



**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
and
VIRGINIA DEPARTMENT OF TRANSPORTATION**

ENVIRONMENTAL ASSESSMENT

I-73 HENRY COUNTY ALTERNATIVE

**State Project: 0073-962-F01, PE-101; UPC No. 16596
Federal Project: NH-962-2 (004)
Henry County**

The background of the lower half of the page is a photograph of a lake. The lake is in the foreground, with a dense line of trees on the far shore. The sky is filled with white clouds. In the bottom right corner, there is a sign on a post. The sign has two sections of text. The top section reads: "Gasoline on Lake is Prohibited. Motorists are responsible for fueling and cleanup at their facilities." The bottom section reads: "All Boats Must have a Current Permit from Lake Warden's Office Before Launching. Boating at Your Own Risk." Below this is another sign that reads: "Alcoholic Beverages Are Prohibited on Park Property." The entire image is overlaid with a semi-transparent green filter.

Gasoline on Lake is Prohibited
Motorists are responsible for fueling and cleanup at their facilities.

All Boats Must have a Current Permit from Lake Warden's Office Before Launching.
Boating at Your Own Risk.

Alcoholic Beverages Are Prohibited on Park Property

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Submitted Pursuant to 42 U.S.C. 4332(2)(C)

Approved for Public Availability

2/15/11

Date

Edward Dundra

For Division Administrator
Federal Highway Administration

Section 1 - PURPOSE AND NEED

1.1 STUDY AREA 1
1.2 HISTORY 1
1.3 NEEDS – EXISTING CONDITIONS 3
1.4 NEEDS – FUTURE CONDITIONS 4
1.5 SUMMARY 6

Section 2 - ALTERNATIVES

2.1 INTRODUCTION 7
2.2 ALTERNATIVE DEVELOPMENT AND SCREENING PROCESS 7
2.3 OTHER ALTERNATIVES ELIMINATED FROM DETAILED STUDY 7
2.4 ALTERNATIVES CARRIED FORWARD 7
 2.4.1 No Action 7
 2.4.2 Adopted Location Corridor 8
 2.4.3 Proposed HCA Alignment 8
2.5 DEVELOPMENT OF UPDATED TRAFFIC FORECASTS 13

Section 3 – ENVIRONMENTAL CONSEQUENCES

3.1 INTRODUCTION AND OVERVIEW OF ENVIRONMENTAL ISSUES 15
3.2 ACIDIC ROCK AND SOIL 21
3.3 PARKS AND RECREATION 21
 3.3.1 Description 21
 3.3.2 Section 4(f) Involvement 21
 3.3.3 *De Minimis* Finding 23
 3.3.4 Applicability of Section 6(f) 24
3.4 HAZARDOUS MATERIALS 24
3.5 WATER RESOURCES 27
 3.5.1 Surface Waters 27
 3.5.2 Wetlands 30
 3.5.3 Floodplains 30
3.6 WILDLIFE AND HABITAT 30
3.7 NOISE 32
3.8 INDIRECT EFFECTS 34
3.9 CUMULATIVE EFFECTS 35

Section 4 - COORDINATION AND COMMENTS

4.1 AGENCY COORDINATION 37
4.2 PUBLIC INVOLVEMENT 37

FIGURES

1. PROJECT LOCATION 2
2. RURAL FOUR-LANE TYPICAL CROSS SECTION 9
3. COMMUNITY FACILITIES 20
4. OPTION TO USE FISHER FARM PARK LAND 22
5. POTENTIAL HAZMAT SITES WITHIN HCA 600-FOOT CORRIDOR 26
6. WATERSHEDS, WATER TREATMENT PLANT, AND SURFACE WATER INTAKES 28
7. 100-YEAR FLOODPLAINS – HENRY COUNTY 31

TABLES

1. POPULATION ESTIMATES IN HENRY COUNTY AND VIRGINIA 4
2. EXISTING, INTERIM YEAR (2020), AND DESIGN YEAR (2035) TRAFFIC DATA 5
3. COMPARISON OF ALC AND HCA INTERCHANGES 10
4. HCA INTERCHANGES 10
5. PEAK HOUR VOLUMES AND LEVELS OF SERVICE 11
6. SUMMARY OF HCA ENVIRONMENTAL ISSUES 15
7. SUMMARY OF IMPACTS 18

8. SECTION 4(f) IMPACTS TO FISHER FARM PARK..... 23
9. PROXIMITY OF HCA AND ALC ALIGNMENTS TO RESERVOIRS & SURFACE WATER INTAKES .29
10. WETLAND IMPACTS..... 30
11. SUMMARY OF CUMULATIVE EFFECTS 36

APPENDIX A – NRCS-CPA-106 FORM

APPENDIX B – VDHR CONCURRENCE LETTERS

APPENDIX C – NOISE IMPACT ANALYSIS TECHNICAL REPORT

APPENDIX D – HENRY COUNTY LETTER REGARDING USE OF FISHER FARM PARK

1.1 STUDY AREA

The Virginia Department of Transportation (VDOT), in cooperation with the Federal Highway Administration (FHWA), is studying the environmental consequences of the Henry County Alternative (HCA), an alternative alignment to the Adopted Location Corridor (ALC) approved by the Commonwealth Transportation Board (CTB) for I-73. The HCA is being considered at the request of the Henry County Board of Supervisors and is limited to an area east of the City of Martinsville and wholly contained within Henry County, as shown in **Figure 1**. This Environmental Assessment (EA) is being used as a tool to support a decision on Henry County's request and determine whether a supplemental Environmental Impact Statement (EIS) is warranted in accordance with 23 CFR 771.130(c).

1.2 HISTORY

1991: U.S. Congress identifies I-73 as a high priority corridor in the federal transportation funding bill of 1991, the Intermodal Surface Transportation Act (ISTEA), identifying its general location between South Carolina and Michigan.

1993 – 1994: VDOT conducts I-73 Feasibility Study to identify the general location of the I-73 corridor in Virginia.

1995: U.S. Congress includes the general location of I-73 in Virginia in federal legislation.

July 1997: VDOT begins I-73 Location Study.

November 2000: FHWA approves Draft Environmental Impact Statement (DEIS) to be made available for public review and comment.

December 2000: Public hearings on contents of the DEIS are held throughout corridor.

May 2001: CTB approves location for I-73 build alternative from the Virginia/North Carolina State Line to Interstate 81.

June 2001: CTB rescinds its May location decision because of economic development concerns raised by Henry and Pittsylvania Counties and changes the location of I-73 by approving a more easterly alignment for the route from the Virginia-North Carolina State Line to just north of the Henry County-Franklin County border.

July 2004: CTB amends their decision and selects a different location for I-73 in the City of Roanoke to avoid impacts to historic resources.

November 30, 2006: FHWA approves Final Environmental Impact Statement (FEIS).

March 30, 2007: FHWA issues Record of Decision (ROD).

June 2008: Henry County presents alternate alignment to VDOT for consideration by the CTB.

June 19, 2008: CTB passes resolution directing VDOT to evaluate the Henry County proposed alternate route.

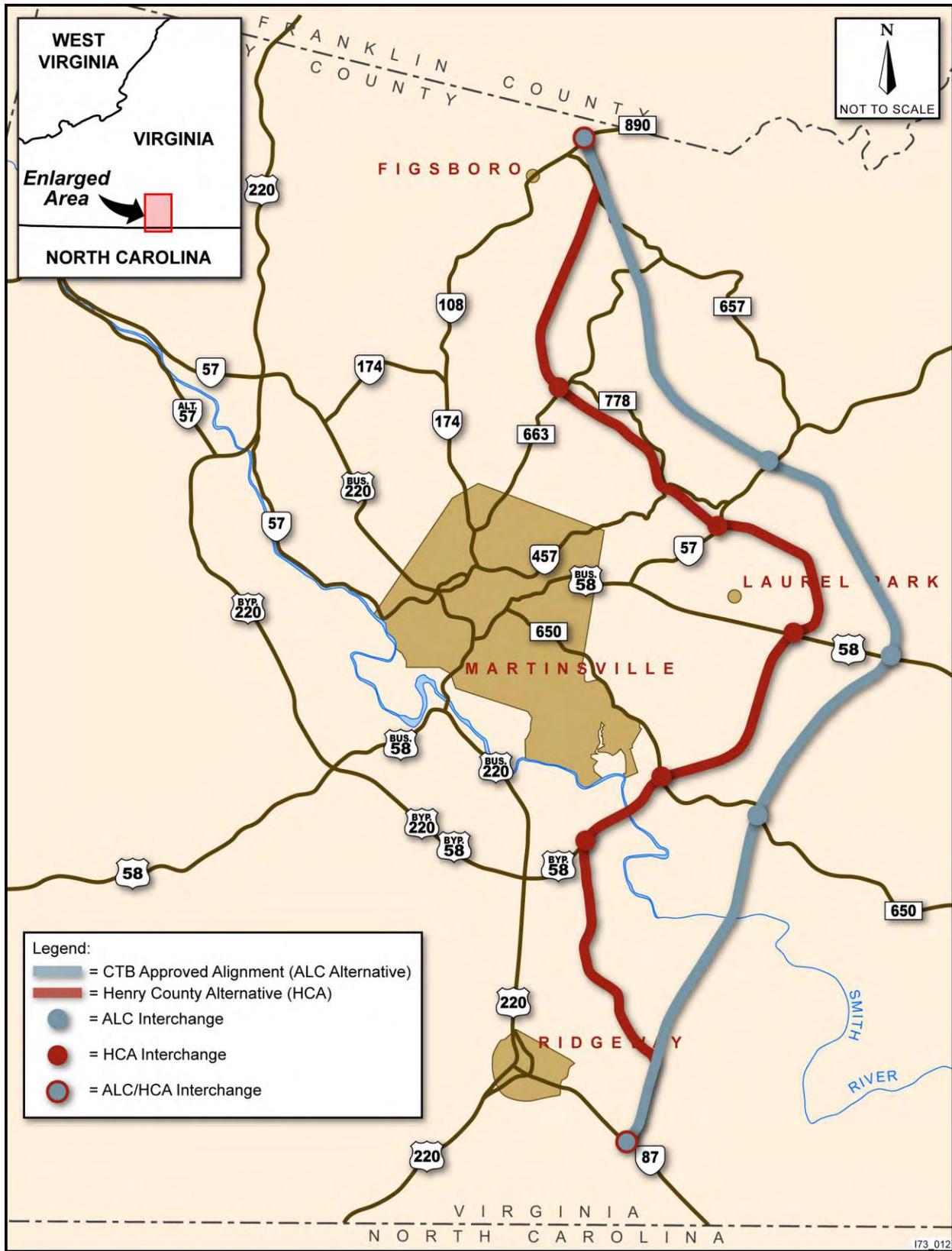


Figure 1. Project Location

December 17, 2009: CTB passes resolution directing VDOT to conduct the necessary National Environmental Policy Act (NEPA) studies to support a decision on whether to shift the I-73 alignment.

1.3 NEEDS – EXISTING CONDITIONS

The purpose and need identified in the FEIS stated the interstate mobility concerns that led to I-73's designation as a high priority corridor by Congress. In summary, the purpose and need for the project included several components:

1. Improve the safe movement of goods and people in the U.S. Route 220 corridor;
2. Provide for the economic growth, economic vitality, and maintenance of existing economic competitiveness in the study area;
3. Improve operations, access, and capacity for vehicular and freight movement in the study area and to other locations between Michigan and South Carolina;
4. Enhance general mobility and transportation linkage in the study area and through the broader Michigan to South Carolina travel shed; and
5. Address Congressional intent for the high priority corridor.

U.S. Route 220 is a four-lane, divided, full-access highway that was constructed in the 1950s and 1960s to then-acceptable design standards that are less than standards used today. Steep grades, uncontrolled access, speeds in excess of current design standards, and poor sight distance contribute to the safety problems in the corridor. The high percentage of trucks on U.S. Route 220 intensifies the safety needs and substantiates the interstate goods movement needs for the I-73 corridor.

Goods movement is a critical function in the study area as the economic base in Henry and Franklin Counties along the U.S. Route 220 corridor is predominantly manufacturing, and the facility serves as the only access to the north and west with links to I-81 and I-64. A key element to maintaining existing jobs and to supporting the growth of the manufacturing industry in this area will be the ability to move supplies and products to and from other regions using a good transportation network in a safe, efficient, and timely manner.

As such, the HCA alignment currently under consideration was presented to VDOT as an alternative to the I-73 ALC in Henry County to improve access to existing and developing industrial areas and to enhance economic development in Martinsville and Henry County. As shown in **Table 1**, between 1990 and 2000, Henry County experienced only a modest increase in population, and the estimates for 2009 actually suggest a decrease in population, all at a time of high growth in the Commonwealth. The economy of the county also has experienced limited or no growth; the majority of the labor force in Henry County is employed in some type of manufacturing, a trade that has suffered many job losses due to industrial downsizing. Given these trends, the county is seeking to improve its economic vitality by diversifying its markets, promoting growth in existing area businesses, and attracting new industry and businesses to the area.

With affordable real estate, economical freight rates, and close proximity to major East Coast markets, local officials and business interests believe the area has potential as a distribution hub and that an improved highway system would afford local businesses easy access to outside markets.

Table 1. Population Estimates in Henry County and Virginia

	Population				
	1990	2000	Percent Change 1990 to 2000	2009	Percent Change 2000 to 2009
Henry County	56,942	57,930	1.74%	54,888	(5.25%)
Virginia	6,187,358	7,078,515	14.40%	7,882,590	11.36%

Source: U.S. Census Bureau, 2009 Population Estimates, 2000 Census, 1990 Census.

The proposed HCA alignment is more proximate to existing and planned economic activity surrounding Martinsville and includes two interchanges additional to the five proposed by the ALC. The first additional interchange would provide access to the Patriot Centre Industrial Park expansion approximately one mile north of Martinsville. A second new interchange is proposed to provide access to the Martinsville Speedway and Industrial Area. The HCA alignment and the ALC are the same near the proposed Commonwealth Crossing Business Centre (CCBC) development, which is located north of U.S. Route 220 near the Virginia-North Carolina State Line, and access to an interstate would offer the same potential benefits to this industrial park.

The HCA utilizes approximately five miles of the existing U.S. Route 58 Bypass. Henry County is a proponent of this overlap and believes utilizing the existing facility may present a cost savings when compared to the cost of new construction. In addition, the existing bypass already has bridges constructed over major streams, such as the Smith River and Leatherwood Creek, as well as an overpass over Route 620.

1.4 NEEDS – FUTURE CONDITIONS

Table 2 presents forecast Average Daily Traffic (ADT) volumes for the Interim Year 2020 and the Design Year 2035 compared to existing conditions. The forecasts were developed using recent count data and the Virginia Statewide Planning System (SPS) database and they suggest modest increases in traffic in the region by 2035. Annual growth rates range from 0.5 to 1.8 percent per year for local roads and 1.0 to 2.5 percent per year for regional roads. ADT volumes along the proposed I-73 HCA alignment are projected to range from 14,300 to 20,650 vehicles per day in 2035.

Goods movement is an important factor in traffic generation, capacity, and composition. As documented in the I-73 FEIS, the percentage of trucks on U.S. Route 220 is much higher than experienced on similar rural principal arterials. The study area businesses and industries, including textile, furniture, manufactured housing, aggregate quarries, and window manufacturing, contribute to the truck volumes, and given local plans for economic development, this volume of truck traffic will likely increase within the corridor.

Table 2. Existing, Interim Year (2020), and Design Year (2035) Traffic Data

Location	Direction	2010 Existing				2020 Build Daily Volumes	2035 Design Year	
		Daily Volume	Truck Percentage				No-Build Daily Volume	Build Daily Volume
			Cars	Medium Trucks	Heavy Trucks			
I-73 Segment #1 Figsboro Road to Barrows Mill Road	NB	N/A	N/A	N/A	N/A	13,500	N/A	16,000
	SB	N/A	N/A	N/A	N/A	13,500	N/A	16,000
I-73 Segment #2 Barrows Mill Road to Route 57	NB	N/A	N/A	N/A	N/A	14,100	N/A	17,100
	SB	N/A	N/A	N/A	N/A	14,100	N/A	17,100
I-73 Segment #3 Route 57 to US 58 / US 58 Business	NB	N/A	N/A	N/A	N/A	12,200	N/A	15,300
	SB	N/A	N/A	N/A	N/A	12,250	N/A	15,300
I-73 Segment #4 / US Route 58 Bypass US 58 to Irisburg Road	EB	4,700	80.3%	6.9%	12.7%	13,350	9,300	18,250
	WB	4,650	80.5%	6.5%	13.0%	13,350	9,350	18,250
I-73 Segment #5 / US Route 58 Bypass Irisburg Road to Clover Road	EB	6,250	84.9%	5.6%	9.6%	15,250	11,600	20,650
	WB	6,450	85.0%	5.4%	9.5%	15,500	11,900	20,650
I-73 Segment #6 Clover Road/US 58 Bypass to Route 87	NB	N/A	N/A	N/A	N/A	10,850	N/A	14,300
	SB	N/A	N/A	N/A	N/A	10,950	N/A	14,300
US Route 58 Bypass US 220 to Clover Road	EB	6,250	84.9%	5.6%	9.6%	4,450	11,600	6,100
	WB	6,450	85.0%	5.4%	9.5%	4,650	11,900	6,400
US Route 58 Business northwest of US 58	EB	5,900	93.3%	3.2%	3.6%	6,050	10,600	7,200
	WB	5,800	92.9%	3.6%	3.5%	6,150	10,750	7,300
US Route 58 southeast of US 58 Business	EB	7,800	88.5%	3.8%	7.7%	10,050	12,950	12,950
	WB	7,900	88.4%	4.0%	7.6%	9,900	12,800	12,800
Irisburg Road south of US 58	NB	1,500	94.3%	4.0%	1.7%	1,750	2,150	2,150
	SB	1,500	94.8%	3.8%	1.4%	1,750	2,150	2,150
Irisburg Road north of US 58	NB	3,150	93.7%	3.8%	2.6%	3,600	4,200	4,200
	SB	3,200	93.5%	3.9%	2.6%	3,600	4,200	4,200
WB US 58 to SB US 58 Bypass	WB to SB	3,200	79.4%	5.5%	15.1%	400	5,100	5,100
EB US 58 Bus. To SB US 58 Bypass	EB to SB	1,200	86.4%	6.4%	7.2%	1,900	3,800	3,300
NB US 58 Bypass to EB US 58	NB to EB	3,400	82.3%	4.4%	13.3%	4,250	5,400	5,400
Route 57 (Chatham Rd) From Route 777 to Route 457	NB	1,650	93.4%	3.0%	3.6%	1,200	4,750	1,350
	SB	1,700	94.0%	2.4%	3.6%	1,250	4,800	1,400
Route 57 (Chatham Rd) From Route 457 to Route 647	NB	1,650	93.4%	3.0%	3.6%	1,900	2,200	2,200
	SB	1,700	94.0%	2.4%	3.6%	1,950	2,300	2,300
Route 87 From North Carolina to proposed I-73	EB	4,400	88.9%	2.4%	8.7%	5,350	6,550	6,550
	WB	4,450	90.3%	1.8%	8.0%	5,400	6,650	6,650
Route 87 From proposed I-73 to SCL Ridgeway	EB	4,400	88.9%	2.4%	8.7%	4,850	6,550	5,750
	WB	4,450	90.3%	1.8%	8.0%	4,900	6,650	5,850
Route 108 From Route 174 to Route 657	NB	2,400	97.2%	1.8%	1.0%	2,550	3,200	3,000
	SB	2,400	97.2%	1.8%	1.0%	2,550	3,200	3,000
Route 663 (Barrows Mill Rd) From NCL to development	NB	550	97.8%	1.8%	0.4%	1,400	4,550	2,350
	SB	600	97.5%	2.1%	0.4%	1,450	4,600	2,400

Location	Direction	2010 Existing				2020 Build Daily Volumes	2035 Design Year	
		Daily Volume	Truck Percentage				No-Build Daily Volume	Build Daily Volume
			Cars	Medium Trucks	Heavy Trucks			
Route 663 (Barrows Mill Rd)	NB	550	97.8%	1.8%	0.4%	3,250	600	6,000
From development to Route 778	SB	600	97.5%	2.1%	0.4%	3,300	700	6,050
Clover Road *	NB	300	85.0%	5.0%	10.0%	1,150	350	1,250
US 58 Bypass to Industrial Drive	SB	300	85.0%	5.0%	10.0%	1,150	350	1,250

Notes:

Percentages may not add up to 100 due to rounding.

Segments 4 and 5 are overlap sections on the existing US 58 Bypass alignment.

* Clover Road has access to US 58 Bypass for special events at the Speedway; all other days, access is blocked off (existing and No-Build conditions).

In the Build condition, Clover Road is assumed to have access to I-73 via an interchange.

Volumes presented here are typical daily volumes; on days with special events, such as a NASCAR event, volumes are higher.

Truck percentages on Clover Road are assumed since vehicle classification data is unavailable. Assumed percentage based on other typical industrial areas.

1.5 SUMMARY

The purpose of the I-73 project is to improve north-south vehicular and freight movement along the U.S. Route 220 corridor and, on a larger scale, enhance general mobility and transportation linkage between Michigan and South Carolina. At the same time, improvements should provide for the economic growth, economic vitality, and maintenance of economic competitiveness in the study area. Henry County has proposed the HCA as an alternative to the ALC in the belief that it better achieves these objectives in Martinsville and Henry County for the following reasons:

1. The alignment is one to two miles closer to the City of Martinsville;
2. The alignment proposes two additional interchanges to access existing and proposed development; one in the vicinity of Patriot Centre Industrial Park and one in the vicinity of the Martinsville Speedway and Martinsville Industrial Park; and,
3. The alignment follows the alignment of existing U.S. Route 58 Bypass for approximately five miles.

2.1 INTRODUCTION

This section describes the I-73 Adopted Location Corridor (ALC) approved by the Commonwealth Transportation Board (CTB) and the proposed alternative alignment, the Henry County Alternative (HCA). The HCA is being considered at the request of the Henry County Board of Supervisors and is limited to an area east of the City of Martinsville and wholly contained within Henry County. The no action or No-Build Alternative is also discussed as it serves as a baseline for comparison.

2.2 ALTERNATIVE DEVELOPMENT AND SCREENING PROCESS

Because this EA is considering revisions to an alternative already approved with a Record of Decision (ROD), a detailed alternatives analysis is not being conducted. As part of the I-73 Location Study and FEIS, a range of reasonable alternatives was considered for the corridor, and the determination as to whether a particular alternative would be subjected to detailed study was based on a number of screening criteria along with that alternative's ability to satisfy the purpose and need. Alternatives eliminated from detailed study in the DEIS because they did not meet purpose and need consisted of several iterations of corridor improvements involving U.S. Route 220 (the "low build or intermediate build alternatives"). Alternatives subjected to detailed study in the DEIS consisted of the No-Build, Transportation System Management (TSM), and eleven Build Alternative Options. Each alternative was evaluated with respect to its potential impacts. Alternatives addressed in the FEIS consisted of the No-Build, TSM, those Build Alternative Options considered but not selected by the CTB, and the Build Alternative approved by the CTB, also known as the ALC.

At this stage of project development, sufficient engineering has not yet been completed to determine the exact location of improvements in the HCA corridor. Rather, a generalized corridor approximately 600 feet wide plus a buffer around proposed interchange locations has been developed for analysis purposes, similar to the approach used for the EIS analysis. This approach provides flexibility for design revisions once more detailed design efforts are undertaken, should the HCA be selected.

2.3 OTHER ALTERNATIVES ELIMINATED FROM DETAILED STUDY

As noted above, only the ALC, the HCA alignment, and the No-Build Alternative are under consideration. Accordingly, there were no other alternatives considered and eliminated from detailed study.

2.4 ALTERNATIVES CARRIED FORWARD

2.4.1 No Action

The No-Build Alternative provides a baseline of conditions against which to compare the Build Alternatives. Under the no action or No-Build Alternative, I-73 would not be constructed along either the ALC or the proposed HCA alignment. Most existing roads would generally remain in their present configurations. Additionally, committed and funded roadway and transit projects for construction recommended in the Virginia Commonwealth Transportation Board's FY 2010-2015 Six-Year Improvement Program (SYIP) would also be assumed to be implemented in the

future. However, within Henry County, the current SYIP includes only minor intersection and Transportation Systems Management (TSM) improvements and bridge replacements, which generally do not add capacity to the roadway system or appreciably affect traffic volumes.

2.4.2 Adopted Location Corridor

The I-73 ALC is a 71.71-mile-long segment of proposed limited access highway between the Virginia/North Carolina State Line and I-81. It consists of 5.7 miles of existing I-581 along with 66.01 miles of new highway constructed to interstate (freeway) design standards.

In Henry County, the ALC segment considered in this assessment extends approximately 19.6 miles from Route 890/108 to Route 87.¹ The ALC crosses over from Franklin County to the east of Oak Level. Heading southeast through northern Henry County, the proposed alignment would pass to the east of Figsboro, crossing Route 57 and turning to the southwest as it crosses U.S. Route 58 well east of Laurel Park (see Figure 1). Continuing on a southwesterly course east of Martinsville, the alignment would extend east of the communities of Carlisle and Ridgeway. After crossing Route 87, the alignment would bear due west to existing U.S. Route 220 before turning south to the Virginia-North Carolina State Line.

Through Henry County, the ALC would include six interchanges (five within the limits of the current study). As described in the FEIS, potential interchanges were assessed at strategic locations along the mainline and the criteria for location selection of these interchanges included roadways that had one or more of the following characteristics:

- *Functional classification of the intersecting roadway.* Functional classification indicates the significance of the roadway to the locality, the region, the state, and the nation. In general, the higher the functional classification, the more significant contribution the roadway makes to the transportation network. [In Henry County, U.S. Routes 58 and 220 and Routes 57 and 87.]
- *Traffic volumes along intersecting roadway.* High volume urban and rural roadways were provided interchanges where safety and geometric conditions warranted.
- *Linkage with other communities, recreational areas, employment areas, and economic development areas.* To fulfill the purpose and need, interchanges were located to serve and access areas that are currently or forecast to be developed for recreational, employment, or economic development. [In Henry County, Route 890/108 and 650.]

2.4.3 Proposed HCA Alignment

Description. The alternative alignment, also shown in Figure 1, extends 21.3 miles from Route 890/108 to Route 87.¹ It breaks from the ALC at a point near Figsboro, and from there, the HCA heads in a more southerly direction towards Martinsville and closer to Henry County's Patriot Centre Industrial Park. It is in this general area where an additional interchange is proposed at Route 663 (Barrows Mill Road) to serve local economic development. From there, the

¹ Other related study documents report the length of the ALC as 17.4 miles and the HCA as 19.1 miles, which are the lengths of the alignments from where they depart from each other and then reconnect. The 19.6 miles and 21.3 miles reported here for the lengths of the ALC and HCA, respectively, are the lengths of each alignment from Route 890/108 to Route 87, which are the endpoints of the study area for this EA.

alignment generally parallels the ALC approximately one-and-a-half miles closer to Martinsville. In the vicinity of Laurel Park, the HCA ties into the existing U.S. Route 58 Bypass and U.S. Route 58 interchange and follows the existing U.S. Route 58 Bypass south-southwest for approximately five miles toward the Martinsville Speedway, with an additional interchange proposed at Clover Road to serve the speedway and Martinsville Industrial Park area. The route then heads south-southeast approximately four miles before tying back into the ALC at Flanigan Branch Road, two miles east of the Town of Ridgeway.

The alignment proposed by Henry County is located just west of Fisher Farm Park (see Figure 4 in Section 3.3). This 127.3 acre park is the largest in Henry County and is located just south of the City of Martinsville in Ridgeway. While the proposed HCA alignment avoids the park, it crosses the Norfolk Southern Railway in two locations. The construction of bridges and/or tunnels to cross the railway would be costly and result in additional impacts to the surrounding area; therefore, an option was developed to use Fisher Farm Park land to the east of the railway. The proposed alignment shift (HCA Modified shown in brown in Figure 4) avoids the railway and crosses through the wooded areas in the western portion of the park. Discussion of the impacts associated with this alternative alignment within the park is provided in Section 3, Environmental Consequences.

The roadway would be built to meet interstate (freeway) design standards with a four-lane divided highway typical section (two 12-foot lanes in each direction) (see **Figure 2**). The proposed HCA follows the alignment of existing U.S. Route 58 Bypass for approximately five miles, and improvements would be required to bring the existing facility up to interstate standards. More specifically, the following items would need to be addressed: an expanded and fully configured interchange at U.S. 58; substandard vertical curves; substandard shoulder widths and treatments; acceleration and deceleration lane lengths; structural improvements at the Smith River and Leatherwood Creek crossings; upgraded clearance height of overpass structures; and signage, lighting, and pavement improvements.

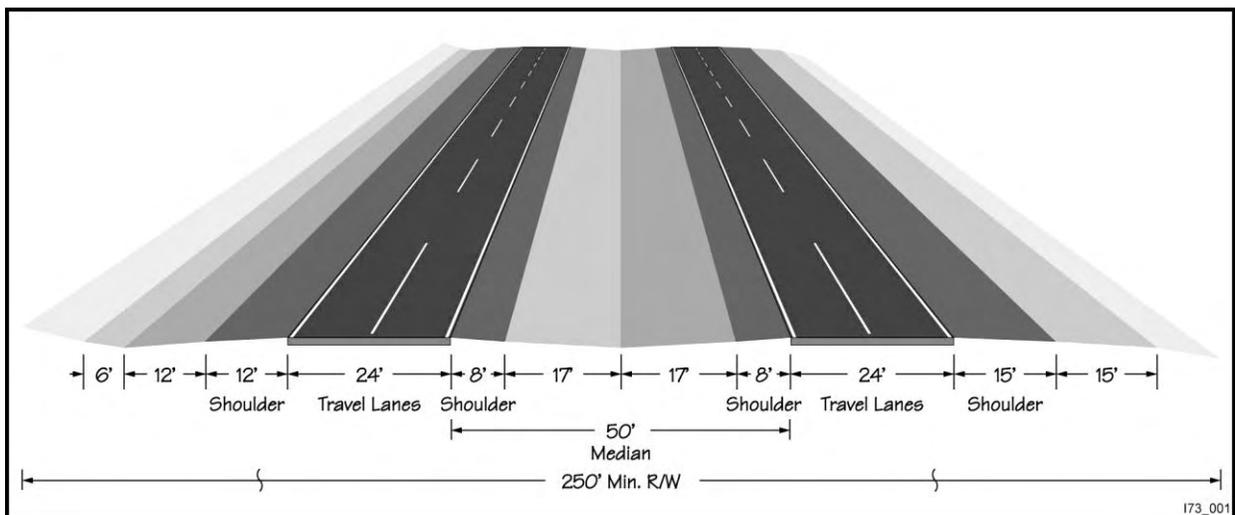


Figure 2. Rural Four-Lane Typical Cross Section

Within the limits of the current study, the HCA alignment expands the ALC’s five interchanges to seven, as shown in **Table 3**. The HCA adds two interchanges, at Barrows Mill Road and at U.S. Route 58 Bypass/Clover Road, to provide access to existing and planned economic activity surrounding Martinsville. All seven of the HCA interchange locations and proposed configurations are described in **Table 4**. Note that each new interchange location as well as interchange type is tentative at this point and based on preliminary information that is subject to change as the design is refined and the traffic analyses are updated.

Table 3. Comparison of ALC and HCA Interchanges

ALC Interchanges	HCA Interchanges
Route 890/108 north of Figsboro	Same as ALC
	Barrows Mill Road/Beaver Creek Drive intersection area near Patriot Centre Industrial Park & Patrick Henry Community College
Route 57 southwest of Dyers Store Road	Route 57 near Route 457 intersection
U.S. Route 58 east of the Route 648/Route 620 intersection	U.S. Route 58 in the vicinity of Laurel Park
Route 650 near Tanyard Creek Crossing	U.S. Route 58 at Route 650 intersection near Smith River Sports Complex
	U.S. Route 58 and Clover Road near Martinsville Speedway
Route 87 north of the Route 750 intersection	Same as ALC

Table 4. HCA Interchanges

HCA Interchange	Proposed Configuration
Route 890/108 north of Figsboro	Cloverleaf
Barrows Mill Road/Beaver Creek Drive intersection area near Patriot Centre Industrial Park & Patrick Henry Community College	To Be Determined
Route 57 near Route 457 intersection	Diamond
U.S. Route 58 in the vicinity of Laurel Park	Diamond
U.S. Route 58 at Route 650 intersection near Smith River Sports Complex	Diamond
U.S. Route 58 and Clover Road near Martinsville Speedway	To Be Determined
Route 87 north of the Route 750 intersection	Diamond

Ability to Meet Needs. The proposed roadway is located closer to and improves access to the existing and planned economic activity associated with Patriot Centre Industrial Park and the Martinsville Speedway and Industrial Park area. It generally parallels the alignment of the ALC; however, it is located one to two miles closer to Martinsville, adds two interchanges, and overlaps with the existing U.S. Route 58 Bypass for approximately five miles.

In terms of traffic impacts, no appreciable differences in automobile and truck traffic are expected between the ALC and the HCA alignment.² Given that the latter is located closer to Martinsville and provides two additional interchanges, some increases of local interchange-to-interchange traffic may be realized, but not to the extent that would require design changes with respect to the corridor. **Table 5** lists the forecasted volumes (see Section 2.5 for a description of the methodology used to generate these forecasts) and the estimated levels of service (LOS) for the No-Build and Build Alternatives.³ The peak hour volumes on the I-73 HCA alignment range

² I-73 Traffic and Transportation Data – Supplement #1 Max Kendall Alternative, October 2007.

³ The level of service (LOS) characterizes the operating conditions on the facility in terms of traffic performance measures related to speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. In general, LOS can be characterized as follows: A = free flow; B = reasonably free flow; C = stable flow; D = approaching unstable flow; E = unstable flow; F = forced or breakdown flow.

Table 5. Peak Hour Volumes and Levels of Service

Location	Direction	Number of lanes	2010 Existing		2020 Build		2035 No-Build		2035 Build	
			Peak Hour Volume	Level of Service						
I-73 Segment #1 Figsboro Road to Barrows Mill Road	NB	2	N/A	N/A	980	A	N/A	N/A	1,160	A
	SB	2	N/A	N/A	1,130	A	N/A	N/A	1,340	B
I-73 Segment #2 Barrows Mill Road to Route 57	NB	2	N/A	N/A	1,040	A	N/A	N/A	1,260	B
	SB	2	N/A	N/A	1,180	A	N/A	N/A	1,440	B
I-73 Segment #3 Route 57 to US 58 / US 58 Business	NB	2	N/A	N/A	900	A	N/A	N/A	1,130	A
	SB	2	N/A	N/A	1,030	A	N/A	N/A	1,280	B
I-73 Segment #4 / US Route 58 Bypass US 58 to Irisburg Road	EB	2	340	A	990	A	690	A	1,350	B
	WB	2	390	A	1,130	A	780	A	1,540	B
I-73 Segment #5 / US Route 58 Bypass Irisburg Road to Clover Road	EB	2	500	A	1,210	A	920	A	1,630	B
	WB	2	560	A	1,350	B	1,030	A	1,820	B
I-73 Segment #6 Clover Road/US 58 Bypass to Route 87	NB	2	N/A	N/A	870	A	N/A	N/A	1,150	A
	SB	2	N/A	N/A	970	A	N/A	N/A	1,280	B
US Route 58 Bypass US 220 to Clover Road	EB	2	500	A	360	A	920	A	490	A
	WB	2	560	A	400	A	1,030	A	550	A
US Route 58 Business northwest of US 58	EB	2	530	A	550	A	970	A	660	A
	WB	2	480	A	470	A	820	A	560	A
US Route 58 southeast of US 58 Business	EB	2	670	A	840	A	1,110	A	1,110	A
	WB	2	570	A	710	A	940	A	940	A
Irisburg Road south of US 58	NB	1	160	C	180	C	220	C	220	C
	SB	1	170	C	200	C	240	C	240	C
Irisburg Road north of US 58	NB	1	290	C	340	C	390	D	390	D
	SB	1	370	D	420	D	480	D	480	D
WB US 58 to SB US 58 Bypass	WB to SB	1	248	C	310	C	396	D	396	D
EB US 58 Bus. To SB US 58 Bypass	EB to SB	1	101	B	160	C	320	C	278	C
NB US 58 Bypass to EB US 58	NB to EB	1	275	C	344	C	437	D	437	D
Route 57 (Chatham Rd) From Route 777 to Route 457	NB	1	190	C	140	B	540	D	160	C
	SB	1	180	C	140	B	520	D	150	C
Route 57 (Chatham Rd) From Route 457 to Route 647	NB	1	190	C	220	C	260	C	260	C
	SB	1	180	C	210	C	250	C	250	C
Route 87 From North Carolina to proposed I-73	EB	1	400	D	490	D	600	D	600	D
	WB	1	330	C	400	D	500	D	500	D

Table 5. Peak Hour Volumes and Levels of Service

Location	Direction	Number of lanes	2010 Existing		2020 Build		2035 No-Build		2035 Build	
			Peak Hour Volume	Level of Service						
Route 87 From proposed I-73 to SCL Ridgeway	EB	1	400	D	440	D	600	D	530	D
	WB	1	330	C	360	D	500	D	440	D
Route 108 From Route 174 to Route 657	NB	1	300	C	320	C	400	D	370	D
	SB	1	310	C	330	C	410	D	390	D
Route 663 (Barrows Mill Rd) From NCL to development	NB	1	60	A	160	C	510	D*	260	C
	SB	1	80	B	200	C	640	D*	330	C
Route 663 (Barrows Mill Rd) From development to Route 778	NB	1	60	A	370	D*	70	B	670	D*
	SB	1	80	B	460	D*	90	B	840	E*
Clover Road US 58 Bypass to Industrial Drive	NB	1	40	A	160	C	50	A	170	C
	SB	1	50	A	200	C	60	A	210	C

Notes: Peak hour volume is the highest volume of the day on each facility, extracted from ENTRADA output and rounded to the nearest 10 vehicles.

Level of Service determined from criteria in the Highway Capacity Manual, Exhibit 13-6 for multilane freeway and Exhibit 12-15 for 2-lane, 2-way facilities.

* Route 663 currently is a two-lane facility in rolling terrain with little to no shoulders and lane widths less than 12 feet. Under the 2035 No-Build Alternative, level of service on the section of Route 663 *south* of the Patriot Centre Industrial Park is expected to deteriorate to "D" due to the industrial park expansion. With the provision of I-73, LOS is expected to deteriorate on the section of Route 663 *north* of the industrial park as more traffic will use I-73 rather than the local roadway network to access the industrial park. Under both scenarios, future upgrades to Route 663 may be required to accommodate the increased volumes to and from the industrial park. The provision of I-73 will determine which section (south or north) of Route 663 will drive the need for improvements. The exact cross-section for Route 663 has not been determined at this time; however, projected volumes suggest that a two-lane facility will suffice, upgraded to 12-foot lane widths and full shoulders, with turn lanes at appropriate locations, according to VDOT standards for rural two-lane roadways. A decision on the cross section for Route 663 will be made during final design when a detailed traffic analysis is conducted. If a two-lane facility remains sufficient, minimal environmental impacts are anticipated.

from 870 to 1,820 vehicles per hour, with the lowest volumes on the southernmost segment between U.S. Route 58 Bypass/Clover Road and Route 87 (Segment #6) and the highest volumes just north of that segment, between U.S. Route 58 Bypass/Clover Road and Irisburg Road (Route 650) (Segment #5). In general, all of the segments operate at LOS A or B. Note that the volumes shown in the table represent the highest hourly volume of the day on each individual facility; volumes are not shown for a single AM or PM peak hour as the peak hour on each facility varies due to the differing types of developments in the surrounding area, which influence the traffic patterns on an hourly basis.

Overall, the origin-destination (O-D) patterns projected in the original VDOT studies are not likely to change. The regional/interstate context of the road will remain unchanged and the alignments are essentially parallel, crossing many of the same routes, just at different locations closer to Martinsville. In addition, the ALC (19.6 miles) and HCA (21.3 miles) alignments are similar in length. There may be isolated increases of local traffic usage along the south side of Martinsville, specifically in the vicinity of the Smith River Sports Complex and the Martinsville Speedway, but the corridor itself will remain a limited access facility carrying both regional and interstate traffic. In terms of truck traffic, given the plans for economic development in the study area, the volume of trucks will likely increase; however, truck percentages on local roads in and

around Martinsville may be reduced by the closer proximity of the proposed roadway to the City and the region's business/industrial parks.

I-73 offers Henry County and Martinsville improved interstate linkages north and south, as well as intrastate and local traffic circulation advantages. Direct links between the industrial areas and the interstate would reduce local industrial traffic in the Martinsville area and provide an excellent connection to the markets of the East Coast and the Middle Atlantic states.

The HCA alignment was proposed by Henry County to enhance economic growth, vitality, and competitiveness in Martinsville and Henry County. The HCA meets this need, while at the same time continuing to satisfy the other components of the purpose and need for I-73, as documented in the I-73 Location Study and FEIS.

2.5 DEVELOPMENT OF UPDATED TRAFFIC FORECASTS

As part of the analysis for this EA, the No-Build and Build traffic forecasts from the I-73 Location Study and Final FEIS were updated for an interim year (2020) and the new design year 2035. Roadway links for which forecasts were prepared and the peak hour forecasts at those locations are presented in Table 5.

This section provides a brief summary of the methodology used to update the forecasts. The process entailed five steps, as outlined below.

1. Review and organize traffic count data provided by VDOT and collected as part of this study to characterize existing (2010) traffic conditions. Traffic data included hourly volume, truck percentages, and posted speed limit by direction.
2. Review former documents to gather information on previous forecasts developed for the corridor, including future growth rates from those studies; identify changes in land use near the proposed HCA alignment and any new major traffic generators beyond those that were assumed in the 2020 and 2025 forecasts generated for the I-73 FEIS; and understand potential traffic impacts from those traffic generators (e.g., industrial parks) on roadways in the study area.

Sources of traffic data and land use information included the following:

- I-73 FEIS and supporting documents (*Transportation Technical Report*).
- *Evaluation of the Henry County Board of Supervisors Alternative* ("White Paper"), September 2009.
- *I-73 Traffic and Transportation Data – Supplement #1 Max Kendall Alternative*, October 2007.
- *Patriot Centre, Henry County Virginia: Industrial Park Master Plan*, May 2009.
- *Martinsville/Henry County Virginia Master Plan and Preliminary Engineering Report for the Commonwealth Crossing Business Centre*, May 2009 (CCBC).
- *City of Martinsville Comprehensive Plan 2009 Update*.
- *Henry County Comprehensive Plan*, 1995.
- VDOT Count Books.
- Statewide Planning System (SPS) Database.
- US Census Data.

3. Examine trends in traffic volumes and develop typical growth rates for “background” traffic on study area roadways. Background traffic is the growth in traffic that is expected regardless of the improvements.

The Statewide Planning System (SPS) database was used for all study area roadways, with the exception of Clover Road and other roadways near the Speedway (Industrial, Speedway, and Brass Shop Roads), as they are not included in the SPS database. Growth rates were assigned depending on classification of roadway – local or regional – and a separate rate was developed for U.S. Route 58 Bypass to maintain consistency with connecting roadways. Classification of roadways followed the VDOT classification system.

4. Using the information gathered in Steps 1 to 3, project the existing year 2010 Average Daily Traffic (ADT) volumes to year 2020 Build and Year 2035 No-Build and Build ADT volumes for the HCA alignment and the adjacent intersecting roadways listed in Table 5.

In summary, these projections include the background traffic, the additional traffic expected as a result of new traffic generators in the region, and the redistribution/addition of traffic that is diverted from adjacent facilities or that is new to the area with the provision of I-73.

5. Prepare Year 2020 Build and 2035 No-Build and Build 24-hour traffic forecasts for the HCA alignment and the adjacent/intersecting roadways.

The 24-hour traffic forecasts were developed using the Environmental Traffic Data (ENTRADA) Program, which standardizes the production of the environmental traffic data needed as input for air quality and noise analyses.

The traffic data inputs into the program for each link included:

- Existing and future daily traffic volumes and the existing hourly factors (k-factors), directional split, and truck percentages.
- Facility type, posted speed limit, number of lanes, terrain type, lane and shoulder width, and capacity.

The traffic data output included future hourly traffic volumes by vehicle type and speeds.

Section 3
ENVIRONMENTAL CONSEQUENCES

3.1 INTRODUCTION AND OVERVIEW OF ENVIRONMENTAL ISSUES

This section describes the environmental consequences of the Henry County Alternative (HCA). For purposes of the environmental analyses, computations for impacts have been prepared using a similar methodology to that employed for assessing the Adopted Location Corridor (ALC) in the VDOT I-73 Location Study and FEIS. The environmental consequences are reported assuming a project “footprint” corridor 600 feet wide (300 feet to both sides of the alignment’s centerline), including areas surrounding proposed interchanges to a radius of 1,320 feet. This 600-foot corridor was created to analyze impacts for the HCA and is consistent with the corridor width used to assess impacts for the I-73 FEIS. This approach provides flexibility for design revisions once more detailed design efforts are undertaken, should the HCA be selected.

Table 6 summarizes environmental issues and their relevance to the project. **Table 7** quantifies and compares the impacts between the HCA, HCA Modified (which includes a shifted alignment near Fisher Farm Park), and the ALC. The community facilities and potential relocations discussed in both tables are shown in **Figure 3** and key issues requiring further discussion are addressed following the tables.

Table 6. Summary of HCA Environmental Issues

Land Use/Land Cover	The HCA is consistent with local land use plans and the new alignment is being considered at the request of the Henry County Board of Supervisors. Land cover within the HCA corridor consists primarily of forests (70%), with small amounts of agricultural (17%) and developed (12%) lands, and less than a half percent of water/wetlands.
Relocations/Right of Way Acquisition*	The HCA would have the potential to impact 178 homes and 8 farms; therefore, relocations may be required.* One business and 2 churches are also located within the 600-foot corridor and may be impacted by the project.
Environmental Justice	<p>The HCA is consistent with Executive Order 12898, <i>Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations</i>. There are no minority or low-income populations along the HCA corridor that would suffer disproportionately high and adverse environmental effects from the HCA. Following the methods established in the FEIS, the minority portion of the population for all of the Henry County block groups traversed by the HCA is calculated to be 28.3%. This value is within the range (26.7% – 32.3%) for all build options reported in the FEIS and for the county as a whole (27.3%). The percentage of low-income population along the HCA is 8.8%, which is lower than the values (9.4% – 14.0%) reported in the FEIS for all of the build options within Henry County and the county as a whole (11.7%).</p> <p>The FEIS reviewed information from the West Piedmont Planning District Commission and the Chamber of Commerce and included visual surveys. The FEIS noted that impacts would occur primarily through displacements, that minority and low-income occupied residential units are scattered throughout the block groups and study area, and that the effects of the project are not disproportionate to any one group.</p>
Community Facilities and Services	The following community facilities or services (churches, schools, civic organizations, law enforcement, or emergency services) are located in close proximity to the HCA alignment: Morgan Ford Christian Church, Freedom Baptist Church, and Laurel Park Middle School. The Superintendent of Henry County Public Schools has stated that the project would provide better roads and improved efficiency for transporting students in the eastern portion of the county.

Table 6. Summary of HCA Environmental Issues

Community Access	The HCA alignment is generally one to two miles closer to Martinsville, so it would improve local access around the City. The alignment is more proximate to existing and planned economic activity surrounding Martinsville. The new alignment includes an additional interchange at Route 663 (Barrows Mill Road) to provide access to the Patriot Centre Industrial Park located approximately one mile north of Martinsville and a new interchange at Clover Road to serve the Martinsville Speedway and Industrial Park area.
Agriculture and Prime Farmland	Approximately 8 farms may be displaced and 123 acres of prime farmland exist in the HCA corridor (see Appendix A for NRCS-CPA-106 Form).
Agricultural and Forestal Districts	There are no designated agricultural or forestal districts in Henry County.
Mines, Minerals, and Geology	There are no active mines or quarries and no mineral resources that would be affected by the HCA. There is no karst terrain in this part of the state.
Soils	The HCA corridor crosses approximately 992 acres of moderately to highly corrosive (acid) soil types that could be of some concern to water quality, vegetation establishment, and degradation of road structures if those soil types are exposed. These issues are discussed in Section 3.2 .
Parks and Recreational Resources	Fisher Farm Park is the largest park in Henry County, located south of the City of Martinsville and the proposed HCA interchange at U.S. Route 58 and Clover Road near Martinsville Speedway. The original HCA alignment does not impact the Park; however, a proposed realignment to avoid costly crossings of the Norfolk Southern Railway would use approximately 27 acres of this public park (see Section 3.3). Richard P. Gravely Nature Preserve is located within a mile of the alignment; however, no adverse effects are expected to this recreational area.
Historic Properties	<p>A historic architectural survey of the Area of Potential Effects (APE) (600-foot corridor and resources adjacent to or visible from the HCA corridor) was conducted to identify and record all resources more than 50 years old and assess their potential for National Register of Historic Places (NRHP) eligibility (VDHR File 1994-0572, <i>I-73 Henry County Alternative Architecture Survey Report</i>, November 2010). An additional survey was conducted of two newly recorded resources within the proposed Fisher Farm Park alignment (<i>Interstate 73 Henry County Alternative, Fisher Farm Park Alignment Cultural Resources Assessment</i>, January 2011). The Virginia State Historic Preservation Officer (SHPO) concurred that none of the resources that were assessed in both surveys within the APE are eligible for the NRHP (see Appendix B for Concurrence Letters). Accordingly, no architectural historic properties would be affected by the HCA.</p> <p>Should the CTB approve the HCA as the preferred alternative, appropriate archaeological surveys would be conducted within the HCA corridor. Such a phased approach is consistent with 36 CFR 800.4(b)(2), which provides for the phased identification of historic properties on projects “where alternatives under consideration consist of corridors or large land areas,” and with the Section 106 Programmatic Agreement executed in September 2006 for the project, which provides for VDOT to complete efforts to identify, evaluate, and treat historic properties potentially affected by design changes to the project that would extend project effects beyond the corridor studied for the preferred alternative. Notwithstanding, an archaeological assessment of the HCA corridor was conducted using the same criteria as were used in the original study. The assessment indicated that the potential for encountering archaeological sites within the HCA corridor is greater than the potential within the ALC corridor given that the HCA contains a greater number of previously recorded Precontact Period archaeological sites, primarily located along the Route 58 Bypass section of the HCA, along with a greater number of potential former and extant house/farm sites.</p>
State Scenic River	A portion of the Smith River in Henry County (south of the US Route 58 Bypass to near the Pittsylvania County border, see Figure 3) is designated as a State Scenic River. The HCA alignment does not affect this portion of the river. The ALC crosses the State Scenic River portion of the Smith River east of Fisher Farm Park, as shown in Figure 3.
Visual	Both the I-73 ALC and HCA alignments traverse the Lower Piedmont landscape district, which is characterized by agricultural views predominated by oaks, maples, and Virginia pines. Large farms, with large parcel sizes and occasional farmhouses set back from the road, are typical, and there is a predominance of pine forests. I-73 would require only moderate cuts and fills, but would require forest clearing for virtually all of its length. For

Table 6. Summary of HCA Environmental Issues

	<p>this reason, and the growing presence of residences associated with the proximity to Martinsville, a medium visual impact was assessed in the FEIS to the section of I-73 in Henry County.</p>
Hazardous Materials Sites	<p>The preliminary environmental review for properties that potentially contain hazardous material(s) was conducted using a half-mile search radius from the centerline of the HCA and included a review of federal and state government records and a field reconnaissance review by VDOT of sites bordering the roadway improvement corridor. The Environmental Data Resources, Inc. (EDR) database search identified six potential HAZMAT sites proximate to or within the HCA corridor, as described further below in Section 3.4.</p>
Waters of the U.S., Including Wetlands	<p>The HCA crosses approximately 6.2 acres of wetlands and 4.4 miles of stream. See Section 3.5.</p>
Water Quality	<p>Stormwater management facilities would be incorporated into the HCA to minimize long-term effects of the project on water quality. See Section 3.5.</p>
Public Water Supplies	<p>The HCA would be located closer to the Martinsville Reservoir and Reservoir 6, as well as existing public water and sewer infrastructure, as the alignment is located closer to the City of Martinsville and the surrounding developed areas. These are discussed in Section 3.5.</p>
Floodplains	<p>Approximately 124 acres of floodplain would be crossed by the HCA, as discussed in Section 3.5. No appreciable changes to 100-year floodplain elevations are expected.</p>
Terrestrial and Aquatic Habitat and Wildlife	<p>Impacts to terrestrial and aquatic wildlife would include the elimination of habitat within the limits of construction. Potential impacts to aquatic wildlife may also result from sediment deposition due to stormwater runoff from the construction area. Stream and habitat losses would be compensated through mitigation measures to be developed in consultation with the permitting agencies. Additionally, temporary and permanent stormwater management and erosion and sediment controls would be implemented as part of the project to minimize damages to aquatic habitats. See Section 3.6.</p>
Forest	<p>Approximately 70 percent of the 600-foot HCA corridor consists of forest cover - deciduous, evergreen, and mixed.</p>
Threatened and Endangered Species	<p>No impacts by the HCA to federally listed threatened or endangered species have been identified. See Section 3.6.</p>
Invasive Species	<p>In accordance with Executive Order 13112, <i>Invasive Species</i>, the potential for the establishment of invasive terrestrial or aquatic animal or plant species during construction of the project would be minimized by following provisions in VDOT's <i>Road and Bridge Specifications</i>. These provisions require prompt seeding of disturbed areas with mixes that are tested in accordance with the Virginia Seed Law and VDOT's standards and specifications to ensure that seed mixes are free of noxious species. While the proposed right of way is vulnerable to the colonization of invasive plant species from other portions of the site and from adjacent properties, implementation of the stated provisions would reduce the potential for the establishment and proliferation of invasive species.</p>
Wildlife and Waterfowl Refuges	<p>No wildlife or waterfowl refuges are located in the project vicinity.</p>
Anadromous Fish, Trout Waters, and Shellfish	<p>No anadromous fish, trout, or shellfish waters are located in the project vicinity.</p>
Air Quality	<p>The HCA has been assessed for potential air quality impacts and conformity with applicable air quality regulations and requirements. The project lies in an area that is currently in attainment with all of the National Ambient Air Quality Standards (NAAQS). As such, regional air quality conformity requirements do not apply. The project does not include or directly affect any roadway whose design year average daily traffic volume, skew angle, or level of service would exceed the threshold criteria specified in the Agreement between the Federal Highway Administration and the Virginia Department of Transportation (February 27, 2009) for streamlining the project-level air quality analysis process for carbon monoxide. A project level CO analysis is therefore not required.</p> <p>The HCA would meet all applicable air quality analysis and conformity requirements. As such, it would not cause or contribute to a violation or delay timely attainment of the NAAQS. Additionally, best available information indicates that, nationwide, regional levels of mobile source air toxics are expected to decrease in the future due to fleet turnover and the continued implementation of more stringent emission and fuel quality regulations.</p>

Table 6. Summary of HCA Environmental Issues

	Nevertheless, it is possible that some localized areas may show an increase in emissions and ambient levels of these pollutants due to locally increased traffic levels associated with the project.
Noise	Noise monitoring was completed at nine sites in the HCA corridor to represent existing noise levels in the study area (<i>Noise Impact Analysis Technical Report</i> , December 2010 – see Appendix C). For the design year (2035) build condition, the location of the 66-dBA noise contour line was determined for the purpose of characterizing the noise environment along the corridor. Noise impact is predicted to occur in areas of Noise Sensitive Areas (NSA) 2 (Barrows Mill Rd to Route 57) and 6 (Clover Rd to Route 87). In the area of Fisher Farm Park, the noise contour distance for the shifted alignment remains the same as the calculated HCA original noise contour distance. The areas of frequent human use (i.e., the ball fields, picnic areas, and playground) are beyond the 66-dBA contour line; therefore, noise impact is not anticipated. Additional studies will be necessary during the final design phase when more detailed design information is available. See Section 3.7 .

*The FEIS calculated land use impacts using a 350-foot wide corridor (175 feet from centerline) combined with a 1,320-foot wide radius surrounding each of the interchanges; therefore, relocation impacts will not be comparable in this EA, which used a 600-foot wide corridor width.

Table 7. Summary of Impacts

CATEGORY	IMPACTS			
	NO-BUILD	HENRY COUNTY ALTERNATIVE	HENRY COUNTY ALTERNATIVE - MODIFIED	ADOPTED LOCATION CORRIDOR
Total Area within Corridor (acres)	-	2,209	2,200	1,892
Length (miles)*	-	21.3	21.1	19.6
Interchanges	-	7	7	5
Homes Displaced**	0	178	169	106
Businesses Displaced**	0	1	1	2
Farms Displaced**	0	8	9	9
Schools Displaced**	0	0	0	0
Churches Displaced**	0	2	2	2
Other Community Facilities Displaced (rescue squads, fire stations, etc.)**	0	0	0	1 (Fire Station)
Section 4(f) Property Used (acres)	0	0	27	0
Historic Properties Affected	0	0	0	0
Agricultural and Forestal District Land Used (acres)	0	0	0	0
Prime, Unique, or Statewide-Important Farmland Converted (acres)***	0	123	123	36
Acidic Rock/Soil Disturbance (acres)	0	992	964	569

Table 7. Summary of Impacts

CATEGORY	IMPACTS			
	NO-BUILD	HENRY COUNTY ALTERNATIVE	HENRY COUNTY ALTERNATIVE - MODIFIED	ADOPTED LOCATION CORRIDOR
Number of Stream Crossings	0	16	16	21
Length of Streams Disturbed (miles)	0	4.4	4.4	4.3
Wetlands Displaced (acres)	0	6.2	6.3	10.2
Floodplains Crossed (acres)	0	124	120	91
Forests Displaced (acres)	0	1,460	1,461	1,355
Threatened or Endangered Species Impacted	0	0	0	0
Hazardous Material Sites Impacted	0	6	6	1****
Violations of National Ambient Air Quality Standards	0	0	0	0
Noise Impacts	0	2 Noise Sensitive Areas	2 Noise Sensitive Areas	0*****

* HCA and ALC lengths of 21.3 and 19.6 miles, respectively, calculated from Route 890/108 interchange north of Figsboro to Route 87 interchange north of the Route 750 intersection.

**The FEIS calculated land use impacts using a 350-foot wide corridor (175 feet from centerline) combined with a 1,320-foot wide radius surrounding each of the interchanges; therefore, relocation impacts will not be comparable in this EA, which used a 600-foot wide corridor width.

***Prime, unique, or statewide-important farmland impacts reported here will not be comparable to the I-73 FEIS as the latter used hand-digitized mapping and at that time, Virginia had not yet adopted a statewide important farmland list. This EA used Henry County Soil Survey spatial and tabular data and includes the statewide important farmland units, which increases acreage of farmland impacted by Farmland Protection Policy Act (FPPA) definition.

**** The portion of the ALC in Henry County that is being referenced in this study consists of Segments 333 and 373. In Segment 333, one site with one occurrence (registered Underground Storage Tank) was identified near the segment boundary. No sites were identified within or near Segment 373 (I-73 Location Study FEIS, Environmental Data Resources, Inc. 2004).

*****In the FEIS, based on a corridor-wide inspection of aerial photographs and U.S. Geological Survey maps, and from overlay of future estimated traffic noise contours, an approximate count was made of the total number of residences that would experience traffic noise impacts from proposed I-73. Twenty-two receptors were located throughout Henry County, and the monitored L_{eq} did not exceed the noise abatement criteria along any of those that were located in the proximity of the ALC.

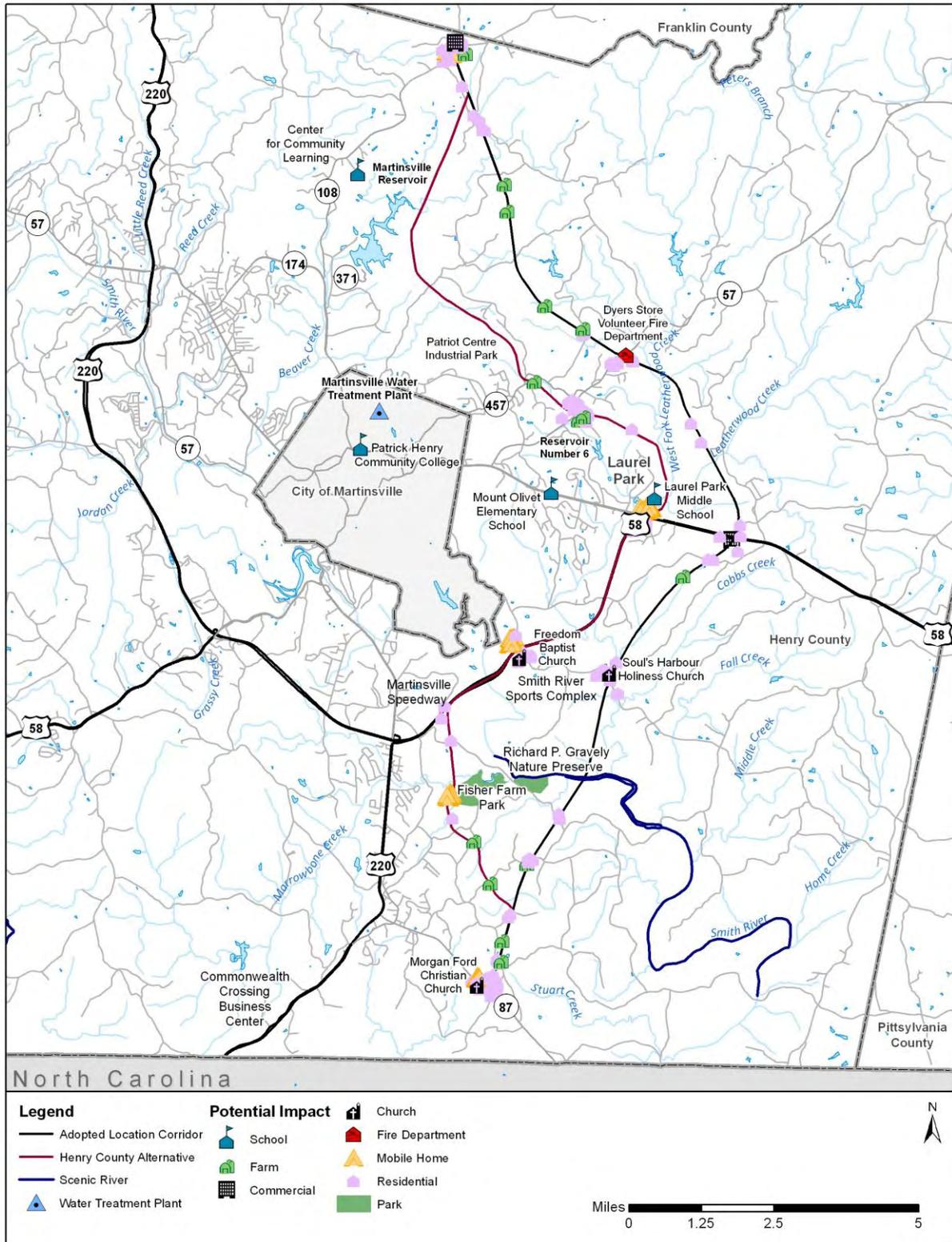


Figure 3. Community Facilities

3.2 ACIDIC ROCK AND SOIL

Approximately 992 acres of soils with ‘sulfide occurrence documented in geologic literature’ have been identified within the project corridor using the digital representation of the Geologic Map of Virginia (Virginia Department of Mines, Minerals, and Energy). Road construction through this formation could result in acid rock drainage, which occurs when sulfide-bearing soil or rock is excavated and exposed to oxygen in the atmosphere and water. Problems associated with acid rock drainage include: degradation of metal and concrete building materials (which accelerates the need for repairs and can compromise structural stability), weathering of fill material and precipitation of sulfates, damage to vegetation, impacts to surface water quality and aquatic life, and contamination of ground water.

Potential problems associated with these areas can be mitigated by several possible methods:

- Neutralize the acid by applying pulverized agricultural lime or soda ash.
- Encapsulate the materials to segregate them from exposure to air.
- Remove and dispose at another location.

The appropriate method of dealing with potential acid drainage problems will be identified during the design process, part of which will include acquisition of geotechnical borings to identify potential problem areas for use in design of foundations and road substructure. Special provisions will be developed as needed for inclusion in the construction plans.

3.3 PARKS AND RECREATION

3.3.1 Description

The proposed HCA alignment is located just west of Fisher Farm Park. This 127.3 acre park is the largest in Henry County and is located south of the City of Martinsville near Ridgeway, as shown in Figure 3. The Henry County Parks and Recreation Department maintains the park and the public recreational facilities located on site, which include two baseball/softball fields, two picnic shelters with cooking grills, restrooms, playground and open space, and wooded areas that are used for hiking. The park is open year-round from dawn until dusk.

The alignment originally proposed by Henry County (shown in blue in **Figure 4**) avoids the park; however, it crosses the Norfolk Southern Railway in two locations. The construction of bridges and/or tunnels to cross the railway would be costly and result in additional impacts to the surrounding area; therefore, an option was developed to use Fisher Farm Park land to the east of the railway. The proposed alignment shift (HCA Modified shown in brown) avoids crossing the railway and crosses through the wooded areas in the western portion of the park. In addition, the HCA Modified Alternative results in nine fewer residential displacements (within the mobile home park located west of the railway tracks and Fisher Farm Park).

3.3.2 Section 4(f) Involvement

Section 4(f) Applicability. Under Section 4(f) of the USDOT Act of 1966, FHWA may approve a transportation project requiring the use of publicly owned land of a public park only if: (1) there is no prudent and feasible alternative to using that land; and, (2) the project includes all possible planning to minimize harm to the park resulting from the use, unless the criteria for *de minimis* Section 4(f) involvement can be met.

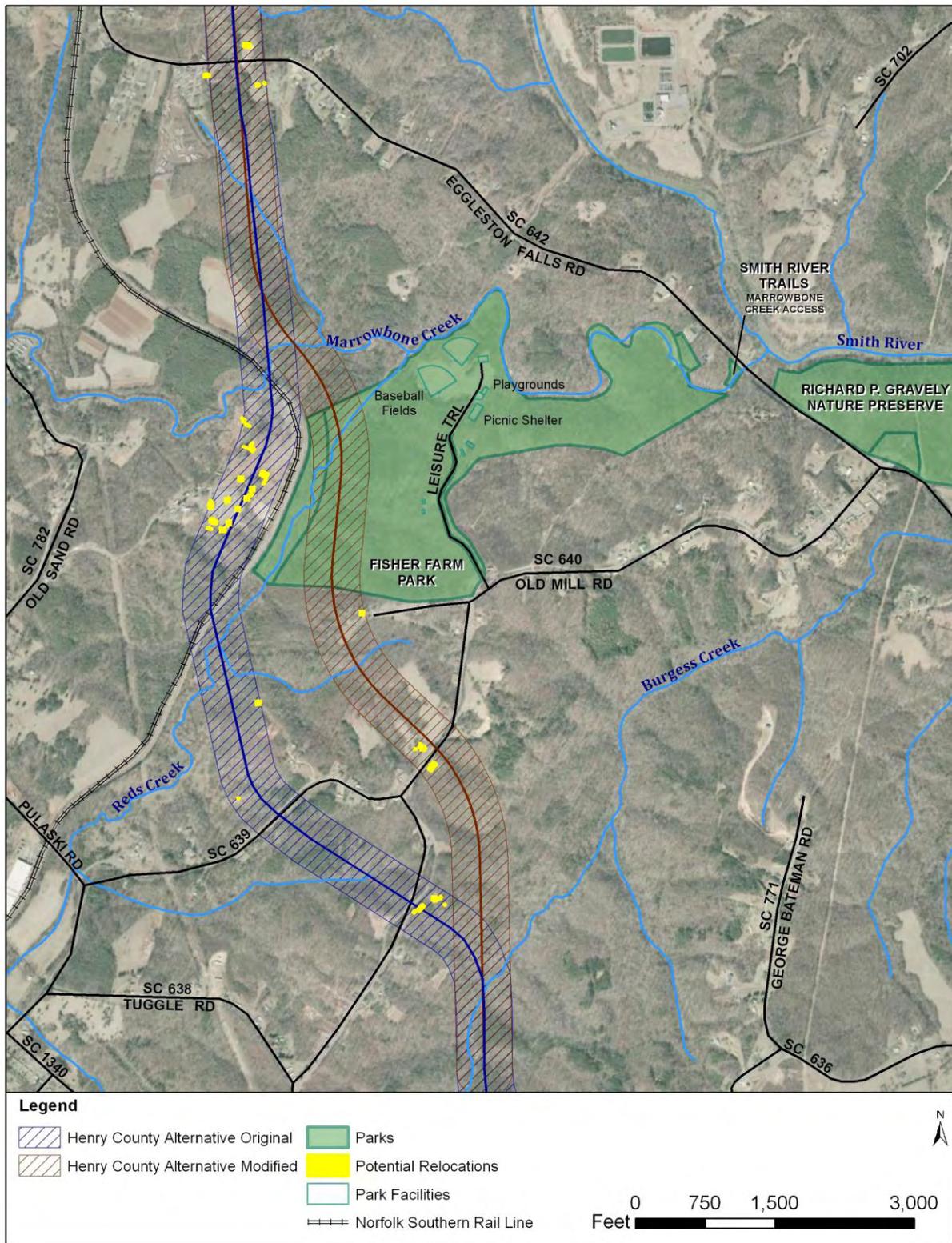


Figure 4. Option to Use Fisher Farm Park Land

The *de minimis* criteria include the following:

- 1) The transportation use of the Section 4(f) resource, together with any impact avoidance, minimization, and mitigation or enhancement measures incorporated into the project, does not adversely affect the activities, features, and attributes that qualify the resource for protection under Section 4(f);
- 2) The official(s) with jurisdiction over the property are informed of FHWA’s intent to make the *de minimis* impact finding based on their written concurrence that the project will not adversely affect the activities, features, and attributes that qualify the property for protection under Section 4(f); and
- 3) The public has been afforded an opportunity to review and comment on the effects of the project on the protected activities, features, and attributes of the Section 4(f) resource.

Alternatives Considered to Minimize Impacts to the Park. The original HCA alignment avoids the park; however, given the cost to cross the Norfolk Southern Railway in two locations, an alternative was developed that uses woodlands in the park that are not part of the main usable area. The shifted HCA alignment is shown in brown in Figure 4. The acreage of park that would be used under this scenario assuming the 600-foot corridor and a more realistic 250-foot construction corridor is summarized in **Table 8** below. The uneconomic remnant is the portion of land between the proposed roadway and the rail line that would be made unusable upon construction of the roadway.

Table 8. Section 4(f) Impacts to Fisher Farm Park

Alternative	Park Acreage Used	Acreage of Uneconomic Remnant	Total Park Acreage*	Percentage Used
No-Build	0	0	129	0
ALC	0	0	129	0
HCA	0	0	129	0
HCA Modified (600-ft corridor)	27	9	129	28
HCA Modified (250-ft corridor)	11	17	129	22

*Includes three tracts: main tract - 127.3 acres; adjacent tract on eastern edge of park – 1 acre; and tract of land along Eggleston Falls Road that provides access to Marrowbone Creek – 0.5 acres.

While the No-build Alternative would avoid any use of Fisher Farm Park, it would not achieve the purpose and need for the project.

3.3.3 De Minimis Finding

Section 6009 of SAFETEA-LU provides that Section 4(f) requirements are satisfied if it is determined that the proposed project would have a *de minimis* impact on the Section 4(f) property. The public is hereby notified that FHWA intends to make a *de minimis* finding with respect to the project’s Section 4(f) involvement with the publicly owned Fisher Farm Park in Henry County. The basis for this finding includes the following:

- The project would not adversely affect the activities, features, and attributes of Fisher Farm Park or its recreational facilities that make it eligible for protection under Section 4(f).
- Henry County representatives have concurred in writing (see Appendix D) that the project would not adversely affect the activities, features, and attributes of Fisher Farm Park or its

recreational facilities. The County states that it has no plans to ever develop that land for recreational use due to the difficult terrain and its location in the western rear of the Park.

- The public will be given further opportunity at the public hearing to review and comment on the proposed project and the proposed *de minimis* impact finding.

3.3.4 Applicability of Section 6(f)

Lands for Fisher Farm Park are supported by the federal Land and Water Conservation Fund (LWCF). Therefore, conversions of land from the park for project right of way would require that replacement lands of approximately equivalent utility and value be provided pursuant to Section 6(f) of the Land and Water Conservation Fund Act.

Should the HCA be selected and the project advanced, a formal request for permission to convert LWCF-assisted properties in whole or in part must be submitted in writing by the locality with jurisdiction over the LWCF area, in this case Henry County, to the Department of Conservation and Recreation (DCR) for review and approval prior to submission to the National Park Service (NPS) by the State Liaison Officer (SLO). The conversion proposal must meet the following prerequisites before NPS will consider the request:

1. All practical alternatives to the conversion have been evaluated and rejected on a sound basis.
2. The fair market value of the property to be converted has been established and the property proposed for substitution is of at least equal fair market value as established by an approved appraisal excluding the value of structures or facilities that will not directly enhance its outdoor recreation utility.
3. The property proposed for replacement is of reasonably equivalent usefulness and location as that being converted (no specific potential replacement properties have been identified at this time).
4. The property proposed for replacement meets the eligibility requirements for LWCF assisted acquisition. The replacement property must constitute or be part of a viable recreation area.
5. In the case of Section 6(f)(3) protected areas that are partially rather than wholly converted, the impact of the converted portion on the remaining area shall be considered. If such a conversion is approved, the unconverted area must remain recreationally viable or be replaced as well.
6. All necessary coordination with other federal agencies has been satisfactorily accomplished including, for example, compliance with Section 4(f) of the Department of Transportation Act of 1966.
7. The guidelines for environmental review under NEPA have been satisfactorily completed. In cases where the proposed conversion arises from another federal action, NPS final review of the conversion proposal shall not occur until the NPS is assured all environmental review requirements for the other federal action have been met, e.g., Army Corps of Engineer permits.

3.4 HAZARDOUS MATERIALS

Available government agency databases were reviewed to determine whether hazardous materials-related activities were located within or near the proposed HCA corridor. The current and past regulatory status of the sites within the project area was determined by a review of

information on file with the U.S. Environmental Protection Agency (EPA) and the Virginia Department of Environmental Quality (DEQ). A records search performed by Environmental Data Resources, Inc. (EDR) of Southport, Connecticut in July 2010 was reviewed for the project area. EDR compiled a detailed list of sites with recognized environmental concerns within a half-mile search radius from the centerline of the proposed HCA. The EDR database search identified six potential hazardous material sites proximate to or within the corridor, as described further below and shown in **Figure 5**:

- Map ID #1 - (Underground Storage Tank [UST] Database) - According to the DEQ's UST Database, the site contained two 1,000-gallon petroleum underground storage tanks that reportedly have been removed from the ground.
- Map ID #2 - (UST Database) - According to the DEQ's UST Database, this site once served as a gasoline station that contained three underground petroleum tanks that reportedly have been removed from the ground.
- Map ID #3 - (SPILLS Database) - According to the DEQ's SPILLS Database, this property had an overflowing septic system. The DEQ closed the case in October, 2002.
- Map ID #4 - (FINDS Database) - The FINDS Database identifies the public school as being included in their information system but does not indicate that any pollution complaint has been filed related to the property.
- Map ID #5 - (Integrated Compliance Information System [ICIS] Database) - The ICIS Database identifies this sewage treatment facility as having a previous enforcement action (2005), but it does not indicate that there are any current remedial activities ongoing at the facility.
- Map ID #6 - (UST Database) - The UST Database identifies the facility as having four petroleum underground storage tanks that are currently registered and in use.

The EDR report also included an Orphan Summary listing that identified 97 "unmappable" sites with regulated activities. Orphan sites are sites that were not mapped due to insufficient address information but that may be located within the project area. Field reconnaissance confirmed that none of the sites listed in the Orphan Summary were identified in or proximate to the evaluation limits of this study.

No additional hazardous material impacts will result from the shift in the proposed alignment through Fisher Farm Park. The search area for the hazardous material assessment, which included a half-mile radius from the centerline of the proposed HCA, covered most, if not all, of the area through Fisher Farm Park. Additionally, a site visit to the park confirmed that there were no sites of concern.

To date, Phase I and Phase II Environmental Assessment activities have not been completed at the sites identified during this preliminary hazardous material review. Therefore, depending on the proposed right of way alignment, Phase I and/or Phase II activities may be necessary to identify and delineate impacted media that could adversely affect the proposed construction project. The presence of hazardous material/petroleum impacts identified on properties to be acquired for the project would be addressed through coordination with existing property owners, regulatory agencies, and/or the development of special provisions for management of hazardous materials during construction.

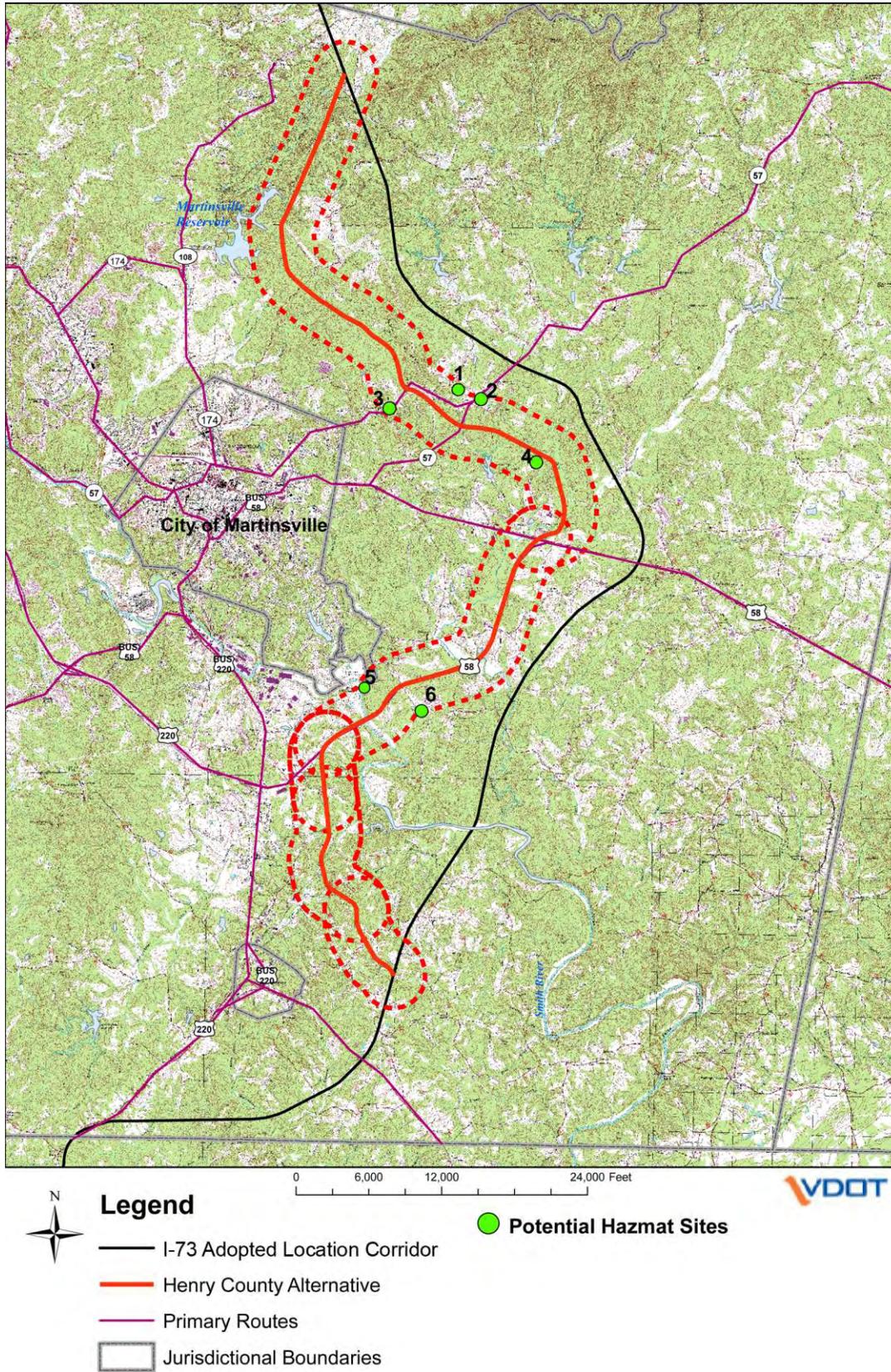


Figure 5. Potential Hazmat Sites within HCA 600-foot Corridor

3.5 WATER RESOURCES

3.5.1 Surface Waters

Approximately 4.4 miles of streambed lie within the 600-foot corridor of the proposed HCA alignment. Affected streams include (from north to south): Beaver Creek (three crossings), Hairston Branch, four crossings of an unnamed stream, Camp Branch Creek, Leatherwood Creek (two crossings), Smith River, Marrowbone Creek, Reds Creek, Burgess Creek, and Flanigan Branch.⁴ A number of unnamed tributaries also are present. These are mainly smaller perennial streams.

The HCA alignment does not directly cross the water bodies of the Martinsville Reservoir or Reservoir #6, but it does pass through their watersheds, as shown in **Figure 6**. The Martinsville Reservoir (Reservoir), also known as the Beaver Creek Reservoir, is located in northern Henry County, approximately two miles north of the City of Martinsville near Patrick Henry Community College. The 175-acre lake has a 1.3 billion gallon capacity and is the primary water supply source for the City of Martinsville. Supplemental water sources, used as needed, are located on Leatherwood Creek near Laurel Park Middle School and on Little Beaver Creek, just north of the corporate limits. Reservoir #6, located northwest of Laurel Park, is approximately one-quarter mile in length and roughly 500 feet across, although it likely fluctuates seasonally. This reservoir is not directly used as a water supply, although it feeds into water systems that do supply water, such as the water pumping station found along Leatherwood Creek.

Both the ALC and HCA alignments lie upstream of the three surface water intake locations (see Figure 6). The 600-foot corridor for the ALC encompasses a total of approximately 1,892 acres of land, 1,000 of which lie within the Reservoir and intake watersheds (about 53% of the total). Similarly, the corridor area for the HCA alignment encompasses a total of approximately 2,209 acres of land, 900 of which lie within the Reservoir and intake watersheds (about 41% of the total). The HCA is approximately 7,700 feet (1.5 miles) closer to the Martinsville Reservoir than the ALC (calculated from edge of 600-foot corridor to nearest edge of Reservoir). As shown in **Table 9**, the HCA is closer to Reservoir #6 and the surface water intake locations at Leatherwood Creek and Little Beaver Creek as well. A detailed evaluation of the impacts of the HCA and ALC alignments on the Martinsville Reservoir and surface water resources was prepared as part of the EA and is available upon request.

In summary, the project impacts to surface waters could include filling of stream channels for construction of roadbed and placement of culverts to carry streams under the proposed roadway. Temporary siltation may occur during construction; however, construction of the proposed roadway is not expected to cause a significant increase of construction-related sediment loads into the Reservoir and surface waters if erosion and sediment control measures are appropriately used and maintained. As stated in the City of Martinsville Annual Water Quality Report for 2009, the Martinsville Reservoir and creeks are currently determined to be of high susceptibility to contamination, as are virtually all other surface water sources in the State, using criteria developed by the State in its approved Source Water Assessment Program.

⁴ These 16 crossings were reported in the *I-73 Corridor Study Evaluation of the Henry County Board of Supervisors Alternative* (October 2009). For this evaluation, the number of stream crossings counted from the National Hydrography Dataset, U.S. Geological Survey and U.S. Environmental Protection Agency (downloaded from <http://nhd.usgs.gov/>) totaled 43. This total includes the 16 crossings identified by the previous study, as well as crossings of some additional smaller unnamed intermittent streams and multiple crossings of those streams.

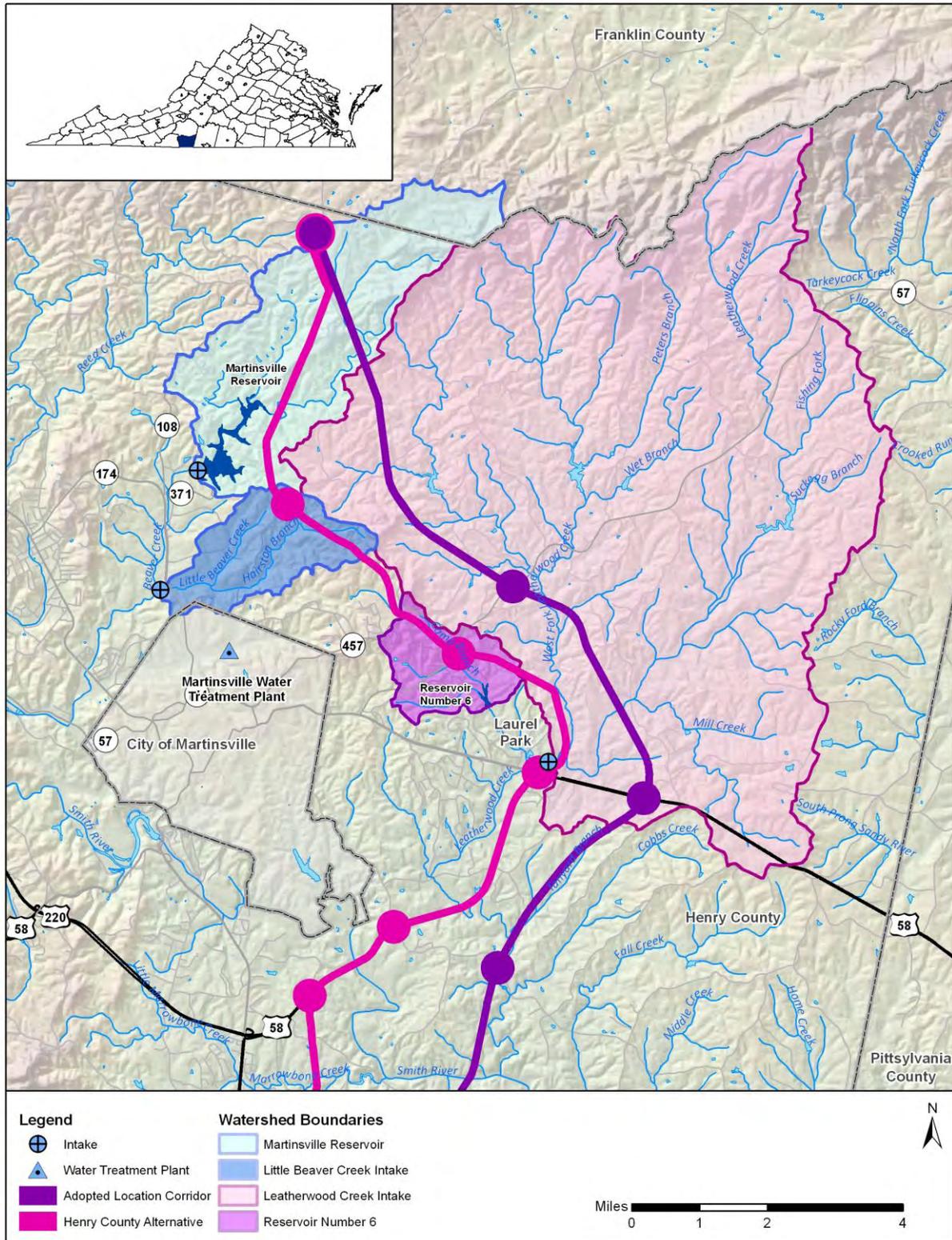


Figure 6. Watersheds, Water Treatment Plant, and Surface Water Intakes

Table 9. Proximity of HCA and ALC Alignments to Reservoirs and Surface Water Intakes

Intake	HCA Shortest Distance* To Corridor (feet)	ALC Shortest Distance* To Corridor (feet)
Martinsville Reservoir Intake	5,223	14,354
Martinsville Reservoir	219	7,912
Little Beaver Creek Intake	10,644	19,421
Leatherwood Creek Intake	<i>Within Interchange Corridor**</i>	6,570
Reservoir #6	1,673	6,499

* From edge of corridor to closest edge of facility.

**According to the City of Martinsville, the Leatherwood Creek intake is not used often and is kept operational for emergency purposes only. Immediate and/or short-term impacts of the project to the water supply are minimal since the City maintains the option of when to activate the pump station; during construction or in the event of a vehicle/equipment accident resulting in a spill, the City would not activate the pump station until the situation clears.

Long-term effects on water quality could occur as a result of an increase in pollutant loads in runoff from impervious surfaces. Such pollutants include particulates, metals, oil and grease, organics, nutrients, and other harmful substances. Both the Virginia Department of Health and the City of Martinsville have articulated that the project would need to mitigate for erosion and sedimentation, highway runoff, and hazardous materials spills in the interest of protecting public drinking water sources in the vicinity of the proposed roadway. Appropriate stormwater management and techniques to mitigate for the short-term impacts due to construction, including erosion and sedimentation and potential hazardous materials spills, as well as for the long-term impacts of highway operation and maintenance resulting from the accumulation of roadway liquids, oils, salts, deicing/snow-removal chemicals, etc. will be designed to avoid or minimize these impacts to the fullest degree practicable.

Minimization measures could include:

- Minor alignment shifts to avoid or minimize impacts.
- Temporary and permanent stormwater management measures. Much of the potential impact could be minimized through roadway design incorporating curb and gutter to collect roadway drainage in “high-risk” areas; piping, treating, filtering, and stabilizing the collected drainage through use of detention basins/ponds or other appropriate measures; and proper design, construction, and maintenance of erosion and sediment control features.
- Use of retaining walls.
- Open bottom or countersunk culverts to retain natural stream bottoms.
- Ensuring culverts maintain low-flow depths and high-flow conveyances to avoid impairing stream hydraulics and assure fish passage during low-flow periods.
- Conducting stream work in the dry.

A detailed avoidance, minimization, and mitigation plan will be developed for coordination with the environmental review agencies during the water quality permitting process.

3.5.2 Wetlands

Approximately 6.2 acres of wetlands lie within the 600-foot corridor of the proposed HCA alignment. Wetland types are delineated below in **Table 10**. Functions of these wetlands include sediment trapping, nutrient reduction, habitat for wildlife, groundwater discharge, and seasonal flood attenuation.

Table 10. Wetland Impacts

Wetland Class	Description	Within 600-foot Corridor of HCA Alignment (acres)
PEM	Freshwater Palustrine Emergent	1.65
PSS	Freshwater Palustrine Scrub-Shrub	0.64
PUB	Freshwater Palustrine Unconsolidated Bottom	2.56
R3UB*	Riverine Upper Perennial Unconsolidated Bottom	1.34
Total Wetlands		6.2

*Along Smith River

Impacts would include filling of wetlands for construction of roadbed. Compensation for unavoidable wetland impacts from the project would be developed in cooperation with the federal and state water quality permitting agencies during the permitting process. Such compensation would offset losses of wetland types and functions and could include enhancement or restoration of existing wetlands, wetland creation onsite or offsite, use of credits from an approved wetlands mitigation bank, or payments to the Virginia Aquatic Resources Trust Fund.

3.5.3 Floodplains

According to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps, the proposed project would cross 7 streams with designated 100-year floodplains, as shown in **Figure 7**. Approximately 124 acres of floodplains lie within the 600-foot corridor of the proposed HCA alignment. The streams include: Beaver Creek, West Fork Leatherwood Creek, Leatherwood Creek (two crossings), Smith River, Marrowbone Creek, Reds Creek, and Flanigan Branch. The shift in the proposed alignment through Fisher Farm Park would reduce the encroachment upon the Marrowbone and Reds Creek floodplains by approximately five acres.

In accordance with Executive Order 11988, *Floodplain Management*, floodplain encroachments would be avoided or minimized to the maximum extent practicable. Crossings will be designed such that the project would not appreciably increase, directly or indirectly, flood levels or the risks of flooding. No substantial effects on natural or beneficial floodplain values are expected to result from the proposed project.

3.6 WILDLIFE AND HABITAT

A variety of wildlife exists in Henry County, with management efforts concentrating on the increasing populations of deer and turkey. The Virginia Department of Game and Inland

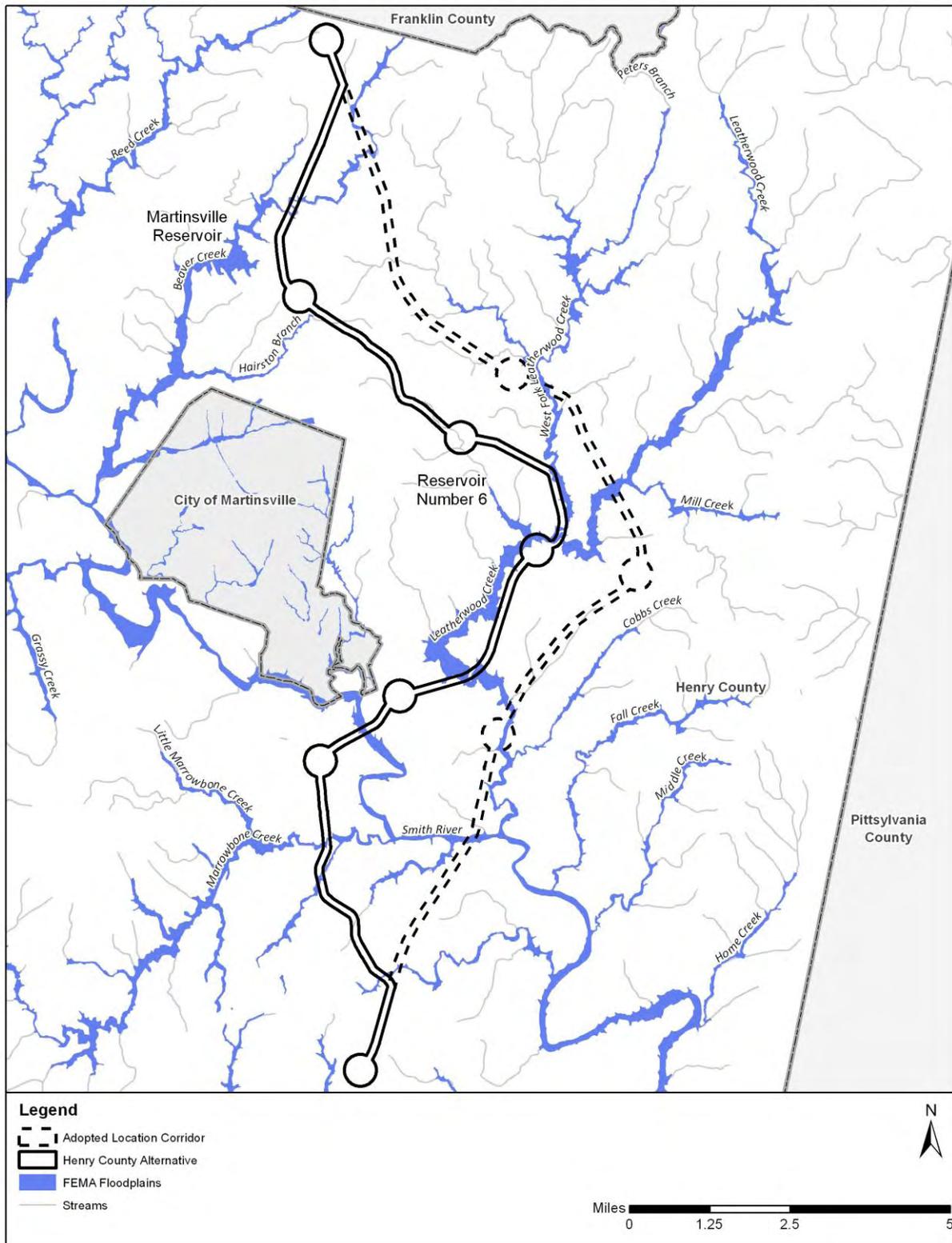


Figure 7. 100-year Floodplains – Henry County

Fisheries (VDGIF) is currently trying to stabilize the deer population. Bear sightings are incidental, with most of the sightings involving bears that are moving through the area.

No endangered or threatened animal species have been reported in the county. However, several species have been reported in adjacent localities that may exist elsewhere in the region if appropriate habitat is present. The orangefin madtom (state-listed) and the Roanoke logperch (federally listed) are found in medium to large streams of the Dan and Roanoke River drainages. They were determined to be the most significant aquatic habitats within the I-73 FEIS study area, and the document concluded that should work in waters containing either of these critical fish populations be necessary, measures to minimize unavoidable impacts will be developed through consultation with the U.S. Fish and Wildlife Service (USFWS) or the VDGIF.

A biological assessment for the Roanoke logperch was prepared and included in the appendices to the FEIS. The USFWS was unable to initiate formal consultation because of insufficient information related to design, construction and scheduling, which was unavailable at that time. VDOT funded a range-wide assessment of habitat suitability for the Roanoke logperch in the VDOT Salem District in 2006 and reported six new sites where the Roanoke logperch was discovered; however, none were near the proposed I-73. The results of the range-wide assessment will be used in any future consultation with the USFWS to further refine knowledge concerning the status of the species and its distribution.

The loggerhead shrike in eastern Franklin County and the eastern woodrat, both identified as species of concern, have not recently been recorded but may exist in areas of suitable habitat. The Virginia Department of Agriculture and Consumer Services notes that neither endangered insects nor endangered plants have been recorded in Henry County.

Vegetation within the construction limits would be cleared for the project as needed. Upon completion of the necessary earthwork, all disturbed areas that are not paved would be revegetated using appropriate grass seed mixes. Impacts to terrestrial wildlife would include the elimination of habitat within the limits of construction. Impacts to aquatic wildlife would include the elimination of stream habitat within the limits of construction and potential impacts from sediment deposition due to stormwater runoff from the construction area. Stream losses would be compensated through mitigation measures to be developed in consultation with the permitting agencies. Such mitigation measures would also include habitat enhancement measures, thereby offsetting habitat losses resulting from the project. Additionally, temporary and permanent stormwater management and erosion and sediment controls would be implemented as part of the project, which should also minimize damages to aquatic habitats.

3.7 NOISE

For purposes of the noise analysis, noise monitoring was completed at nine sites in the corridor to represent existing noise levels in the study area. If noise levels “approach” or “exceed” noise abatement criteria (NAC) for the design year build scenario, then an impact occurs and abatement measures are to be considered. Noise-sensitive land uses potentially affected by this project are in Category B (NAC 67 decibels [dBA]) and consist of residences and places of worship, and Category C (NAC 72 dBA), which consists of commercial sites. VDOT defines “approach” as being within 1 dBA of the NAC and therefore the criterion can actually be considered 66 dBA for Category B and 71 dBA for Category C. A noise impact is also deemed to occur if design year build noise levels are substantially higher than existing levels, even

though the levels may not reach the NAC. The State Noise Abatement Policy defines a substantial increase as 10 dBA or more.

Along new-alignment roadways, where the project alternative passes through areas that are remote from major noise sources and that have relatively low existing noise levels, substantial increases from the existing to build case noise level commonly occur. Because of the limited plans available, noise impact was based on noise contour data, therefore substantial increase impacts were not determined. This type of impact would be evaluated during final design with the selected alternative.

The noise analysis prepared for the project showed that:

- The monitored L_{eq} in the study corridor ranged from 39 dBA to 61 dBA. The dominant noise sources in the study area were traffic on existing highways, exit ramps, and local roads. Very few time intervals reflected noise sources other than roadway traffic.
- Design year (2035) no-build noise levels would increase by approximately 3 dBA over existing (2010) noise levels, assuming a worst-case condition. For reference, noise level increases and decreases of 3 dBA or less are nearly imperceptible to the human ear. The overall no-build (2035) noise levels are predicted to range from 42 to 64 dBA.
- For the design year (2035) build condition, the location of the 66 dBA noise contour line was determined for areas along the project corridor for the purpose of characterizing the noise environment in the study area. Any Category B noise sensitive properties within the noise contours should be considered noise impacted if no sound barrier is present to reduce noise levels. Because Category B noise sensitive receptors fall within the noise contour, noise impact is predicted to occur in areas of Noise Sensitive Areas (NSA) 2 (Barrows Mill Road to Route 57) and 6 (Clover Road to Route 87).
- In the area of Fisher Farm Park, an alignment shift is being considered, which affects only a small area of NSA 6 (Clover Road to Route 87). The noise contour distance for the build alternative remains the same as the calculated HCA original noise contour distance. The areas of frequent human use (i.e., the ball fields, picnic areas, and playground) are beyond the 66-dBA contour line; therefore, noise impact is not anticipated. If the modified alternative is selected, noise impacts would be evaluated further with final design.

Plans are not developed to a stage where property displacements have been determined; therefore, noise abatement has not yet been evaluated. There is potential that the impacted sites would be displaced and noise barriers would no longer be warranted. Noise abatement will be considered and evaluated for feasibility and reasonableness during the final design stage with the selected alternative.

VDOT guidelines recommend a variety of mitigation measures that should be considered in response to transportation-related noise impacts. While noise barriers and/or earth berms are generally the most effective form of noise mitigation, additional mitigation measures exist that have the potential to provide considerable noise reductions, under certain circumstances. Mitigation measures that may be considered for this project include:

- Construction of noise barriers;
- Construction of earth berms;
- Acoustical insulation of public use and non-profit facilities;
- Alignment modifications;
- Traffic management; and,
- Property acquisition for severely impacted residential sites.

This information is preliminary and should be considered to be very approximate since the project is not developed to a stage where a reliable cost estimate can be provided in regard to determining cost effectiveness. Once the selected alternative has received design approval, a later study will determine noise impacts, barrier cost estimates, feasibility, and reasonableness of proposed noise abatement.

Construction activity as part of this project may cause intermittent fluctuations in noise levels. During the construction phase of the project, all reasonable measures will be taken to minimize noise impacts from these activities. VDOT's *Road and Bridge Specifications* establish construction noise limits and the contractor will be required to conform to this specification to reduce any impacts of construction noise.

3.8 INDIRECT EFFECTS

Indirect effects are those that are caused by the proposed action but occur later in time or farther in distance than the direct impacts discussed elsewhere in this document. The most common indirect effects associated with highway projects have to do with induced development, that is, development and the impacts of such development that would not otherwise occur if the project were not constructed. As stated in the Purpose and Need section, Henry County proposed this realignment of I-73 as an alternative to the ALC to improve access to existing and developing industrial areas and to serve as a catalyst to increase economic development in Martinsville and Henry County. Indeed, the proposed HCA alignment is more proximate to existing and planned economic activity surrounding Martinsville and includes an additional interchange at Barrows Mill Road to provide access to the Patriot Centre Industrial Park expansion approximately one mile north of Martinsville. The most recent master plan, prepared in May 2009, included a 1,202-acre expansion eastward on the eastern side of Barrows Mill Road, north to Terrys Mountain Road. A second new interchange is proposed to provide access to the 86,000-seat Martinsville Speedway and Industrial Area. The HCA alignment and the ALC are the same near the proposed Commonwealth Crossing Business Centre (CCBC) development, which is located north of U.S. Route 220 near the Virginia-North Carolina State Line, and access to an interstate would offer the same potential benefits to this industrial park. The May 2009 master plan for this development describes a 726-acre business park at this location.

According to the County's Director of Planning, Zoning, and Inspection, the HCA interchange at Route 57 may spur low-density commercial development and create additional demand for the extension of public sewer to supplement the existing medium to low-density residential development that is currently provided only public water service. At Route 58, the Director predicts the emergence of new in-fill commercial development because that area already is served by public water and sewer. The additional access would promote commercial corridor development on already available lots. Finally, the HCA alignment would maintain or upgrade the existing U.S. 58 interchange at Route 650, which provides access to Smith River Sports Complex. At this location, the Director projects that the new alignment would provide the momentum to develop the existing industrial property in the immediate area.

In summary, the HCA would serve traffic in a manner similar to the ALC and may accelerate development that is already planned or desired on adjoining lands. The latter would achieve Henry County's primary objective for proposing the realignment. The project is consistent with local comprehensive planning regarding land use goals in the surrounding area and transportation in the project corridor.

3.9 CUMULATIVE EFFECTS

Cumulative effects are the effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable future actions. The current affected environment is a reflection of the impacts of past and present actions over time. Reasonably foreseeable future actions may include other planned and programmed transportation projects and other planned development as reflected in a locality's comprehensive planning documents that would affect the same environmental resources that would be affected by the project.

As can be seen on the USGS map base in Figure 5, existing land cover within the HCA corridor consists primarily of forests (70%), with small amounts of agricultural (17%) and developed (12%) lands, and less than a half percent of water/wetlands. The existing land cover reflects the predominantly forestry and agricultural activities of the past, which continue today. The proposed HCA follows the alignment of existing U.S. Route 58 Bypass for approximately five miles; therefore, this section would not be new construction and would only require improvements to bring the present facility up to interstate standards. The existing developed lands within and immediately surrounding the corridor consist of medium to low-density residential and commercial development, and Henry County is seeking to attract more of the latter with the strategic placement of I-73 closer to the City of Martinsville. In particular, the HCA is closer to the Patriot Centre Industrial Park, which is currently planned for expansion, and the Martinsville Speedway, which is a prominent tourist attraction and economic asset for the city and county. The proposed HCA and its interchanges also traverse existing developments at Route 57, Route 58, and Route 650, and Henry County projects that the new alignment would provide the momentum to further develop the existing commercial and industrial properties in those areas. Near Route 58, the HCA would be in proximity of Laurel Park Middle School, and between Ridgeway and Martinsville, the HCA alignment would be located near the Norfolk Southern Railway.

The level of impacts associated with the HCA alignment are comparable to impacts previously addressed in the I-73 FEIS for the ALC, and no new significant impacts to natural or cultural resources have been identified in this evaluation. In addition, as described in the Alternatives Section, no appreciable differences in automobile and truck volumes and traffic-related impacts are expected between the ALC and the HCA alignments. The I-73 FEIS concluded that the new roadway may influence the location, intensity, and nature of development that could occur near the proposed interchanges; however, based on existing and proposed plans, this development is projected with or without the project. This conclusion aptly applies in the case of the HCA, which is located closer to Martinsville and the areas of proposed and desired development in Henry County.

Table 11 summarizes the more prominent environmental resources in the project study area that would be impacted by the proposed project, the impact that these resources have experienced from past and present actions, the incremental impact expected from the proposed project, identification of potential reasonably foreseeable future actions, and the potential impact that may occur from other reasonably foreseeable future actions in or near the study area.

Table 11. Summary Of Cumulative Effects

Environmental Resources in Study Area	Impacts from Past and Present Actions	Impact from Proposed Project	Potential Future Action	Potential Impact on Resources from Potential Future Actions
Air Quality	Decrease in air quality as area population, industry, and traffic increases, offset by improvements to air quality resulting from increasingly stringent emissions and fuel standards.	No violations of NAAQS; project is in area that is in attainment of all NAAQS and conformity does not apply.	Continuing development in region, accompanied by increasing regional traffic volumes.	Continuing improvements in vehicle and fuel technology, and resulting cleaner emissions, anticipated to offset increases in volumes of vehicles on regional travel network. Cumulative effect not substantial.
Noise	Increase in noise levels as urbanization and traffic increase.	Noise impact is predicted to occur in areas of NSA 2 (Barrows Mill Rd to Route 57) and 6 (Clover Rd to Route 87).	Continued urbanization with accompanying increases in traffic volumes.	Increase in noise levels as urbanization and traffic increase. Cumulative effect not substantial.
Waters of the U.S., Including Wetlands	Conversion or culverting of water resources to make way for development; degradation of water quality from agricultural and other runoff, impervious surfaces, increased runoff and sediment volumes.	Potential impacts to approximately 4.4 linear miles of stream and 6.2 acres of wetlands; temporary siltation during construction and increase in pollutant loadings, which would be minimized through implementation of best management practices and stormwater management measures.	Additional impervious surfaces and conversion of resources for growing urban area; long-term water quality effects could occur as a result of increased impervious surface; spills from vehicles; an increase in non-point source pollutants from asphalt, grease, oil, metals, nutrients, nitrogen, deicing salts, roadside vegetation management chemicals, and suspended solids and other elements associated with roadways.	Increased impervious surfaces may affect water tables and streamflow volume and quality; adverse effects offset by enforcement of stormwater management, erosion and sediment controls, and water quality permitting requirements under local, state, and federal laws, including compensation requirements; cumulative effect not substantial.
Terrestrial and Aquatic Habitat and Wildlife	Conversion of wildlife habitat to other uses, and degradation of remaining habitat from urban impacts and fragmentation.	Potential impacts to approximately 1,460 acres of wooded areas.	Continued urbanization and population growth.	Continued degradation of remaining habitat due to urban influences; cumulative effect not substantial.

4.1 AGENCY COORDINATION

As part of the I-73 Location Study, federal, state, and local agencies were contacted to obtain pertinent information and to identify key issues regarding potential environmental impacts for the project (see Appendix C of the DEIS). The DEIS was then distributed for review and comment and the FEIS addressed the comments received (see Appendices B and C of the FEIS for the full list of agencies and comments and responses).

Given that this EA is considering revisions to the I-73 Adopted Location Corridor (ALC) and that the proposed realignment is wholly contained in Henry County and located only one to two miles from the ALC, additional coordination included only the following affected state and local agencies:

- U.S. Department of Agriculture, Natural Resources Conservation Service
- Virginia Department of Conservation and Recreation
- Virginia Department of Health
- Virginia Department of Historic Resources
- City of Danville – City Manager
- City of Martinsville – City Manager
- City of Martinsville – Director of Water Resources (Martinsville Reservoir)
- City of Martinsville – Planning Commission
- Franklin County – County Administrator
- Henry County – County Administrator
- Henry County – Director of Parks and Recreation
- Henry County – Director of Planning, Zoning, and Inspections
- Henry County – Director of Public Works
- Henry County – Superintendent, Henry County Public Schools
- Pittsylvania County – County Administrator
- West Piedmont Planning District Commission – Executive Director

A review copy of this Environmental Assessment will be distributed to these agencies when it is made available for public review.

4.2 PUBLIC INVOLVEMENT

Several rounds of public meetings were held as part of the I-73 Location Study. Following the Commonwealth Transportation Board's March 1994 and December 1994 resolutions supporting the general I-73 corridor through Virginia, two sets of meetings were held to review I-73 alternatives and environmental analyses. The various options comprising the I-73 Build Alternative along with the No-Build Alternative and the TSM Alternative were presented during

a series of open forum citizen information meetings in May, June, and July of 1998 and during Location Public Hearings held in December of 2000.

For the current study, Henry County Geographic Information System (GIS) databases and property tax records were researched to identify owners of those properties that would need to be accessed to conduct fieldwork (e.g., cultural resources, noise monitoring). Property owner notification letters were sent to the affected parties that included information about the project and the need to access properties for field studies.

A Location Public Hearing will be held to present information, including this Environmental Assessment, about the potential alignment change and to obtain input and comments from the community. Comments received will be considered prior to making a final decision about the Henry County Alternative.

Appendix A
NRCS-CPA-106 FORM

**FARMLAND CONVERSION IMPACT RATING
FOR CORRIDOR TYPE PROJECTS**

PART I (To be completed by Federal Agency)		3. Date of Land Evaluation Request 12/14/10	4. Sheet 1 of 1
1. Name of Project I-73 Henry County Alternative		5. Federal Agency Involved Federal Highway Administration	
2. Type of Project Interstate Highway		6. County and State Henry County, VA	
PART II (To be completed by NRCS)		1. Date Request Received by NRCS 12/14/10	2. Person Completing Form J. C. Freyman, SRS
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		4. Acres Irrigated 174	Average Farm Size 174
5. Major Crop(s) Pasture	6. Farmable Land in Government Jurisdiction Acres: 53,064 %	7. Amount of Farmland As Defined in FPPA Acres: estimated @ 45% %	
8. Name Of Land Evaluation System Used	9. Name of Local Site Assessment System	10. Date Land Evaluation Returned by NRCS 12/29/10	

PART III (To be completed by Federal Agency)	Alternative Corridor For Segment _____			
	Corridor A	Corridor B	Corridor C	Corridor D
A. Total Acres To Be Converted Directly	2,199.5			
B. Total Acres To Be Converted Indirectly, Or To Receive Services				
C. Total Acres In Corridor	2,199.5	0	0	0

PART IV (To be completed by NRCS) Land Evaluation Information	
A. Total Acres Prime And Unique Farmland	123.1
B. Total Acres Statewide And Local Important Farmland	1,185.7
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	<1%
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	50

PART V (To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)	46
--	-----------

PART VI (To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))	Maximum Points				
1. Area in Nonurban Use	15	10			
2. Perimeter in Nonurban Use	10	8			
3. Percent Of Corridor Being Farmed	20	1			
4. Protection Provided By State And Local Government	20	0			
5. Size of Present Farm Unit Compared To Average	10	5			
6. Creation Of Nonfarmable Farmland	25	17			
7. Availability Of Farm Support Services	5	5			
8. On-Farm Investments	20	12			
9. Effects Of Conversion On Farm Support Services	25	0			
10. Compatibility With Existing Agricultural Use	10	5			
TOTAL CORRIDOR ASSESSMENT POINTS	160	63	0	0	0

PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)	100	46			
Total Corridor Assessment (From Part VI above or a local site assessment)	160	63	0	0	0
TOTAL POINTS (Total of above 2 lines)	260	109	0	0	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES <input type="checkbox"/> NO <input type="checkbox"/>
5. Reason For Selection:			

Geospatial evaluation using Arc Map and the shape file (HCA 600 foot corridor) provided by Parsons and USDA NRCS Henry County Soil Survey spatial and tabular data.
NOTE: (Total Acres to be converted directly include only 2 of the Water map units (.707 calcares+ 1.949 calcares in southern portion of corridor) - J.C. Freyman, SRS 12/29/2010

Signature of Person Completing this Part: _____ DATE _____

NOTE: Complete a form for each segment with more than one Alternate Corridor

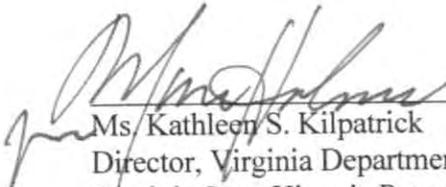
Appendix B
VDHR CONCURRENCE LETTERS

cc: Ed Sundra, FHWA - w/attachments
Reid Nelson, ACHP - w/attachments
Wenonah G. Haire, Catawba Indian Nation THPO - w/attachments
Philip A. Francis, Jr., NPS-BRP - w/o attachments
David A. Bowers, City of Roanoke - w/o attachments
B. Clayton Goodman III, County of Roanoke - w/o attachments
Benny Summerlin, Henry County - w/attachments
Ann M. Rogers, VAR - w/attachments
Virginia R. King, Martinsville-Henry County Historical Society - w/attachments

.....

The Virginia Department of Historic Resources concurs with the Virginia Department of Transportation's recommendations below regarding VDOT Project No. 0073-962-F01, P101; iPM 16596 (VDHR File No. 1994-0572) that:

- 1) The two previously recorded properties, DSS #044-0112 and DSS #044-0113, are not eligible for the NRHP under Criteria A, B, C, or D; and
- 2) The 36 newly recorded properties, DSS #044-5458 thru #044-5493, inclusive, are not eligible for the NRHP under Criteria A, B, C, or D; and
- 3) There are no (rural) historic districts present within the HCA's area of potential effects.



Ms. Kathleen S. Kilpatrick
Director, Virginia Department of Historic Resources
Virginia State Historic Preservation Officer

30 Dec 10
Date

DHR # 1994-0572

* also concern that archaeological survey will be necessary if CTB chooses this alignment.

Ms. K. Kilpatrick
December 13, 2010
Page Three

Ann M. Rogers, VAR - w/attachments
Virginia R. King, Martinsville-Henry County Historical Society - w/attachments

.....

The Virginia Department of Historic Resources concurs with the Virginia Department of Transportation's recommendations below regarding VDOT Project No. 0073-962-F01, P101; iPM 16596 (VDHR File No. 1994-0572) that the two newly recorded architectural properties, DSS #044-5494 and DSS #044-5542, are not eligible for the NRHP under Criteria A, B, C, or D.



Ms. Kathleen S. Kilpatrick
Director, Virginia Department of Historic Resources
Virginia State Historic Preservation Officer

25 Jan 11

Date

DHR* 1994-0572

Appendix C

NOISE IMPACT ANALYSIS TECHNICAL REPORT

NOISE IMPACT ANALYSIS TECHNICAL REPORT

**I-73 Corridor Study
Henry County Alternative**

Henry County

PROJECT: 0073-962-F01, P-101

UPC: 16596

**From: Route 108/890 Near Figsboro
To: Route 87 Southeast of Ridgeway**



Prepared by:

**Monica Franz
Environmental Division
Virginia Department of Transportation**

December 2010

Table of Contents

1. Summary	1
2. Introduction.....	3
2.1 Project Description.....	3
2.2 Existing Condition	5
2.3 Alternatives Considered.....	5
2.3.1 No-Build	5
2.3.2 HCA Alternative	5
3. Guidelines and Criteria	6
4. Existing Noise Conditions	8
5. Noise Model and Projections	10
5.1 Highway Noise Computation Model	10
5.2 Traffic Data for Traffic Noise Computations	10
6. Noise Impact Assessment	11
6.1 Existing Conditions.....	12
6.2 No Build Alternative.....	14
6.3 HCA Build Alternative	14
6.4 HCA Build Alternative- Modified.....	16
7. Noise Abatement.....	19
7.1 Alignment Modification and Traffic Management.....	19
7.2 Noise Barriers	20
8. Construction Noise.....	23

List of Figures

Figure 1: Regional Location Map	4
Figure 2: HCA Build Alternative Modified at Fletcher Farm Park	18

List of Tables

Table 1: FHWA Noise Abatement Criteria	7
Table 2: Short-term Noise Monitoring Summary	9
Table 3: Existing and No-Build Noise Levels	14
Table 4: 66 dBA Noise Contours	17

List of Appendices

Appendix A: Noise Study Graphics	A-1
Appendix B: Noise Monitoring Data Sheets	B-1

1. Summary

The Virginia Department of Transportation (VDOT), in cooperation with the Federal Highway Administration (FHWA), is conducting a corridor study to evaluate an alternative to meet existing and future travel needs along the proposed I-73 corridor. The Commonwealth Transportation Board approved the Adopted Location Corridor (ALC) on July 15, 2004. VDOT completed and FHWA approved the Final Environmental Impact Statement (FEIS) in November, 2006. A modified alternative through Henry County is being reviewed at the request of the Henry County Board of Supervisors, and is referred to as the Henry County Alternative (HCA).

The HCA under evaluation is a new location roadway through Henry County, west of the ALC. The HCA follows along the existing Route 58 Bypass corridor for approximately 5 miles. Noise impact along the HCA was assessed in accordance with procedures and criteria approved by FHWA and VDOT. Noise impact was determined using noise contours, discussed further in *Section 6.3*. There are two areas which are potentially noise impacted, parts of Noise Sensitive Area (NSA) 2 and NSA 6. However, because project plans, interchange plans, and property displacements have not been developed, the sites would need to be evaluated further for impact and noise abatement during the final design stage with the selected alternative.

Along new-alignment roadways, where the project alternative passes through areas that are remote from major noise sources and that have relatively low existing noise levels, substantial increases from the existing to build case noise level commonly occur. Because of the limited plans available, noise impact was based on contour data, therefore substantial increase impacts were not determined. This type of impact would be evaluated during final design with the selected alternative.

This information is preliminary and should be considered to be very approximate since the project is not developed to a stage where a reliable cost estimate can be provided in regard to determining cost effectiveness. Once the selected alternative has received design approval, a

later study will determine noise impacts, barrier cost estimates, feasibility, and reasonableness of proposed noise abatement.

Construction activity may cause intermittent fluctuations in noise levels. During the construction phase of the project, all reasonable measures will be taken to minimize noise impact from these activities.

2. Introduction

2.1 Project Description

The I-73 HCA Corridor Study evaluates an alternative to the ALC through Henry County, Virginia. The HCA is located west of the ALC and follows the existing alignment of Route 58 Bypass for 5 miles. Interchanges would be constructed at five locations in the corridor.

The corridor begins in the north at Route 108/890 near Figsboro, and ends in the south at Route 87 Southeast of Ridgeway, where it ties back in with the ALC. *Figure 1* illustrates the project from a regional perspective, and depicts the HCA study area in relation to the ALC.

2.2 Existing Condition

The existing condition through the corridor is rural. Few major routes exist in the study corridor, including Route 58 and Route 58 Bypass. The corridor has residences, churches, schools and commercial land uses, as well as areas of undeveloped land. The corridor has areas of steep terrain and dense vegetation. Noise monitoring was completed at nine (9) sites in the corridor, to represent existing noise levels in the study area. The monitoring results are discussed in **Section 4** of this report.

2.3 Alternatives Considered

In accordance with National Environment Policy Act (NEPA) requirements, alternatives considered for the I-73 HCA Corridor Study include the No-Build, and the HCA Build Alternative. Each alternative has been evaluated with respect to its potential impacts and its ability to address the project's purpose and need.

2.3.1 No-Build

Consistent with the requirements of the NEPA and related FHWA guidelines, full consideration is given to the environmental consequences of taking no action to meet future travel demand. The No-Build Alternative, while having no direct construction costs, would result in other economic, environmental, and quality of life impacts that can be expected from the continuation of roadway system deficiencies. While the No-Build alternative does not meet the project needs for traffic, safety, and roadway infrastructure improvements, it provides a baseline condition with which to compare the improvements and consequences associated with the build alternative.

2.3.2 HCA Alternative

The HCA is an alternative to the ALC. It would be a four lane roadway (two lanes each direction) with a 50-foot median. The roadway would be constructed on new location, except where the corridor overlaps the existing Route 58 Bypass. The existing roadways, the HCA alternative, and noise sensitive sites are shown in the figures in **Appendix A**.

3. Guidelines and Criteria

The potential noise impact of the proposed project has been assessed in accordance with FHWA guidelines published in Volume 7, Chapter 7, Section 2 of the Federal Aid Policy Guide (FAPG 7-7-2) and with the State Noise Abatement Policy. In order to determine the degree of impact of highway traffic noise on human activity, the Noise Abatement Criteria (NAC), *Table 1*, established by FAPG 7-7-2 is used. The NAC, listed in *Table 1* for various activities, represent the upper limit of acceptable traffic noise conditions and also a balancing of that which may be desirable with that which may be achievable. The NAC applies to areas having regular human use and where lowered noise levels are desired. They do not apply to the entire tract of land on which the activity is based, but only to that portion where the activity takes place.

The NAC is given in terms of the hourly, A-weighted, equivalent sound level in decibels (dBA). The A-weighted sound level is a single number measure of sound intensity with weighted frequency characteristics that correspond to human subjective response to noise. However, since most environmental noise fluctuates from moment to moment, it is common practice to condense all of this information into a single number called the equivalent sound level (Leq). The Leq is the value of a steady sound level that would represent the same sound energy as the actual time-varying sound evaluated over the same time period. For highway traffic noise assessment, Leq is typically evaluated over a one-hour time period, and is denoted as Leq(h).

The noise impact assessment is made using the guidelines listed in *Table 1*. Noise-sensitive land uses potentially affected by this project are in Category B and consist of residences and places of worship, and Category C, which consists of commercial sites. In situations where there are no exterior activities that would be affected by traffic noise (such as may occur at places of worship or schools), noise impact is assessed with respect to the FHWA NAC for Activity Category E. If, for a given activity, the design year noise levels “approach or exceed” the NAC, then the activity is impacted and a series of abatement measures must be considered. The VDOT State Noise Abatement Policy defines “approach” as 1 dBA less than the NAC.

There is another criterion for assessing noise impact provided in the Federal guidelines. A receptor can be noise impacted if the design year build noise levels are substantially higher than existing levels. The VDOT State Noise Abatement Policy defines a substantial increase as 10 dBA or more, even though the levels may not reach the NAC.

If traffic noise impact is identified as a result of the project, then consideration of noise abatement measures is necessary. The final decision on whether or not to provide noise abatement along a project corridor will take into account the feasibility of the design and overall cost weighted against the environmental benefit.

Table 1: FHWA Noise Abatement Criteria

Hourly A-Weighted Sound Level Decibels (dBA)		
Activity Category	Leq(h)	Description Of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	Developed land, properties or activities not included in Categories A or B above.
D	---	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals and auditoriums.

Source: 23 CFR Part 772

4. Existing Noise Conditions

To assess existing noise conditions within the I-73 HCA Corridor study area, short term noise monitoring was conducted. During the noise monitoring, a windshield survey of noise-sensitive land uses and identification of major sources of acoustical shielding was conducted to supplement the mapping provided. A more thorough noise monitoring session will be conducted during the final design stage to better establish existing noise levels for more remote sites.

Noise monitoring was conducted in the vicinity of noise-sensitive land uses near the proposed project alignment. The noise monitoring characterized existing noise levels in the study area but were not necessarily conducted during the loudest hour of the day. The monitoring data can be used as the baseline against which probable future noise levels are compared and potential impacts assessed.

Short-term noise measurements of 10 to 20 minutes duration were obtained at a total of nine (9) sites on September 9, 2010 in the project corridor. These short-term measurements were conducted with a Larson Davis System 824 noise meter, a Type I (precision) instrument. Prior to noise monitoring, the noise meter was calibrated using CAL200 precision acoustic calibrator. Readings were in the A-weighted scale and were reported in decibels (dBA). The data collection procedure involved the Leq measurements in consecutive 10 seconds intervals. This method allows individual time intervals that include noise events unrelated to traffic noise (such as aircraft overflights) to be excluded from consideration. Data collected by the noise meter included time, average noise level (Leq), maximum noise level (Lmax), and instantaneous peak noise level (Lpk) for each interval. Hourly average noise levels (Leq (h)) were derived at each location from the 10 minute (or 20 minute, depending with the site) Leq values. Additional data collected at each monitoring location included atmospheric conditions such as wind speed humidity and ambient temperature.

A summary of the short-term noise monitoring results is presented in **Table 2**. For each site, the table lists the assigned site number, the location and a description of the associated land use, the

monitored sound level, and the dominant sources of noise at each site. Ten (10) minute (or 20 minute) traffic data (vehicle volume composition and speed) were also recorded on all roadways which were visible from the monitoring site and significantly contributed to the overall noise level. Traffic was grouped into one of the three categories: automobiles, medium trucks and heavy trucks, per VDOT procedure.

The location of each noise monitoring site in relation to the HCA build alternative is shown on the graphics located in *Appendix A*. The field data sheets are presented in *Appendix B*.

The monitored Leq in the study corridor ranged from 39 dBA at site M2, to 61 dBA at site M7. The dominant noise sources in the study area were traffic on the existing highway, exit ramps, and local roads. Very few time intervals reflected noise sources other than roadway traffic. These intervals, which consisted of noise from aircraft, distant lawn mower, and local traffic, were later excluded from the measured Leq calculation.

Table 2: Short-term Noise Monitoring Summary

Site	Location	Land-use Description	Dominant Sources of Noise	Leq (dBA)
M1	Dyer Store Road	Residential	Ambient	42
M2	Omega Dr	Residential	Ambient	39
M3	McPeck Dr	Residential	Ambient	41
M4	Red Hill Rd	Residential	Route 58	51
M5	Chatsmoss Crossing Way	Residential	Route 58	54
M6	Freedom First Baptist Church	Church (Parking Lot)	Route 58	53
M7	Eggleston Falls Rd	Residential	Route 58	61
M8	Eggleston Falls Rd	Residential	Ambient	49
M9	Mitchell Rd	Residential	Ambient	40

5. Noise Model and Projections

5.1 Highway Noise Computation Model

A review of the project corridor has established roadway traffic as the dominant source of noise for the build alternative. Since roadway noise can be determined accurately through computer modeling techniques for areas that are dominated by road traffic, design year traffic noise calculations have been performed using the Federal Highway Administration's Traffic Noise Model (FHWA TNM®) Version 2.5. FHWA TNM ® was developed and sponsored by the U. S. Department of Transportation and John A. Volpe National Transportation Systems Center, Acoustics facility. The TNM computer model can account for such factors as ground absorption, roadway geometry, receptor distance, shielding from local terrain and structures, vehicle volume, operating speed, and volumes of medium trucks (vehicles with 2 axles and 6 tires) and heavy trucks.

Although the TNM model can account for terrain features, only a 2-dimensional model was used, which represents a worse case condition. Plans have not been developed to a stage where elevations have been determined. A 3-dimensional model with terrain features will be used during final design stages with the selected build alternative. Typically, a noise model validation exercise is carried out to compare noise monitoring results to predicted noise levels. However, because only a 2- dimensional model was used for the build case, noise model validation was not completed. The monitoring data provides a good representation of the existing noise levels throughout the corridor. A more thorough noise monitoring session will be conducted during the final design stage to in an effort to validate the final design noise model.

5.2 Traffic Data for Traffic Noise Computations

Traffic data for traffic noise computations were supplied as hourly volumes and operating speeds by roadway segment for the 2010 Existing condition, and design-year 2035 no-build and build conditions. Separate medium and heavy truck percentages were provided by roadway segment. As required by FHWA and VDOT, the noise analysis was performed for the loudest hour of the

day. Noise levels have been predicted for that hour of the day when the vehicle volume, operating speed, and number of trucks (vehicles with 3 or more axles) combine to produce the worst noise conditions. For the design year build condition, the worst noise hour used in this study was 9 to 10 a.m.

An active rail line is within the project corridor. Rail traffic data was supplied by Norfolk Southern. Rail traffic noise levels were predicted using the Federal Transit Administration's (FTA) Freight Rail Noise Model. The output from the rail noise model was then applied to a TNM roadway. The TNM roadway was placed along the rail alignment, and contained autos and heavy trucks which would produce a similar noise level to the rail traffic. For the analysis, it was assumed that the rail traffic data and track alignments were the same for the existing, no build, and build conditions.

6. Noise Impact Assessment

Noise levels in the study area have been determined for the existing condition, the no-build condition, and the design year (2035) build condition for the HCA build alternative. Existing and no-build noise levels were based on the monitoring data. Build condition noise levels were determined using noise contours (discussed in *Section 6.3*). For reporting purposes, the project area was divided into areas of common noise environment, referred to as Noise Sensitive Areas (NSA). The NSAs were selected based on the HCA build segment in which they are located.

Assessment of traffic noise impact requires three comparisons:

- (1) The noise levels under existing conditions must be compared to those under design year build conditions. This comparison shows the change in noise levels that will occur between the existing year and the design year if the project is constructed, to determine if the substantial increase impact criteria has been met.

- (2) The noise levels under design year no-build conditions must be compared to those under design year build conditions. This comparison shows how much of the change in noise levels can actually be attributed to the proposed project.

- (3) The noise levels under design year build conditions must be compared to the applicable NAC. This comparison determines if the impact criteria has been met under future build conditions and can be used to assist in noise compatible land use planning.

Noise impacts are predicted in two NSAs under the build condition, as a result of approaching the applicable NAC.

6.1 Existing Conditions

The existing noise levels are based on the monitoring results. The existing year (2010) noise levels range from 39 to 61 dBA.

NSA 1 – HCA Segment 1 – Figsboro Rd to Barrows Mill Rd (Appendix A, Sheets 2, 3)

NSA 1 is located along both sides of the roadway at the northern end of the project, from Figsboro Road to Barrows Mill Road. Monitoring site M1 is located in NSA 1. Due to distance from existing roadways, modeling was not completed for NSA 1. The monitored level for site M1 is used to represent the existing noise level in the area. Existing noise levels within NSA 1 are 42 dBA. Noise impact is not predicted to occur under the existing condition.

NSA 2 – HCA Segment 2 – Barrows Mill Rd to Route 57 (Appendix A, Sheets 4, 5)

NSA 2 is located along both sides of the roadway along HCA segment 2, from Barrows Mill Rd to Route 57. Monitoring sites M2 and M3 are located in NSA 2. Due to distance from existing roadways, modeling was not completed for NSA 2. The monitored level for sites M2 and M3 are used to represent the existing noise level in the area. Existing noise levels within NSA 2 range from 39 to 41 dBA. Noise impact is not predicted to occur under the existing condition.

NSA 3 – HCA Segment 3 – Route 57 to Route 58 (Appendix A, Sheets 6, 7)

NSA 3 is located along both sides of the roadway along HCA segment 3, from Route 57 to Route 58. Due to distance from existing roadways, modeling was not completed for NSA 3. Since the environment is similar, the monitored level for sites M2 and M3 are used to represent the

existing noise level in the area. Existing noise levels within NSA 3 range from 39 to 41 dBA. Noise impact is not predicted to occur under the existing condition.

NSA 4 – HCA Segment 4 – Route 58 to Irisburg Rd (Appendix A, Sheets 7, 8, 9)

NSA 4 is located along both sides of the roadway along HCA segment 4, from Route 58 to Irisburg Road. This segment is along the existing Route 58 Bypass, however modeling was not completed for the existing condition and instead the monitored results are used to represent the existing case. Monitoring sites M4 and M5 are located in NSA 4. Existing noise levels within NSA 4 range from 51 to 54 dBA. Noise impact is not predicted to occur under the existing condition.

NSA 5 – HCA Segment 5 – Irisburg Rd to Clover Rd (Appendix A, Sheets 9, 10)

NSA 5 is located along both sides of the roadway along HCA segment 5, from Irisburg Road to Clover Road. This segment is along the existing Route 58 Bypass, however modeling was not completed for the existing condition and instead the monitored results are used to represent the existing case. Monitoring site M6 is located in NSA 5, and monitoring site M7, while located slightly beyond NSA 5, is also used to represent NSA 5. Existing noise levels within NSA 5 range from 53 to 61 dBA. Noise impact is not predicted to occur under the existing condition.

NSA 6 – HCA Segment 6 – Clover Rd to Route 87 (Appendix A, Sheets 10, 11, 12)

NSA 6 is located along both sides of the roadway at the southern end of the project, along HCA segment 6, from Clover Road to Route 87. Monitoring sites M8 and M9 are located in NSA 6. Due to distance from existing roadways, modeling was not completed for NSA 6. The monitored level for sites M8 and M9 are used to represent the existing noise level in the area. Existing noise levels within NSA 6 range from 40 to 49 dBA. Noise impact is not predicted to occur under the existing condition.

In the area of Fisher Farm Park, an alignment shift is being considered in order to reduce potential displacements. This affects only a small area of NSA 6, shown in **Figure 2**. The existing noise levels would range from 40 to 49 dBA which is consistent within NSA 6.

6.2 No Build Alternative

No-build condition noise levels are based on the monitoring results. In areas near existing roadways, a worst case scenario can be assumed, that the traffic volume doubles to design year 2035. A doubling of volume results in a 3 dB increase in noise levels. However, in rural areas remote from existing roadways, it is difficult to predict future ambient noise levels. For these areas, it is assumed that the ambient noise is generated by the existing roads, and therefore if the traffic volume is doubled on the roadway, these areas would also experience a 3 dB increase in noise levels. This assumes a worst case for both situations. The overall no-build (2035) noise levels are predicted to range from 42 to 64 dBA. Noise levels are listed in a table format below. Descriptions of the NSAs are listed in the existing conditions, *Section 6.1*. Noise impact is not predicted to occur under the design year (2035) no-build condition.

Table 3: Existing and No-Build Noise Levels

NSA	Representative Monitoring Sites	Existing Noise Level (dBA)	No Build Noise Level (dBA)	Appendix A Sheets
1	M1	42	45	2, 3
2	M2, M3	39 – 41	42 – 44	4, 5
3	M2, M3	39 – 41	42 – 44	6, 7
4	M4, M5	51 – 54	54 – 57	7, 8, 9
5	M6, M7	53 – 61	56 – 64	9, 10
6	M8, M9	40 – 49	43 – 52	10, 11, 12

6.3 HCA Build Alternative

Noise impact for the build condition was assessed using noise contours. Noise contours are lines of equal noise exposure that parallel the roadway noise source, and diminish in intensity with distance. For the design year (2035) build condition, the location of the 66 dBA noise contour line was determined for areas along the project corridor for the purpose of characterizing the noise environment in the study area. The contours were modeled in the two-dimensional TNM model, therefore due to terrain features the actual noise contours may vary from those predicted. The contour distance is measured from the center of the lane group. The noise contours are listed below in *Table 4* and illustrated in the graphics in *Appendix A*. Any Category B noise sensitive properties within the noise contours should be considered noise impacted if no sound barrier is present to reduce noise levels.

Because Category B noise sensitive receptors fall within the noise contour, noise impact is predicted to occur in areas of NSAs 2 and 6, as discussed below. However, because plans are not developed to a stage where property displacements have been determined, noise abatement has not been evaluated. There is potential that the impacted sites would be displaced and therefore noise barriers would no longer be warranted.

NSA 1 – HCA Segment 1 – Figsboro Rd to Barrows Mill Rd (Appendix A, Sheets 2, 3)

NSA 1 is located along both sides of the roadway at the northern end of the project, from Figsboro Road to Barrows Mill Road. Monitoring site M1 is located in NSA 1. The 66 dBA noise contour was determined to be 185 feet from the northbound lane group, and 175 feet from the southbound lane group. Noise impact is not predicted to occur under the build condition.

NSA 2 – HCA Segment 2 – Barrows Mill Rd to Route 57 (Appendix A, Sheets 4, 5)

NSA 2 is located along both sides of the roadway along HCA segment 2, from Barrows Mill Rd to Route 57. Monitoring sites M2 and M3 are located in NSA 2. The 66 dBA noise contour was determined to be 190 feet from the northbound lane group, and also 190 feet from the southbound lane group.

Noise sensitive receptors fall within the noise contour in one area, the vicinity of Route 57. Therefore noise impact is predicted to occur under the build condition. However, since roadway plans have not been developed to a stage where the interchange configuration and property displacements have been determined, this area would be evaluated at the final design stage to determine if noise abatement is warranted.

NSA 3 – HCA Segment 3 – Route 57 to Route 58 (Appendix A, Sheets 6, 7)

NSA 3 is located along both sides of the roadway along HCA segment 3, from Route 57 to Route 58. The 66 dBA noise contour was determined to be 175 feet from the northbound lane group, and 170 feet from the southbound lane group. Noise impact is not predicted to occur under the build condition.

NSA 4 – HCA Segment 4 – Route 58 to Irisburg Rd (Appendix A, Sheets 7, 8, 9)

NSA 4 is located along both sides of the roadway along HCA segment 4, from Route 58 to Irisburg Road. This segment is along the existing Route 58 Bypass. The 66 dBA noise contour was determined to be 190 feet from the northbound lane group, and 185 feet from the southbound lane group. Noise impact is not predicted to occur under the build condition.

NSA 5 – HCA Segment 5 – Irisburg Rd to Clover Rd (Appendix A, Sheets 9, 10)

NSA 5 is located along both sides of the roadway along HCA segment 5, from Irisburg Road to Clover Road. This segment is along the existing Route 58 Bypass. The 66 dBA noise contour was determined to be 180 feet from the northbound lane group, and 170 feet from the southbound lane group. Noise impact is not predicted to occur under the build condition.

NSA 6 – HCA Segment 6 – Clover Rd to Route 87 (Appendix A, Sheets 10, 11, 12)

NSA 6 is located along both sides of the roadway at the southern end of the project, along HCA segment 6, from Clover Road to Route 87. Monitoring sites M8 and M9 are located in NSA 6. The 66 dBA noise contour was determined to be 160 feet from the northbound lane group, and 150 feet from the southbound lane group.

Noise sensitive receptors fall within the noise contour in NSA 6, at the trailer park along Poteat Drive, and at a dwelling on Old Mill Road. Therefore noise impact is predicted to occur under the build condition. However, since roadway plans have not been developed to a stage where property displacements have been determined, this area would be evaluated at the final design stage to determine if noise abatement is warranted.

6.4 HCA Build Alternative- Modified

In the area of Fisher Farm Park, an alignment shift is being considered in order to reduce potential displacements. This affects only a small area of NSA 6, shown in **Figure 2**. The noise contour distance for the build alternative remains the same as the calculated HCA original noise contour distance, which was 160 feet from the northbound lane group, and 150 feet from the southbound lane group. It appears that the areas of frequent human use (i.e. the ball fields,

picnic areas, and playground) are beyond the 66 decibel contour line therefore noise impact is not anticipated. If the modified alternative is selected, noise impacts would be evaluated further with final design.

Table 4: 66 dBA Noise Contours

HCA Build Alternative Segment (NSA)	Direction	Distance to 66 dBA Noise Contour (ft)
1	Northbound	185
1	Southbound	175
2	Northbound	190
2	Southbound	190
3	Northbound	175
3	Southbound	170
4	Northbound	190
4	Southbound	185
5	Northbound	180
5	Southbound	170
6	Northbound	160
6	Southbound	150

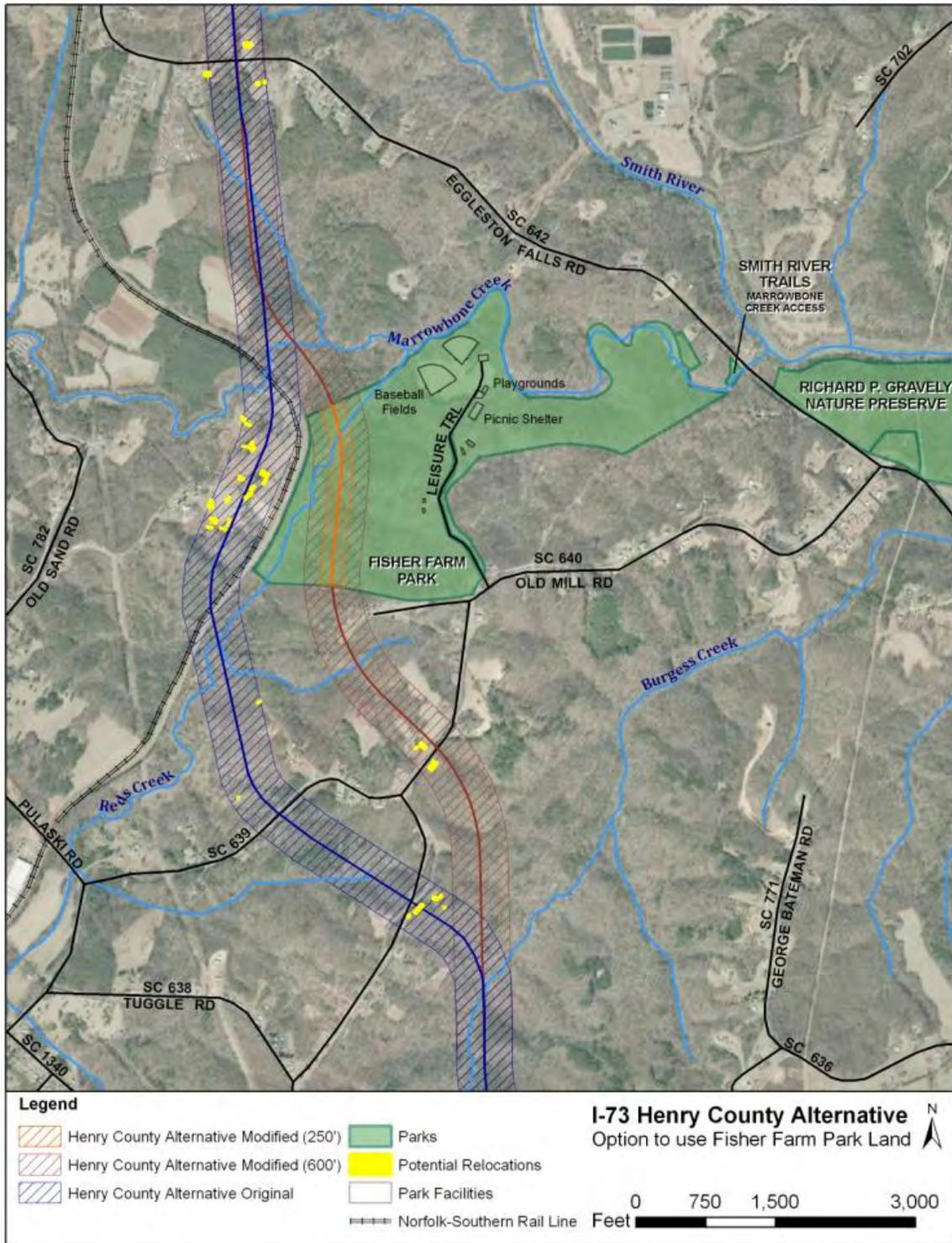


Figure 2: HCA Build Alternative Modified at Fisher Farm Park

7. Noise Abatement

Design year noise levels have been predicted to approach or exceed the VDOT NAC in the project corridor. Therefore, per VDOT's State Noise Abatement Policy, noise abatement considerations are warranted for these areas. However, because the design plans, particularly the interchange configuration and property displacements, have not been developed, noise abatement has not been evaluated. Noise abatement will be considered and evaluated for feasibility and reasonableness during the final design stage, with the selected alternative, as discussed below.

VDOT guidelines recommend a variety of mitigation measures that should be considered in response to transportation-related noise impacts. While noise barriers and/or earth berms are generally the most effective form of noise mitigation, additional mitigation measures exist which have the potential to provide considerable noise reductions, under certain circumstances.

Mitigation measures considered for this project include:

- Construction of noise barriers;
- Construction of earth berms;
- Acoustical insulation of public use and non-profit facilities;
- Alignment modifications;
- Traffic Management; and
- Property acquisition for severely impacted residential sites

7.1 Alignment Modification and Traffic Management

The alteration of the horizontal and vertical alignment has been considered to reduce or eliminate the impacts created by the proposed project. The alteration of horizontal and vertical alignment may be feasible for this project in areas along new location, but not in HCA segments 4 and 5, along the existing roadway. However, there are areas of steep terrain that may preclude placing the entire roadway into a cut. This would be evaluated during future design stages with the selected alternative.

Traffic management measures that may be considered in conjunction with this project include reduced speeds and truck restrictions. However, truck restrictions are not practical since this facility is designated as a major route which serves truck traffic. Reducing speeds will not be an effective noise mitigation measure since a substantial decrease in speed is necessary to provide adequate noise reduction. Typically, a 10 mph reduction in speed will result in only a 2 dBA decrease in noise level, which may not eliminate all impacts.

7.2 Noise Barriers

Noise walls and earth berms are often implemented into the highway design in response to the identified noise impacts. The effectiveness of a freestanding (post and panel) noise barrier and an earth berm of equivalent height are relatively consistent; however an earth berm is perceived as a more aesthetically pleasing option. The use of earth berms is not always an option due to the excessive space they require adjacent to the roadway corridor. At a standard slope of 2:1, every one-foot in height would require four feet of horizontal width. This requirement becomes more complex in urban settings where residential properties often abut the proposed roadway corridor. In these situations, implementation of earth berms can require significant property acquisitions to accommodate noise mitigation. The cost associated with the acquisition of property to construct a berm can significantly increase the total costs to implement this form of noise mitigation.

Availability of fill material to construct the berm also needs to be considered. On proposed projects where proposed grading yields excess waste material, earth berms are often cost effective mitigation options. On balance or borrow projects the implementation of earth berms is often an expensive solution due to the need to identify, acquire, and transport the material to the project site. Earth berms may be considered a viable mitigation option throughout the project area, and would be evaluated further where possible in the final design stage.

As a general practice, noise barriers are most effective when placed at a relatively high point between the roadway and the impacted noise sensitive land use. To achieve the greatest benefit from a potential noise barrier, the goal of the barrier should focus on breaking the line-of-sight

(to the greatest degree possible) from the roadway to the receptor. In roadway fill conditions, where the highway is above the natural grade, noise barriers are typically most effective when placed on the edge of the roadway shoulder or on top of the fill slope. In roadway cut conditions, where the roadway is located below the natural grade, barriers are typically most effective when placed at the top of the cut slope. Engineering and safety issues have the potential to alter these typical barrier locations.

The effectiveness of a noise barrier is measured by examining the barrier's capability to reduce future noise levels. Noise reduction is measured by comparing design year pre- and post-barrier noise levels. This difference between unabated and abated noise levels is known as insertion loss (IL). The following discussion presents potential mitigation measures for each of the impacted noise sensitive land uses.

According to VDOT guidelines, potential mitigation measures must also be assessed for feasibility and reasonableness. Noise barrier feasibility deals specifically with acoustical and engineering considerations such as:

- Noise barriers must reduce design year noise levels by 5 dBA for impacted sites;
- The barrier cannot deny access to local vehicular and/or pedestrian travel; and
- There cannot be significant engineering and/or safety problems associated with the barrier which preclude construction of the barrier (engineering, safety, and utility conflicts)

Noise barrier reasonableness is determined by assessing multiple issues including:

- The number of units protected;
- The desires of those citizens affected by the barrier;
- A comparison of existing and future noise levels;
- Total barrier cost and cost per protected and benefited property;
- Barrier constructability and maintainability; and
- Barrier impacts to utilities and drainage

Typically, the limiting factor related to barrier reasonableness is cost per protected dwelling unit, where a protected and/or benefited receptor receives at least a 5 dBA reduction in noise level. VDOT's current approved cost is \$30,000 per protected and/or benefited residence.

When a barrier exceeds the State Noise Abatement Policy's cost-effectiveness criteria, third party funding is required for the barrier to continue towards construction. FHWA and VDOT contribute the first \$30,000 for each protected or benefited property. The remainder must come from any source other than FHWA or VDOT. Final approval of all barriers will take into account the views of the impacted property owners. The final determination of a barrier's cost effectiveness will be based on the following:

- For residential properties, a barrier is cost effective when the cost does not exceed \$30,000 per protected or benefited residential unit.
- An impacted property is considered protected when it receives a noise reduction of at least 5 decibels.
- Should a non-impacted property receive 5 dBA or more of noise reduction then the property will be considered benefited and included in the cost per protected site equation.

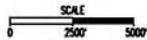
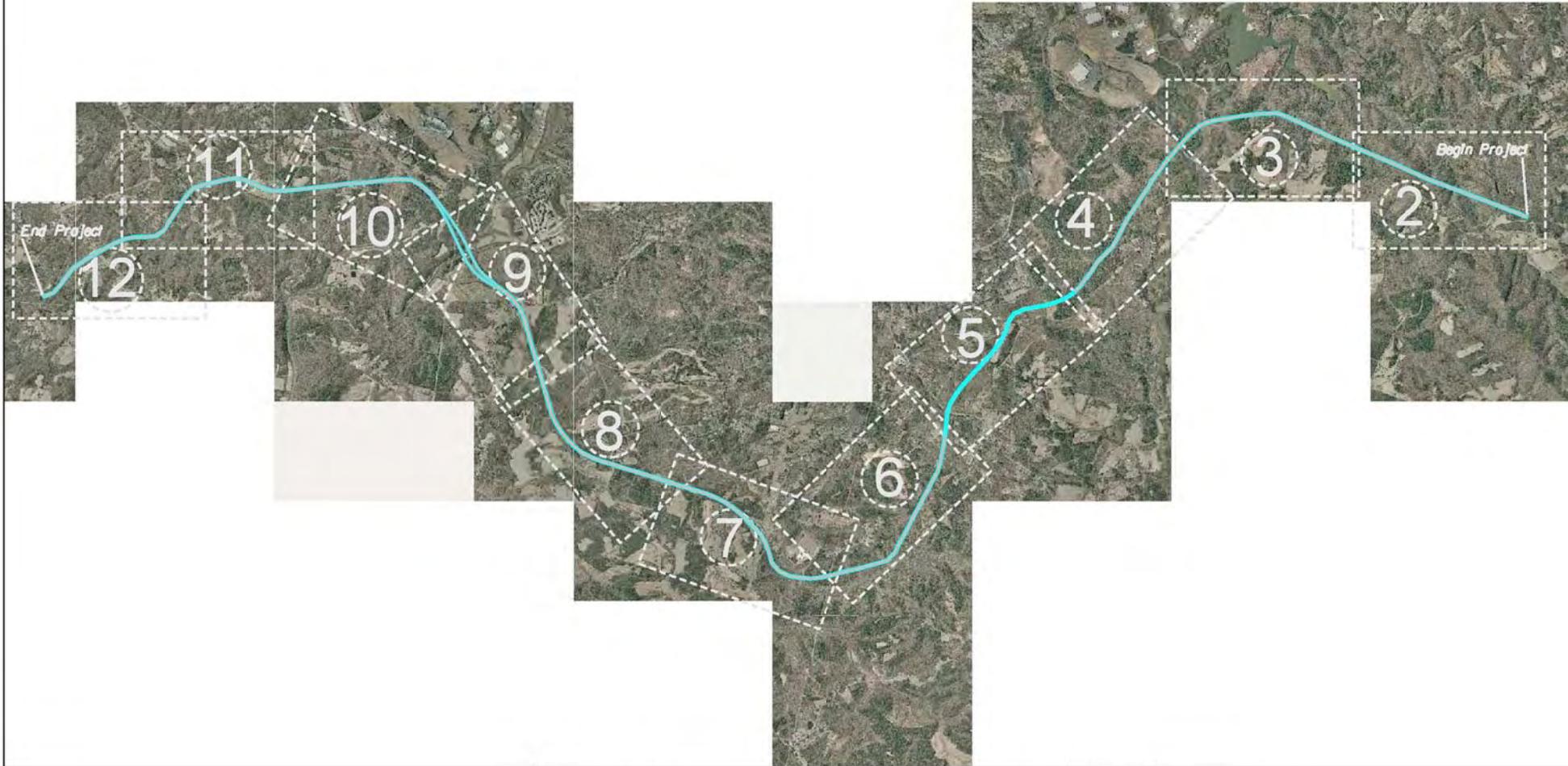
For non-residential properties such as parks, schools, and churches, the \$30,000 cost criterion does not apply. The determination is based on cost, severity of impact (both in terms of noise levels and the size of the impacted area and the activity it contains), and amount of noise reduction.

If the noise barriers are determined to be feasible, the affected public will be given an opportunity to decide whether they are in favor of construction of the noise barrier. A final determination as to the construction of barriers will be made after the public hearing process. Before final decisions and approvals can be made to construct a noise barrier, a detailed evaluation will be performed, and input from the impacted property owners must be obtained. All feasible noise barriers will be reviewed by the Joint VDOT/FHWA Noise Abatement Committee, which will make recommendations to the Chief Engineer for approval. Approved barriers will be incorporated into the road project plans.

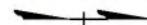
8. Construction Noise

Land uses that will be sensitive to traffic noise will also be sensitive to construction noise. A method of controlling construction noise is to establish the maximum level of noise that construction operations can generate. In view of this, VDOT has developed and FHWA has approved a specification that establishes construction noise limits. This specification can be found in VDOT's *2007 Road and Bridge Specifications*, Section 107.16(b.3), "Noise". The contractor will be required to conform to this specification to reduce the impact of construction noise on the surrounding community.

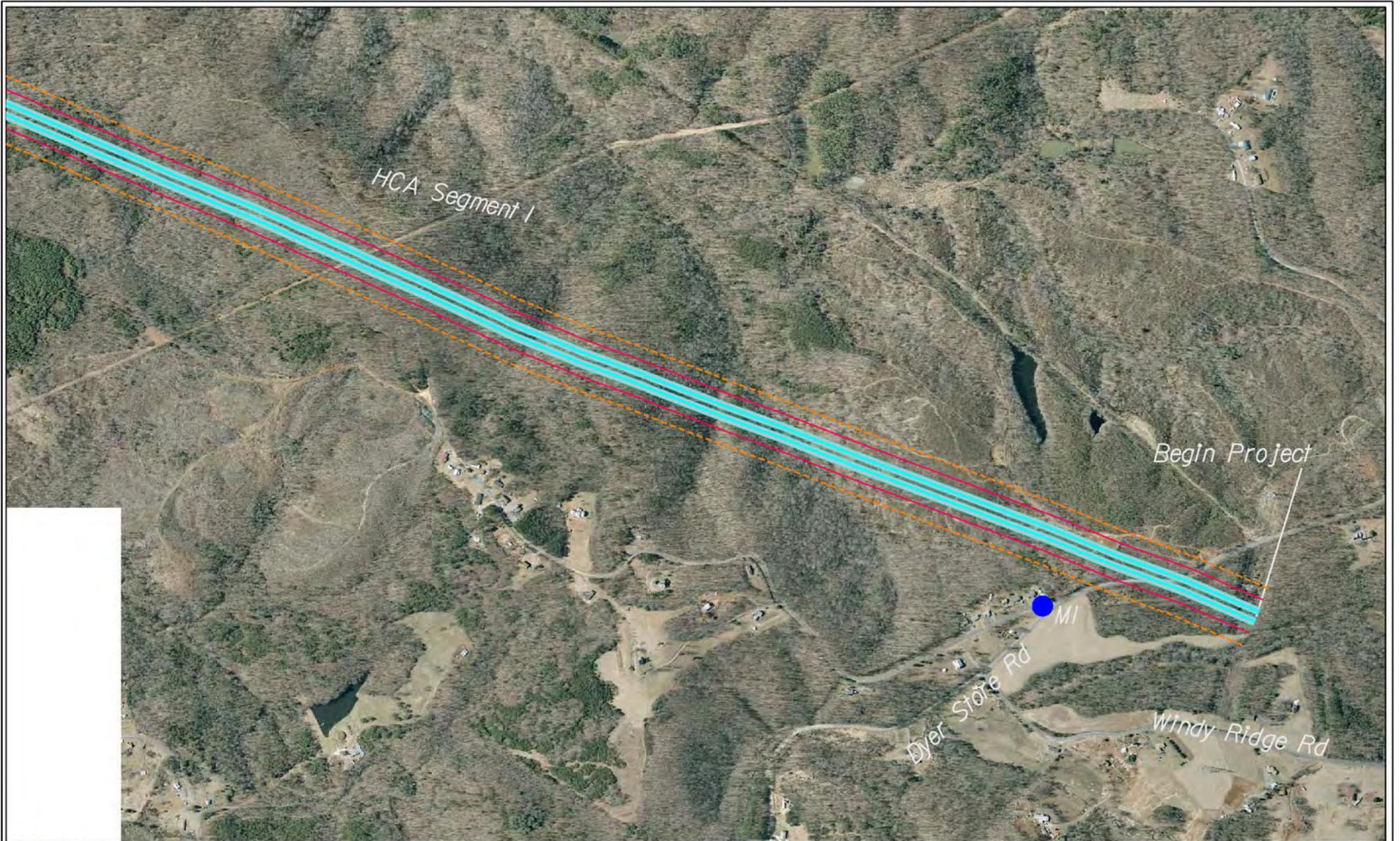
Appendix A: Noise Study Graphics



Appendix A
Sheet Index



UPC: 16696
State Project Number: 0073-962-F01, P-101
VDOT
Sheet 1 of 12 Date: November 2010

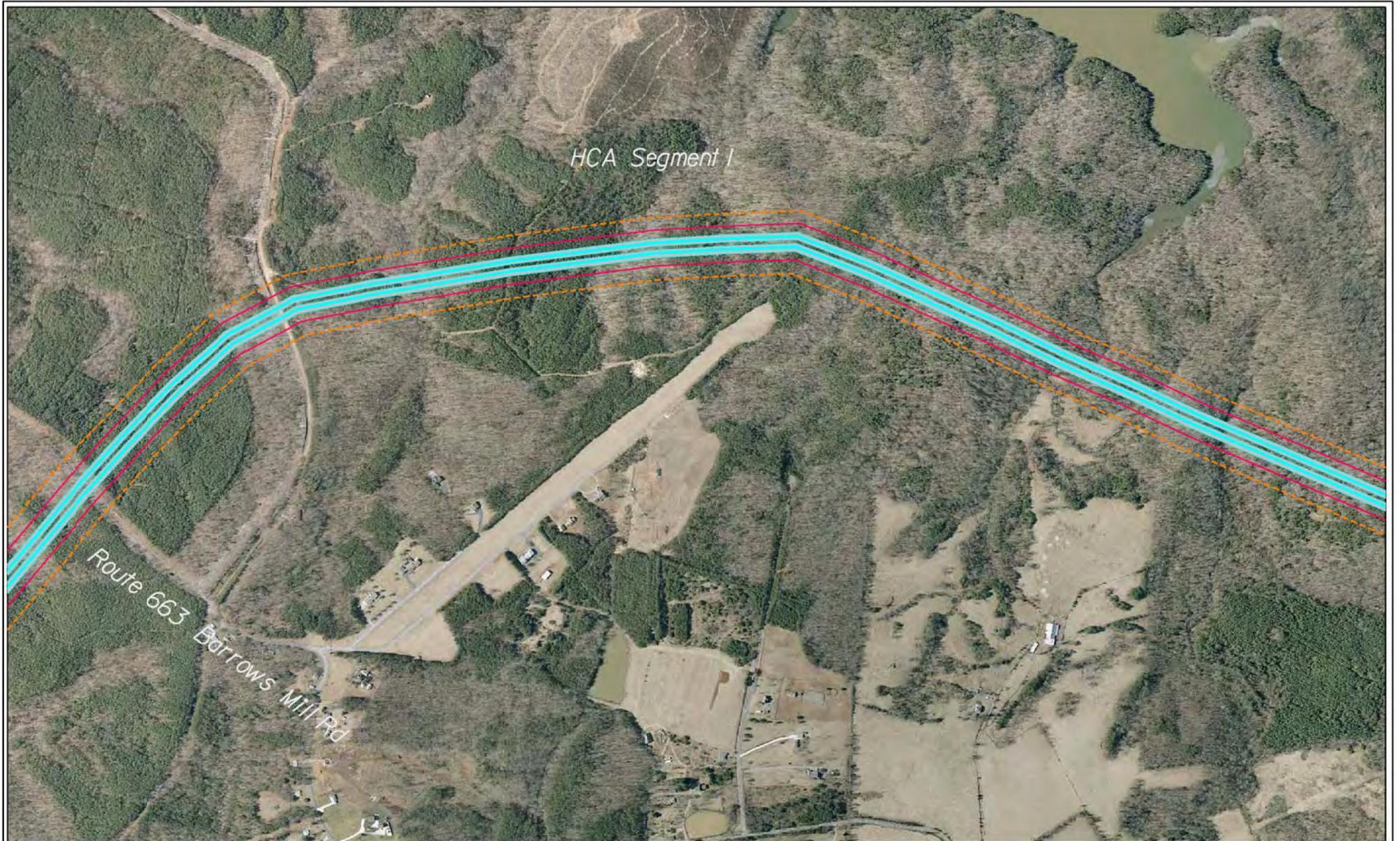


- Noise Monitoring Sites
- Potential Impacted Receptor Sites
- Proposed Alignment
- Proposed R/W Limits
- - - 66 dBA Noise Contour



UPC: 16596
 State Project Number: 0073-962-F01, P-101
 VDOT
 Sheet 2 of 12 Date: November 2010

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HCA Segment I

Route 663 Barrows Mill Rd

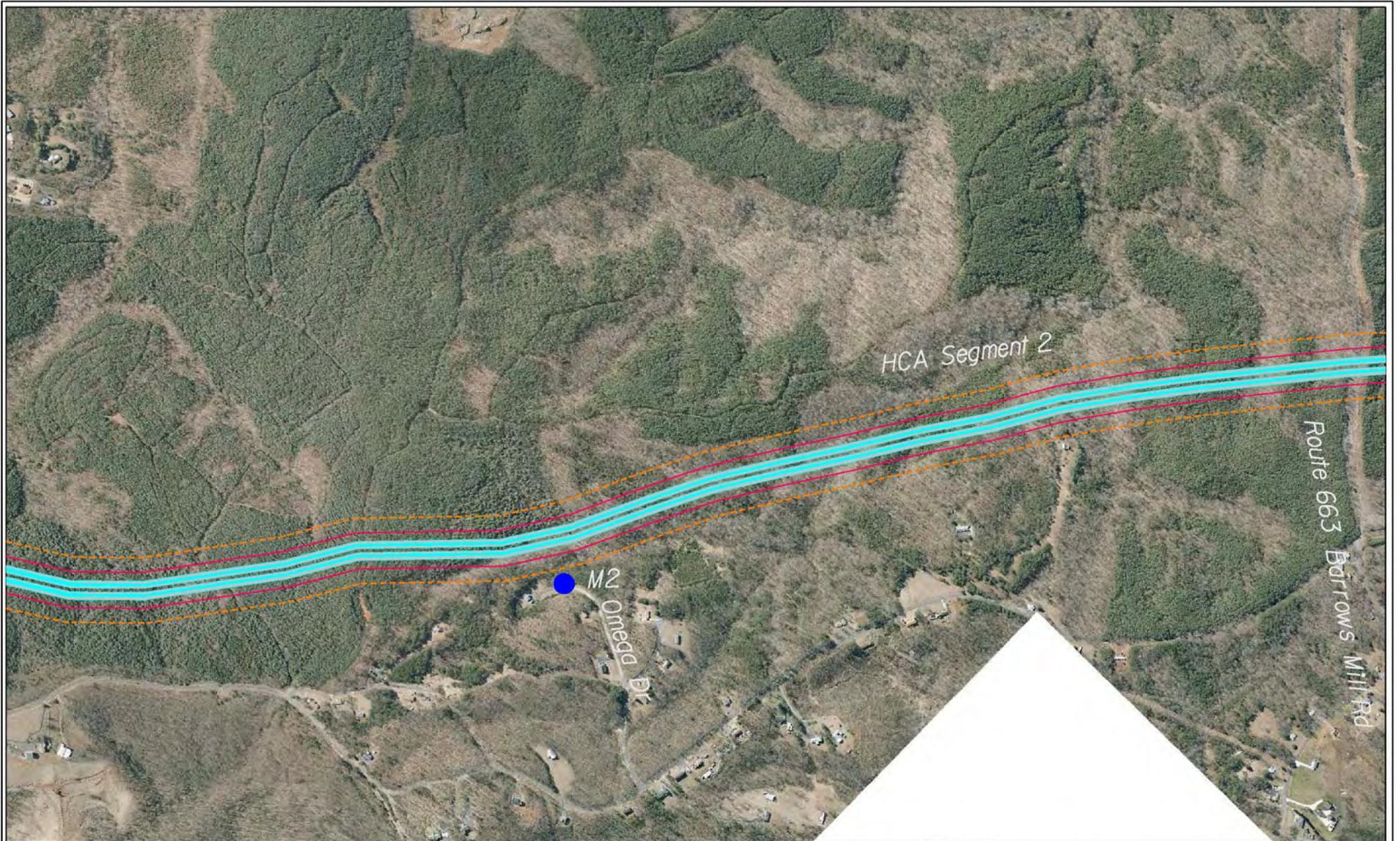
- Noise Monitoring Sites
- Potential Impacted Receptor Sites
- Proposed Alignment
- Proposed R/W Limits
- - - 66 dBA Noise Contour



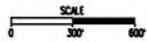
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 State Project Number: 0073-962-F01, P-101
 VDOT

Sheet 3 of 12 Date: November 2010

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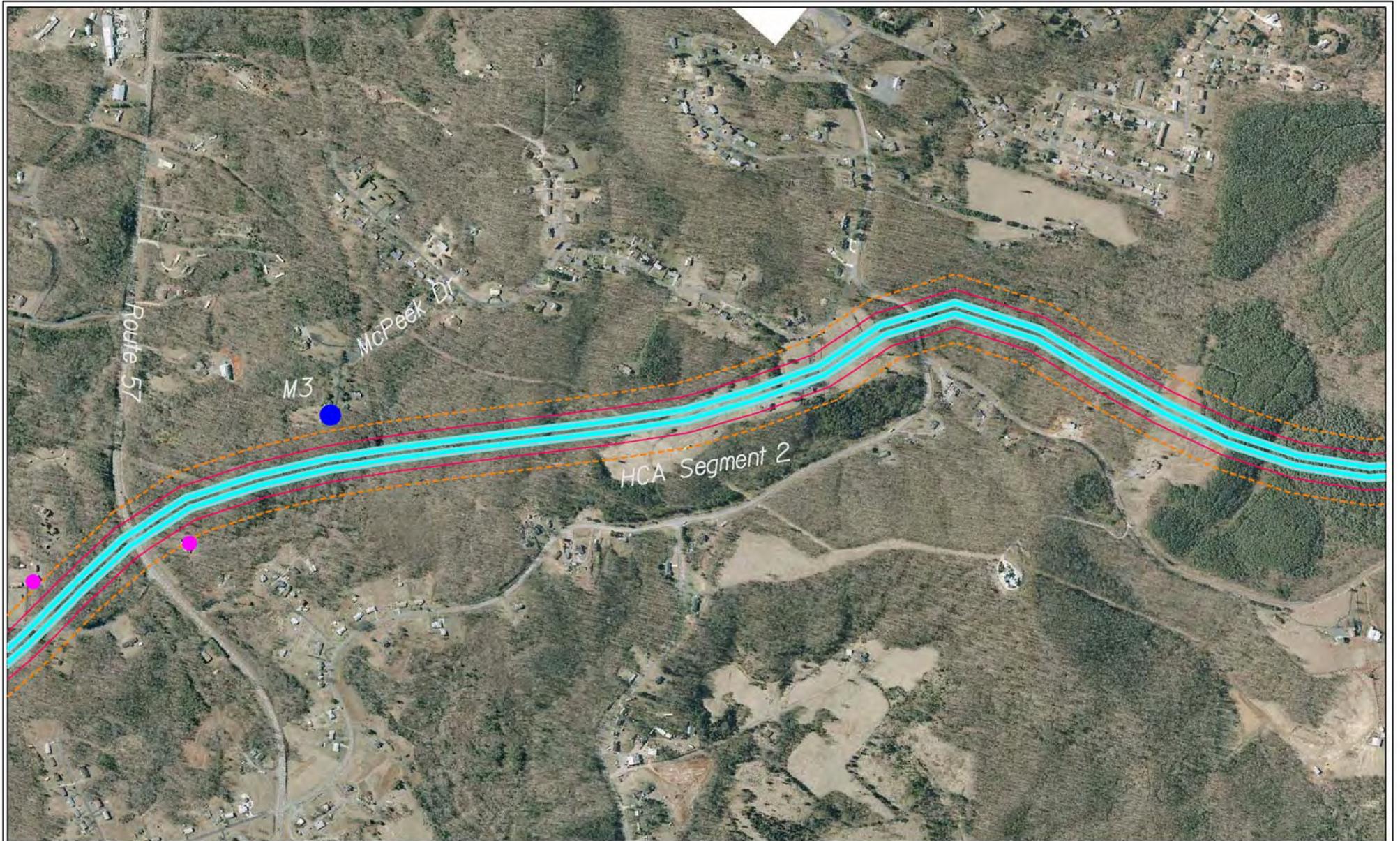


- Noise Monitoring Sites
- Potential Impacted Receptor Sites
- Proposed Alignment
- Proposed R/W Limits
- - - 66 dBA Noise Contour



UPC: 16596
 State Project Number: 0073-962-F01, P-101
 VDOT

Sheet 4 of 12 Date: November 2010

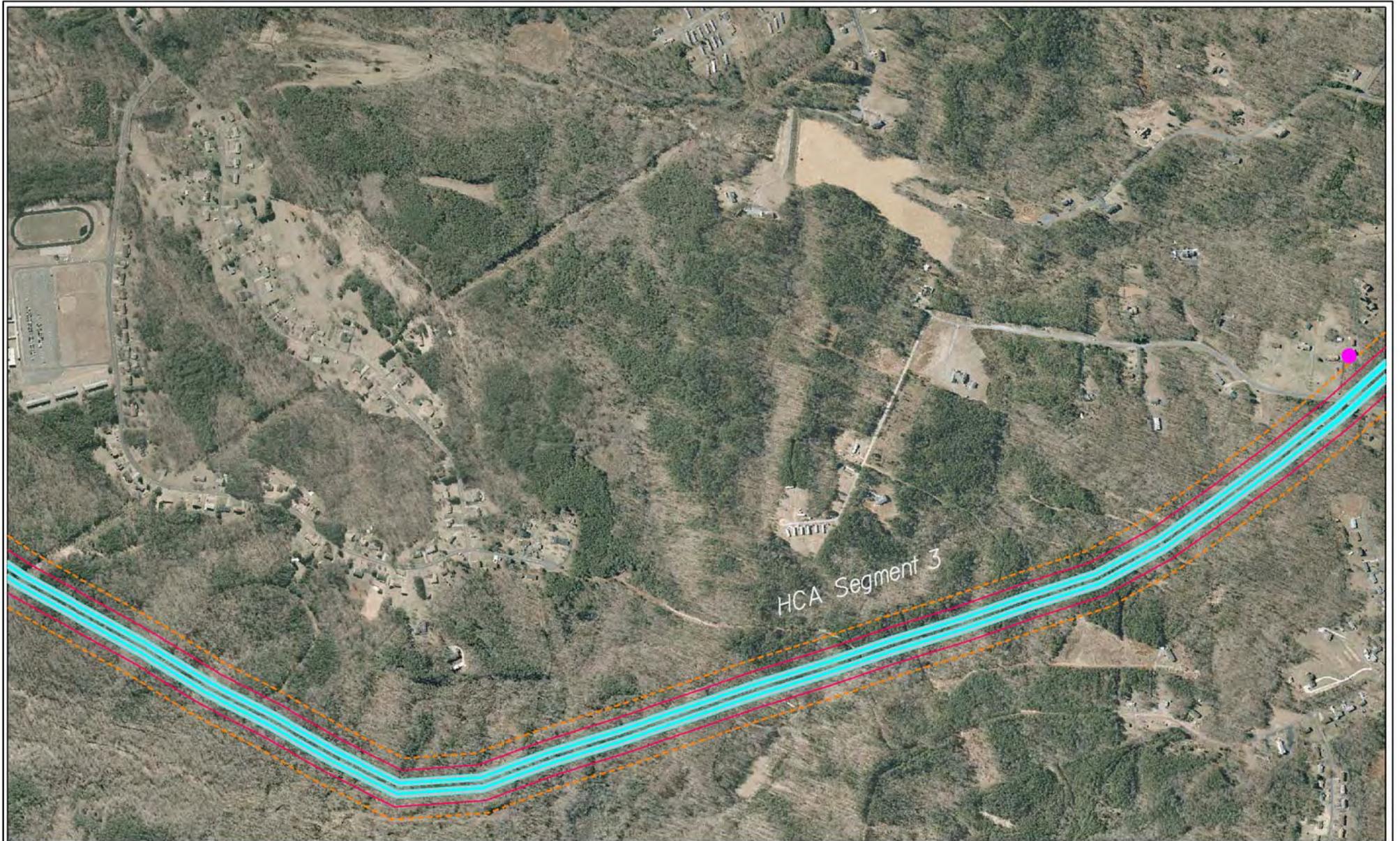


- Noise Monitoring Sites
- Potential Impacted Receptor Sites
- Proposed Alignment
- Proposed R/W Limits
- - - 66 dBA Noise Contour

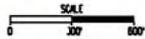


UPC: 16596
 State Project Number: 0073-962-F01, P-101
 VDOT

Sheet 5 of 12 Date: November 2010

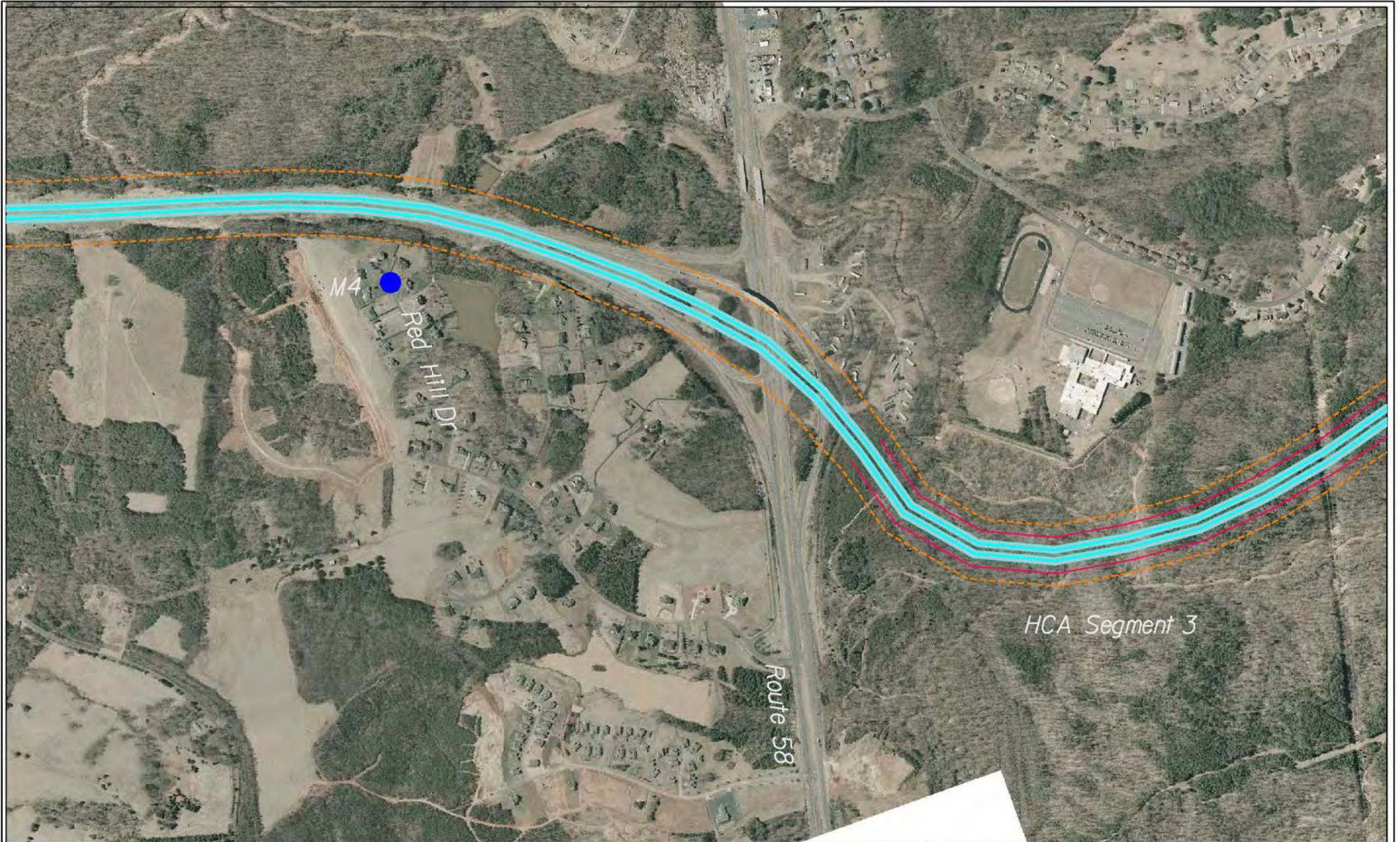


- Noise Monitoring Sites
- Potential Impacted Receptor Sites
- Proposed Alignment
- Proposed R/W Limits
- - - 66 dBA Noise Contour

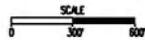


UPC: 16596
State Project Number: 0073-962-F01, P-101
VDOT

Sheet 6 of 12 Date: November 2010

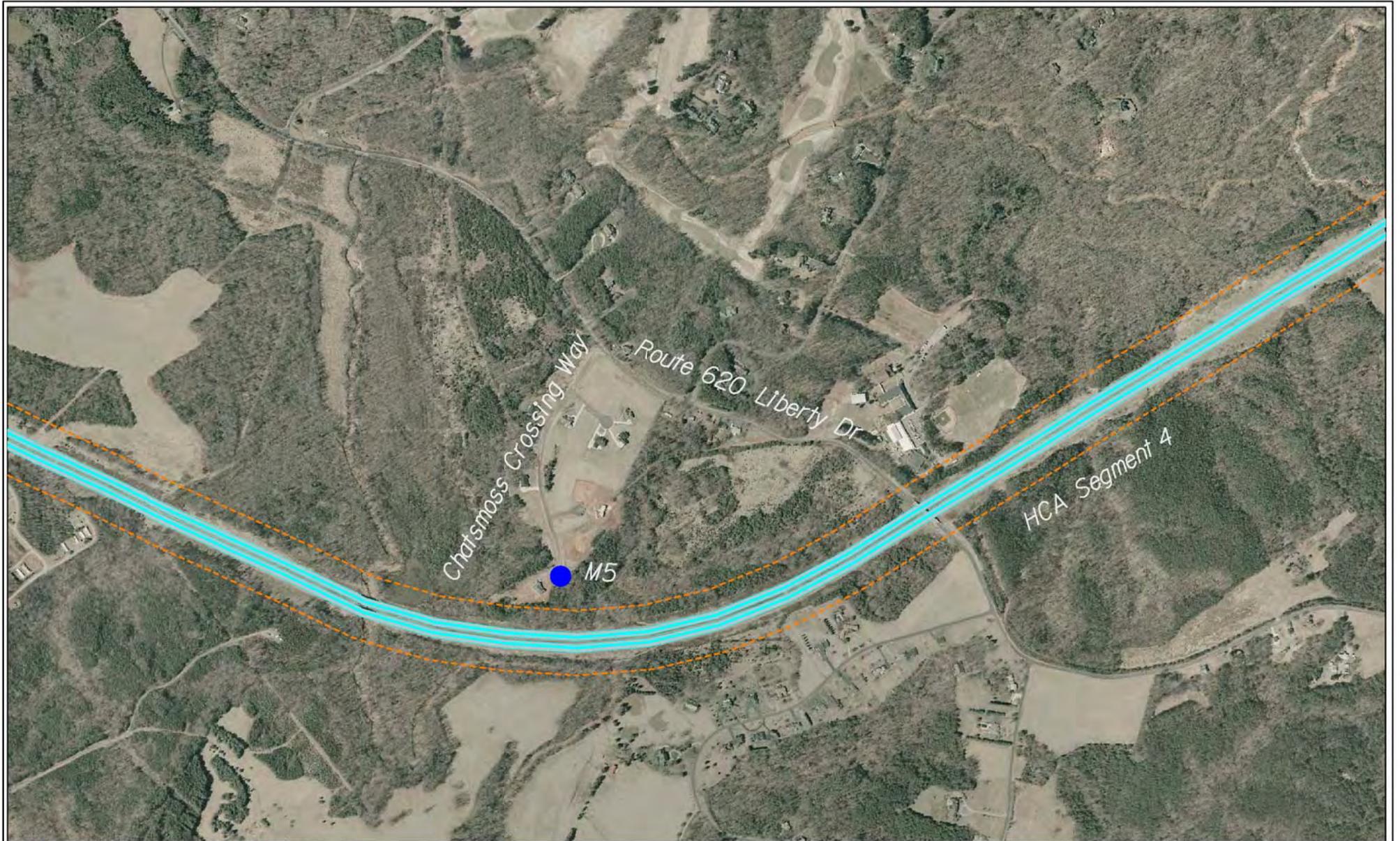


- Noise Monitoring Sites
- Potential Impacted Receptor Sites
- Proposed Alignment
- Proposed R/W Limits
- - - 66 dBA Noise Contour



UPC: 16596
 State Project Number: 0073-962-F01, P-101
 VDOT

Sheet 7 of 12 Date: November 2010



Chatsmoss Crossing Way

Route 620 Liberty Dr

HCA Segment 4

M5

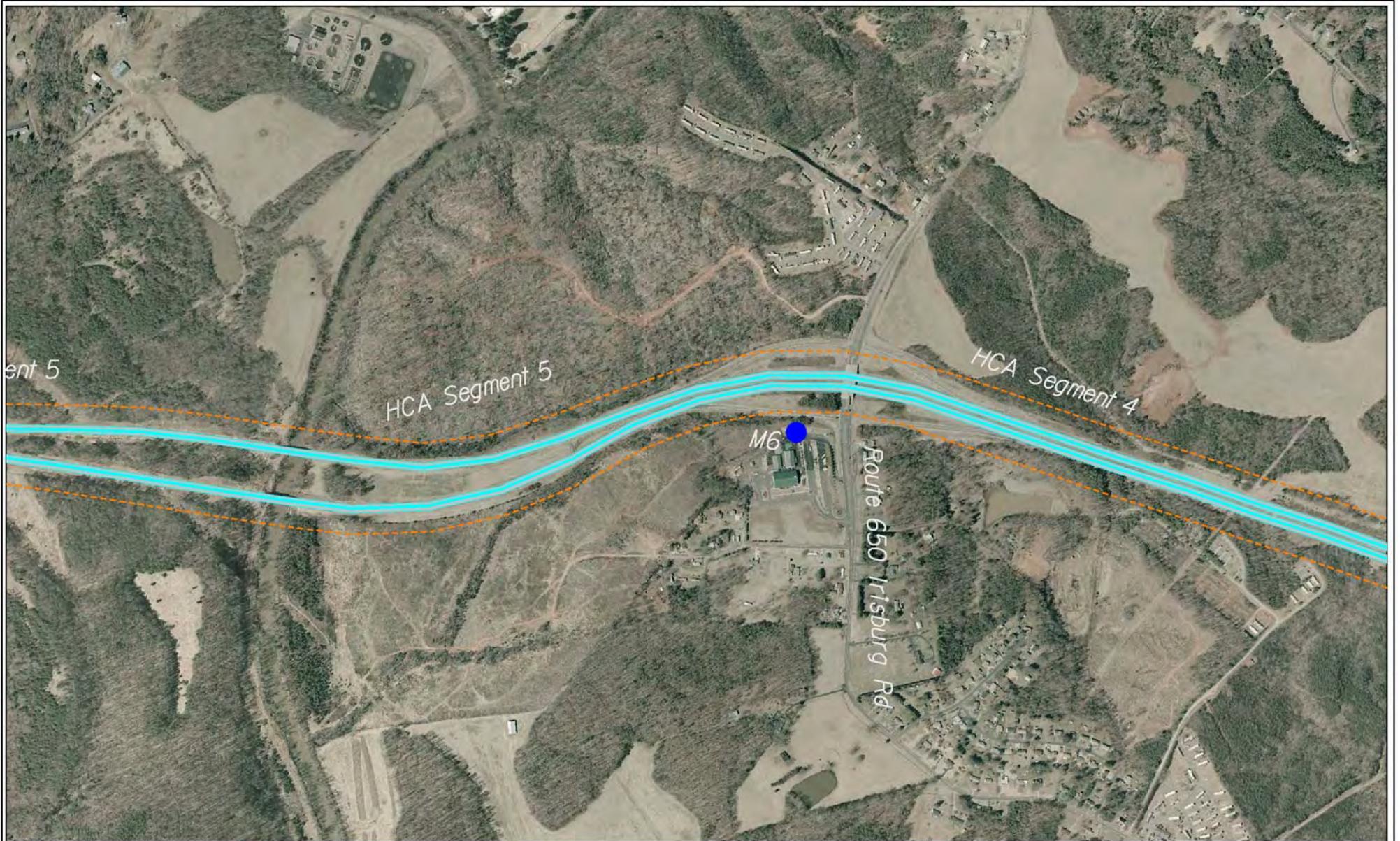
- Monitoring Sites
- Potential Impacted Receptor Sites
- Proposed Alignment
- Proposed R/W Limits
- - - 66 dBA Noise Contour



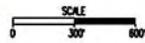
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 State Project Number: 0073-962-F01, P-101
 VDOT

Sheet 8 of 12 Date: November 2010

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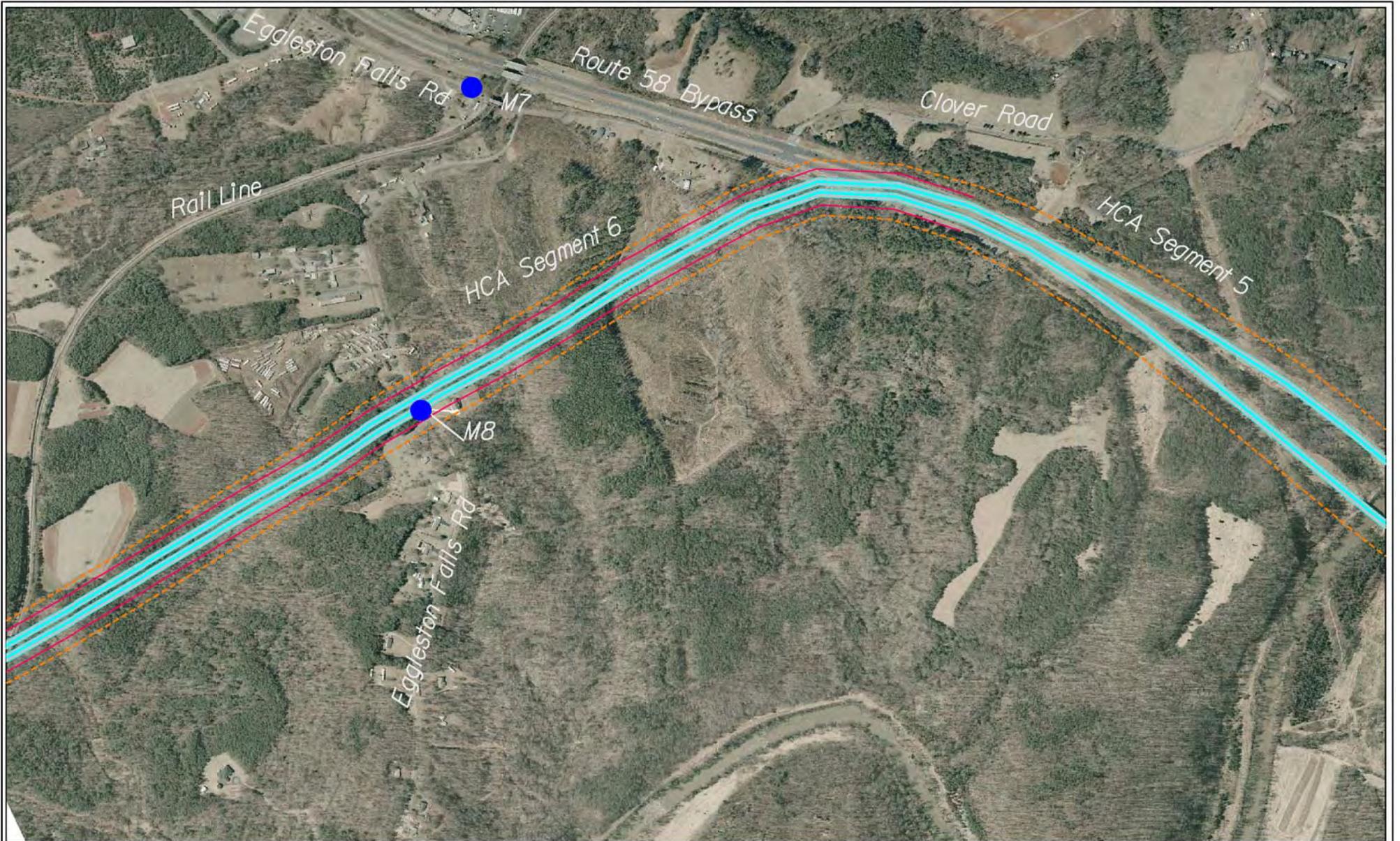


- Noise Monitoring Sites
- Potential Impacted Receptor Sites
- Proposed Alignment
- Proposed R/W Limits
- - - 66 dBA Noise Contour

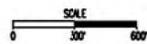


UPC: 16596
 State Project Number: 0073-962-F01, P-101
 VDOT

Sheet 9 of 12 Date: November 2010

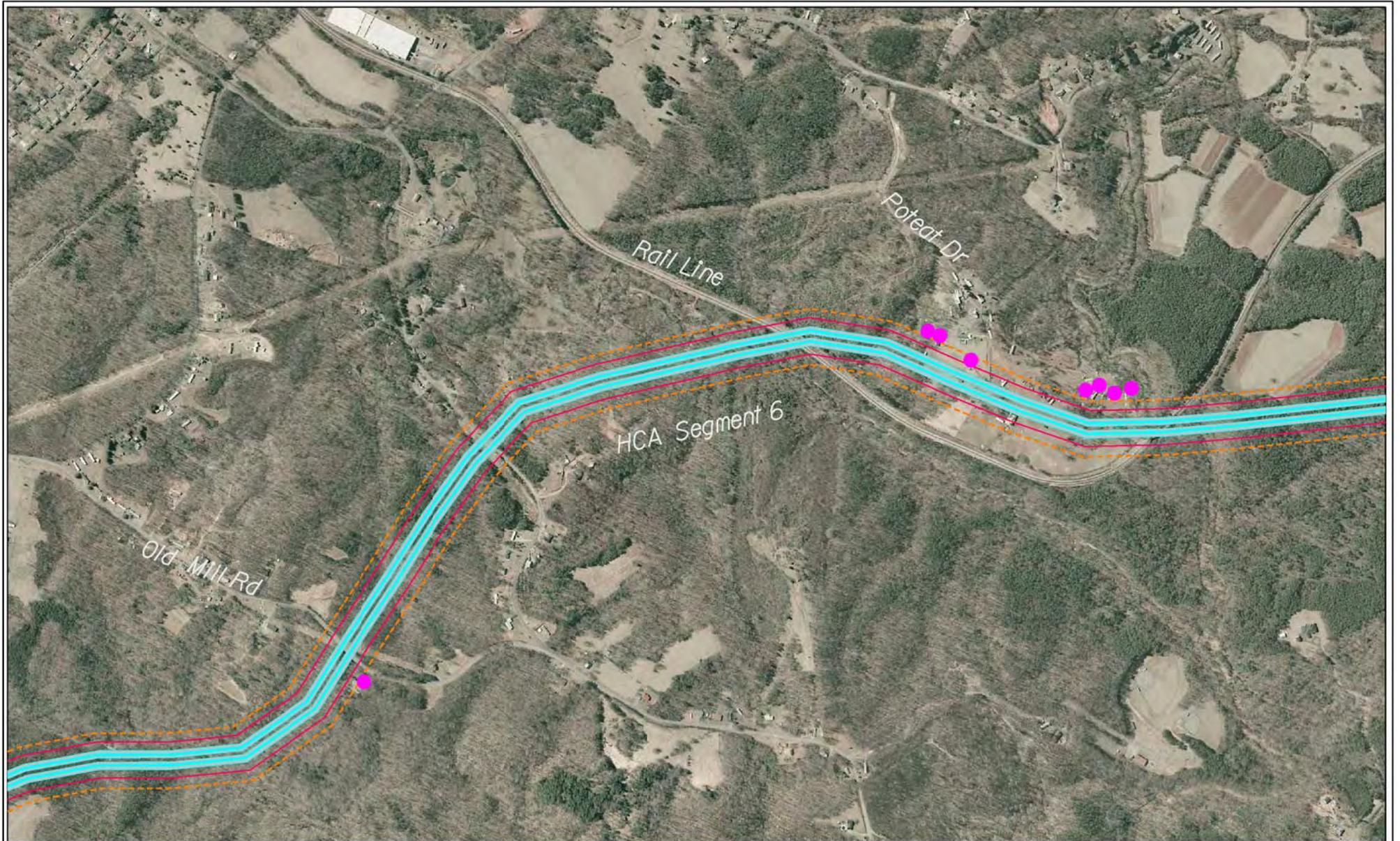


- Noise Monitoring Sites
- Potential Impacted Receptor Sites
- Proposed Alignment
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- - - 66 dBA Noise Contour



UPC: 16596
 State Project Number: 0073-962-F01, P-101
 VDOT

Sheet 10 of 12 Date: November 2010

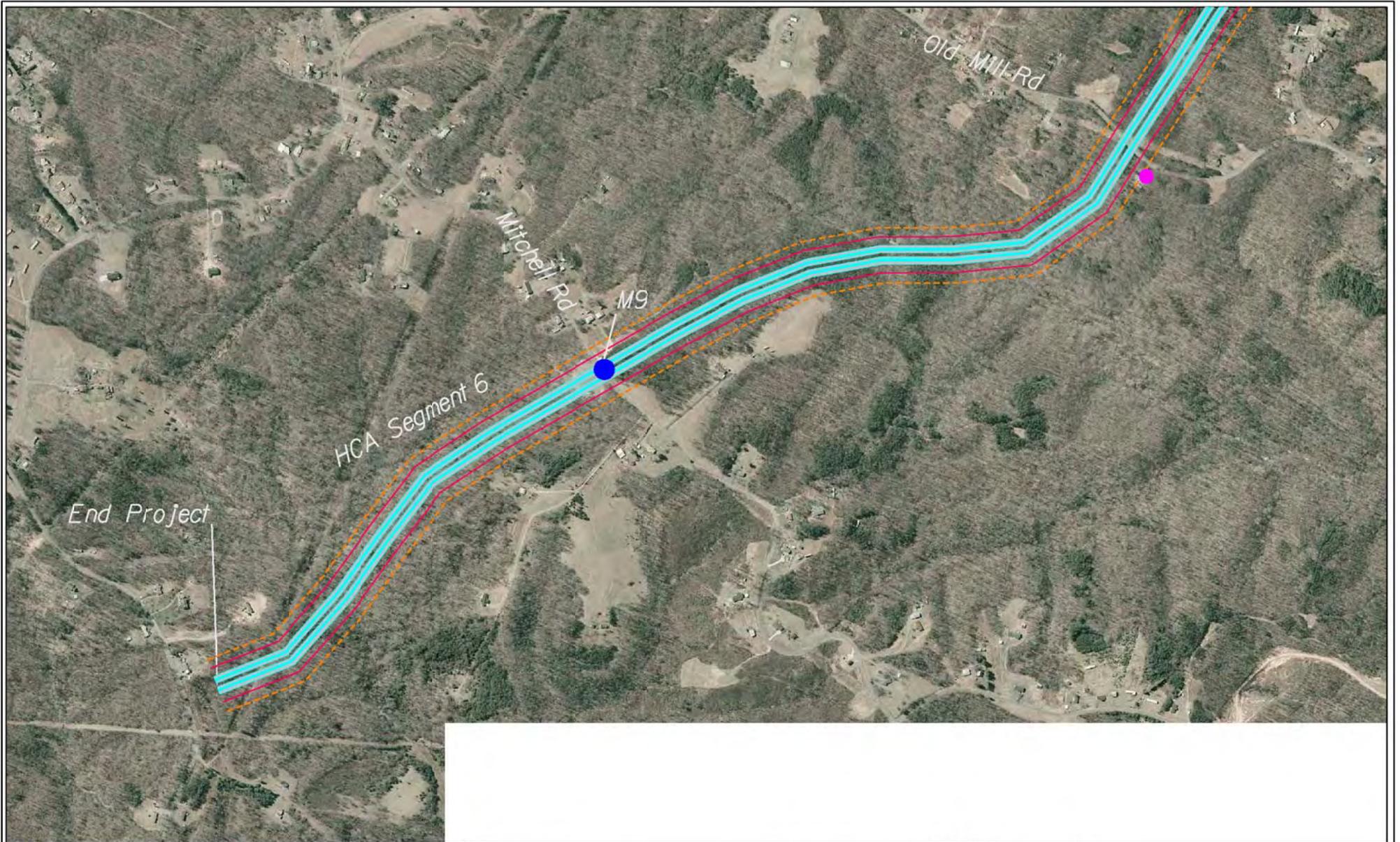


- Noise Monitoring Sites
- Potential Impacted Receptor Sites
- Proposed Alignment
- Proposed R/W Limits
- - - 66 dBA Noise Contour

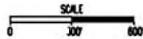


UPC: 16596
 State Project Number: 0073-962-F01, P-101
 VDOT

Sheet 11 of 12 Date: November 2010



- Noise Monitoring Sites
- Potential Impacted Receptor Sites
- Proposed Alignment
- Proposed R/W Limits
- - - 66 dBA Noise Contour



UPC: 16596
 State Project Number: 0073-962-F01, P-101
 VDOT

Sheet 12 of 12

Date: November 2010

Appendix B: Noise Monitoring Data Sheets

**State Project: 0073-962-F01, P101 (UPC 16596)
Route I-73**

Site # M1 **Description:** Intersection of Dyer Store Rd & Flatrock Rd

Meter # LD 824

Done by LJ & PK

Monitoring Data:

Date 09/09/10
Start Time 8:35am
End time 8:55am
Duration 20min
Peak/OffPeak _____

Calibration Data:

Begin Check 113.9 dBA **Wind Speed** _____

Atmospheric Data

End Check _____ **Temp** 65 F

Humidity 66%

Leq. 42.3 dBA

Weather Conditions

Traffic Counts:

Roadway No counts

Sunny

no winds

Cars _____

MT _____

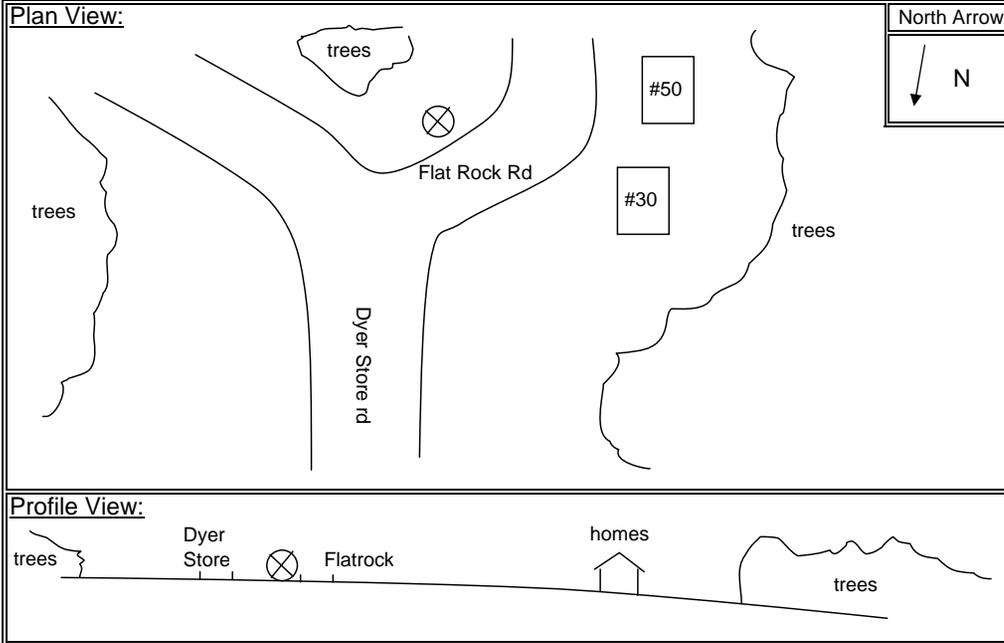
HT _____

Speed _____



Site Data:

Pavement Type:



Monitoring Notes:

Time	Comment
8:35	8:53
8:36	8:54
8:37	Plane flying by
8:38	8:55
8:39	
8:40	
8:41	Local car
8:42	Local car
8:43	
8:44	
8:45	
8:46	
8:47	
8:48	
8:49	
8:50	
8:51	
8:52	

**State Project: 0073-962-F01, P101 (UPC 16596)
Route I-73**

Site # M2 **Description:** End of Omega Dr

Meter # LD 824

Done by LJ & PK

Monitoring Data:

Date 09/09/10
Start Time 9:25 AM
End time 9:45 AM
Duration 20 min
Peak/OffPeak _____

Calibration Data:

Begin Check _____

End Check _____

Atmospheric Data

Wind Speed 1 mph

Temp 65 F

Humidity 66%

Leq. 38.8 dBA

Weather Conditions

Sunny

still winds

Traffic Counts:

Roadway No counts

Cars _____

MT _____

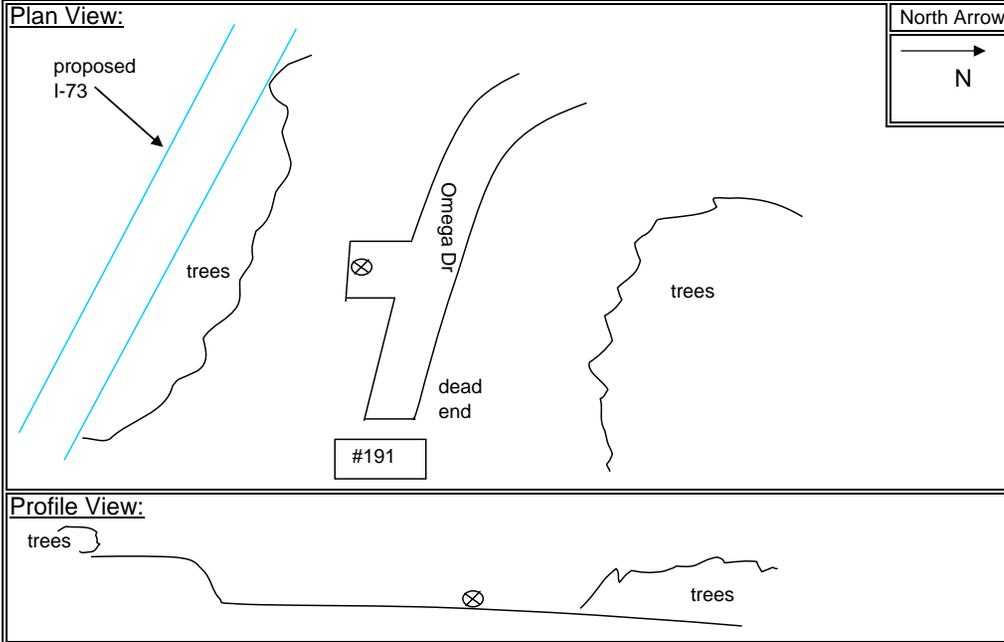
HT _____

Speed _____



Site Data:

Pavement Type:



Monitoring Notes:

Time	Comment	Time	Comment
9:25		9:43	
9:26	plane fly by	9:44	
9:27		9:45	
9:28			
9:29			
9:30			
9:31			
9:32			
9:33			
9:34			
9:35			
9:36			
9:37			
9:38			
9:39			
9:40			
9:41			
9:42			

**State Project: 0073-962-F01, P101 (UPC 16596)
Route I-73**

Site # M9 **Description:** Opposite 6313 Mitchell Rd

Meter # LD 824

Done by LJ & PK

Monitoring Data:

Date 09/09/10
Start Time 2:19 PM
End time 2:39 PM
Duration 20 min
Peak/OffPeak

Calibration Data:

Begin Check **Atmospheric Data**
Wind Speed

End Check 114.1 dBA **Temp** 65 F

Humidity 66%

Leq. 40.0 dBA

Weather Conditions

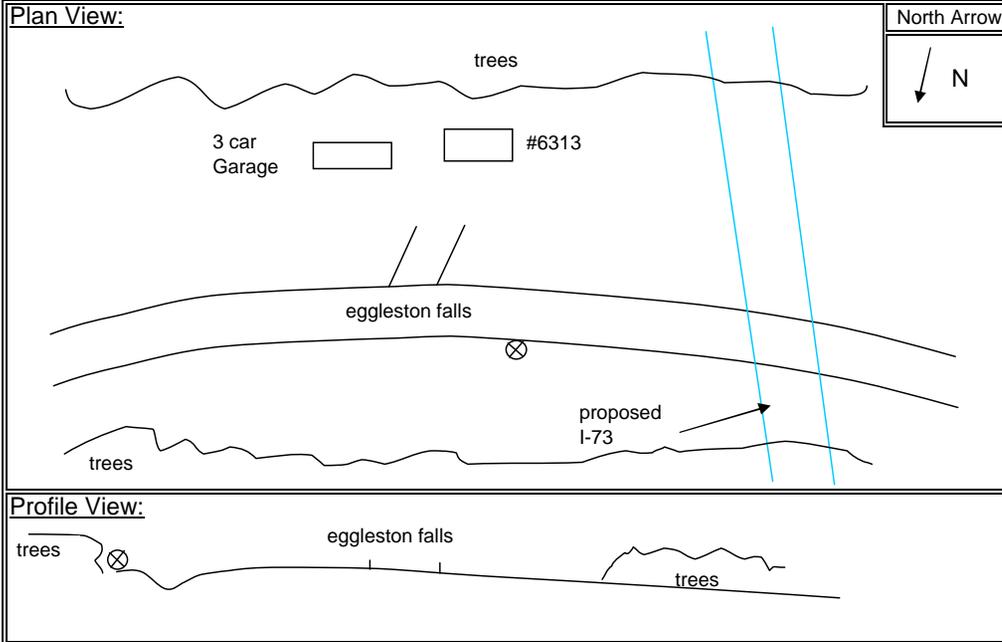
Traffic Counts:

Roadway	No counts			Sunny
Cars				no winds
MT				
HT				
Speed				



Site Data:

Pavement Type:



Monitoring Notes:

Time	Comment
2:19	
2:20	
2:21	Plane flying by
2:22	
2:23	
2:24	
2:25	
2:26	
2:27	
2:28	
2:29	
2:30	
2:31	
2:32	
2:33	
2:34	
2:35	
2:36	

Appendix D

HENRY COUNTY LETTER REGARDING USE OF FISHER FARM PARK

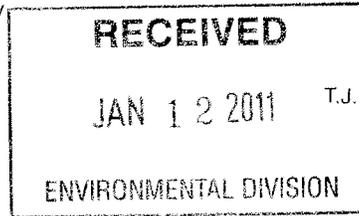
County of Henry

P.O. BOX 7
KINGS MOUNTAIN ROAD
COLLINSVILLE, VIRGINIA 24078-0007
www.henrycountyva.gov



BENNY SUMMERLIN
County Administrator

TIM HALL
Deputy County Administrator



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JIM ADAMS
Blackberry District

JOSEPH A. BRYANT
Collinsville District

Fax (276) 634-4781

Board of Supervisors
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CHAIRMAN
Horsepasture District
H.G. VAUGHN, VICE-CHAIRMAN
Ridgeway District
MILTON H. KENDALL
Iriswood District
Telephone (276) 634-4601

December 22, 2010

Ms. Angel Deem
Project Manager
Environmental Division
Virginia Department of Transportation
1221 East Broad Street
Richmond, VA 23219

Re: I-73 Environmental Assessment for Henry County Alternative

Dear Ms. Deem:

As you know, the Commonwealth Transportation Board ("CTB") by resolution adopted December 17, 2010, authorized a re-examination of the alignment of I-73 as it traverses through Henry County. Specifically, the assessment focuses on an area east of the City of Martinsville and wholly contained within the County running north to south about 19 miles from a point near Figsboro to Route 87 southeast of Ridgeway (the Henry County Alternative or "HCA").

The HCA as presented to the Virginia Department of Transportation ("VDOT") pursuant to the CTB resolution did not cross the public recreational park known as Fisher Farm Park because it was the understanding of the County that using a portion of a public park or recreational area as part of the HCA alignment would raise concerns under Section 4(f) within the U.S. Department of Transportation Act of 1966, now codified in 49 U.S.C. Section 303 and 23 U.S.C. Section 138, and implemented by the Federal Highway Administration (FHWA) through the regulation 23 CFR 774. However, during the course of the study, VDOT determined that aligning the route through a small segment of the park is a viable option and thus sought the County's input on such use. The purpose of this letter is to support such an option, describe the current and future planned

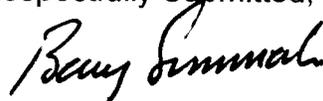
use of the affected area of Fisher Farm Park and to request respectfully that a determination be made that the proposed use of such a small segment of the Section 4(f) property would have a de minimis impact upon that recreational facility.

Fisher Farm Park consists of approximately 127 acres and contains a playground, two picnic shelters, two baseball/softball fields, restrooms and cooking grills. The majority of the park is wooded with some open space near the baseball/softball fields. However, the 250-foot width of the HCA that encroaches upon the park is at its western end, where the park is adjacent to railroad tracks, on property that the County has no plans to ever develop for recreational use. That part of the park is owned by the County only because it was part of the sale of Fisher Farm to the County at the outset. Such portion is not hospitable or useable for public use or enjoyment, now or in the future because of the difficult terrain and its location at the western rear of the Park. Thus, the area within Fisher Farm Park to be affected by the HCA will not impact adversely activities, features or attributes of the property.

For the reasons set forth above, the County requests that VDOT pursue a de minimis determination as to the impact to the Fisher Farm Property of aligning a portion of the HCA through that property.

Thank you.

Respectfully Submitted,



Benny Summerlin
County Administrator

Cc: Board of Supervisors

