While special protections are required by federal agencies to avoid and minimize impacts to NRHP listed sites, there are no such requirements on private developers to do so. Development in the areas of the historic districts could change the rural nature of the viewshed and diminish the historical significance of the properties. Any adverse effects will be mitigated through coordination with SHPO.

C.7 HAZARDOUS MATERIALS AND WASTE SITES

C.7.1 Would the proposed alternatives impact any known potentially contaminated sites?

Identified potentially contaminated sites were overlaid onto existing maps to determine if they may be affected by the proposed alternatives. These known sites include previously identified hazardous materials and hazardous waste sites within the vicinity of the 400-foot corridor for each alternative. Additional field investigations would be completed prior to construction to identify suspected hazardous waste sites and to characterize the extent of possible contamination from all known or suspected sites. Table C.16 (refer to page C-61) provides a summary of sites identified within the vicinity of the 400-foot corridor for each alternative. For detailed information about hazardous material and waste sites within a half-mile vicinity of each alternative, please refer to the *Hazardous Material Technical Memorandum*.

Alternative 3 would have the least number of potentially impacted hazardous material or waste sites at one, while Alternative 6 would have the greatest at four sites that could be potentially impacted. However, only two of the eight sites are known to have had releases. Given the potential that exists for each alternative to impact these sites, there is little difference between the alternatives.

C.8 NOISE

C.8.1 What are the anticipated noise impacts for the proposed alternatives?

Detailed land use data and structural information for the project study area has been collected in a GIS format. In order to analyze and compare specific categories of noise impacts associated with the eight Build Alternatives, contour distances were extrapolated from the TNM model and applied to the GIS data. This provided the ability to calculate the number and types of structures that fell within the contours associated with each NAC category for each of the proposed alternatives. The two contours of concern are the 66dB contour (Category B) and the 71 dB contour (Category C); no Category A receivers were identified adjacent to the proposed alignments. The GIS analysis provided a more detailed picture as to where impacts are located along the alignments. Noise impacts from this analysis are summarized in Table C.17, (refer to page C-63) and shown on Figure C-33 (refer to page C-62).

A more detailed analysis of noise impacts will be completed for the Preferred Alternative when more detailed design and survey information is available.

Table C.16
Hazardous Materials and Waste Sites Potentially Impacted, by Alternative
Interstate 73 EIS: I-95 to the Myrtle Beach Region

Site	Description	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8
Exxon Mobile Smith Rogers Oil Co., Inc. 3725 U.S. Route 76 E, Mullins	One gasoline UST with 8,000 gallon capacity; currently in use.	X				X			
Kunja Knitting Mill, 36300 U.S. Route 76 E, Mullins (Now Southeastern Millwork, Inc.)	Unknown, it was listed on the S.C. Environmental Facility Information System and USEPA's RCRA Info database	X				X			
Stuckey's Gas Station at I-95 and S.C. Route 34 Interchange, Dillon	Two gasoline USTs with an 8,000 gallon capacity and one gasoline UST with a 4,000 gallon capacity, all of which are currently in use.		X				X		X
Carousel Amoco Gas Station at I-95 and S.C. Route 34 Interchange, Dillon (Now a media/video store)	Two gasoline USTs with an 8,000 gallon capacity, one gasoline UST with a 3,000 gallon capacity, and one gasoline UST with a 1,000 gallon capacity; all abandoned and have been removed.		X				X		X
Webster's 66 Service at I-95 and S.C. Route 34 Interchange, Dillon (Now an auto service shop)	One gasoline UST with an 8,000 gallon capacity, one 8,000 gallon capacity diesel UST, and one 3,000 gallon capacity gasoline UST, all of which have been abandoned and filled with foam. An investigation and risk assessment is being conducted on the site due to a leak reported in December, 1991 from an UST which contained gasoline.		X				X		X
Luther Martin Grocery and C&M Convenience, 3842 Joiner Swamp Rd, Galivants Ferry (Now Harold's Convenience Store)	One 3,000 gallon capacity gasoline UST, and two 2,000 gallon capacity gasoline USTs, all of which have been removed. A LUST was reported in June 2001, but received a status of no further action in November 2001. Currently there are four fuel ASTs present and in use.			X			X		
Marion County Airport, 225 Airport Court, Mullins	One 8,000 gallon capacity gasoline UST and one 8,000 gallon capacity kerosene UST were present, but have been removed. There is one 10,000 gallon capacity gasoline UST and one 10,000 gallon aviation fuel UST which are both currently in use.				X			X	
Wellman Incorporated – Marion Plant, U.S. Route 76 and U.S. Route 501 Bypass in Marion (now vacant)	Unknown, but the site was listed on the South Carolina Environmental Facility Information System and the Aerometric Information Retrieval System/Air Facility Subsystem databases, which is related to tracking the compliance of stationary sources of air pollution.				X			X	
Total Number of Sites by Alternative:		**2**	**3**	**1**	**2**	**2**	**4**	**2**	**3**

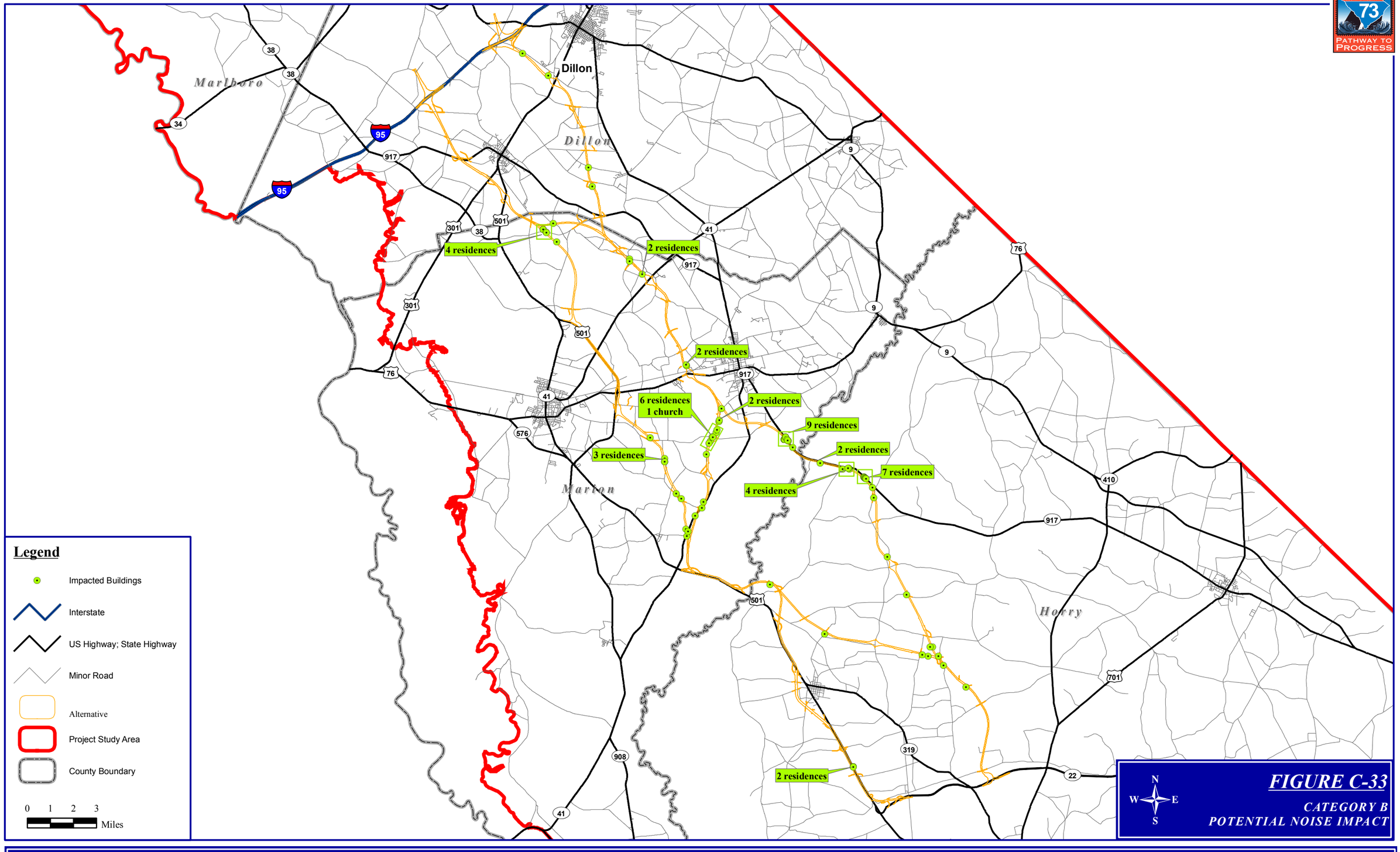


FIGURE C-33

CATEGORY B
POTENTIAL NOISE IMPACT

Table C.17
Noise Impacts Based on GIS Analysis
Interstate 73 EIS: I-95 to the Myrtle Beach Region

Location	Category	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8
I-95 to US 301	66 dBA	0	2R	0	0	0	2R	0	2R
	71 dBA	0	0	0	0	0	0	0	0
US 301 to SC 41-Alt.	66 dBA	3R	5R	3R	5R	3R	5R	5R	5R
	71 dBA	0	0	0	0	0	0	0	0
SC 41-Alt. to US 76	66 dBA	2R	0	2R	0	2R	2R	0	0
	71 dBA	0	0	0	0	0	0	0	0
US 76 to SC 41	66 dBA	10R, 1C	5R	1R	8R	10R, 1C	1R	8R	4R
	71 dBA	0	0	0	0	0	0	0	0
SC 41 to S-99/S-308	66 dBA	1R	2R	25R	2R	2R	25R	2R	2R
	71 dBA	0	0	0	0	0	0	0	0
S-99/S-308 to SC 22	66 dBA	2R	5R	6R	2R	5R	6R	5R	2R
	71 dBA	0	0	0	0	0	0	0	0
Total Impacts		18R, 1C	19R	37R	17R	22R, 1C	41R	20R	15R

Note: R=residence, C=church

C.8.2 How could noise impacts be mitigated?

Due to the rural setting of the project study area, areas of high density development were avoided to the extent possible during the development of the Build Alternatives. Alternatives were adjusted to avoid, as much as possible, the smaller communities and neighborhoods. The avoidance of developed areas reduced potential noise impacts.

The following noise abatement measures were evaluated for areas with the highest potential for noise impacts. The various noise abatement measures were studied to determine the feasibility and reasonableness of their implementation.

C.8.2.1 Highway Alignment

Highway alignment selection involves the horizontal or vertical orientation of the proposed project in such a way as to minimize impacts and costs. The selection of alternative alignments for noise abatement purposes must consider the balance between noise impacts and other engineering and environmental parameters. For noise abatement, a horizontal alignment selection is primarily a matter of placing the roadway at a sufficient distance from noise sensitive areas. As stated above, this method was used during the development of Build Alternatives and has been implemented through the entire process.

C.8.2.2 Noise Barriers

Noise barriers involve constructing solid barriers to effectively diffract, absorb, and/or reflect highway traffic noise. These may include earth berms and/or noise walls. The evaluation of the reasonableness and

feasibility of noise wall construction is based on many factors, some of which include constructability, cost, height, anticipated noise increase, noise reduction obtained, number of receptors benefited, residents' views, land use type, and whether land use changes are expected. For this analysis, noise barriers were studied for areas where there are more than two or three isolated receptors located within approximately 400 feet of a potential alternative. Table C.18 explains the potential cost and benefit information about the barriers analyzed. A construction cost of 20 dollars a square foot was used for the cost analysis, with the exception of barrier number 6 which was priced at $28 per square foot since it would be located on a bridge. The cost of the benefited receptors was calculated by dividing the cost of the noise wall by the number of receptors benefited by the wall.

Table C.18
Noise Barrier Analysis
Interstate 73 EIS: I-95 to the Myrtle Beach Region

Barrier Number	Location	Alt.	Impacted Receptors Studied	Number of Receptors Benefited	Length (feet)	Average Height (feet)	Cost	Cost per Benefited Receptor
1	North of U.S. Route 301	2, 6, 8	10	10	2,774	14	$769,000	$76,900
2	South of U.S. Route 301	2, 6, 8	10	10	2,875	14	$783,000	$78,300
3	North of S.C. Alt. Route 41	1, 2, 3, 5, 6, 8	7	7	1,200	21	$496,000	$70,900
4	North of S.C. Alt. Route 41	1, 2, 3, 5, 6, 8	12	12	1,750	22	$754,000	$62,800
5	North of U.S. Route 76	1, 2, 3, 5, 6, 8	23	13	1,856	17	$612,000	$47,100
6	South of S.C. Route 41	3, 6	9	8	1,026	12	$340,000	$42,500
7	South of S.C. Route 308	3, 6	11	5	3,223	15	$986,000	$197,200
8	North of U.S. Route 301	1, 3, 4, 5, 7	7	3	2,627	13	$702,000	$234,000
9	South of U.S. Route 301	4, 7	7	4	2,197	18	$796,000	$199,000
10	North of U.S. Route 76	4, 7	5	3	2,400	18	$860,000	$286,700
11	South of U.S. Route 76	4, 7	14	12	2,855	13	$768,000	$59,100
12	South of S.C. Route 308	1, 4, 8	7	6	2,100	16	$652,000	$108,700
13	South of S.C. Route 308	1, 4, 8	10	6	2,588	19	$985,000	$134,200
14	South of U.S. Route 76	1, 2, 5, 8	7	6	1,460	13	$385,000	$64,200
15	South of S.C. Route 308	2, 5, 7	26	11	2,200	20	$878,000	$79,800

Note: Barrier 6 includes cost for a portion of the barrier on a bridge.

A review of Table C.18 shows that, based on preliminary analysis, none of the noise barriers would be reasonable based on cost per benefited receptor. A more detailed analysis may be needed in the Final EIS. SCDOT has defined a reasonable cost for noise abatement as $25,000 dollars per benefited receptor. In order to be effective, a noise wall must be tall enough to block the "line of sight" between the human ear and the noise source, and long enough to block the "line of sight" from a length of roadway approximately six to eight times the distance between the receptor and roadway. The distance between receptors and the distance between the roadway and many of the receptors studied, contribute to the need for the noise walls to be of such great length and height as to render them cost ineffective. The lowest cost obtained for any wall studied was over $42,000 dollars per benefited receptor, and is not considered reasonable due to cost.

C.9 AIR QUALITY

C.9.1 Would air quality be impacted by the proposed project?

Air quality is not likely to be impacted by this project. The three-county area is currently in attainment of the NAAQS standards. In general, the project should improve traffic congestion along existing routes to the Myrtle Beach region, which would have positive effects on the region's air quality. In addition, the counties have entered into Early Action Compacts to set goals for cleaner air in the three-county area. This project also has been included in the South Carolina Transportation Infrastructure Program, which is reviewed for air quality compliance. With the Early Action Compacts in place, and standard review of the project as part of the South Carolina Transportation Infrastructure Program, the project is not likely to impact air quality in the three-county area.

C.10 CONSTRUCTION IMPACTS

During the construction of the project, several potential environmental impacts may occur, but these would be mitigated through careful attention to construction methods. Construction methods would follow the current edition of SCDOT's *Standard Specifications for Highway Construction* to minimize potential impacts. Appropriate mitigation measures would be incorporated into the design plans and construction specifications to reduce, and, possibly eliminate, the associated impacts.

C.10.1 What Impacts May Occur to Air Quality During Construction?

Air quality impacts may occur during construction due to the dust and fumes from equipment, earthwork activities, and vehicles accessing the construction site. Air quality impacts may also occur from an increase of vehicle emissions from traffic delays due to construction activities. Construction activities could include staging of construction for interchange locations, delivery of equipment and materials, and longer waiting times at traffic signals.

Best management practices that limit dust generation are described in the *South Carolina Stormwater Management and Sediment Control Handbook For Land Disturbance Activities*[4] and *A Guide To Site Development andBest Management Practices For Stormwater Management and Sediment Control.*[5] These methods include vegetative cover, mulch, spray-on adhesive, calcium chloride application, water sprinkling, stone, tillage, wind barriers, and construction of a temporary graveled entrance/exit to the construction site.

In accordance with Section 107.07 of the South Carolina Highway Department Standard Specifications for Highway Construction,[6] the contractor would comply with *South Carolina Air Pollution Control Laws, Regulations and Standards*.[7] The contractor would also comply with county and other local air pollution regulations. Any burning of cleared materials would be conducted in accordance with applicable state and local laws, regulations and ordinances and the regulations of the South Carolina's State Implementation Plan for air quality, in compliance with Regulation 62.2, Prohibition of Open Burning.

C.10.2 What Noise Impacts may occur as a result of Construction?

Areas along the Build Alternatives could be affected by noise generated from various construction activities. The major construction elements of this project are expected to be earth moving, hauling, grading, and paving. General construction noise impacts to individuals living or working near the project would be expected, particularly from noise generated by paving operations and from earth moving equipment. Overall, construction noise impacts are expected to be minimal since construction noise would be relatively short in duration and could be restricted to daytime hours.

C.10.3 What Water Quality Impacts may occur as a result of Construction?

Potential impacts to water quality from construction activities could be related to surface water runoff, accidental release of fuel or hydraulic fluids, sedimentation from soil erosion, and changes in stream channel grades. *The South Carolina Stormwater Management and Sediment Control Handbook for Land Disturbance Activities,*[8] provides information regarding stormwater management and sediment control during construction. Several Best Management Practices (BMPs) that could be possibly used during construction include the following:

- land grading;
- construction of temporary diversions to dispose of runoff to control erosion and sedimentation;
- construction of diversion dikes to prevent sediment-laden runoff from exiting the construction site;

[4] South Carolina Department of Health and Environmental Control's Office of Ocean and Coastal Resource Management, *South Carolina Stormwater Management and Sediment Control Handbook for Land Disturbance Activities* (2003), Appendix E.

[5] South Carolina Department of Health and Environmental Control's Office of Ocean and Coastal Resource Management, A Guide to Site Development and Best Management Practices for Stormwater Management and Sediment Control.

[6] SCDOT Standard Specifications for Highway Construction (2000).

[7] South Carolina Department of Health and Environmental Control, Bureau of Air Quality Control, *South Carolina Air Pollution Control Laws, Regulations, and Standards.*

[8] *Ibid.*

- construction of temporary sediment traps which would detain sediment-laden runoff and trap the sediment to prevent impacts to surrounding water bodies;
- construction of sediment basins;
- straw bale dikes; and,
- rock dams to retain sediment on the construction site and prevent sedimentation of off-site water bodies.

The contractor would be required to comply with Section 107.26, SCDHEC's Environmental Protection and Water Pollution Control from the *South Carolina Highway Department Standard Specifications for Highway Construction*.[9] In addition, the contractor would be required to comply with current federal and state laws, as well as regulations regarding water quality and stormwater management.

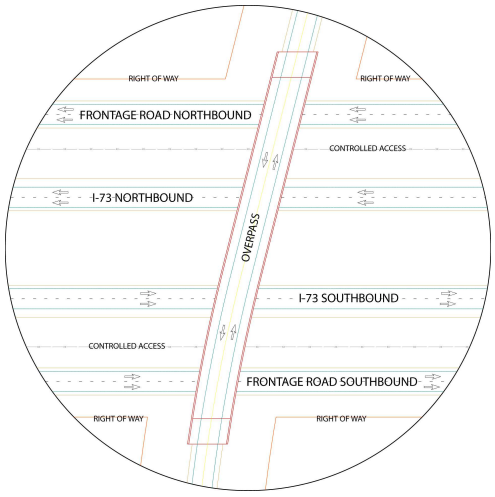
C.10.4 What Impacts to Wildlife may occur as a result of Construction?

Staging and stockpiling operations during construction could result in possible disruption to the resident wildlife population. Both the clearing of habitats, as well as the noise and vibration from construction operations could displace mobile wildlife species. Construction activities would stimulate competition between displaced species and the resident wildlife population adjacent to the construction site. Biotic impacts would be temporary, since staging and stockpiling areas would be abandoned after construction.

C.10.5 How would Traffic be Maintained During Construction?

The construction of I-73 on sections of existing U.S. Route 501 will be more complex than sections on new location. At several sections construction will be performed in the median of U.S. Route 501.

The segment of I-73 on the Marion Bypass would require construction in the median of existing U.S. Route 501. One side of U.S. Route 501 would stay in place while the other side would be relocated to allow for I-73 to be placed in the center. U.S. Route 501 would become a pair of one-way frontage roads on the outside of each side of I-73 (refer to graphic of the frontage roads). I-73 would then be constructed between the lanes of U.S. Route 501. Because of the one-way frontage roads the traffic circulation would be changed. People wanting to get onto U.S. Route 501 from the western side would have to get on the frontage road heading south. If they wanted to travel north they would have to stay on the southbound side until they reached a location to pass under I-73 and make a U-turn to go north. Likewise the people on the eastern side would have to turn north onto U.S. Route 501. Those wanting to proceed south would have to travel north until they reached a turn around under I-73 and head south.



One-way Frontage Roads

[9] SCDOT Standard Specifications for Highway Construction (2000).

This situation would occur again at the U.S. Route 501 crossing of the Little Pee Dee River. One side, the northern side, of U.S. Route 501 would be shifted farther north to allow for construction of I-73 between the travel lanes. Again, U.S. Route 501 would be come a pair of one-way frontage roads on the outside of both sides of I-73. The situation here would be more complex because there are several bridge structures that would have to be replaced. Again, people would have to travel in one direction on U.S. Route 501 on either side of I-73 until they reached a place to make the turn around to go in the opposite direction.

This situation would arise a third time on U.S. Route 501 from Aynor south to S.C. Route 22. The one-way frontage roads would maintain access to adjacent properties but would require the same circulation patterns for local trips on U.S. Route 501 as described for the other segments.

Extreme caution must be taken during the design and construction of the project to ensure that proper measures are met to provide a safe facility to the traveling public. These considerations would be necessary due to the existing high volume of traffic which uses U.S. Route 501 as the primary route from I-95 to the Myrtle Beach area, especially during the peak season summer months. A minimum design speed of 45 mph would have to be maintained in the construction area in order to minimize undue traffic backups and delays.

Shifting of traffic during the various phases of construction would be required. This would cause a potential for accidents due to motorists unfamiliarity with the facility as it changes. A conflict that would occur between the construction traffic, such as large hauling trucks and construction tractors, and the traveling public that would increase the risk of accidents and potential fatalities in the work zone area. The construction activity would warrant the placement of more rigid traffic control apparatus such as temporary concrete barriers which would create an undue obstacle, but reduce the potential for injury or fatalities should an accident occur.

In addition, the construction in the areas of U.S. Route 501 will cause a burden on the existing businesses and residents adjacent to the existing roadway. During certain phases of construction, access will be affected to these properties to the extent that a vehicle wanting to gain access to specific property may have to be detoured several miles.

A similar situation would exist on the eastern crossing of the Little Pee Dee River, along S.C. Route 917. However, in that situation the existing road would be maintained as a two-lane frontage road, with traffic in both directions. I-73 would be built on the southwestern side of the existing road. Again, shifting of traffic during phases of construction would be increase the potential for accidents and rigid traffic control would be needed to make a safe work and travel environment. The traffic volumes at this crossing are substantially less than at the U.S. Route 501 crossing, making the maintenance of traffic at this location easier to perform.

A higher number of people live in the vicinity of U.S. Route 501 and in turn any alternatives that utilize this existing facility would impact more people by altering the existing traffic patterns. As such, Alternative 4 would have the greatest impact to mobility and constructability since it follows existing U.S. Route 501 for the greatest length. Alternatives 1 and 8 would have the second highest impacts to construction and mobility since their alignments follow the existing U.S. Route 501 corridor south of Aynor. Alternative 6 would connect to I-95

near the Gateway Industrial Park and would require a complex system of collector and distributor roads. Alternative 3 would have the least impacts for construction and mobility because it is primarily on new alignment.

Traffic congestion could occur, particularly in areas where new construction would be in the vicinity of existing facilities. Temporary detours could be needed as part of maintenance of traffic during construction, particularly at interchanges. Existing facilities could be closed for brief periods of time, as approved by SCDOT. Detours could also be utilized in areas where construction activities would lead to a reduced number of lanes on an existing facility. This would help reduce traffic congestion in the vicinity of construction. Any detours and maintenance-of-traffic layouts proposed by the contractor would be reviewed and approved by SCDOT. Temporary detours and closures of facilities could lead to more inconveniences for local residents and travelers throughout the areas of construction. Businesses along these roadways could experience a loss of revenue during construction due to the inconvenience placed on customers to access these businesses.

Access roads would be needed to maintain existing connections that would otherwise be lost due to construction of the project. Measures that could be incorporated to provide maintenance of traffic include temporary lane closures, temporary relocation of roads, or construction of temporary structures. The speed limits in the construction work zone areas should generally be lower than the posed speed limit on the existing facility. The construction of the interchanges may be completed in stages and the contractor would be required to use typical maintenance of traffic layouts or submit site-specific layouts for review. The contractor would also be required to comply with Section 104.07, Maintenance and Maintaining Traffic, 107.06, Sanitary Health and Safety Provisions, and Section 107.09, Public Convenience and Safety of the *South Carolina Highway Department Standard Specifications for Highway Construction.*[10]

C.10.6 What are the Estimated Costs of Constructing the Project?

Table C.19 lists the estimated costs to construct each alternative. The costs are shown in 2006 dollars, and then factored up by six percent per year to the Years 2011 and 2016.

Table C.19
Potential Cost Per Alternative
Interstate 73 EIS: I-95 to the Myrtle Beach Region

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8
Total Estimated Cost in Billions (2006 Dollars)	1.115	1.156	0.964	1.040	1.069	1.051	1.008	1.192
Total Estimated Cost in Billions (2011 Dollars at 6% Annually)	1.492	1.547	1.290	1.392	1.431	1.406	1.350	1.595
Total Estimated Cost in Billions (2016 Dollars at 6% Annually)	1.997	2.070	1.726	1.863	1.915	1.882	1.806	2.134

[10] *Ibid.*

C.11 PEDESTRIANS AND BICYCLISTS

C.11.1 How would pedestrian and bicycle facilities be incorporated into the project?

The proposed project would provide facilities for bicyclists and pedestrians where bridges are constructed to elevate roadways over the interstate. The bridges constructed at these locations would have 10-foot shoulders, which would accommodate pedestrian and bicyclists more safely. The existing road system within the project study area is comprised primarily of secondary roadways including U.S. Route 501, U.S. Route 76, S.C. Route 41, and S.C. Route 22. The secondary roadways have limited or no shoulders making it difficult to accommodate pedestrians or bicyclists.

The SCDOT has developed policies to ensure that pedestrians and bicyclists are taken into consideration when planning to widen existing roadways or for new road construction projects. "Accommodating Bicycle and Pedestrian Travel: A Recommended Approach" is a policy statement adopted by the USDOT to guide the integration of bicycling and walking facilities into the transportation mainstream.[11] Along with input from public agencies, professional associations, and advocacy groups, the USDOT drafted the policy statement in response to Section 1202 (b) of the TEA-21. The policy statement states that facilities for bicyclists and pedestrians in urbanized areas should be established in new construction and reconstruction projects, unless bicyclists and pedestrians are prohibited by law from using the roadway, as they would be for the proposed project.

Due to the fact that access to the facility would be fully-controlled, in designated locations secondary roadways would be elevated and constructed over the interstate. The frontage roadways would be considered for bike and pedestrian facilities based on SCDOT policies. Although the proposed project would require the modification of several local roads, it would not reduce the routes available for travel by pedestrians or bicyclists. The proposed project is not anticipated to affect pedestrian or bicycle traffic.

C.12 SHORT-TERM USES VERSUS LONG-TERM PRODUCTIVITY

C.12.1 What are the Short-term Uses versus the Long-term Productivity of the Project?

The potential impacts of the proposed project must be weighted against the need for the interstate facility. Although potential adverse impacts may occur, the implementation of various mitigation measures would limit the extent of impacts that are deemed unavoidable. The local short-term impacts would be primarily associated with site preparation and construction of the interstate facility. Many of the potential impacts would only occur during construction and would be considered short-term, including run-off from cleared areas. Other potential impacts such as permanent changes to the existing land use, loss of wetlands, loss of farmlands, and loss of habitat would be considered long-term. As discussed previously, the proposed project would provide long-term enhancement opportunities for economic development and provide transportation system linkage.

[11] FHWA. Design Guidance. Accommodating Bicycle and Pedestrian Travel: A Recommended Approach. http://www.fhwa.dot.gov/environment/bikeped/design.htm Last accessed October 24, 2006.

C.13 FARMLANDS

C.13.1 How would the proposed project impact farmlands?

A Farmland Impact Conversion Evaluation was completed for the reasonable alternatives. By totaling the relative value and the corridor assessment value, it was determined that the total threshold, 160 points overall, set by NRCS, was not exceeded by the Build Alternatives in any of the three counties (refer to Table C.20). The highest total value was 157 for Alternative 4 in Dillon County. The lowest value was 107 points for Alternative 7 in Marion County (refer to Table C.20). Since the 160 threshold was not exceeded for any of the alternatives, mitigation actions that could reduce adverse impacts associated with the Build Alternatives would not be required.

Table C.20
NRCS Farmland Conversion Evaluation
Point Total by Alternative
Interstate73: I-95 to Myrtle Beach Region

	Alt 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8
Dillon County	156	149	153	157	155	149	155	147
Horry County	131	130	134	128	138	139	134	128
Marion County	117	109	117	110	117	112	107	116

The No-build Alternative would have no effect on farming operations since existing conditions would remain unchanged. Construction of the Build Alternatives would result in the direct conversion of farmland to a transportation facility. Alternative 8 would incur 2,155 acres of impact to prime and statewide important farmland soils, the highest of all proposed alternatives (refer to Table C.21, page C-73). Alternative 3 would have the least amount, 1,708 acres, of prime and statewide important farmland soils directly impacted, (refer to Table C.21, page C-73). Overall, while the difference between the highest (Alternative 8) and the lowest (Alternative 3) may be enough to differentiate it is not a substantial difference.

The Build Alternatives would also result in other impacts, such as divided farm parcels. If farm buildings or land were divided from farming operations, inaccessibility to fields or pastureland may result if access were not provided. If access is not provided, the farm operator may experience increased time requirements and expenses in order to conduct normal farming operations. The increased expenses could include the need to transfer equipment, feed, and livestock between the divided parts of the farm.

Impacts to parcels that could potentially be divided by the alternatives were identified. Given that farm size in the project study area ranges from 1 acre to 1,000 acres or

A "divided" farm parcel is an area divided either diagonally or laterally by the proposed right-of-way, thus dividing a single area of land into two or more plots.

Table C.21
Prime and Farmland of Statewide Importance Soils
Interstate73: I-95 to Myrtle Beach Region

Alternative	Total Farm-land (acres)	Dillon		Horry		Marion	
		Prime (acres)	Statewide Importance (acres)	Prime (acres)	Statewide Importance (acres)	Prime (acres)	Statewide Importance (acres)
1	1,993	417	227	261	294	368	426
2	2,009	526	321	499	129	294	240
3	1,708	420	223	422	130	252	261
4	1,717	420	222	270	278	178	349
5	2,136	486	236	490	130	368	426
6	1,835	522	331	422	140	203	217
7	1,781	360	277	498	130	178	338
8	2,155	571	331	280	285	308	380

more, it was determined that no parcel would be too small to farm. For every parcel that an alternative traversed, three areas were calculated: the area within the 400-foot corridor and the two remaining areas on either side of the corridor. The area within the 400-foot corridor was calculated as direct impacts. It is assumed that the parcels divided by an alternative could be acquired by a neighboring farm, so the farmland, even though it may be split, may not be removed from active production. Maintaining access to farms that have been split or severed by I-73 is an issue that will be further investigated for the Preferred Alternative in the Final EIS.

Alternative 5 would incur the greatest potential impact to farmland via divided parcels (281 acres) while Alternative 4 would incur the least amount of impacts via divided parcels (169 acres), (refer to Table C.22).

Overall, farming operations would be directly impacted as a result of the construction of the proposed project. No farmlands, besides those acquired for right-of-way, should be rendered un-farmable and access issues to divided parcels would be addressed during the right-of-way acquisition process. The conversion of farmland

Table C.22
Divided Farmland Parcels in the Project Study Area
Interstate73: I-95 to Myrtle Beach Region

Alternative	Total Corridor (acres)	Total (acres)	Dillon County (acres)	Horry County (acres)	Marion County (acres)
1	2,519	209	65	27	117
2	2,578	275	80	103	92
3	2,273	257	65	110	82
4	2,336	169	65	23	81
5	2,530	281	65	99	117
6	2,321	261	86	111	64
7	2,347	243	65	99	79
8	2,567	207	86	23	98

to right-of-way due to the construction should not cause a significant disruption of agricultural activities in the project study area.

C.13.2 What would be the potential indirect and cumulative impacts on farmland?

Impacts from induced development and cumulative impacts were calculated with the use of GIS. Spatial data layers containing acreages of projected growth by alternative (which were determined in the land use study, see Land Use Section, page C-1) were overlaid on the soils data (obtained from the NRCS) within the project study area. The acreages of projected growth that fell within prime farmland or farmland of statewide importance were identified and calculated.

C.13.2.1 How would development that is expected to occur with the No-build Alternative impact farmlands?

Development that would be expected under the No-build Alternative would impact approximately 20,426 acres of farmlands, including prime farmland and farmland of statewide importance. These impacts would include: in Dillon County, 28 acres of prime farmland and 20 acres of farmland of statewide importance; in Horry County, 3,373 acres of prime farmland and 1,309 acres of farmland of statewide importance; and in Marion County, 3,173 acres of prime farmland and 12,523 acres of farmland of statewide importance. Approximately 16,000 acres of this development in Marion County would be located at the site of a proposed inland port that is currently in the planning stage, located north of the City of Marion. The inland port would encompass: one acre of both prime farmland and farmland of statewide importance in Dillon County; and 2,993 acres of prime farmland and 12,405 acres of farmland of statewide importance in Marion County. The No-build Alternative was used as a baseline to compare development that was projected as a result of the construction of I-73.

C.13.2.2 What would be the potential impacts from induced development on farmland?

In addition to the direct conversion of farmland to roadway right-of-way and indirect impacts, impacts from development induced by the construction of the project would be anticipated in the project study area. Listed in Table C.23 (refer to page C-74) are acres of impacts from induced development to farmland, based on the land use model. Alternative 2 would have the highest acres of impacts from induced development with 1,362 acres, while Alternative 3 would have the least acres of impacts with 1,014 acres.

C.13.2.3 What would be the potential cumulative impacts on farmland?

Cumulative effects on farmland are caused by the aggregate of past, present and reasonably foreseeable future actions. Cumulative impacts would include development in the project study area that would be expected under the No-build Alternative, development that may result from the project, as well as other development in the project study area that may affect farmlands. Table C.24 (refer to page C-74) lists cumulative impacts to farmland in the project study area from development that is projected from the land use model. Alternative 2 would have the most acres of cumulative impacts with 21,906 acres, while

Table C.23
Impacts from Induced Development on Prime and Farmland of Statewide Importance Soils in the Project Study Area by Alternative
Interstate73: I-95 to Myrtle Beach Region

Alternative	Total Impacts from Induced Development to Farmland (acres)	Dillon Prime (acres)	Dillon Statewide Importance (acres)	Horry Prime (acres)	Horry Statewide Importance (acres)	Marion Prime (acres)	Marion Statewide Importance (acres)
1	1,157	69	56	304	136	349	243
2	1,362	93	33	420	241	353	222
3	1,014	43	47	336	164	230	194
4	1,047	59	55	264	135	296	239
5	1,284	56	51	436	213	300	228
6	1,152	77	28	384	182	279	202
7	1,118	46	50	393	173	262	194
8	1,303	78	32	387	229	377	240

Table C.24
Cumulative Impacts on Prime and Farmland of Statewide Importance Soils in the Project Study Area by Alternative
Interstate73: I-95 to Myrtle Beach Region

Alternative	Total Cumulative Impact to Farmland (acres)	Dillon Prime (acres)	Dillon Statewide Importance (acres)	Horry Prime (acres)	Horry Statewide Importance (acres)	Marion Prime (acres)	Marion Statewide Importance (acres)
1	21,648	70	95	3,677	1,445	3,522	12,839
2	21,906	121	53	3,793	1,550	3,526	12,863
3	21,440	71	67	3,709	1,473	3,403	12,717
4	21,501	87	75	3,637	1,444	3,496	12,762
5	21,710	84	71	3,809	1,522	3,473	12,751
6	21,578	105	48	3,757	1,491	3,452	12,725
7	21,144	74	70	3,766	1,482	3,035	12,717
8	21,729	106	52	3,760	1,538	3,510	12,763

Alternative 7 would have the least acres of cumulative impacts with 21,144 acres. However, the relatively small magnitude of the difference between alternatives means that they are essentially the same.

In addition to projected growth and land use changes, other transportation projects in the project study area contribute to the cumulative impacts on farmlands. In 2000, construction of the Conway Bypass from U.S. Route 501 in Conway to U.S. Route 17 in North Myrtle Beach was completed. The Conway Bypass was 28.5 miles of new location roadway and its construction impacted farmlands directly and/or

by bisecting parcels, which created access problems for some farm owners. The widening of S.C. Route 38 from I-95 to Marion is currently under construction. This project widened an existing route from two to four lanes, which have impacted minor amounts of farmlands adjacent to the road.

C.13.3 How would Federal/USDA farmland programs be impacted by the proposed alternatives?

C.13.3.1 Farm and Ranch Lands Protection Program

Alternatives 1, 2, 5, and 8 would intersect only one of the easements, while Alternative 3 and Alternative 6 would intersect both sites (refer to Figure C-34, page C-77). Alternative 4 and Alternative 7 would not affect either of the easements. If the proposed alternative would traverse through these easements, the remainder of the land in the affected parcels would remain in the program and no mitigation would be required.

C.13.3.2 Wetlands Reserve Program

While wetland reserve program easements exist in the project study area, none would be impacted by any of the proposed alternatives.

C.13.3.3 Conservation Reserve Program

There are over 200 Conservation Reserve Program easements in the project study area. All of the proposed alternatives would intersect multiple easements, ranging from 15 to 34 easements (refer to Table C.25).

Table C.25
Impacts to Land in the Conservation Reserve Program
Interstate73: I-95 to Myrtle Beach Region

	Total acres	Total Number of Sites	Dillon County	Horry County	Marion County
Alt. 1 acres (sites)	213	34	26 (11)	52 (6)	135 (17)
Alt. 2	184	17	26 (6)	52 (4)	106 (7)
Alt. 3	77	22	39 (11)	16 (4)	22 (7)
Alt. 4	177	29	39 (11)	3 (1)	135 (17)
Alt. 5	205	24	39 (11)	59 (6)	107 (7)
Alt. 6	58	15	26 (6)	10 (2)	22 (7)
Alt. 7	149	19	39 (11)	3 (1)	107 (7)
Alt. 8	213	27	26 (6)	52 (4)	135 (17)

Alternative 6 would intersect the fewest easements (15), which contain approximately 58 acres of land. The alternatives with the most impacts to easements are Alternative 1, which intersects 34 sites and Alternative 8, which intersects 27 sites. Both alternatives would impact approximately 213 acres of land. If the proposed alternative would traverse through an easement, the remainder of the land in the affected parcels would remain in the program and no mitigation would be required.

C.14 UPLANDS

C.14.1 What impacts to upland natural communities would occur?

Impacts to upland natural communities would consist of clearing and grubbing of vegetation within the construction limits in preparation of construction of the road. Excavation and/or the placement of fill material would occur to construct the road bed. Each of the Build Alternatives would impact upland natural communities. Table C.26 provides the forested upland community impacts by community type that would result from the construction of each Build Alternative.

The Build Alternatives can be grouped together in four groups with each alternative having similar impacts, and one alternative occupying a group by itself. Alternatives 3 and 7 would have basically the same impacts, as would Alternatives 4, 5, and 6. The next highest impact group would be Alternatives 1 and 2, followed by Alternative 8 with the highest amount of upland impacts. Each alternative in a group would have less than 20 acres of impacts separating the lowest from the highest impact for that group. Each group would have less than 30 acres of impact between highest impact of that group and the lowest impact of the next group. The total impacts to forested uplands would range from a low of approximately 439.9 acres for Alternative 7, to a high of 562.9 acres for Alternative 8. The majority of the upland impacts from each Build Alternative would occur to agricultural and developed lands. The portion of forested uplands that would potentially be impacted would range from 23 to 26 percent of the total upland impacts for the Build Alternatives (refer to Land Use, page C-1, and Farmlands, page C-71) .

Table C.26
Potential Upland Community Impacts in Acres
Interstate73: I-95 to the Myrtle Beach Region

Upland Type	Alternatives							
	1	2	3	4	5	6	7	8
Oak-Hickory Forest	134.1	159.3	98.5	101.2	122.7	135.1	89.7	170.8
Pine Flatwoods	147.1	107.8	112.8	133.2	134.9	85.7	121.0	120.0
Pine-Scrub Oak	18.4	34.1	33.6	12.8	24.9	42.7	19.4	27.5
Timberlands	233.9	212.8	201.7	241.6	202.1	212.4	209.8	244.6
Total Upland Impact	**533.5**	**514.0**	**446.6**	**488.8**	**484.6**	**475.9**	**439.9**	**562.9**

Source: THE LPA GROUP INCORPORATED, 2006

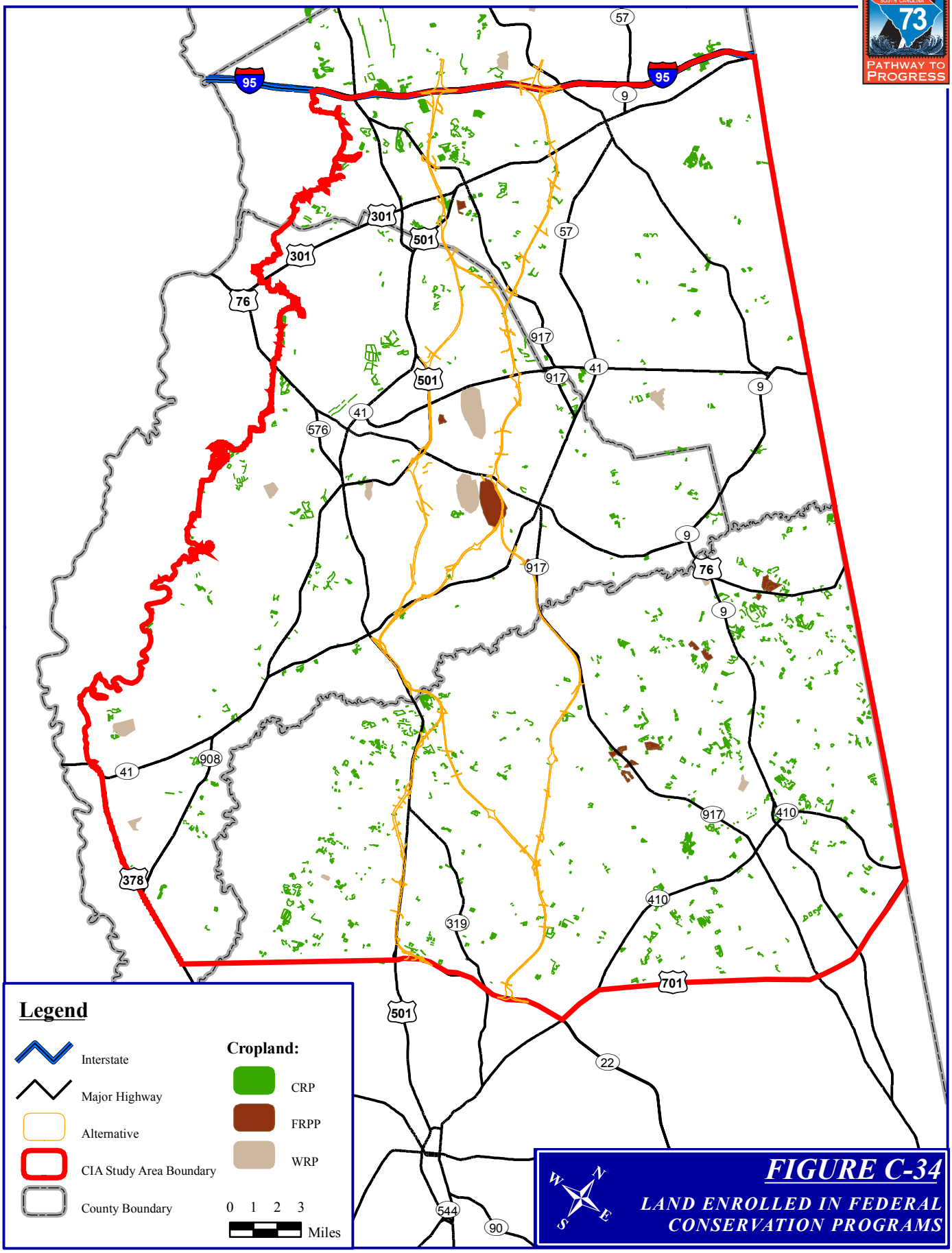


FIGURE C-34

LAND ENROLLED IN FEDERAL CONSERVATION PROGRAMS

Upland community impacts would result in the removal of wildlife habitat as discussed later in the Wildlife Section (refer to page C-113). Of the forested uplands that would be impacted, the oak-hickory forest would support the most wildlife diversity due to the presence of mast producing species, on which animal species such as turkey, squirrels, and white tailed deer feed.

Alternative 7 would have the least impact to oak-hickory forests followed by Alternatives 3, 4, 5, 1, 6, 2, and 8 in ascending impacts. Pine flatwoods typically have a dense understory and provide cover and browse for white tailed deer. These areas also provide nesting and forage habitat for a variety of perching bird species. Alternative 6 would have the least impact to pine flatwoods followed by Alternatives 2, 3, 8, 7, 4, 5, and 1 in ascending order.

Pine-scrub oak forests are the least diverse of the upland habitats from a wildlife standpoint, however Pickering's morning-glory and crestless plume orchid, both state listed species, occur in this habitat type. None of the federally-listed species occur in pine-scrub oak communities. Alternative 4 would have the least impacts to this community type followed by Alternatives 1, 7, 5, 8, 3, 2, and 6 in ascending impacts.

The largest portion of the upland forest impacts would occur to timberlands, or managed pines, which typically have relatively low wildlife diversity when compared to the other upland types that would be impacted. Also, these forested areas are frequently disturbed by logging operations during which wildlife is displaced to adjoining upland communities. Timberlands could provide foraging habitat for red-cockaded woodpeckers. However, these forests generally are harvested before they reach maturity which is required for suitable red-cockaded woodpecker nest colonies. Impacts to timberlands would be basically the same for all the Build Alternatives with 43 acres difference between the lowest impact, Alternative 3, and the highest impact, Alternative 8.

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