

# Rationale for Finding of No Significant Impact

## Interstate 73; Henry County Alternative

### Henry County, Virginia

#### **Introduction**

FHWA has reviewed VDOT's August 30, 2012, submittal of the Revised Environmental Assessment (EA) for the Interstate 73 (I-73) Henry County Alternative which consists of the original EA dated February 15, 2011, and VDOT's transmittal letter requesting a Finding of No Significant Impact (FONSI) for proposed revisions to the previously approved location for the project, also known as the Henry County Alternative. VDOT did not submit a final EA for this project nor is one required under 23 CFR Part 771. Instead, VDOT's submittal, in addition to including the original EA, provides 1) a summary of substantive comments received on the EA and VDOT's responses; 2) a summary of changes to the proposed action and mitigation measures from comments received on the EA as a result of the public hearing and other factors; and 3) a summary of the findings, agreements, and determinations made for the project.

The approach of submitting a transmittal letter to complete the EA process is acceptable under NEPA and is prescribed in FHWA Technical Advisory T6640.8A under Section II(h). To summarize the transmittal letter, several comments were submitted on the EA which have been summarized and addressed. No changes have been made to the proposal presented in the EA as a result of comments received but additional mitigation measures are being committed to in order to address park impacts and potential water quality impacts. Further, a no effect determination has been made in accordance with Section 106 of the National Historic Preservation Act for the Henry County Alternative (the overall project will still have an adverse effect on historic properties which was addressed in the 2006 Programmatic Agreement for the project). In conjunction with the issuance of this FONSI, FHWA is also making a Section 4(f) *de minimis* finding and a wetland finding.

This EA was prepared in accordance with 23 CFR 771.130 to determine the need for a supplemental Environmental Impact Statement (EIS). When an EIS has been prepared for a proposed federal action, this section allows the preparation of "appropriate environmental studies" when it is uncertain whether the impacts of any proposed changes, new information, or new circumstances relevant to environmental concerns are significant and therefore, warrant the preparation of a supplemental EIS. 23 CFR 771.130(c) allows FHWA to go beyond the mere preparation of appropriate environmental studies and prepare an EA, when appropriate, to support that decision making process.

#### **Background:**

##### **History:**

Interstate 73 was designated a High Priority Corridor in the Intermodal Surface Transportation and Efficiency Act of 1991 (ISTEA) by the U.S. Congress. At that time, it was described as a north-south corridor from Charleston, South Carolina to Detroit, Michigan. Shortly after ISTEA was passed, VDOT, recognizing that I-73 would have to pass through Virginia, conducted a feasibility study to identify a general location where they wanted I-73 to go. This general

location served as a basis for language that was included in the National Highway System Designation Act of 1995 (NHS Act). The NHS Act described the location of Interstate 73 in Virginia as follows: “In the Commonwealth of Virginia, the corridor shall generally follow United States Route 220 from the Virginia-North Carolina border to I-581 south of Roanoke; I-581 to I-81 in the vicinity of Roanoke; I-81 to the proposed highway to demonstrate intelligent transportation systems...in the vicinity of Christiansburg to United States Route 460 in the vicinity of Blacksburg; and United States Route 460 to the West Virginia State line.” In 1997, FHWA initiated an EIS for I-73 in Virginia from the Virginia-North Carolina state line to Interstate 81 in the vicinity of Roanoke, a distance of approximately 72 miles. A draft EIS was released in October of 2000, and a final EIS was issued in December of 2006; a Record of Decision (ROD) was issued March 30, 2007. The selected alternative<sup>1</sup> generally parallels the Route 220 corridor, and consists of a four-lane facility in rural areas and a six-lane facility in urbanized areas designed to Interstate (i.e. freeway) standards.

In October 2007, litigation was filed against the project alleging violations of NEPA and other environmental laws. In June 2008, Henry County presented to VDOT, for consideration by the Commonwealth Transportation Board (CTB), an alternate alignment for I-73 in their county from what was approved in the ROD. This alternative, which became known as the Henry County Alternative (HCA), would shift the approved alignment up to 1.5 miles to the west closer to the City of Martinsville for a distance of approximately 19 miles. In response, the CTB directed VDOT to evaluate the Henry County alternative to determine if it warranted further consideration. VDOT’s evaluation<sup>2</sup> identified the environmental issues that might be invoked if the HCA was pursued and compared those issues to the approved alignment in Henry County. During this time, FHWA did not allow the NEPA process for I-73 to be reopened while litigation was ongoing. In July 2009, the District Court ruled in favor of FHWA and VDOT on all counts. In October of 2009, plaintiffs appealed the court’s decision. In December 2009, based on the results of the evaluation, the CTB instructed VDOT to work with FHWA to evaluate the HCA in accordance with NEPA. In January of 2010 following mediation, a settlement agreement was executed in response to the plaintiff’s appeal. In the summer of 2010, VDOT initiated an EA for the HCA.

The EA was made available to the public in mid-February 2011, and a public hearing was held on March 28, 2011. On June 5, 2011, the CTB modified their location approval for I-73 dated July 2004 to include the HCA with one modification (referred to as HCA Modified going forward in this document). In the vicinity of Fisher Farm Park, the CTB approved a modification supported by Henry County to shift the alignment onto a portion of the park that is not considered useable by the County. The shift would avoid two costly crossings of the Norfolk Southern Railroad and a mobile home park.

### **Previous Studies:**

Numerous studies were developed in support of the I-73 EIS and the ROD. These included the following:

I-73 Location Study: Right of Way Cost Technical Memorandum (October 2000);

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<sup>1</sup> The selected alternative, hereafter, is referred to as the ROD-approved alternative. It is also referred to as the Approved Location Corridor, or ALC, in project documents.

<sup>2</sup> This was a “high-level” evaluation that did not rely upon field reconnaissance or ground-truthing; instead, it relied upon mapping and readily available data bases.

I-73 Location Study: Cultural Resources Technical Memorandum (October 2000);  
 I-73 Location Study: Air Quality Technical Memorandum (October 2000);  
 I-73 Location Study: Noise Technical Memorandum (October 2000);  
 I-73 Location Study: Natural Resources Technical Memorandum (October 2000);  
 I-73 Location Study: Alternatives Identification and Screening Technical Memo (October 2000);  
 I-73 Location Study: Hazardous Materials Technical Memorandum (October 2000);  
 I-73 Location Study: Land Use Socioeconomic and Farmlands Technical Memo (October 2000);  
 I-73 Location Study: Traffic and Transportation Technical Memorandum (October 2000);  
 I-73 Location Study: Parklands and Recreational Resources Technical Memo (October 2000);  
 I-73 Location Study: Visual Quality Technical Memorandum (October 2000);  
 I-73 Location Study: Evaluation of Historic Properties: Buildings, Districts, Structures and Objects, Addendum, Coastal Carolina Research, Inc. (October 2001);  
 I-73 Location Study: Evaluation of Historic Properties: Buildings, Districts, Structures and Objects, Addendum, Coastal Carolina Research, Inc. (December 2001);  
 Survey for Freshwater Mussels at the I-73 Bridge Crossing of Matrimony Creek, Henry County, Virginia, Melissa Petty and Richard J. Neves (May 2002);  
 Survey for Freshwater Mussels at the I-73 Bridge Crossings of Leatherwood Creek, Henry County, Virginia, Melissa Petty and Richard J. Neves (May 2002);  
 I-73 Location Study: Photographic Inventory Coopers Cove, Roanoke and Franklin Counties, Virginia, Coastal Carolina Research, Inc. (May 2002);  
 I-73 Location Study: Evaluation of Historic Properties: Buildings, Districts, Structures and Objects, Addendum: Evaluation of Price and Tyree Houses, Coastal Carolina Research, Inc. (May 2002);  
 Survey for Freshwater Mussels at the I-73 Bridge Crossing of Smith River, Henry County, Virginia, Melissa Petty and Richard J. Neves (June 2002);  
 I-73 Location Study: Evaluation of Historic Properties: Buildings, Districts, Structures and Objects, Addendum: Tyree/Woody House (VDHR 033-5153) Revisit, Coastal Carolina Research, Inc. (July 2002);  
 Roanoke Logperch (*Percina Rex*) Survey for the Proposed Interstate 73 Project, Dr. Steve McIninch and Dr. Greg Garman (August 2002);  
 I-73 Location Study: Evaluation of Historic Properties: Buildings, Districts, Structures and Objects, Addendum: Eastern Terminus Interchange U.S. 220 Connector, Coastal Carolina Research, Inc. (December 2002);  
 I-73 Location Study: Archeological Survey, Coastal Carolina, Inc. (January 2003);  
 Supplemental Historical/Architectural Study, Interstate 73, City of Roanoke, The Louis Berger Group, Inc. (July 2003);  
 Independent Evaluation of Oak Hill German Baptist Brethren Community as a Rural Historic Landscape and a Traditional Cultural Property, Franklin County, Virginia, Parsons Brinckerhoff (October 2003);  
 I-73 Location Study: Capital Cost Technical Memorandum, 2007 ALC Cost Estimate (November 2006);  
 I-73 Location Study: Right of Way and Relocation Cost Technical Memorandum (November 2006);  
 Range-wide Assessment of Habitat Suitability for Roanoke Logperch (*Percina Rex*), Anita Lahey and Paul Angermeier (January 2007);

In preparing the EA, additional studies were conducted that included a historic architectural survey, a noise impact analysis, threatened and endangered species surveys for the smooth coneflower and Roanoke logperch, and a potential reservoir and watershed impact analysis. The traffic forecasts were also updated to extend the design year to 2035.

**Purpose and Need:**

The purpose and need for the I-73 project is identified in the draft and final EIS for the project and the ROD. The HCA and its modification at Fisher Park address that purpose and need just as the alignment approved in the ROD did. If anything, the HCA will enhance the components of the purpose and need related to economic growth, vitality, and competitiveness as well as freight movement because it moves the alignment closer to the City of Martinsville and improves access to existing and developing industrial areas located in Henry County near Martinsville.

**Alternatives:**

The EA did not consider alternatives other than the HCA alternative proposed by Henry County. The purpose of the EA was to consider a revision to an alignment already approved with a ROD in March of 2007. The HCA would revise approximately 19 miles of the approved 72 mile alignment covered by that ROD. In the development of the I-73 EIS, several alternatives were considered to address the purpose and need such as Transportation System Management, transit, rail, and access control. Reconsidering those alternatives now as part of the effort to address Henry County's request to revise a 19-mile portion of the I-73 alignment is not appropriate.

The HCA alignment is depicted in Figure 1 of the EA. As proposed, the HCA would deviate from the ROD-approved alignment north of Martinsville near Figsboro and head in a southerly direction toward Martinsville and closer to Henry County's Patriot Centre Industrial Park. In this general area, a new interchange is proposed to be constructed at Route 663. From there, the HCA would generally parallel the ROD-approved alignment and include a new interchange at Route 57 and tie into the existing interchange at Route 58. From Route 58, the HCA would follow the existing Route 58 Bypass, generally paralleling the ROD-approved alignment, and utilize the existing interchange at Route 650. The HCA would continue to follow the existing alignment of the Route 58 Bypass to the south-southeast for a total of approximately five miles. At Clover Road and the Route 58 Bypass, a new interchange is proposed. From there, the HCA would leave the existing alignment of the Route 58 Bypass, head in a south-southeast direction for approximately four miles and tie back into the ROD-approved alignment at Flanigan Branch Road, approximately two miles east of the Town of Ridgeway. As explained above, in the vicinity of Fisher Park, the HCA Modified alignment would be shifted to the east onto Fisher Park.

**Summary of Environmental Impacts:**

The following social and environmental impacts were identified in the EA and supporting documentation and will result if the HCA Modified alignment is implemented. It should be noted that the EA assessed potential impacts associated with the HCA based on a 600 foot corridor to allow for an apples-to-apples comparison with the impacts identified in the EIS. A 600 foot corridor was used in the EIS to allow greater flexibility to make revisions to the alignment during final design without automatically triggering additional environmental review and to account for potentially

greater right-of-way needs in the mountainous areas of the alignment where cut and fill slopes could be more extensive. One exception to the 600 foot corridor approach in the EIS was relocation impacts. The relocation impacts identified in the EA for the HCA were based on a 600 foot corridor while a more realistic 350 foot corridor was used in the I-73 EIS. This difference was addressed in VDOT's request for a FONSI and is also addressed below. Also, a 600 foot corridor was used to assess wetland and floodplain impacts of the HCA, even along the five mile section of the Route 58 Bypass that the HCA would utilize. This issue is also addressed below.

\* **Land Use:** The land uses impacted by the HCA Modified alignment consists primarily of forest (70%) with small amounts of agriculture (17%), developed lands (12%) and water/wetlands (< 0.5%). The ROD-approved alignment in Henry County would impact comparable types of land uses with a slightly higher percentage of impacts on forests and water/wetlands and a slightly lower percent of impacts on developed lands. (EA, page 15)

\* **Relocations/Right-of-Way:** The HCA Modified alignment has the potential to impact 169 homes, one business, nine farms, and two churches based on the use of a 600 foot corridor. In contrast, the ROD-approved alignment in Henry County that would be revised by the HCA Modified alignment has the potential to impact 106 homes, two businesses, nine farms, and two churches based on a 350 foot corridor. The use of a 600 foot corridor in the EA represents a 40% increase in the corridor width upon which the impact assessment for relocations in the EIS was based. If we assume that residential displacements for the HCA Modified are overstated by a similar amount, then the relocations associated with HCA Modified would be comparable to relocations associated with the ROD-approved alignment. (EA, page 15, 19)

\* **Environmental Justice:** The proposed project has been developed in accordance with Executive Order 12898, Federal actions to Address Environmental Justice in Minority Populations and Low Income Populations. The same methodology for evaluating environmental justice impacts in the EIS was used to evaluate environmental justice impacts of the HCA Modified alignment. No minority or low-income populations have been identified in the HCA modified alignment that would experience disproportionately high and adverse environmental effects from the project. The minority portion of the population for the Census block groups traversed by the alignment is within the range for all build options evaluated in the EIS and consistent with the countywide percent. As for low income, the percentage of low-income population along the HCA Modified alignment is below the values reported in the EIS for all of the build options. There are mobile home parks located in the vicinity of the HCA modified alignment where it crosses Business Route 58 and ties into the Route 58 Bypass, where it crosses Route 650, and in the vicinity of Fisher Park. All of these locations are avoided by the alignment. Any impacts experienced by minority or low income populations will be comparable to impacts experienced by non-minority or non-low income populations in the corridor. As explained below, the consideration of air quality impacts did not identify any issues along the HCA Modified alignment. As for noise impacts, the preliminary noise analysis included in the appendix to the EA shows that the mobile home parks would be located outside the 66 dB(A) contour line. (EA, page 15, Appendix C)

\* **Historic/Archeological Resources:** A historic architectural survey was conducted on the Area of Potential Affect (i.e. the 600 foot corridor and resources adjacent to and visible from the 600 foot corridor) associated with the HCA alignment to identify if there were any resources eligible for the National Register of Historic Places. When the decision was made to shift the alignment onto Fisher Park, an additional survey was conducted of the shift. Based on the results of the surveys

and coordination with the Virginia Department of Historic Resources, no new architectural properties or rural historic districts were found eligible for the National Register of Historic Places.

An archeological survey was not conducted of the HCA alignment. Instead, consistent with the approach used in the EIS, known archeological sites were documented in the vicinity of the proposed alignment shift. In addition, predictive modeling was used to identify the potential for encountering archeological sites in the HCA Modified alignment corridor. Based on the results of that effort, it has been determined that the potential for encountering archeological sites within the HCA Modified corridor is greater than the potential associated with the ROD-approved alignment in Henry County given that the HCA Modified alignment contains a greater number of previously recorded Precontact Period archeological sites, primarily located along the previously disturbed Route 58 Bypass section of the HCA Modified alignment. Likewise, there is a greater potential of encountering former and extant house/farm sites for this same reason. In Stipulation II of the Section 106 Programmatic Agreement executed in 2006, it addresses future design changes to the project that would extend project effects beyond the corridor already studied for the preferred alternative. Because archeological sites are rarely worthy of preservation in place and don't normally affect agency decision making as it relates to the location of an alignment, the Programmatic Agreement allows additional archeological work to occur in the HCA Modified alignment prior to construction. This phased approach is consistent with 36 CFR 800.4(b)(2). (EA, page 16, Appendix B; VDOT August 30, 2012, Request for a FONSI, page 19-20)

\* **Section 4(f) Resources:** Assuming a 250-foot construction corridor, the HCA Modified alignment will impact approximately 11 acres of Fisher Farm Park in the western part of the park, which is the minimum right-of-way needed to accommodate the project's cross section as depicted in Figure 2.3-1 of the final EIS. It is anticipated that this minimum right-of-way width will be sufficient to accommodate the alignment through the park based on the commitments that have been made below. By shifting the alignment onto the western portion of the park as requested by Henry County representatives, two crossings of the Norfolk Southern Railroad and a mobile home park will be avoided.

In order to minimize the impact of the footprint on the park, the following commitments are being made:

- To the extent practicable and without compromising safety, the project applicant will give consideration during final design to the flexibility inherent in VDOT's freeway design standards in order to minimize the right-of-way of the HCA Modified alignment through the park. This will include consideration of reducing the median to the degree permitted, considering the use of retaining walls to eliminate cut slopes, and using guardrail to minimize clear zones.
- Appropriate landscaping will be provided to stabilize cut and fill slopes and to minimize the visual impact of the corridor on the park.
- Coordination with park officials will be carried out during final design.
- A structure will be provided at the crossing of Reds Creek (or another suitable location within the park) and sized sufficiently to allow for bicycle and pedestrian access to the western portion of the park should County officials wish to develop the western portion for recreational opportunities in the future.

- The project applicant will comply with Section 6(f) of the Land and Water Conservation Fund during the design and right-of-way phases, which requires the approval of the Department of the Interior for the conversion of Section 6(f) property to roadway use and requires the applicant to provide replacement property of equal fair market value and reasonably equivalent usefulness and location.

In accordance with Section 6009 of SAFETEA-LU, the Section 4(f) impacts are being treated as a *de minimis* impact. The Henry County Parks and Recreation Department owns and maintains Fisher Farm Park and the public recreational facilities located on site, which includes two baseball/softball fields, two picnic shelters, restrooms, a playground and open space, and wooded areas that may be used for hiking<sup>3</sup>. All of these facilities are located on the eastern half of the park. By letter dated December 20, 2010, Henry County Administrator Benny Summerlin concurred that the project would not adversely affect the activities, features, and attributes of Fisher Farm Park that it considers important. The County has no plans to develop the western portion of the park where the HCA Modified alignment would be located for recreational use due to the difficult terrain located there. By e-mail dated November 29, 2012, Henry County reaffirmed its position regarding Fisher Farm Park. The Section 4(f) *de minimis* finding is addressed below. (EA, pages 21-24, Appendix D; VDOT August 30, 2012, Request for a FONSI, pages 12-13, 20-21)

\* **Section 6(f) Resources:** Fisher Farm Park has utilized funding from the Land and Water Conservation Fund (LWCF) which requires that the conversion of park property be replaced with land of equal fair market value and reasonably equivalent usefulness and location. At the appropriate time during the project development process, Henry County will have to submit a request to the Virginia Department of Conservation and Recreation for review and approval to convert the Fisher Farm Park property. The request will then have to be submitted to the National Park Service for approval. Historically, the request for a conversion is made during the right-of-way acquisition phase after final design has progressed sufficiently and detailed information on the extent of the conversion is known. Final design takes place after the NEPA process is completed, but there currently is no schedule for post-NEPA activities on this project. Because of the potential for a Section 6(f) conversion, the Department of the Interior (DOI) was provided with a copy of the EA so they could conduct an internal review with the National Park Service and other divisions within the Department. No comments were received from the DOI or its divisions. (EA, page 24; VDOT August 30, 2012, Request for a FONSI, page 21)

\* **Air Quality:** The project in general and the HCA Modified alignment in particular is located in an area that has not been designated nonattainment for any of the National Ambient Air Quality Standards (NAAQS) established by EPA: carbon monoxide, lead, particulate matter (less than 10 and 2.5 microns), ozone, sulfur dioxide, and nitrogen dioxide. The NAAQS were established by EPA for these six pollutants based on comprehensive studies of available ambient air monitoring data, human health effects data, and material effects studies. The NAAQS regulate the six pollutants by establishing both a primary and secondary ambient air concentration as well as a length of exposure standard. The primary standard is established to protect everyone including children, individuals with asthma, and the elderly from health risks. The secondary standard is established to prevent unacceptable effects on the public welfare such as unacceptable damage to

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<sup>3</sup> Subsequent discussions with County officials and field reconnaissance confirmed that there are no marked trails within the park.

crops, vegetation, buildings, property, and ecosystems. For most of the criteria pollutants, the secondary standard is the same as the primary standard.

The quantitative carbon monoxide analysis conducted for the EIS was not updated for the HCA Modified alignment. There are a couple of reasons for this. First, the worst case carbon monoxide sites are located in the City of Roanoke where the highest hourly volume exceeds 4,000 vehicles. As demonstrated in the quantitative CO analysis prepared for the EIS, even under worst-case conditions, the highest one and eight-hour carbon monoxide concentrations would not exceed the NAAQS for carbon monoxide and would, in fact, be well below those standards. The highest hourly volume of vehicles associated with the HCA Modified alignment, by comparison, would be significantly less than these worst case sites. Second, FHWA and VDOT executed an agreement on February 27, 2009, for conducting project-level carbon monoxide air quality analyses (the agreement was actually an update to a similar agreement executed in 2004). The agreement, using worst-case modeling assumptions, demonstrated that any project affecting the capacity of roadways without intersections or interchanges for which the build scenario design year level of service (LOS) is E or better and the corresponding average daily traffic (ADT) does not exceed 59,000, then a quantitative carbon monoxide analysis is not required. If the roadway in question has intersections or interchanges for which the build scenario design year intersection/interchange is level of service E or better and the corresponding ADT does not exceed 39,000 ADT (up to 59,000 ADT depending upon the skew angle of the intersection roadway), then a quantitative analysis is not required. Since the ADT for the HCA Modified alignment is less than 21,000, the proposed change to the alignment will not cause any exceedances of the NAAQS for carbon monoxide or contribute to any violations.

A quantitative mobile source air toxics (MSAT) analysis was prepared based on FHWA's February 3, 2006, *Interim Guidance for Addressing MSATs in NEPA Documents* and included in the final EIS. This analysis demonstrated that the primary area of concern for the I-73 project as it relates to MSATs is the northern section of the project within the City of Roanoke near I-81 where the forecasted ADT exceeds 126,000 vehicles per day (vpd). Even then, based on the 2006 guidance, it was determined that there was a low potential for MSAT effects in the Roanoke area. In contrast, once the project leaves the City, it traverses primarily rural areas down to the North Carolina border, and the ADT drops off sharply. For example, the highest ADT on the project between the City of Roanoke and the North Carolina border was forecasted to be below 37,000 vpd which has no meaningful MSAT effects. For purposes of the EA, the HCA Modified alignment was reviewed in light of FHWA's September 30, 2009, *Interim Guidance Update on MSAT Analysis in NEPA Documents*. Based on this review, the conclusions reached in the EIS regarding the potential for MSAT effects do not change. Because the HCA Modified alignment is forecasted to carry less than 21,000 vpd in 2035, the potential for MSAT effects is still in the range of no to low effects. (EA, pages 17-18; VDOT August 30, 2012, Request for a FONSI, page 13)

\* **Noise:** A simplified noise analysis was prepared for the HCA Modified alignment. The types of activities and land uses located in the vicinity of the alignment are subject to the 66 dB(A) noise abatement criteria (NAC; the NAC serves as a threshold for determining when a receptor will experience a noise impact). Based on forecasted traffic, 66 dB(A) impact contour lines were developed parallel to the alignment and are shown in the appendix to the noise study. Receptors located beyond these contour lines would not experience noise levels that exceed the 66 dB(A) NAC. Based on this approach, there are a handful of receptors that would fall within the 66 dB(A) contours and experience noise levels that exceed the 66 dB(A) level and therefore, be considered



impacted. This simplified approach allows one to make some general comparisons to the results from the EIS, but it is not the final analysis. For example, no receptors that exceed the 66 dB(A) NAC were identified in the EIS along this stretch of the ROD-approved alignment in Henry County. If the project moves forward, a more detailed noise analysis would be conducted during final design in accordance with VDOT's FHWA-approved noise policy when the necessary design information would be developed to run the noise model. Likewise, any conclusions regarding noise barriers are only preliminary at this point and subject to change during final design as that design information is developed. At this point, given the limited number of receptors impacted along the HCA Modified alignment, it does not appear that feasible and reasonable noise barriers can be constructed to protect the limited number of impacted receptors. This is consistent with the findings in the EIS for the rural areas. Notwithstanding, these barrier conclusions would be reviewed again during final design as the information needed to make a definitive conclusion is developed.

Noise impacts can also occur when there is a substantial increase in noise levels in the design year when compared to existing noise levels. Because of the simplified approach taken for the noise analysis, substantial noise impacts were not identified. However, a review of the noise study graphics included in Appendix C of the EA shows that there are a handful of receptors located outside the 66 dB(A) contour but within 500 feet of the edge of the roadway<sup>4</sup>. Therefore, there is the potential that these receptors will experience a noise impact because of a substantial noise increase. By comparison, receptors were identified in the EIS along the ROD-approved alignment that would also experience a noise impact because of a substantial noise increase.

The noise analysis for the HCA Modified alignment was prepared before FHWA's revised noise regulations went into effect July 13, 2011. Given the revisions to the noise regulations and the manner in which noise analysis and decisions have been historically made in Virginia, the revised noise regulations are unlikely to affect the results of the simplified noise analysis conducted for the HCA Modified alignment. For example, the revised noise regulations do not change the way noise analyses are conducted or impacts are identified. Some of the more prominent revisions include the expansion of the definition of a Type I project subject to noise analysis, expansion of the NAC, a requirement that States develop a design goal for their noise barriers (i.e. a noise attenuation level that will be achieved), and reinforcement of the regulatory basis for Type II programs. None of these changes to the noise regulations would change the results of the simplified noise analysis. In addition, VDOT made discretionary changes to its approach for addressing noise impacts based on the revisions to the noise regulations. For example, VDOT changed their approach for determining the reasonableness of noise barriers, reduced the limits beyond the project where noise impacts will be considered, changed their date of public knowledge, and eliminated third party funding. Again, if the project advances, a final design noise analysis will be conducted at the appropriate time. That final design noise analysis will be based upon the revised noise regulations. Given the revisions that have been made to the noise regulations, it is not anticipated that the revised noise regulations will have a noticeable effect on the results and conclusions of the noise analysis conducted for the HCA Modified alignment. (EA, pages 18, 32-34; Appendix C)

\* **Floodplains:** The HCA Modified alignment would cross seven major streams (for a total of eight crossings) where 100-year floodplains have been designated. In contrast, the ROD-approved

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<sup>4</sup> Based on VDOT's noise policy, impacts to receptors are considered up to 500 feet from the roadway; beyond that, the reliability of the model to assess impacts declines.

alignment would cross five major streams (for a total of eight crossings) where 100-year floodplains have been designated. There are 120 acres of floodplains located within the 600 foot corridor of the HCA Modified alignment compared to 91 acres located within the 600 foot corridor of the ROD-approved alignment, an increase of approximately 24%. However, included in the estimate of 120 acres are the floodplains located along the Route 58 Bypass which the HCA Modified alignment would follow for five miles. This includes floodplains associated with the Route 58 Bypass crossing of Leatherwood Creek and Smith River and an approximately one mile section of the Route 58 Bypass where it is located in close proximity to and parallels Leatherwood Creek. The existing Route 58 Bypass is an access-controlled, four-lane freeway with a divided median. Limited work would be needed to bring the Route 58 Bypass alignment up to Interstate standards. Accordingly, while there may be 120 acres in the 600 foot corridor of the HCA Modified alignment, that entire 120 acres do not have the potential to be impacted; the floodplains located along the section of the HCA Modified alignment where it will follow the Route 58 Bypass for five miles and not deviate from have a low probability of being impacted (i.e. the floodplains associated with the crossings of Leatherwood Creek and Smith River as well as the floodplains associated with Leatherwood Creek where the Route 58 Bypass parallels it for approximately one mile). Therefore, when this is taken into account, the number of floodplain acres in the 600 foot corridor that could be potentially impacted is reduced and more comparable to the total acres of floodplains associated with the ROD-approved alignment. Regardless, floodplain encroachments will be avoided or minimized to the extent practicable, but there are limits to the extent to which impacts can be minimized in some cases because of the location of the project relative to the floodplains (i.e. perpendicular). In accordance with 23 CFR Part 650, crossings will be designed so that there will not be an appreciable increase in the floodway, 100-year floodplain, or the risk of flooding. No substantial effects on natural or beneficial floodplain values are expected as a result of the proposed project. (EA, pages 18-19, 30-31; *Potential Reservoir & Watershed Impacts Memorandum*)

\* **Wetlands:** Approximately 6.3 acres of wetlands are located within the 600 foot corridor of the HCA Modified alignment. By contrast, 10.2 acres are located in the corridor of the ROD-approved alignment. Impacts to the wetlands would be primarily from filling in wetlands during construction of the roadbed. Avoidance and minimization has been considered to the extent practicable during the environmental review process given the level of design work that has been conducted. Wetland mitigation will be coordinated with the Corps of Engineers during the permit process and would be consistent with their preferred hierarchy for mitigating wetland impacts which includes wetland banks, use of in-lieu fees, wetland creation on-site and off-site, and wetland enhancement or restoration. (EA, page 30; *Potential Reservoir & Watershed Impacts Memorandum*)

\* **Streams:** Based on the October 2009 assessment of the HCA that was used to support the CTB's decision to proceed with a more comprehensive evaluation of the HCA, it was determined that the HCA Modified alignment would cross 16 streams while the ROD-approved alignment would cross 21. For purposes of this EA, the National Hydrography Dataset, U.S. Geological Survey, and EPA data sets were used to calculate the number of stream crossings. These data sets identified 43 stream crossings for the HCA Modified alignment and 42 stream crossings for the ROD-approved alignment. This translates to approximately 4.4 miles of stream impacts for the HCA Modified alignment and approximately 4.3 miles of stream impacts for the ROD-approved alignment. Impacts to streams would primarily be from filling of stream channels during construction of the roadbed, placement of culverts, and the construction of bridges. Long term impacts to streams

could occur as a result of pollutant loading in runoff from impervious surfaces but stormwater retention measures will be incorporated into the project. As designed, these measures will retain runoff for a period of time or slow down the runoff allowing sediments and pollutants to settle out. As with wetland impacts, avoidance and minimization of stream impacts have been considered to the extent practicable during the environmental review process given the level of design work that has been conducted. Stream mitigation will be coordinated with the Corps of Engineers during the permit process; however, all practicable measures will be taken to avoid and minimize impacts which could include but is not limited to temporary and permanent stormwater measures, open bottom or countersunk culverts, limiting stream work to dry periods, etc. (EA, page 27; *Potential Reservoir & Watershed Impacts Memorandum*)

**\* Surface Waters, Water Quality:** The HCA Modified alignment would be located closer to the Martinsville Reservoir (also known as Beaver Creek Reservoir) as well as the Martinsville Reservoir, Little Beaver Creek, and Leatherwood Creek intakes when compared to the ROD-approved alignment. Specifically, the HCA Modified alignment would go from being 7,900 feet from the Martinsville Reservoir to 210 feet; 14,354 feet from the Martinsville Reservoir intake to 5,220 feet; 19,400 feet from the Little Beaver Creek intake to 10,600 feet; 6,600 feet from the Leatherwood Creek intake to being within the alignment corridor (i.e. the intake is located within the vicinity of the existing interchange where the Route 58 Bypass takes off from Route 58; the intake is located between a mobile home park and Laurel Park Middle School); and 6,500 feet from Reservoir #6 to 1,700 feet. To address the potential impacts from the HCA Modified alignment on water quality, a technical memorandum was developed. The technical memorandum generally describes four different types of potential impacts: 1) pollutants in runoff; 2) pollutants from highway maintenance; 3) hazardous material spills; and 4) construction impacts (particularly sedimentation). The technical memorandum points out that the HCA Modified alignment has a greater physical presence within drinking water watersheds than the ROD-approved alignment raising the potential for greater water quality-related impacts (although the HCA would have fewer stream crossings). However, the technical memorandum goes on to conclude that these potential impacts will not be significant for the following reasons:

- 1) Anticipated contaminant loading from roadway runoff is not expected to greatly affect water quality in the reservoir given the maximum ADT (page 15). Also, as was pointed out in the EIS, this project is subject to Virginia's stormwater management requirements, which would capture runoff from the roadway, allowing sediments to settle out, before runoff is discharged into the environment.
- 2) Impacts from highway maintenance runoff is not expected to be substantial (page 16).
- 3) There is a low probability for hazardous material spills (pages 16-18). It is recognized that when it comes to the issue of hazardous material spills, it's more an issue of risk and how to manage that risk instead of an issue of quantifying the impacts from a potential worst-case scenario that a hazardous material spill would represent.
- 4) Construction of the proposed roadway is not expected to cause a significant increase of construction-related sediment loads into the reservoir if erosion and sediment control measures are appropriately used and maintained; as was pointed out in the EIS, this project is subject to Virginia's erosion and sediment requirements and several erosion and sediment controls were specifically identified to address construction impacts.

The Army Corps of Engineers reviewed the technical memorandum and did not provide any substantive comments on its results or conclusions. The City of Martinsville also reviewed the technical memorandum and provided comments. In their comments, the City of Martinsville identified three public water supplies in the vicinity of the HCA: Beaver Creek (also known as Martinsville Reservoir), Little Beaver Creek and Leatherwood Creek. Beaver Creek is the primary public water supply while Little Beaver Creek and Leatherwood Creek serve as back-up/emergency water supplies and are not used on a regular basis. The City of Martinsville also identified three different types of impacts: 1) immediate (during construction); 2) short term/direct (hazardous material spill); and 3) long term/indirect (stormwater and maintenance runoff). Regarding these impacts, the City concluded:

- 1) "...immediate impact to any of the water sources resulting from roadway construction should be minimal provided appropriate erosion and sediment control measures are properly designed, constructed, and maintained." Regarding Beaver Creek Reservoir, the City commented, "Impact to the reservoir during construction should be minimal provided again, the appropriate E & S control measures are designed, constructed, and properly maintained."
- 2) "...immediate and/or short term impacts to the City [from impacts to the Little Beaver Creek and Leatherwood Creek water supplies] are minimal since the City has the option of when to activate the pump stations [of these sources]." Regarding Beaver Creek Reservoir, the City commented, "Our area of most concern would be a direct impact to the reservoir resulting for example, from a vehicle accident upstream with substantial spillage along the roadway whereby the material immediately enters the tributaries feeding the reservoir and enters the reservoir itself, potentially contaminating the water source." Elsewhere, the City commented, "It would appear that much of the potential impact could be minimized through roadway design incorporating curbing to collect roadway drainage in "high risk" areas; piping, treating, filtering, and stabilizing the collected drainage through the use of detention basins/ponds or other appropriate measures..."
- 3) "Long term/indirect impact [to the Little Beaver Creek and Leatherwood Creek water supplies]...that could potentially accumulate over time would be of concern, however. In this regard, it would seem appropriate for roadway design to include elements to minimize adverse effects...to allow contaminants to settle/filter out at maximum distance from the water sources, etc." Regarding the Beaver Creek Reservoir, the City commented, "...indirect/long term impact resulting from the accumulation of roadway liquids, salts, chemicals, etc. would pose problems, perhaps not at the magnitude of the direct hit scenario..., but would create concern nonetheless as treatment measures may require modification to adequately handle contaminants not currently present in the water source." Elsewhere, the City commented, "It would appear that much of the potential impact could be minimized through roadway design incorporating curbing to collect roadway drainage in "high risk" areas; piping, treating, filtering, and stabilizing the collected drainage through the use of detention basins/ponds or other appropriate measures..."

In summary, the City concluded, "...there is potential impact to public drinking water sources, the City has concern over the impact, but proper design and engineering, construction, and maintenance should minimize the potential impact."

In the ROD for I-73, FHWA committed to the following erosion and sediment control and stormwater management measures in another sensitive area on the project where water quality impacts may be a potential issue to the Roanoke logperch:

- A project-specific erosion and sediment control plan and a storm water management plan will be developed for the project, including segment 153 (see section 4.6.3.3 for a list of measures that will be considered to control and mitigate for erosion and storm water runoff);
- Erosion and Sediment Control Inspectors certified by the Virginia Department of Conservation and Recreation will be assigned to the project during construction, and VDOT will consider employing a full-time erosion and sediment inspector while construction occurs over and in the immediate vicinity of the Pigg River;
- All contractors working on site will be certified through the VDOT Erosion and Sediment Control Contractor certification;
- Permanent storm water BMPs will be constructed and implemented as soon as practicable following clearing and grubbing operations and in conjunction with roadway construction activities;
- Storm water management facilities in proximity to receiving waters with known populations of the Roanoke logperch will be sized to accommodate the contents of a tanker truck in the case of a hazardous material spill;

In order to reduce the potential for water quality impacts from construction, operation, and maintenance of the facility as well as the potential increased risk from hazardous material spills in the drinking water watersheds of the City of Martinsville and Henry County due to the proximity of the HCA Modified alignment to reservoirs and water intakes, FHWA is committing to similar “enhanced” mitigation/minimization measures like the ones bulleted above in the vicinity of the Martinsville/Beaver Creek Reservoir and Leatherwood Creek intake. In addition, FHWA is committing to other “enhanced” mitigation/minimization measures but will not dictate the specific measures to be implemented given that there is no schedule for implementing the project and given that strategies for addressing water quality impacts may evolve and become more effective over time. Measures on other projects involving potential drinking water impacts have taken the form of wet retention ponds to achieve higher pollutant removal efficiency; concrete curb along fill sections in order to capture and redirect all stormwater runoff to retention ponds through a series of curb, median, and ditch inlets; a monitoring program to measure pollutant concentrations at outfall locations before, during and after construction; dry sump areas at the outfall of each drainage system where runoff is conveyed to a wet pond where the sump area is sized to hold a volume equal to the capacity of a tanker truck (approximately 1,100 cf); use of Jersey barrier in fill sections closest to the reservoir and water intake to prevent or provide a more positive containment of errant vehicles; rock check dams in fill ditches; and lining of retention ponds with a membrane to prevent migration of hazardous materials in the event of a spill. While FHWA is not dictating the specific measures to be used, the intent is to utilize measures and incorporate design features into the project that would achieve similar results as the measures and features identified above; namely, measures and features that minimize potential impacts to public drinking water supplies and associated watersheds by capturing and addressing all stormwater runoff before it enters the environment and measures and features that reduce the potential risk of trucks leaving the roadway and hazardous material spills in affected watersheds from reaching water supplies. Finally, any

features that are developed to minimize potential impacts to public drinking water supplies and associated watersheds will be coordinated with the City of Martinsville and Henry County.

\* **Endangered Species and Wildlife:** In 2011, a field survey for the smooth coneflower was conducted within the 600 foot corridor of the HCA Modified alignment. The survey found that the study area generally lacked favorable habitat attributes for the species. Furthermore, no smooth coneflower individuals were found within the study area. The survey was submitted to the Fish and Wildlife Service and the Corps of Engineers, but it did not elicit any comments. Due to the lack of favorable habitat, the HCA Modified alignment will have no effect on the smooth coneflower. A field survey was also conducted for the Roanoke logperch within the 600 foot corridor of the HCA Modified alignment. Four stream crossings were identified as having system size suitable for logperch populations: Reds Creek, Marrowbone Creek, Beaver Creek, and Leatherwood Creek. The Smith River, which would be crossed by the alignment at the same crossing as the Route 58 Bypass, was not surveyed since the species has already been documented in that system. The survey results indicated that the four crossings within the study area generally lacked appropriate suitable habitat for the species despite the presence of small areas of suitable habitat. The survey was submitted to the Fish and Wildlife Service and the Corps of Engineers, but it did not elicit any comments. Due to the lack of suitable habitat in all streams surveyed and because the Smith River crossing would utilize the existing Route 58 Bypass crossing, the HCA Modified alignment would have no effect on the Roanoke logperch or its habitat. The surveys will need to be updated and further consultation with the Fish and Wildlife Service will be required if the project progresses to final design. (EA, pages 31-32, VDOT August 30, 2012, Request for a FONSI, pages 21-22)

\* **Indirect and Cumulative Impacts:** When the EIS was prepared, it was assumed that induced development would most likely occur at interchanges over time which would be considered an indirect effect on the environment. While development and development patterns are dependent upon a variety of factors, FHWA and VDOT worked with EPA to develop an acceptable approach that could be used to compare potential indirect effects among alternatives and inform decision making. To assess potential indirect effects, a zone of potential influence having a one-mile radius was established at each potential interchange location. From this, an area with a one-quarter mile radius was subtracted to account for direct construction impacts associated with the interchange. Likewise, land within the one-mile radius that had already been programmed for development in local comprehensive plans but not yet converted was assumed to be developed for purposes of the analysis. It was then assumed that all other land within the one-mile radius (also known as the zone of influence), with the exception of existing park, residential and commercial development, would be converted over time and therefore, be a potential indirect effect of the project. A similar approach was taken for the HCA Modified alignment. There are five new interchanges associated with the ROD-approved alignment. There are seven interchanges associated with the HCA modified alignment, two of which are existing interchanges. With respect to the new interchanges, both the HCA Modified alignment and the ROD-approved alignment would utilize the same interchanges at the termini (Route 809 and Route 87). Therefore, the potential indirect effects at these two locations are assumed to be identical. Moving north to south, the HCA Modified alignment proposes a new interchange at Route 663, which borders the Fieldale-Collinsville growth area and is near the Patriot Center Industrial Park. Henry County requested the I-73 alignment be moved closer to the industrial park because it was more compatible with the County's economic development plans. Currently, about 10% of the land around the interchange within the zone of influence is developed. The remaining land, which consists of forestland and open field

would be subject to induced development. The HCA Modified alignment would also propose a new interchange at Route 57 which is within the Iriswood growth area. Approximately 20% of the land within the zone of influence is developed, and the remaining lands that could be converted due to induced development consists of forestland and grassy areas. Finally, the HCA Modified alignment proposes a new interchange near the Martinsville Motor Speedway within the Ridgeway growth area. Approximately 60% of the land within the zone of influence is already developed.

In contrast, the ROD-approved alignment proposed a new interchange at Route 57 where approximately 10% of the land in the zone of influence is already developed. The remaining land that could be subject to induced development consists of forest and farmland. The ROD-approved alignment also proposed a new interchange at Route 58 where, similar to the circumstances with Route 57, approximately 10% of the land is developed. The remaining land that would be subject to induced development consists of forest and farmland. Finally, the ROD-approved alignment proposed a new interchange at Route 650 where virtually all of the land within the zone of influence is undeveloped. The land that would be subject to induced development is primarily forestland.

As indicated above, the HCA Modified alignment would also use two existing interchanges, one located at Route 58 and the other located at Route 650. The land within the zone of influence at the existing Route 58 interchange is 50% developed. The land that would be subject to induced development consists of forestland and grassy areas. Finally, the land within the zone of influence of the existing Route 650 interchange is 60% developed. The land that would be subject to induced development consists of forestland. Given this approach using the zone of influence, it was calculated in the EIS that there is a potential for 1,764 acres subject to induced development at each interchange once you subtract out the acreage associated with the interchange construction footprint. If we use this figure and multiply it by the percent of land that is undeveloped and subject to induced development for each interchange above, we come up with approximately 5,292 acres that could be converted by induced development for the HCA Modified alignment and approximately 4,939 acres for the ROD-approved alignment. Therefore, the HCA Modified alignment represents a 6% increase in the acreage that could potentially be converted by induced development given the assumptions that were used.

The conversion of acreage by induced development also represents a cumulative impact. While it can be debated whether an increased potential for induced development represents reasonably foreseeable actions, the fact of the matter is that the alignment in Henry County has been moved closer to Martinsville at the request of County officials so that it would be more compatible with their economic development goals. The HCA Modified alignment is also more consistent with the County's designated growth areas which are targeted for growth and development. Therefore, the potential for the project to be a catalyst for economic development is enhanced. Accordingly, the project has the potential to accelerate development where it is currently planned or allow development to occur where it may not be currently planned. While information on specific development that might come about as a result of the project is lacking and is speculative in nature, the induced development assessment that was done for the zone of influence around each interchange identifies the potential cumulative effects that might occur in terms of land use conversions. The conversion of land from undeveloped to developed can have additional impacts like water quality impacts which are addressed in general terms in the EA. (EA, pages 34-35; VDOT August 30, 2012, Request for a FONSI, pages 23-27)

## **Findings and Determinations:**

### *Section 106 Determination of No Effect*

Based on coordination with the SHPO, it has been determined that the HCA Modified alignment will have no effect on historic architectural resources that are eligible for the National Register of Historic Places and located within the Area of Potential Effect (APE). The overall project will still have an adverse effect on historic resources based on impacts located elsewhere on the project, which have already been addressed by the Section 106 Programmatic Agreement executed in 2006. Archeological properties located in the APE for the project will be addressed in accordance with the Section 106 Programmatic Agreement that has been executed for the project.

*Section 4(f) de minimis Finding* – The proposed project will require the acquisition of approximately 11 acres of right-of-way from Fisher Farm Park. In accordance with Section 6009 of SAFETEA-LU, FHWA is making the finding that this Section 4(f) impact is *de minimis*. This finding satisfies the requirements of 23 CFR Part 774.5(b)(2), 774.7(b), and 774.17 regarding *de minimis*. Specifically, the transportation use of Fisher Farm Park, together with the minimization and mitigation commitments identified in the Section 4(f) discussion above, will not adversely affect the activities, features, or attributes that qualify the park for protection and which County officials consider significant for meeting their recreational needs. The Henry County Parks and Recreation Department owns and maintains Fisher Farm Park and the public recreational facilities located on site, which includes two baseball/softball fields, two picnic shelters, restrooms, a playground and open space, and wooded areas that may be used for hiking; all of these facilities are located on the eastern half of the park. The road will be located in a portion of the park that does not contain any recreational resources, is inaccessible to the public, and has no development plans per County officials. By letter dated December 20, 2010, Henry County Administrator Benny Summerlin concurred that the project would not adversely affect the activities, features, and attributes of Fisher Farm Park and explained that the County has no plans to develop the western portion of the park for recreational use due to the difficult terrain located there. The FHWA's intent to pursue a Section 4(f) *de minimis* finding was clearly stated in the EA, and the public was afforded an opportunity to comment on that intent at the March 2011 public hearing. Several comments regarding Fisher Farm Park were received and have been addressed by VDOT in their August 30, 2012, Request for a FONSI. In summary, three comments supported the HCA Modified alignment through the park, one comment supported the HCA alignment that stayed out of the park, and one comment opposed both alignments in the vicinity of the park. Another comment questioned the applicability of Section 4(f) *de minimis* given the acreage of impact while another comment questioned the characterization that park land located west of the alignment constituted an uneconomic remnant. Again, these comments have been addressed by VDOT in their request for a FONSI. By e-mail dated November 29, 2012, Henry County reaffirmed its position regarding Fisher Farm Park.

*Wetland Finding* – Wetland impacts have been considered in light of Executive Order 11990. The HCA Modified alignment will have fewer wetland impacts than the ROD-approved alignment that it would replace (approximately 6.2 acres compared to 10.2 acres, respectively). Therefore, the HCA Modified alignment can be considered a minimization alternative compared to the ROD-approved alignment in Henry County. In addition, the proposed project includes all practicable measures to minimize harm that can be developed at this stage of project development given that design activities are limited. Based on the above considerations, FHWA has determined that there is no practicable alternative to the proposed construction in wetlands, and the proposed project includes all practicable



measures to minimize harm to wetlands that can be developed at this stage of project development which may result from such use.

*Floodplain Finding* – A floodplain finding in accordance with Executive Order 11988 is not needed because the potential floodplain encroachments that have been identified are not expected to result in significant impacts (i.e. impacts that raise the elevation of the floodplain above acceptable levels causing encroachments on adjacent properties or impacts that modify the regulatory floodway). Floodplain crossings will be designed in accordance with 23 CFR Part 650, so that there will not be an appreciable increase in the 100-year floodplain or alterations to the regulatory floodway or base floodplain.

### **Mitigation and Minimization Commitments:**

The following is a list of the more prominent mitigation and minimization measures that FHWA and VDOT will undertake to address the impacts to the social and natural environment resulting from the implementation of the HCA Modified alignment. These measures represent both commitments on the part of FHWA and VDOT as well as requirements of law. This list is not inclusive; it does not include mitigation for impacts during construction, which are addressed in accordance with VDOT's *Road and Bridge Specifications*, and it does not include commitments that have already been made in the EIS.

- ▶ In accordance with the Section 106 Programmatic Agreement dated 2006, additional archeological work will be carried out in the HCA Modified alignment prior to construction.
- ▶ With respect to Fisher Park:
  - To the extent practicable and without compromising safety, the project applicant will give consideration during final design to the flexibility inherent in VDOT's freeway design standards in order to minimize the right-of-way of the HCA Modified alignment through the park. This will include consideration of reducing the median to the degree permitted, considering the use of retaining walls to eliminate cut slopes, and using guardrail to minimize clear zones.
  - Appropriate landscaping will be provided to stabilize cut and fill slopes and to minimize the visual impact of the corridor on the park.
  - Coordination with park officials will be carried out during final design.
  - A structure will be provided at the crossing of Reds Creek (or another suitable location within the park) and sized sufficiently to allow for bicycle and pedestrian access to the western portion of the park should County officials wish to develop the western portion for recreational opportunities in the future.
  - Section 6(f) of the LWCF will be addressed during the design and right-of-way phases, which requires the approval of the Department of the Interior for the conversion of Section 6(f) property to roadway use and requires the applicant to provide replacement property of equal fair market value and reasonably equivalent usefulness and location.
- ▶ Floodplain crossings will be designed in accordance with 23 CFR Part 650, so that there will not be an appreciable increase in the 100-year floodplain or alterations to the regulatory floodway or base floodplain.

- ▶ The “enhanced” mitigation and minimization measures committed to elsewhere on the project in sensitive areas will also be employed in the vicinity of the Martinsville/Beaver Creek Reservoir and Leatherwood Creek intake. These measures relate to erosion and sediment controls and the timing of the implementation of measures to address stormwater runoff. In addition, measures and design features that minimize potential impacts to public drinking water supplies and associated watersheds by capturing and addressing all stormwater runoff before it enters the environment and measures and features that reduce the potential risk of trucks leaving the roadway and hazardous material spills in affected watersheds from reaching water supplies will be developed and incorporated into the project during final design.
- ▶ Wetland and stream impacts will be mitigated in accordance with the Army Corps of Engineers Mitigation Rule, which are designed to improve the effectiveness of compensatory mitigation by focusing on watersheds and resource functions, expanding public participation in the decision making process, and increasing the efficiency and predictability of the mitigation project review process.
- ▶ FHWA will look for opportunities to enhance wildlife passage during the design process, especially for crossings where bridges are warranted.

### **Public Involvement:**

VDOT hosted a public hearing on March 29, 2011, where information was provided to the public on the proposed HCA Modified alignment, and the public was permitted to go around to stations and discuss the issues that interested them with VDOT officials and representatives. Participants were provided the opportunity to submit comments in writing or to a court reporter. The EA and supporting studies were made available to the public in advance of the public hearing and posted on-line. A comment period for the EA was provided 15 days in advance of the public hearing and extended for ten days after.

### **Miscellaneous Issues and Considerations:**

Virginia Natural Landscape Assessment – When FHWA issued the ROD in March of 2007, it made the following commitment with respect to landscape corridors for the movement of wildlife:

...the Virginia Department of Conservation and Recreation’s Division of Natural Heritage has been conducting a statewide analysis known as the Virginia Natural Landscape Assessment (VANLA). The VANLA uses a geographic information system (GIS) to identify large patches of natural land cover (habitat cores) and the natural linkages connecting these areas (landscape corridors). VDOT is looking at incorporating the VALAN GIS into their GIS applications so that planners and project managers can assess potential habitat fragmentation issues or impacts on landscape corridors during the project scoping stage. The statewide analysis is scheduled to be completed in the summer of 2007 and wasn’t available when the final EIS was prepared. Therefore, FHWA has made a commitment in the final EIS to use the VANLA to identify impacts to landscape corridors that can be mitigated with appropriate wildlife passage measures. Until that analysis is completed and specific landscape corridors and any associated impacts identified, it is premature to identify and commit to specific mitigation for habitat fragmentation.

Notwithstanding, FHWA is committed to implementing habitat fragmentation mitigation as part of this project in the form of passages for accommodating wildlife.

The VDCR has completed its assessment, and it can be found at the following web address: [http://www.dcr.virginia.gov/natural\\_heritage/vclnavnla.shtml](http://www.dcr.virginia.gov/natural_heritage/vclnavnla.shtml). A review of the assessment shows that no landscape corridors have been identified in the HCA Modified alignment area. The VaNLA also identifies ecological cores and habitat fragments. An ecological core is defined as a patch of land with at least 100 acres, and a habitat fragment is defined as a patch of land with 10 to 99 acres. The ecological integrity of the cores and habitat fragments in the VaNLA are ranked on a scale of 1 to 5 with 1 exhibiting outstanding integrity and 5 exhibiting general integrity. The VaNLA explains the ecological integrity rankings this way:

...natural landscapes are essential for basic ecosystem services such as cleaning the air and filtering the water. Natural lands also harbor thousands of species of animals and plants and contain libraries of genetic information from which new foods, materials, and medicinal compounds are derived. These parts of the landscape also provide us with recreational opportunities and open space resources. But these qualities are represented differently across the cores and habitat fragments that constitute the natural landscape. To assess their unique values, each core and habitat fragment has been assigned an Ecological Integrity Score that rates the relative contribution of that area to the ecosystem service values above. In general, larger, more biologically diverse areas are given higher scores. Scores are enhanced if the core or habitat fragment is part of a larger complex of natural lands. Scores also are increased for those cores and habitat fragments that contribute to water quality enhancement.

In the area of the HCA Modified alignment, the cores and habitat fragments are rated 4 (moderate) and 5 (general) for ecological integrity. There is a large section to the east and southeast of the southern terminus of the ROD-approved alignment that is rated 2 (very high) for ecological integrity. The ROD-approved alignment would impact this core near its northwestern border while the HCA Modified alternative would move the alignment further to the west and avoid this core. In addition to the cores and fragments, there are several natural landscape blocks located throughout the project area. These blocks are defined as a slightly fragmented aggregation of one or more ecological cores or habitat fragments and contiguous land cover, and they were mapped to support the ecological cores. These blocks were created by selecting natural lands adjacent to ecological cores and establishing their boundaries at major roads and where developed areas were at least one hundred meters across. These features are analogous to hubs in other landscape assessments. Since hubs were prioritized instead of ecological cores in those assessments, the name was changed to natural landscape blocks to deemphasize them and reduce confusion. The smaller sizes of ecological cores, and the fact that they often are bounded by local roads, make them much more useful for conservation planning at the local level, thus these were the features prioritized in the assessment. North of Route 58, both the HCA Modified alignment and ROD-approved alignment have a comparable potential to impact these natural landscape blocks. South of Route 58, the potential for the ROD-approved alignment to impact these natural landscape blocks is much greater because the HCA Modified alignment would follow the existing Route 58 Bypass for five miles.

While there are no landscape corridors that have been identified that will be impacted by the HCA Modified alignment, the FHWA will continue to look for opportunities to enhance wildlife passage

during the design process, especially for crossings where bridges are warranted.

Army Corps of Engineer Comments on the EA – The Army Corps of Engineers submitted comments on the EA similar to some of the comments they submitted on the draft and final EIS, which were addressed in the final EIS and ROD, respectively. The specific nature of these most recent comments had to do with the extent of impacts to riparian corridors, streams and other aquatic resources as well as consideration and development of alternatives including improvements to the Route 220 corridor and access management. Accordingly, the Army Corps of Engineers is not able to identify the LEDPA at this time. In October 2007, a lawsuit was filed in federal court against FHWA alleging violations of NEPA on the project. The plaintiffs in that litigation raised some of the same issues regarding the consideration and development of alternatives as the Corps of Engineers in their comments. In July 2009, the District Court affirmed the agency’s decision making and interpretation of NEPA on the project and ruled in FHWA’s favor on all counts. A copy of the Court’s decision has been provided to the Corps of Engineers.

Health Effects of Motor Vehicle Emissions – Andrea Ferster, on behalf of Virginians for Appropriate Roads, Forest Watch, and the Sierra Club, submitted comments on the EA. One of those comments had to do with mobile source air toxics (MSATs) and the increased risk from breathing MSATs, including the risk of cancer. An article from the International Journal of Health Geographics was also cited in support of the comment. The EIS addressed MSATs, and VDOT’s August 30, 2012, Request for a FONSI addressed this comment in particular. Specifically, because of the forecasted volume of traffic on I-73, it was determined and documented in the EIS that the potential for MSAT effects was in the range of no to low effects (a low effect on the northern section of the project and no effect on the southern section). This conclusion was based on FHWA’s 2006 interim guidance for considering MSATs in NEPA documents. That guidance was updated in 2009 and reviewed for the EA. The conclusion regarding the potential for MSAT effects on the I-73 project and the HCA Modified alignment in particular is unchanged by the updated guidance and is in fact reinforced.

Regarding the health effects of mobile source emissions in general, it is not uncommon to receive comments on a NEPA document citing research that draws a link between mobile source emissions and adverse health effects. There are hundreds and hundreds of peer-reviewed studies (exposure, epidemiology and toxicology studies) that have been conducted on the subject of traffic-related air pollution (which include both the criteria pollutants regulated by EPA (i.e. NAAQS) and MSATs) in terms of emissions, exposure, and health effects. Not all of these studies are conclusive nor do they arrive at the same conclusions. Therefore, given the universe of studies, considering just one or two studies does not allow one to draw informed conclusions. The Health Effects Institute (HEI), a nonprofit corporation chartered in 1980 as an independent research organization to provide high-quality, impartial and relevant science on the effects of air pollution on health, has done a lot of work in this area. In 2010, HEI released Special Report #17 titled, *Traffic-Related Air Pollution: A Critical Review of the Literature on Emissions, Exposure, and Health Effects*<sup>5</sup>. The panel that developed the report consisted of scientists from a variety of disciplines including medicine, environmental science, environmental health, and vehicle emissions. In compiling their report, HEI considered hundreds of peer-reviewed studies related to emissions and exposure, epidemiology, and toxicology published between January 1980 and October 2008. Based on their efforts, HEI affirmed that motor vehicles are a significant source of air pollution in urban areas and concluded that there was sufficient evidence to support a causal association between traffic related air pollution and

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<sup>5</sup> <http://pubs.healtheffects.org/getfile.php?u=553>

exacerbation of asthma in children that already have it. Based on their review of the available research, HEI also concluded that the results were either inadequate, only suggestive, or there was insufficient evidence/data to infer a causal association between traffic related pollution and adverse human health effects. Specifically, HEI concluded:

#### Asthma Incidence and Prevalence in Children (epidemiology studies)

- “Living close to busy roads appears to be an independent risk factor for the onset of childhood asthma.” They “considered the evidence for a causal relationship to be in the gray zone between “sufficient” and “suggestive but not sufficient.”

#### Exacerbation of Symptoms in Children with and without Asthma (epidemiology studies)

- The “evidence is “sufficient” to infer a causal association between traffic exposure and exacerbations of asthma but that it is “inadequate and insufficient” to infer a causal association between exposure and respiratory symptoms in children without asthma.”

#### Asthma Onset and Respiratory Symptoms in Adults

- HEI noted that the evidence between exposure to traffic-related pollution and new adult asthma was “inadequate and insufficient” as it was only investigated in one study. Seventeen studies were reviewed by HEI on respiratory systems, “of which all but one relied on proximity to roads or traffic-density measures, and concluded that the evidence for a causal association is “suggestive but not sufficient”.
- The “few human [toxicology] studies in which subjects were exposed to realistic traffic conditions are supportive of the possibility that persons with asthma may be more susceptible to adverse health effects related to such exposure.” When the epidemiologic and toxicologic data were viewed together, HEI “noted that a case could be made that there are likely to be causal associations related to exposure to traffic-related air pollution and asthma exacerbation and some other respiratory symptoms. However, given the lack of a large body of toxicological data based on human and animal exposures to real world traffic scenarios, [HEI] noted that it was hazardous to conclude that causality has been established at this time for all respiratory symptoms at all ages.”

#### Lung Function in Children and Adults (epidemiology)

- HEI “concluded that the evidence is “suggestive but not sufficient” to infer a causal association between short- and long-term exposure to traffic-related pollution and decrements in lung function.”
- “While the epidemiology studies do provide suggestive evidence of chronic exposure effects on lung function in adolescents and young adults, there are too few toxicologic data to indicate what mechanisms underlie these observations. The aggregate epidemiologic and toxicologic evidence to chronic exposure to traffic-related air pollution and altered lung function in older adults...is too sparse to permit any inference with respect to causal association.”

These findings by HEI are consistent with EPA’s approach to MSATs. Because the relationship between MSATs and health effects is an area of continuing research and many questions remain unanswered, EPA has not established a NAAQS for any of the MSATs to protect human health other than particulate matter. Further, the tools and techniques for assessing project-specific health outcomes are limited. These limitations impede the ability to evaluate how the potential health risks posed by MSAT exposure should factor into project level decision making. Regardless, as

acknowledged by EPA in their 2007 Final Rule on the Control of Hazardous Air Pollutants from Mobile Sources, EPA has instituted controls that will dramatically reduce MSAT emissions through cleaner fuels and cleaner engines over time. Based on EPA's MOBILE6.2 model, even if VMT increases 145% between 1999 and 2050 consistent with historical trends, there will be a combined reduction of 72% in the total annual emission rates for the MSATs most closely tied to mobile sources. Accordingly, it is reasonable to conclude that even if the association between adverse health effects and MSATs is more clearly established over time, the potential health impacts from the project as they relate to mobile source emissions is expected to decrease as those emission rates decrease. Likewise, the qualitative MSAT analysis prepared for this project and included in the Air Quality Technical Report determined that the project has a low potential for MSAT effects. Not only is this based on the trend in emission rates described above, it is also based on the fact that the project is not forecasted to carry anywhere near the traffic at which the potential for MSAT effects is considered to be higher (e.g. 140,000 to 150,000 ADT). Accordingly, the project in general and the HCA Modified alignment in particular is not expected to have an adverse effect on health due to mobile source emissions.

### **Evaluation of Significance:**

The EA was prepared in accordance with 23 CFR Part 771.130 to determine whether changes to the proposed action (the HCA Modified alignment, in this case) would result in significant impacts that were not evaluated in the EIS and to determine whether new information or circumstances relevant to environmental concerns and bearing on the proposed action or its impacts would result in significant environmental impacts not evaluated in the EIS, thereby requiring the preparation of a supplemental EIS. This section of the regulation also indicates that a supplemental EIS is not necessary if changes to the proposed action, new information or circumstances would result in a lessening of adverse environmental impacts evaluated in the EIS without causing new environmental impacts that are significant.

The preceding assessment demonstrates that the environmental impacts from the HCA Modified alignment will be lower than or comparable to the impacts from the ROD-approved alignment in Henry County, depending upon the resource considered.

While the impacts associated with the HCA Modified alignment are lower than or comparable to the impacts associated with the ROD-approved alignment when considering quantity, FHWA still has to consider whether the new impacts associated with the HCA Modified alignment are significant. 40 CFR Part 1508.27 of the Council on Environmental Quality's regulations identifies ten criteria that should be considered in determining whether the intensity of a project's impacts are significant enough to warrant the preparation of an EIS. Those ten criteria are discussed below along with their relevance to the HCA Modified alignment:

1. *Impacts that may be both beneficial and adverse* – In addition to the adverse effects of the project described above, the project will have some beneficial impact on the environment. However, it is not anticipated that these beneficial impacts will be significant. For example, the social environment, represented by those living in the area will potentially benefit from the project in the form of improved access, operations, freight movement, general mobility and transportation linkage. They could also benefit from economic growth, vitality and competitiveness.
2. *The degree to which the project affects public health or safety* – It is not anticipated that

the HCA Modified alignment will adversely affect public health or safety. Two areas where public health arises as an issue is in the area of air and noise impacts. The discussion on air quality impacts documented that the NAAQS were established with public health in mind and the project area has not been designated nonattainment for any of the NAAQS. Likewise, the MSAT discussion documented that MSAT effects from the HCA Modified alignment are in the range of no to low effects. Finally, a review of hundreds of research studies that examined the relationship between mobile source emissions and adverse health effects led to the conclusion that those studies were either inadequate, only suggestive, or there was insufficient evidence/data to infer a causal association between traffic related pollution and adverse human health effects. Noise impacts are assessed against NAC established by FHWA. These NAC were developed by considering several criteria including: 1) hearing impairment; 2) annoyance, sleep, and task interference or disturbance; and 3) interference with speech communication (FHWA's Highway Traffic Noise Analysis and Abatement Guidance). Because of the rural nature of Henry County where the HCA Modified alignment would be located, the alignment would have a limited impact on adjacent receptors. Based on the forecasted traffic and topography, contours have been identified that parallel the corridor; these contours identify where the 66 dB(A) NAC would be exceeded. The noise analysis documents that these contours would be located less than 200 feet from the edge of the corridor. There is also a potential for adjacent receptors to experience noise impacts due to a substantial increase in noise (i.e. 10 db(A) or more increase over existing levels) given the ambient conditions of the existing environment. However, as discussed above in the section on "Noise", these impacts would be limited. Finally, it is anticipated that public safety would be improved by the HCA Modified alignment. Based on vehicle miles traveled, Interstate facilities have the lowest accident rate among all types of roadways (i.e. primary, secondary, urban). Given that part of the purpose of the project is related to economic growth, vitality, and competitiveness as well as freight movement, the HCA Modified alignment would enhance public safety by moving the alignment closer to freight traffic generators and reducing the extent to which existing freight traffic relies upon the existing local and secondary street networks.

3. *Unique characteristics of the geographical area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers or ecologically critical area* – No historic (i.e. architectural) or cultural resources have been identified in the APE for the HCA Modified alignment. The project will impact Fisher Farm Park, but FHWA has made a determination that this impact meets the Section 4(f) *de minimis* requirements. The *de minimis* requirements have been satisfied because the impacts to Fisher Farm Park, when taking into consideration the commitments to minimize and mitigate impacts, will not adversely affect the activities, features, or attributes that qualify the park for protection and which County officials consider significant for meeting their recreational needs. Prime farmlands will also be impacted by the HCA modified alignment. The Department of Agriculture has been coordinated with and the NRCS-CPA-106 form completed. The farmland conversion impact rating is well below the threshold where the impact requires consideration of alternatives to avoid or minimize impacts. Because of the nature of the topography of the project area, there are few unique wetland systems. Generally, the wetlands that exist are small in size and tend to be confined to rivers and lakes. Finally, there are no wild or scenic rivers impacted by the alignment.
4. *The degree to which the effects on the environment are expected to be highly*

*controversial* – The effects on the environment attributed to this project are not expected to be controversial let alone highly controversial. Environmental issues have been coordinated with the appropriate state and federal resource and regulatory agencies, and they have been provided an opportunity to review the EA. Those agencies that submitted comments did not take issue with the assessment of impacts or disagree with the effect of the project on environmental resources. Instead, where issues have been raised, they have focused on the significance of the impact and the consideration of alternatives.


5. *The degree to which the effects on the quality of the human environment are highly uncertain or involve unique or unknown risks* – There are no effects on the quality of the human environment associated with the HCA Modified alignment that can be considered highly uncertain or involve unique or unknown risks. The potential impacts from the project have been identified using standard and accepted scientific methods and/or approaches for assessing environmental impacts. Likewise, the approach for assessing potential risk for hazardous material spills in the drinking water watersheds is consistent with the approach used to identify and address that risk where it exists on other projects.
6. *The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration* – This action will not establish a precedent for future roadway projects with significant effects or represent a decision in principle about a future project. The impacts associated with the HCA Modified alignment are not unique and instead, are fairly common for transportation improvements in rural areas. The FONSI decision on this revision to the ROD-approved alignment is a stand-alone decision and does not create any obligation or bind decision makers on future actions in any way. Any future changes that are proposed to the project will be considered on their own merits and in accordance with FHWA regulations. Finally, using an EA to determine the need for a supplemental EIS does not establish any precedent; FHWA in general and the Division Office in particular routinely prepare EAs to determine the need for a supplemental EIS as allowed by 23 CFR Part 771.130(c).
7. *Whether the action is related to other actions with individually insignificant but cumulatively significant impacts* – The HCA Modified alignment is not related to other actions in the area. Presently, there are few actions that qualify as reasonably foreseeable actions in the same area as the HCA Modified alignment let alone actions that would impact the same environmental resources as the HCA Modified alignment creating a basis for cumulative impacts. There are no other regionally significant transportation projects proposed in the vicinity of the HCA Modified alignment let alone transportation projects that are related to the HCA Modified alignment or I-73. As documented in the discussion on the history of the project, the HCA Modified alignment originated with Henry County in an effort to move the project closer to Martinsville and its growth areas in order to improve the economic development potential for the depressed County. The Patriot Center Industrial Park located northeast of Martinsville was specifically identified as an intended beneficiary of the County's desire to move the alignment to the west. However, the Patriot Center Industrial Park predates the concept of I-73 and was developed before I-73 came to fruition. While the Patriot Center Industrial Park stands to potentially benefit from the decision to move I-73 closer, one is not dependent upon the other.
8. *The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss of significant scientific, cultural, or historic resources* – The HCA



Modified alignment will have no effect on historic architectural properties or rural historic districts. There is a potential to impact archeological sites that have not yet been identified. Because archeological sites are rarely worthy of preservation in place and are only significant for the data that can be gathered from them, the Section 106 Programmatic Agreement defers the identification of archeological sites associated with project changes to later stages of project development.

9. *The degree to which the action may adversely effect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act* – Surveys have been conducted for the smooth coneflower and Roanoke logperch. The smooth coneflower survey found that the study area generally lacked favorable habitat for the species. Furthermore, no smooth coneflower individuals were found within the study area. The Roanoke logperch surveys found that the study area generally lacked appropriate suitable habitat for the species.
10. *Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment* – The proposed action does not knowingly threaten a violation of any Federal, State, or local law for the protection of the environment. The project will comply with all Federal and comply with State and local laws to the extent they apply. The project will include erosion and sedimentation controls during construction and include stormwater management features in the design of the facility in keeping with State and local laws.

Based on the information contained in the EA and other supporting documentation provided by VDOT, FHWA has concluded that the proposed HCA Modified alignment will not have a significant impact on the environment, either individually or cumulatively. Therefore, a supplemental EIS is not warranted, and a Finding of No Significant Impact is being issued accordingly.

  
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Edward Sundra

