*Attribute:*

*Attribute\_Label:* DENR\_REG

*Attribute\_Definition:*

Regions in North Carolina used by the Department of Environment and Natural Resources for management and operations, based on counties

*Attribute\_Definition\_Source:*

The State of North Carolina

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Region name varies in number of characters.

*Attribute\_Measurement\_Frequency:*

None planned

*Attribute:*

*Attribute\_Label:* POLY\_SOURC

*Attribute\_Definition:*

The abbreviated name of the coverage that the polygon actually came from and whether the boundary was adjusted or not. Ex: 'PRSVFARM', 'PRSVFARM-ADJUSTED'.

*Attribute\_Definition\_Source:*

NCCGIA

*Attribute\_Domain\_Values:*



*Unrepresentable\_Domain:*  
 Polygon source varies in number of characters.  
*Attribute\_Measurement\_Frequency:*  
 None planned  
*Attribute:*  
*Attribute\_Label:* HOLE  
*Attribute\_Definition:*  
 Identifier of hole and water polygons  
*Attribute\_Definition\_Source:*  
 NCCGIA  
*Attribute\_Domain\_Values:*  
*Enumerated\_Domain:*  
*Enumerated\_Domain\_Value:* H  
*Enumerated\_Domain\_Value\_Definition:*  
 Hole polygons  
*Enumerated\_Domain\_Value\_Definition\_Source:*  
 NCCGIA  
*Enumerated\_Domain:*  
*Enumerated\_Domain\_Value:* W  
*Enumerated\_Domain\_Value\_Definition:*  
 Water polygons  
*Enumerated\_Domain\_Value\_Definition\_Source:*  
 NCCGIA  
*Enumerated\_Domain:*  
*Enumerated\_Domain\_Value:* (blank)  
*Enumerated\_Domain\_Value\_Definition:*  
 All other polygons  
*Enumerated\_Domain\_Value\_Definition\_Source:*  
 NCCGIA  
*Attribute\_Measurement\_Frequency:*  
 As needed  
*Attribute:*  
*Attribute\_Label:* LAND\_ID  
*Attribute\_Definition:*  
 Unique identifier for each property, generated from alternating digits  
 of the state plane coordinates (meters) of the centroid of the property  
*Attribute\_Definition\_Source:*  
 NCCGIA  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
 Land ID varies in number of characters.  
*Attribute\_Measurement\_Frequency:*  
 None planned  
*Attribute:*  
*Attribute\_Label:* MANAGEMENT  
*Attribute\_Definition:*  
 The organization that manages the land for conservation and open space  
 purposes, not necessarily the property owner  
*Attribute\_Definition\_Source:*  
 NCCGIA  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
 Management organization varies in number of words.  
*Attribute\_Measurement\_Frequency:*  
 None planned  
*Attribute:*  
*Attribute\_Label:* MA\_CONTACT  
*Attribute\_Definition:*  
 Contact person for the managing organization  
*Attribute\_Definition\_Source:*  
 NCCGIA  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
 Management contact varies in number of characters.  
*Attribute\_Measurement\_Frequency:*  
 None planned  
*Attribute:*

*Attribute\_Label:* MA\_EMAIL  
*Attribute\_Definition:*  
Managing organization contact email  
*Attribute\_Definition\_Source:*  
NCCGIA  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Management email varies in number of characters.  
*Attribute\_Measurement\_Frequency:*  
None planned

*Attribute:*  
*Attribute\_Label:* OWNER  
*Attribute\_Definition:*  
Owner name, the organization that owns the property or is responsible for the conservation easement of a privately held property  
*Attribute\_Definition\_Source:*  
NCCGIA  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Owner name varies in number of words.  
*Attribute\_Measurement\_Frequency:*  
None planned

*Attribute:*  
*Attribute\_Label:* OWNER\_TYPE  
*Attribute\_Definition:*  
Type of owner: federal, state, county , municipal, city/county, other public, land trust, conservation group, or other non-profit  
*Attribute\_Definition\_Source:*  
NCCGIA  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Owner type varies in number of characters.  
*Attribute\_Measurement\_Frequency:*  
None planned

*Attribute:*  
*Attribute\_Label:* TRANS\_TYPE  
*Attribute\_Definition:*  
Transaction type that brought the property into public ownership or responsibility: permanent easement, fee simple purchase, donation or not sure (many public properties have been held by the public for many years and would require research to determine the transaction type)  
*Attribute\_Definition\_Source:*  
NCCGIA  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Transaction type varies in number of words.  
*Attribute\_Measurement\_Frequency:*  
None planned

*Attribute:*  
*Attribute\_Label:* AREA\_NAME  
*Attribute\_Definition:*  
The common name for the property such as "Lake Logan" or "WRC Sandhills Gameland" or simply "Farm"  
*Attribute\_Definition\_Source:*  
NCCGIA  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Area name varies in number of words.  
*Attribute\_Measurement\_Frequency:*  
None planned

*Attribute:*  
*Attribute\_Label:* MAP\_SCALE  
*Attribute\_Definition:*  
Base scale used for creating polygons, or the scale of the map source(s)  
*Attribute\_Definition\_Source:*  
NCCGIA

*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Map scale varies in number of characters.  
*Attribute\_Measurement\_Frequency:*  
None planned

*Attribute:*

*Attribute\_Label:* MA\_PHONE  
*Attribute\_Definition:*  
Managing organization phone number  
*Attribute\_Definition\_Source:*  
NCCGIA  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Management phone number varies in number of characters.  
*Attribute\_Measurement\_Frequency:*  
None planned

*Attribute:*

*Attribute\_Label:* MAP\_SOURCE  
*Attribute\_Definition:*  
Source materials or source agency for polygons  
*Attribute\_Definition\_Source:*  
NCCGIA  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Map source varies in number of words.  
*Attribute\_Measurement\_Frequency:*  
None planned

*Attribute:*

*Attribute\_Label:* TRANS\_YR  
*Attribute\_Definition:*  
Year of transaction  
*Attribute\_Definition\_Source:*  
NCCGIA  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Year varies in number of characters.  
*Attribute\_Measurement\_Frequency:*  
None planned

*Attribute:*

*Attribute\_Label:* MILLION\_AC  
*Attribute\_Definition:*  
Qualifies toward the goal of one million acres of additional open space 1999-2009 - Determined by the year of transaction (starting in January 1999)  
*Attribute\_Definition\_Source:*  
NCCGIA  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Qualifier varies in number of words.  
*Attribute\_Measurement\_Frequency:*  
None planned

*Attribute:*

*Attribute\_Label:* PUB\_ACCESS  
*Attribute\_Definition:*  
Public access to the property: yes, no or conditional  
*Attribute\_Definition\_Source:*  
NCCGIA  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Public access in number of characters.  
*Attribute\_Measurement\_Frequency:*  
None planned

*Attribute:*

*Attribute\_Label:* ACRES  
*Attribute\_Definition:*  
Acres per polygon (this is recalculated after the file is changed)

*Attribute\_Definition\_Source:*  
Software computed  
*Attribute\_Domain\_Values:*  
*Range\_Domain:*  
*Range\_Domain\_Minimum:* 0.003491  
*Range\_Domain\_Maximum:* 279,766.281250  
*Attribute\_Measurement\_Frequency:*  
As needed

*Attribute:*  
*Attribute\_Label:* COUNTY  
*Attribute\_Definition:*  
Name of county containing the center point of the land parcel  
*Attribute\_Definition\_Source:*  
The State of North Carolina  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
County name varies in number of characters.  
*Attribute\_Measurement\_Frequency:*  
None planned

*Attribute:*  
*Attribute\_Label:* HECTARES  
*Attribute\_Definition:*  
Hectares per polygon (this is recalculated after the file is changed)  
*Attribute\_Definition\_Source:*  
Software computed  
*Attribute\_Domain\_Values:*  
*Range\_Domain:*  
*Range\_Domain\_Minimum:* 0.001413  
*Range\_Domain\_Maximum:* 113,217.859375  
*Attribute\_Measurement\_Frequency:*  
As needed

*Attribute:*  
*Attribute\_Label:* RIV\_BASIN  
*Attribute\_Definition:*  
Name of the major river basin containing the center point of the parcel  
*Attribute\_Definition\_Source:*  
NC DENR-Div of Water Quality, Water Quality Planning Section  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
River basin names vary in length and number of words.  
*Attribute\_Measurement\_Frequency:*  
None planned

*Attribute:*  
*Attribute\_Label:* COG  
*Attribute\_Definition:*  
Regions defined by lead regional organizations (Councils of Government) in North Carolina, based on counties (regions have letter designations, L, J, B, etc)  
*Attribute\_Definition\_Source:*  
The State of North Carolina  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
COG region varies in number of characters.  
*Attribute\_Measurement\_Frequency:*  
None planned

*Attribute:*  
*Attribute\_Label:* USGS\_QUAD  
*Attribute\_Definition:*  
Name of the 1:24,000-scale quad containing the center point of the parcel  
*Attribute\_Definition\_Source:*  
USGS  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Quad names vary in length and number of words.  
*Attribute\_Measurement\_Frequency:*  
None planned

*Attribute:*

*Attribute\_Label:* SHAPE

*Attribute\_Definition:*

Feature geometry.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Coordinates defining the features.

*Attribute:*

*Attribute\_Label:* Shape

*Attribute\_Definition:*

Feature geometry.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Coordinates defining the features.

*Attribute:*

*Attribute\_Label:* MA\_TYPE

*Attribute\_Definition:*

Type of managing organization: federal, state, county , municipal, city/county, other public, land trust, conservation group, or other non-profit

*Attribute\_Definition\_Source:*

NCCGIA

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Management type varies in number of words.

*Attribute\_Measurement\_Frequency:*

None planned

*Attribute:*

*Attribute\_Label:* OrigID

*Attribute:*

*Attribute\_Label:* SourceFile

*Attribute:*

*Attribute\_Label:* Shape\_Area

*Attribute\_Definition:*

Area of feature in internal units squared.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Positive real numbers that are automatically generated.

*Attribute:*

*Attribute\_Label:* Shape\_Leng

*Attribute:*

*Attribute\_Label:* Shape\_Le\_1

*Attribute:*

*Attribute\_Label:* FID

*Attribute\_Definition:*

Internal feature number.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Sequential unique whole numbers that are automatically generated.

*Attribute:*

*Attribute\_Label:* Shape\_Le\_2

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* Lands Managed for Conservation and Open Space

*Entity\_Type\_Definition:*

Land parcel boundaries for properties managed for conservation and open space

*Entity\_Type\_Definition\_Source:*

NCCGIA

*Attribute:*

*Attribute\_Label:* FNODE#



*Attribute\_Definition:*  
 From-node identifier of linear feature  
*Attribute\_Definition\_Source:*  
 Software computed  
*Attribute\_Domain\_Values:*  
*Range\_Domain:*  
*Range\_Domain\_Minimum:* 1  
*Range\_Domain\_Maximum:* 6,096  
*Attribute\_Measurement\_Frequency:*  
 None planned

*Attribute:*  
*Attribute\_Label:* TNODE#  
*Attribute\_Definition:*  
 To-node identifier of linear feature  
*Attribute\_Definition\_Source:*  
 Software computed  
*Attribute\_Domain\_Values:*  
*Range\_Domain:*  
*Range\_Domain\_Minimum:* 1  
*Range\_Domain\_Maximum:* 6,096  
*Attribute\_Measurement\_Frequency:*  
 None planned

*Attribute:*  
*Attribute\_Label:* LPOLY#  
*Attribute\_Definition:*  
 Internal number of poly to left of arc  
*Attribute\_Definition\_Source:*  
 Software computed  
*Attribute\_Domain\_Values:*  
*Range\_Domain:*  
*Range\_Domain\_Minimum:* 1  
*Range\_Domain\_Maximum:* 4,845  
*Attribute\_Measurement\_Frequency:*  
 None planned

*Attribute:*  
*Attribute\_Label:* RPOLY#  
*Attribute\_Definition:*  
 Internal number of poly to right of arc  
*Attribute\_Definition\_Source:*  
 Software computed  
*Attribute\_Domain\_Values:*  
*Range\_Domain:*  
*Range\_Domain\_Minimum:* 1  
*Range\_Domain\_Maximum:* 4,845  
*Attribute\_Measurement\_Frequency:*  
 None planned

*Attribute:*  
*Attribute\_Label:* LENGTH  
*Attribute\_Definition:*  
 Length of arc in coverage units  
*Attribute\_Definition\_Source:*  
 Software computed  
*Attribute\_Domain\_Values:*  
*Range\_Domain:*  
*Range\_Domain\_Minimum:* 0.789  
*Range\_Domain\_Maximum:* 153,307.937  
*Attribute\_Units\_of\_Measure:* meters  
*Attribute\_Measurement\_Resolution:* 10.0  
*Attribute\_Measurement\_Frequency:*  
 As needed

*Attribute:*  
*Attribute\_Label:* LMCOS#  
*Attribute\_Definition:*  
 Internal feature number  
*Attribute\_Definition\_Source:*  
 Software computed  
*Attribute\_Domain\_Values:*



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>Coverage
>57 CWMTF                4    4    B    -    ID from CGIA's Clean Water
>Management Trust Fund Coverage
>61 FWSEASE              4    4    B    -    ID from Fish & Wildlife Service
>Easements Coverage
>65 FMA                  4    4    B    -    ID from Federally Managed Lands
>Coverage
>69 POLY_SOURC           50   50    C    -    Polygon source
>119 HOLE                 1    1    C    -    Identifier of hole and water
>polygons
>120 LAND_ID             12   12    C    -    Unique identifier for each property
>132 MANAGEMENT          75   75    C    -    Management organization
>207 MA_CONTACT          25   25    C    -    Management contact
>232 MA_TYPE              30   30    C    -    Management type
>262 MA_PHONE            30   30    C    -    Management phone
>292 MA_EMAIL            50   50    C    -    Management email
>342 OWNER               75   75    C    -    Owner name
>417 OWNER_TYPE         30   30    C    -    Owner type
>447 TRANS_TYPE          20   20    C    -    Transaction type
>467 AREA_NAME           50   50    C    -    Area name
>517 MAP_SCALE           80   80    C    -    Map scale
>597 MAP_SOURCE          35   35    C    -    Map source
>632 TRANS_YR            8    8    C    -    Year of transaction
>640 MILLION_AC          50   50    C    -    Million acre qualifier
>690 PUB_ACCESS          15   15    C    -    Public access
>705 ACRES                8    16    F    6    Acres per polygon
>713 COUNTY              50   50    C    -    County name
>763 HECTARES             8    16    F    6    Hectares per polygon
>771 RIV_BASIN           50   50    C    -    River basin name
>821 DENR_REG            50   50    C    -    DENR region
>871 COG                  50   50    C    -    Council of Governments region
>921 USGS_QUAD           80   80    C    -    USGS 1:24,000-scale quad name
>
>MILACRE.AAT Arc Attribute Table
>COLUMN ITEM NAME      WIDTH OUTPUT TYPE DEC DESCRIPTION
>1 FNODE#              4    5    B    -    From-node id of linear feature
>5 TNODE#              4    5    B    -    To-node id of linear feature
>9 LPOLY#              4    5    B    -    Left-side polygon id of linear feature
>13 RPOLY#             4    5    B    -    Right-side polygon id of linear feature
>17 LENGTH             4   12    F    3    Length of linear feature in meters
>21 LMCOS#             4    5    B    -    Internal id number
>25 LMCOS-ID           4    5    B    -    Internal id number

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*Entity\_and\_Attribute\_Detail\_Citation:*  
None

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*Distribution\_Information:*

*Distributor:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NC Center for Geographic Information and Analysis

*Contact\_Position:* Production Services

*Contact\_Address:*

*Address\_Type:* Mailing and physical address

*Address:*

301 North Wilmington Street, Suite 700

*City:* Raleigh

*State\_or\_Province:* North Carolina

*Postal\_Code:* 27601-2825

*Country:* USA

*Contact\_Voice\_Telephone:* (919) 733-2090

*Contact\_Facsimile\_Telephone:* (919) 715-0725

*Contact\_Electronic\_Mail\_Address:* dataq@cgia.state.nc.us

*Hours\_of\_Service:* 8:30AM - 5:30PM

*Contact\_Instructions:*

Phone and electronic mail preferred

For current price information use a web browser:

COST INFORMATION - <http://www.cgia.state.nc.us/cost.html>

*Resource\_Description:* Lands Managed for Conservation and Open Space

*Distribution\_Liability:*

NCCGIA is charged with the development and maintenance of the State's corporate geographic database and, in cooperation with other mapping organizations, is committed to offering its users accurate, useful, and current information about the state. Although every effort has been made to ensure the accuracy of information, errors and conditions originating from physical sources used to develop the corporate database may be reflected in the data supplied. The client must be aware of data conditions and bear responsibility for the appropriate use of the information with respect to possible errors, original map scale, collection methodology, currency of data, and other conditions specific to certain data. NCCGIA does not support secondary distribution of this data. The use of trade names or commercial products does not constitute their endorsement by the NCCGIA or North Carolina State Government.

*Standard\_Order\_Process:*

*Non-digital\_Form:*

FOR DIGITAL OR NON-DIGITAL DATA, Contact NC CGIA, Data Distribution to order data, Phone 919.733.2090 ... Email [dataq@cgia.state.nc.us](mailto:dataq@cgia.state.nc.us) ... Web Page order form <http://www.cgia.state.nc.us/cgdb/index.html>

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Transfer\_Size:* 0.000

*Fees:* For current FORMAT/MEDIA INFORMATION, use a web browser: <http://www.cgia.state.nc.us/cost.html> or phone NC CGIA Data Distribution 919.733.2090

*Custom\_Order\_Process:*

Data creation and large data analysis jobs contact Database Administration P:(919)733-2090. All data is available through standard ordering procedures on a cost recovery basis.

*Technical\_Prerequisites:*

All formats supplied are created using ARC/INFO GIS software on Unix workstations. Other formats are available. Format compatibility is the user's responsibility. For more information on formats and media, use a web browser: FORMAT/MEDIA INFORMATION - <http://www.cgia.state.nc.us/cost.html>

*Available\_Time\_Period:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 199208

*Ending\_Date:* Present

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20070625

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* North Carolina Center for Geographic Information and Analysis

*Contact\_Person:* REQUIRED: The person responsible for the metadata information.

*Contact\_Position:* Database Management

*Contact\_Address:*

*Address\_Type:* Mailing and physical address

*Address:*

301 North Wilmington Street, Suite 700

*City:* Raleigh

*State\_or\_Province:* North Carolina

*Postal\_Code:* 27601-2825

*Country:* USA

*Contact\_Voice\_Telephone:* (919) 733-2090

*Contact\_Facsimile\_Telephone:* (919) 715-0725

*Contact\_Electronic\_Mail\_Address:* [dataq@cgia.state.nc.us](mailto:dataq@cgia.state.nc.us)

*Hours\_of\_Service:* 8:30AM - 5:30PM

*Contact\_Instructions:*

Phone and electronic mail preferred

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time

*Metadata\_Access\_Constraints:* None

*Metadata\_Use\_Constraints:*

This metadata file is to accompany the data set identified and received from NCCGIA. NCCGIA does not support secondary distribution. If this data file was received from anyone besides NCCGIA, this metadata file and the data set it describes may contain discrepancies.

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

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# Managed Areas

## Metadata:

- [Identification Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

*Originator:* North Carolina Natural Heritage Program

*Publication\_Date:* March 2005

#### *Title:*

Managed Areas

*Geospatial\_Data\_Presentation\_Form:* vector digital data

*Online\_Linkage:* [\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\ManagedAreas\\_polys.shp](\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\ManagedAreas_polys.shp)

### *Description:*

#### *Abstract:*

GIS layer documenting public lands of conservation interest and private nature preserves.

### *Time\_Period\_of\_Content:*

#### *Time\_Period\_Information:*

##### *Single\_Date/Time:*

*Calendar\_Date:* March 2005

*Time of Day:* unknown

#### *Currentness\_Reference:*

publication date

### *Status:*

*Maintenance\_and\_Update\_Frequency:* Unknown

### *Spatial\_Domain:*

#### *Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -80.046735

*East\_Bounding\_Coordinate:* -79.458233

*North\_Bounding\_Coordinate:* 35.143487

*South\_Bounding\_Coordinate:* 34.868551

### *Keywords:*

#### *Theme:*

*Access\_Constraints:* Permission from the North Carolina Natural Heritage Program is required.

*Use\_Constraints:*

Permission from the North Carolina Natural Heritage Program is required.

*Point\_of\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* John Finnegan

*Contact\_Organization:* North Carolina Natural Heritage Program

*Contact\_Position:* Data Systems Manager

*Contact\_Address:*

*Address\_Type:* mailing address

*Address:*

1601 MSC

*City:* Raleigh

*State\_or\_Province:* NC

*Postal\_Code:* 27699

*Country:* USA

*Contact\_Voice\_Telephone:* (919) 715-8702

*Contact\_Facsimile\_Telephone:* (919) 715-3085

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog 9.2.2.1350

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* G-polygon

*Point\_and\_Vector\_Object\_Count:* 0

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Map\_Projection:*

*Map\_Projection\_Name:* Lambert Conformal Conic

*Lambert\_Conformal\_Conic:*

*Standard\_Parallel:* 34.333333

*Standard\_Parallel:* 36.166667

*Longitude\_of\_Central\_Meridian:* -79.000000

*Latitude\_of\_Projection\_Origin:* 33.750000

*False\_Easting:* 2000000.002617

*False\_Northing:* 0.000000

*Planar\_Coordinate\_Information:*

*Planar\_Coordinate\_Encoding\_Method:* coordinate pair

*Coordinate\_Representation:*

*Abscissa\_Resolution:* 0.000000

*Ordinate\_Resolution:* 0.000000

*Planar\_Distance\_Units:* survey feet

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* North American Datum of 1983

*Ellipsoid\_Name:* Geodetic Reference System 80

*Semi-major\_Axis:* 6378137.000000

*Denominator\_of\_Flattening\_Ratio:* 298.257222

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*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* ManagedAreas\_polys

*Attribute:*

*Attribute\_Label:* Shape\_Area

*Attribute\_Definition:*

Area of feature in internal units squared.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Positive real numbers that are automatically generated.

*Attribute:*

*Attribute\_Label:* Shape

*Attribute\_Definition:*

Feature geometry.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Coordinates defining the features.

*Attribute:*

*Attribute\_Label:* MA\_ID

*Attribute:*

*Attribute\_Label:* ACRES

*Attribute:*

*Attribute\_Label:* MA\_NAME

*Attribute:*

*Attribute\_Label:* OWNER

*Attribute:*

*Attribute\_Label:* OWNER\_TYPE

*Attribute:*

*Attribute\_Label:* Shape\_Leng

*Attribute:*

*Attribute\_Label:* COMMENTS

*Attribute:*

*Attribute\_Label:* FID

*Attribute\_Definition:*

Internal feature number.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Sequential unique whole numbers that are automatically generated.

*Attribute:*

*Attribute\_Label:* Shape\_Le\_1

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*Distribution\_Information:*

*Resource\_Description:* Downloadable Data

*Standard\_Order\_Process:*

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Transfer\_Size:* 0.000

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20070625

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* THE LPA GROUP, INC.

*Contact\_Address:*

*Address\_Type:* mailing and physical address

*Address:*

700 Huger Street

*City:* Columbia

*State\_or\_Province:* SC

*Postal\_Code:* 29201

*Country:* USA

*Contact\_Voice\_Telephone:* (803) 254-2211

*Contact\_Facsimile\_Telephone:* (803) 779-8749

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>  
*Profile\_Name:* ESRI Metadata Profile

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# Natural Heritage Element Occurrence - Arc

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

*Originator:* North Carolina Natural Heritage Program

*Publication\_Date:* April 2005

##### *Title:*

Natural Heritage Element Occurrence - Arc

*Geospatial\_Data\_Presentation\_Form:* vector digital data

*Online\_Linkage:* [\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\nheo\\_In.shp](\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\nheo_In.shp)

### *Description:*

#### *Abstract:*

GIS layer identifying locations of rare and endangered plant and animal species, occurrences of exemplary or unique natural communities, and important animal assemblages.

### *Time\_Period\_of\_Content:*

#### *Time\_Period\_Information:*

##### *Single\_Date/Time:*

*Calendar\_Date:* April 2005

*Time of Day:* unknown

#### *Currentness\_Reference:*

publication date

### *Status:*

*Progress:* In work

*Maintenance\_and\_Update\_Frequency:* Continually

### *Spatial\_Domain:*

#### *Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -79.488250

*East\_Bounding\_Coordinate:* -79.486472

*North\_Bounding\_Coordinate:* 35.032986

*South\_Bounding\_Coordinate:* 35.032464

### *Keywords:*

*Theme:*

*Access\_Constraints:* Permission from the North Carolina Natural Heritage Program is required.

*Use\_Constraints:*

Permission from the North Carolina Natural Heritage Program is required.

*Point\_of\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* John Finnegan

*Contact\_Organization:* North Carolina Natural Heritage Program

*Contact\_Position:* Data Systems Manager

*Contact\_Address:*

*Address\_Type:* mailing address

*Address:*

1601 MSC

*City:* Raleigh

*State\_or\_Province:* NC

*Postal\_Code:* 27699

*Country:* USA

*Contact\_Voice\_Telephone:* (919) 715-8702

*Contact\_Facsimile\_Telephone:* (919) 715-3085

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog 9.2.2.1350

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*Data\_Quality\_Information:*

*Lineage:*

*Process\_Step:*

*Process\_Description:*

Metadata imported.

*Source\_Used\_Citation\_Abbreviation:*

C:\DOCUME~1\dgrigg\LOCALS~1\Temp\xml2C.tmp

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* String

*Point\_and\_Vector\_Object\_Count:* 0

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Grid\_Coordinate\_System:*

*Grid\_Coordinate\_System\_Name:* State Plane Coordinate System 1983

*State\_Plane\_Coordinate\_System:*

*SPCS\_Zone\_Identifier:* 3200

*Lambert\_Conformal\_Conic:*

*Standard\_Parallel:* 34.333333

*Standard\_Parallel:* 36.166667

*Longitude\_of\_Central\_Meridian:* -79.000000

*Latitude\_of\_Projection\_Origin:* 33.750000

*False\_Easting:* 609601.220000

*False\_Northing:* 0.000000

*Planar\_Coordinate\_Information:*

*Planar\_Coordinate\_Encoding\_Method:* coordinate pair

*Coordinate\_Representation:*

*Abscissa\_Resolution:* 0.000000

*Ordinate\_Resolution:* 0.000000

*Planar\_Distance\_Units:* meters

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* North American Datum of 1983

*Ellipsoid\_Name:* Geodetic Reference System 80

*Semi-major\_Axis:* 6378137.000000

*Denominator\_of\_Flattening\_Ratio:* 298.257222

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*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* nheo\_ln

*Attribute:*

*Attribute\_Label:* Shape

*Attribute\_Definition:*

Feature geometry.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Coordinates defining the features.

*Attribute:*

*Attribute\_Label:* SCI\_NAME

*Attribute:*

*Attribute\_Label:* EO\_NUM

*Attribute:*

*Attribute\_Label:* COM\_NAME

*Attribute:*  
    *Attribute\_Label:* LAST\_OBS

*Attribute:*  
    *Attribute\_Label:* EO\_RANK

*Attribute:*  
    *Attribute\_Label:* UNCRT\_DIST

*Attribute:*  
    *Attribute\_Label:* S\_RANK

*Attribute:*  
    *Attribute\_Label:* G\_RANK

*Attribute:*  
    *Attribute\_Label:* STATE\_STAT

*Attribute:*  
    *Attribute\_Label:* FED\_STAT

*Attribute:*  
    *Attribute\_Label:* DATA\_SENS

*Attribute:*  
    *Attribute\_Label:* EO\_STAT

*Attribute:*  
    *Attribute\_Label:* EL\_CLASS

*Attribute:*  
    *Attribute\_Label:* AQUATIC

*Attribute:*  
    *Attribute\_Label:* WETLAND

*Attribute:*  
    *Attribute\_Label:* SHAPE\_ID

*Attribute:*  
    *Attribute\_Label:* SOURCE\_ID

*Attribute:*  
    *Attribute\_Label:* EO\_ID

*Attribute:*  
    *Attribute\_Label:* FID  
    *Attribute\_Definition:*  
        Internal feature number.  
    *Attribute\_Definition\_Source:*  
        ESRI  
    *Attribute\_Domain\_Values:*  
        *Unrepresentable\_Domain:*  
            Sequential unique whole numbers that are automatically  
            generated.

*Attribute:*  
    *Attribute\_Label:* Shape\_Leng

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*Distribution\_Information:*  
    *Resource\_Description:* Downloadable Data

*Standard\_Order\_Process:*  
*Digital\_Form:*  
*Digital\_Transfer\_Information:*  
*Transfer\_Size:* 0.070

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*Metadata\_Reference\_Information:*  
*Metadata\_Date:* 20070625  
*Metadata\_Contact:*  
*Contact\_Information:*  
*Contact\_Organization\_Primary:*  
*Contact\_Organization:* THE LPA GROUP, INC.  
*Contact\_Person:* REQUIRED: The person responsible for the metadata information.  
*Contact\_Address:*  
*Address\_Type:* mailing and physical address  
*Address:*  
700 Huger Street  
*City:* Columbia  
*State\_or\_Province:* SC  
*Postal\_Code:* 29201  
*Country:* USA  
*Contact\_Voice\_Telephone:* (803) 254-2211  
*Contact\_Facsimile\_Telephone:* (803) 779-8749  
*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata  
*Metadata\_Standard\_Version:* FGDC-STD-001-1998  
*Metadata\_Time\_Convention:* local time  
*Metadata\_Extensions:*  
*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>  
*Profile\_Name:* ESRI Metadata Profile  
*Metadata\_Extensions:*  
*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>  
*Profile\_Name:* ESRI Metadata Profile

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# Natural Heritage Element Occurrence - Point

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

*Originator:* North Carolina Natural Heritage Program

*Publication\_Date:* April 2005

##### *Title:*

Natural Heritage Element Occurrence - Point

*Geospatial\_Data\_Presentation\_Form:* vector digital data

*Online\_Linkage:* [\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\nheo\\_pt.shp](\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\nheo_pt.shp)

### *Description:*

#### *Abstract:*

GIS layer identifying locations of rare and endangered plant and animal species, occurrences of exemplary or unique natural communities, and important animal assemblages.

### *Time\_Period\_of\_Content:*

#### *Time\_Period\_Information:*

##### *Single\_Date/Time:*

*Calendar\_Date:* April 2005

*Time of Day:* unknown

#### *Currentness\_Reference:*

publication date

### *Status:*

*Progress:* In work

*Maintenance\_and\_Update\_Frequency:* Continually

### *Spatial\_Domain:*

#### *Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -80.027127

*East\_Bounding\_Coordinate:* -79.459554

*North\_Bounding\_Coordinate:* 35.180561

*South\_Bounding\_Coordinate:* 34.805410

### *Keywords:*

*Theme:*

*Access\_Constraints:* Permission from the North Carolina Natural Heritage Program is required.

*Use\_Constraints:*

Permission from the North Carolina Natural Heritage Program is required.

*Point\_of\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* John Finnegan

*Contact\_Organization:* North Carolina Natural Heritage Program

*Contact\_Position:* Data Systems Manager

*Contact\_Address:*

*Address\_Type:* mailing address

*Address:*

1601 MSC

*City:* Raleigh

*State\_or\_Province:* NC

*Postal\_Code:* 27699

*Country:* USA

*Contact\_Voice\_Telephone:* (919) 715-8702

*Contact\_Facsimile\_Telephone:* (919) 715-3085

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog 9.2.2.1350

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*Data\_Quality\_Information:*

*Lineage:*

*Process\_Step:*

*Process\_Description:*

Metadata imported.

*Source\_Used\_Citation\_Abbreviation:*

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*Process\_Step:*

*Process\_Description:*

Metadata imported.

*Source\_Used\_Citation\_Abbreviation:*

C:\DOCUME~1\dgrigg\LOCALS~1\Temp\xml30.tmp

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type*: Entity point  
*Point\_and\_Vector\_Object\_Count*: 0

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*Spatial\_Reference\_Information*:

*Horizontal\_Coordinate\_System\_Definition*:

*Planar*:

*Grid\_Coordinate\_System*:

*Grid\_Coordinate\_System\_Name*: State Plane Coordinate System 1983

*State\_Plane\_Coordinate\_System*:

*SPCS\_Zone\_Identifier*: 3200

*Lambert\_Conformal\_Conic*:

*Standard\_Parallel*: 34.333333

*Standard\_Parallel*: 36.166667

*Longitude\_of\_Central\_Meridian*: -79.000000

*Latitude\_of\_Projection\_Origin*: 33.750000

*False\_Easting*: 609601.220000

*False\_Northing*: 0.000000

*Planar\_Coordinate\_Information*:

*Planar\_Coordinate\_Encoding\_Method*: coordinate pair

*Coordinate\_Representation*:

*Abscissa\_Resolution*: 0.000000

*Ordinate\_Resolution*: 0.000000

*Planar\_Distance\_Units*: meters

*Geodetic\_Model*:

*Horizontal\_Datum\_Name*: North American Datum of 1983

*Ellipsoid\_Name*: Geodetic Reference System 80

*Semi-major\_Axis*: 6378137.000000

*Denominator\_of\_Flattening\_Ratio*: 298.257222

[Back to Top](#)

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*Entity\_and\_Attribute\_Information*:

*Detailed\_Description*:

*Entity\_Type*:

*Entity\_Type\_Label*: nheo\_pt

*Attribute*:

*Attribute\_Label*: EO\_ID

*Attribute*:

*Attribute\_Label*: Shape

*Attribute\_Definition*:

Feature geometry.

*Attribute\_Definition\_Source*:

ESRI

*Attribute\_Domain\_Values*:

*Unrepresentable\_Domain:*  
Coordinates defining the features.

*Attribute:*

*Attribute\_Label:* SCI\_NAME

*Attribute:*

*Attribute\_Label:* EO\_NUM

*Attribute:*

*Attribute\_Label:* COM\_NAME

*Attribute:*

*Attribute\_Label:* LAST\_OBS

*Attribute:*

*Attribute\_Label:* EO\_RANK

*Attribute:*

*Attribute\_Label:* UNCRT\_DIST

*Attribute:*

*Attribute\_Label:* S\_RANK

*Attribute:*

*Attribute\_Label:* G\_RANK

*Attribute:*

*Attribute\_Label:* STATE\_STAT

*Attribute:*

*Attribute\_Label:* FED\_STAT

*Attribute:*

*Attribute\_Label:* DATA\_SENS

*Attribute:*

*Attribute\_Label:* EO\_STAT

*Attribute:*

*Attribute\_Label:* EL\_CLASS

*Attribute:*

*Attribute\_Label:* AQUATIC

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*Attribute\_Label:* WETLAND

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*Attribute\_Label:* SHAPE\_ID

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*Attribute\_Label:* SOURCE\_ID

*Attribute:*

*Attribute\_Label:* FID

*Attribute\_Definition:*

Internal feature number.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Sequential unique whole numbers that are automatically generated.

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*Distribution\_Information:*

*Resource\_Description:* Downloadable Data

*Standard\_Order\_Process:*

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Transfer\_Size:* 0.070

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20070625

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* THE LPA GROUP, INC.

*Contact\_Address:*

*Address\_Type:* mailing and physical address

*Address:*

700 Huger Street

*City:* Columbia

*State\_or\_Province:* SC

*Postal\_Code:* 29201

*Country:* USA

*Contact\_Voice\_Telephone:* (803) 254-2211

*Contact\_Facsimile\_Telephone:* (803) 779-8749

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

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# Significant Natural Heritage Areas

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

*Originator:* NC DENR, Div. of Parks and Recreation, Natural Heritage Program

*Publication\_Date:* 20070227

##### *Title:*

Significant Natural Heritage Areas

*Geospatial\_Data\_Presentation\_Form:* vector digital data

##### *Publication\_Information:*

*Publication\_Place:* Raleigh, North Carolina

*Publisher:* NC DENR, Div. of Parks and Recreation, Natural Heritage Program

##### *Other\_Citation\_Details:*

NCCGIA distributes this dataset

*Online\_Linkage:* <\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\snha.shp>

### *Description:*

#### *Abstract:*

The North Carolina Department of Environment and Natural Resources, Division of Parks and Recreation, Natural Heritage Program in cooperation with the NC Center for Geographic Information & Analysis, developed the Significant Natural Heritage Areas digital data to determine the areas containing ecologically significant natural communities or rare species.

NOTE: Due to its dynamic nature, this data becomes outdated very quickly. The Natural Heritage Program MUST be contacted before each use of this data set, to ensure data currency. The Natural Heritage Program MUST be contacted in writing prior to distribution or hardcopy output of this data layer. This data covers the state of North Carolina.

#### *Purpose:*

This data was created to assist governmental agencies and others

in making resource management decisions through use of a Geographic Information System (GIS).

*Supplemental\_Information:*

An extensive tabular database is maintained by the Natural Heritage Program. Other data that can be accessed include natural area identification code.

Supplemental materials are also available that indicate the state, national and global status of the rare plants and animals of North Carolina. These publications are available from the NHP and are helpful in understanding each natural heritage site record. (See Cross References)

**NATURAL HERITAGE PROGRAM DATA**

The Natural Heritage Program is the state's most comprehensive source of information on rare and endangered animals and plants, and exemplary natural communities, known collectively as "elements of natural diversity." Since 1976, the program has systematically gathered information on the occurrence and the status of the state's ecological resources. The inventory consists of information compiled from a broad range of sources including herbarium and museum collections, published and unpublished literature, and field surveys by volunteers, contracted workers, and staff. Information from and interpretation of this database for specific sites is available from the Natural Heritage Program. This is generally the preferred method of getting information on elements of natural diversity. The geographic content of the Natural Heritage Program element occurrence database has also been incorporated into the state Center for Geographic Information & Analysis (CGIA) ARC/INFO database where it can be combined with other geographic data for planning and analysis. Users of the data must, however, be aware of the nature and limitations of the data.

**LIMITATIONS OF POLYGON DATA**

The polygon locations contained in the data represent the approximate boundaries of ecologically significant natural areas. The natural areas database contains data from a variety of sources, which vary in the quality of their locational information. Because of uncertainty about the precision and accuracy of source data, polygons anywhere within several miles of a site of interest should be regarded as indicating the need for more information. Probability of effects by a project depends on the actual location and extent of the natural area, on the nature of the species or community it contains, and on the nature of the action being considered. Interpretation of potential effects should be done only by ecologists familiar with the natural area, with the best locational information available.

**LIMITATIONS OF ABSENCE OF DATA**

Although the Natural Heritage Program has conducted numerous

biological inventories and has assembled as much of the secondary source data as possible, the large majority of the state has never been systematically surveyed for significant natural areas. In addition, negative surveys are seldom reported to the Natural Heritage Program and are not recorded. The database reflects only locations where a significant natural area was once known to occur. It does not distinguish between areas known to have no elements and those that have not been checked. The absence of natural areas cannot be taken as an indication of absence of elements or of ecological concerns. Natural Heritage Program biologists are often able to give indications of the potential for concern in unsurveyed areas, and the CGIA map database is not a substitute for this kind of interpretation.

#### DATA CURRENCY

The Natural Heritage Program databases are continually updated as new information is acquired. The locational database at CGIA is updated as needed for applications. Users should determine from CGIA the date of the last update and, if necessary, see that an update is done prior to their application being run. All printed maps from the GIS should be dated. Depending on activity in a given area, a map may quickly become outdated, or may remain current for several years. It is not possible to set a specific expiration date on maps; however, data more than six months old should not be depended on without checking with the Natural Heritage Program.

Only a small portion of the natural areas are monitored on a regular basis. Information in the Natural Heritage Program database represents the occurrence at the last time it was observed. The date of last observation is given in the Natural Heritage Program database but is not included in the CGIA database.

#### ADDITIONAL INFORMATION

Additional information about significant natural heritage areas, and user services are available from the Natural Heritage Program. The basic data are "public records" and are available for inspection on request for reasonable purposes.

Revisions and updates to this layer include:

- 19.) Data updated February 27, 2007.
- 18.) Data updated August 16, 2006.
- 17.) Data updated December 2005.
- 16.) Data updated September 7, 2005.
- 15.) Data updated January 13, 2004.
- 14.) Data updated October 28, 2003.
- 13.) Data updated January 28, 2002.
- 12.) Data updated October 29, 2001.

THIS VERSION NOT RELEASED, JUST ARCHIVED.

- 11.) Data updated January 17, 2001. 1,897 polygons. Arc attributes were dropped since they were only default values.
- 10.) Data updated July 20, 2000. 1,838 polygons.
- 9.) Data updated March 6, 2000. 1,881 polygons.
- 8.) Data updated November 1, 1999. 1,994 polygons.
- 7.) Data Updated May 21, 1999. Data set contains 1,992 polygons.
- 6.) Data updated Feb. 26, 1999. File contains 2,012 polygons.
- 5.) Data updated August 3, 1998 update.  
The August 1998 update to this layer consisted of projecting the data from NAD27 datum, State Plane projection, units of measure feet TO: NAD83 DATUM, State Plane PROJECTION, UNITS OF MEASURE METERS. This was done to comply with the NC Geographic Information Coordinating Council's "Statement of Direction for North Carolina Corporate Geographic Database Horizontal Reference, Datum and Unit of Measure". This reprojecting was done in various ways depending on the data type and content. Vector data was projected using the 'project' command in ESRI's Arc software and topology was cleaned and built based on coverage needs. Raster data was projected using ESRI's Grid module and various steps as applicable.
- 4.) Data updated February 26, 1998. Item PRIORITY changed to SIG in .pat. Item ACRES added to .pat. Item MACROCD changed to MCSITECODE. Arc attribute table (.aat) was dropped. This layer was previously named Natural Areas, nanhp.
- 3.) Data updated October 21, 1996. Areas may have been added, deleted or attributes corrected.
- 2.) Data updated May 20, 1996 release of Natural Areas for statewide North Carolina. This incorporated the previous data, edits, edition and expansion of the coverage area.
- 1.) Data released July 1993. Natural Areas for the APES region. The July 1993 file is the original version of this data and covers only the APES area minus Tyrrell and Dare counties.

*Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 199307

*Ending\_Date:* 20070227

*Currentness\_Reference:*

publication date

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* As needed

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -80.032784

*East\_Bounding\_Coordinate:* -79.457648

*North\_Bounding\_Coordinate:* 35.179302

*South\_Bounding\_Coordinate:* 34.804086

*Keywords:*

*Theme:*

*Theme\_Keyword\_Thesaurus:* None

*Theme\_Keyword:* Natural areas

*Theme\_Keyword:* Rare species

*Theme\_Keyword:* Natural ecosystem

*Theme\_Keyword:* Natural community

*Theme\_Keyword:* Albemarle-Pamlico Estuarine Study

*Theme\_Keyword:* APES

*Theme:*

*Theme\_Keyword\_Thesaurus:* ISO 19115 Topic Category

*Theme\_Keyword:* environment

*Place:*

*Place\_Keyword\_Thesaurus:* William S. Powell, The North Carolina

GAZETTEER, A Dictionary of Tar Heel Places, (Chapel Hill: University of North Carolina Press), August 1984.

*Place\_Keyword:* North Carolina

*Access\_Constraints:* Although more significant ecological features are lost because of ignorance and accident than because of exploitation or intentional destruction, publication of locations of many natural areas increases the risk of deliberate damage to them. If a particular area is of interest, the Natural Heritage Program must be contacted to determine the identity of the area and its significance. There may be a charge for Natural Heritage Program services in providing the data.

*Use\_Constraints:*

These data are intended for research or planning projects that will contribute to better protection for the ecological features involved. Due to its dynamic nature, this data becomes outdated very quickly. The Natural Heritage Program must be contacted before each use of the data set to ensure data currency. The Natural Heritage Program **MUST** be contacted in writing prior to distribution or hardcopy output of this data layer. Acknowledgement of products derived from this dataset should cite the following: The source of the Significant Natural Heritage Areas data is NC OneMap. Earlier versions of this data set may exist. The user must be sure to use the appropriate dataset for the time period of interest. While efforts have been made to ensure that these data are accurate and reliable within the state of the art, CGIA cannot assume liability for any damages or misrepresentation caused by any inaccuracies in the data or as a result of changes to the data caused by system transfers.

*Point\_of\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* John Finnegan



*Contact\_Organization:* NC DENR-Div. of Parks and Recreation,  
Natural Heritage Program  
*Contact\_Position:* Program Head  
*Contact\_Address:*  
*Address\_Type:* Mailing and physical address  
*Address:*  
512 N. Salisbury Street, PO Box 27687  
*City:* Raleigh  
*State\_or\_Province:* North Carolina  
*Postal\_Code:* 27611-7687  
*Country:* U.S.A.  
*Contact\_Voice\_Telephone:* (919) 715-8702  
*Contact\_Facsimile\_Telephone:* (919) 715-3085  
*Hours\_of\_Service:* 8am to 5pm  
*Contact\_Instructions:*  
Preferred contact is by telephone

*Data\_Set\_Credit:*

Division of Parks and Recreation Director, Louis Ledford  
Natural Heritage Program, John Finnegan  
NCCGIA Database Administration, David Giordano

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog  
9.2.2.1350

*Cross\_Reference:*

*Citation\_Information:*

*Originator:* Natural Heritage Program  
*Publication\_Date:* 1990  
*Title:*

County Natural Area Inventories

*Publication\_Information:*

*Publication\_Place:* Raleigh, North Carolina  
*Publisher:* NC DENR-Div. of Parks and Recreation, Natural Heritage  
Program

*Other\_Citation\_Details:*

Available from Natural Heritage Program

*Cross\_Reference:*

*Citation\_Information:*

*Originator:* Natural Heritage Program  
*Publication\_Date:* 19960409  
*Title:*

Natural Heritage Element Occurrence Sites

*Geospatial\_Data\_Presentation\_Form:* Map

*Publication\_Information:*

*Publication\_Place:* Raleigh, North Carolina  
*Publisher:* NC DENR-Div. of Parks and Recreation, Natural Heritage  
Program

*Other\_Citation\_Details:*

Data available through NCCGIA

*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

NC DENR-Div. of Parks and Recreation, Natural Heritage Program provides the Significant Natural Heritage Areas as ARC/INFO export files to NCCGIA. They are imported as ARC/INFO coverages. The data is reviewed by NHP staff.

*Logical\_Consistency\_Report:*

Using ESRI's ARC/INFO GIS software, the data set was built for arc and polygon topology using the "build" command. The data set was then cleaned with a fuzzy tolerance of 1 foot. Topology has not been edited since the last build or clean.

*Completeness\_Report:*

These data represent areas containing ecologically significant natural communities or rare species as identified by NC DENR-Div. of Parks and Recreation, Natural Heritage Program.

*Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy\_Report:*

Natural areas were delineated on 7.5 Minute USGS paper topographic maps which meet National Map Accuracy Standards, using a best estimate with reference to surrounding features.

*Lineage:*

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* NC DENR-Div. of Parks and Recreation, Natural Heritage Program

*Publication\_Date:* 20070227

*Title:*

Significant Natural Heritage Areas

*Geospatial\_Data\_Presentation\_Form:* Map

*Publication\_Information:*

*Publication\_Place:* Raleigh, North Carolina

*Publisher:* NC DENR-Div. of Parks and Recreation, Natural Heritage Program

*Source\_Scale\_Denominator:* 24000

*Type\_of\_Source\_Media:* paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 199307

*Ending\_Date:* 20070227

*Source\_Currentness\_Reference:*

publication date

*Source\_Citation\_Abbreviation:*

None

*Source\_Contribution:*

Locations of ecologically significant natural communities  
or rare species

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* US Geological Survey

*Publication\_Date:* 1990

*Title:*

USGS 7.5 Minute series quadrangles

*Geospatial\_Data\_Presentation\_Form:* Map

*Publication\_Information:*

*Publication\_Place:* Reston, Virginia

*Publisher:* US Geological Survey

*Other\_Citation\_Details:*

Published map series

*Source\_Scale\_Denominator:* 24000

*Type\_of\_Source\_Media:* Paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 1938

*Ending\_Date:* 1990

*Source\_Currentness\_Reference:*

publication date

*Source\_Citation\_Abbreviation:*

None

*Source\_Contribution:*

Paper maps used to plot locations of the  
Significant Natural Heritage Areas

*Process\_Step:*

*Process\_Description:*

Natural Area boundaries were delineated by NHP field biologists. Precision varies. The cartographic method used for the majority of the sites was for the biologist to survey not just the area where the rare species occurred, but the high quality habitat the species may inhabit as well. This area was delineated onto a photocopy of a USGS 1:24,000 topographic map. The delineated map was then brought back to the NHP offices where it was then transferred onto an original USGS paper base map. This map was then digitized by NHP.

*Process\_Date:* 20070227

*Process\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* Linda Pearsall

*Contact\_Organization:* NC DENR-Div. of Parks and Recreation, Natural Heritage Program  
*Contact\_Position:* Program Head  
*Contact\_Address:*  
*Address\_Type:* Physical address  
*Address:*  
512 N. Salisbury Street  
*City:* Raleigh  
*State\_or\_Province:* North Carolina  
*Postal\_Code:* 27611-7687  
*Country:* U.S.A.  
*Contact\_Address:*  
*Address\_Type:* Mailing address  
*Address:*  
PO Box 27687  
*City:* Raleigh  
*State\_or\_Province:* North Carolina  
*Postal\_Code:* 27611-7687  
*Country:* U.S.A.  
*Contact\_Voice\_Telephone:* (919) 715-8697  
*Contact\_Facsimile\_Telephone:* (919) 715-3085  
*Hours\_of\_Service:* 8:00 am to 5:00 pm  
*Contact\_Instructions:*  
Phone or mail

*Process\_Step:*

*Process\_Description:*

CGIA received an Arc/Info shapefile from NHP. The shapefile was then converted to an Arc/Info coverage.

*Process\_Date:* 20070227

*Process\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NC CGIA

*Contact\_Address:*

*Address\_Type:* Physical

*Address:*

301 N. Wilmington Street, Suite 700

*City:* Raleigh

*State\_or\_Province:* North Carolina

*Postal\_Code:* 27601-2825

*Country:* U.S.A.

*Contact\_Address:*

*Address\_Type:* Mailing

*Address:*

20322 Mail Service Center

*City:* Raleigh

*State\_or\_Province:* North Carolina

*Postal\_Code:* 27699

*Country:* U.S.A.  
*Contact\_Voice\_Telephone:* (919) 733-2090  
*Contact\_Facsimile\_Telephone:* (919)715-0725  
*Contact\_Electronic\_Mail\_Address:* dataq@ncmail.net  
*Hours\_of\_Service:* 8am to 5pm  
*Contact\_Instructions:*  
Phone and electronic mail preferred

*Process\_Step:*

*Process\_Description:*

Metadata imported.

*Source\_Used\_Citation\_Abbreviation:*

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*Spatial\_Data\_Organization\_Information:*

*Indirect\_Spatial\_Reference\_Method:*

*\_Method:* Site code and site name

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* G-polygon

*Point\_and\_Vector\_Object\_Count:* 0

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* GT-polygon composed of chains

*Point\_and\_Vector\_Object\_Count:* 5353

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Node, planar graph

*Point\_and\_Vector\_Object\_Count:* 9550

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Area point

*Point\_and\_Vector\_Object\_Count:* 5352

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Grid\_Coordinate\_System:*

*Grid\_Coordinate\_System\_Name:* State Plane Coordinate System 1983

*State\_Plane\_Coordinate\_System:*

*SPCS\_Zone\_Identifier:* 3200

*Lambert\_Conformal\_Conic:*

*Standard\_Parallel:* 34.333333

*Standard\_Parallel:* 36.166667

*Longitude\_of\_Central\_Meridian:* -79.000000



*Latitude\_of\_Projection\_Origin:* 33.750000  
*False\_Easting:* 609601.220000  
*False\_Northing:* 0.000000  
*Planar\_Coordinate\_Information:*  
*Planar\_Coordinate\_Encoding\_Method:* coordinate pair  
*Coordinate\_Representation:*  
*Abscissa\_Resolution:* 0.000000  
*Ordinate\_Resolution:* 0.000000  
*Planar\_Distance\_Units:* meters  
*Geodetic\_Model:*  
*Horizontal\_Datum\_Name:* North American Datum of 1983  
*Ellipsoid\_Name:* Geodetic Reference System 80  
*Semi-major\_Axis:* 6378137.000000  
*Denominator\_of\_Flattening\_Ratio:* 298.257222

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*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* snha

*Entity\_Type\_Definition:*

Areas containing ecologically significant natural communities or rare species

*Entity\_Type\_Definition\_Source:*

NC DENR-Div of Parks and Recreation, Natural Heritage Program

*Attribute:*

*Attribute\_Label:* ACRES

*Attribute\_Definition:*

Acreage of polygon.

*Attribute\_Definition\_Source:*

Software computed.

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Values differ by polygon.

*Attribute:*

*Attribute\_Label:* SIG

*Attribute\_Definition:*

Significance of the site.

*Attribute\_Definition\_Source:*

Natural Heritage Program

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* A

*Enumerated\_Domain\_Value\_Definition:*

Areas that are of national significance

*Enumerated\_Domain\_Value\_Definition\_Source:*  
NC DENR-Div of Parks and Recreation  
Natural Heritage Program

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* B

*Enumerated\_Domain\_Value\_Definition:*  
Areas that are of state  
significance

*Enumerated\_Domain\_Value\_Definition\_Source:*  
NC DENR-Div of Parks and Recreation  
Natural Heritage Program

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* C

*Enumerated\_Domain\_Value\_Definition:*  
Areas that are of regional  
significance

*Enumerated\_Domain\_Value\_Definition\_Source:*  
NC DENR-Div of Parks and Recreation  
Natural Heritage Program

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* D

*Enumerated\_Domain\_Value\_Definition:*  
Areas that are of local  
significance

*Enumerated\_Domain\_Value\_Definition\_Source:*  
NC DENR-Div of Parks and Recreation  
Natural Heritage Program

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* <BLANK>

*Enumerated\_Domain\_Value\_Definition:*  
Areas that are not ecologically  
significant

*Enumerated\_Domain\_Value\_Definition\_Source:*  
NC DENR-Div of Parks and Recreation  
Natural Heritage Program

*Attribute:*

*Attribute\_Label:* TYPE

*Attribute\_Definition:*

Distinguishes high quality from lesser  
quality sections of site.

*Attribute\_Definition\_Source:*

Natural Heritage Program

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* BUFFER

*Enumerated\_Domain\_Value\_Definition:*  
Section is of lesser quality than  
PRIMARY or SECONDARY

*Enumerated\_Domain\_Value\_Definition\_Source:*  
NC DENR-Div of Parks and Recreation, Natural  
Heritage Program

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* PRIMARY

*Enumerated\_Domain\_Value\_Definition:*  
Section is of high quality

*Enumerated\_Domain\_Value\_Definition\_Source:*  
NC DENR-Div of Parks and Recreation, Natural  
Heritage Program

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* SECONDARY

*Enumerated\_Domain\_Value\_Definition:*  
Section is of lesser quality than  
PRIMARY

*Enumerated\_Domain\_Value\_Definition\_Source:*  
NC DENR-Div of Parks and Recreation, Natural  
Heritage Program

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* UNDIFFERENTIATED

*Enumerated\_Domain\_Value\_Definition:*  
Section may be of PRIMARY or SECONDARY  
quality

*Enumerated\_Domain\_Value\_Definition\_Source:*  
NC DENR-Div of Parks and Recreation, Natural  
Heritage Program

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* <BLANK>

*Enumerated\_Domain\_Value\_Definition:*  
Entire site is either of uniformly high quality  
or primary/secondary boundaries have not been  
differentiated

*Enumerated\_Domain\_Value\_Definition\_Source:*  
NC DENR-Div of Parks and Recreation, Natural  
Heritage Program

*Attribute:*

*Attribute\_Label:* Shape

*Attribute\_Definition:*  
Feature geometry.

*Attribute\_Definition\_Source:*  
ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*  
Coordinates defining the features.

*Attribute:*

*Attribute\_Label:* SITE\_NAME

*Attribute\_Definition:*  
Site name.

*Attribute\_Definition\_Source:*  
Natural Heritage Program  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Names vary.

*Attribute:*  
*Attribute\_Label:* SITE\_ID

*Attribute:*  
*Attribute\_Label:* Shape\_Area  
*Attribute\_Definition:*  
Area of feature in internal units squared.  
*Attribute\_Definition\_Source:*  
ESRI  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Positive real numbers that are automatically generated.

*Attribute:*  
*Attribute\_Label:* OWNER\_ABBR

*Attribute:*  
*Attribute\_Label:* FID  
*Attribute\_Definition:*  
Internal feature number.  
*Attribute\_Definition\_Source:*  
ESRI  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Sequential unique whole numbers that are automatically generated.

*Attribute:*  
*Attribute\_Label:* Shape\_Leng

*Overview\_Description:*

*Entity\_and\_Attribute\_Overview:*  
A polygon coverage depicting areas classified by the Natural Heritage Program as containing ecologically significant natural communities or rare species. The polygon attribute table (PAT) has attribute data including total area in coverage units (square meters), total perimeter (linear meters), polygon internal identification number, polygon user identification number, site type, acres, natural area site name, and significance of natural area.

*Entity\_and\_Attribute\_Detail\_Citation:*  
All items are defined by the Natural Heritage Program and they should be contacted with detailed questions.

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*Distribution\_Information:*  
*Distributor:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NC CGIA

*Contact\_Address:*

*Address\_Type:* Physical

*Address:*

301 N. Wilmington Street, Suite 700

*City:* Raleigh

*State\_or\_Province:* North Carolina

*Postal\_Code:* 27601-2825

*Country:* U.S.A.

*Contact\_Address:*

*Address\_Type:* Mailing

*Address:*

20322 Mail Service Center

*City:* Raleigh

*State\_or\_Province:* North Carolina

*Postal\_Code:* 27699

*Country:* U.S.A.

*Contact\_Voice\_Telephone:* (919) 733-2090

*Contact\_Facsimile\_Telephone:* (919)715-0725

*Contact\_Electronic\_Mail\_Address:* dataq@ncmail.net

*Hours\_of\_Service:* 8am to 5pm

*Contact\_Instructions:*

Phone and electronic mail preferred

*Resource\_Description:* Significant Natural Heritage Areas

*Distribution\_Liability:*

NCCGIA is charged with the development and maintenance of NC OneMap and, in cooperation with other mapping organizations, is committed to offering its users accurate, useful, and current information. Although every effort has been made to ensure the accuracy of information, errors and conditions originating from physical sources used to develop this dataset may be reflected in the data supplied. The user must be aware of possible conditions and bear responsibility for the appropriate use of the information with respect to possible errors, original map scale, collection methodology, currency of data, and other conditions specific to certain data. NCCGIA does not support secondary distribution of this dataset without its current, compliant metadata record. The use of trade names or commercial products does not constitute their endorsement by NCCGIA or North Carolina State Government.

*Standard\_Order\_Process:*

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Format\_Name:* ESRI shapefile (\*.shp)

*Transfer\_Size:* 0.000



*Digital\_Transfer\_Option:*

*Online\_Option:*

*Computer\_Contact\_Information:*

*Network\_Address:*

*Network\_Resource\_Name:* [NC OneMap](#)

*Fees:* None. Download from [www.nconemap.com](http://www.nconemap.com) is free of charge.

*Custom\_Order\_Process:*

Data can be customized on a cost-recovery basis. Contact [dataq@ncmail.net](mailto:dataq@ncmail.net) or 919-733-2090 for more information.

*Technical\_Prerequisites:*

All formats available from [www.nconemap.com](http://www.nconemap.com) are in ESRI shapefile. Other formats are available on a cost-recovery basis - contact [dataq@ncmail.net](mailto:dataq@ncmail.net) or 919.733.2090 for more information. Format compatibility is the user's responsibility.

*Available\_Time\_Period:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 199307

*Ending\_Date:* 20070227

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20070625

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NC CGIA

*Contact\_Person:* REQUIRED: The person responsible for the metadata information.

*Contact\_Address:*

*Address\_Type:* Physical

*Address:*

301 N. Wilmington Street, Suite 700

*City:* Raleigh

*State\_or\_Province:* North Carolina

*Postal\_Code:* 27601-2825

*Country:* U.S.A.

*Contact\_Address:*

*Address\_Type:* Mailing

*Address:*

20322 Mail Service Center

*City:* Raleigh

*State\_or\_Province:* North Carolina

*Postal\_Code:* 27699

*Country:* U.S.A.

*Contact\_Voice\_Telephone:* (919) 733-2090

*Contact\_Facsimile\_Telephone:* (919)715-0725

*Contact\_Electronic\_Mail\_Address:* dataq@ncmail.net

*Hours\_of\_Service:* 8am to 5pm

*Contact\_Instructions:*

Phone and electronic mail preferred

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time

*Metadata\_Access\_Constraints:* None

*Metadata\_Use\_Constraints:*

This metadata file is to accompany the dataset. NCCGIA does not support secondary distribution of this dataset without its current, compliant metadata record. If the dataset described in this metadata record was received from anyone besides NCCGIA, this metadata and the dataset it describes may contain discrepancies.

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

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# Wetlands - Hamlet Quad

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

*Originator:* U.S. Fish and Wildlife Service

*Publication\_Date:* 200610

##### *Title:*

Wetlands - Hamlet Quad

*Geospatial\_Data\_Presentation\_Form:* vector digital data

##### *Series\_Information:*

*Series\_Name:* Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington, DC. FWS/OBS-79/31.

##### *Publication\_Information:*

*Publication\_Place:* Washington, D.C.

*Publisher:* U.S. Fish and Wildlife Service, Branch of Habitat Assessment

*Online\_Linkage:* [\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\hamlet\\_p.shp](\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\hamlet_p.shp)

### *Description:*

#### *Abstract:*

This data set represents the extent, approximate location and type of wetlands and deepwater habitats in the conterminous United States. These data delineate the areal extent of wetlands and surface waters as defined by Cowardin et al. (1979).

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 near shore 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.

By policy, the Service also excludes certain types of "farmed wetlands" as may be defined by the Food Security Act or that do not coincide with the Cowardin et al. definition. Contact the Service's Regional Wetland Coordinator for additional information on what types of farmed wetlands are included on wetland maps.

*Purpose:*

The present goal of the Service is to provide the citizens of the United States and its Trust Territories with current geospatially referenced information on the status, extent, characteristics and functions of wetlands, riparian, deepwater and related aquatic habitats in priority areas to promote the understanding and conservation of these resources.

*Supplemental\_Information:*

The wetland maps were produced as topical overlays using U.S. Geological Survey topographic maps as the base. The hard copy product is a composite map showing topographic and planimetric features from the USGS map base and wetlands and deepwater habitats from the Service's topical overlay. Thus, the data are intended for use in publications, at a scale of 1:24,000 or smaller. Due to the scale, the primary intended use is for regional and watershed data display and analysis, rather than specific project data analysis. The map products were neither designed or intended to represent legal or regulatory products.

Comments regarding the interpretation or classification of wetlands or deepwater habitats can be directed to the U.S. Fish and Wildlife Service, Division of Federal Program Activities, Branch of Habitat Assessment <http://www.fws.gov/duspit/contactus.htm>

These data were developed in conjunction with the publication Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington, DC. FWS/OBS-79/31. Alpha-numeric map codes have been developed to correspond to the wetland and deepwater classifications described.

These spatial data are not designed to stand alone. They form topical overlays to the U.S. Geological Survey 1:24,000 or 1:25,000 scale topographic quadrangles. Note that coastline delineations were drawn to follow the extent of wetland or deepwater features as described by this project and may not match the coastline shown in other base maps.

Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Although this Federal Geographic Data Committee-compliant metadata file is intended to document the data set in nonproprietary form, as well as in Arc/INFO format, this metadata file may include some Arc/INFO-specific terminology.

*Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 1977

*Ending\_Date:* present

*Currentness\_Reference:*

REQUIRED: The basis on which the time period of content information is determined.

*Status:*

*Progress:* Ongoing

*Maintenance\_and\_Update\_Frequency:* In Continuous Increments

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -79.751672

*East\_Bounding\_Coordinate:* -79.622687

*North\_Bounding\_Coordinate:* 35.001506

*South\_Bounding\_Coordinate:* 34.873805

*Keywords:*

*Theme:*

*Theme\_Keyword\_Thesaurus:* REQUIRED: Reference to a formally registered thesaurus or a similar authoritative source of theme keywords.

*Theme\_Keyword:* Wetlands

*Theme\_Keyword:* Deepwater habitats

*Theme\_Keyword:* Hydrography

*Theme\_Keyword:* Surface water

*Theme\_Keyword:* Swamps, marshes, bogs, fens

*Place:*

*Place\_Keyword:* Conterminous United States

*Place\_Keyword:* United States

*Place\_Keyword:* Conterminous 48 states

*Place\_Keyword:* Lower 48 states

*Place\_Keyword:* Maine

*Place\_Keyword:* Vermont

*Place\_Keyword:* New Hampshire

*Place\_Keyword:* Connecticut

*Place\_Keyword:* Massachusetts

*Place\_Keyword:* Delaware

*Place\_Keyword:* Rhode Island

*Place\_Keyword:* New York

*Place\_Keyword:* New Jersey

*Place\_Keyword:* Pennsylvania

*Place\_Keyword:* West Virginia

*Place\_Keyword:* District of Columbia

*Place\_Keyword:* Virginia

*Place\_Keyword:* Maryland

*Place\_Keyword:* Ohio

*Place\_Keyword:* Indiana

*Place\_Keyword:* Michigan



*Place\_Keyword:* Illinois  
*Place\_Keyword:* Wisconsin  
*Place\_Keyword:* Iowa  
*Place\_Keyword:* Missouri  
*Place\_Keyword:* Minnesota  
*Place\_Keyword:* Kansas  
*Place\_Keyword:* Nebraska  
*Place\_Keyword:* South Dakota  
*Place\_Keyword:* North Dakota  
*Place\_Keyword:* Montana  
*Place\_Keyword:* Colorado  
*Place\_Keyword:* Utah  
*Place\_Keyword:* Wyoming  
*Place\_Keyword:* Texas  
*Place\_Keyword:* Oklahoma  
*Place\_Keyword:* New Mexico  
*Place\_Keyword:* Arizona  
*Place\_Keyword:* Nevada  
*Place\_Keyword:* California  
*Place\_Keyword:* Oregon  
*Place\_Keyword:* Washington  
*Place\_Keyword:* Idaho  
*Place\_Keyword:* North Carolina  
*Place\_Keyword:* South Carolina  
*Place\_Keyword:* Georgia  
*Place\_Keyword:* Alabama  
*Place\_Keyword:* Florida  
*Place\_Keyword:* Mississippi  
*Place\_Keyword:* Louisiana  
*Place\_Keyword:* Arkansas  
*Place\_Keyword:* Kentucky  
*Place\_Keyword:* Tennessee

*Access\_Constraints:* None

*Use\_Constraints:*

None. Acknowledgement of the U.S. Fish and Wildlife Service and (or) the National Wetlands Inventory would be appreciated in products derived from these data

*Point\_of\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* John Cooper

*Contact\_Organization:* U.S. Fish and Wildlife Service

*Contact\_Position:* Chief - Branch of Habitat Assessment

*Contact\_Address:*

*Address:*

U.S. Fish and Wildlife Service, 4401 North Fairfax Drive

*City:* Arlington,

*State\_or\_Province:* VA

*Postal\_Code:* 22203

*Country:* USA

*Contact\_Voice\_Telephone:* 703-358-2161

*Contact\_Facsimile\_Telephone:* 703-358-1869

*Contact\_Electronic\_Mail\_Address:* john\_cooper@fws.gov

*Browse\_Graphic:*

*Browse\_Graphic\_File\_Description:*

Topical overlay showing the extent and type of wetland and deepwater habitats.

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog 9.2.2.1350

*Cross\_Reference:*

*Citation\_Information:*

*Originator:* U.S. Fish and Wildlife Service, National Wetlands Inventory

*Publication\_Date:* Various

*Title:*

Wetlands and Deepwater Habitats of the Conterminous United States

*Edition:* Version 1.0

*Publication\_Information:*

*Publication\_Place:* Washington, D.C. USA

*Publisher:* U.S. Fish and Wildlife Service

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*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

The source data was checked using standard review procedures. Attributes were checked by using visual inspection as well as automated verification routines. Quality of the attribute information varies with age and mapping protocols used when individual maps were prepared

*Quantitative\_Attribute\_Accuracy\_Assessment:*

*Attribute\_Accuracy\_Value:* All polygons are attributed.

*Logical\_Consistency\_Report:*

Polygon and chain-node topology are present. Every polygon has a label.

*Completeness\_Report:*

This data set represents the extent of wetlands and deepwater habitats that can be determined with the use of remotely sensed data and within the timeframe for which the maps were produced. Wetlands are shown in all of the conterminous 48 states and the District of Columbia. 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.

There is a margin error 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.

Wetlands or other mapped features may have changed since the date or the imagery and/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.

*Lineage:*

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* U.S. Fish and Wildlife Service

*Publication\_Date:* 1977 to present

*Title:*

Wetlands and Deepwater Habitats of the Conterminous United States

*Series\_Information:*

*Series\_Name:* National Wetlands Inventory Maps

*Publication\_Information:*

*Publication\_Place:* Washington, D.C.

*Publisher:* U.S. Fish and Wildlife Service

*Source\_Scale\_Denominator:* 1:24,000 and 1:25,000

*Type\_of\_Source\_Media:* Digital file and hard copy paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 1977

*Ending\_Date:* present

*Source\_Currentness\_Reference:*

Various dates

*Source\_Contribution:*

Spatial information

*Process\_Step:*

*Process\_Description:*

Original stable base hard copy maps of wetland and deepwater habitats were created based on USGS state and quadrangle boundaries. These maps were converted to digital files using various software packages (WAMS, ARC and others). The digital files were stored as ESRI Import/Export files corresponding to a single 1:24,000 USGS quadrangle. These digital files were imported and converted to ESRI Coverage format and checked for topological and attribute errors. All coverages were converted from a UTM map projection to an Alber's Equal Area map projection and the horizontal datum was converted from NAD27 to NAD83 where necessary. Polygons attributed as "Uplands" were removed from the dataset and polygons were merged at quadrangle boundaries where the quadrangle line divided polygons with the same attribute. The data was loaded into a seamless SDE geodatabase for the conterminous United States. These steps were conducted using both Arc Macro Language (AML) and ArcMap editing tools. All point data from the original ESRI Coverages were buffered by 11.28 meters (1/10 of an acre) and incorporated into this polygon

feature class. Linear features from the original ESRI Coverages were merged at quadrangle boundaries where the quadrangle line divided lines with the same attribute. Linear data is stored in a separate feature class.

Further data improvements included the conversion of all old wetland codes that contained 'OW' to the new code containing 'UB'. All polygons labeled as 'OUT', 'No Data' and 'NP' were removed from the database.

*Source\_Used\_Citation\_Abbreviation:*  
NWI

*Process\_Step:*

*Process\_Description:*

The file was converted to NAD83 in geographic coordinates, and saved in geodatabase format.

*Process\_Date:* 200401

*Process\_Step:*

*Process\_Description:*

Metadata imported.

*Source\_Used\_Citation\_Abbreviation:*

C:\Documents and Settings\wrbuck\Desktop\metadata.xml

*Process\_Step:*

*Process\_Description:*

Dataset copied.

*Source\_Used\_Citation\_Abbreviation:*

Server=aquaterra2; Service=5151; User=nwidba;  
Version=SDE.DEFAULT

*Process\_Step:*

*Process\_Description:*

Metadata imported.

*Source\_Used\_Citation\_Abbreviation:*

C:\DOCUME~1\Bergeson\LOCALS~1\Temp\xml9E.tmp

*Process\_Step:*

*Process\_Description:*

Metadata imported.

*Source\_Used\_Citation\_Abbreviation:*

C:\DOCUME~1\dgrigg\LOCALS~1\Temp\xml24.tmp

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* G-polygon

*Point\_and\_Vector\_Object\_Count:* 0

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Grid\_Coordinate\_System:*

*Grid\_Coordinate\_System\_Name:* Universal Transverse Mercator

*Universal\_Transverse\_Mercator:*

*UTM\_Zone\_Number:* 17

*Transverse\_Mercator:*

*Scale\_Factor\_at\_Central\_Meridian:* 0.999600

*Longitude\_of\_Central\_Meridian:* -81.000000

*Latitude\_of\_Projection\_Origin:* 0.000000

*False\_Easting:* 500000.000000

*False\_Northing:* 0.000000

*Planar\_Coordinate\_Information:*

*Planar\_Coordinate\_Encoding\_Method:* coordinate pair

*Coordinate\_Representation:*

*Abscissa\_Resolution:* 0.000000

*Ordinate\_Resolution:* 0.000000

*Planar\_Distance\_Units:* meters

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* North American Datum of 1983

*Ellipsoid\_Name:* Geodetic Reference System 80

*Semi-major\_Axis:* 6378137.000000

*Denominator\_of\_Flattening\_Ratio:* 298.257222

*Vertical\_Coordinate\_System\_Definition:*

*Altitude\_System\_Definition:*

*Altitude\_Resolution:* 1.000000

*Altitude\_Encoding\_Method:* Explicit elevation coordinate included with horizontal coordinates

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*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* hamlet\_p

*Entity\_Type\_Definition:*

Reference: Cowardin et al. 1979

*Entity\_Type\_Definition\_Source:*

U.S. Fish and Wildlife Service

*Attribute:*

*Attribute\_Label:* SHAPE

*Attribute\_Definition:*

Feature geometry.



*Attribute\_Definition\_Source:*  
ESRI  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Coordinates defining the features.

*Attribute:*  
*Attribute\_Label:* Shape  
*Attribute\_Definition:*  
Feature geometry.  
*Attribute\_Definition\_Source:*  
ESRI  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Coordinates defining the features.

*Attribute:*  
*Attribute\_Label:* ATTRIBUTE

*Attribute:*  
*Attribute\_Label:* AREA

*Attribute:*  
*Attribute\_Label:* PERIMETER

*Attribute:*  
*Attribute\_Label:* HAMLET\_P\_

*Attribute:*  
*Attribute\_Label:* Shape\_Area  
*Attribute\_Definition:*  
Area of feature in internal units squared.  
*Attribute\_Definition\_Source:*  
ESRI  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Positive real numbers that are automatically generated.

*Attribute:*  
*Attribute\_Label:* HAMLET\_P\_I

*Attribute:*  
*Attribute\_Label:* FID  
*Attribute\_Definition:*  
Internal feature number.  
*Attribute\_Definition\_Source:*  
ESRI  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Sequential unique whole numbers that are automatically generated.

*Attribute:*  
*Attribute\_Label:* Shape\_Leng

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*Distribution\_Information:*

*Distributor:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* Branch of Habitat Assessment

*Contact\_Person:* U.S. Fish and Wildlife Service

*Contact\_Address:*

*Address\_Type:* mailing address

*Address:*

4401 North Fairfax Drive

*City:* Arlington

*State\_or\_Province:* VA

*Postal\_Code:* 22203

*Contact\_Voice\_Telephone:* 703-358-2161

*Contact\_Instructions:*

Hard copy maps can be purchased through Cooperator-Run Distribution Centers. Each Center establishes its own pricing structure, product types and order procedures. View Cooperator-Run Distribution Centers.

The wetlands data can also be viewed by accessing The National Map.

*Resource\_Description:* Downloadable Data

*Distribution\_Liability:*

Although these data have been processed successfully on a computer system at the U.S. Fish and Wildlife Service, no warranty expressed or implied is made by the U.S. Fish and Wildlife Service regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. No responsibility is assumed by the U.S. Fish and Wildlife Service in the use of these data.

*Standard\_Order\_Process:*

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Format\_Name:* ESRI Shapefile or Personal Geodatabase

*Transfer\_Size:* 0.000

*Digital\_Transfer\_Option:*

*Offline\_Option:*

*Offline\_Media:* CD-ROM or DVD

*Recording\_Format:* tar

*Fees:* There is no charge for the online option. Requests for large amounts of data are handled on a cost reimbursable basis.

*Ordering\_Instructions:*

To order files on CD-ROM, please see

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20070625

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* National Wetlands Inventory Maps  
*Contact\_Organization:* U.S. Fish and Wildlife Service Division of  
Federal Program Activities  
*Contact\_Position:* Chief, Branch of Habitat Assessment  
*Contact\_Address:*  
*Address\_Type:* mailing and physical address  
*Address:*  
4401 North Fairfax Drive  
*City:* Arlington  
*State\_or\_Province:* VA  
*Postal\_Code:* 22203  
*Country:* USA  
*Contact\_Voice\_Telephone:* 703-358-2161  
*Contact\_Facsimile\_Telephone:* 608-358-1869  
*Contact\_Electronic\_Mail\_Address:* john\_cooper@fws.gov  
*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata  
*Metadata\_Standard\_Version:* FGDC-STD-001-1998  
*Metadata\_Time\_Convention:* local time  
*Metadata\_Security\_Information:*  
*Metadata\_Security\_Classification\_System:* None  
*Metadata\_Security\_Classification:* Unclassified  
*Metadata\_Security\_Handling\_Description:*  
None  
*Metadata\_Extensions:*  
*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>  
*Profile\_Name:* ESRI Metadata Profile  
*Metadata\_Extensions:*  
*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>  
*Profile\_Name:* ESRI Metadata Profile  
*Metadata\_Extensions:*  
*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>  
*Profile\_Name:* ESRI Metadata Profile

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# Wetlands - Rockingham Quad

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

*Originator:* U.S. Fish and Wildlife Service

*Publication\_Date:* 200610

##### *Title:*

Wetlands - Rockingham Quad

*Geospatial\_Data\_Presentation\_Form:* vector digital data

##### *Series\_Information:*

*Series\_Name:* Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington, DC. FWS/OBS-79/31.

##### *Publication\_Information:*

*Publication\_Place:* Washington, D.C.

*Publisher:* U.S. Fish and Wildlife Service, Branch of Habitat Assessment

*Online\_Linkage:* [\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\rockin\\_p.shp](\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\rockin_p.shp)

### *Description:*

#### *Abstract:*

This data set represents the extent, approximate location and type of wetlands and deepwater habitats in the conterminous United States. These data delineate the areal extent of wetlands and surface waters as defined by Cowardin et al. (1979).

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 near shore 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.

By policy, the Service also excludes certain types of "farmed wetlands" as may be defined by the Food Security Act or that do not coincide with the Cowardin et al. definition. Contact the Service's Regional Wetland Coordinator for additional information on what types of farmed wetlands are included on wetland maps.

*Purpose:*

The present goal of the Service is to provide the citizens of the United States and its Trust Territories with current geospatially referenced information on the status, extent, characteristics and functions of wetlands, riparian, deepwater and related aquatic habitats in priority areas to promote the understanding and conservation of these resources.

*Supplemental\_Information:*

The wetland maps were produced as topical overlays using U.S. Geological Survey topographic maps as the base. The hard copy product is a composite map showing topographic and planimetric features from the USGS map base and wetlands and deepwater habitats from the Service's topical overlay. Thus, the data are intended for use in publications, at a scale of 1:24,000 or smaller. Due to the scale, the primary intended use is for regional and watershed data display and analysis, rather than specific project data analysis. The map products were neither designed or intended to represent legal or regulatory products.

Comments regarding the interpretation or classification of wetlands or deepwater habitats can be directed to the U.S. Fish and Wildlife Service, Division of Federal Program Activities, Branch of Habitat Assessment <http://www.fws.gov/duspit/contactus.htm>

These data were developed in conjunction with the publication Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington, DC. FWS/OBS-79/31. Alpha-numeric map codes have been developed to correspond to the wetland and deepwater classifications described.

These spatial data are not designed to stand alone. They form topical overlays to the U.S. Geological Survey 1:24,000 or 1:25,000 scale topographic quadrangles. Note that coastline delineations were drawn to follow the extent of wetland or deepwater features as described by this project and may not match the coastline shown in other base maps.

Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Although this Federal Geographic Data Committee-compliant metadata file is intended to document the data set in nonproprietary form, as well as in Arc/INFO format, this metadata file may include some Arc/INFO-specific terminology.



*Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 1977

*Ending\_Date:* present

*Currentness\_Reference:*

REQUIRED: The basis on which the time period of content information is determined.

*Status:*

*Progress:* Ongoing

*Maintenance\_and\_Update\_Frequency:* In Continuous Increments

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -79.876484

*East\_Bounding\_Coordinate:* -79.747883

*North\_Bounding\_Coordinate:* 35.001375

*South\_Bounding\_Coordinate:* 34.873933

*Keywords:*

*Theme:*

*Theme\_Keyword\_Thesaurus:* REQUIRED: Reference to a formally registered thesaurus or a similar authoritative source of theme keywords.

*Theme\_Keyword:* Wetlands

*Theme\_Keyword:* Deepwater habitats

*Theme\_Keyword:* Hydrography

*Theme\_Keyword:* Surface water

*Theme\_Keyword:* Swamps, marshes, bogs, fens

*Place:*

*Place\_Keyword:* Conterminous United States

*Place\_Keyword:* United States

*Place\_Keyword:* Conterminous 48 states

*Place\_Keyword:* Lower 48 states

*Place\_Keyword:* Maine

*Place\_Keyword:* Vermont

*Place\_Keyword:* New Hampshire

*Place\_Keyword:* Connecticut

*Place\_Keyword:* Massachusetts

*Place\_Keyword:* Delaware

*Place\_Keyword:* Rhode Island

*Place\_Keyword:* New York

*Place\_Keyword:* New Jersey

*Place\_Keyword:* Pennsylvania

*Place\_Keyword:* West Virginia

*Place\_Keyword:* District of Columbia

*Place\_Keyword:* Virginia

*Place\_Keyword:* Maryland

*Place\_Keyword:* Ohio

*Place\_Keyword:* Indiana

*Place\_Keyword:* Michigan

*Place\_Keyword:* Illinois  
*Place\_Keyword:* Wisconsin  
*Place\_Keyword:* Iowa  
*Place\_Keyword:* Missouri  
*Place\_Keyword:* Minnesota  
*Place\_Keyword:* Kansas  
*Place\_Keyword:* Nebraska  
*Place\_Keyword:* South Dakota  
*Place\_Keyword:* North Dakota  
*Place\_Keyword:* Montana  
*Place\_Keyword:* Colorado  
*Place\_Keyword:* Utah  
*Place\_Keyword:* Wyoming  
*Place\_Keyword:* Texas  
*Place\_Keyword:* Oklahoma  
*Place\_Keyword:* New Mexico  
*Place\_Keyword:* Arizona  
*Place\_Keyword:* Nevada  
*Place\_Keyword:* California  
*Place\_Keyword:* Oregon  
*Place\_Keyword:* Washington  
*Place\_Keyword:* Idaho  
*Place\_Keyword:* North Carolina  
*Place\_Keyword:* South Carolina  
*Place\_Keyword:* Georgia  
*Place\_Keyword:* Alabama  
*Place\_Keyword:* Florida  
*Place\_Keyword:* Mississippi  
*Place\_Keyword:* Louisiana  
*Place\_Keyword:* Arkansas  
*Place\_Keyword:* Kentucky  
*Place\_Keyword:* Tennessee

*Access\_Constraints:* None

*Use\_Constraints:*

None. Acknowledgement of the U.S. Fish and Wildlife Service and (or) the National Wetlands Inventory would be appreciated in products derived from these data

*Point\_of\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* John Cooper

*Contact\_Organization:* U.S. Fish and Wildlife Service

*Contact\_Position:* Chief - Branch of Habitat Assessment

*Contact\_Address:*

*Address:*

U.S. Fish and Wildlife Service, 4401 North Fairfax Drive

*City:* Arlington,

*State\_or\_Province:* VA

*Postal\_Code:* 22203

*Country:* USA

*Contact\_Voice\_Telephone:* 703-358-2161

*Contact\_Facsimile\_Telephone:* 703-358-1869

*Contact\_Electronic\_Mail\_Address:* john\_cooper@fws.gov

*Browse\_Graphic:*

*Browse\_Graphic\_File\_Description:*

Topical overlay showing the extent and type of wetland and deepwater habitats.

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog 9.2.2.1350

*Cross\_Reference:*

*Citation\_Information:*

*Originator:* U.S. Fish and Wildlife Service, National Wetlands Inventory

*Publication\_Date:* Various

*Title:*

Wetlands and Deepwater Habitats of the Conterminous United States

*Edition:* Version 1.0

*Publication\_Information:*

*Publication\_Place:* Washington, D.C. USA

*Publisher:* U.S. Fish and Wildlife Service

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*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

The source data was checked using standard review procedures. Attributes were checked by using visual inspection as well as automated verification routines. Quality of the attribute information varies with age and mapping protocols used when individual maps were prepared

*Quantitative\_Attribute\_Accuracy\_Assessment:*

*Attribute\_Accuracy\_Value:* All polygons are attributed.

*Logical\_Consistency\_Report:*

Polygon and chain-node topology are present. Every polygon has a label.

*Completeness\_Report:*

This data set represents the extent of wetlands and deepwater habitats that can be determined with the use of remotely sensed data and within the timeframe for which the maps were produced. Wetlands are shown in all of the conterminous 48 states and the District of Columbia. 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.

There is a margin error 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.

Wetlands or other mapped features may have changed since the date or the imagery and/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.

*Lineage:*

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* U.S. Fish and Wildlife Service

*Publication\_Date:* 1977 to present

*Title:*

Wetlands and Deepwater Habitats of the Conterminous United States

*Series\_Information:*

*Series\_Name:* National Wetlands Inventory Maps

*Publication\_Information:*

*Publication\_Place:* Washington, D.C.

*Publisher:* U.S. Fish and Wildlife Service

*Source\_Scale\_Denominator:* 1:24,000 and 1:25,000

*Type\_of\_Source\_Media:* Digital file and hard copy paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 1977

*Ending\_Date:* present

*Source\_Currentness\_Reference:*

Various dates

*Source\_Contribution:*

Spatial information

*Process\_Step:*

*Process\_Description:*

Original stable base hard copy maps of wetland and deepwater habitats were created based on USGS state and quadrangle boundaries. These maps were converted to digital files using various software packages (WAMS, ARC and others). The digital files were stored as ESRI Import/Export files corresponding to a single 1:24,000 USGS quadrangle. These digital files were imported and converted to ESRI Coverage format and checked for topological and attribute errors. All coverages were converted from a UTM map projection to an Alber's Equal Area map projection and the horizontal datum was converted from NAD27 to NAD83 where necessary. Polygons attributed as "Uplands" were removed from the dataset and polygons were merged at quadrangle boundaries where the quadrangle line divided polygons with the same attribute. The data was loaded into a seamless SDE geodatabase for the conterminous United States. These steps were conducted using both Arc Macro Language (AML) and ArcMap editing tools. All point data from the original ESRI Coverages were buffered by 11.28 meters (1/10 of an acre) and incorporated into this polygon

feature class. Linear features from the original ESRI Coverages were merged at quadrangle boundaries where the quadrangle line divided lines with the same attribute. Linear data is stored in a separate feature class.

Further data improvements included the conversion of all old wetland codes that contained 'OW' to the new code containing 'UB'. All polygons labeled as 'OUT', 'No Data' and 'NP' were removed from the database.

*Source\_Used\_Citation\_Abbreviation:*  
NWI

*Process\_Step:*

*Process\_Description:*

The file was converted to NAD83 in geographic coordinates, and saved in geodatabase format.

*Process\_Date:* 200401

*Process\_Step:*

*Process\_Description:*

Metadata imported.

*Source\_Used\_Citation\_Abbreviation:*

C:\Documents and Settings\wrbuck\Desktop\metadata.xml

*Process\_Step:*

*Process\_Description:*

Dataset copied.

*Source\_Used\_Citation\_Abbreviation:*

Server=aquaterra2; Service=5151; User=nwidba;  
Version=SDE.DEFAULT

*Process\_Step:*

*Process\_Description:*

Metadata imported.

*Source\_Used\_Citation\_Abbreviation:*

C:\DOCUME~1\Bergeson\LOCALS~1\Temp\xml9E.tmp

*Process\_Step:*

*Process\_Description:*

Metadata imported.

*Source\_Used\_Citation\_Abbreviation:*

C:\DOCUME~1\dgrigg\LOCALS~1\Temp\xml25.tmp

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* G-polygon

*Point\_and\_Vector\_Object\_Count:* 0

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Grid\_Coordinate\_System:*

*Grid\_Coordinate\_System\_Name:* Universal Transverse Mercator

*Universal\_Transverse\_Mercator:*

*UTM\_Zone\_Number:* 17

*Transverse\_Mercator:*

*Scale\_Factor\_at\_Central\_Meridian:* 0.999600

*Longitude\_of\_Central\_Meridian:* -81.000000

*Latitude\_of\_Projection\_Origin:* 0.000000

*False\_Easting:* 500000.000000

*False\_Northing:* 0.000000

*Planar\_Coordinate\_Information:*

*Planar\_Coordinate\_Encoding\_Method:* coordinate pair

*Coordinate\_Representation:*

*Abscissa\_Resolution:* 0.000000

*Ordinate\_Resolution:* 0.000000

*Planar\_Distance\_Units:* meters

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* North American Datum of 1983

*Ellipsoid\_Name:* Geodetic Reference System 80

*Semi-major\_Axis:* 6378137.000000

*Denominator\_of\_Flattening\_Ratio:* 298.257222

*Vertical\_Coordinate\_System\_Definition:*

*Altitude\_System\_Definition:*

*Altitude\_Resolution:* 1.000000

*Altitude\_Encoding\_Method:* Explicit elevation coordinate included with horizontal coordinates

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*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* rockin\_p

*Entity\_Type\_Definition:*

Reference: Cowardin et al. 1979

*Entity\_Type\_Definition\_Source:*

U.S. Fish and Wildlife Service

*Attribute:*

*Attribute\_Label:* SHAPE

*Attribute\_Definition:*

Feature geometry.



*Attribute\_Definition\_Source:*  
ESRI  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Coordinates defining the features.

*Attribute:*  
*Attribute\_Label:* Shape  
*Attribute\_Definition:*  
Feature geometry.  
*Attribute\_Definition\_Source:*  
ESRI  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Coordinates defining the features.

*Attribute:*  
*Attribute\_Label:* ATTRIBUTE

*Attribute:*  
*Attribute\_Label:* AREA

*Attribute:*  
*Attribute\_Label:* PERIMETER

*Attribute:*  
*Attribute\_Label:* ROCKIN\_P\_

*Attribute:*  
*Attribute\_Label:* Shape\_Area  
*Attribute\_Definition:*  
Area of feature in internal units squared.  
*Attribute\_Definition\_Source:*  
ESRI  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Positive real numbers that are automatically generated.

*Attribute:*  
*Attribute\_Label:* ROCKIN\_P\_I

*Attribute:*  
*Attribute\_Label:* FID  
*Attribute\_Definition:*  
Internal feature number.

*Attribute\_Definition\_Source:*  
ESRI  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Sequential unique whole numbers that are automatically generated.

*Attribute:*  
*Attribute\_Label:* Shape\_Leng

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*Distribution\_Information:*

*Distributor:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* Branch of Habitat Assessment

*Contact\_Person:* U.S. Fish and Wildlife Service

*Contact\_Address:*

*Address\_Type:* mailing address

*Address:*

4401 North Fairfax Drive

*City:* Arlington

*State\_or\_Province:* VA

*Postal\_Code:* 22203

*Contact\_Voice\_Telephone:* 703-358-2161

*Contact\_Instructions:*

Hard copy maps can be purchased through Cooperator-Run Distribution Centers. Each Center establishes its own pricing structure, product types and order procedures. View Cooperator-Run Distribution Centers.

The wetlands data can also be viewed by accessing The National Map.

*Resource\_Description:* Downloadable Data

*Distribution\_Liability:*

Although these data have been processed successfully on a computer system at the U.S. Fish and Wildlife Service, no warranty expressed or implied is made by the U.S. Fish and Wildlife Service regarding the utility of the data on any other system, nor shall the act of distribution constitute any such warranty. No responsibility is assumed by the U.S. Fish and Wildlife Service in the use of these data.

*Standard\_Order\_Process:*

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Format\_Name:* ESRI Shapefile or Personal Geodatabase

*Transfer\_Size:* 0.000

*Digital\_Transfer\_Option:*

*Offline\_Option:*

*Offline\_Media:* CD-ROM or DVD

*Recording\_Format:* tar

*Fees:* There is no charge for the online option. Requests for large amounts of data are handled on a cost reimbursable basis.

*Ordering\_Instructions:*

To order files on CD-ROM, please see

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20070625

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* National Wetlands Inventory Maps  
*Contact\_Organization:* U.S. Fish and Wildlife Service Division of  
Federal Program Activities  
*Contact\_Position:* Chief, Branch of Habitat Assessment  
*Contact\_Address:*  
*Address\_Type:* mailing and physical address  
*Address:*  
4401 North Fairfax Drive  
*City:* Arlington  
*State\_or\_Province:* VA  
*Postal\_Code:* 22203  
*Country:* USA  
*Contact\_Voice\_Telephone:* 703-358-2161  
*Contact\_Facsimile\_Telephone:* 608-358-1869  
*Contact\_Electronic\_Mail\_Address:* john\_cooper@fws.gov  
*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata  
*Metadata\_Standard\_Version:* FGDC-STD-001-1998  
*Metadata\_Time\_Convention:* local time  
*Metadata\_Security\_Information:*  
*Metadata\_Security\_Classification\_System:* None  
*Metadata\_Security\_Classification:* Unclassified  
*Metadata\_Security\_Handling\_Description:*  
None  
*Metadata\_Extensions:*  
*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>  
*Profile\_Name:* ESRI Metadata Profile  
*Metadata\_Extensions:*  
*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>  
*Profile\_Name:* ESRI Metadata Profile  
*Metadata\_Extensions:*  
*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>  
*Profile\_Name:* ESRI Metadata Profile

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## **INFRASTRUCTURE LAYERS**

# Airports - Arcs

## Metadata:

- [Identification Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

*Originator:* NC Department of Transportation

*Publication\_Date:* Unknown

*Title:*

Airports - Arcs

*Geospatial\_Data\_Presentation\_Form:* vector digital data

*Online\_Linkage:* <\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\dotairport.shp>

### *Description:*

#### *Abstract:*

Airport locations

### *Time\_Period\_of\_Content:*

#### *Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* unknown

*Currentness\_Reference:*

publication date

### *Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* Unknown

### *Spatial\_Domain:*

#### *Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -79.770032

*East\_Bounding\_Coordinate:* -79.489126

*North\_Bounding\_Coordinate:* 35.045572

*South\_Bounding\_Coordinate:* 34.886998

### *Keywords:*

*Theme:*

### *Point\_of\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NC Department of Transportation  
*Contact\_Position:* NC-DOT GIS Unit  
*Contact\_Address:*  
*Address\_Type:* mailing address  
*Address:*  
1587 Mail Service Center  
*City:* Raleigh  
*State\_or\_Province:* NC  
*Postal\_Code:* 27699  
*Country:* USA  
*Contact\_Voice\_Telephone:* (919) 212-6000  
*Contact\_Facsimile\_Telephone:* (919) 212-5999

*Data\_Set\_Credit:*

NC Department of Transportation GIS Unit

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog 9.2.2.1350

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* String

*Point\_and\_Vector\_Object\_Count:* 0

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Map\_Projection:*

*Map\_Projection\_Name:* Lambert Conformal Conic

*Lambert\_Conformal\_Conic:*

*Standard\_Parallel:* 34.333333

*Standard\_Parallel:* 36.166667

*Longitude\_of\_Central\_Meridian:* -79.000000

*Latitude\_of\_Projection\_Origin:* 33.750000

*False\_Easting:* 2000000.002617

*False\_Northing:* 0.000000

*Planar\_Coordinate\_Information:*

*Planar\_Coordinate\_Encoding\_Method:* coordinate pair

*Coordinate\_Representation:*

*Abscissa\_Resolution:* 0.000000

*Ordinate\_Resolution:* 0.000000



*Planar\_Distance\_Units:* survey feet  
*Geodetic\_Model:*  
*Horizontal\_Datum\_Name:* North American Datum of 1983  
*Ellipsoid\_Name:* Geodetic Reference System 80  
*Semi-major\_Axis:* 6378137.000000  
*Denominator\_of\_Flattening\_Ratio:* 298.257222

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*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* dotairport

*Attribute:*

*Attribute\_Label:* Shape

*Attribute\_Definition:*

Feature geometry.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Coordinates defining the features.

*Attribute:*

*Attribute\_Label:* IGDS\_LEVEL

*Attribute:*

*Attribute\_Label:* IGDS\_COLOR

*Attribute:*

*Attribute\_Label:* FID

*Attribute\_Definition:*

Internal feature number.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Sequential unique whole numbers that are automatically generated.

*Attribute:*

*Attribute\_Label:* Shape\_Leng

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*Distribution\_Information:*

*Resource\_Description:* Downloadable Data

*Standard\_Order\_Process:*

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Transfer\_Size:* 0.000

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20070625

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* THE LPA GROUP, INC.

*Contact\_Address:*

*Address\_Type:* mailing and physical address

*Address:*

700 Huger Street

*City:* Columbia

*State\_or\_Province:* SC

*Postal\_Code:* 29201

*Country:* USA

*Contact\_Voice\_Telephone:* (803) 254-2211

*Contact\_Facsimile\_Telephone:* (803) 779-8749

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

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# Airports in North Carolina Represented by Points Integrated from State and Federal Sources, 2003

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

*Originator:* The North Carolina Center for Geographic Information and Analysis (NCCGIA)

*Publication\_Date:* 20040316

##### *Title:*

Airports in North Carolina Represented by Points Integrated from State and Federal Sources, 2003

*Geospatial\_Data\_Presentation\_Form:* vector digital data

##### *Other\_Citation\_Details:*

NCCGIA distributes this dataset

*Online\_Linkage:* [\\Cgia\ms3\database\onemap\\_newdata\nc\\_airports.shp](\\Cgia\ms3\database\onemap_newdata\nc_airports.shp)

### *Description:*

#### *Abstract:*

NCCGIA developed a GIS data set representing point locations for airports located in North Carolina.

#### *Purpose:*

These data were created to assist governmental agencies and others in making resource management decisions through use of a Geographic Information System (GIS).

#### *Supplemental\_Information:*

Point locations were verified using 1998 Digital Orthophoto Quarter Quads where a runway was visible.

### *Time\_Period\_of\_Content:*

#### *Time\_Period\_Information:*

##### *Single\_Date/Time:*

*Calendar\_Date:* 20040316

*Time\_of\_Day:* unknown

*Currentness\_Reference:*  
publication date

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* As needed

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -84.110286

*East\_Bounding\_Coordinate:* -75.564368

*North\_Bounding\_Coordinate:* 36.547531

*South\_Bounding\_Coordinate:* 33.829985

*Keywords:*

*Theme:*

*Theme\_Keyword\_Thesaurus:* None

*Theme\_Keyword:* Airports

*Theme\_Keyword:* Airport locations

*Theme\_Keyword:* Airport landing facilities

*Place:*

*Place\_Keyword\_Thesaurus:* William S. Powell, The North Carolina  
GAZETTEER, A Dictionary of Tar Heel Places, (Chapel Hill: University of  
North Carolina Press), August 1984.

*Place\_Keyword:* North Carolina

*Access\_Constraints:* None

*Use\_Constraints:*

Acknowledgement of products derived from this data set should cite the following:  
The source of the North Carolina Airport Locations data is the North Carolina  
Corporate Geographic Database. Earlier versions of this dataset may exist. The user  
must be sure to use the appropriate data set for the time period of interest. While  
efforts have been made to ensure that these data are accurate and reliable within the  
state of the art, NCCGIA cannot assume liability for any damages or  
misrepresentation caused by any inaccuracies in the data or as a result of changes to  
the data caused by system transfers.

*Point\_of\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NC CGIA

*Contact\_Address:*

*Address\_Type:* mailing address

*Address:*

20322 Mail Service Center

*City:* Raleigh

*State\_or\_Province:* NC

*Postal\_Code:* 27699-0322

*Country:* USA

*Contact\_Voice\_Telephone:* 919-733-2090

*Contact\_Facsimile\_Telephone:* 919-715-0725

*Contact\_Electronic\_Mail\_Address:* dataq@cgia.state.nc.us

*Hours\_of\_Service:* 9:00 to 5:00

*Data\_Set\_Credit:*

Federal Aviation Administration, Aeronautical Information Services  
ATA-100, Room 626  
800 Independence Ave, S.W.  
Washington D.C, 20591  
Toll free number: 1-866-295-8236 ext.35442  
Fax number: 1-202-493-4266  
Email: 9-awa-ata100-feedback@faa.gov

NC Department of Transportation  
Division of Aviation  
1050 Meridian Drive  
RDU Airport, NC 27623

North Carolina Center for Geographic Information and Analysis  
NC Dept. of Environment and Natural Resources  
Project Manager - Jeff Brown  
301 North Wilmington Street, Suite 700  
Raleigh, NC 27699-0322

*Native\_Data\_Set\_Environment:*

Microsoft Windows 2000 Version 5.0 (Build 2195) Service Pack 4; ESRI  
ArcCatalog 8.3.0.800

*Cross\_Reference:*

*Citation\_Information:*

*Originator:* NC CGIA

*Publication\_Date:* 20030616

*Title:*

Airport Locations In North Carolina

*Geospatial\_Data\_Presentation\_Form:* vector digital data

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*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

In December 2003, NCCGIA created a point shapefile from lat/longs provided by NC DOT. A shapefile was also created from data supplied by the FAA. Because there was not a common field for joining tables, NCCGIA identified FAA points that coincided with or were near a state point. The FAA points within 3,200 feet of a state point were selected in ArcView. These points were converted to a shapefile. Then the selection was switched to make the FAA points selected as those not near a state point. That selection was converted to a shapefile. The two datasets were merged to fill in gaps that occurred in both datasets allowing for a more complete statewide airports coverage. NCCGIA then used digital orthophotography from 1998 to verify the points. The data were intended for planning purposes and were not verified or documented for GIS.

*Logical\_Consistency\_Report:*

Using ESRI's ARC/INFO Arcview software, a point shapefile was created.

*Completeness\_Report:*

These data represent the locations of airports in North Carolina as identified by the NC DOT and the FAA.

*Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy\_Report:*

For the larger airports, point locations (approximate center of airport) were verified using 1998 digital orthophoto quarter quads at 1-meter resolution. The smallest airports were not visible on photos and not verified by other means.

*Lineage:*

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* Federal Aviation Administration

*Publication\_Date:* 2003

*Title:*

FAA Landing Facility Database

*Geospatial\_Data\_Presentation\_Form:* tabular digital data

*Online\_Linkage:*

<http://www.faa.gov/ats/ata/ata100/120/datadistr.html>

*Type\_of\_Source\_Media:* CD-ROM

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2003

*Source\_Currentness\_Reference:*

publication date

*Source\_Citation\_Abbreviation:*

FAA

*Source\_Contribution:*

Point locations for airports not included in state DOT files were extracted from the national FAA dataset.

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* NC Department of Transportation, Division of Aviation

*Publication\_Date:* 2003

*Title:*

Division of Aviation North Carolina 2003 Airport Guide

*Geospatial\_Data\_Presentation\_Form:* document

*Type\_of\_Source\_Media:* paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*



*Calendar\_Date:* 2003

*Source\_Currentness\_Reference:*  
publication date

*Source\_Citation\_Abbreviation:*  
NC DOT Airport Division

*Source\_Contribution:*  
Latitude/longitude locations and attributes for airports in North Carolina

*Process\_Step:*

*Process\_Description:*

In December 2003, NCCGIA created a point shapefile from lat/longs provided by NC DOT. A shapefile was also created from data supplied by the FAA. Because there was not a common field for joining tables, NCCGIA identified FAA points that coincided with or were near a state point. The FAA points within 3,200 feet of a state point were selected in ArcView. These points were converted to a shapefile. Then the selection was switched to make the FAA points selected as those not near a state point. That selection was converted to a shapefile. The two datasets were merged to fill in gaps that occurred in both datasets allowing for a more complete statewide airports coverage. NCCGIA then used digital orthophotography from 1998 to verify the points.

*Process\_Date:* 200312

*Process\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* Jeff Brown

*Contact\_Organization:* NC Center for Geographic  
Information and Analysis

*Contact\_Position:* Project Manager

*Contact\_Address:*

*Address\_Type:* physical address

*Address:*

301 North Wilmington Street, Suite 700

*City:* Raleigh

*State\_or\_Province:* NC

*Postal\_Code:* 27601

*Country:* USA

*Contact\_Voice\_Telephone:* (919) 733-2090

*Contact\_Facsimile\_Telephone:* (919) 715-0725

*Contact\_Electronic\_Mail\_Address:* dataq@cgia.state.nc.us

*Hours\_of\_Service:* 8:30AM - 5:30PM

*Contact\_Instructions:*

Phone and electronic mail preferred

*Process\_Step:*

*Process\_Description:*

Dataset copied.

*Source\_Used\_Citation\_Abbreviation:*

*Process\_Step:*

*Process\_Description:*

Dataset copied.  
*Source\_Used\_Citation\_Abbreviation:*  
\\dot-csfs01\DataLibrary\GIS Distribution\Public Facilities.mdb  
*Process\_Step:*  
*Process\_Description:*  
Dataset copied.  
*Source\_Used\_Citation\_Abbreviation:*  
O:\GIS Distribution\Shapefiles\Transportation\Airports\_points

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*Spatial\_Data\_Organization\_Information:*  
*Direct\_Spatial\_Reference\_Method:* Vector  
*Point\_and\_Vector\_Object\_Information:*  
*SDTS\_Terms\_Description:*  
*SDTS\_Point\_and\_Vector\_Object\_Type:* Entity point  
*Point\_and\_Vector\_Object\_Count:* 366

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*Spatial\_Reference\_Information:*  
*Horizontal\_Coordinate\_System\_Definition:*  
*Planar:*  
*Map\_Projection:*  
*Map\_Projection\_Name:* Lambert Conformal Conic  
*Lambert\_Conformal\_Conic:*  
*Standard\_Parallel:* 34.333333  
*Standard\_Parallel:* 36.166667  
*Longitude\_of\_Central\_Meridian:* -79.000000  
*Latitude\_of\_Projection\_Origin:* 33.750000  
*False\_Easting:* 2000000.002617  
*False\_Northing:* 0.000000  
*Planar\_Coordinate\_Information:*  
*Planar\_Coordinate\_Encoding\_Method:* coordinate pair  
*Coordinate\_Representation:*  
*Abscissa\_Resolution:* 0.002048  
*Ordinate\_Resolution:* 0.002048  
*Planar\_Distance\_Units:* meters  
*Geodetic\_Model:*  
*Horizontal\_Datum\_Name:* North American Datum of 1983  
*Ellipsoid\_Name:* Geodetic Reference System 80  
*Semi-major\_Axis:* 6378137.000000  
*Denominator\_of\_Flattening\_Ratio:* 298.257222

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*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* nc\_airports

*Entity\_Type\_Definition:*

Airports Locations in North Carolina

*Entity\_Type\_Definition\_Source:*

CGIA

*Attribute:*

*Attribute\_Label:* PHONE2

*Attribute\_Definition:*

Secondary Contact Phone Number

*Attribute\_Definition\_Source:*

NC DOT

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

variable

*Beginning\_Date\_of\_Attribute\_Values:* 2000

*Ending\_Date\_of\_Attribute\_Values:* 2004

*Attribute\_Measurement\_Frequency:*

As needed

*Attribute:*

*Attribute\_Label:* PHONE3

*Attribute\_Definition:*

Tertiary Contact Phone Number

*Attribute\_Definition\_Source:*

NC DOT

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

variable

*Beginning\_Date\_of\_Attribute\_Values:* 2000

*Ending\_Date\_of\_Attribute\_Values:* 2004

*Attribute\_Measurement\_Frequency:*

As needed

*Attribute:*

*Attribute\_Label:* STATUS

*Attribute\_Definition:*

Status of point location

*Attribute\_Definition\_Source:*

CGIA

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* edited

*Enumerated\_Domain\_Value\_Definition:*

a point was moved to reflect its correct location as verified  
by orthophotography

*Enumerated\_Domain\_Value\_Definition\_Source:*

NCCGIA

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* ok

*Enumerated\_Domain\_Value\_Definition:*

point locations were verified in orthophotos

*Enumerated\_Domain\_Value\_Definition\_Source:*

CGIA

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* no ortho

*Enumerated\_Domain\_Value\_Definition:*

No orthophoto was available for the point location; not verified

*Enumerated\_Domain\_Value\_Definition\_Source:*

CGIA

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* not verified

*Enumerated\_Domain\_Value\_Definition:*

point location could not be verified on available orthophoto

*Enumerated\_Domain\_Value\_Definition\_Source:*

CGIA

*Beginning\_Date\_of\_Attribute\_Values:* 2000

*Ending\_Date\_of\_Attribute\_Values:* 2004

*Attribute\_Measurement\_Frequency:*

As needed

*Attribute:*

*Attribute\_Label:* LOCID

*Attribute\_Definition:*

Airport Location Identifier

*Attribute\_Definition\_Source:*

FAA

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

variable

*Beginning\_Date\_of\_Attribute\_Values:* 2000

*Ending\_Date\_of\_Attribute\_Values:* 2004

*Attribute\_Measurement\_Frequency:*

As needed

*Attribute:*

*Attribute\_Label:* Shape

*Attribute\_Definition:*

Feature geometry.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Coordinates defining the features.

*Beginning\_Date\_of\_Attribute\_Values:* 030104

*Ending\_Date\_of\_Attribute\_Values:* 030104

*Attribute:*

*Attribute\_Label:* ARPT\_NAME  
*Attribute\_Definition:*  
Airport Name  
*Attribute\_Definition\_Source:*  
FAA  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Airport Name  
*Beginning\_Date\_of\_Attribute\_Values:* 2000  
*Ending\_Date\_of\_Attribute\_Values:* 2004  
*Attribute\_Measurement\_Frequency:*  
As needed

*Attribute:*

*Attribute\_Label:* ARPT\_ID  
*Attribute\_Definition:*  
Airport Identification Number  
*Attribute\_Definition\_Source:*  
NC DOT  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
variable  
*Beginning\_Date\_of\_Attribute\_Values:* 2000  
*Ending\_Date\_of\_Attribute\_Values:* 2004  
*Attribute\_Measurement\_Frequency:*  
As needed

*Attribute:*

*Attribute\_Label:* CLASS  
*Attribute\_Definition:*  
Airport Facility Type  
*Attribute\_Definition\_Source:*  
FAA  
*Attribute\_Domain\_Values:*  
*Enumerated\_Domain:*  
*Enumerated\_Domain\_Value:* AIRPORT  
*Enumerated\_Domain\_Value\_Definition:*  
Facility is an airport  
*Enumerated\_Domain\_Value\_Definition\_Source:*  
FAA  
*Enumerated\_Domain:*  
*Enumerated\_Domain\_Value:* GLIDERPORT  
*Enumerated\_Domain\_Value\_Definition:*  
The facility is a glider port  
*Enumerated\_Domain\_Value\_Definition\_Source:*  
FAA  
*Enumerated\_Domain:*  
*Enumerated\_Domain\_Value:* HELIPORT  
*Enumerated\_Domain\_Value\_Definition:*  
The facility is a heliport

*Enumerated\_Domain\_Value\_Definition\_Source:*  
 FAA

*Enumerated\_Domain:*  
*Enumerated\_Domain\_Value:* MAJOR AIRPORT  
*Enumerated\_Domain\_Value\_Definition:*  
 The facility is a major airport  
*Enumerated\_Domain\_Value\_Definition\_Source:*  
 NC DOT

*Enumerated\_Domain:*  
*Enumerated\_Domain\_Value:* SEAPLANE BASE  
*Enumerated\_Domain\_Value\_Definition:*  
 The facility is a base for a seaplane  
*Enumerated\_Domain\_Value\_Definition\_Source:*  
 FAA

*Enumerated\_Domain:*  
*Enumerated\_Domain\_Value:* STOLPORT  
*Enumerated\_Domain\_Value\_Definition:*  
 The facility is a stolport  
*Enumerated\_Domain\_Value\_Definition\_Source:*  
 FAA

*Enumerated\_Domain:*  
*Enumerated\_Domain\_Value:* ULTRALIGHT  
*Enumerated\_Domain\_Value\_Definition:*  
 The facility is for ultralight aircraft  
*Enumerated\_Domain\_Value\_Definition\_Source:*  
 FAA

*Beginning\_Date\_of\_Attribute\_Values:* 2000  
*Ending\_Date\_of\_Attribute\_Values:* 2004  
*Attribute\_Measurement\_Frequency:*  
 As needed

*Attribute:*  
*Attribute\_Label:* ARPT\_USE  
*Attribute\_Definition:*  
 Airport Ownership Type  
*Attribute\_Definition\_Source:*  
 FAA

*Attribute\_Domain\_Values:*  
*Enumerated\_Domain:*  
*Enumerated\_Domain\_Value:* PU  
*Enumerated\_Domain\_Value\_Definition:*  
 Public  
*Enumerated\_Domain\_Value\_Definition\_Source:*  
 FAA

*Enumerated\_Domain:*  
*Enumerated\_Domain\_Value:* PR  
*Enumerated\_Domain\_Value\_Definition:*  
 Private  
*Enumerated\_Domain\_Value\_Definition\_Source:*



FAA

*Beginning\_Date\_of\_Attribute\_Values:* 2000

*Ending\_Date\_of\_Attribute\_Values:* 2004

*Attribute\_Measurement\_Frequency:*

As needed

*Attribute:*

*Attribute\_Label:* COUNTY

*Attribute\_Definition:*

County where airport is located

*Attribute\_Definition\_Source:*

FAA

*Attribute\_Domain\_Values:*

*Codeset\_Domain:*

*Codeset\_Name:* County names

*Codeset\_Source:* State of North Carolina

*Beginning\_Date\_of\_Attribute\_Values:* 2000

*Ending\_Date\_of\_Attribute\_Values:* 2004

*Attribute\_Measurement\_Frequency:*

As needed

*Attribute:*

*Attribute\_Label:* STATE

*Attribute\_Definition:*

State where airport is located

*Attribute\_Definition\_Source:*

NC DOT

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* NC

*Enumerated\_Domain\_Value\_Definition:*

North Carolina

*Enumerated\_Domain\_Value\_Definition\_Source:*

NC DOT

*Beginning\_Date\_of\_Attribute\_Values:* 2000

*Ending\_Date\_of\_Attribute\_Values:* 2004

*Attribute\_Measurement\_Frequency:*

As needed

*Attribute:*

*Attribute\_Label:* ASSO\_CITY

*Attribute\_Definition:*

City associated with airport

*Attribute\_Definition\_Source:*

FAA

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

variable

*Beginning\_Date\_of\_Attribute\_Values:* 2000

*Ending\_Date\_of\_Attribute\_Values:* 2004

*Attribute\_Measurement\_Frequency:*

As needed

*Attribute:*

*Attribute\_Label:* CO\_FIPS

*Attribute\_Definition:*

County code according to the Federal Information Processing Standards

*Attribute\_Definition\_Source:*

NC DOT

*Attribute\_Domain\_Values:*

*Codeset\_Domain:*

*Codeset\_Name:* County FIPS

*Codeset\_Source:* US Bureau of the Census

*Beginning\_Date\_of\_Attribute\_Values:* 2000

*Ending\_Date\_of\_Attribute\_Values:* 2004

*Attribute\_Measurement\_Frequency:*

As needed

*Attribute:*

*Attribute\_Label:* MSL

*Attribute\_Definition:*

Airport Elevation above mean sea level

*Attribute\_Definition\_Source:*

FAA

*Attribute\_Domain\_Values:*

*Range\_Domain:*

*Range\_Domain\_Minimum:* 0

*Range\_Domain\_Maximum:* 5000

*Attribute\_Units\_of\_Measure:* feet

*Beginning\_Date\_of\_Attribute\_Values:* 2000

*Ending\_Date\_of\_Attribute\_Values:* 2004

*Attribute\_Measurement\_Frequency:*

As needed

*Attribute:*

*Attribute\_Label:* NAME1

*Attribute\_Definition:*

Primary Contact Name

*Attribute\_Definition\_Source:*

NC DOT

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

variable

*Beginning\_Date\_of\_Attribute\_Values:* 2000

*Ending\_Date\_of\_Attribute\_Values:* 2004

*Attribute\_Measurement\_Frequency:*

As needed

*Attribute:*

*Attribute\_Label:* NAME2

*Attribute\_Definition:*

Secondary Contact Name

*Attribute\_Definition\_Source:*

NC DOT

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*  
variable

*Beginning\_Date\_of\_Attribute\_Values:* 2000

*Ending\_Date\_of\_Attribute\_Values:* 2004

*Attribute\_Measurement\_Frequency:*  
As needed

*Attribute:*

*Attribute\_Label:* NAME3

*Attribute\_Definition:*

Tertiary Contact Name

*Attribute\_Definition\_Source:*  
NC DOT

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*  
variable

*Beginning\_Date\_of\_Attribute\_Values:* 2000

*Ending\_Date\_of\_Attribute\_Values:* 2004

*Attribute\_Measurement\_Frequency:*  
As needed

*Attribute:*

*Attribute\_Label:* PHONE1

*Attribute\_Definition:*

Primary Contact Phone Number

*Attribute\_Definition\_Source:*  
NC DOT

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*  
variable

*Beginning\_Date\_of\_Attribute\_Values:* 2000

*Ending\_Date\_of\_Attribute\_Values:* 2004

*Attribute\_Measurement\_Frequency:*  
As needed

*Attribute:*

*Attribute\_Label:* FID

*Attribute\_Definition:*

Internal feature number.

*Attribute\_Definition\_Source:*  
ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*  
Sequential unique whole numbers that are automatically  
generated.

*Overview\_Description:*

*Entity\_and\_Attribute\_Overview:*

The theme includes airport name, type, and contact information.

*Entity\_and\_Attribute\_Detail\_Citation:*

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*Distribution\_Information:*

*Distributor:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NC CGIA

*Contact\_Address:*

*Address\_Type:* mailing address

*Address:*

20322 Mail Service Center

*City:* Raleigh

*State\_or\_Province:* NC

*Postal\_Code:* 27699-0322

*Country:* USA

*Contact\_Voice\_Telephone:* 919-733-2090

*Contact\_Facsimile\_Telephone:* 919-715-0725

*Contact\_Electronic\_Mail\_Address:* dataq@cgia.state.nc.us

*Hours\_of\_Service:* 9:00 to 5:00

*Resource\_Description:* GIS data layer

*Distribution\_Liability:*

NCCGIA is charged with the development and maintenance of the State's corporate geographic database and, in cooperation with other mapping organizations, is committed to offering its users accurate, useful, and current information about the state. Although every effort has been made to ensure the accuracy of information, errors and conditions originating from physical sources used to develop the corporate database may be reflected in the data supplied. The client must be aware of data conditions and bear responsibility for the appropriate use of the information with respect to possible errors, original map scale, collection methodology, currency of data, and other conditions specific to certain data. NCCGIA does not support secondary distribution of these data. The use of trade names or commercial products does not constitute their endorsement by the NCCGIA or North Carolina State Government.

*Standard\_Order\_Process:*

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Format\_Name:* shapefile

*Transfer\_Size:* 0.435

*Digital\_Transfer\_Option:*

*Offline\_Option:*

*Offline\_Media:* CD-ROM

*Recording\_Format:* shapefile

*Fees:* contact CGIA for offline data distribution fees

*Ordering\_Instructions:*

Contact CGIA 919-733-2090

*Custom\_Order\_Process:*

Data creation and large data analysis jobs contact Database Administration P:(919) 733-2090. All data are available through standard ordering procedures on a cost recovery basis.

*Technical\_Prerequisites:*

All formats supplied are created using ARC/INFO GIS software on Unix workstations or ArcGIS on Windows PCs. Other formats are available. Format compatibility is the user's responsibility. For more information on formats and media, use a web browser: <http://www.cgia.state.nc.us/cost.html>

*Available\_Time\_Period:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 2004

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20040624

*Metadata\_Review\_Date:* 20040319

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* North Carolina Center for Geographic Information and Analysis

*Contact\_Person:* REQUIRED: The person responsible for the metadata information.

*Contact\_Position:* Database Manager

*Contact\_Address:*

*Address\_Type:* physical address

*Address:*

301 North Wilmington Street, Suite 700

*City:* Raleigh

*State\_or\_Province:* NC

*Postal\_Code:* 27601

*Country:* USA

*Contact\_Voice\_Telephone:* (919) 733-2090

*Contact\_Facsimile\_Telephone:* (919) 715-0725

*Contact\_Electronic\_Mail\_Address:* [dataq@cgia.state.nc.us](mailto:dataq@cgia.state.nc.us)

*Hours\_of\_Service:* 8:30AM - 5:30PM

*Contact\_Instructions:*

Phone and electronic mail preferred

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time

*Metadata\_Access\_Constraints:* None

*Metadata\_Use\_Constraints:*

This metadata file is to accompany the data set identified and received from NCCGIA. NCCGIA does not support secondary distribution. If this data file was received from anyone besides NCCGIA, this metadata file and the data set it describes may contain discrepancies.

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

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# Fire Stations

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

*Publication\_Date:* unknown

*Title:*

Fire Stations

*Geospatial\_Data\_Presentation\_Form:* vector digital data

*Online\_Linkage:* <\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\Stations.shp>

#### *Description:*

##### *Abstract:*

Locations of Fire Stations in Richmond County.

#### *Time\_Period\_of\_Content:*

##### *Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* unknown

##### *Currentness\_Reference:*

publication date

#### *Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* Unknown

#### *Spatial\_Domain:*

##### *Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -80.076151

*East\_Bounding\_Coordinate:* -79.457639

*North\_Bounding\_Coordinate:* 35.185906

*South\_Bounding\_Coordinate:* 34.802115

#### *Keywords:*

*Theme:*

#### *Point\_of\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* Richmond County GIS Department  
*Contact\_Person:* James Armstrong  
*Contact\_Position:* Director of Planning and GIS Services  
*Contact\_Address:*  
*Address\_Type:* mailing address  
*Address:*  
P.O. Box 504  
City: Rockingham  
*State\_or\_Province:* NC  
*Postal\_Code:* 28380  
*Country:* USA  
*Contact\_Voice\_Telephone:* (910) 417-4904  
*Contact\_Facsimile\_Telephone:* (910) 417-4905

*Data\_Set\_Credit:*

Richmond County Government, North Carolina

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog 9.2.2.1350

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*Data\_Quality\_Information:*

*Lineage:*

*Process\_Step:*

*Process\_Description:*

Metadata imported.

*Source\_Used\_Citation\_Abbreviation:*

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Entity point

*Point\_and\_Vector\_Object\_Count:* 0

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Map\_Projection:*

*Map\_Projection\_Name:* Lambert Conformal Conic

*Lambert\_Conformal\_Conic:*  
*Standard\_Parallel:* 34.333333  
*Standard\_Parallel:* 36.166667  
*Longitude\_of\_Central\_Meridian:* -79.000000  
*Latitude\_of\_Projection\_Origin:* 33.750000  
*False\_Easting:* 2000000.002617  
*False\_Northing:* 0.000000  
*Planar\_Coordinate\_Information:*  
*Planar\_Coordinate\_Encoding\_Method:* coordinate pair  
*Coordinate\_Representation:*  
*Abscissa\_Resolution:* 0.000328  
*Ordinate\_Resolution:* 0.000328  
*Planar\_Distance\_Units:* survey feet  
*Geodetic\_Model:*  
*Horizontal\_Datum\_Name:* North American Datum of 1983  
*Ellipsoid\_Name:* Geodetic Reference System 80  
*Semi-major\_Axis:* 6378137.000000  
*Denominator\_of\_Flattening\_Ratio:* 298.257222

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*Entity\_and\_Attribute\_Information:*  
*Detailed\_Description:*  
*Entity\_Type:*  
*Entity\_Type\_Label:* Stations  
*Attribute:*  
*Attribute\_Label:* ANGLE  
*Attribute:*  
*Attribute\_Label:* Shape  
*Attribute\_Definition:*  
Feature geometry.  
*Attribute\_Definition\_Source:*  
ESRI  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Coordinates defining the features.  
*Attribute:*  
*Attribute\_Label:* AREA  
*Attribute:*  
*Attribute\_Label:* PERIMETER  
*Attribute:*  
*Attribute\_Label:* STATIONS\_  
*Attribute:*  
*Attribute\_Label:* STATIONS\_I  
*Attribute:*  
*Attribute\_Label:* TYPE  
*Attribute:*

*Attribute\_Label:* NAME  
*Attribute:*  
*Attribute\_Label:* FEAT\_NAME  
*Attribute:*  
*Attribute\_Label:* NORTHING  
*Attribute:*  
*Attribute\_Label:* EASTING  
*Attribute:*  
*Attribute\_Label:* POLYGONID  
*Attribute:*  
*Attribute\_Label:* SCALE  
*Attribute:*  
*Attribute\_Label:* FID  
*Attribute\_Definition:*  
Internal feature number.  
*Attribute\_Definition\_Source:*  
ESRI  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Sequential unique whole numbers that are automatically generated.

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*Distribution\_Information:*

*Distributor:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* Richmond County Government, North Carolina

*Contact\_Person:* James Armstrong

*Contact\_Position:* Director of Planning and GIS Services

*Contact\_Address:*

*Address\_Type:* mailing address

*Address:*

P.O. Box 504

*City:* Rockingham

*State\_or\_Province:* NC

*Postal\_Code:* 28380

*Resource\_Description:* Downloadable Data

*Standard\_Order\_Process:*

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Transfer\_Size:* 0.000

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20070625

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* The LPA GROUP, INCORPORATED

*Contact\_Address:*

*Address\_Type:* mailing and physical address

*Address:*

700 Huger Street

*City:* Columbia

*State\_or\_Province:* SC

*Postal\_Code:* 29201

*Country:* USA

*Contact\_Voice\_Telephone:* 803-254-2211

*Contact\_Facsimile\_Telephone:* 803-779-8749

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

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# Library - City of Rockingham

## Metadata:

- [Identification Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

###### *Title:*

Library - City of Rockingham

*Geospatial\_Data\_Presentation\_Form:* vector digital data

*Online\_Linkage:* [\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\leath\\_memorial\\_library.shp](\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\leath_memorial_library.shp)

### *Description:*

#### *Abstract:*

Leath Memorial Library, Rockingham, North Carolina

### *Time\_Period\_of\_Content:*

#### *Time\_Period\_Information:*

##### *Single\_Date/Time:*

*Calendar\_Date:* unknown

### *Status:*

*Maintenance\_and\_Update\_Frequency:* Unknown

### *Spatial\_Domain:*

#### *Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -79.769740

*East\_Bounding\_Coordinate:* -79.769224

*North\_Bounding\_Coordinate:* 34.937905

*South\_Bounding\_Coordinate:* 34.937494

### *Keywords:*

#### *Theme:*

### *Point\_of\_Contact:*

#### *Contact\_Information:*

##### *Contact\_Person\_Primary:*

*Contact\_Person:* James Armstrong

*Contact\_Organization:* Richmond County Government, North Carolina

*Contact\_Position:* Director of Planning and GIS Services

##### *Contact\_Address:*

*Address\_Type:* mailing address



*Address:*

P.O. Box 504

City: Rockingham

State\_or\_Province: NC

Postal\_Code: 28380

Country: USA

Contact\_Voice\_Telephone: (910) 417-4904

Contact\_Facsimile\_Telephone: (910) 417-4905

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog  
9.2.2.1350

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* G-polygon

*Point\_and\_Vector\_Object\_Count:* 0

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Map\_Projection:*

*Map\_Projection\_Name:* Lambert Conformal Conic

*Lambert\_Conformal\_Conic:*

*Standard\_Parallel:* 34.333333

*Standard\_Parallel:* 36.166667

*Longitude\_of\_Central\_Meridian:* -79.000000

*Latitude\_of\_Projection\_Origin:* 33.750000

*False\_Easting:* 2000000.002617

*False\_Northing:* 0.000000

*Planar\_Coordinate\_Information:*

*Planar\_Coordinate\_Encoding\_Method:* coordinate pair

*Coordinate\_Representation:*

*Abscissa\_Resolution:* 0.000000

*Ordinate\_Resolution:* 0.000000

*Planar\_Distance\_Units:* survey feet

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* North American Datum of 1983

*Ellipsoid\_Name:* Geodetic Reference System 80

*Semi-major\_Axis:* 6378137.000000

*Denominator\_of\_Flattening\_Ratio:* 298.257222

*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* leath\_memorial\_library

*Attribute:*

*Attribute\_Label:* Shape

*Attribute\_Definition:*

Feature geometry.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Coordinates defining the features.

*Attribute:*

*Attribute\_Label:* AREA

*Attribute:*

*Attribute\_Label:* PERIMETER

*Attribute:*

*Attribute\_Label:* BUILD1\_

*Attribute:*

*Attribute\_Label:* Shape\_Area

*Attribute\_Definition:*

Area of feature in internal units squared.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Positive real numbers that are automatically generated.

*Attribute:*

*Attribute\_Label:* BUILD1\_ID

*Attribute:*

*Attribute\_Label:* FID

*Attribute\_Definition:*

Internal feature number.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Sequential unique whole numbers that are automatically generated.

*Attribute:*

*Attribute\_Label:* Shape\_Leng

*Distribution\_Information:*

*Resource\_Description:* Downloadable Data

*Standard\_Order\_Process:*

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Transfer\_Size:* 0.000

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20070625

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* THE LPA GROUP, INC.

*Contact\_Address:*

*Address\_Type:* mailing and physical address

*Address:*

700 Huger Street

*City:* Columbia

*State\_or\_Province:* SC

*Postal\_Code:* 29201

*Country:* USA

*Contact\_Voice\_Telephone:* (803) 254-2211

*Contact\_Facsimile\_Telephone:* (803) 779-8749

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

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# Library - Public

## Metadata:

- [Identification Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

*Originator:* NC Center of Geographic Information and Analysis

*Publication\_Date:* March 2003

*Title:*

Library - Public

*Geospatial\_Data\_Presentation\_Form:* vector digital data

*Online\_Linkage:* [\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\PublicLibraries\\_points.shp](\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\PublicLibraries_points.shp)

### *Description:*

#### *Abstract:*

NC Center for Geographic Information and Analysis developed the digital Public Libraries data from addresses provided by the State Library of North Carolina on 3/20/03. This file enables users to identify public library locations.

### *Time\_Period\_of\_Content:*

#### *Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* March 2003

#### *Currentness\_Reference:*

publication date

### *Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* Unknown

### *Spatial\_Domain:*

#### *Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -79.770991

*East\_Bounding\_Coordinate:* -79.701394

*North\_Bounding\_Coordinate:* 35.074345

*South\_Bounding\_Coordinate:* 34.884218

### *Keywords:*

*Theme:*

*Point\_of\_Contact:*  
    *Contact\_Information:*  
        *Contact\_Person\_Primary:*  
            *Contact\_Organization:* NC Department of Transportation  
*Native\_Data\_Set\_Environment:*  
    Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog  
    9.2.2.1350

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*Spatial\_Data\_Organization\_Information:*  
    *Direct\_Spatial\_Reference\_Method:* Vector  
    *Point\_and\_Vector\_Object\_Information:*  
        *SDTS\_Terms\_Description:*  
            *SDTS\_Point\_and\_Vector\_Object\_Type:* Entity point  
            *Point\_and\_Vector\_Object\_Count:* 0

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*Spatial\_Reference\_Information:*  
    *Horizontal\_Coordinate\_System\_Definition:*  
        *Planar:*  
            *Map\_Projection:*  
                *Map\_Projection\_Name:* Lambert Conformal Conic  
                *Lambert\_Conformal\_Conic:*  
                    *Standard\_Parallel:* 34.333333  
                    *Standard\_Parallel:* 36.166667  
                    *Longitude\_of\_Central\_Meridian:* -79.000000  
                    *Latitude\_of\_Projection\_Origin:* 33.750000  
                    *False\_Easting:* 2000000.002617  
                    *False\_Northing:* 0.000000  
                *Planar\_Coordinate\_Information:*  
                    *Planar\_Coordinate\_Encoding\_Method:* coordinate pair  
                    *Coordinate\_Representation:*  
                        *Abscissa\_Resolution:* 0.000000  
                        *Ordinate\_Resolution:* 0.000000  
                    *Planar\_Distance\_Units:* survey feet  
        *Geodetic\_Model:*  
            *Horizontal\_Datum\_Name:* North American Datum of 1983  
            *Ellipsoid\_Name:* Geodetic Reference System 80  
            *Semi-major\_Axis:* 6378137.000000  
            *Denominator\_of\_Flattening\_Ratio:* 298.257222

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*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* PublicLibraries\_points

*Attribute:*

*Attribute\_Label:* LIB\_ID

*Attribute:*

*Attribute\_Label:* TYPE

*Attribute:*

*Attribute\_Label:* Shape

*Attribute\_Definition:*

Feature geometry.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Coordinates defining the features.

*Attribute:*

*Attribute\_Label:* LIB\_SYSTEM

*Attribute:*

*Attribute\_Label:* BRNCH\_NAME

*Attribute:*

*Attribute\_Label:* ADDRESS

*Attribute:*

*Attribute\_Label:* CITY

*Attribute:*

*Attribute\_Label:* COUNTY

*Attribute:*

*Attribute\_Label:* ZIPCODE

*Attribute:*

*Attribute\_Label:* ZIP4

*Attribute:*

*Attribute\_Label:* PHONE

*Attribute:*

*Attribute\_Label:* FSCS\_ID

*Attribute:*

*Attribute\_Label:* FID

*Attribute\_Definition:*

Internal feature number.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Sequential unique whole numbers that are automatically generated.

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*Distribution\_Information:*

*Resource\_Description:* Downloadable Data

*Standard\_Order\_Process:*

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Transfer\_Size:* 0.000

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20070625

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* THE LPA GROUP, INC.

*Contact\_Address:*

*Address\_Type:* mailing and physical address

*Address:*

700 Huger Street

*City:* Columbia

*State\_or\_Province:* SC

*Postal\_Code:* 29201

*Country:* USA

*Contact\_Voice\_Telephone:* (803) 254-2211

*Contact\_Facsimile\_Telephone:* (803) 779-8749

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

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# Railroads

## Metadata:

- [Identification Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

*Publication\_Date:* Unknown

*Title:*

Railroads

*Geospatial\_Data\_Presentation\_Form:* vector digital data

*Online\_Linkage:* [\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\Railroads\\_arcs.shp](\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\Railroads_arcs.shp)

#### *Description:*

##### *Abstract:*

Railroad features as delineated on USGS 1:24,000 scale published map series. Railroad features include standard gauge, car line, cog railroad, railroad spur, yard limit, arbitrary line extension, railroad station, roundhouse, abandoned, and narrow gauge.

#### *Time\_Period\_of\_Content:*

##### *Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* 1987

##### *Currentness\_Reference:*

publication date

#### *Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* Unknown

#### *Spatial\_Domain:*

##### *Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -79.856483

*East\_Bounding\_Coordinate:* -79.476808

*North\_Bounding\_Coordinate:* 35.057439

*South\_Bounding\_Coordinate:* 34.804712

#### *Keywords:*

*Theme:*

#### *Point\_of\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Organization:* NC Department of Transportation

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog  
9.2.2.1350

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* String

*Point\_and\_Vector\_Object\_Count:* 0

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Map\_Projection:*

*Map\_Projection\_Name:* Lambert Conformal Conic

*Lambert\_Conformal\_Conic:*

*Standard\_Parallel:* 34.333333

*Standard\_Parallel:* 36.166667

*Longitude\_of\_Central\_Meridian:* -79.000000

*Latitude\_of\_Projection\_Origin:* 33.750000

*False\_Easting:* 2000000.002617

*False\_Northing:* 0.000000

*Planar\_Coordinate\_Information:*

*Planar\_Coordinate\_Encoding\_Method:* coordinate pair

*Coordinate\_Representation:*

*Abscissa\_Resolution:* 0.000000

*Ordinate\_Resolution:* 0.000000

*Planar\_Distance\_Units:* survey feet

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* North American Datum of 1983

*Ellipsoid\_Name:* Geodetic Reference System 80

*Semi-major\_Axis:* 6378137.000000

*Denominator\_of\_Flattening\_Ratio:* 298.257222

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*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* Railroads\_arcs

*Attribute:*

*Attribute\_Label:* Shape

*Attribute\_Definition:*

Feature geometry.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Coordinates defining the features.

*Attribute:*

*Attribute\_Label:* FID\_

*Attribute:*

*Attribute\_Label:* Entity

*Attribute:*

*Attribute\_Label:* Layer

*Attribute:*

*Attribute\_Label:* Level\_

*Attribute:*

*Attribute\_Label:* Color

*Attribute:*

*Attribute\_Label:* Linetype

*Attribute:*

*Attribute\_Label:* Text\_

*Attribute:*

*Attribute\_Label:* MsLink\_Ora

*Attribute:*

*Attribute\_Label:* MsCtlg\_Ora

*Attribute:*

*Attribute\_Label:* MsLink\_ODB

*Attribute:*

*Attribute\_Label:* MsCtlg\_ODB

*Attribute:*

*Attribute\_Label:* Shape\_Leng

*Attribute:*

*Attribute\_Label:* FID

*Attribute\_Definition:*

Internal feature number.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Sequential unique whole numbers that are automatically generated.

*Attribute:*

*Attribute\_Label:* Shape\_Le\_1

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*Distribution\_Information:*

*Resource\_Description:* Downloadable Data

*Standard\_Order\_Process:*

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Transfer\_Size:* 0.000

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20070625

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* THE LPA GROUP, INC.

*Contact\_Address:*

*Address\_Type:* mailing and physical address

*Address:*

700 Huger Street

*City:* Columbia

*State\_or\_Province:* SC

*Postal\_Code:* 29201

*Country:* USA

*Contact\_Voice\_Telephone:* (803) 254-2211

*Contact\_Facsimile\_Telephone:* (803) 779-8749

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

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# Roads

## Metadata:

- [Identification Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

*Publication\_Date:* Unknown

##### *Title:*

Roads

*Geospatial\_Data\_Presentation\_Form:* vector digital data

*Online\_Linkage:* [\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\RoadsStateSystem\\_arcs.shp](\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\RoadsStateSystem_arcs.shp)

### *Description:*

#### *Abstract:*

GIS Layer for Richmond County Roads

### *Time\_Period\_of\_Content:*

#### *Time\_Period\_Information:*

##### *Single\_Date/Time:*

*Calendar\_Date:* unknown

#### *Currentness\_Reference:*

publication date

### *Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* Unknown

### *Spatial\_Domain:*

#### *Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -80.043749

*East\_Bounding\_Coordinate:* -79.492336

*North\_Bounding\_Coordinate:* 35.185825

*South\_Bounding\_Coordinate:* 34.802260

### *Keywords:*

#### *Theme:*

### *Point\_of\_Contact:*

#### *Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Organization:* NC Department of Transportation



*Data\_Set\_Credit:*

NC Department of Transportation

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog  
9.2.2.1350

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* String

*Point\_and\_Vector\_Object\_Count:* 0

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Map\_Projection:*

*Map\_Projection\_Name:* Lambert Conformal Conic

*Lambert\_Conformal\_Conic:*

*Standard\_Parallel:* 34.333333

*Standard\_Parallel:* 36.166667

*Longitude\_of\_Central\_Meridian:* -79.000000

*Latitude\_of\_Projection\_Origin:* 33.750000

*False\_Easting:* 2000000.002617

*False\_Northing:* 0.000000

*Planar\_Coordinate\_Information:*

*Planar\_Coordinate\_Encoding\_Method:* coordinate pair

*Coordinate\_Representation:*

*Abscissa\_Resolution:* 0.000000

*Ordinate\_Resolution:* 0.000000

*Planar\_Distance\_Units:* survey feet

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* North American Datum of 1983

*Ellipsoid\_Name:* Geodetic Reference System 80

*Semi-major\_Axis:* 6378137.000000

*Denominator\_of\_Flattening\_Ratio:* 298.257222

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*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*  
     *Entity\_Type\_Label:* RoadsStateSystem\_arcs  
*Attribute:*  
     *Attribute\_Label:* Shape  
     *Attribute\_Definition:*  
         Feature geometry.  
     *Attribute\_Definition\_Source:*  
         ESRI  
     *Attribute\_Domain\_Values:*  
         *Unrepresentable\_Domain:*  
             Coordinates defining the features.

*Attribute:*  
     *Attribute\_Label:* FNODE\_  
*Attribute:*  
     *Attribute\_Label:* TNODE\_  
*Attribute:*  
     *Attribute\_Label:* LPOLY\_  
*Attribute:*  
     *Attribute\_Label:* RPOLY\_  
*Attribute:*  
     *Attribute\_Label:* LENGTH  
*Attribute:*  
     *Attribute\_Label:* LRSRT\_  
*Attribute:*  
     *Attribute\_Label:* LRSRT\_ID  
*Attribute:*  
     *Attribute\_Label:* HEADER  
*Attribute:*  
     *Attribute\_Label:* PRIMARY\_ID  
*Attribute:*  
     *Attribute\_Label:* SECONDARY\_  
*Attribute:*  
     *Attribute\_Label:* ENTITY  
*Attribute:*  
     *Attribute\_Label:* MSLINK  
*Attribute:*  
     *Attribute\_Label:* LINK  
*Attribute:*  
     *Attribute\_Label:* INTERSECT1  
*Attribute:*  
     *Attribute\_Label:* INTERSECT2  
*Attribute:*  
     *Attribute\_Label:* ROUTE1  
*Attribute:*  
     *Attribute\_Label:* BEGMP1  
*Attribute:*  
     *Attribute\_Label:* ENDMP1  
*Attribute:*

*Attribute\_Label:* BEGNODE1  
*Attribute:*  
*Attribute\_Label:* ENDNODE1  
*Attribute:*  
*Attribute\_Label:* ROUTE2  
*Attribute:*  
*Attribute\_Label:* BEGMP2  
*Attribute:*  
*Attribute\_Label:* ENDMP2  
*Attribute:*  
*Attribute\_Label:* BEGNODE2  
*Attribute:*  
*Attribute\_Label:* ENDNODE2  
*Attribute:*  
*Attribute\_Label:* ROUTE3  
*Attribute:*  
*Attribute\_Label:* BEGMP3  
*Attribute:*  
*Attribute\_Label:* ENDMP3  
*Attribute:*  
*Attribute\_Label:* BEGNODE3  
*Attribute:*  
*Attribute\_Label:* ENDNODE3  
*Attribute:*  
*Attribute\_Label:* ROUTE4  
*Attribute:*  
*Attribute\_Label:* BEGMP4  
*Attribute:*  
*Attribute\_Label:* ENDMP4  
*Attribute:*  
*Attribute\_Label:* BEGNODE4  
*Attribute:*  
*Attribute\_Label:* ENDNODE4  
*Attribute:*  
*Attribute\_Label:* ROUTE5  
*Attribute:*  
*Attribute\_Label:* BEGMP5  
*Attribute:*  
*Attribute\_Label:* ENDMP5  
*Attribute:*  
*Attribute\_Label:* BEGNODE5  
*Attribute:*  
*Attribute\_Label:* ENDNODE5  
*Attribute:*  
*Attribute\_Label:* ROUTE6  
*Attribute:*  
*Attribute\_Label:* BEGMP6  
*Attribute:*

*Attribute\_Label:* ENDMP6  
*Attribute:*  
*Attribute\_Label:* BEGNODE6  
*Attribute:*  
*Attribute\_Label:* ENDNODE6  
*Attribute:*  
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*Attribute\_Label:* ENDMP12  
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*Attribute\_Label: RTTYP5*  
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*Attribute\_Label: RTSPE5*  
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*Attribute\_Label:* RTDIR5  
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*Attribute\_Label:* RTNUM6  
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*Attribute\_Label:* Shape\_Leng  
*Attribute:*  
*Attribute\_Label:* FID  
*Attribute\_Definition:*  
Internal feature number.  
*Attribute\_Definition\_Source:*  
ESRI  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Sequential unique whole numbers that are automatically  
generated.  
*Attribute:*  
*Attribute\_Label:* Shape\_Le\_1

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*Distribution\_Information:*  
*Resource\_Description:* Downloadable Data  
*Standard\_Order\_Process:*  
*Digital\_Form:*  
*Digital\_Transfer\_Information:*  
*Transfer\_Size:* 0.000

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*Metadata\_Reference\_Information:*  
*Metadata\_Date:* 20070625  
*Metadata\_Contact:*  
*Contact\_Information:*  
*Contact\_Organization\_Primary:*  
*Contact\_Organization:* THE LPA GROUP, INC.  
*Contact\_Address:*  
*Address\_Type:* mailing and physical address  
*Address:*

700 Huger Street  
City: Columbia  
State\_or\_Province: SC  
Postal\_Code: 29201  
Country: USA  
Contact\_Voice\_Telephone: (803) 254-2211  
Contact\_Facsimile\_Telephone: (803) 779-8749  
Metadata\_Standard\_Name: FGDC Content Standards for Digital Geospatial Metadata  
Metadata\_Standard\_Version: FGDC-STD-001-1998  
Metadata\_Time\_Convention: local time  
Metadata\_Extensions:  
Online\_Linkage: <http://www.esri.com/metadata/esriprof80.html>  
Profile\_Name: ESRI Metadata Profile

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# Schools - Non Public

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

*Originator:* NC Department of Administration, Division of Non-Public Education

*Publication\_Date:* 20061215

#### *Title:*

Schools - Non Public

*Geospatial\_Data\_Presentation\_Form:* vector digital data

#### *Publication\_Information:*

*Publication\_Place:* Raleigh, North Carolina

*Publisher:* NC Department of Administration, Division of Non-Public Education

#### *Other\_Citation\_Details:*

NCCGIA distributes this dataset

*Online\_Linkage:* [\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\SchoolsNonPublic\\_points.shp](\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\SchoolsNonPublic_points.shp)

### *Description:*

#### *Abstract:*

NC Center for Geographic Information and Analysis developed the digital Non-Public Schools data from addresses provided by the NC Department of Administration, Division of Non-Public Education on 5/07/03. This file enables users to identify non-public school locations. This data covers the entire extent of North Carolina.

#### *Purpose:*

This data was created to assist governmental agencies and others in making resource management decisions through use of a Geographic Information System (GIS).

#### *Supplemental\_Information:*

Revisions and updates to this layer include:

3.) December 2006 - Regular update. Website: <http://www.ncdnpe.org>

2.) June 2004 update - Previous data was compared to schools posted in Adobe Acrobat Reader files on the following website:

<http://www.doa.state.nc.us/dnpe>.

Schools were added or deleted as necessary, and other pertinent data (administrator, phone number, grades, enrollment, staff, etc) updated as needed.

1.) May 2003 - This was the first version of this data.

*Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 20030507

*Ending\_Date:* 20061215

*Currentness\_Reference:*

Data creation and revision dates

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* As needed

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -79.775663

*East\_Bounding\_Coordinate:* -79.698768

*North\_Bounding\_Coordinate:* 34.924885

*South\_Bounding\_Coordinate:* 34.850478

*Keywords:*

*Theme:*

*Theme\_Keyword\_Thesaurus:* None

*Theme\_Keyword:* Non-Public

*Theme\_Keyword:* Schools

*Theme\_Keyword:* Education

*Theme:*

*Theme\_Keyword\_Thesaurus:* ISO 19115 Topic Category

*Theme\_Keyword:* society

*Theme\_Keyword:* structure

*Place:*

*Place\_Keyword\_Thesaurus:* William S. Powell, The North Carolina

GAZETTEER, A Dictionary of Tar Heel Places, (Chapel Hill: University of North Carolina Press), August 1984.

*Place\_Keyword:* North Carolina

*Access\_Constraints:* None

*Use\_Constraints:*

Acknowledgement of products derived from this data set should cite the following: The source of the Non-Public Schools data is the North Carolina Corporate Geographic Database. Earlier versions of this data set may exist. The user must be sure to use the appropriate data set for the time period of interest. While efforts have been made to ensure that these data are accurate and reliable within the state of the art, CGIA cannot assume liability for any damages or misrepresentation

caused by any inaccuracies in the data or as a result of changes to the data caused by system transfers.

*Point\_of\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* Pam Finnell

*Contact\_Organization:* NC Department of Administration, Division of Non-Public Education

*Contact\_Address:*

*Address\_Type:* Mailing address

*Address:*

1309 Mail Service Center

*City:* Raleigh

*State\_or\_Province:* NC

*Postal\_Code:* 27699

*Country:* U.S.A.

*Contact\_Voice\_Telephone:* 919-733-4276

*Contact\_Electronic\_Mail\_Address:* pamala.finnell@ncmail.net

*Hours\_of\_Service:* 8:00 am to 5:00 pm

*Contact\_Instructions:*

Preferred contact is by mail or telephone

*Data\_Set\_Credit:*

Annette Brown, NC Department of Administration, Division of Non-Public Education

CGIA contacts:

Director: Tim Johnson

Project Manager: Jeffrey Brown

Database Administration: David Giordano

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog 9.2.2.1350

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*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

Point locations were generated using geocoding in Arcview from the non-public schools address list provided by the Division of Non-Public Education on 5/07/03. Points that could not be generated using geocoding were interactively added in arcedit using mapquest.com and/or the directions to each school posted on the www.doa.state.nc.us/dnpe website. This digital file is updated as changes occur.

*Logical\_Consistency\_Report:*

Using ESRI's ARC/INFO GIS software, the dataset was built for point topology using the "build" command. Topology has not been



edited since the last build or clean.

*Completeness\_Report:*

These data represent the locations of Non-Public Schools in North Carolina as listed by the NC Department of Administration, Division of Non-Public Education. The locations were either address-matched using ArcView geocoding or matched manually using mapquest.com and/or the directions to each school posted on the [www.doa.state.nc.us/dnpe](http://www.doa.state.nc.us/dnpe) website.

*Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy\_Report:*

The majority of Non-Public Schools were generated using geocoding in Arcview. The point generated in the processing would be snapped to the road identified in the address field. Therefore, point locations are coincident with the GDT roads data.

*Lineage:*

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* NC Department of Administration, Division of Non-Public Education

*Publication\_Date:* 20061215

*Title:*

Non-Public Schools

*Geospatial\_Data\_Presentation\_Form:* Map

*Publication\_Information:*

*Publication\_Place:* Raleigh, North Carolina

*Publisher:* NC Department of Administration, Division of Non-Public Education

*Other\_Citation\_Details:*

Generated at NCCGIA

*Type\_of\_Source\_Media:* Paper

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 20030310

*Ending\_Date:* 20061215

*Source\_Currentness\_Reference:*

Original release date and revision date, respectively

*Source\_Citation\_Abbreviation:*

None

*Source\_Contribution:*

Non-Public Schools

*Process\_Step:*

*Process\_Description:*

Point locations were generated using geocoding in Arcview from the non-public schools address list provided by the NC Department of Administration, Division of Non-Public Education on 3/07/03. Points that could not be generated using geocoding were interactively added in

arcredit using mapquest.com and/or the directions to each school posted on the www.doa.state.nc.us/dnpe/hhh700.htm website. This digital file is updated as changes occur.

*Process\_Date:* 20030307

*Process\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* Jeffrey Brown

*Contact\_Organization:* NC Center for Geographic Information and Analysis

*Contact\_Position:* Project Manager

*Contact\_Address:*

*Address\_Type:* Physical

*Address:*

301 N. Wilmington Street, Suite 700

*City:* Raleigh

*State\_or\_Province:* North Carolina

*Postal\_Code:* 27601-2825

*Country:* U.S.A.

*Contact\_Address:*

*Address\_Type:* Mailing

*Address:*

20322 Mail Service Center

*City:* Raleigh

*State\_or\_Province:* North Carolina

*Postal\_Code:* 27699

*Country:* U.S.A.

*Contact\_Voice\_Telephone:* (919) 733-2090

*Contact\_Facsimile\_Telephone:* (919)715-0725

*Contact\_Electronic\_Mail\_Address:* dataq@ncmail.net

*Hours\_of\_Service:* 8am to 5pm

*Contact\_Instructions:*

Phone and electronic mail preferred

*Process\_Step:*

*Process\_Description:*

Metadata imported.

*Source\_Used\_Citation\_Abbreviation:*

C:\DOCUME~1\dgrigg\LOCALS~1\Temp\xml29.tmp

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*Spatial\_Data\_Organization\_Information:*

*Indirect\_Spatial\_Reference\_Method:*

*\_Method:* None

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Entity point

*Point\_and\_Vector\_Object\_Count:* 0

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Map\_Projection:*

*Map\_Projection\_Name:* Lambert Conformal Conic

*Lambert\_Conformal\_Conic:*

*Standard\_Parallel:* 34.333333

*Standard\_Parallel:* 36.166667

*Longitude\_of\_Central\_Meridian:* -79.000000

*Latitude\_of\_Projection\_Origin:* 33.750000

*False\_Easting:* 2000000.002617

*False\_Northing:* 0.000000

*Planar\_Coordinate\_Information:*

*Planar\_Coordinate\_Encoding\_Method:* coordinate pair

*Coordinate\_Representation:*

*Abscissa\_Resolution:* 0.000000

*Ordinate\_Resolution:* 0.000000

*Planar\_Distance\_Units:* survey feet

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* North American Datum of 1983

*Ellipsoid\_Name:* Geodetic Reference System 80

*Semi-major\_Axis:* 6378137.000000

*Denominator\_of\_Flattening\_Ratio:* 298.257222

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*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* SchoolsNonPublic\_points

*Entity\_Type\_Definition:*

Point locations of Non-Public Schools in North Carolina

*Entity\_Type\_Definition\_Source:*

NC Department of Administration, Division of Non-Public Education

*Attribute:*

*Attribute\_Label:* Angle2

*Attribute:*

*Attribute\_Label:* CO\_NAME

*Attribute\_Definition:*

County name

*Attribute\_Definition\_Source:*  
NC Department of Administration, Division of Non-Public Education

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*  
Varies

*Attribute\_Measurement\_Frequency:*  
As needed

*Attribute:*

*Attribute\_Label:* SCHL\_NAME

*Attribute\_Definition:*  
School name

*Attribute\_Definition\_Source:*  
NC Department of Administration, Division of Non-Public Education

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*  
Varies

*Attribute\_Measurement\_Frequency:*  
As needed

*Attribute:*

*Attribute\_Label:* MAIL\_ADDR1

*Attribute\_Definition:*  
Mailing address (PO Box or street number/name)

*Attribute\_Definition\_Source:*  
NC Department of Administration, Division of Non-Public Education

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*  
Varies

*Attribute\_Measurement\_Frequency:*  
As needed

*Attribute:*

*Attribute\_Label:* MAIL\_ADDR2

*Attribute\_Definition:*  
Mailing address (city)

*Attribute\_Definition\_Source:*  
NC Department of Administration, Division of Non-Public Education

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*  
Varies

*Attribute\_Measurement\_Frequency:*  
None planned

*Attribute:*

*Attribute\_Label:* MAIL\_ADDR3

*Attribute\_Definition:*  
Mailing address (zip code)

*Attribute\_Definition\_Source:*  
NC Department of Administration, Division of Non-Public Education

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Varies

*Attribute\_Measurement\_Frequency:*

None planned

*Attribute:*

*Attribute\_Label:* PHYS\_ADDR1

*Attribute\_Definition:*

Physical address (street number/name)

*Attribute\_Definition\_Source:*

NC Department of Administration, Division of Non-Public Education

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Varies

*Attribute\_Measurement\_Frequency:*

None planned

*Attribute:*

*Attribute\_Label:* PHYS\_ADDR2

*Attribute\_Definition:*

Physical address (city)

*Attribute\_Definition\_Source:*

NC Department of Administration, Division of Non-Public Education

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Varies

*Attribute\_Measurement\_Frequency:*

None planned

*Attribute:*

*Attribute\_Label:* PHYS\_ADDR3

*Attribute\_Definition:*

Physical address (zip code)

*Attribute\_Definition\_Source:*

NC Department of Administration, Division of Non-Public Education

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Varies

*Attribute\_Measurement\_Frequency:*

None planned

*Attribute:*

*Attribute\_Label:* CHIEF\_ADMN

*Attribute\_Definition:*

Chief administrator

*Attribute\_Definition\_Source:*

NC Department of Administration, Division of Non-Public Education

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Varies

*Attribute\_Measurement\_Frequency:*

As needed planned

*Attribute:*

*Attribute\_Label:* GRADES

*Attribute\_Definition:*

School grades

*Attribute\_Definition\_Source:*

NC Department of Administration, Division of Non-Public Education

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Varies

*Attribute\_Measurement\_Frequency:*

As needed planned

*Attribute:*

*Attribute\_Label:* STAFF

*Attribute\_Definition:*

School staff

*Attribute\_Definition\_Source:*

NC Department of Administration, Division of Non-Public Education

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Varies (0 indicates information was unavailable or, in cases of schools that have two locations, the total number for both locations is listed with the first listing)

*Attribute\_Measurement\_Frequency:*

As needed planned

*Attribute:*

*Attribute\_Label:* PHONE\_NUM

*Attribute\_Definition:*

School phone number

*Attribute\_Definition\_Source:*

NC Department of Administration, Division of Non-Public Education

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Varies

*Attribute\_Measurement\_Frequency:*

As needed planned

*Attribute:*

*Attribute\_Label:* Shape

*Attribute\_Definition:*

Feature geometry.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Coordinates defining the features.

*Attribute:*

*Attribute\_Label:* ENROLLMENT

*Attribute\_Definition:*

School enrollment

*Attribute\_Definition\_Source:*



NC Department of Administration, Division of Non-Public Education

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Varies (0 indicates information was unavailable or, in cases of schools that have two locations, the total number for both locations is listed with the first listing)

*Attribute\_Measurement\_Frequency:*

As needed planned

*Attribute:*

*Attribute\_Label:* Angle

*Attribute:*

*Attribute\_Label:* angle3

*Attribute:*

*Attribute\_Label:* FID

*Attribute\_Definition:*

Internal feature number.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Sequential unique whole numbers that are automatically generated.

*Overview\_Description:*

*Entity\_and\_Attribute\_Overview:*

A point coverage depicting non-public school locations. The point attribute table (PAT) has attribute data including total area in coverage units (square meters), total perimeter (linear meters), two point internal identification numbers, and pertinent non-public schools information.

*Entity\_and\_Attribute\_Detail\_Citation:*

None

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*Distribution\_Information:*

*Distributor:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NC CGIA

*Contact\_Address:*

*Address\_Type:* Physical

*Address:*

301 N. Wilmington Street, Suite 700

*City:* Raleigh

*State\_or\_Province:* North Carolina

*Postal\_Code:* 27601-2825

*Country:* U.S.A.

*Contact\_Address:*

*Address\_Type:* Mailing

*Address:*

20322 Mail Service Center

*City:* Raleigh

*State\_or\_Province:* North Carolina

*Postal\_Code:* 27699

*Country:* U.S.A.

*Contact\_Voice\_Telephone:* (919) 733-2090

*Contact\_Facsimile\_Telephone:* (919)715-0725

*Contact\_Electronic\_Mail\_Address:* dataq@ncmail.net

*Hours\_of\_Service:* 8am to 5pm

*Contact\_Instructions:*

Phone and electronic mail preferred

*Resource\_Description:* Non-Public Schools

*Distribution\_Liability:*

NCCGIA is charged with the development and maintenance of NC OneMap and, in cooperation with other mapping organizations, is committed to offering its users accurate, useful, and current information. Although every effort has been made to ensure the accuracy of information, errors and conditions originating from physical sources used to develop this dataset may be reflected in the data supplied. The user must be aware of possible conditions and bear responsibility for the appropriate use of the information with respect to possible errors, original map scale, collection methodology, currency of data, and other conditions specific to certain data. NCCGIA does not support secondary distribution of this dataset without its current, compliant metadata record. The use of trade names or commercial products does not constitute their endorsement by NCCGIA or North Carolina State Government.

*Standard\_Order\_Process:*

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Format\_Name:* ESRI shapefile (\*.shp)

*Transfer\_Size:* 0.000

*Digital\_Transfer\_Option:*

*Online\_Option:*

*Computer\_Contact\_Information:*

*Network\_Address:*

*Network\_Resource\_Name:* [NC OneMap](#)

*Fees:* None. Download from [www.nconemap.com](http://www.nconemap.com) is free of charge.

*Custom\_Order\_Process:*

Data can be customized on a cost-recovery basis. Contact [dataq@ncmail.net](mailto:dataq@ncmail.net) or 919-733-2090 for more information.

*Technical\_Prerequisites:*

All formats available from [www.nconemap.com](http://www.nconemap.com) are in ESRI shapefile. Other

formats are available on a cost-recovery basis - contact dataq@ncmail.net or 919.733.2090 for more information. Format compatibility is the user's responsibility.

*Available\_Time\_Period:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 20030307

*Ending\_Date:* Present

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20070625

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NCCGIA

*Contact\_Person:* REQUIRED: The person responsible for the metadata information.

*Contact\_Position:* Database Administration

*Contact\_Address:*

*Address\_Type:* Physical

*Address:*

301 N. Wilmington Street, Suite 700

*City:* Raleigh

*State\_or\_Province:* North Carolina

*Postal\_Code:* 27601-2825

*Country:* U.S.A.

*Contact\_Address:*

*Address\_Type:* Mailing

*Address:*

20322 Mail Service Center

*City:* Raleigh

*State\_or\_Province:* North Carolina

*Postal\_Code:* 27699

*Country:* U.S.A.

*Contact\_Voice\_Telephone:* (919) 733-2090

*Contact\_Facsimile\_Telephone:* (919)715-0725

*Contact\_Electronic\_Mail\_Address:* dataq@ncmail.net

*Hours\_of\_Service:* 8am to 5pm

*Contact\_Instructions:*

Phone and electronic mail preferred

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time

*Metadata\_Access\_Constraints:* None

*Metadata\_Use\_Constraints:*

This metadata file is to accompany the dataset. NCCGIA does not support secondary

distribution of this dataset without its current, compliant metadata record. If the dataset described in this metadata record was received from anyone besides NCCGIA, this metadata and the dataset it describes may contain discrepancies.

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

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# Schools - Public

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### Identification\_Information:

#### Citation:

##### Citation\_Information:

*Originator:* NC Department of Public Instruction

*Publication\_Date:* 20061228

##### Title:

Schools - Public

*Geospatial\_Data\_Presentation\_Form:* vector digital data

##### Publication\_Information:

*Publication\_Place:* Raleigh, North Carolina

*Publisher:* NC Department of Public Instruction

##### Other\_Citation\_Details:

NCCGIA distributes this dataset

*Online\_Linkage:* [\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\SchoolsPublic\\_points.shp](\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\SchoolsPublic_points.shp)

### Description:

#### Abstract:

CGIA developed this set of point locations for public schools in North Carolina as part of a project for the NC Division of Emergency Management. School data serves multiple purposes, but foremost for this project, public schools are vital facilities in terms of emergency management. Many schools serve as shelters and all are critical to hazard vulnerability planning and emergency response. CGIA used two methods to generate point locations for public schools. First, CGIA used a road network from GDT, Inc. with ArcView GIS to geocode the addresses. This process matched 60 percent of the schools with a point on the road network. Point locations are approximate, based on an interpolation of street numbers along street segments. Second, CGIA worked with the NC Department of Public Instruction to use the Transportation Information Management System (TIMS) along with geographic layers from the NC Corporate Geographic Database to determine school locations. Many of these point locations are coincident with the center of school buildings on digital imagery or along driveways and may be more accurate than points located using the first method.

#### Purpose:

This data was created to assist governmental agencies and others in making resource management decisions through use of a Geographic Information System (GIS).

#### Supplemental\_Information:

system filename: schlp1 file size = 0.39 mb

Revisions and updates to this layer include:

```
>
>5) filename: schlp11206 Regular update. December 28, 2006.
>
>5) filename: schlp11104 Regular update. November 11, 2004.
>
>4) filename: schlp1504 The 5/17/04 update:
>Points (from west to east) were verified/corrected using a backcover
>of the 1998 Color Infrared Orthophotography images. (Reviewed points
>will have a '1' in the reviewed item. Points that were moved will
>have a 'yes' in the ptmoved item.)
```

>  
 >3) filename: schlpl404     The 4/20/04 update:  
 >The following public school point locations were corrected:  
 >NORTHSIDE ELEMENTARY  
 >PASQUOTANK CO HIGH  
 >Correct locations were found on the greatschools.net website.  
 >  
 >2) filename: schlpl703     Regular update.   July 3, 2003.  
 >  
 >1) filename: schlpl701     The 07/12/01 version was the first  
 >released version of this data.

*Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* REQUIRED: The year (and optionally month, or month and day) for which the data set corresponds to the ground.

*Currentness\_Reference:*

Data creation and revision dates

*Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* As needed

*Spatial\_Domain:*

*Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -79.821750

*East\_Bounding\_Coordinate:* -79.548659

*North\_Bounding\_Coordinate:* 35.074979

*South\_Bounding\_Coordinate:* 34.889208

*Keywords:*

*Theme:*

*Theme\_Keyword\_Thesaurus:* None

*Theme\_Keyword:* Public Schools

*Theme:*

*Theme\_Keyword\_Thesaurus:* ISO 19115 Topic Category

*Theme\_Keyword:* structure

*Place:*

*Place\_Keyword\_Thesaurus:* William S. Powell, The North Carolina GAZETTEER, A Dictionary of Tar Heel Places, (Chapel Hill: University of North Carolina Press), August 1984.

*Place\_Keyword:* North Carolina

*Access\_Constraints:* None

*Use\_Constraints:*

Acknowledgement of products derived from this data set should cite the following: The source of the School Locations data is the North Carolina Corporate Geographic Database. Earlier versions of this dataset may exist. The user must be sure to use the appropriate data set for the time period of interest. While efforts have been made to ensure that these data are accurate and reliable within the state of the art, CGIA cannot assume liability for any damages or misrepresentation caused by any inaccuracies in the data or as a result of changes to the data caused by system transfers.

*Point\_of\_Contact:*

*Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* Derek Graham

*Contact\_Organization:* NC Department of Public Instruction

*Contact\_Position:* Transportation Services Chief

*Contact\_Address:*

*Address\_Type:* Mailing address

*Address:*

301 N. Wilmington Steet

*City:* Raleigh

*State\_or\_Province:* North Carolina

*Postal\_Code:* 27601-2825

*Country:* U.S.A.

*Contact\_Voice\_Telephone:* (919) 807-3571

*Contact\_Facsimile\_Telephone:* (919) 807-3578

*Contact\_Electronic\_Mail\_Address:* dgraham@dpi.state.nc.us

*Hours\_of\_Service:* 8:00 am to 5:00 pm



*Contact Instructions:*

Preferred contact is by mail or telephone

*Data\_Set\_Credit:*

>NC Dept. of Public Instruction  
>Transportation Services Chief, Derek Graham

>North Carolina Center for Geographic Information and Analysis  
>301 North Wilmington Street, Suite 700  
>Raleigh, NC 27601-2825

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog 9.2.2.1350

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*Data\_Quality\_Information:*

*Attribute\_Accuracy:*

*Attribute\_Accuracy\_Report:*

The attributes were loaded into the GIS from data supplied by the NC Dept. of Public Instruction. Minimal QC was performed during the digitization process on attributes. The values in the Dept. of Public Instruction data are reliable.

*Logical\_Consistency\_Report:*

Using ESRI's ARC/INFO GIS software, the dataset was built for point topology using the "build" command. Topology has not been edited since the last build or clean.

*Completeness\_Report:*

The data represents those public schools which were either address matched using ArcView geocoding or matched manually using the best available techniques. This data does not contain all the public school locations in North Carolina.

*Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy:*

*Horizontal\_Positional\_Accuracy\_Report:*

The majority of school locations were generated using geocoding in Arcview. The point generated in the processing would be snapped to the road identified in the address field. Therefore, point locations are coincident with the GDT roads data.

*Lineage:*

*Source\_Information:*

*Source\_Citation:*

*Citation\_Information:*

*Originator:* NC Department of Public Instruction

*Publication\_Date:* 1986

*Title:*

Transportation Information Management System (TIMS)

*Geospatial\_Data\_Presentation\_Form:* map

*Publication\_Information:*

*Publication\_Place:* Raleigh, North Carolina

*Publisher:* NC Department of Public Instruction

*Other\_Citation\_Details:*

Generated at NCCGIA

*Type\_of\_Source\_Media:* computer program

*Source\_Time\_Period\_of\_Content:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 19990823

*Ending\_Date:* 20061228

*Source\_Currentness\_Reference:*

Original release date and revision date, respectively

*Source\_Citation\_Abbreviation:*

None

*Source\_Contribution:*

Locations of Schools by address

*Process\_Step:*

*Process\_Description:*

Point locations were generated using geocoding in Arcview. The resulting file was checked to determine which addresses did not match. These schools were located using the NC Department of Public Instruction Transportation Information Management System data. These locations were then added to the school coverage interactively, using GDT roads, Digital Raster Graphics and Digital Orthophoto Quarter Quadrangles as backcovers.

*Process\_Date:* 20061228

*Process\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NC Center for Geographic Information and Analysis

*Contact\_Position:* GIS Analyst

*Contact\_Address:*

*Address\_Type:* Mailing address

*Address:*

301 North Wilmington Street, Suite 700

*City:* Raleigh

*State\_or\_Province:* NC

*Postal\_Code:* 27601-2825

*Country:* U.S.A.

*Contact\_Voice\_Telephone:* (919) 733-2090

*Contact\_Facsimile\_Telephone:* (919) 715-0725

*Contact\_Electronic\_Mail\_Address:* dataq@ncmail.net

*Hours\_of\_Service:* 8:30 am to 5:30 pm

*Contact\_Instructions:*

Phone or electronic mail preferred

*Process\_Step:*

*Process\_Description:*

Metadata imported.

*Source\_Used\_Citation\_Abbreviation:*

C:\DOCUME~1\david\LOCALS~1\Temp\xml296.tmp

*Process\_Step:*

*Process\_Description:*

Dataset copied.

*Source\_Used\_Citation\_Abbreviation:*

Server=207.192.29.55; Service=5151; Database=onemap; User=sdeadmin; Version=sde.DEFAULT

*Process\_Step:*

*Process\_Description:*

Metadata imported.

*Source\_Used\_Citation\_Abbreviation:*

C:\DOCUME~1\dgrigg\LOCALS~1\Temp\xml2F.tmp

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*Spatial\_Data\_Organization\_Information:*

*Indirect\_Spatial\_Reference\_Method:*

*\_Method:* None

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Entity point

*Point\_and\_Vector\_Object\_Count:* 0

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Label point

*Point\_and\_Vector\_Object\_Count:* 2420

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Map\_Projection:*

*Map\_Projection\_Name:* Lambert Conformal Conic  
*Lambert\_Conformal\_Conic:*  
*Standard\_Parallel:* 34.333333  
*Standard\_Parallel:* 36.166667  
*Longitude\_of\_Central\_Meridian:* -79.000000  
*Latitude\_of\_Projection\_Origin:* 33.750000  
*False\_Easting:* 2000000.002617  
*False\_Northing:* 0.000000  
*Planar\_Coordinate\_Information:*  
*Planar\_Coordinate\_Encoding\_Method:* coordinate pair  
*Coordinate\_Representation:*  
*Abscissa\_Resolution:* 0.000000  
*Ordinate\_Resolution:* 0.000000  
*Planar\_Distance\_Units:* survey feet  
*Geodetic\_Model:*  
*Horizontal\_Datum\_Name:* North American Datum of 1983  
*Ellipsoid\_Name:* Geodetic Reference System 80  
*Semi-major\_Axis:* 6378137.000000  
*Denominator\_of\_Flattening\_Ratio:* 298.257222  
*Vertical\_Coordinate\_System\_Definition:*  
*Altitude\_System\_Definition:*  
*Altitude\_Resolution:* 1.000000  
*Altitude\_Encoding\_Method:* Explicit elevation coordinate included with horizontal coordinates

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*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* SchoolsPublic\_points

*Entity\_Type\_Definition:*

Point locations of Public Schools in North Carolina

*Entity\_Type\_Definition\_Source:*

NC Department of Public Instruction

*Attribute:*

*Attribute\_Label:* Angle2

*Attribute:*

*Attribute\_Label:* SHAPE

*Attribute\_Definition:*

Feature geometry.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Coordinates defining the features.

*Attribute:*

*Attribute\_Label:* PTMOVED

*Attribute\_Definition:*

Tracking of points moved during CGIA editing process

*Attribute\_Definition\_Source:*

NCCGIA

*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* (blank)

*Enumerated\_Domain\_Value\_Definition:*

Point did not need to be moved

*Enumerated\_Domain\_Value\_Definition\_Source:*

NCCGIA

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* no

*Enumerated\_Domain\_Value\_Definition:*

Point needs to be moved, but not sure where

*Enumerated\_Domain\_Value\_Definition\_Source:*

NCCGIA

*Enumerated\_Domain:*

*Enumerated\_Domain\_Value:* yes

*Enumerated\_Domain\_Value\_Definition:*  
Point was moved  
*Enumerated\_Domain\_Value\_Definition\_Source:*  
NCCGIA

*Attribute\_Measurement\_Frequency:*  
As needed

*Attribute:*

*Attribute\_Label:* LEA\_SCHOOL  
*Attribute\_Definition:*  
Unique 6-digit school identification number  
*Attribute\_Definition\_Source:*  
NC Department of Public Instruction  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Unique schools identification numbers vary  
*Attribute\_Measurement\_Frequency:*  
None planned

*Attribute:*

*Attribute\_Label:* SCHL\_NAME  
*Attribute\_Definition:*  
School name  
*Attribute\_Definition\_Source:*  
NC Department of Public Instruction  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
School names vary.  
*Attribute\_Measurement\_Frequency:*  
As needed

*Attribute:*

*Attribute\_Label:* PRINCIPAL  
*Attribute\_Definition:*  
Name of school principal  
*Attribute\_Definition\_Source:*  
NC Department of Public Instruction  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
School principal names vary.  
*Attribute\_Measurement\_Frequency:*  
As needed

*Attribute:*

*Attribute\_Label:* PHYS\_ADDR  
*Attribute\_Definition:*  
Physical address of school  
*Attribute\_Definition\_Source:*  
NC Department of Public Instruction  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Addresses of schools vary.  
*Attribute\_Measurement\_Frequency:*  
As needed

*Attribute:*

*Attribute\_Label:* PHYS\_CITY  
*Attribute\_Definition:*  
Physical city in which school is located  
*Attribute\_Definition\_Source:*  
NC Department of Public Instruction  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
City names vary.  
*Attribute\_Measurement\_Frequency:*  
As needed

*Attribute:*

*Attribute\_Label:* PHYS\_ZIP  
*Attribute\_Definition:*  
Physical zip code in which school is located  
*Attribute\_Definition\_Source:*  
NC Department of Public Instruction

*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Physical zip codes vary.  
*Attribute\_Measurement\_Frequency:*  
As needed

*Attribute:*

*Attribute\_Label:* PHONE  
*Attribute\_Definition:*  
Phone number of school  
*Attribute\_Definition\_Source:*  
NC Department of Public Instruction  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Phone numbers vary.  
*Attribute\_Measurement\_Frequency:*  
As needed

*Attribute:*

*Attribute\_Label:* BGN\_GRADE  
*Attribute\_Definition:*  
Beginning grade of school  
*Attribute\_Definition\_Source:*  
NC Department of Public Instruction  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Beginning grades vary.  
*Attribute\_Measurement\_Frequency:*  
As needed

*Attribute:*

*Attribute\_Label:* END\_GRADE  
*Attribute\_Definition:*  
Ending grade of school  
*Attribute\_Definition\_Source:*  
NC Department of Public Instruction  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Ending grades vary.  
*Attribute\_Measurement\_Frequency:*  
As needed

*Attribute:*

*Attribute\_Label:* FAX  
*Attribute\_Definition:*  
Facsimile number of school  
*Attribute\_Definition\_Source:*  
NC Department of Public Instruction  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Facsimile numbers vary.  
*Attribute\_Measurement\_Frequency:*  
As needed

*Attribute:*

*Attribute\_Label:* COMMENTS  
*Attribute\_Definition:*  
Comments made by CGIA during editing process  
*Attribute\_Definition\_Source:*  
NCCGIA  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Comments vary.  
*Attribute\_Measurement\_Frequency:*  
As needed

*Attribute:*

*Attribute\_Label:* REVIEWED  
*Attribute\_Definition:*  
Tracking of points reviewed during CGIA editing process  
*Attribute\_Definition\_Source:*  
NCCGIA  
*Attribute\_Domain\_Values:*

*Enumerated\_Domain:*  
*Enumerated\_Domain\_Value:* 1  
*Enumerated\_Domain\_Value\_Definition:*  
Point was reviewed  
*Enumerated\_Domain\_Value\_Definition\_Source:*  
NCCGIA  
*Enumerated\_Domain:*  
*Enumerated\_Domain\_Value:* 2  
*Enumerated\_Domain\_Value\_Definition:*  
Point was not reviewed  
*Enumerated\_Domain\_Value\_Definition\_Source:*  
NCCGIA  
*Enumerated\_Domain:*  
*Enumerated\_Domain\_Value:* 9  
*Enumerated\_Domain\_Value\_Definition:*  
Ortho image not available at time of edits  
*Enumerated\_Domain\_Value\_Definition\_Source:*  
NCCGIA

*Attribute\_Measurement\_Frequency:*  
As needed

*Attribute:*

*Attribute\_Label:* MAIL\_ADDR  
*Attribute\_Definition:*  
Mailing address of school  
*Attribute\_Definition\_Source:*  
NC Department of Public Instruction  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Addresses of schools vary.  
*Attribute\_Measurement\_Frequency:*  
As needed

*Attribute:*

*Attribute\_Label:* MAIL\_ZIP  
*Attribute\_Definition:*  
Mailing zip code of school  
*Attribute\_Definition\_Source:*  
NC Department of Public Instruction  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Zip codes vary.  
*Attribute\_Measurement\_Frequency:*  
As needed

*Attribute:*

*Attribute\_Label:* ANGLE

*Attribute:*

*Attribute\_Label:* Shape  
*Attribute\_Definition:*  
Feature geometry.  
*Attribute\_Definition\_Source:*  
ESRI  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Coordinates defining the features.

*Attribute:*

*Attribute\_Label:* MAIL\_CITY  
*Attribute\_Definition:*  
Mailing city of school  
*Attribute\_Definition\_Source:*  
NC Department of Public Instruction  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
City names vary.  
*Attribute\_Measurement\_Frequency:*  
As needed

*Attribute:*

*Attribute\_Label:* Angle

*Attribute:*



*Attribute\_Label:* angle3

*Attribute:*

*Attribute\_Label:* FID

*Attribute\_Definition:*

Internal feature number.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Sequential unique whole numbers that are automatically generated.

*Overview\_Description:*

*Entity\_and\_Attribute\_Overview:*

A point coverage depicting school locations. The point attribute table (PAT) has attribute data including total area in coverage units (square meters), total perimeter (linear meters), two point internal identification numbers, and pertinent school location information.

```
>SCHLPL.PAT Point Attribute Table
>ITEM NAME      WIDTH  OUTPUT  TYPE  DEC  DESCRIPTION
>AREA           4      12      F     3    Total area in meters
>PERIMETER      4      12      F     3    Total perimeter in meters
>SCHLPL1206#    4       5       B     -    Internal id number
>SCHLPL1206-ID  4       5       B     -    Internal id number
>LEA_SCHOOL     9       9       C     -    6-digit School id number
>SCHL_NAME      40     40      C     -    School name
>PRINCIPAL      24     24      C     -    School principal
>PHYS_ADDR      40     40      C     -    Physical address of school
>PHYS_CITY      24     24      C     -    City in which school is located
>PHYS_ZIP       10     10      C     -    Zip code in which school is located
>PHONE         12     12      C     -    School phone number
>BGN_GRADE     12     12      C     -    School beginning grade
>END_GRADE     12     12      C     -    School ending grade
>MAIL_ADDR     28     28      C     -    Mailing address of school
>MAIL_CITY     20     20      C     -    Mailing city of school
>MAIL_ZIP      10     10      C     -    Mailing zip code of school
>FAX           12     12      C     -    School fax number
>PTMOVED       18     18      C     -    Internal CGIA review tracking item
>COMMENTS      40     40      C     -    Internal CGIA review tracking item
>REVIEWED      15     15      C     -    Internal CGIA review tracking item
```

*Entity\_and\_Attribute\_Detail\_Citation:*

None

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*Distribution\_Information:*

*Distributor:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* NC Center for Geographic Information and Analysis

*Contact\_Position:* Production Services

*Contact\_Address:*

*Address\_Type:* Mailing and physical address

*Address:*

301 North Wilmington Street, Suite 700

*City:* Raleigh

*State\_or\_Province:* North Carolina

*Postal\_Code:* 27601-2825

*Country:* USA

*Contact\_Voice\_Telephone:* (919) 733-2090

*Contact\_Facsimile\_Telephone:* (919) 715-0725

*Contact\_Electronic\_Mail\_Address:* dataq@ncmail.net

*Hours\_of\_Service:* 8:30AM - 5:30PM

*Contact\_Instructions:*

Phone and electronic mail preferred

*Resource\_Description:* Public School Locations

*Distribution\_Liability:*

NCCGIA is charged with the development and maintenance

of the NC Onemap database and, in cooperation with other mapping organizations, is committed to offering its users accurate, useful, and current information about the state. Although every effort has been made to ensure the accuracy of information, errors and conditions originating from physical sources used to develop the database may be reflected in the data supplied. The client must be aware of data conditions and bear responsibility for the appropriate use of the information with respect to possible errors, original map scale, collection methodology, currency of data, and other conditions specific to certain data. NCCGIA does not support secondary distribution of this data. The use of trade names or commercial products does not constitute their endorsement by the NCCGIA or North Carolina State Government.

*Standard\_Order\_Process:*

*Non-digital\_Form:*

FOR DIGITAL OR NON-DIGITAL DATA, Contact NC CGIA, Data Distribution to order data, Phone 919-733-2090 ... Email dataq@ncmail.net

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Transfer\_Size:* 0.000

*Fees:* Costs for custom data orders apply. Contact CGIA at 919-733-2090.

*Custom\_Order\_Process:*

Data creation and large data analysis jobs contact CGIA at P:(919)733-2090. All custom data orders are available through standard ordering procedures on a cost recovery basis.

*Technical\_Prerequisites:*

All formats supplied are created using ARC/INFO GIS software. Other formats are available. Format compatibility is the user's responsibility.

*Available\_Time\_Period:*

*Time\_Period\_Information:*

*Range\_of\_Dates/Times:*

*Beginning\_Date:* 20061228

*Ending\_Date:* Present

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20070625

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* North Carolina Center for Geographic Information and Analysis

*Contact\_Person:* REQUIRED: The person responsible for the metadata information.

*Contact\_Position:* Database Management

*Contact\_Address:*

*Address\_Type:* Mailing and physical address

*Address:*

301 North Wilmington Street, Suite 700

*City:* Raleigh

*State\_or\_Province:* North Carolina

*Postal\_Code:* 27601-2825

*Country:* USA

*Contact\_Voice\_Telephone:* (919) 733-2090

*Contact\_Facsimile\_Telephone:* (919) 715-0725

*Contact\_Electronic\_Mail\_Address:* dataq@ncmail.net

*Hours\_of\_Service:* 8:30AM - 5:30PM

*Contact\_Instructions:*

Phone and electronic mail preferred

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time

*Metadata\_Access\_Constraints:* None

*Metadata\_Use\_Constraints:*

This metadata file is to accompany the data set identified and received from NCCGIA. NCCGIA does not support secondary distribution. If this data file was received from anyone besides NCCGIA, this metadata file and the data set it describes may contain discrepancies.

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

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# Sewer Treatment Plants

## Metadata:

- [Identification Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

*Publication\_Date:* Unknown

##### *Title:*

Sewer Treatment Plants

*Geospatial\_Data\_Presentation\_Form:* vector digital data

*Online\_Linkage:* [\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\Sewer\\_Treat.shp](\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\Sewer_Treat.shp)

#### *Description:*

##### *Abstract:*

Locations of Sewer Treatment Plants in Richmond County

#### *Time\_Period\_of\_Content:*

##### *Time\_Period\_Information:*

##### *Single\_Date/Time:*

*Calendar\_Date:* unknown

##### *Currentness\_Reference:*

publication date

#### *Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* Unknown

#### *Spatial\_Domain:*

##### *Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -79.798426

*East\_Bounding\_Coordinate:* -79.724712

*North\_Bounding\_Coordinate:* 35.083033

*South\_Bounding\_Coordinate:* 34.854767

#### *Keywords:*

##### *Theme:*

#### *Point\_of\_Contact:*

##### *Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* James Armstrong

*Contact\_Organization:* Richmond County Government

*Contact\_Position:* Director of Planning and GIS Services

*Contact\_Address:*

*Address\_Type:* mailing address

*Address:*

P.O. Box 504

*City:* Rockingham

*State\_or\_Province:* NC

*Postal\_Code:* 28380

*Country:* USA

*Contact\_Voice\_Telephone:* (910) 417-4904

*Contact\_Facsimile\_Telephone:* (910) 417-4905

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog  
9.2.2.1350

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Entity point

*Point\_and\_Vector\_Object\_Count:* 0

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Map\_Projection:*

*Map\_Projection\_Name:* Lambert Conformal Conic

*Lambert\_Conformal\_Conic:*

*Standard\_Parallel:* 34.333333

*Standard\_Parallel:* 36.166667

*Longitude\_of\_Central\_Meridian:* -79.000000

*Latitude\_of\_Projection\_Origin:* 33.750000

*False\_Easting:* 2000000.002617

*False\_Northing:* 0.000000

*Planar\_Coordinate\_Information:*

*Planar\_Coordinate\_Encoding\_Method:* coordinate pair

*Coordinate\_Representation:*

*Abscissa\_Resolution:* 0.000000

*Ordinate\_Resolution:* 0.000000

*Planar\_Distance\_Units:* survey feet

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* North American Datum of 1983  
*Ellipsoid\_Name:* Geodetic Reference System 80  
*Semi-major\_Axis:* 6378137.000000  
*Denominator\_of\_Flattening\_Ratio:* 298.257222

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*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* Sewer\_Treat

*Attribute:*

*Attribute\_Label:* ANGLE

*Attribute:*

*Attribute\_Label:* Shape

*Attribute\_Definition:*

Feature geometry.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Coordinates defining the features.

*Attribute:*

*Attribute\_Label:* AREA

*Attribute:*

*Attribute\_Label:* PERIMETER

*Attribute:*

*Attribute\_Label:* STREAT1\_

*Attribute:*

*Attribute\_Label:* STREAT1\_ID

*Attribute:*

*Attribute\_Label:* SSTPID

*Attribute:*

*Attribute\_Label:* SSTPLOC

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*Attribute\_Label:* SSTPMDPR

*Attribute:*

*Attribute\_Label:* SSTPADPR

*Attribute:*

*Attribute\_Label:* SSTPTRMT

*Attribute:*



*Attribute\_Label:* SSTPSLUD  
*Attribute:*  
*Attribute\_Label:* SSTPINFT  
*Attribute:*  
*Attribute\_Label:* SSTPAREA  
*Attribute:*  
*Attribute\_Label:* SYSTEM  
*Attribute:*  
*Attribute\_Label:* POLYGONID  
*Attribute:*  
*Attribute\_Label:* SCALE  
*Attribute:*  
*Attribute\_Label:* FID  
*Attribute\_Definition:*  
Internal feature number.  
*Attribute\_Definition\_Source:*  
ESRI  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Sequential unique whole numbers that are automatically generated.

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*Distribution\_Information:*  
*Resource\_Description:* Downloadable Data  
*Standard\_Order\_Process:*  
*Digital\_Form:*  
*Digital\_Transfer\_Information:*  
*Transfer\_Size:* 0.000

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*Metadata\_Reference\_Information:*  
*Metadata\_Date:* 20070625  
*Metadata\_Contact:*  
*Contact\_Information:*  
*Contact\_Organization\_Primary:*  
*Contact\_Organization:* THE LPA GROUP, INC.  
*Contact\_Address:*  
*Address\_Type:* mailing address  
*Address:*  
700 Huger Street  
*City:* Columbia  
*State\_or\_Province:* SC  
*Postal\_Code:* 29201

*Country:* USA  
*Contact\_Voice\_Telephone:* (803) 254-2211  
*Contact\_Facsimile\_Telephone:* (803) 779-8749  
*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata  
*Metadata\_Standard\_Version:* FGDC-STD-001-1998  
*Metadata\_Time\_Convention:* local time  
*Metadata\_Extensions:*  
*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>  
*Profile\_Name:* ESRI Metadata Profile

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# Transmission Lines and Pipe Lines by USGS Quad

## Metadata:

- [Identification Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

*Originator:* US Geologic Survey

##### *Title:*

Transmission Lines and Pipe Lines by USGS Quad

*Geospatial\_Data\_Presentation\_Form:* vector digital data

*Online\_Linkage:* [\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\Hamlet\\_PTL.shp](\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\Hamlet_PTL.shp)

### *Description:*

#### *Abstract:*

Transmissions Lines and Pipelines by USGS 7.5 Minute Quadrangle (Hamlet)

### *Time\_Period\_of\_Content:*

#### *Time\_Period\_Information:*

##### *Single\_Date/Time:*

*Calendar\_Date:* unknown

#### *Currentness\_Reference:*

publication date

### *Status:*

*Maintenance\_and\_Update\_Frequency:* Unknown

### *Spatial\_Domain:*

#### *Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -79.751896

*East\_Bounding\_Coordinate:* -79.622912

*North\_Bounding\_Coordinate:* 35.001353

*South\_Bounding\_Coordinate:* 34.873652

### *Keywords:*

#### *Theme:*

### *Point\_of\_Contact:*

#### *Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* US Geologic Survey  
*Native\_Data\_Set\_Environment:*  
Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog  
9.2.2.1350

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*Spatial\_Data\_Organization\_Information:*  
*Direct\_Spatial\_Reference\_Method:* Vector  
*Point\_and\_Vector\_Object\_Information:*  
*SDTS\_Terms\_Description:*  
*SDTS\_Point\_and\_Vector\_Object\_Type:* String  
*Point\_and\_Vector\_Object\_Count:* 0

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*Spatial\_Reference\_Information:*  
*Horizontal\_Coordinate\_System\_Definition:*  
*Planar:*  
*Grid\_Coordinate\_System:*  
*Grid\_Coordinate\_System\_Name:* Universal Transverse Mercator  
*Universal\_Transverse\_Mercator:*  
*UTM\_Zone\_Number:* 17  
*Transverse\_Mercator:*  
*Scale\_Factor\_at\_Central\_Meridian:* 0.999600  
*Longitude\_of\_Central\_Meridian:* -81.000000  
*Latitude\_of\_Projection\_Origin:* 0.000000  
*False\_Easting:* 500000.000000  
*False\_Northing:* 0.000000  
*Planar\_Coordinate\_Information:*  
*Planar\_Coordinate\_Encoding\_Method:* coordinate pair  
*Coordinate\_Representation:*  
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*Ordinate\_Resolution:* 0.000000  
*Planar\_Distance\_Units:* meters  
*Geodetic\_Model:*  
*Horizontal\_Datum\_Name:* North American Datum of 1927  
*Ellipsoid\_Name:* Clarke 1866  
*Semi-major\_Axis:* 6378206.400000  
*Denominator\_of\_Flattening\_Ratio:* 294.978698

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*Entity\_and\_Attribute\_Information:*  
*Detailed\_Description:*

*Entity\_Type:*  
*Entity\_Type\_Label:* Hamlet\_PTL

*Attribute:*  
*Attribute\_Label:* Shape  
*Attribute\_Definition:*  
 Feature geometry.  
*Attribute\_Definition\_Source:*  
 ESRI  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
 Coordinates defining the features.

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*Attribute\_Label:* OBJECTID

*Attribute:*  
*Attribute\_Label:* LINE

*Attribute:*  
*Attribute\_Label:* LINE\_OBRP

*Attribute:*  
*Attribute\_Label:* PIDL

*Attribute:*  
*Attribute\_Label:* PIDR

*Attribute:*  
*Attribute\_Label:* SNID

*Attribute:*  
*Attribute\_Label:* ENID

*Attribute:*  
*Attribute\_Label:* ENTITY\_LAB

*Attribute:*  
*Attribute\_Label:* RELATION\_T

*Attribute:*  
*Attribute\_Label:* OPERATIONA

*Attribute:*  
*Attribute\_Label:* UNPAVED

*Attribute:*  
*Attribute\_Label:* NUCLEAR

*Attribute:*  
*Attribute\_Label:* ARBITRARY\_

*Attribute:*  
*Attribute\_Label:* PHOTOREVIS

*Attribute:*  
*Attribute\_Label:* ROTATION\_A

*Attribute:*  
*Attribute\_Label:* BEST\_ESTIM

*Attribute:*  
*Attribute\_Label:* FID  
*Attribute\_Definition:*  
 Internal feature number.  
*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Sequential unique whole numbers that are automatically generated.

*Attribute:*

*Attribute\_Label:* Shape\_Leng

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*Distribution\_Information:*

*Distributor:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* US Geologic Survey

*Resource\_Description:* Downloadable Data

*Standard\_Order\_Process:*

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Transfer\_Size:* 0.000

*Available\_Time\_Period:*

*Time\_Period\_Information:*

*Single\_Date/Time:*

*Calendar\_Date:* unknown

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20070625

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* THE LPA GROUP, INC.

*Contact\_Address:*

*Address\_Type:* mailing and physical address

*Address:*

700 Huger Street

*City:* Columbia

*State\_or\_Province:* SC

*Postal\_Code:* 29201

*Country:* USA

*Contact\_Voice\_Telephone:* (803) 254-2211

*Contact\_Facsimile\_Telephone:* (803) 779-8749

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time



*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

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# Transmission Lines and Pipe Lines by USGS Quad

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

*Originator:* US Geologic Survey

*Publication\_Date:* Unknown

##### *Title:*

Transmission Lines and Pipe Lines by USGS Quad

*Geospatial\_Data\_Presentation\_Form:* vector digital data

*Online\_Linkage:* [\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\Rockingham\\_PTL.shp](\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\Rockingham_PTL.shp)

### *Description:*

#### *Abstract:*

Transmissions Lines and Pipelines by USGS 7.5 Minute Quadrangle (Rockingham)

### *Time\_Period\_of\_Content:*

#### *Time\_Period\_Information:*

##### *Single\_Date/Time:*

*Calendar\_Date:* unknown

#### *Currentness\_Reference:*

publication date

### *Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* Unknown

### *Spatial\_Domain:*

#### *Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -79.876702

*East\_Bounding\_Coordinate:* -79.748100

*North\_Bounding\_Coordinate:* 35.001221

*South\_Bounding\_Coordinate:* 34.873779

### *Keywords:*

*Theme:*  
*Point\_of\_Contact:*  
*Contact\_Information:*  
*Contact\_Organization\_Primary:*  
*Contact\_Organization:* US Geologic Survey  
*Native\_Data\_Set\_Environment:*  
Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog  
9.2.2.1350

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*Lineage:*  
*Process\_Step:*  
*Process\_Description:*  
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*Source\_Used\_Citation\_Abbreviation:*  
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*Spatial\_Data\_Organization\_Information:*  
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*Point\_and\_Vector\_Object\_Information:*  
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*SDTS\_Point\_and\_Vector\_Object\_Type:* String  
*Point\_and\_Vector\_Object\_Count:* 0

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*Spatial\_Reference\_Information:*  
*Horizontal\_Coordinate\_System\_Definition:*  
*Planar:*  
*Grid\_Coordinate\_System:*  
*Grid\_Coordinate\_System\_Name:* Universal Transverse Mercator  
*Universal\_Transverse\_Mercator:*  
*UTM\_Zone\_Number:* 17  
*Transverse\_Mercator:*  
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*Latitude\_of\_Projection\_Origin:* 0.000000  
*False\_Easting:* 500000.000000  
*False\_Northing:* 0.000000  
*Planar\_Coordinate\_Information:*  
*Planar\_Coordinate\_Encoding\_Method:* coordinate pair

*Coordinate\_Representation:*

*Abscissa\_Resolution:* 0.000000

*Ordinate\_Resolution:* 0.000000

*Planar\_Distance\_Units:* meters

*Geodetic\_Model:*

*Horizontal\_Datum\_Name:* North American Datum of 1927

*Ellipsoid\_Name:* Clarke 1866

*Semi-major\_Axis:* 6378206.400000

*Denominator\_of\_Flattening\_Ratio:* 294.978698

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*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* Rockingham\_PTL

*Attribute:*

*Attribute\_Label:* Shape

*Attribute\_Definition:*

Feature geometry.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Coordinates defining the features.

*Attribute:*

*Attribute\_Label:* OBJECTID

*Attribute:*

*Attribute\_Label:* LINE

*Attribute:*

*Attribute\_Label:* LINE\_OBRP

*Attribute:*

*Attribute\_Label:* PIDL

*Attribute:*

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*Attribute:*

*Attribute\_Label:* SNID

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*Attribute\_Label:* RELATION\_T

*Attribute:*

*Attribute\_Label:* OPERATIONA

*Attribute:*

*Attribute\_Label:* UNPAVED

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    *Attribute\_Label:* ARBITRARY\_  
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    *Attribute\_Label:* PHOTOREVIS  
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    *Attribute\_Label:* ROTATION\_A  
*Attribute:*  
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    *Attribute\_Label:* FID  
    *Attribute\_Definition:*  
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    *Attribute\_Definition\_Source:*  
        ESRI  
    *Attribute\_Domain\_Values:*  
        *Unrepresentable\_Domain:*  
            Sequential unique whole numbers that are automatically  
            generated.  
*Attribute:*  
    *Attribute\_Label:* Shape\_Leng

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*Distribution\_Information:*  
    *Distributor:*  
        *Contact\_Information:*  
            *Contact\_Organization\_Primary:*  
                *Contact\_Organization:* US Geologic Survey  
    *Resource\_Description:* Downloadable Data  
    *Standard\_Order\_Process:*  
        *Digital\_Form:*  
            *Digital\_Transfer\_Information:*  
                *Transfer\_Size:* 0.000  
    *Available\_Time\_Period:*  
        *Time\_Period\_Information:*  
            *Single\_Date/Time:*  
                *Calendar\_Date:* unknown

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*Metadata\_Reference\_Information:*  
    *Metadata\_Date:* 20070625  
    *Metadata\_Contact:*  
        *Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* THE LPA GROUP, INC.

*Contact\_Address:*

*Address\_Type:* mailing and physical address

*Address:*

700 Huger Street

*City:* Columbia

*State\_or\_Province:* SC

*Postal\_Code:* 29201

*Country:* USA

*Contact\_Voice\_Telephone:* (803) 254-2211

*Contact\_Facsimile\_Telephone:* (803) 779-8749

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

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# Water Lines

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

*Publication\_Date:* Unknown

##### *Title:*

Water Lines

*Geospatial\_Data\_Presentation\_Form:* vector digital data

*Online\_Linkage:* [\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\Water\\_Line.shp](\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\Water_Line.shp)

#### *Description:*

##### *Abstract:*

Locations of Water Lines in Richmond County

#### *Time\_Period\_of\_Content:*

##### *Time\_Period\_Information:*

##### *Single\_Date/Time:*

*Calendar\_Date:* unknown

##### *Currentness\_Reference:*

publication date

#### *Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* Unknown

#### *Spatial\_Domain:*

##### *Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -79.888057

*East\_Bounding\_Coordinate:* -79.512495

*North\_Bounding\_Coordinate:* 35.178840

*South\_Bounding\_Coordinate:* 34.820841

#### *Keywords:*

##### *Theme:*

#### *Point\_of\_Contact:*

##### *Contact\_Information:*

##### *Contact\_Person\_Primary:*



*Contact\_Person:* James Armstrong  
*Contact\_Organization:* Richmond County Government  
*Contact\_Position:* Director of Planning and GIS Services  
*Contact\_Address:*  
*Address\_Type:* mailing address  
*Address:*  
P.O. Box 504  
City: Rockingham  
*State\_or\_Province:* NC  
*Postal\_Code:* 28380  
*Country:* USA  
*Contact\_Voice\_Telephone:* (910) 417-4904  
*Contact\_Facsimile\_Telephone:* (910) 417-4905

*Data\_Set\_Credit:*

Richmond County Government, North Carolina

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog 9.2.2.1350

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*Data\_Quality\_Information:*

*Lineage:*

*Process\_Step:*

*Process\_Description:*

Metadata imported.

*Source\_Used\_Citation\_Abbreviation:*

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*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* String

*Point\_and\_Vector\_Object\_Count:* 0

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Map\_Projection:*

*Map\_Projection\_Name:* Lambert Conformal Conic

*Lambert\_Conformal\_Conic:*  
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*Standard\_Parallel:* 36.166667  
*Longitude\_of\_Central\_Meridian:* -79.000000  
*Latitude\_of\_Projection\_Origin:* 33.750000  
*False\_Easting:* 2000000.002617  
*False\_Northing:* 0.000000  
*Planar\_Coordinate\_Information:*  
*Planar\_Coordinate\_Encoding\_Method:* coordinate pair  
*Coordinate\_Representation:*  
*Abscissa\_Resolution:* 0.000000  
*Ordinate\_Resolution:* 0.000000  
*Planar\_Distance\_Units:* survey feet  
*Geodetic\_Model:*  
*Horizontal\_Datum\_Name:* North American Datum of 1983  
*Ellipsoid\_Name:* Geodetic Reference System 80  
*Semi-major\_Axis:* 6378137.000000  
*Denominator\_of\_Flattening\_Ratio:* 298.257222

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*Entity\_and\_Attribute\_Information:*

*Detailed\_Description:*

*Entity\_Type:*

*Entity\_Type\_Label:* Water\_Line

*Attribute:*

*Attribute\_Label:* Shape

*Attribute\_Definition:*

Feature geometry.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Coordinates defining the features.

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*Attribute\_Label:* SYSID

*Attribute:*

*Attribute\_Label:* INSTALLED

*Attribute:*

*Attribute\_Label:* RENOVATED

*Attribute:*

*Attribute\_Label:* DIAMETER

*Attribute:*

*Attribute\_Label:* MATERIAL

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*Attribute\_Label:* SysAdmin

*Attribute:*

*Attribute\_Label:* Shape\_Leng  
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*Attribute\_Label:* Status  
*Attribute:*  
*Attribute\_Label:* FID  
*Attribute\_Definition:*  
Internal feature number.  
*Attribute\_Definition\_Source:*  
ESRI  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Sequential unique whole numbers that are automatically  
generated.  
*Attribute:*  
*Attribute\_Label:* Shape\_Le\_1

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*Distribution\_Information:*  
*Resource\_Description:* Downloadable Data  
*Standard\_Order\_Process:*  
*Digital\_Form:*  
*Digital\_Transfer\_Information:*  
*Transfer\_Size:* 0.000

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*Metadata\_Reference\_Information:*  
*Metadata\_Date:* 20070625  
*Metadata\_Contact:*  
*Contact\_Information:*  
*Contact\_Organization\_Primary:*  
*Contact\_Organization:* THE LPA GROUP, INC.  
*Contact\_Address:*  
*Address\_Type:* mailing address  
*Address:*  
700 Huger Street  
*City:* Columbia  
*State\_or\_Province:* SC  
*Postal\_Code:* 29201  
*Country:* USA  
*Contact\_Voice\_Telephone:* (803) 254-2211  
*Contact\_Facsimile\_Telephone:* (803) 779-8749  
*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata  
*Metadata\_Standard\_Version:* FGDC-STD-001-1998  
*Metadata\_Time\_Convention:* local time

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

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# Water Tanks

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

*Originator:* .

*Publication\_Date:* Unknown

##### *Title:*

Water Tanks

*Geospatial\_Data\_Presentation\_Form:* vector digital data

*Online\_Linkage:* [\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\Water\\_Tanks.shp](\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\Water_Tanks.shp)

### *Description:*

#### *Abstract:*

Locations of Water Tanks in Richmond County

### *Time\_Period\_of\_Content:*

#### *Time\_Period\_Information:*

##### *Single\_Date/Time:*

*Calendar\_Date:* unknown

#### *Currentness\_Reference:*

publication date

### *Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* Unknown

### *Spatial\_Domain:*

#### *Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -79.840865

*East\_Bounding\_Coordinate:* -79.559789

*North\_Bounding\_Coordinate:* 35.149966

*South\_Bounding\_Coordinate:* 34.821513

### *Keywords:*

#### *Theme:*

### *Point\_of\_Contact:*

#### *Contact\_Information:*

*Contact\_Person\_Primary:*

*Contact\_Person:* James Armstrong

*Contact\_Organization:* Richmond County Government

*Contact\_Position:* Director of Planning and GIS Services

*Contact\_Address:*

*Address\_Type:* mailing address

*Address:*

P.O. Box 504

*City:* Rockingham

*State\_or\_Province:* NC

*Postal\_Code:* 28380

*Country:* USA

*Contact\_Voice\_Telephone:* (910) 417-4904

*Contact\_Facsimile\_Telephone:* (910) 417-4905

*Data\_Set\_Credit:*

Richmond County Government, North Carolina

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog  
9.2.2.1350

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*Data\_Quality\_Information:*

*Lineage:*

*Process\_Step:*

*Process\_Description:*

Metadata imported.

*Source\_Used\_Citation\_Abbreviation:*

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Entity point

*Point\_and\_Vector\_Object\_Count:* 0

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Map\_Projection:*

*Map\_Projection\_Name:* Lambert Conformal Conic  
*Lambert\_Conformal\_Conic:*  
    *Standard\_Parallel:* 34.333333  
    *Standard\_Parallel:* 36.166667  
    *Longitude\_of\_Central\_Meridian:* -79.000000  
    *Latitude\_of\_Projection\_Origin:* 33.750000  
    *False\_Easting:* 2000000.002617  
    *False\_Northing:* 0.000000  
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    *Coordinate\_Representation:*  
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    *Planar\_Distance\_Units:* survey feet  
*Geodetic\_Model:*  
    *Horizontal\_Datum\_Name:* North American Datum of 1983  
    *Ellipsoid\_Name:* Geodetic Reference System 80  
    *Semi-major\_Axis:* 6378137.000000  
    *Denominator\_of\_Flattening\_Ratio:* 298.257222

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            *Entity\_Type\_Label:* Water\_Tanks  
        *Attribute:*  
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        *Attribute:*  
            *Attribute\_Label:* SCALE  
        *Attribute:*  
            *Attribute\_Label:* ANGLE  
        *Attribute:*  
            *Attribute\_Label:* WTANKS1\_  
        *Attribute:*  
            *Attribute\_Label:* WTANKS1\_ID  
        *Attribute:*  
            *Attribute\_Label:* AREA  
        *Attribute:*  
            *Attribute\_Label:* SYSTEM  
        *Attribute:*  
            *Attribute\_Label:* POLYGONID  
        *Attribute:*  
            *Attribute\_Label:* WATKID  
        *Attribute:*  
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*Attribute\_Label:* WATKCSTR  
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*Attribute\_Label:* WATKRENV  
*Attribute:*  
*Attribute\_Label:* Shape  
*Attribute\_Definition:*  
Feature geometry.  
*Attribute\_Definition\_Source:*  
ESRI  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Coordinates defining the features.

*Attribute:*  
*Attribute\_Label:* WATKTYPE  
*Attribute:*  
*Attribute\_Label:* PERIMETER  
*Attribute:*  
*Attribute\_Label:* WATKUTIL  
*Attribute:*  
*Attribute\_Label:* WATKMATR  
*Attribute:*  
*Attribute\_Label:* WATKEBOT  
*Attribute:*  
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*Attribute:*  
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*Attribute\_Definition:*  
Internal feature number.  
*Attribute\_Definition\_Source:*  
ESRI  
*Attribute\_Domain\_Values:*  
*Unrepresentable\_Domain:*  
Sequential unique whole numbers that are automatically generated.

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*Distribution\_Information:*  
*Resource\_Description:* Downloadable Data  
*Standard\_Order\_Process:*  
*Digital\_Form:*  
*Digital\_Transfer\_Information:*  
*Transfer\_Size:* 0.000

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20070625

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* THE LPA GROUP, INC.

*Contact\_Address:*

*Address\_Type:* mailing address

*Address:*

700 Huger Street

*City:* Columbia

*State\_or\_Province:* SC

*Postal\_Code:* 29201

*Country:* USA

*Contact\_Voice\_Telephone:* (803) 254-2211

*Contact\_Facsimile\_Telephone:* (803) 779-8749

*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata

*Metadata\_Standard\_Version:* FGDC-STD-001-1998

*Metadata\_Time\_Convention:* local time

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

*Metadata\_Extensions:*

*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>

*Profile\_Name:* ESRI Metadata Profile

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# Water Treatment Plants

## Metadata:

- [Identification Information](#)
  - [Data Quality Information](#)
  - [Spatial Data Organization Information](#)
  - [Spatial Reference Information](#)
  - [Entity and Attribute Information](#)
  - [Distribution Information](#)
  - [Metadata Reference Information](#)
- 

### *Identification\_Information:*

#### *Citation:*

##### *Citation\_Information:*

*Publication\_Date:* Unknown

##### *Title:*

Water Treatment Plants

*Geospatial\_Data\_Presentation\_Form:* vector digital data

*Online\_Linkage:* [\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\Water\\_treat.shp](\\cae-data1\columbia\Planning\Roadway Projects\I73-SC9\Data Collection\Documents\Northern Project Appendix\Data Pictures\Water_treat.shp)

#### *Description:*

##### *Abstract:*

Locations of Water Treatment Plants in Richmond County

#### *Time\_Period\_of\_Content:*

##### *Time\_Period\_Information:*

##### *Single\_Date/Time:*

*Calendar\_Date:* unknown

##### *Currentness\_Reference:*

publication date

#### *Status:*

*Progress:* Complete

*Maintenance\_and\_Update\_Frequency:* Unknown

#### *Spatial\_Domain:*

##### *Bounding\_Coordinates:*

*West\_Bounding\_Coordinate:* -79.839430

*East\_Bounding\_Coordinate:* -79.692293

*North\_Bounding\_Coordinate:* 34.966958

*South\_Bounding\_Coordinate:* 34.885644

#### *Keywords:*

##### *Theme:*

#### *Point\_of\_Contact:*

##### *Contact\_Information:*

##### *Contact\_Person\_Primary:*

*Contact\_Person:* James Armstrong  
*Contact\_Organization:* Richmond County Government  
*Contact\_Position:* Director of Planning and GIS Services  
*Contact\_Address:*  
*Address\_Type:* mailing address  
*Address:*  
P.O. Box 504  
City: Rockingham  
*State\_or\_Province:* NC  
*Postal\_Code:* 28380  
*Country:* USA  
*Contact\_Voice\_Telephone:* (910) 417-4904  
*Contact\_Facsimile\_Telephone:* (910) 417-4905

*Data\_Set\_Credit:*

Richmond County Government, North Carolina

*Native\_Data\_Set\_Environment:*

Microsoft Windows XP Version 5.1 (Build 2600) Service Pack 2; ESRI ArcCatalog 9.2.2.1350

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*Data\_Quality\_Information:*

*Lineage:*

*Process\_Step:*

*Process\_Description:*

Metadata imported.

*Source\_Used\_Citation\_Abbreviation:*

C:\DOCUME~1\dgrigg\LOCALS~1\Temp\xml5D.tmp

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*Spatial\_Data\_Organization\_Information:*

*Direct\_Spatial\_Reference\_Method:* Vector

*Point\_and\_Vector\_Object\_Information:*

*SDTS\_Terms\_Description:*

*SDTS\_Point\_and\_Vector\_Object\_Type:* Entity point

*Point\_and\_Vector\_Object\_Count:* 0

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*Spatial\_Reference\_Information:*

*Horizontal\_Coordinate\_System\_Definition:*

*Planar:*

*Map\_Projection:*

*Map\_Projection\_Name:* Lambert Conformal Conic

*Lambert\_Conformal\_Conic:*  
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*Standard\_Parallel:* 36.166667  
*Longitude\_of\_Central\_Meridian:* -79.000000  
*Latitude\_of\_Projection\_Origin:* 33.750000  
*False\_Easting:* 2000000.002617  
*False\_Northing:* 0.000000  
*Planar\_Coordinate\_Information:*  
*Planar\_Coordinate\_Encoding\_Method:* coordinate pair  
*Coordinate\_Representation:*  
*Abscissa\_Resolution:* 0.000000  
*Ordinate\_Resolution:* 0.000000  
*Planar\_Distance\_Units:* survey feet  
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*Horizontal\_Datum\_Name:* North American Datum of 1983  
*Ellipsoid\_Name:* Geodetic Reference System 80  
*Semi-major\_Axis:* 6378137.000000  
*Denominator\_of\_Flattening\_Ratio:* 298.257222

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*Entity\_and\_Attribute\_Information:*  
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*Attribute\_Label:* ANGLE  
*Attribute:*  
*Attribute\_Label:* AREA  
*Attribute:*  
*Attribute\_Label:* SYSTEM  
*Attribute:*  
*Attribute\_Label:* POLYGONID  
*Attribute:*  
*Attribute\_Label:* WTREAT1\_  
*Attribute:*  
*Attribute\_Label:* WTREAT1\_ID  
*Attribute:*  
*Attribute\_Label:* WATPID  
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*Attribute\_Label:* WATPCSTR  
*Attribute:*  
*Attribute\_Label:* WATPRENV

*Attribute:*

*Attribute\_Label:* WATPCPTY

*Attribute:*

*Attribute\_Label:* Shape

*Attribute\_Definition:*

Feature geometry.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Coordinates defining the features.

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*Attribute\_Label:* WATPMDP

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*Attribute\_Label:* PERIMETER

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*Attribute\_Label:* WATPADP

*Attribute:*

*Attribute\_Label:* WATPTRMT

*Attribute:*

*Attribute\_Label:* FID

*Attribute\_Definition:*

Internal feature number.

*Attribute\_Definition\_Source:*

ESRI

*Attribute\_Domain\_Values:*

*Unrepresentable\_Domain:*

Sequential unique whole numbers that are automatically generated.

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*Distribution\_Information:*

*Resource\_Description:* Downloadable Data

*Standard\_Order\_Process:*

*Digital\_Form:*

*Digital\_Transfer\_Information:*

*Transfer\_Size:* 0.000

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*Metadata\_Reference\_Information:*

*Metadata\_Date:* 20070625

*Metadata\_Contact:*

*Contact\_Information:*

*Contact\_Organization\_Primary:*

*Contact\_Organization:* THE LPA GROUP, INC.  
*Contact\_Address:*  
*Address\_Type:* mailing address  
*Address:*  
700 Huger Street  
*City:* Columbia  
*State\_or\_Province:* SC  
*Postal\_Code:* 29201  
*Country:* USA  
*Contact\_Voice\_Telephone:* (803) 254-2211  
*Contact\_Facsimile\_Telephone:* (803) 779-8749  
*Metadata\_Standard\_Name:* FGDC Content Standards for Digital Geospatial Metadata  
*Metadata\_Standard\_Version:* FGDC-STD-001-1998  
*Metadata\_Time\_Convention:* local time  
*Metadata\_Extensions:*  
*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>  
*Profile\_Name:* ESRI Metadata Profile  
*Metadata\_Extensions:*  
*Online\_Linkage:* <http://www.esri.com/metadata/esriprof80.html>  
*Profile\_Name:* ESRI Metadata Profile

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# Appendix D All Preliminary Build Alternatives



From I-95 to Future Interstate 74  
in North Carolina



U.S. Department of Transportation  
**Federal Highway  
Administration**



# APPENDIX D

## All Preliminary Build Alternatives

Revised: 06/18/07

Grey indicates alternatives eliminated based on having greater than 300 acres of wetland impact.  
 White indicates alternatives with less than 300 acres of wetland impact.

	Total Length (Miles)	Total Wetlands (Acres)	Total Wetlands Value
Alternate 1-A	50.91	451.50	2,967.68
Alternate 1-B	50.34	529.39	3,258.94
Alternate 1-C	50.23	386.17	2,809.43
Alternate 1-D	50.07	419.11	3,068.27
Alternate 1-E	51.99	428.85	2,983.50
Alternate 1-F	51.83	461.79	3,242.34
Alternate 1-G	52.64	386.23	2,849.78
Alternate 1-H	52.48	419.17	3,108.62
Alternate 1-I	55.32	463.22	3,378.67
Alternate 1-J	55.17	496.16	3,637.51
Alternate 1-K	55.75	461.50	3,356.31
Alternate 1-L	55.59	494.44	3,615.15
Alternate 1-M	56.35	491.49	3,315.96
Alternate 1-N	51.79	460.20	3,182.21
Alternate 1-O	52.44	417.59	3,048.49
Alternate 1-P	55.12	494.58	3,577.38
Alternate 1-Q	55.55	492.85	3,555.02
Alternate 1-R	56.08	518.23	3,537.37
Alternate 1-S	51.52	486.95	3,403.62
Alternate 1-T	52.17	444.33	3,269.90
Alternate 1-U	54.85	521.32	3,798.79
Alternate 1-V	55.28	519.59	3,776.43
Alternate 2-A	49.03	420.03	2,807.44
Alternate 2-B	48.47	497.92	3,098.69
Alternate 2-C	48.35	354.71	2,649.18
Alternate 2-D	48.20	387.65	2,908.02
Alternate 2-E	50.11	397.39	2,823.25
Alternate 2-F	49.96	430.32	3,082.10
Alternate 2-G	50.76	354.77	2,689.53
Alternate 2-H	50.61	387.71	2,948.38
Alternate 2-I	53.45	431.76	3,218.42
Alternate 2-J	53.29	464.70	3,477.27
Alternate 2-K	53.87	430.04	3,196.07
Alternate 2-L	53.71	462.97	3,454.91
Alternate 2-M	54.47	460.03	3,155.72
Alternate 2-N	49.91	428.74	3,021.97
Alternate 2-O	50.56	386.12	2,888.25
Alternate 2-P	53.24	463.12	3,417.14
Alternate 2-Q	53.67	461.39	3,394.78
Alternate 2-R	54.20	486.77	3,377.13
Alternate 2-S	49.64	455.48	3,243.38
Alternate 2-T	50.29	412.87	3,109.66
Alternate 2-U	52.97	489.86	3,638.55
Alternate 2-V	53.40	488.13	3,616.19
Alternate 3-A	51.12	466.97	3,112.34

Alternate 3-B	50.56	544.86	3,403.59
Alternate 3-C	50.45	401.65	2,954.08
Alternate 3-D	50.29	434.58	3,212.93
Alternate 3-E	52.21	444.32	3,128.15
Alternate 3-F	52.05	477.26	3,387.00
Alternate 3-G	52.86	401.70	2,994.44
Alternate 3-H	52.70	434.64	3,253.28
Alternate 3-I	55.54	478.70	3,523.33
Alternate 3-J	55.38	511.63	3,782.17
Alternate 3-K	55.96	476.97	3,500.97
Alternate 3-L	55.81	509.91	3,759.81
Alternate 3-M	56.56	506.96	3,460.62
Alternate 3-N	52.00	475.67	3,326.87
Alternate 3-O	52.65	433.06	3,193.15
Alternate 3-P	55.34	510.05	3,722.04
Alternate 3-Q	55.76	508.32	3,699.68
Alternate 3-R	56.29	533.70	3,682.03
Alternate 3-S	51.73	502.42	3,548.28
Alternate 3-T	52.38	459.80	3,414.56
Alternate 3-U	55.07	536.79	3,943.45
Alternate 3-V	55.49	535.07	3,921.09
Alternate 4-A	49.24	435.51	2,952.09
Alternate 4-B	48.68	513.39	3,243.35
Alternate 4-C	48.57	370.18	2,793.84
Alternate 4-D	48.41	403.12	3,052.68
Alternate 4-E	50.33	412.86	2,967.91
Alternate 4-F	50.17	445.80	3,226.75
Alternate 4-G	50.98	370.24	2,834.19
Alternate 4-H	50.82	403.18	3,093.03
Alternate 4-I	53.66	447.23	3,363.08
Alternate 4-J	53.50	480.17	3,621.92
Alternate 4-K	54.09	445.51	3,340.72
Alternate 4-L	53.93	478.45	3,599.57
Alternate 4-M	54.68	475.50	3,300.37
Alternate 4-N	50.13	444.21	3,166.62
Alternate 4-O	50.78	401.59	3,032.90
Alternate 4-P	53.46	478.59	3,561.79
Alternate 4-Q	53.89	476.86	3,539.44
Alternate 4-R	54.41	502.24	3,521.78
Alternate 4-S	49.86	470.95	3,388.03
Alternate 4-T	50.51	428.34	3,254.31
Alternate 4-U	53.19	505.33	3,783.20
Alternate 4-V	53.62	503.60	3,760.85
Alternate 5-A	51.13	473.16	3,168.06
Alternate 5-B	50.56	551.05	3,459.31
Alternate 5-C	50.45	407.84	3,009.80
Alternate 5-D	50.29	440.77	3,268.64
Alternate 5-E	52.21	450.51	3,183.87
Alternate 5-F	52.05	483.45	3,442.71
Alternate 5-G	52.86	407.89	3,050.15
Alternate 5-H	52.70	440.83	3,309.00
Alternate 5-I	55.54	484.89	3,579.04
Alternate 5-J	55.38	517.82	3,837.88



Alternate 5-K	55.97	483.16	3,556.69
Alternate 5-L	55.81	516.10	3,815.53
Alternate 5-M	56.57	513.15	3,516.34
Alternate 5-N	52.01	481.87	3,382.58
Alternate 5-O	52.66	439.25	3,248.87
Alternate 5-P	55.34	516.24	3,777.76
Alternate 5-Q	55.77	514.51	3,755.40
Alternate 5-R	56.30	539.89	3,737.75
Alternate 5-S	51.74	508.61	3,603.99
Alternate 5-T	52.39	465.99	3,470.28
Alternate 5-U	55.07	542.98	3,999.17
Alternate 5-V	55.50	541.26	3,976.81
Alternate 6-A	49.25	441.70	3,007.81
Alternate 6-B	48.68	519.58	3,299.06
Alternate 6-C	48.57	376.37	2,849.56
Alternate 6-D	48.42	409.31	3,108.40
Alternate 6-E	50.33	419.05	3,023.63
Alternate 6-F	50.17	451.99	3,282.47
Alternate 6-G	50.98	376.43	2,889.91
Alternate 6-H	50.82	409.37	3,148.75
Alternate 6-I	53.66	453.42	3,418.80
Alternate 6-J	53.51	486.36	3,677.64
Alternate 6-K	54.09	451.70	3,396.44
Alternate 6-L	53.93	484.64	3,655.28
Alternate 6-M	54.69	481.69	3,356.09
Alternate 6-N	50.13	450.40	3,222.34
Alternate 6-O	50.78	407.79	3,088.62
Alternate 6-P	53.46	484.78	3,617.51
Alternate 6-Q	53.89	483.05	3,595.15
Alternate 6-R	54.42	508.43	3,577.50
Alternate 6-S	49.86	477.14	3,443.75
Alternate 6-T	50.51	434.53	3,310.03
Alternate 6-U	53.19	511.52	3,838.92
Alternate 6-V	53.62	509.79	3,816.56
Alternate 7-A	51.44	516.45	3,342.04
Alternate 7-B	50.88	594.34	3,633.29
Alternate 7-C	50.77	451.13	3,183.78
Alternate 7-D	50.61	484.07	3,442.62
Alternate 7-E	52.53	493.80	3,357.85
Alternate 7-F	52.37	526.74	3,616.69
Alternate 7-G	53.18	451.19	3,224.13
Alternate 7-H	53.02	484.12	3,482.98
Alternate 7-I	55.86	528.18	3,753.02
Alternate 7-J	55.70	561.12	4,011.87
Alternate 7-K	56.29	526.45	3,730.67
Alternate 7-L	56.13	559.39	3,989.51
Alternate 7-M	56.88	556.44	3,690.32
Alternate 7-N	52.33	525.16	3,556.57
Alternate 7-O	52.98	482.54	3,422.85
Alternate 7-P	55.66	559.53	3,951.74
Alternate 7-Q	56.08	557.81	3,929.38
Alternate 7-R	56.61	583.18	3,911.73
Alternate 7-S	52.06	551.90	3,777.98

Alternate 7-T	52.71	509.28	3,644.26
Alternate 7-U	55.39	586.27	4,173.15
Alternate 7-V	55.81	584.55	4,150.79
Alternate 8-A	49.57	484.99	3,181.79
Alternate 8-B	49.00	562.88	3,473.04
Alternate 8-C	48.89	419.67	3,023.54
Alternate 8-D	48.73	452.60	3,282.38
Alternate 8-E	50.65	462.34	3,197.61
Alternate 8-F	50.49	495.28	3,456.45
Alternate 8-G	51.30	419.72	3,063.89
Alternate 8-H	51.14	452.66	3,322.73
Alternate 8-I	53.98	496.72	3,592.78
Alternate 8-J	53.82	529.65	3,851.62
Alternate 8-K	54.41	494.99	3,570.42
Alternate 8-L	54.25	527.93	3,829.26
Alternate 8-M	55.01	524.98	3,530.07
Alternate 8-N	50.45	493.69	3,396.32
Alternate 8-O	51.10	451.08	3,262.60
Alternate 8-P	53.78	528.07	3,791.49
Alternate 8-Q	54.21	526.34	3,769.13
Alternate 8-R	54.74	551.72	3,751.48
Alternate 8-S	50.18	520.44	3,617.73
Alternate 8-T	50.83	477.82	3,484.01
Alternate 8-U	53.51	554.81	4,012.90
Alternate 8-V	53.94	553.09	3,990.54
Alternate 9-A	51.66	531.92	3,486.69
Alternate 9-B	51.10	609.81	3,777.95
Alternate 9-C	50.98	466.60	3,328.44
Alternate 9-D	50.83	499.54	3,587.28
Alternate 9-E	52.74	509.27	3,502.51
Alternate 9-F	52.59	542.21	3,761.35
Alternate 9-G	53.39	466.66	3,368.79
Alternate 9-H	53.24	499.59	3,627.63
Alternate 9-I	56.08	543.65	3,897.68
Alternate 9-J	55.92	576.59	4,156.52
Alternate 9-K	56.50	541.92	3,875.32
Alternate 9-L	56.34	574.86	4,134.17
Alternate 9-M	57.10	571.91	3,834.97
Alternate 9-N	52.54	540.63	3,701.22
Alternate 9-O	53.19	498.01	3,567.50
Alternate 9-P	55.87	575.00	4,096.39
Alternate 9-Q	56.30	573.28	4,074.04
Alternate 9-R	56.83	598.65	4,056.38
Alternate 9-S	52.27	567.37	3,922.63
Alternate 9-T	52.92	524.75	3,788.91
Alternate 9-U	55.60	601.75	4,317.80
Alternate 9-V	56.03	600.02	4,295.45
Alternate 10-A	49.78	500.46	3,326.45
Alternate 10-B	49.22	578.35	3,617.70
Alternate 10-C	49.11	435.14	3,168.19
Alternate 10-D	48.95	468.07	3,427.04
Alternate 10-E	50.86	477.81	3,342.26
Alternate 10-F	50.71	510.75	3,601.11

Alternate 10-G	51.52	435.19	3,208.54
Alternate 10-H	51.36	468.13	3,467.39
Alternate 10-I	54.20	512.19	3,737.43
Alternate 10-J	54.04	545.12	3,996.28
Alternate 10-K	54.62	510.46	3,715.08
Alternate 10-L	54.47	543.40	3,973.92
Alternate 10-M	55.22	540.45	3,674.73
Alternate 10-N	50.66	509.17	3,540.98
Alternate 10-O	51.31	466.55	3,407.26
Alternate 10-P	54.00	543.54	3,936.15
Alternate 10-Q	54.42	541.81	3,913.79
Alternate 10-R	54.95	567.19	3,896.14
Alternate 10-S	50.39	535.91	3,762.39
Alternate 10-T	51.04	493.29	3,628.67
Alternate 10-U	53.73	570.28	4,157.56
Alternate 10-V	54.15	568.56	4,135.20
Alternate 11-A	51.66	538.11	3,542.41
Alternate 11-B	51.10	616.00	3,833.66
Alternate 11-C	50.99	472.79	3,384.16
Alternate 11-D	50.83	505.73	3,643.00
Alternate 11-E	52.75	515.46	3,558.23
Alternate 11-F	52.59	548.40	3,817.07
Alternate 11-G	53.40	472.85	3,424.51
Alternate 11-H	53.24	505.79	3,683.35
Alternate 11-I	56.08	549.84	3,953.40
Alternate 11-J	55.92	582.78	4,212.24
Alternate 11-K	56.50	548.11	3,931.04
Alternate 11-L	56.35	581.05	4,189.88
Alternate 11-M	57.10	578.10	3,890.69
Alternate 11-N	52.54	546.82	3,756.94
Alternate 11-O	53.19	504.20	3,623.22
Alternate 11-P	55.88	581.19	4,152.11
Alternate 11-Q	56.30	579.47	4,129.75
Alternate 11-R	56.83	604.85	4,112.10
Alternate 11-S	52.27	573.56	3,978.35
Alternate 11-T	52.92	530.94	3,844.63
Alternate 11-U	55.61	607.94	4,373.52
Alternate 11-V	56.03	606.21	4,351.16
Alternate 12-A	49.78	506.65	3,382.16
Alternate 12-B	49.22	584.54	3,673.42
Alternate 12-C	49.11	441.33	3,223.91
Alternate 12-D	48.95	474.27	3,482.75
Alternate 12-E	50.87	484.00	3,397.98
Alternate 12-F	50.71	516.94	3,656.82
Alternate 12-G	51.52	441.39	3,264.26
Alternate 12-H	51.36	474.32	3,523.10
Alternate 12-I	54.20	518.38	3,793.15
Alternate 12-J	54.04	551.32	4,051.99
Alternate 12-K	54.63	516.65	3,770.80
Alternate 12-L	54.47	549.59	4,029.64
Alternate 12-M	55.22	546.64	3,730.44
Alternate 12-N	50.67	515.36	3,596.69
Alternate 12-O	51.32	472.74	3,462.97

Alternate 12-P	54.00	549.73	3,991.86
Alternate 12-Q	54.43	548.01	3,969.51
Alternate 12-R	54.95	573.38	3,951.85
Alternate 12-S	50.40	542.10	3,818.10
Alternate 12-T	51.05	499.48	3,684.38
Alternate 12-U	53.73	576.47	4,213.27
Alternate 12-V	54.16	574.75	4,190.92
Alternate 19-A	42.95	386.35	2,498.60
Alternate 19-B	42.38	464.24	2,789.85
Alternate 19-C	42.27	321.03	2,340.34
Alternate 19-D	42.11	353.97	2,599.19
Alternate 19-E	44.03	363.70	2,514.42
Alternate 19-F	43.87	396.64	2,773.26
Alternate 19-G	44.68	321.09	2,380.70
Alternate 19-H	44.52	354.03	2,639.54
Alternate 19-I	47.36	398.08	2,909.59
Alternate 19-J	47.21	431.02	3,168.43
Alternate 19-K	47.79	396.35	2,887.23
Alternate 19-L	47.63	429.29	3,146.07
Alternate 19-M	48.39	426.34	2,846.88
Alternate 19-N	43.83	395.06	2,713.13
Alternate 19-O	44.48	352.44	2,579.41
Alternate 19-P	47.16	429.43	3,108.30
Alternate 19-Q	47.59	427.71	3,085.94
Alternate 19-R	48.12	453.09	3,068.29
Alternate 19-S	43.56	421.80	2,934.54
Alternate 19-T	44.21	379.18	2,800.82
Alternate 19-U	46.89	456.18	3,329.71
Alternate 19-V	47.32	454.45	3,307.35
Alternate 20-A	43.01	351.72	2,300.31
Alternate 20-B	42.45	429.61	2,591.56
Alternate 20-C	42.34	286.39	2,142.05
Alternate 20-D	42.18	319.33	2,400.89
Alternate 20-E	44.10	329.07	2,316.12
Alternate 20-F	43.94	362.01	2,574.96
Alternate 20-G	44.75	286.45	2,182.40
Alternate 20-H	44.59	319.39	2,441.25
Alternate 20-I	47.43	363.44	2,711.29
Alternate 20-J	47.27	396.38	2,970.14
Alternate 20-K	47.85	361.72	2,688.94
Alternate 20-L	47.70	394.66	2,947.78
Alternate 20-M	48.45	391.71	2,648.59
Alternate 20-N	43.89	360.42	2,514.84
Alternate 20-O	44.54	317.81	2,381.12
Alternate 20-P	47.23	394.80	2,910.01
Alternate 20-Q	47.65	393.07	2,887.65
Alternate 20-R	48.18	418.45	2,870.00
Alternate 20-S	43.62	387.17	2,736.25
Alternate 20-T	44.27	344.55	2,602.53
Alternate 20-U	46.96	421.54	3,131.42
Alternate 20-V	47.38	419.81	3,109.06
Alternate 21-A	43.48	451.31	2,872.95
Alternate 21-B	42.92	529.19	3,164.21



Alternate 21-C	42.81	385.98	2,714.70
Alternate 21-D	42.65	418.92	2,973.54
Alternate 21-E	44.57	428.66	2,888.77
Alternate 21-F	44.41	461.60	3,147.61
Alternate 21-G	45.22	386.04	2,755.05
Alternate 21-H	45.06	418.98	3,013.89
Alternate 21-I	47.90	463.03	3,283.94
Alternate 21-J	47.74	495.97	3,542.78
Alternate 21-K	48.33	461.31	3,261.58
Alternate 21-L	48.17	494.25	3,520.43
Alternate 21-M	48.92	491.30	3,221.23
Alternate 21-N	44.37	460.01	3,087.48
Alternate 21-O	45.02	417.40	2,953.76
Alternate 21-P	47.70	494.39	3,482.65
Alternate 21-Q	48.12	492.66	3,460.30
Alternate 21-R	48.65	518.04	3,442.64
Alternate 21-S	44.10	486.75	3,308.89
Alternate 21-T	44.75	444.14	3,175.17
Alternate 21-U	47.43	521.13	3,704.06
Alternate 21-V	47.85	519.40	3,681.71
Alternate 22-A	43.55	416.67	2,674.66
Alternate 22-B	42.99	494.56	2,965.91
Alternate 22-C	42.87	351.35	2,516.41
Alternate 22-D	42.72	384.29	2,775.25
Alternate 22-E	44.63	394.02	2,690.48
Alternate 22-F	44.48	426.96	2,949.32
Alternate 22-G	45.28	351.41	2,556.76
Alternate 22-H	45.13	384.34	2,815.60
Alternate 22-I	47.97	428.40	3,085.65
Alternate 22-J	47.81	461.34	3,344.49
Alternate 22-K	48.39	426.67	3,063.29
Alternate 22-L	48.23	459.61	3,322.13
Alternate 22-M	48.99	456.66	3,022.94
Alternate 22-N	44.43	425.38	2,889.19
Alternate 22-O	45.08	382.76	2,755.47
Alternate 22-P	47.76	459.75	3,284.36
Alternate 22-Q	48.19	458.03	3,262.00
Alternate 22-R	48.72	483.40	3,244.35
Alternate 22-S	44.16	452.12	3,110.60
Alternate 22-T	44.81	409.50	2,976.88
Alternate 22-U	47.49	486.49	3,505.77
Alternate 22-V	47.92	484.77	3,483.41
Alternate 25-A	43.12	317.16	1,938.37
Alternate 25-B	42.56	395.05	2,229.62
Alternate 25-C	42.45	251.84	1,780.12
Alternate 25-D	42.29	284.78	2,038.96
Alternate 25-E	44.21	294.52	1,954.19
Alternate 25-F	44.05	327.45	2,213.03
Alternate 25-G	44.86	251.90	1,820.47
Alternate 25-H	44.70	284.84	2,079.31
Alternate 25-I	47.54	328.89	2,349.36
Alternate 25-J	47.38	361.83	2,608.20
Alternate 25-K	47.97	327.16	2,327.00

Alternate 25-L	47.81	360.10	2,585.84
Alternate 25-M	48.56	357.15	2,286.65
Alternate 25-N	44.01	325.87	2,152.90
Alternate 25-O	44.66	283.25	2,019.18
Alternate 25-P	47.34	360.24	2,548.07
Alternate 25-Q	47.77	358.52	2,525.71
Alternate 25-R	48.29	383.90	2,508.06
Alternate 25-S	43.74	352.61	2,374.31
Alternate 25-T	44.39	309.99	2,240.59
Alternate 25-U	47.07	386.99	2,769.48
Alternate 25-V	47.49	385.26	2,747.12
Alternate 26-A	43.12	317.54	1,947.61
Alternate 26-B	42.56	395.42	2,238.86
Alternate 26-C	42.45	252.21	1,789.36
Alternate 26-D	42.29	285.15	2,048.20
Alternate 26-E	44.21	294.89	1,963.43
Alternate 26-F	44.05	327.83	2,222.27
Alternate 26-G	44.86	252.27	1,829.71
Alternate 26-H	44.70	285.21	2,088.55
Alternate 26-I	47.54	329.26	2,358.60
Alternate 26-J	47.38	362.20	2,617.44
Alternate 26-K	47.96	327.54	2,336.24
Alternate 26-L	47.81	360.48	2,595.08
Alternate 26-M	48.56	357.53	2,295.89
Alternate 26-N	44.00	326.24	2,162.14
Alternate 26-O	44.65	283.63	2,028.42
Alternate 26-P	47.34	360.62	2,557.31
Alternate 26-Q	47.76	358.89	2,534.95
Alternate 26-R	48.29	384.27	2,517.30
Alternate 26-S	43.73	352.98	2,383.55
Alternate 26-T	44.38	310.37	2,249.83
Alternate 26-U	47.07	387.36	2,778.72
Alternate 26-V	47.49	385.63	2,756.36
Alternate 27-A	43.66	382.12	2,312.72
Alternate 27-B	43.10	460.00	2,603.98
Alternate 27-C	42.99	316.79	2,154.47
Alternate 27-D	42.83	349.73	2,413.31
Alternate 27-E	44.74	359.47	2,328.54
Alternate 27-F	44.59	392.41	2,587.38
Alternate 27-G	45.39	316.85	2,194.82
Alternate 27-H	45.24	349.79	2,453.67
Alternate 27-I	48.08	393.84	2,723.71
Alternate 27-J	47.92	426.78	2,982.55
Alternate 27-K	48.50	392.12	2,701.36
Alternate 27-L	48.35	425.06	2,960.20
Alternate 27-M	49.10	422.11	2,661.00
Alternate 27-N	44.54	390.82	2,527.25
Alternate 27-O	45.19	348.21	2,393.54
Alternate 27-P	47.88	425.20	2,922.42
Alternate 27-Q	48.30	423.47	2,900.07
Alternate 27-R	48.83	448.85	2,882.41
Alternate 27-S	44.27	417.56	2,748.66
Alternate 27-T	44.92	374.95	2,614.95

Alternate 27-U	47.61	451.94	3,143.83
Alternate 27-V	48.03	450.21	3,121.48
Alternate 28-A	43.66	382.49	2,321.96
Alternate 28-B	43.10	460.38	2,613.22
Alternate 28-C	42.98	317.17	2,163.71
Alternate 28-D	42.83	350.10	2,422.55
Alternate 28-E	44.74	359.84	2,337.78
Alternate 28-F	44.59	392.78	2,596.62
Alternate 28-G	45.39	317.23	2,204.06
Alternate 28-H	45.24	350.16	2,462.90
Alternate 28-I	48.08	394.22	2,732.95
Alternate 28-J	47.92	427.15	2,991.79
Alternate 28-K	48.50	392.49	2,710.60
Alternate 28-L	48.34	425.43	2,969.44
Alternate 28-M	49.10	422.48	2,670.24
Alternate 28-N	44.54	391.20	2,536.49
Alternate 28-O	45.19	348.58	2,402.77
Alternate 28-P	47.87	425.57	2,931.66
Alternate 28-Q	48.30	423.85	2,909.31
Alternate 28-R	48.83	449.22	2,891.65
Alternate 28-S	44.27	417.94	2,757.90
Alternate 28-T	44.92	375.32	2,624.18
Alternate 28-U	47.60	452.31	3,153.07
Alternate 28-V	48.03	450.59	3,130.72
Alternate 31-A	42.82	348.60	2,125.14
Alternate 31-B	42.26	426.48	2,416.40
Alternate 31-C	42.15	283.27	1,966.89
Alternate 31-D	41.99	316.21	2,225.73
Alternate 31-E	43.91	325.95	2,140.96
Alternate 31-F	43.75	358.89	2,399.80
Alternate 31-G	44.56	283.33	2,007.24
Alternate 31-H	44.40	316.27	2,266.08
Alternate 31-I	47.24	360.32	2,536.13
Alternate 31-J	47.08	393.26	2,794.97
Alternate 31-K	47.67	358.60	2,513.77
Alternate 31-L	47.51	391.53	2,772.62
Alternate 31-M	48.26	388.59	2,473.42
Alternate 31-N	43.71	357.30	2,339.67
Alternate 31-O	44.36	314.68	2,205.95
Alternate 31-P	47.04	391.68	2,734.84
Alternate 31-Q	47.47	389.95	2,712.49
Alternate 31-R	47.99	415.33	2,694.83
Alternate 31-S	43.44	384.04	2,561.08
Alternate 31-T	44.09	341.43	2,427.36
Alternate 31-U	46.77	418.42	2,956.25
Alternate 31-V	47.20	416.69	2,933.90
Alternate 32-A	43.37	333.10	2,013.92
Alternate 32-B	42.80	410.99	2,305.17
Alternate 32-C	42.69	267.78	1,855.66
Alternate 32-D	42.54	300.71	2,114.51
Alternate 32-E	44.45	310.45	2,029.73
Alternate 32-F	44.29	343.39	2,288.58
Alternate 32-G	45.10	267.84	1,896.02

Alternate 32-H	44.94	300.77	2,154.86
Alternate 32-I	47.78	344.83	2,424.91
Alternate 32-J	47.63	377.76	2,683.75
Alternate 32-K	48.21	343.10	2,402.55
Alternate 32-L	48.05	376.04	2,661.39
Alternate 32-M	48.81	373.09	2,362.20
Alternate 32-N	44.25	341.81	2,228.45
Alternate 32-O	44.90	299.19	2,094.73
Alternate 32-P	47.58	376.18	2,623.62
Alternate 32-Q	48.01	374.46	2,601.26
Alternate 32-R	48.54	399.83	2,583.61
Alternate 32-S	43.98	368.55	2,449.86
Alternate 32-T	44.63	325.93	2,316.14
Alternate 32-U	47.31	402.92	2,845.03
Alternate 32-V	47.74	401.20	2,822.67
Alternate 39-A	43.61	329.75	1,972.48
Alternate 39-B	43.05	407.64	2,263.73
Alternate 39-C	42.94	264.43	1,814.22
Alternate 39-D	42.78	297.36	2,073.07
Alternate 39-E	44.70	307.10	1,988.30
Alternate 39-F	44.54	340.04	2,247.14
Alternate 39-G	45.35	264.48	1,854.58
Alternate 39-H	45.19	297.42	2,113.42
Alternate 39-I	48.03	341.48	2,383.47
Alternate 39-J	47.87	374.41	2,642.31
Alternate 39-K	48.46	339.75	2,361.11
Alternate 39-L	48.30	372.69	2,619.95
Alternate 39-M	49.05	369.74	2,320.76
Alternate 39-N	44.50	338.45	2,187.01
Alternate 39-O	45.15	295.84	2,053.29
Alternate 39-P	47.83	372.83	2,582.18
Alternate 39-Q	48.26	371.10	2,559.82
Alternate 39-R	48.78	396.48	2,542.17
Alternate 39-S	44.23	365.20	2,408.42
Alternate 39-T	44.88	322.58	2,274.70
Alternate 39-U	47.56	399.57	2,803.59
Alternate 39-V	47.99	397.85	2,781.23
Alternate 51-A	41.54	333.21	1,969.12
Alternate 51-B	40.98	411.10	2,260.38
Alternate 51-C	40.87	267.89	1,810.87
Alternate 51-D	40.71	300.83	2,069.71
Alternate 51-E	42.63	310.56	1,984.94
Alternate 51-F	42.47	343.50	2,243.78
Alternate 51-G	43.28	267.95	1,851.22
Alternate 51-H	43.12	300.88	2,110.06
Alternate 51-I	45.96	344.94	2,380.11
Alternate 51-J	45.80	377.88	2,638.95
Alternate 51-K	46.39	343.21	2,357.75
Alternate 51-L	46.23	376.15	2,616.60
Alternate 51-M	46.99	373.20	2,317.40
Alternate 51-N	42.43	341.92	2,183.65
Alternate 51-O	43.08	299.30	2,049.93
Alternate 51-P	45.76	376.29	2,578.82

Alternate 51-Q	46.19	374.57	2,556.47
Alternate 51-R	46.71	399.94	2,538.81
Alternate 51-S	42.16	368.66	2,405.06
Alternate 51-T	42.81	326.04	2,271.34
Alternate 51-U	45.49	403.03	2,800.23
Alternate 51-V	45.92	401.31	2,777.88
Alternate 97-A	44.50	435.94	2,966.82
Alternate 97-B	43.94	513.83	3,258.08
Alternate 97-C	43.82	370.62	2,808.57
Alternate 97-D	43.67	403.56	3,067.41
Alternate 97-E	45.58	413.30	2,982.64
Alternate 97-F	45.43	446.23	3,241.48
Alternate 97-G	46.23	370.68	2,848.92
Alternate 97-H	46.08	403.62	3,107.76
Alternate 97-I	48.92	447.67	3,377.81
Alternate 97-J	48.76	480.61	3,636.65
Alternate 97-K	49.34	445.95	3,355.45
Alternate 97-L	49.18	478.88	3,614.30
Alternate 97-M	49.94	475.94	3,315.10
Alternate 97-N	45.38	444.65	3,181.35
Alternate 97-O	46.03	402.03	3,047.63
Alternate 97-P	48.71	479.03	3,576.52
Alternate 97-Q	49.14	477.30	3,554.17
Alternate 97-R	49.67	502.68	3,536.51
Alternate 97-S	45.11	471.39	3,402.76
Alternate 97-T	45.76	428.78	3,269.04
Alternate 97-U	48.44	505.77	3,797.93
Alternate 97-V	48.87	504.04	3,775.58
Alternate 98-A	45.04	500.90	3,341.18
Alternate 98-B	44.47	578.79	3,632.43
Alternate 98-C	44.36	435.58	3,182.92
Alternate 98-D	44.20	468.51	3,441.76
Alternate 98-E	46.12	478.25	3,356.99
Alternate 98-F	45.96	511.19	3,615.84
Alternate 98-G	46.77	435.63	3,223.27
Alternate 98-H	46.61	468.57	3,482.12
Alternate 98-I	49.45	512.63	3,752.16
Alternate 98-J	49.29	545.56	4,011.01
Alternate 98-K	49.88	510.90	3,729.81
Alternate 98-L	49.72	543.84	3,988.65
Alternate 98-M	50.48	540.89	3,689.46
Alternate 98-N	45.92	509.60	3,555.71
Alternate 98-O	46.57	466.99	3,421.99
Alternate 98-P	49.25	543.98	3,950.88
Alternate 98-Q	49.68	542.25	3,928.52
Alternate 98-R	50.20	567.63	3,910.87
Alternate 98-S	45.65	536.35	3,777.12
Alternate 98-T	46.30	493.73	3,643.40
Alternate 98-U	48.98	570.72	4,172.29
Alternate 98-V	49.41	569.00	4,149.93
Alternate 99-A	42.01	315.21	1,821.30
Alternate 99-B	41.45	393.10	2,112.55
Alternate 99-C	41.34	249.89	1,663.04

<b>Alternate 99-D</b>	41.18	282.83	1,921.88
<b>Alternate 99-E</b>	43.10	292.57	1,837.11
<b>Alternate 99-F</b>	42.94	325.50	2,095.96
<b>Alternate 99-G</b>	43.75	249.95	1,703.39
<b>Alternate 99-H</b>	43.59	282.89	1,962.24
<b>Alternate 99-I</b>	46.43	326.94	2,232.28
<b>Alternate 99-J</b>	46.27	359.88	2,491.13
<b>Alternate 99-K</b>	46.86	325.22	2,209.93
<b>Alternate 99-L</b>	46.70	358.15	2,468.77
<b>Alternate 99-M</b>	47.46	355.21	2,169.58
<b>Alternate 99-N</b>	42.90	323.92	2,035.83
<b>Alternate 99-O</b>	43.55	281.30	1,902.11
<b>Alternate 99-P</b>	46.23	358.30	2,431.00
<b>Alternate 99-Q</b>	46.66	356.57	2,408.64
<b>Alternate 99-R</b>	47.18	381.95	2,390.99
<b>Alternate 99-S</b>	42.63	350.66	2,257.24
<b>Alternate 99-T</b>	43.28	308.05	2,123.52
<b>Alternate 99-U</b>	45.96	385.04	2,652.41
<b>Alternate 99-V</b>	46.39	383.31	2,630.05
<b>Alternate 100-A</b>	40.21	340.66	2,047.99
<b>Alternate 100-B</b>	39.64	418.55	2,339.24
<b>Alternate 100-C</b>	39.53	275.34	1,889.74
<b>Alternate 100-D</b>	39.38	308.28	2,148.58
<b>Alternate 100-E</b>	41.29	318.01	2,063.81
<b>Alternate 100-F</b>	41.13	350.95	2,322.65
<b>Alternate 100-G</b>	41.94	275.40	1,930.09
<b>Alternate 100-H</b>	41.78	308.33	2,188.93
<b>Alternate 100-I</b>	44.62	352.39	2,458.98
<b>Alternate 100-J</b>	44.47	385.33	2,717.82
<b>Alternate 100-K</b>	45.05	350.66	2,436.62
<b>Alternate 100-L</b>	44.89	383.60	2,695.46
<b>Alternate 100-M</b>	45.65	380.65	2,396.27
<b>Alternate 100-N</b>	41.09	349.37	2,262.52
<b>Alternate 100-O</b>	41.74	306.75	2,128.80
<b>Alternate 100-P</b>	44.42	383.74	2,657.69
<b>Alternate 100-Q</b>	44.85	382.02	2,635.33
<b>Alternate 100-R</b>	45.38	407.39	2,617.68
<b>Alternate 100-S</b>	40.82	376.11	2,483.93
<b>Alternate 100-T</b>	41.47	333.49	2,350.21
<b>Alternate 100-U</b>	44.15	410.48	2,879.10
<b>Alternate 100-V</b>	44.58	408.76	2,856.74
<b>Alternate 101-A</b>	37.98	319.07	1,849.16
<b>Alternate 101-B</b>	37.42	396.96	2,140.41
<b>Alternate 101-C</b>	37.31	253.75	1,690.90
<b>Alternate 101-D</b>	37.15	286.69	1,949.75
<b>Alternate 101-E</b>	39.07	296.43	1,864.97
<b>Alternate 101-F</b>	38.91	329.36	2,123.82
<b>Alternate 101-G</b>	39.72	253.81	1,731.26
<b>Alternate 101-H</b>	39.56	286.75	1,990.10
<b>Alternate 101-I</b>	42.40	330.80	2,260.14
<b>Alternate 101-J</b>	42.24	363.74	2,518.99
<b>Alternate 101-K</b>	42.82	329.08	2,237.79
<b>Alternate 101-L</b>	42.67	362.01	2,496.63

Alternate 101-M	43.42	359.07	2,197.44
Alternate 101-N	38.86	327.78	2,063.69
Alternate 101-O	39.51	285.16	1,929.97
Alternate 101-P	42.20	362.16	2,458.86
Alternate 101-Q	42.62	360.43	2,436.50
Alternate 101-R	43.15	385.81	2,418.85
Alternate 101-S	38.59	354.52	2,285.10
Alternate 101-T	39.24	311.91	2,151.38
Alternate 101-U	41.93	388.90	2,680.27
Alternate 101-V	42.35	387.17	2,657.91
Alternate 13-W	52.96	512.79	3,383.62
Alternate 13-X	52.40	590.68	3,674.88
Alternate 13-Y	51.04	442.36	3,149.05
Alternate 13-Z	50.77	469.10	3,370.46
Alternate 13-AA	52.80	485.04	3,323.12
Alternate 13-AB	52.53	511.78	3,544.53
Alternate 13-AC	53.45	442.42	3,189.40
Alternate 13-AD	53.18	469.16	3,410.81
Alternate 13-AE	56.13	519.41	3,718.29
Alternate 13-AF	55.86	546.15	3,939.70
Alternate 13-AG	56.56	517.69	3,695.93
Alternate 13-AH	56.29	544.43	3,917.34
Alternate 13-AI	52.85	500.52	3,304.76
Alternate 13-AJ	52.29	578.41	3,596.01
Alternate 13-AK	50.93	430.10	3,070.18
Alternate 13-AL	50.66	456.84	3,291.59
Alternate 13-AM	52.69	472.77	3,244.25
Alternate 13-AN	52.42	499.51	3,465.66
Alternate 13-AO	53.34	430.15	3,110.53
Alternate 13-AP	53.07	456.90	3,331.94
Alternate 13-AQ	56.02	507.15	3,639.42
Alternate 13-AR	55.75	533.89	3,860.83
Alternate 13-AS	56.45	505.42	3,617.06
Alternate 13-AT	56.18	532.16	3,838.47
Alternate 14-W	51.08	481.33	3,223.38
Alternate 14-X	50.52	559.22	3,514.63
Alternate 14-Y	49.17	410.90	2,988.80
Alternate 14-Z	48.90	437.64	3,210.21
Alternate 14-AA	50.92	453.57	3,162.87
Alternate 14-AB	50.65	480.32	3,384.28
Alternate 14-AC	51.57	410.96	3,029.16
Alternate 14-AD	51.30	437.70	3,250.57
Alternate 14-AE	54.26	487.95	3,558.05
Alternate 14-AF	53.99	514.69	3,779.46
Alternate 14-AG	54.68	486.22	3,535.69
Alternate 14-AH	54.41	512.97	3,757.10
Alternate 14-AI	50.97	469.06	3,144.51
Alternate 14-AJ	50.41	546.95	3,435.76
Alternate 14-AK	49.05	398.63	2,909.93
Alternate 14-AL	48.78	425.38	3,131.34
Alternate 14-AM	50.81	441.31	3,084.01
Alternate 14-AN	50.54	468.05	3,305.42
Alternate 14-AO	51.46	398.69	2,950.29



Alternate 14-AP	51.19	425.43	3,171.70
Alternate 14-AQ	54.15	475.68	3,479.18
Alternate 14-AR	53.88	502.43	3,700.59
Alternate 14-AS	54.57	473.96	3,456.82
Alternate 14-AT	54.30	500.70	3,678.23
Alternate 15-W	53.18	528.26	3,528.28
Alternate 15-X	52.61	606.15	3,819.54
Alternate 15-Y	51.26	457.83	3,293.71
Alternate 15-Z	50.99	484.58	3,515.12
Alternate 15-AA	53.02	500.51	3,467.78
Alternate 15-AB	52.75	527.25	3,689.19
Alternate 15-AC	53.67	457.89	3,334.06
Alternate 15-AD	53.40	484.63	3,555.47
Alternate 15-AE	56.35	534.88	3,862.95
Alternate 15-AF	56.08	561.63	4,084.36
Alternate 15-AG	56.78	533.16	3,840.59
Alternate 15-AH	56.51	559.90	4,062.00
Alternate 15-AI	53.07	515.99	3,449.41
Alternate 15-AJ	52.50	593.88	3,740.67
Alternate 15-AK	51.15	445.57	3,214.84
Alternate 15-AL	50.88	472.31	3,436.25
Alternate 15-AM	52.91	488.24	3,388.91
Alternate 15-AN	52.64	514.98	3,610.32
Alternate 15-AO	53.56	445.63	3,255.19
Alternate 15-AP	53.29	472.37	3,476.60
Alternate 15-AQ	56.24	522.62	3,784.08
Alternate 15-AR	55.97	549.36	4,005.49
Alternate 15-AS	56.67	520.89	3,761.72
Alternate 15-AT	56.40	547.63	3,983.13
Alternate 16-W	51.30	496.80	3,368.04
Alternate 16-X	50.74	574.69	3,659.29
Alternate 16-Y	49.38	426.37	3,133.46
Alternate 16-Z	49.11	453.11	3,354.87
Alternate 16-AA	51.14	469.05	3,307.53
Alternate 16-AB	50.87	495.79	3,528.94
Alternate 16-AC	51.79	426.43	3,173.81
Alternate 16-AD	51.52	453.17	3,395.22
Alternate 16-AE	54.47	503.42	3,702.70
Alternate 16-AF	54.20	530.16	3,924.11
Alternate 16-AG	54.90	501.69	3,680.35
Alternate 16-AH	54.63	528.44	3,901.76
Alternate 16-AI	51.19	484.53	3,289.17
Alternate 16-AJ	50.62	562.42	3,580.42
Alternate 16-AK	49.27	414.11	3,054.59
Alternate 16-AL	49.00	440.85	3,276.00
Alternate 16-AM	51.03	456.78	3,228.66
Alternate 16-AN	50.76	483.52	3,450.07
Alternate 16-AO	51.68	414.16	3,094.94
Alternate 16-AP	51.41	440.91	3,316.35
Alternate 16-AQ	54.36	491.15	3,623.83
Alternate 16-AR	54.09	517.90	3,845.24
Alternate 16-AS	54.79	489.43	3,601.48
Alternate 16-AT	54.52	516.17	3,822.89

Alternate 17-W	53.18	534.45	3,584.00
Alternate 17-X	52.62	612.34	3,875.25
Alternate 17-Y	51.26	464.02	3,349.42
Alternate 17-Z	50.99	490.77	3,570.83
Alternate 17-AA	53.02	506.70	3,523.49
Alternate 17-AB	52.75	533.44	3,744.90
Alternate 17-AC	53.67	464.08	3,389.78
Alternate 17-AD	53.40	490.82	3,611.19
Alternate 17-AE	56.35	541.07	3,918.66
Alternate 17-AF	56.08	567.82	4,140.07
Alternate 17-AG	56.78	539.35	3,896.31
Alternate 17-AH	56.51	566.09	4,117.72
Alternate 17-AI	53.07	522.19	3,505.13
Alternate 17-AJ	52.51	600.07	3,796.38
Alternate 17-AK	51.15	451.76	3,270.55
Alternate 17-AL	50.88	478.50	3,491.96
Alternate 17-AM	52.91	494.43	3,444.62
Alternate 17-AN	52.64	521.18	3,666.03
Alternate 17-AO	53.56	451.82	3,310.91
Alternate 17-AP	53.29	478.56	3,532.32
Alternate 17-AQ	56.24	528.81	3,839.79
Alternate 17-AR	55.97	555.55	4,061.20
Alternate 17-AS	56.67	527.08	3,817.44
Alternate 17-AT	56.40	553.82	4,038.85
Alternate 18-W	51.30	502.99	3,423.75
Alternate 18-X	50.74	580.88	3,715.01
Alternate 18-Y	49.39	432.56	3,189.18
Alternate 18-Z	49.11	459.30	3,410.59
Alternate 18-AA	51.14	475.24	3,363.25
Alternate 18-AB	50.87	501.98	3,584.66
Alternate 18-AC	51.79	432.62	3,229.53
Alternate 18-AD	51.52	459.36	3,450.94
Alternate 18-AE	54.48	509.61	3,758.42
Alternate 18-AF	54.21	536.35	3,979.83
Alternate 18-AG	54.90	507.89	3,736.06
Alternate 18-AH	54.63	534.63	3,957.47
Alternate 18-AI	51.19	490.72	3,344.88
Alternate 18-AJ	50.63	568.61	3,636.14
Alternate 18-AK	49.27	420.30	3,110.31
Alternate 18-AL	49.00	447.04	3,331.72
Alternate 18-AM	51.03	462.97	3,284.38
Alternate 18-AN	50.76	489.71	3,505.79
Alternate 18-AO	51.68	420.35	3,150.66
Alternate 18-AP	51.41	447.10	3,372.07
Alternate 18-AQ	54.37	497.35	3,679.55
Alternate 18-AR	54.10	524.09	3,900.96
Alternate 18-AS	54.79	495.62	3,657.19
Alternate 18-AT	54.52	522.36	3,878.60
Alternate 23-W	45.00	447.64	2,914.54
Alternate 23-X	44.44	525.53	3,205.80
Alternate 23-Y	43.08	377.22	2,679.97
Alternate 23-Z	42.81	403.96	2,901.38
Alternate 23-AA	44.84	419.89	2,854.04

Alternate 23-AB	44.57	446.63	3,075.45
Alternate 23-AC	45.49	377.28	2,720.32
Alternate 23-AD	45.22	404.02	2,941.73
Alternate 23-AE	48.17	454.27	3,249.21
Alternate 23-AF	47.90	481.01	3,470.62
Alternate 23-AG	48.60	452.54	3,226.85
Alternate 23-AH	48.33	479.28	3,448.26
Alternate 23-AI	44.89	435.38	2,835.67
Alternate 23-AJ	44.33	513.27	3,126.93
Alternate 23-AK	42.97	364.95	2,601.10
Alternate 23-AL	42.70	391.69	2,822.51
Alternate 23-AM	44.73	407.63	2,775.17
Alternate 23-AN	44.46	434.37	2,996.58
Alternate 23-AO	45.38	365.01	2,641.45
Alternate 23-AP	45.11	391.75	2,862.86
Alternate 23-AQ	48.06	442.00	3,170.34
Alternate 23-AR	47.79	468.74	3,391.75
Alternate 23-AS	48.49	440.28	3,147.98
Alternate 23-AT	48.22	467.02	3,369.39
Alternate 24-W	45.07	413.01	2,716.25
Alternate 24-X	44.50	490.90	3,007.50
Alternate 24-Y	43.15	342.58	2,481.67
Alternate 24-Z	42.88	369.32	2,703.08
Alternate 24-AA	44.91	385.26	2,655.74
Alternate 24-AB	44.64	412.00	2,877.15
Alternate 24-AC	45.56	342.64	2,522.03
Alternate 24-AD	45.29	369.38	2,743.44
Alternate 24-AE	48.24	419.63	3,050.92
Alternate 24-AF	47.97	446.37	3,272.33
Alternate 24-AG	48.67	417.91	3,028.56
Alternate 24-AH	48.40	444.65	3,249.97
Alternate 24-AI	44.96	400.74	2,637.38
Alternate 24-AJ	44.39	478.63	2,928.63
Alternate 24-AK	43.04	330.32	2,402.80
Alternate 24-AL	42.77	357.06	2,624.21
Alternate 24-AM	44.80	372.99	2,576.88
Alternate 24-AN	44.53	399.73	2,798.29
Alternate 24-AO	45.45	330.37	2,443.16
Alternate 24-AP	45.18	357.12	2,664.57
Alternate 24-AQ	48.13	407.37	2,972.05
Alternate 24-AR	47.86	434.11	3,193.46
Alternate 24-AS	48.56	405.64	2,949.69
Alternate 24-AT	48.29	432.38	3,171.10
Alternate 29-W	43.26	362.49	2,239.25
Alternate 29-X	42.70	440.38	2,530.51
Alternate 29-Y	41.34	292.07	2,004.68
Alternate 29-Z	41.07	318.81	2,226.09
Alternate 29-AA	43.10	334.74	2,178.75
Alternate 29-AB	42.83	361.48	2,400.16
Alternate 29-AC	43.75	292.13	2,045.03
Alternate 29-AD	43.48	318.87	2,266.44
Alternate 29-AE	46.43	369.12	2,573.92
Alternate 29-AF	46.16	395.86	2,795.33

Alternate 29-AG	46.86	367.39	2,551.56
Alternate 29-AH	46.59	394.13	2,772.97
Alternate 29-AI	43.15	350.23	2,160.38
Alternate 29-AJ	42.58	428.12	2,451.64
Alternate 29-AK	41.23	279.80	1,925.81
Alternate 29-AL	40.96	306.54	2,147.22
Alternate 29-AM	42.99	322.48	2,099.88
Alternate 29-AN	42.72	349.22	2,321.29
Alternate 29-AO	43.64	279.86	1,966.16
Alternate 29-AP	43.37	306.60	2,187.57
Alternate 29-AQ	46.32	356.85	2,495.05
Alternate 29-AR	46.05	383.59	2,716.46
Alternate 29-AS	46.75	355.13	2,472.69
Alternate 29-AT	46.48	381.87	2,694.10
Alternate 30-W	43.26	362.87	2,248.49
Alternate 30-X	42.69	440.76	2,539.75
Alternate 30-Y	41.34	292.44	2,013.92
Alternate 30-Z	41.07	319.18	2,235.33
Alternate 30-AA	43.10	335.12	2,187.99
Alternate 30-AB	42.83	361.86	2,409.40
Alternate 30-AC	43.75	292.50	2,054.27
Alternate 30-AD	43.48	319.24	2,275.68
Alternate 30-AE	46.43	369.49	2,583.16
Alternate 30-AF	46.16	396.23	2,804.57
Alternate 30-AG	46.86	367.76	2,560.80
Alternate 30-AH	46.59	394.51	2,782.21
Alternate 30-AI	43.15	350.60	2,169.62
Alternate 30-AJ	42.58	428.49	2,460.88
Alternate 30-AK	41.23	280.17	1,935.05
Alternate 30-AL	40.96	306.92	2,156.46
Alternate 30-AM	42.99	322.85	2,109.12
Alternate 30-AN	42.72	349.59	2,330.53
Alternate 30-AO	43.64	280.23	1,975.40
Alternate 30-AP	43.37	306.98	2,196.81
Alternate 30-AQ	46.32	357.22	2,504.29
Alternate 30-AR	46.05	383.97	2,725.70
Alternate 30-AS	46.75	355.50	2,481.93
Alternate 30-AT	46.48	382.24	2,703.34
Alternate 33-W	43.16	355.10	2,205.22
Alternate 33-X	42.60	432.99	2,496.47
Alternate 33-Y	41.24	284.67	1,970.64
Alternate 33-Z	40.97	311.41	2,192.05
Alternate 33-AA	43.00	327.35	2,144.71
Alternate 33-AB	42.73	354.09	2,366.12
Alternate 33-AC	43.65	284.73	2,011.00
Alternate 33-AD	43.38	311.47	2,232.41
Alternate 33-AE	46.33	361.72	2,539.88
Alternate 33-AF	46.06	388.46	2,761.29
Alternate 33-AG	46.76	359.99	2,517.53
Alternate 33-AH	46.49	386.74	2,738.94
Alternate 33-AI	43.05	342.83	2,126.35
Alternate 33-AJ	42.48	420.72	2,417.60
Alternate 33-AK	41.13	272.40	1,891.77

Alternate 33-AL	40.86	299.15	2,113.18
Alternate 33-AM	42.89	315.08	2,065.84
Alternate 33-AN	42.62	341.82	2,287.25
Alternate 33-AO	43.54	272.46	1,932.13
Alternate 33-AP	43.27	299.20	2,153.54
Alternate 33-AQ	46.22	349.45	2,461.01
Alternate 33-AR	45.95	376.20	2,682.42
Alternate 33-AS	46.65	347.73	2,438.66
Alternate 33-AT	46.38	374.47	2,660.07
Alternate 40-W	43.40	351.75	2,163.78
Alternate 40-X	42.84	429.64	2,455.03
Alternate 40-Y	41.49	281.32	1,929.20
Alternate 40-Z	41.22	308.06	2,150.61
Alternate 40-AA	43.25	323.99	2,103.27
Alternate 40-AB	42.98	350.74	2,324.68
Alternate 40-AC	43.90	281.38	1,969.56
Alternate 40-AD	43.63	308.12	2,190.97
Alternate 40-AE	46.58	358.37	2,498.45
Alternate 40-AF	46.31	385.11	2,719.86
Alternate 40-AG	47.01	356.64	2,476.09
Alternate 40-AH	46.73	383.39	2,697.50
Alternate 40-AI	43.29	339.48	2,084.91
Alternate 40-AJ	42.73	417.37	2,376.16
Alternate 40-AK	41.38	269.05	1,850.33
Alternate 40-AL	41.11	295.80	2,071.74
Alternate 40-AM	43.13	311.73	2,024.41
Alternate 40-AN	42.86	338.47	2,245.82
Alternate 40-AO	43.78	269.11	1,890.69
Alternate 40-AP	43.51	295.85	2,112.10
Alternate 40-AQ	46.47	346.10	2,419.58
Alternate 40-AR	46.20	372.85	2,640.99
Alternate 40-AS	46.89	344.38	2,397.22
Alternate 40-AT	46.62	371.12	2,618.63
Alternate 102-W	46.55	497.24	3,382.77
Alternate 102-X	45.99	575.13	3,674.02
Alternate 102-Y	44.64	426.81	3,148.19
Alternate 102-Z	44.37	453.55	3,369.60
Alternate 102-AA	46.39	469.48	3,322.26
Alternate 102-AB	46.12	496.23	3,543.67
Alternate 102-AC	47.04	426.87	3,188.54
Alternate 102-AD	46.77	453.61	3,409.95
Alternate 102-AE	49.73	503.86	3,717.43
Alternate 102-AF	49.46	530.60	3,938.84
Alternate 102-AG	50.15	502.13	3,695.08
Alternate 102-AH	49.88	528.88	3,916.49
Alternate 102-AI	46.44	484.97	3,303.90
Alternate 102-AJ	45.88	562.86	3,595.15
Alternate 102-AK	44.52	414.54	3,069.32
Alternate 102-AL	44.25	441.29	3,290.73
Alternate 102-AM	46.28	457.22	3,243.39
Alternate 102-AN	46.01	483.96	3,464.80
Alternate 102-AO	46.93	414.60	3,109.67
Alternate 102-AP	46.66	441.34	3,331.08

Alternate 102-AQ	49.62	491.59	3,638.56
Alternate 102-AR	49.35	518.34	3,859.97
Alternate 102-AS	50.04	489.87	3,616.21
Alternate 102-AT	49.77	516.61	3,837.62
Alternate 103-W	40.00	362.66	2,239.29
Alternate 103-X	39.44	440.55	2,530.54
Alternate 103-Y	38.08	292.23	2,004.72
Alternate 103-Z	37.81	318.97	2,226.13
Alternate 103-AA	39.84	334.91	2,178.79
Alternate 103-AB	39.57	361.65	2,400.20
Alternate 103-AC	40.49	292.29	2,045.07
Alternate 103-AD	40.22	319.03	2,266.48
Alternate 103-AE	43.17	369.28	2,573.96
Alternate 103-AF	42.90	396.02	2,795.37
Alternate 103-AG	43.60	367.56	2,551.60
Alternate 103-AH	43.33	394.30	2,773.01
Alternate 103-AI	39.89	350.39	2,160.42
Alternate 103-AJ	39.32	428.28	2,451.68
Alternate 103-AK	37.97	279.97	1,925.85
Alternate 103-AL	37.70	306.71	2,147.26
Alternate 103-AM	39.73	322.64	2,099.92
Alternate 103-AN	39.46	349.38	2,321.33
Alternate 103-AO	40.38	280.02	1,966.20
Alternate 103-AP	40.11	306.77	2,187.61
Alternate 103-AQ	43.06	357.02	2,495.09
Alternate 103-AR	42.79	383.76	2,716.50
Alternate 103-AS	43.49	355.29	2,472.73
Alternate 103-AT	43.22	382.03	2,694.14
Alternate 104-W	41.81	337.21	2,012.60
Alternate 104-X	41.24	415.10	2,303.85
Alternate 104-Y	39.89	266.79	1,778.02
Alternate 104-Z	39.62	293.53	1,999.43
Alternate 104-AA	41.65	309.46	1,952.09
Alternate 104-AB	41.38	336.20	2,173.50
Alternate 104-AC	42.30	266.84	1,818.37
Alternate 104-AD	42.03	293.59	2,039.78
Alternate 104-AE	44.98	343.84	2,347.26
Alternate 104-AF	44.71	370.58	2,568.67
Alternate 104-AG	45.41	342.11	2,324.91
Alternate 104-AH	45.14	368.85	2,546.32
Alternate 104-AI	41.69	324.95	1,933.73
Alternate 104-AJ	41.13	402.84	2,224.98
Alternate 104-AK	39.78	254.52	1,699.15
Alternate 104-AL	39.51	281.26	1,920.56
Alternate 104-AM	41.54	297.19	1,873.22
Alternate 104-AN	41.27	323.94	2,094.63
Alternate 104-AO	42.19	254.58	1,739.50
Alternate 104-AP	41.92	281.32	1,960.91
Alternate 104-AQ	44.87	331.57	2,268.39
Alternate 104-AR	44.60	358.31	2,489.80
Alternate 104-AS	45.30	329.84	2,246.04
Alternate 104-AT	45.02	356.59	2,467.45
Alternate 105-W	37.77	341.07	2,040.46

Alternate 105-X	37.21	418.96	2,331.71
Alternate 105-Y	35.86	270.65	1,805.88
Alternate 105-Z	35.58	297.39	2,027.29
Alternate 105-AA	37.61	313.32	1,979.95
Alternate 105-AB	37.34	340.06	2,201.36
Alternate 105-AC	38.26	270.70	1,846.23
Alternate 105-AD	37.99	297.45	2,067.64
Alternate 105-AE	40.95	347.69	2,375.12
Alternate 105-AF	40.68	374.44	2,596.53
Alternate 105-AG	41.37	345.97	2,352.77
Alternate 105-AH	41.10	372.71	2,574.18
Alternate 105-AI	37.66	328.81	1,961.59
Alternate 105-AJ	37.10	406.70	2,252.84
Alternate 105-AK	35.74	258.38	1,727.01
Alternate 105-AL	35.47	285.12	1,948.42
Alternate 105-AM	37.50	301.05	1,901.08
Alternate 105-AN	37.23	327.80	2,122.49
Alternate 105-AO	38.15	258.44	1,767.37
Alternate 105-AP	37.88	285.18	1,988.78
Alternate 105-AQ	40.84	335.43	2,296.25
Alternate 105-AR	40.57	362.17	2,517.66
Alternate 105-AS	41.26	333.70	2,273.90
Alternate 105-AT	40.99	360.45	2,495.31
Alternate 35-AU	42.32	332.46	2,080.54
Alternate 35-AV	41.76	410.35	2,371.80
Alternate 35-AW	40.40	262.03	1,845.97
Alternate 35-AX	40.13	288.78	2,067.38
Alternate 35-AY	42.16	304.71	2,020.04
Alternate 35-AZ	41.89	331.45	2,241.45
Alternate 35-BA	42.81	262.09	1,886.32
Alternate 35-BB	42.54	288.83	2,107.73
Alternate 35-BC	45.49	339.08	2,415.21
Alternate 35-BD	45.22	365.83	2,636.62
Alternate 35-BE	45.92	337.36	2,392.85
Alternate 35-BF	45.65	364.10	2,614.26
Alternate 35-BG	42.21	320.19	2,001.67
Alternate 35-BH	41.64	398.08	2,292.93
Alternate 35-BI	40.29	249.77	1,767.10
Alternate 35-BJ	40.02	276.51	1,988.51
Alternate 35-BK	42.05	292.44	1,941.17
Alternate 35-BL	41.78	319.18	2,162.58
Alternate 35-BM	42.70	249.83	1,807.45
Alternate 35-BN	42.43	276.57	2,028.86
Alternate 35-BO	45.38	326.82	2,336.34
Alternate 35-BP	45.11	353.56	2,557.75
Alternate 35-BQ	45.81	325.09	2,313.98
Alternate 35-BR	45.54	351.83	2,535.39
Alternate 35-DA	41.62	296.06	2,133.93
Alternate 35-DB	41.35	322.80	2,355.34
Alternate 35-DC	41.51	283.79	2,055.06
Alternate 35-DD	41.24	310.53	2,276.47
Alternate 42-AU	42.56	329.11	2,039.10
Alternate 42-AV	42.00	407.00	2,330.36



Alternate 42-AW	40.65	258.68	1,804.53
Alternate 42-AX	40.38	285.42	2,025.94
Alternate 42-AY	42.41	301.36	1,978.60
Alternate 42-AZ	42.14	328.10	2,200.01
Alternate 42-BA	43.06	258.74	1,844.88
Alternate 42-BB	42.79	285.48	2,066.29
Alternate 42-BC	45.74	335.73	2,373.77
Alternate 42-BD	45.47	362.47	2,595.18
Alternate 42-BE	46.16	334.01	2,351.41
Alternate 42-BF	45.89	360.75	2,572.82
Alternate 42-BG	42.45	316.84	1,960.23
Alternate 42-BH	41.89	394.73	2,251.49
Alternate 42-BI	40.54	246.42	1,725.66
Alternate 42-BJ	40.27	273.16	1,947.07
Alternate 42-BK	42.29	289.09	1,899.73
Alternate 42-BL	42.02	315.83	2,121.14
Alternate 42-BM	42.94	246.47	1,766.01
Alternate 42-BN	42.67	273.22	1,987.42
Alternate 42-BO	45.63	323.47	2,294.90
Alternate 42-BP	45.36	350.21	2,516.31
Alternate 42-BQ	46.05	321.74	2,272.54
Alternate 42-BR	45.78	348.48	2,493.95
Alternate 42-DA	41.87	292.71	2,092.49
Alternate 42-DB	41.60	319.45	2,313.90
Alternate 42-DC	41.76	280.44	2,013.62
Alternate 42-DD	41.49	307.18	2,235.03
Alternate 46-AU	43.20	338.20	2,101.63
Alternate 46-AV	42.63	416.09	2,392.89
Alternate 46-AW	41.28	267.77	1,867.06
Alternate 46-AX	41.01	294.52	2,088.47
Alternate 46-AY	43.04	310.45	2,041.13
Alternate 46-AZ	42.77	337.19	2,262.54
Alternate 46-BA	43.69	267.83	1,907.41
Alternate 46-BB	43.42	294.57	2,128.82
Alternate 46-BC	46.37	344.82	2,436.30
Alternate 46-BD	46.10	371.56	2,657.71
Alternate 46-BE	46.80	343.10	2,413.94
Alternate 46-BF	46.53	369.84	2,635.35
Alternate 46-BG	43.08	325.93	2,022.77
Alternate 46-BH	42.52	403.82	2,314.02
Alternate 46-BI	41.17	255.51	1,788.19
Alternate 46-BJ	40.90	282.25	2,009.60
Alternate 46-BK	42.93	298.18	1,962.26
Alternate 46-BL	42.66	324.92	2,183.67
Alternate 46-BM	43.58	255.57	1,828.54
Alternate 46-BN	43.31	282.31	2,049.95
Alternate 46-BO	46.26	332.56	2,357.43
Alternate 46-BP	45.99	359.30	2,578.84
Alternate 46-BQ	46.68	330.83	2,335.07
Alternate 46-BR	46.41	357.57	2,556.48
Alternate 46-DA	42.50	301.80	2,155.02
Alternate 46-DB	42.23	328.54	2,376.43
Alternate 46-DC	42.39	289.53	2,076.15

Alternate 46-DD	42.12	316.27	2,297.56
Alternate 52-AU	40.97	316.61	1,902.80
Alternate 52-AV	40.41	394.50	2,194.06
Alternate 52-AW	39.05	246.19	1,668.23
Alternate 52-AX	38.78	272.93	1,889.64
Alternate 52-AY	40.81	288.86	1,842.30
Alternate 52-AZ	40.54	315.60	2,063.71
Alternate 52-BA	41.46	246.24	1,708.58
Alternate 52-BB	41.19	272.99	1,929.99
Alternate 52-BC	44.14	323.24	2,237.47
Alternate 52-BD	43.87	349.98	2,458.88
Alternate 52-BE	44.57	321.51	2,215.11
Alternate 52-BF	44.30	348.25	2,436.52
Alternate 52-BG	40.86	304.35	1,823.93
Alternate 52-BH	40.30	382.24	2,115.19
Alternate 52-BI	38.94	233.92	1,589.36
Alternate 52-BJ	38.67	260.66	1,810.77
Alternate 52-BK	40.70	276.60	1,763.43
Alternate 52-BL	40.43	303.34	1,984.84
Alternate 52-BM	41.35	233.98	1,629.71
Alternate 52-BN	41.08	260.72	1,851.12
Alternate 52-BO	44.03	310.97	2,158.60
Alternate 52-BP	43.76	337.71	2,380.01
Alternate 52-BQ	44.46	309.24	2,136.24
Alternate 52-BR	44.19	335.99	2,357.65
Alternate 52-DA	40.27	280.21	1,956.19
Alternate 52-DB	40.00	306.95	2,177.60
Alternate 52-DC	40.16	267.94	1,877.32
Alternate 52-DD	39.89	294.69	2,098.73
Alternate 161-AU	40.97	314.58	1,887.92
Alternate 161-AV	40.40	392.46	2,179.18
Alternate 161-AW	39.05	244.15	1,653.35
Alternate 161-AX	38.78	270.89	1,874.76
Alternate 161-AY	40.81	286.82	1,827.42
Alternate 161-AZ	40.54	313.56	2,048.83
Alternate 161-BA	41.46	244.21	1,693.70
Alternate 161-BB	41.19	270.95	1,915.11
Alternate 161-BC	44.14	321.20	2,222.59
Alternate 161-BD	43.87	347.94	2,444.00
Alternate 161-BE	44.57	319.47	2,200.23
Alternate 161-BF	44.30	346.21	2,421.64
Alternate 161-BG	40.85	302.31	1,809.05
Alternate 161-BH	40.29	380.20	2,100.31
Alternate 161-BI	38.94	231.88	1,574.48
Alternate 161-BJ	38.67	258.62	1,795.89
Alternate 161-BK	40.70	274.56	1,748.55
Alternate 161-BL	40.42	301.30	1,969.96
Alternate 161-BM	41.35	231.94	1,614.83
Alternate 161-BN	41.08	258.68	1,836.24
Alternate 161-BO	44.03	308.93	2,143.72
Alternate 161-BP	43.76	335.67	2,365.13
Alternate 161-BQ	44.45	307.21	2,121.36
Alternate 161-BR	44.18	333.95	2,342.77

Alternate 161-DA	40.27	278.17	1,941.31
Alternate 161-DB	40.00	304.91	2,162.72
Alternate 161-DC	40.16	265.91	1,862.44
Alternate 161-DD	39.89	292.65	2,083.85
Alternate 61-BS	49.65	442.09	3,145.30
Alternate 61-BT	51.31	495.26	3,361.42
Alternate 61-BU	51.04	422.70	3,116.46
Alternate 61-BV	53.72	499.69	3,645.35
Alternate 61-BW	54.15	497.96	3,623.00
Alternate 61-CG	50.12	460.47	3,251.23
Alternate 61-CH	51.79	513.63	3,467.35
Alternate 61-CI	51.51	441.07	3,222.39
Alternate 61-CJ	54.20	518.07	3,751.28
Alternate 61-CK	54.62	516.34	3,728.93
Alternate 61-CL	49.85	432.20	3,143.84
Alternate 61-CM	49.85	432.20	3,143.84
Alternate 61-CN	49.85	432.20	3,143.84
Alternate 61-CO	50.32	450.57	3,249.77
Alternate 61-CP	50.32	450.57	3,249.77
Alternate 61-CQ	50.32	450.57	3,249.77
Alternate 61-DE	49.85	456.66	3,364.07
Alternate 61-DF	50.33	475.04	3,470.00
Alternate 62-BS	47.77	410.63	2,985.06
Alternate 62-BT	49.44	463.79	3,201.17
Alternate 62-BU	49.16	391.24	2,956.22
Alternate 62-BV	51.85	468.23	3,485.11
Alternate 62-BW	52.27	466.50	3,462.75
Alternate 62-CG	48.24	429.00	3,090.99
Alternate 62-CH	49.91	482.17	3,307.10
Alternate 62-CI	49.64	409.61	3,062.15
Alternate 62-CJ	52.32	486.60	3,591.04
Alternate 62-CK	52.74	484.88	3,568.68
Alternate 62-CL	47.97	400.73	2,983.60
Alternate 62-CM	47.97	400.73	2,983.60
Alternate 62-CN	47.97	400.73	2,983.60
Alternate 62-CO	48.44	419.11	3,089.53
Alternate 62-CP	48.44	419.11	3,089.53
Alternate 62-CQ	48.44	419.11	3,089.53
Alternate 62-DE	47.98	425.20	3,203.83
Alternate 62-DF	48.45	443.58	3,309.76
Alternate 63-BS	49.86	457.56	3,289.96
Alternate 63-BT	51.53	510.73	3,506.07
Alternate 63-BU	51.26	438.17	3,261.12
Alternate 63-BV	53.94	515.16	3,790.01
Alternate 63-BW	54.37	513.44	3,767.65
Alternate 63-CG	50.34	475.94	3,395.89
Alternate 63-CH	52.00	529.10	3,612.00
Alternate 63-CI	51.73	456.55	3,367.05
Alternate 63-CJ	54.41	533.54	3,895.94
Alternate 63-CK	54.84	531.81	3,873.58
Alternate 63-CL	50.06	447.67	3,288.50
Alternate 63-CM	50.06	447.67	3,288.50
Alternate 63-CN	50.06	447.67	3,288.50

Alternate 63-CO	50.53	466.04	3,394.43
Alternate 63-CP	50.53	466.04	3,394.43
Alternate 63-CQ	50.53	466.04	3,394.43
Alternate 63-DE	50.07	472.14	3,508.73
Alternate 63-DF	50.54	490.51	3,614.66
Alternate 64-BS	47.99	426.10	3,129.71
Alternate 64-BT	49.65	479.26	3,345.83
Alternate 64-BU	49.38	406.71	3,100.88
Alternate 64-BV	52.06	483.70	3,629.76
Alternate 64-BW	52.49	481.97	3,607.41
Alternate 64-CG	48.46	444.48	3,235.64
Alternate 64-CH	50.12	497.64	3,451.76
Alternate 64-CI	49.85	425.08	3,206.80
Alternate 64-CJ	52.53	502.08	3,735.69
Alternate 64-CK	52.96	500.35	3,713.34
Alternate 64-CL	48.18	416.21	3,128.25
Alternate 64-CM	48.18	416.21	3,128.25
Alternate 64-CN	48.18	416.21	3,128.25
Alternate 64-CO	48.66	434.58	3,234.18
Alternate 64-CP	48.66	434.58	3,234.18
Alternate 64-CQ	48.66	434.58	3,234.18
Alternate 64-DE	48.19	440.67	3,348.49
Alternate 64-DF	48.66	459.05	3,454.41
Alternate 65-BS	49.87	463.75	3,345.68
Alternate 65-BT	51.53	516.92	3,561.79
Alternate 65-BU	51.26	444.36	3,316.84
Alternate 65-BV	53.94	521.35	3,845.73
Alternate 65-BW	54.37	519.63	3,823.37
Alternate 65-CG	50.34	482.13	3,451.61
Alternate 65-CH	52.00	535.29	3,667.72
Alternate 65-CI	51.73	462.74	3,422.77
Alternate 65-CJ	54.42	539.73	3,951.66
Alternate 65-CK	54.84	538.00	3,929.30
Alternate 65-CL	50.06	453.86	3,344.22
Alternate 65-CM	50.06	453.86	3,344.22
Alternate 65-CN	50.06	453.86	3,344.22
Alternate 65-CO	50.54	472.23	3,450.15
Alternate 65-CP	50.54	472.23	3,450.15
Alternate 65-CQ	50.54	472.23	3,450.15
Alternate 65-DE	50.07	478.33	3,564.45
Alternate 65-DF	50.54	496.70	3,670.38
Alternate 66-BS	47.99	432.29	3,185.43
Alternate 66-BT	49.66	485.46	3,401.55
Alternate 66-BU	49.38	412.90	3,156.59
Alternate 66-BV	52.07	489.89	3,685.48
Alternate 66-BW	52.49	488.16	3,663.13
Alternate 66-CG	48.46	450.67	3,291.36
Alternate 66-CH	50.13	503.83	3,507.47
Alternate 66-CI	49.86	431.27	3,262.52
Alternate 66-CJ	52.54	508.27	3,791.41
Alternate 66-CK	52.96	506.54	3,769.05
Alternate 66-CL	48.19	422.40	3,183.97
Alternate 66-CM	48.19	422.40	3,183.97

Alternate 66-CN	48.19	422.40	3,183.97
Alternate 66-CO	48.66	440.77	3,289.90
Alternate 66-CP	48.66	440.77	3,289.90
Alternate 66-CQ	48.66	440.77	3,289.90
Alternate 66-DE	48.20	446.86	3,404.20
Alternate 66-DF	48.67	465.24	3,510.13
Alternate 67-BS	41.69	376.95	2,676.22
Alternate 67-BT	43.35	430.11	2,892.33
Alternate 67-BU	43.08	357.55	2,647.38
Alternate 67-BV	45.76	434.55	3,176.27
Alternate 67-BW	46.19	432.82	3,153.91
Alternate 67-CG	42.16	395.32	2,782.15
Alternate 67-CH	43.83	448.49	2,998.26
Alternate 67-CI	43.55	375.93	2,753.31
Alternate 67-CJ	46.24	452.92	3,282.20
Alternate 67-CK	46.66	451.20	3,259.84
Alternate 67-CL	41.89	367.05	2,674.76
Alternate 67-CM	41.89	367.05	2,674.76
Alternate 67-CN	41.89	367.05	2,674.76
Alternate 67-CO	42.36	385.43	2,780.69
Alternate 67-CP	42.36	385.43	2,780.69
Alternate 67-CQ	42.36	385.43	2,780.69
Alternate 67-DE	41.89	391.52	2,894.99
Alternate 67-DF	42.37	409.90	3,000.92
Alternate 68-BS	41.75	342.31	2,477.93
Alternate 68-BT	43.42	395.48	2,694.04
Alternate 68-BU	43.15	322.92	2,449.09
Alternate 68-BV	45.83	399.91	2,977.98
Alternate 68-BW	46.26	398.18	2,955.62
Alternate 68-CG	42.23	360.69	2,583.86
Alternate 68-CH	43.89	413.85	2,799.97
Alternate 68-CI	43.62	341.29	2,555.02
Alternate 68-CJ	46.30	418.29	3,083.91
Alternate 68-CK	46.73	416.56	3,061.55
Alternate 68-CL	41.95	332.42	2,476.47
Alternate 68-CM	41.95	332.42	2,476.47
Alternate 68-CN	41.95	332.42	2,476.47
Alternate 68-CO	42.42	350.79	2,582.40
Alternate 68-CP	42.42	350.79	2,582.40
Alternate 68-CQ	42.42	350.79	2,582.40
Alternate 68-DE	41.96	356.88	2,696.70
Alternate 68-DF	42.43	375.26	2,802.63
Alternate 69-BS	39.95	291.80	2,000.93
Alternate 69-BT	41.61	344.96	2,217.05
Alternate 69-BU	41.34	272.40	1,972.09
Alternate 69-BV	44.02	349.40	2,500.98
Alternate 69-BW	44.45	347.67	2,478.63
Alternate 69-CG	40.42	310.17	2,106.86
Alternate 69-CH	42.08	363.34	2,322.98
Alternate 69-CI	41.81	290.78	2,078.02
Alternate 69-CJ	44.49	367.77	2,606.91
Alternate 69-CK	44.92	366.05	2,584.55
Alternate 69-CL	40.14	281.90	1,999.47

Alternate 69-CM	40.14	281.90	1,999.47
Alternate 69-CN	40.14	281.90	1,999.47
Alternate 69-CO	40.62	300.28	2,105.40
Alternate 69-CP	40.62	300.28	2,105.40
Alternate 69-CQ	40.62	300.28	2,105.40
Alternate 69-DE	40.15	306.37	2,219.70
Alternate 69-DF	40.62	324.75	2,325.63
Alternate 70-BS	39.95	292.17	2,010.17
Alternate 70-BT	41.61	345.33	2,226.29
Alternate 70-BU	41.34	272.78	1,981.33
Alternate 70-BV	44.02	349.77	2,510.22
Alternate 70-BW	44.45	348.04	2,487.87
Alternate 70-CG	40.42	310.55	2,116.10
Alternate 70-CH	42.08	363.71	2,332.21
Alternate 70-CI	41.81	291.15	2,087.26
Alternate 70-CJ	44.49	368.15	2,616.15
Alternate 70-CK	44.92	366.42	2,593.79
Alternate 70-CL	40.14	282.28	2,008.71
Alternate 70-CM	40.14	282.28	2,008.71
Alternate 70-CN	40.14	282.28	2,008.71
Alternate 70-CO	40.61	300.65	2,114.64
Alternate 70-CP	40.61	300.65	2,114.64
Alternate 70-CQ	40.61	300.65	2,114.64
Alternate 70-DE	40.15	306.74	2,228.94
Alternate 70-DF	40.62	325.12	2,334.87
Alternate 71-BS	39.85	284.40	1,966.90
Alternate 71-BT	41.51	337.56	2,183.01
Alternate 71-BU	41.24	265.01	1,938.06
Alternate 71-BV	43.92	342.00	2,466.95
Alternate 71-BW	44.35	340.27	2,444.59
Alternate 71-CG	40.32	302.77	2,072.83
Alternate 71-CH	41.98	355.94	2,288.94
Alternate 71-CI	41.71	283.38	2,043.99
Alternate 71-CJ	44.39	360.38	2,572.88
Alternate 71-CK	44.82	358.65	2,550.52
Alternate 71-CL	40.04	274.50	1,965.44
Alternate 71-CM	40.04	274.50	1,965.44
Alternate 71-CN	40.04	274.50	1,965.44
Alternate 71-CO	40.52	292.88	2,071.37
Alternate 71-CP	40.52	292.88	2,071.37
Alternate 71-CQ	40.52	292.88	2,071.37
Alternate 71-DE	40.05	298.97	2,185.67
Alternate 71-DF	40.52	317.35	2,291.60
Alternate 73-BS	38.96	261.78	1,842.36
Alternate 73-BT	40.63	314.95	2,058.48
Alternate 73-BU	40.35	242.39	1,813.52
Alternate 73-BV	43.04	319.38	2,342.41
Alternate 73-BW	43.46	317.66	2,320.06
Alternate 73-CG	39.43	280.16	1,948.29
Alternate 73-CH	41.10	333.32	2,164.41
Alternate 73-CI	40.83	260.77	1,919.45
Alternate 73-CJ	43.51	337.76	2,448.34
Alternate 73-CK	43.94	336.03	2,425.98

Alternate 73-CL	39.16	251.89	1,840.90
Alternate 73-CM	39.16	251.89	1,840.90
Alternate 73-CN	39.16	251.89	1,840.90
Alternate 73-CO	39.63	270.26	1,946.83
Alternate 73-CP	39.63	270.26	1,946.83
Alternate 73-CQ	39.63	270.26	1,946.83
Alternate 73-DE	39.17	276.36	2,061.13
Alternate 73-DF	39.64	294.73	2,167.06
Alternate 74-BS	40.09	281.05	1,925.46
Alternate 74-BT	41.76	334.21	2,141.57
Alternate 74-BU	41.49	261.66	1,896.62
Alternate 74-BV	44.17	338.65	2,425.51
Alternate 74-BW	44.59	336.92	2,403.15
Alternate 74-CG	40.57	299.42	2,031.39
Alternate 74-CH	42.23	352.59	2,247.50
Alternate 74-CI	41.96	280.03	2,002.55
Alternate 74-CJ	44.64	357.02	2,531.44
Alternate 74-CK	45.07	355.30	2,509.08
Alternate 74-CL	40.29	271.15	1,924.00
Alternate 74-CM	40.29	271.15	1,924.00
Alternate 74-CN	40.29	271.15	1,924.00
Alternate 74-CO	40.76	289.53	2,029.93
Alternate 74-CP	40.76	289.53	2,029.93
Alternate 74-CQ	40.76	289.53	2,029.93
Alternate 74-DE	40.30	295.62	2,144.23
Alternate 74-DF	40.77	314.00	2,250.16
Alternate 76-BS	39.21	258.43	1,800.92
Alternate 76-BT	40.87	311.60	2,017.04
Alternate 76-BU	40.60	239.04	1,772.08
Alternate 76-BV	43.28	316.03	2,300.97
Alternate 76-BW	43.71	314.31	2,278.62
Alternate 76-CG	39.68	276.81	1,906.85
Alternate 76-CH	41.35	329.97	2,122.97
Alternate 76-CI	41.07	257.42	1,878.01
Alternate 76-CJ	43.76	334.41	2,406.90
Alternate 76-CK	44.18	332.68	2,384.55
Alternate 76-CL	39.41	248.54	1,799.46
Alternate 76-CM	39.41	248.54	1,799.46
Alternate 76-CN	39.41	248.54	1,799.46
Alternate 76-CO	39.88	266.91	1,905.39
Alternate 76-CP	39.88	266.91	1,905.39
Alternate 76-CQ	39.88	266.91	1,905.39
Alternate 76-DE	39.41	273.00	2,019.69
Alternate 76-DF	39.88	291.38	2,125.62
Alternate 77-BS	39.84	267.52	1,863.45
Alternate 77-BT	41.50	320.69	2,079.57
Alternate 77-BU	41.23	248.13	1,834.61
Alternate 77-BV	43.91	325.12	2,363.50
Alternate 77-BW	44.34	323.40	2,341.15
Alternate 77-CG	40.31	285.90	1,969.38
Alternate 77-CH	41.98	339.06	2,185.50
Alternate 77-CI	41.70	266.51	1,940.54
Alternate 77-CJ	44.39	343.50	2,469.43



Alternate 77-CK	44.81	341.77	2,447.08
Alternate 77-CL	40.04	257.63	1,861.99
Alternate 77-CM	40.04	257.63	1,861.99
Alternate 77-CN	40.04	257.63	1,861.99
Alternate 77-CO	40.51	276.00	1,967.92
Alternate 77-CP	40.51	276.00	1,967.92
Alternate 77-CQ	40.51	276.00	1,967.92
Alternate 77-DE	40.04	282.10	2,082.22
Alternate 77-DF	40.52	300.47	2,188.15
Alternate 78-BS	37.61	245.93	1,664.62
Alternate 78-BT	39.28	299.10	1,880.74
Alternate 78-BU	39.01	226.54	1,635.78
Alternate 78-BV	41.69	303.54	2,164.67
Alternate 78-BW	42.12	301.81	2,142.32
Alternate 78-CG	38.09	264.31	1,770.55
Alternate 78-CH	39.75	317.48	1,986.66
Alternate 78-CI	39.48	244.92	1,741.71
Alternate 78-CJ	42.16	321.91	2,270.60
Alternate 78-CK	42.59	320.19	2,248.24
Alternate 78-CL	37.81	236.04	1,663.16
Alternate 78-CM	37.81	236.04	1,663.16
Alternate 78-CN	37.81	236.04	1,663.16
Alternate 78-CO	38.28	254.42	1,769.09
Alternate 78-CP	38.28	254.42	1,769.09
Alternate 78-CQ	38.28	254.42	1,769.09
Alternate 78-DE	37.82	260.51	1,883.39
Alternate 78-DF	38.29	278.89	1,989.32
Alternate 109-BS	43.24	426.54	3,144.44
Alternate 109-BT	44.91	479.70	3,360.56
Alternate 109-BU	44.63	407.15	3,115.61
Alternate 109-BV	47.32	484.14	3,644.49
Alternate 109-BW	47.74	482.41	3,622.14
Alternate 109-CG	43.71	444.91	3,250.37
Alternate 109-CH	45.38	498.08	3,466.49
Alternate 109-CI	45.11	425.52	3,221.53
Alternate 109-CJ	47.79	502.51	3,750.42
Alternate 109-CK	48.21	500.79	3,728.07
Alternate 109-CL	43.44	416.64	3,142.98
Alternate 109-CM	43.44	416.64	3,142.98
Alternate 109-CN	43.44	416.64	3,142.98
Alternate 109-CO	43.91	435.02	3,248.91
Alternate 109-CP	43.91	435.02	3,248.91
Alternate 109-CQ	43.91	435.02	3,248.91
Alternate 109-DE	43.45	441.11	3,363.22
Alternate 109-DF	43.92	459.49	3,469.14
Alternate 110-BS	36.69	291.96	2,000.97
Alternate 110-BT	38.35	345.13	2,217.08
Alternate 110-BU	38.08	272.57	1,972.13
Alternate 110-BV	40.76	349.56	2,501.02
Alternate 110-BW	41.19	347.83	2,478.66
Alternate 110-CG	37.16	310.34	2,106.90
Alternate 110-CH	38.82	363.50	2,323.01
Alternate 110-CI	38.55	290.94	2,078.06

Alternate 110-CJ	41.23	367.94	2,606.95
Alternate 110-CK	41.66	366.21	2,584.59
Alternate 110-CL	36.88	282.07	1,999.51
Alternate 110-CM	36.88	282.07	1,999.51
Alternate 110-CN	36.88	282.07	1,999.51
Alternate 110-CO	37.36	300.44	2,105.44
Alternate 110-CP	37.36	300.44	2,105.44
Alternate 110-CQ	37.36	300.44	2,105.44
Alternate 110-DE	36.89	306.53	2,219.74
Alternate 110-DF	37.36	324.91	2,325.67
Alternate 111-BS	38.49	266.51	1,774.28
Alternate 111-BT	40.16	319.68	1,990.39
Alternate 111-BU	39.89	247.12	1,745.44
Alternate 111-BV	42.57	324.11	2,274.33
Alternate 111-BW	43.00	322.39	2,251.97
Alternate 111-CG	38.97	284.89	1,880.20
Alternate 111-CH	40.63	338.06	2,096.32
Alternate 111-CI	40.36	265.50	1,851.36
Alternate 111-CJ	43.04	342.49	2,380.25
Alternate 111-CK	43.47	340.76	2,357.90
Alternate 111-CL	38.69	256.62	1,772.82
Alternate 111-CM	38.69	256.62	1,772.82
Alternate 111-CN	38.69	256.62	1,772.82
Alternate 111-CO	39.16	275.00	1,878.74
Alternate 111-CP	39.16	275.00	1,878.74
Alternate 111-CQ	39.16	275.00	1,878.74
Alternate 111-DE	38.70	281.09	1,993.05
Alternate 111-DF	39.17	299.46	2,098.97
Alternate 112-BS	34.46	270.37	1,802.14
Alternate 112-BT	36.13	323.54	2,018.25
Alternate 112-BU	35.85	250.98	1,773.30
Alternate 112-BV	38.54	327.97	2,302.19
Alternate 112-BW	38.96	326.25	2,279.83
Alternate 112-CG	34.93	288.75	1,908.07
Alternate 112-CH	36.60	341.92	2,124.18
Alternate 112-CI	36.33	269.36	1,879.23
Alternate 112-CJ	39.01	346.35	2,408.11
Alternate 112-CK	39.43	344.62	2,385.76
Alternate 112-CL	34.66	260.48	1,800.68
Alternate 112-CM	34.66	260.48	1,800.68
Alternate 112-CN	34.66	260.48	1,800.68
Alternate 112-CO	35.13	278.86	1,906.60
Alternate 112-CP	35.13	278.86	1,906.60
Alternate 112-CQ	35.13	278.86	1,906.60
Alternate 112-DE	34.67	284.95	2,020.91
Alternate 112-DF	35.14	303.32	2,126.84
Alternate 37-BX	39.84	242.22	1,647.86
Alternate 37-BY	41.51	295.39	1,863.97
Alternate 37-BZ	40.72	227.93	1,634.14
Alternate 37-CA	43.38	301.80	2,150.19
Alternate 37-CB	43.80	300.08	2,127.83
Alternate 37-CR	39.52	237.39	1,661.33
Alternate 38-BX	39.43	237.50	1,595.76

Alternate 38-BY	41.09	290.66	1,811.87
Alternate 38-BZ	40.31	223.20	1,582.04
Alternate 38-CA	42.97	297.07	2,098.09
Alternate 38-CB	43.39	295.35	2,075.73
Alternate 38-CR	39.11	232.67	1,609.23
Alternate 44-BX	40.09	238.87	1,606.42
Alternate 44-BY	41.75	292.04	1,822.53
Alternate 44-BZ	40.96	224.58	1,592.70
Alternate 44-CA	43.62	298.45	2,108.75
Alternate 44-CB	44.05	296.72	2,086.39
Alternate 44-CR	39.77	234.04	1,619.89
Alternate 45-BX	39.67	234.15	1,554.32
Alternate 45-BY	41.34	287.31	1,770.43
Alternate 45-BZ	40.55	219.85	1,540.60
Alternate 45-CA	43.21	293.72	2,056.65
Alternate 45-CB	43.64	292.00	2,034.29
Alternate 45-CR	39.36	229.31	1,567.79
Alternate 47-BX	40.72	247.96	1,668.95
Alternate 47-BY	42.38	301.13	1,885.06
Alternate 47-BZ	41.59	233.67	1,655.23
Alternate 47-CA	44.25	307.54	2,171.28
Alternate 47-CB	44.68	305.82	2,148.92
Alternate 47-CR	40.40	243.13	1,682.42
Alternate 48-BX	40.31	243.24	1,616.85
Alternate 48-BY	41.97	296.40	1,832.96
Alternate 48-BZ	41.18	228.94	1,603.13
Alternate 48-CA	43.84	302.81	2,119.18
Alternate 48-CB	44.27	301.09	2,096.82
Alternate 48-CR	39.99	238.40	1,630.32
Alternate 49-BX	40.07	243.11	1,625.85
Alternate 49-BY	41.74	296.28	1,841.97
Alternate 49-BZ	40.95	228.82	1,612.14
Alternate 49-CA	43.61	302.69	2,128.18
Alternate 49-CB	44.04	300.96	2,105.82
Alternate 49-CR	39.75	238.28	1,639.32
Alternate 53-BX	38.49	226.38	1,470.12
Alternate 53-BY	40.16	279.54	1,686.23
Alternate 53-BZ	39.37	212.08	1,456.40
Alternate 53-CA	42.03	285.95	1,972.44
Alternate 53-CB	42.46	284.23	1,950.09
Alternate 53-CR	38.17	221.54	1,483.59
Alternate 54-BX	38.08	221.65	1,418.02
Alternate 54-BY	39.74	274.82	1,634.13
Alternate 54-BZ	38.96	207.35	1,404.30
Alternate 54-CA	41.62	281.23	1,920.35
Alternate 54-CB	42.04	279.50	1,897.99
Alternate 54-CR	37.76	216.82	1,431.49
Alternate 55-BX	37.85	221.53	1,427.02
Alternate 55-BY	39.51	274.69	1,643.13
Alternate 55-BZ	38.72	207.23	1,413.30
Alternate 55-CA	41.38	281.10	1,929.35
Alternate 55-CB	41.81	279.38	1,906.99
Alternate 55-CR	37.53	216.69	1,440.49

Alternate 79-BX	49.73	421.08	2,976.92
Alternate 79-BY	51.40	474.24	3,193.03
Alternate 79-BZ	50.61	406.78	2,963.20
Alternate 79-CA	53.27	480.65	3,479.25
Alternate 79-CB	53.70	478.93	3,456.89
Alternate 79-CR	49.41	416.24	2,990.39
Alternate 80-BX	47.86	389.61	2,816.67
Alternate 80-BY	49.52	442.78	3,032.79
Alternate 80-BZ	48.73	375.32	2,802.96
Alternate 80-CA	51.39	449.19	3,319.00
Alternate 80-CB	51.82	447.46	3,296.64
Alternate 80-CR	47.54	384.78	2,830.14
Alternate 81-BX	49.95	436.55	3,121.57
Alternate 81-BY	51.61	489.71	3,337.69
Alternate 81-BZ	50.83	422.25	3,107.86
Alternate 81-CA	53.49	496.12	3,623.90
Alternate 81-CB	53.91	494.40	3,601.55
Alternate 81-CR	49.63	431.71	3,135.05
Alternate 82-BX	48.07	405.08	2,961.33
Alternate 82-BY	49.74	458.25	3,177.44
Alternate 82-BZ	48.95	390.79	2,947.61
Alternate 82-CA	51.61	464.66	3,463.66
Alternate 82-CB	52.04	462.94	3,441.30
Alternate 82-CR	47.75	400.25	2,974.80
Alternate 83-BX	49.95	442.74	3,177.29
Alternate 83-BY	51.62	495.90	3,393.41
Alternate 83-BZ	50.83	428.44	3,163.58
Alternate 83-CA	53.49	502.31	3,679.62
Alternate 83-CB	53.92	500.59	3,657.26
Alternate 83-CR	49.63	437.91	3,190.76
Alternate 84-BX	48.08	411.28	3,017.05
Alternate 84-BY	49.74	464.44	3,233.16
Alternate 84-BZ	48.95	396.98	3,003.33
Alternate 84-CA	51.61	470.85	3,519.38
Alternate 84-CB	52.04	469.13	3,497.02
Alternate 84-CR	47.76	406.44	3,030.52
Alternate 85-BX	41.77	355.93	2,507.83
Alternate 85-BY	43.44	409.10	2,723.95
Alternate 85-BZ	42.65	341.64	2,494.12
Alternate 85-CA	45.31	415.51	3,010.16
Alternate 85-CB	45.74	413.78	2,987.81
Alternate 85-CR	41.45	351.10	2,521.31
Alternate 86-BX	41.84	321.30	2,309.54
Alternate 86-BY	43.50	374.46	2,525.66
Alternate 86-BZ	42.72	307.00	2,295.83
Alternate 86-CA	45.38	380.87	2,811.87
Alternate 86-CB	45.80	379.15	2,789.51
Alternate 86-CR	41.52	316.46	2,323.01
Alternate 87-BX	40.03	270.78	1,832.55
Alternate 87-BY	41.70	323.95	2,048.66
Alternate 87-BZ	40.91	256.49	1,818.83
Alternate 87-CA	43.57	330.36	2,334.88
Alternate 87-CB	43.99	328.63	2,312.52

Alternate 87-CR	39.71	265.95	1,846.02
Alternate 88-BX	40.03	271.15	1,841.79
Alternate 88-BY	41.69	324.32	2,057.90
Alternate 88-BZ	40.91	256.86	1,828.07
Alternate 88-CA	43.57	330.73	2,344.12
Alternate 88-CB	43.99	329.01	2,321.76
Alternate 88-CR	39.71	266.32	1,855.26
Alternate 89-BX	39.93	263.38	1,798.51
Alternate 89-BY	41.60	316.55	2,014.63
Alternate 89-BZ	40.81	249.09	1,784.80
Alternate 89-CA	43.47	322.96	2,300.84
Alternate 89-CB	43.90	321.24	2,278.48
Alternate 89-CR	39.61	258.55	1,811.98
Alternate 91-BX	39.05	240.77	1,673.98
Alternate 91-BY	40.71	293.93	1,890.09
Alternate 91-BZ	39.92	226.47	1,660.26
Alternate 91-CA	42.58	300.34	2,176.31
Alternate 91-CB	43.01	298.62	2,153.95
Alternate 91-CR	38.73	235.94	1,687.45
Alternate 92-BX	40.18	260.03	1,757.07
Alternate 92-BY	41.84	313.20	1,973.19
Alternate 92-BZ	41.05	245.74	1,743.36
Alternate 92-CA	43.71	319.61	2,259.40
Alternate 92-CB	44.14	317.88	2,237.04
Alternate 92-CR	39.86	255.20	1,770.54
Alternate 94-BX	39.29	237.42	1,632.54
Alternate 94-BY	40.96	290.58	1,848.65
Alternate 94-BZ	40.17	223.12	1,618.82
Alternate 94-CA	42.83	296.99	2,134.87
Alternate 94-CB	43.26	295.27	2,112.51
Alternate 94-CR	38.97	232.58	1,646.01
Alternate 95-BX	39.92	246.51	1,695.07
Alternate 95-BY	41.59	299.67	1,911.18
Alternate 95-BZ	40.80	232.21	1,681.35
Alternate 95-CA	43.46	306.08	2,197.40
Alternate 95-CB	43.89	304.36	2,175.04
Alternate 95-CR	39.61	241.67	1,708.54
Alternate 96-BX	37.70	224.92	1,496.24
Alternate 96-BY	39.36	278.09	1,712.35
Alternate 96-BZ	38.58	210.62	1,482.52
Alternate 96-CA	41.24	284.50	1,998.56
Alternate 96-CB	41.66	282.77	1,976.21
Alternate 96-CR	37.38	220.09	1,509.71
Alternate 116-BX	43.33	405.52	2,976.06
Alternate 116-BY	44.99	458.69	3,192.17
Alternate 116-BZ	44.20	391.23	2,962.34
Alternate 116-CA	46.86	465.10	3,478.39
Alternate 116-CB	47.29	463.37	3,456.03
Alternate 116-CR	43.01	400.69	2,989.53
Alternate 117-BX	36.77	270.95	1,832.58
Alternate 117-BY	38.44	324.11	2,048.70
Alternate 117-BZ	37.65	256.65	1,818.87
Alternate 117-CA	40.31	330.52	2,334.91

Alternate 117-CB	40.73	328.80	2,312.56
Alternate 117-CR	36.45	266.11	1,846.06
Alternate 118-BX	38.58	245.50	1,605.89
Alternate 118-BY	40.24	298.67	1,822.00
Alternate 118-BZ	39.46	231.20	1,592.17
Alternate 118-CA	42.12	305.08	2,108.22
Alternate 118-CB	42.54	303.35	2,085.86
Alternate 118-CR	38.26	240.67	1,619.36
Alternate 119-BX	34.55	249.36	1,633.75
Alternate 119-BY	36.21	302.53	1,849.87
Alternate 119-BZ	35.42	235.06	1,620.04
Alternate 119-CA	38.08	308.94	2,136.08
Alternate 119-CB	38.51	307.21	2,113.72
Alternate 119-CR	34.23	244.53	1,647.22
Alternate 125-BX	36.35	241.26	1,583.44
Alternate 125-BY	38.02	294.42	1,799.55
Alternate 125-BZ	37.23	226.96	1,569.72
Alternate 125-CA	39.89	300.83	2,085.77
Alternate 125-CB	40.32	299.11	2,063.41
Alternate 125-CR	36.04	236.42	1,596.91
Alternate 126-BX	38.49	224.34	1,455.24
Alternate 126-BY	40.15	277.51	1,671.35
Alternate 126-BZ	39.36	210.04	1,441.52
Alternate 126-CA	42.02	283.92	1,957.56
Alternate 126-CB	42.45	282.19	1,935.21
Alternate 126-CR	38.17	219.51	1,468.71
Alternate 127-BX	38.08	219.61	1,403.14
Alternate 127-BY	39.74	272.78	1,619.25
Alternate 127-BZ	38.95	205.32	1,389.42
Alternate 127-CA	41.61	279.19	1,905.47
Alternate 127-CB	42.04	277.46	1,883.11
Alternate 127-CR	37.76	214.78	1,416.61
Alternate 128-BX	37.10	207.12	1,342.16
Alternate 128-BY	38.76	260.28	1,558.28
Alternate 128-BZ	37.97	192.82	1,328.45
Alternate 128-CA	40.63	266.69	1,844.49
Alternate 128-CB	41.06	264.97	1,822.13
Alternate 128-CR	36.78	202.28	1,355.63
Alternate 131-BX	39.26	218.31	1,490.23
Alternate 131-BY	40.92	271.47	1,706.35
Alternate 131-BZ	40.13	204.01	1,476.52
Alternate 131-CA	42.79	277.88	1,992.56
Alternate 131-CB	43.22	276.16	1,970.20
Alternate 131-CR	38.94	213.47	1,503.70
Alternate 133-BX	39.50	214.96	1,448.79
Alternate 133-BY	41.17	268.12	1,664.91
Alternate 133-BZ	40.38	200.66	1,435.08
Alternate 133-CA	43.04	274.53	1,951.12
Alternate 133-CB	43.47	272.81	1,928.76
Alternate 133-CR	39.18	210.12	1,462.26
Alternate 134-BX	40.13	224.05	1,511.32
Alternate 134-BY	41.80	277.21	1,727.44
Alternate 134-BZ	41.01	209.75	1,497.61

Alternate 134-CA	43.67	283.62	2,013.65
Alternate 134-CB	44.10	281.90	1,991.30
Alternate 134-CR	39.82	219.21	1,524.80
Alternate 135-BX	37.91	202.46	1,312.49
Alternate 135-BY	39.57	255.63	1,528.60
Alternate 135-BZ	38.79	188.16	1,298.78
Alternate 135-CA	41.45	262.04	1,814.82
Alternate 135-CB	41.87	260.31	1,792.46
Alternate 135-CR	37.59	197.63	1,325.96
Alternate 139-BX	49.91	399.76	2,800.05
Alternate 139-BY	51.58	452.93	3,016.17
Alternate 139-BZ	50.79	385.47	2,786.34
Alternate 139-CA	53.45	459.34	3,302.38
Alternate 139-CB	53.88	457.61	3,280.02
Alternate 139-CR	49.59	394.93	2,813.52
Alternate 140-BX	48.04	368.30	2,639.81
Alternate 140-BY	49.70	421.47	2,855.92
Alternate 140-BZ	48.91	354.00	2,626.09
Alternate 140-CA	51.57	427.88	3,142.14
Alternate 140-CB	52.00	426.15	3,119.78
Alternate 140-CR	47.72	363.47	2,653.28
Alternate 141-BX	50.13	415.23	2,944.71
Alternate 141-BY	51.79	468.40	3,160.82
Alternate 141-BZ	51.01	400.94	2,930.99
Alternate 141-CA	53.67	474.81	3,447.04
Alternate 141-CB	54.09	473.08	3,424.68
Alternate 141-CR	49.81	410.40	2,958.18
Alternate 142-BX	48.25	383.77	2,784.46
Alternate 142-BY	49.92	436.94	3,000.58
Alternate 142-BZ	49.13	369.47	2,770.75
Alternate 142-CA	51.79	443.35	3,286.79
Alternate 142-CB	52.22	441.62	3,264.44
Alternate 142-CR	47.93	378.94	2,797.94
Alternate 143-BX	50.13	421.42	3,000.43
Alternate 143-BY	51.80	474.59	3,216.54
Alternate 143-BZ	51.01	407.13	2,986.71
Alternate 143-CA	53.67	481.00	3,502.75
Alternate 143-CB	54.10	479.27	3,480.40
Alternate 143-CR	49.81	416.59	3,013.90
Alternate 144-BX	48.26	389.96	2,840.18
Alternate 144-BY	49.92	443.13	3,056.29
Alternate 144-BZ	49.13	375.66	2,826.47
Alternate 144-CA	51.79	449.54	3,342.51
Alternate 144-CB	52.22	447.81	3,320.15
Alternate 144-CR	47.94	385.13	2,853.65
Alternate 145-BX	41.95	334.62	2,330.97
Alternate 145-BY	43.62	387.78	2,547.08
Alternate 145-BZ	42.83	320.32	2,317.25
Alternate 145-CA	45.49	394.19	2,833.30
Alternate 145-CB	45.92	392.47	2,810.94
Alternate 145-CR	41.63	329.78	2,344.44
Alternate 146-BX	42.02	299.98	2,132.68
Alternate 146-BY	43.68	353.15	2,348.79



Alternate 146-BZ	42.90	285.69	2,118.96
Alternate 146-CA	45.56	359.56	2,635.01
Alternate 146-CB	45.98	357.83	2,612.65
Alternate 146-CR	41.70	295.15	2,146.15
Alternate 147-BX	42.13	265.43	1,770.74
Alternate 147-BY	43.80	318.59	1,986.86
Alternate 147-BZ	43.01	251.13	1,757.03
Alternate 147-CA	45.67	325.00	2,273.07
Alternate 147-CB	46.09	323.28	2,250.71
Alternate 147-CR	41.81	260.59	1,784.21
Alternate 148-BX	42.13	265.80	1,779.98
Alternate 148-BY	43.79	318.97	1,996.09
Alternate 148-BZ	43.01	251.50	1,766.27
Alternate 148-CA	45.67	325.38	2,282.31
Alternate 148-CB	46.09	323.65	2,259.95
Alternate 148-CR	41.81	260.97	1,793.45
Alternate 149-BX	40.11	242.07	1,621.65
Alternate 149-BY	41.78	295.24	1,837.76
Alternate 149-BZ	40.99	227.77	1,607.93
Alternate 149-CA	43.65	301.65	2,123.97
Alternate 149-CB	44.08	299.92	2,101.62
Alternate 149-CR	39.79	237.24	1,635.12
Alternate 150-BX	40.36	238.72	1,580.21
Alternate 150-BY	42.02	291.89	1,796.32
Alternate 150-BZ	41.23	224.42	1,566.49
Alternate 150-CA	43.89	298.30	2,082.54
Alternate 150-CB	44.32	296.57	2,060.18
Alternate 150-CR	40.04	233.89	1,593.68
Alternate 151-BX	43.51	384.21	2,799.19
Alternate 151-BY	45.17	437.38	3,015.31
Alternate 151-BZ	44.38	369.91	2,785.48
Alternate 151-CA	47.04	443.79	3,301.52
Alternate 151-CB	47.47	442.06	3,279.17
Alternate 151-CR	43.19	379.38	2,812.67
Alternate 152-BX	36.95	249.63	1,655.72
Alternate 152-BY	38.62	302.80	1,871.83
Alternate 152-BZ	37.83	235.33	1,642.00
Alternate 152-CA	40.49	309.21	2,158.05
Alternate 152-CB	40.91	307.48	2,135.69
Alternate 152-CR	36.63	244.80	1,669.19
Alternate 153-BX	38.76	224.19	1,429.02
Alternate 153-BY	40.42	277.35	1,645.14
Alternate 153-BZ	39.64	209.89	1,415.31
Alternate 153-CA	42.30	283.76	1,931.35
Alternate 153-CB	42.72	282.04	1,909.00
Alternate 153-CR	38.44	219.35	1,442.50
Alternate 154-BX	34.73	228.04	1,456.89
Alternate 154-BY	36.39	281.21	1,673.00
Alternate 154-BZ	35.60	213.75	1,443.17
Alternate 154-CA	38.26	287.62	1,959.21
Alternate 154-CB	38.69	285.90	1,936.86
Alternate 154-CR	34.41	223.21	1,470.36
Alternate 159-BX	37.90	200.42	1,297.61

Alternate 159-BY	39.57	253.59	1,513.72
Alternate 159-BZ	38.78	186.13	1,283.89
Alternate 159-CA	41.44	260.00	1,799.94
Alternate 159-CB	41.87	258.27	1,777.58
Alternate 159-CR	37.59	195.59	1,311.08
Alternate 160-BX	37.69	222.88	1,481.36
Alternate 160-BY	39.36	276.05	1,697.47
Alternate 160-BZ	38.57	208.59	1,467.64
Alternate 160-CA	41.23	282.46	1,983.68
Alternate 160-CB	41.66	280.73	1,961.33
Alternate 160-CR	37.38	218.05	1,494.83
Alternate 162-BX	37.88	218.95	1,436.54
Alternate 162-BY	39.54	272.12	1,652.65
Alternate 162-BZ	38.76	204.66	1,422.82
Alternate 162-CA	41.41	278.53	1,938.86
Alternate 162-CB	41.84	276.80	1,916.51
Alternate 162-CR	37.56	214.12	1,450.01
Alternate 50-CC	43.45	308.32	1,974.60
Alternate 50-CD	44.65	305.93	2,025.44
Alternate 50-CE	40.34	282.30	1,929.86
Alternate 50-CF	41.49	247.49	1,680.33
Alternate 56-CC	41.23	286.73	1,775.77
Alternate 56-CD	42.42	284.35	1,826.61
Alternate 56-CE	38.11	260.72	1,731.03
Alternate 56-CF	39.27	225.90	1,481.49
Alternate 129-CC	40.48	272.32	1,690.91
Alternate 129-CD	41.67	269.94	1,741.75
Alternate 129-CE	37.36	246.31	1,646.17
Alternate 129-CF	38.52	211.49	1,396.64
Alternate 155-CC	43.93	282.77	1,882.46
Alternate 155-CD	45.12	280.38	1,933.30
Alternate 155-CE	40.81	256.75	1,837.72
Alternate 155-CF	41.97	221.94	1,588.18
Alternate 156-CC	41.70	261.18	1,683.63
Alternate 156-CD	42.89	258.80	1,734.47
Alternate 156-CE	38.58	235.16	1,638.88
Alternate 156-CF	39.74	200.35	1,389.35
Alternate 157-CC	41.08	256.64	1,672.10
Alternate 157-CD	42.28	254.25	1,722.93
Alternate 157-CE	37.97	230.62	1,627.35
Alternate 157-CF	39.12	195.80	1,377.82
Alternate 163-CC	41.26	284.16	1,785.28
Alternate 163-CD	42.45	281.77	1,836.12
Alternate 163-CE	38.14	258.14	1,740.54
Alternate 163-CF	39.30	223.33	1,491.01
Alternate 164-CC	41.73	258.61	1,693.14
Alternate 164-CD	42.93	256.22	1,743.98
Alternate 164-CE	38.61	232.59	1,648.40
Alternate 164-CF	39.77	197.77	1,398.87

# Appendix E Preliminary Build Alternatives with Less Than 300 Acres of Wetland Impact



From I-95 to Future Interstate 74  
in North Carolina



# APPENDIX E

## Preliminary Build Alternative with less than 300 acres of wetland impact

Revised: 06/18/07

Blue indicates alternatives eliminated due to potential high impacts at endpoint NC4

	Total Length (Miles)	Total Wetlands (Acres)	Total Wetlands Value
Alternate 20-C	42.34	286.39	2,142.05
Alternate 20-G	44.75	286.45	2,182.40
Alternate 25-C	42.45	251.84	1,780.12
Alternate 25-D	42.29	284.78	2,038.96
Alternate 25-E	44.21	294.52	1,954.19
Alternate 25-G	44.86	251.90	1,820.47
Alternate 25-H	44.70	284.84	2,079.31
Alternate 25-O	44.66	283.25	2,019.18
Alternate 26-C	42.45	252.21	1,789.36
Alternate 26-D	42.29	285.15	2,048.20
Alternate 26-E	44.21	294.89	1,963.43
Alternate 26-G	44.86	252.27	1,829.71
Alternate 26-H	44.70	285.21	2,088.55
Alternate 26-O	44.65	283.63	2,028.42
Alternate 31-C	42.15	283.27	1,966.89
Alternate 31-G	44.56	283.33	2,007.24
Alternate 32-C	42.69	267.78	1,855.66
Alternate 32-G	45.10	267.84	1,896.02
Alternate 32-O	44.90	299.19	2,094.73
Alternate 39-C	42.94	264.43	1,814.22
Alternate 39-D	42.78	297.36	2,073.07
Alternate 39-G	45.35	264.48	1,854.58
Alternate 39-H	45.19	297.42	2,113.42
Alternate 39-O	45.15	295.84	2,053.29
Alternate 51-C	40.87	267.89	1,810.87
Alternate 51-G	43.28	267.95	1,851.22
Alternate 51-O	43.08	299.30	2,049.93
Alternate 99-C	41.34	249.89	1,663.04
Alternate 99-D	41.18	282.83	1,921.88
Alternate 99-E	43.10	292.57	1,837.11
Alternate 99-G	43.75	249.95	1,703.39
Alternate 99-H	43.59	282.89	1,962.24
Alternate 99-O	43.55	281.30	1,902.11
Alternate 100-C	39.53	275.34	1,889.74
Alternate 100-G	41.94	275.40	1,930.09
Alternate 101-C	37.31	253.75	1,690.90
Alternate 101-D	37.15	286.69	1,949.75
Alternate 101-E	39.07	296.43	1,864.97
Alternate 101-G	39.72	253.81	1,731.26
Alternate 101-H	39.56	286.75	1,990.10
Alternate 101-O	39.51	285.16	1,929.97
Alternate 29-Y	41.34	292.07	2,004.68
Alternate 29-AC	43.75	292.13	2,045.03
Alternate 29-AK	41.23	279.80	1,925.81
Alternate 29-AO	43.64	279.86	1,966.16
Alternate 30-Y	41.34	292.44	2,013.92

Alternate 30-AC	43.75	292.50	2,054.27
Alternate 30-AK	41.23	280.17	1,935.05
Alternate 30-AO	43.64	280.23	1,975.40
Alternate 33-Y	41.24	284.67	1,970.64
Alternate 33-AC	43.65	284.73	2,011.00
Alternate 33-AK	41.13	272.40	1,891.77
Alternate 33-AL	40.86	299.15	2,113.18
Alternate 33-AO	43.54	272.46	1,932.13
Alternate 33-AP	43.27	299.20	2,153.54
Alternate 40-Y	41.49	281.32	1,929.20
Alternate 40-AC	43.90	281.38	1,969.56
Alternate 40-AK	41.38	269.05	1,850.33
Alternate 40-AL	41.11	295.80	2,071.74
Alternate 40-AO	43.78	269.11	1,890.69
Alternate 40-AP	43.51	295.85	2,112.10
Alternate 103-Y	38.08	292.23	2,004.72
Alternate 103-AC	40.49	292.29	2,045.07
Alternate 103-AK	37.97	279.97	1,925.85
Alternate 103-AO	40.38	280.02	1,966.20
Alternate 104-Y	39.89	266.79	1,778.02
Alternate 104-Z	39.62	293.53	1,999.43
Alternate 104-AC	42.30	266.84	1,818.37
Alternate 104-AD	42.03	293.59	2,039.78
Alternate 104-AK	39.78	254.52	1,699.15
Alternate 104-AL	39.51	281.26	1,920.56
Alternate 104-AM	41.54	297.19	1,873.22
Alternate 104-AO	42.19	254.58	1,739.50
Alternate 104-AP	41.92	281.32	1,960.91
Alternate 105-Y	35.86	270.65	1,805.88
Alternate 105-Z	35.58	297.39	2,027.29
Alternate 105-AC	38.26	270.70	1,846.23
Alternate 105-AD	37.99	297.45	2,067.64
Alternate 105-AK	35.74	258.38	1,727.01
Alternate 105-AL	35.47	285.12	1,948.42
Alternate 105-AO	38.15	258.44	1,767.37
Alternate 105-AP	37.88	285.18	1,988.78
Alternate 35-AW	40.40	262.03	1,845.97
Alternate 35-AX	40.13	288.78	2,067.38
Alternate 35-BA	42.81	262.09	1,886.32
Alternate 35-BB	42.54	288.83	2,107.73
Alternate 35-BI	40.29	249.77	1,767.10
Alternate 35-BJ	40.02	276.51	1,988.51
Alternate 35-BK	42.05	292.44	1,941.17
Alternate 35-BM	42.70	249.83	1,807.45
Alternate 35-BN	42.43	276.57	2,028.86
Alternate 35-DA	41.62	296.06	2,133.93
Alternate 35-DC	41.51	283.79	2,055.06
Alternate 42-AW	40.65	258.68	1,804.53
Alternate 42-AX	40.38	285.42	2,025.94
Alternate 42-BA	43.06	258.74	1,844.88
Alternate 42-BB	42.79	285.48	2,066.29
Alternate 42-BI	40.54	246.42	1,725.66
Alternate 42-BJ	40.27	273.16	1,947.07
Alternate 42-BK	42.29	289.09	1,899.73

Alternate 42-BM	42.94	246.47	1,766.01
Alternate 42-BN	42.67	273.22	1,987.42
Alternate 42-DA	41.87	292.71	2,092.49
Alternate 42-DC	41.76	280.44	2,013.62
Alternate 46-AW	41.28	267.77	1,867.06
Alternate 46-AX	41.01	294.52	2,088.47
Alternate 46-BA	43.69	267.83	1,907.41
Alternate 46-BB	43.42	294.57	2,128.82
Alternate 46-BI	41.17	255.51	1,788.19
Alternate 46-BJ	40.90	282.25	2,009.60
Alternate 46-BK	42.93	298.18	1,962.26
Alternate 46-BM	43.58	255.57	1,828.54
Alternate 46-BN	43.31	282.31	2,049.95
Alternate 46-DC	42.39	289.53	2,076.15
Alternate 52-AW	39.05	246.19	1,668.23
Alternate 52-AX	38.78	272.93	1,889.64
Alternate 52-AY	40.81	288.86	1,842.30
Alternate 52-BA	41.46	246.24	1,708.58
Alternate 52-BB	41.19	272.99	1,929.99
Alternate 52-BI	38.94	233.92	1,589.36
Alternate 52-BJ	38.67	260.66	1,810.77
Alternate 52-BK	40.70	276.60	1,763.43
Alternate 52-BM	41.35	233.98	1,629.71
Alternate 52-BN	41.08	260.72	1,851.12
Alternate 52-DA	40.27	280.21	1,956.19
Alternate 52-DC	40.16	267.94	1,877.32
Alternate 52-DD	39.89	294.69	2,098.73
Alternate 161-AW	39.05	244.15	1,653.35
Alternate 161-AX	38.78	270.89	1,874.76
Alternate 161-AY	40.81	286.82	1,827.42
Alternate 161-BA	41.46	244.21	1,693.70
Alternate 161-BB	41.19	270.95	1,915.11
Alternate 161-BI	38.94	231.88	1,574.48
Alternate 161-BJ	38.67	258.62	1,795.89
Alternate 161-BK	40.70	274.56	1,748.55
Alternate 161-BM	41.35	231.94	1,614.83
Alternate 161-BN	41.08	258.68	1,836.24
Alternate 161-DA	40.27	278.17	1,941.31
Alternate 161-DC	40.16	265.91	1,862.44
Alternate 161-DD	39.89	292.65	2,083.85
Alternate 69-BS	39.95	291.80	2,000.93
Alternate 69-BU	41.34	272.40	1,972.09
Alternate 69-CI	41.81	290.78	2,078.02
Alternate 69-CL	40.14	281.90	1,999.47
Alternate 69-CM	40.14	281.90	1,999.47
Alternate 69-CN	40.14	281.90	1,999.47
Alternate 70-BS	39.95	292.17	2,010.17
Alternate 70-BU	41.34	272.78	1,981.33
Alternate 70-CI	41.81	291.15	2,087.26
Alternate 70-CL	40.14	282.28	2,008.71
Alternate 70-CM	40.14	282.28	2,008.71
Alternate 70-CN	40.14	282.28	2,008.71
Alternate 71-BS	39.85	284.40	1,966.90
Alternate 71-BU	41.24	265.01	1,938.06

Alternate 71-CI	41.71	283.38	2,043.99
Alternate 71-CL	40.04	274.50	1,965.44
Alternate 71-CM	40.04	274.50	1,965.44
Alternate 71-CN	40.04	274.50	1,965.44
Alternate 71-CO	40.52	292.88	2,071.37
Alternate 71-CP	40.52	292.88	2,071.37
Alternate 71-CQ	40.52	292.88	2,071.37
Alternate 71-DE	40.05	298.97	2,185.67
Alternate 73-BS	38.96	261.78	1,842.36
Alternate 73-BU	40.35	242.39	1,813.52
Alternate 73-CG	39.43	280.16	1,948.29
Alternate 73-CI	40.83	260.77	1,919.45
Alternate 73-CL	39.16	251.89	1,840.90
Alternate 73-CM	39.16	251.89	1,840.90
Alternate 73-CN	39.16	251.89	1,840.90
Alternate 73-CO	39.63	270.26	1,946.83
Alternate 73-CP	39.63	270.26	1,946.83
Alternate 73-CQ	39.63	270.26	1,946.83
Alternate 73-DE	39.17	276.36	2,061.13
Alternate 73-DF	39.64	294.73	2,167.06
Alternate 74-BS	40.09	281.05	1,925.46
Alternate 74-BU	41.49	261.66	1,896.62
Alternate 74-CG	40.57	299.42	2,031.39
Alternate 74-CI	41.96	280.03	2,002.55
Alternate 74-CL	40.29	271.15	1,924.00
Alternate 74-CM	40.29	271.15	1,924.00
Alternate 74-CN	40.29	271.15	1,924.00
Alternate 74-CO	40.76	289.53	2,029.93
Alternate 74-CP	40.76	289.53	2,029.93
Alternate 74-CQ	40.76	289.53	2,029.93
Alternate 74-DE	40.30	295.62	2,144.23
Alternate 76-BS	39.21	258.43	1,800.92
Alternate 76-BU	40.60	239.04	1,772.08
Alternate 76-CG	39.68	276.81	1,906.85
Alternate 76-CI	41.07	257.42	1,878.01
Alternate 76-CL	39.41	248.54	1,799.46
Alternate 76-CM	39.41	248.54	1,799.46
Alternate 76-CN	39.41	248.54	1,799.46
Alternate 76-CO	39.88	266.91	1,905.39
Alternate 76-CP	39.88	266.91	1,905.39
Alternate 76-CQ	39.88	266.91	1,905.39
Alternate 76-DE	39.41	273.00	2,019.69
Alternate 76-DF	39.88	291.38	2,125.62
Alternate 77-BS	39.84	267.52	1,863.45
Alternate 77-BU	41.23	248.13	1,834.61
Alternate 77-CG	40.31	285.90	1,969.38
Alternate 77-CI	41.70	266.51	1,940.54
Alternate 77-CL	40.04	257.63	1,861.99
Alternate 77-CM	40.04	257.63	1,861.99
Alternate 77-CN	40.04	257.63	1,861.99
Alternate 77-CO	40.51	276.00	1,967.92
Alternate 77-CP	40.51	276.00	1,967.92
Alternate 77-CQ	40.51	276.00	1,967.92
Alternate 77-DE	40.04	282.10	2,082.22



Alternate 78-BS	37.61	245.93	1,664.62
Alternate 78-BT	39.28	299.10	1,880.74
Alternate 78-BU	39.01	226.54	1,635.78
Alternate 78-CG	38.09	264.31	1,770.55
Alternate 78-CI	39.48	244.92	1,741.71
Alternate 78-CL	37.81	236.04	1,663.16
Alternate 78-CM	37.81	236.04	1,663.16
Alternate 78-CN	37.81	236.04	1,663.16
Alternate 78-CO	38.28	254.42	1,769.09
Alternate 78-CP	38.28	254.42	1,769.09
Alternate 78-CQ	38.28	254.42	1,769.09
Alternate 78-DE	37.82	260.51	1,883.39
Alternate 78-DF	38.29	278.89	1,989.32
Alternate 110-BS	36.69	291.96	2,000.97
Alternate 110-BU	38.08	272.57	1,972.13
Alternate 110-CI	38.55	290.94	2,078.06
Alternate 110-CL	36.88	282.07	1,999.51
Alternate 110-CM	36.88	282.07	1,999.51
Alternate 110-CN	36.88	282.07	1,999.51
Alternate 111-BS	38.49	266.51	1,774.28
Alternate 111-BU	39.89	247.12	1,745.44
Alternate 111-CG	38.97	284.89	1,880.20
Alternate 111-CI	40.36	265.50	1,851.36
Alternate 111-CL	38.69	256.62	1,772.82
Alternate 111-CM	38.69	256.62	1,772.82
Alternate 111-CN	38.69	256.62	1,772.82
Alternate 111-CO	39.16	275.00	1,878.74
Alternate 111-CP	39.16	275.00	1,878.74
Alternate 111-CQ	39.16	275.00	1,878.74
Alternate 111-DE	38.70	281.09	1,993.05
Alternate 111-DF	39.17	299.46	2,098.97
Alternate 112-BS	34.46	270.37	1,802.14
Alternate 112-BU	35.85	250.98	1,773.30
Alternate 112-CG	34.93	288.75	1,908.07
Alternate 112-CI	36.33	269.36	1,879.23
Alternate 112-CL	34.66	260.48	1,800.68
Alternate 112-CM	34.66	260.48	1,800.68
Alternate 112-CN	34.66	260.48	1,800.68
Alternate 112-CO	35.13	278.86	1,906.60
Alternate 112-CP	35.13	278.86	1,906.60
Alternate 112-CQ	35.13	278.86	1,906.60
Alternate 112-DE	34.67	284.95	2,020.91
Alternate 37-BX	39.84	242.22	1,647.86
Alternate 37-BY	41.51	295.39	1,863.97
Alternate 37-BZ	40.72	227.93	1,634.14
Alternate 37-CR	39.52	237.39	1,661.33
Alternate 38-BX	39.43	237.50	1,595.76
Alternate 38-BY	41.09	290.66	1,811.87
Alternate 38-BZ	40.31	223.20	1,582.04
Alternate 38-CA	42.97	297.07	2,098.09
Alternate 38-CB	43.39	295.35	2,075.73
Alternate 38-CR	39.11	232.67	1,609.23
Alternate 44-BX	40.09	238.87	1,606.42
Alternate 44-BY	41.75	292.04	1,822.53

Alternate 44-BZ	40.96	224.58	1,592.70
Alternate 44-CA	43.62	298.45	2,108.75
Alternate 44-CB	44.05	296.72	2,086.39
Alternate 44-CR	39.77	234.04	1,619.89
Alternate 45-BX	39.67	234.15	1,554.32
Alternate 45-BY	41.34	287.31	1,770.43
Alternate 45-BZ	40.55	219.85	1,540.60
Alternate 45-CA	43.21	293.72	2,056.65
Alternate 45-CB	43.64	292.00	2,034.29
Alternate 45-CR	39.36	229.31	1,567.79
Alternate 47-BX	40.72	247.96	1,668.95
Alternate 47-BZ	41.59	233.67	1,655.23
Alternate 47-CR	40.40	243.13	1,682.42
Alternate 48-BX	40.31	243.24	1,616.85
Alternate 48-BY	41.97	296.40	1,832.96
Alternate 48-BZ	41.18	228.94	1,603.13
Alternate 48-CR	39.99	238.40	1,630.32
Alternate 49-BX	40.07	243.11	1,625.85
Alternate 49-BY	41.74	296.28	1,841.97
Alternate 49-BZ	40.95	228.82	1,612.14
Alternate 49-CR	39.75	238.28	1,639.32
Alternate 53-BX	38.49	226.38	1,470.12
Alternate 53-BY	40.16	279.54	1,686.23
Alternate 53-BZ	39.37	212.08	1,456.40
Alternate 53-CA	42.03	285.95	1,972.44
Alternate 53-CB	42.46	284.23	1,950.09
Alternate 53-CR	38.17	221.54	1,483.59
Alternate 54-BX	38.08	221.65	1,418.02
Alternate 54-BY	39.74	274.82	1,634.13
Alternate 54-BZ	38.96	207.35	1,404.30
Alternate 54-CA	41.62	281.23	1,920.35
Alternate 54-CB	42.04	279.50	1,897.99
Alternate 54-CR	37.76	216.82	1,431.49
Alternate 55-BX	37.85	221.53	1,427.02
Alternate 55-BY	39.51	274.69	1,643.13
Alternate 55-BZ	38.72	207.23	1,413.30
Alternate 55-CA	41.38	281.10	1,929.35
Alternate 55-CB	41.81	279.38	1,906.99
Alternate 55-CR	37.53	216.69	1,440.49
Alternate 87-BX	40.03	270.78	1,832.55
Alternate 87-BZ	40.91	256.49	1,818.83
Alternate 87-CR	39.71	265.95	1,846.02
Alternate 88-BX	40.03	271.15	1,841.79
Alternate 88-BZ	40.91	256.86	1,828.07
Alternate 88-CR	39.71	266.32	1,855.26
Alternate 89-BX	39.93	263.38	1,798.51
Alternate 89-BZ	40.81	249.09	1,784.80
Alternate 89-CR	39.61	258.55	1,811.98
Alternate 91-BX	39.05	240.77	1,673.98
Alternate 91-BY	40.71	293.93	1,890.09
Alternate 91-BZ	39.92	226.47	1,660.26
Alternate 91-CB	43.01	298.62	2,153.95
Alternate 91-CR	38.73	235.94	1,687.45
Alternate 92-BX	40.18	260.03	1,757.07

Alternate 92-BZ	41.05	245.74	1,743.36
Alternate 92-CR	39.86	255.20	1,770.54
Alternate 94-BX	39.29	237.42	1,632.54
Alternate 94-BY	40.96	290.58	1,848.65
Alternate 94-BZ	40.17	223.12	1,618.82
Alternate 94-CA	42.83	296.99	2,134.87
Alternate 94-CB	43.26	295.27	2,112.51
Alternate 94-CR	38.97	232.58	1,646.01
Alternate 95-BX	39.92	246.51	1,695.07
Alternate 95-BY	41.59	299.67	1,911.18
Alternate 95-BZ	40.80	232.21	1,681.35
Alternate 95-CR	39.61	241.67	1,708.54
Alternate 96-BX	37.70	224.92	1,496.24
Alternate 96-BY	39.36	278.09	1,712.35
Alternate 96-BZ	38.58	210.62	1,482.52
Alternate 96-CA	41.24	284.50	1,998.56
Alternate 96-CB	41.66	282.77	1,976.21
Alternate 96-CR	37.38	220.09	1,509.71
Alternate 117-BX	36.77	270.95	1,832.58
Alternate 117-BZ	37.65	256.65	1,818.87
Alternate 117-CR	36.45	266.11	1,846.06
Alternate 118-BX	38.58	245.50	1,605.89
Alternate 118-BY	40.24	298.67	1,822.00
Alternate 118-BZ	39.46	231.20	1,592.17
Alternate 118-CR	38.26	240.67	1,619.36
Alternate 119-BX	34.55	249.36	1,633.75
Alternate 119-BZ	35.42	235.06	1,620.04
Alternate 119-CR	34.23	244.53	1,647.22
Alternate 125-BX	36.35	241.26	1,583.44
Alternate 125-BY	38.02	294.42	1,799.55
Alternate 125-BZ	37.23	226.96	1,569.72
Alternate 125-CB	40.32	299.11	2,063.41
Alternate 125-CR	36.04	236.42	1,596.91
Alternate 126-BX	38.49	224.34	1,455.24
Alternate 126-BY	40.15	277.51	1,671.35
Alternate 126-BZ	39.36	210.04	1,441.52
Alternate 126-CA	42.02	283.92	1,957.56
Alternate 126-CB	42.45	282.19	1,935.21
Alternate 126-CR	38.17	219.51	1,468.71
Alternate 127-BX	38.08	219.61	1,403.14
Alternate 127-BY	39.74	272.78	1,619.25
Alternate 127-BZ	38.95	205.32	1,389.42
Alternate 127-CA	41.61	279.19	1,905.47
Alternate 127-CB	42.04	277.46	1,883.11
Alternate 127-CR	37.76	214.78	1,416.61
Alternate 128-BX	37.10	207.12	1,342.16
Alternate 128-BY	38.76	260.28	1,558.28
Alternate 128-BZ	37.97	192.82	1,328.45
Alternate 128-CA	40.63	266.69	1,844.49
Alternate 128-CB	41.06	264.97	1,822.13
Alternate 128-CR	36.78	202.28	1,355.63
Alternate 131-BX	39.26	218.31	1,490.23
Alternate 131-BY	40.92	271.47	1,706.35
Alternate 131-BZ	40.13	204.01	1,476.52

Alternate 131-CA	42.79	277.88	1,992.56
Alternate 131-CB	43.22	276.16	1,970.20
Alternate 131-CR	38.94	213.47	1,503.70
Alternate 133-BX	39.50	214.96	1,448.79
Alternate 133-BY	41.17	268.12	1,664.91
Alternate 133-BZ	40.38	200.66	1,435.08
Alternate 133-CA	43.04	274.53	1,951.12
Alternate 133-CB	43.47	272.81	1,928.76
Alternate 133-CR	39.18	210.12	1,462.26
Alternate 134-BX	40.13	224.05	1,511.32
Alternate 134-BY	41.80	277.21	1,727.44
Alternate 134-BZ	41.01	209.75	1,497.61
Alternate 134-CA	43.67	283.62	2,013.65
Alternate 134-CB	44.10	281.90	1,991.30
Alternate 134-CR	39.82	219.21	1,524.80
Alternate 135-BX	37.91	202.46	1,312.49
Alternate 135-BY	39.57	255.63	1,528.60
Alternate 135-BZ	38.79	188.16	1,298.78
Alternate 135-CA	41.45	262.04	1,814.82
Alternate 135-CB	41.87	260.31	1,792.46
Alternate 135-CR	37.59	197.63	1,325.96
Alternate 146-BX	42.02	299.98	2,132.68
Alternate 146-BZ	42.90	285.69	2,118.96
Alternate 146-CR	41.70	295.15	2,146.15
Alternate 147-BX	42.13	265.43	1,770.74
Alternate 147-BZ	43.01	251.13	1,757.03
Alternate 147-CR	41.81	260.59	1,784.21
Alternate 148-BX	42.13	265.80	1,779.98
Alternate 148-BZ	43.01	251.50	1,766.27
Alternate 148-CR	41.81	260.97	1,793.45
Alternate 149-BX	40.11	242.07	1,621.65
Alternate 149-BY	41.78	295.24	1,837.76
Alternate 149-BZ	40.99	227.77	1,607.93
Alternate 149-CB	44.08	299.92	2,101.62
Alternate 149-CR	39.79	237.24	1,635.12
Alternate 150-BX	40.36	238.72	1,580.21
Alternate 150-BY	42.02	291.89	1,796.32
Alternate 150-BZ	41.23	224.42	1,566.49
Alternate 150-CA	43.89	298.30	2,082.54
Alternate 150-CB	44.32	296.57	2,060.18
Alternate 150-CR	40.04	233.89	1,593.68
Alternate 152-BX	36.95	249.63	1,655.72
Alternate 152-BZ	37.83	235.33	1,642.00
Alternate 152-CR	36.63	244.80	1,669.19
Alternate 153-BX	38.76	224.19	1,429.02
Alternate 153-BY	40.42	277.35	1,645.14
Alternate 153-BZ	39.64	209.89	1,415.31
Alternate 153-CA	42.30	283.76	1,931.35
Alternate 153-CB	42.72	282.04	1,909.00
Alternate 153-CR	38.44	219.35	1,442.50
Alternate 154-BX	34.73	228.04	1,456.89
Alternate 154-BY	36.39	281.21	1,673.00
Alternate 154-BZ	35.60	213.75	1,443.17
Alternate 154-CA	38.26	287.62	1,959.21
Alternate 154-CB	38.69	285.90	1,936.86

Alternate 154-CR	34.41	223.21	1,470.36
Alternate 159-BX	37.90	200.42	1,297.61
Alternate 159-BY	39.57	253.59	1,513.72
Alternate 159-BZ	38.78	186.13	1,283.89
Alternate 159-CA	41.44	260.00	1,799.94
Alternate 159-CB	41.87	258.27	1,777.58
Alternate 159-CR	37.59	195.59	1,311.08
Alternate 160-BX	37.69	222.88	1,481.36
Alternate 160-BY	39.36	276.05	1,697.47
Alternate 160-BZ	38.57	208.59	1,467.64
Alternate 160-CA	41.23	282.46	1,983.68
Alternate 160-CB	41.66	280.73	1,961.33
Alternate 160-CR	37.38	218.05	1,494.83
Alternate 162-BX	37.88	218.95	1,436.54
Alternate 162-BY	39.54	272.12	1,652.65
Alternate 162-BZ	38.76	204.66	1,422.82
Alternate 162-CA	41.41	278.53	1,938.86
Alternate 162-CB	41.84	276.80	1,916.51
Alternate 162-CR	37.56	214.12	1,450.01
Alternate 50-CE	40.34	282.30	1,929.86
Alternate 50-CF	41.49	247.49	1,680.33
Alternate 56-CC	41.23	286.73	1,775.77
Alternate 56-CD	42.42	284.35	1,826.61
Alternate 56-CE	38.11	260.72	1,731.03
Alternate 56-CF	39.27	225.90	1,481.49
Alternate 129-CC	40.48	272.32	1,690.91
Alternate 129-CD	41.67	269.94	1,741.75
Alternate 129-CE	37.36	246.31	1,646.17
Alternate 129-CF	38.52	211.49	1,396.64
Alternate 155-CC	43.93	282.77	1,882.46
Alternate 155-CD	45.12	280.38	1,933.30
Alternate 155-CE	40.81	256.75	1,837.72
Alternate 155-CF	41.97	221.94	1,588.18
Alternate 156-CC	41.70	261.18	1,683.63
Alternate 156-CD	42.89	258.80	1,734.47
Alternate 156-CE	38.58	235.16	1,638.88
Alternate 156-CF	39.74	200.35	1,389.35
Alternate 158-CC	40.95	246.77	1,598.77
Alternate 158-CD	42.14	244.38	1,649.61
Alternate 158-CE	37.83	220.75	1,554.03
Alternate 158-CF	38.99	185.94	1,304.50
Alternate 163-CC	41.26	284.16	1,785.28
Alternate 163-CD	42.45	281.77	1,836.12
Alternate 163-CE	38.14	258.14	1,740.54
Alternate 163-CF	39.30	223.33	1,491.01
Alternate 164-CC	41.73	258.61	1,693.14
Alternate 164-CD	42.93	256.22	1,743.98
Alternate 164-CE	38.61	232.59	1,648.40
Alternate 164-CF	39.77	197.77	1,398.87