PREFACE

A. Introduction

The Intercounty Connector (ICC) study's Lead Agencies, including the Maryland State Highway Administration (SHA), the Maryland Transportation Authority (MdTA) and the Federal Highway Administration (FHWA), have developed this Final Environmental Impact Statement (FEIS) consisting of the complete text of the Draft EIS (DEIS) with revisions and additions based on supplemental research and public and agency comments. The FEIS also describes the DEIS availability and public hearing process *(**Chapter VIII, Agency Coordination and Public Involvement**)*, summarizes all comments received on the DEIS, and provides responses to comments *(**Appendix R**)*.

Sections of the DEIS that have been substantively rewritten or supplemented in response to public and agency comments consist of: ***Chapter IV – Environmental Consequences*** (refinements to impact calculations); ***Chapter V – Section 4(f) Evaluation***, and ***Chapter VII – Preferred Alternative.*** Several appendices have been included since the DEIS: ***Appendix D – Upper Paint Branch Baseflow and Temperature Monitoring Study Summary, Appendix H – Typical Landscaping Planting Details, Appendix M - Aquatic Resources Avoidance and Minimization*** , ***Appendix N - Avoidance and Minimization Studies***, ***Appendix Q - Environmental Stewardship Design Plates,*** and ***Appendix R - DEIS Comment Period Comments and Responses.***

On the basis of comments received on the DEIS, Corridor 1, with the proposed mitigation measures incorporated herein, has been identified as the Preferred Alternative. The following Options were selected with Corridor 1: Rock Creek Option C, Grade Separated Interchange at MD 182 (Layhill Road), Northwest Branch Option A and Terminus at US 1. The Preferred Alternative and options were identified on the basis of minimizing environmental impacts, and engineering and operational advantages.

B. Review of Public Outreach Efforts after Publication of the DEIS

The Lead Agencies reached out to obtain feedback from the public on the DEIS through many strategies. The public involvement plan was aimed at meeting the challenge of hearing from as many people as possible not only during the formal DEIS comment period, but throughout the study.

1. Review of Public Hearings

The Lead Agencies, the Army Corps of Engineers (USACE), and the Maryland Department of the Environment (MDE) held joint public hearings to provide project information and receive input from the public. Public hearing locations and times are detailed in ***Table P-1***. The purpose of these public hearings was to provide an opportunity for interested persons to share their viewpoints on and pose questions about the proposed locations and general design of the alternatives as well as the social, economic and environmental effects of the Build Alternatives and the No-Build Alternative. Elected officials and citizens gave public, private, and/or written

testimony. In total, 1,881 persons attended the four public hearings, of which 283 provided public testimony, 127 gave private testimony and 357 submitted comment cards. Throughout the course of the hearings, nearly 100 technical staff members were available to answer questions at the various display boards available in an informational workshop located in a separate room from where public testimony was given. Technical staff and displays covered the following topics: agency environmental permitting process, the project planning stage of the study, description of the corridors and options under study (including the No-Build Alternative), description of environmental resources under study, and the property acquisition and right-of-way processes. These topics were also highlighted in an approximate 45-minute slide presentation given by the Lead Agencies prior to the start of public testimony.

Table P-1
ICC January 2005 Public Hearings

January 2005 Public Hearings			
January 4, 2005 5:00 p.m. – 11:00 p.m. Eleanor Roosevelt High School 7601 Hanover Parkway Greenbelt, MD	**January 5, 2005** 5:00 p.m. – 11:00 p.m. Gaithersburg High School 314 S. Frederick Ave. Gaithersburg, MD	**January 8, 2005** 9:00 a.m. – 6:00 p.m. James Blake High School 300 Norwood Road Silver Spring, MD	**January 29, 2005** 9:00 a.m. – 6:00 p.m. James Blake High School 300 Norwood Road Silver Spring, MD

2. Review of other outreach efforts

As described in ***Chapter VIII, Agency and Public Involvement***, specific outreach efforts were used in soliciting public comments to ensure that public concerns on the DEIS were addressed in the FEIS. Outreach efforts included:

- *Four Location/Design Public Hearings* - Citizens could provide public, private and/or written testimony at public hearings held in January 2005.

- *Interactive project website* – The project website (www.iccstudy.org) included an online public hearing where members of the public could "attend" when it was most convenient for them. Citizens could email the study team and/or submit comments to the Lead Agencies via the website.

- *DEIS Summary/Public Hearing Brochure* – A brochure that served as a summarized version of the DEIS was mailed to those on the project mailing list prior to the public hearings. This brochure also listed locations where copies of the DEIS were available and the dates, times and locations of the public hearings. A postage-paid comment form was included in the brochure so that people could mail their written comments.

- *ICC Information Centers/DEIS and Technical Report Locations* – Locations throughout the study area served as places where members of the public could visit and view

mapping, newsletters, and other project materials near their home or place of business. The DEIS and Technical Reports were placed in various Information Centers for public review and comment.

- *Community Meetings* – Approximately 60 meetings with community and civic associations have been held throughout the duration of the study.

- *Bilingual Outreach* – As Spanish-speaking populations have been identified in the study area, public hearing fliers were translated into Spanish, a Spanish interpreter was present at the public hearings, and a Spanish link to the ICC website was available.

- *Newspaper Advertisements/News Releases* – DEIS availability announcements and public hearing notifications were placed in local and regional newspapers to encourage people to review and comment on the DEIS.

3. Comment Period

Appendix R of the FEIS presents all comments received during the circulation of the DEIS. The comment period lasted from the Notice of Availability in the Federal Register on December 3, 2004 until February 25, 2005. This period is 40 days longer than the 45 day minimum that is required under the National Environmental Policy Act (NEPA). Additionally, the DEIS was available for download online as of November 22, 2004, prior to the Notice of Availability.

4. Comment Processing

Citizens could submit their comments via mail, at one or more of four Public Hearings and/or via the project website, which included information presented at the hearings. More than 3,800 pieces of correspondence were received on the document, including letters, comment cards, emails, public/private testimony and website comments. These resulted in numerous individual questions or concerns that are addressed in the FEIS. Following the end of the comment period, all testimony and comments were reviewed. Where appropriate, responses were developed and modifications were made to the DEIS.

Federal, State, County, and local agencies and governments; organizations and coalitions; businesses and industries; private citizens; special interest groups; and others submitted comments on the DEIS. Upon receipt of comments, each piece of correspondence was assigned an identifying code and entered in a comment database system. A team was assigned the task of distributing the comments to the appropriate technical staff for responses, which are included in ***Appendix R*** of this document. Comments received that were similar in nature were combined, where applicable, if one overall response could adequately address the comments.

C. Review of Additional Studies

Additional engineering and environmental studies have been conducted since publication of the DEIS based on further avoidance and minimization studies, further refinements of design, mitigation study refinements, environmental stewardship study refinements, and comments received during the public comment period and from the agencies. Some of the additional studies

have resulted in changes to the highway alignment and limits of disturbance. Therefore, the environmental impacts for each alternative and option may vary from what was presented in the DEIS. A summary of additional studies is listed below. More information about additional engineering studies can be reviewed in ***Chapter III, Section E.3*** and ***E.4.*** More information about additional environmental studies can be found in ***Chapter IV*** and ***Chapter VI.***

1. Engineering

a. Further Avoidance and Minimization Studies

Avoidance/Minimization Studies at the Free Methodist Church and Camp Ground

Studies have been conducted along Corridor 2 in the area of the Free Methodist Church and Camp Meeting Ground (FMCMG) in an attempt to avoid the Section 4(f) constructive use of this resource. Along the DEIS alignment, potential for a 700' or a 1300'+/- tunnel were studied to minimize noise and visual impacts. The tunnels were found to increase costs by $15.5 and $60 million, respectively. Also, two southerly shifted alignments (Burtonsville Options X and Y) were studied. These options were found to increase costs by between $8 and $13 million dollars and increased residential displacements by between 12 and 15 over proposed Burtonsville Option A, depending on the alignment. It was determined that the 700' +/- cut and cover section and one of the southerly alignment shifts (Option Y) would not avoid the constructive use of the FMCMG and, therefore, these options were not considered further. Due to the extraordinary cost of the 1,300' +/- tunnel, potential issues associated with erosion and sediment control and stormwater management and its effectiveness, this option was found to be imprudent. Option X was ultimately incorporated into the project as an additional option to be analyzed. These studies have been coordinated with Maryland Historical Trust (MHT) / Maryland State Historic Preservation Officer (MD SHPO). On July 8, 2005, MHT commented that the alternatives would be audible and highly visible from the FMCMG, altering the property's setting and contemplative nature of the resource. It is MHT's opinion that all options with the exception of the northernmost Burtonsville option (Option B) would have an adverse effect on FMCMG *(**Appendix B**).*

Stormwater Management in Parklands

Underground stormwater management would be used within parks to reduce impacts to Section 4(f) resources and the natural environment. Stormwater management devices/structures would be placed underground within the roadway footprint, therefore reducing the requirement for additional right of way outside the roadway footprint within park areas. The stormwater management locations can be viewed in ***Appendix A, Plates 53, 53B, 55, 55B and 57.***

Avoidance/Minimization Studies at Columbia Primitive Baptist Church

A study has been conducted at the Columbia Primitive Baptist Church (CPBC) to address adverse effects as related to the proximity of Ramp K with the Corridor 2/US 29 interchange. The DEIS noted the introduction of visual elements that were out of keeping with the current character of the property due to the loss of heavy vegetation. To minimize the loss of existing trees to the north and west of the church, two Ramp K shifts were studied: 1) retaining Ramp K

as a diamond-type ramp, but pulling it closer to the ICC mainline, and 2) converting Ramp K to a loop ramp in the southeast quadrant. The first option would not eliminate the adverse effect on the church. Further study of the second option found that adverse effects would still be present, but only at the revised ramp tie-in. Construction costs and right of way needs would increase with the second option. Additionally, the proposed bridge over the ICC would be longer to accommodate the ramp and the ramp itself would be longer, both increasing costs and impacts. During the study of this shift, it was also determined that the new ICC interchange with relocated US 29 would also introduce new visual elements to the east of the church. These studies have been coordinated with MHT. On July 8, 2005, MHT commented that Corridor 2 would continue to have an adverse effect on CPBC as the setting and viewshed would continue to be altered by the ICC/US 29 interchange (***Appendix B***). As the ramp shift would not remove adverse effects and is more costly, the interchange configuration at the ICC and existing US 29 as shown in the DEIS has been retained. The interchange design can be viewed in ***Appendix A, Plates 71 and 74.***

Corridor 2 Spencerville Option B to Burtonsville Option A - Wetland 7B Alignment Shift

A study was conducted to determine the feasibility of reducing the impacts to wetland 7B, south of the ICC along Spencerville Option B to Burtonsville Option A. The study found that revising the horizontal alignment by "flattening" the curve through the wetland was feasible. The revision would eliminate one residential displacement and would reduce impacts to wetland 7B by 0.67 acres, while increasing impacts to surrounding wetlands by 0.24 acres, for a net decrease in wetland impacts of 0.43 acres. The shift would increase impacts to the vernal pool in wetland 7C, and has the potential to increase secondary impacts to the State rare plant, Featherbells. Project team review of the alignment shift noted that wetland 7B is within a fenced horse pasture and is disturbed by the presence of horses. It was determined that the horizontal alignment of Spencerville Option B to Burtonsville Option A would not be shifted. The roadway design can be viewed in ***Appendix A, Plate 55.***

Corridor 2 Burtonsville Option A – Ward Graveyard horizontal alignment shift

As a result of public comments on the DEIS regarding potential impacts to gravesites, additional archeological investigations were conducted along Corridor 2 alignments and coordinated with MHT. A potential cemetery was identified along Burtonsville Option A at Kruhm Road after publication of the DEIS. The Lead Agencies conducted additional archival research and a remote sensing study to further delineate the graveyard. A report entitled Ground-Penetrating Radar Survey, Billy Ward's Graveyard (18MO622), Kruhm Road, Burtonsville, Montgomery County, Maryland (Chadwick et al. 2005) was completed and submitted to the MHT/MD SHPO for review and comment on July 13, 2005. Results of the remote sensing study identified 25 anomalies, 24 of which likely represent graves. As a result of these studies, the Burtonsville Option A horizontal alignment was shifted to provide a 75-foot minimum buffer from the delineated area to the ICC limit of disturbance. This alignment shift is included in the FEIS. The roadway design can be viewed in ***Appendix A, Plates 69 and 70.***

Accompanying correspondence concluded that Site 18MO622 is outside of the Area of Potential Effect (APE) as a result of an ICC alignment shift to avoid the potentially significant cemetery.

Wetland 1Z Grade Study

At the request of the agencies, a study was conducted to determine the feasibility of raising the ICC profile at the crossing of wetland 1Z, Sta. 328+00, (Corridor 1 and 2, west of MD 97) to increase vertical clearance at the bridge. Consideration was given to replacing the bridge with a box culvert if the profile cannot be raised. Through the Jurisdictional Permit Application (JPA), the Lead Agencies decided to utilize a 135' bridge along the DEIS roadway profile. The roadway design can be viewed in ***Appendix A, Plate 12***. The roadway profile can be viewed on ***Chapter VII, Figure 11, sheet 6 of 18.***

Corridor 1 Bridge Abutments in Northwest Branch Stream Valley Park

The east abutment of the eastern most Northwest Branch Bridge (Sta. 595) was set at approximately 601+40 and retaining walls extended to the east to minimize natural environment impacts in the area of the abutment. This bridge can be viewed in ***Appendix A, Plate 20***.

Studies to Avoid State Rare, Threatened and Endangered (RTE) Species near the I-95 Interchange

A study was conducted to determine the feasibility of alignment shifts to avoid the State Rare, Threatened or Endangered (RTE) Species Habitat area in the vicinity of Wetland 6J (Corridors 1 and 2 east of I-95). After coordination with the environmental agencies and the current property owner (Konterra), an alignment shift to the south was determined to be acceptable to avoid the State RTE Species Habitat area and is proposed in this FEIS. The interchange design can be viewed in ***Appendix A, Plates 33, 40 and 84.***

b. Further Refinement of Design

US 29 Interchange Study – Corridor 1

Studies were conducted to eliminate the partial interchange at Old Columbia Pike to address concerns raised by the public. Several options were developed, all of which maintained access between US 29 and the ICC, as well as northbound US 29 to Briggs Chaney Road and southbound US 29 to Fairland Road. No solution was identified that adequately addressed all desired connections between the ICC and US 29, and the local road network without significantly increasing impacts. The current proposal reflects the elimination of the Old Columbia Road partial interchange. No direct access between the ICC and Fairland Road would be provided. The interchange design can be viewed in ***Appendix A, Plates 28-30.***

Bicycle/Pedestrian Trail- Corridors 1 and 2

The ICC pedestrian and bicycle trail alignment has been studied in more detail since the publication of the DEIS to assure that the trail makes logical connections without abrupt stopping and starting points. The trail alignment has been modified to maintain full connectivity in areas where the path converges from the ICC right of way to another existing bike route or roadway as part of the overall plan. Amending the DEIS, which did not include paving or lighting of any

trail portions, the FEIS proposes construction of trail segments between these logical termini to include paving and lighting. The pedestrian and bicycle trail alignment can be viewed in ***Appendix A, Plates 4, 5, 7, 8, 10-18, 20, 21, 22, 24, 25, 28, 31, 32, 40-52, 53A, 54, 55A, 56-58, 60, 62-66 and 75.***

MD 355 Interchange Studies- Corridors 1 and 2

Additional post-DEIS traffic studies were conducted along the ICC between the ICC / Metro Access Road (MAR) interchange and the MD 355 interchange. It was found that a type C weave with a weaving distance along westbound ICC between Ramp A (MAR interchange) and Ramp L (MD 355 interchange) of 1500' was present. A Highway Capacity Software (HCS) analysis of this weave indicated a level of service C/D (AM/PM). It was determined that a small increase in weaving traffic volume or shift in origin of the MD 355 bound traffic could result in an unacceptable level of service on the ICC. Four options were studied to lengthen or remove the weaving section. Through coordination with SHA Office of Traffic and Safety and as part of the I-370 Interstate Access Point Approval process, study option 4 was chosen. This option includes lengthening the above noted weave approximately 500 feet and reconfiguring Ramp L and M at the MD 355 interchange. Study option 4 is presented in the FEIS. The interchange design can be viewed in ***Appendix A, Plates 1 and 2.***

Gas Lines West of MD 115- Corridors 1 and 2

Several transmission gas lines located west of MD 115 would require relocation under Rock Creek Option A or C. The limits of disturbance in this area have been revised to show the land required for these relocations. The revisions to the limits of disturbance can be viewed in ***Appendix A, Plates 5, 8 and 11.***

Rock Creek Option C- Corridors 1 and 2

The horizontal alignment of Rock Creek Option C has been refined from the western edge of Winters Run to east of MD 115 to eliminate two sets of compound curves that, by AASHTO criteria, were acceptable but not desirable. The refinements to the horizontal alignment can be viewed in ***Appendix A, Plates 6 – 11, 12A.***

Potential Bridge Construction Impacts in Parks- Corridors 1 and 2

In an effort to minimize additional park impacts, studies were conducted to verify that the construction of bridges through parks could be achieved within the Limit of Disturbance (LOD). The studies determined that bridge construction within park areas could be confined to the LOD as shown in the DEIS in all cases except for one. The bridge locations can be viewed in ***Appendix A, Plates 4, 7, 10, 12, 17-20, 26, 27, 32, 42, 69 and 73.*** There is potential that construction could exceed the LOD within the Rock Creek area for Option C, Sta. 240+. Construction access at this crossing would be difficult due to the steep existing terrain and an additional temporary construction easement would be needed beyond the LOD. The additional area needed is shown on ***Plate 7***.

Overhill Road – Rock Creek Option C – Olde Mill Run Cul-de-sac Option – Corridors 1 and 2

An additional option was developed to grade separate the ICC under Overhill Road, rather than over as shown in the DEIS. This option was determined to be more costly due to increased excavation along the ICC, additional retaining walls and a more complex maintenance of traffic plan. The option shown in the DEIS for the ICC over Overhill Road is carried into the FEIS. However, it should be noted that this grade separation study applies only to the Olde Mill Run cul-de-sac option. The Olde Mill Run Grade Separation option continues to include a relocation of Overhill Road to the south. This option has been modified slightly since the DEIS to avoid parkland impacts. The interchange design can be viewed in ***Appendix A, Plate 9.***

OverhillRoad / Nedham Road Connection to Redland Road- Corridors 1 and 2

The alignment of the connection associated with Rock Creek Option C – Olde Mill Run Grade Separation has been modified to avoid acquisition of a corner of Rock Creek Regional Park. This roadway section can be viewed in ***Appendix A, Plate 6.***

MD 28 Grade Separation - Corridor 1

The alignment and typical section of MD 28 (Norbeck Road) has been modified to better accommodate the ultimate MD 28 improvements being considered as part of the ongoing MD 28/MD 198 improvements study. This roadway section can be viewed in ***Appendix A, Plate 15.***

MD 650 Interchange- Corridor 1

The configuration of the interchange has been modified to improve turning radii and sightlines, making MD 650 wider. In addition, the proposed cul-de-sac at Cape May Road has been reconfigured to orient the majority of new pavement on the south side of Cape May Road. This roadway section can be viewed in ***Appendix A, Plate 25.***

I-95/ICC Interchange Area – Corridors 1 and 2

The alignment has been refined to accommodate the shift in ICC east of I-95 as well as to address the latest traffic modeling needs. One of the more significant refinements was the addition of a Southbound I-95 auxiliary lane, between the MD 198/Contee Road on-ramp (Sta. 811) and the southbound off-ramp at MD 212 (Sta. 710). This roadway section can be viewed in ***Appendix A, Plates 33, 35 and 36.***

MD 182 Park and Ride Lot- Corridor 2

The MD 182 Park and Ride Lot, located in the northeast quadrant of the ICC/MD 182 interchange (and only to be provided if this optional interchange is selected) has been shifted northward to minimize wetland impacts. This park and ride lot can be viewed in ***Appendix A, Plate 48.***

Grade Separation at Thompson Road – Corridor 2 (Burtonsville Option A)

In the DEIS, Thompson Road is shown with a cul-de-sac on the north and south sides of the ICC. A study was conducted to determine the feasibility of grade separating the ICC over or under Thompson Road along Spencerville Option A, B & C to Burtonsville Option A. Additionally, the feasibility to include a pedestrian bridge at Thompson Road over these options was also conducted. The study found that grade separating the ICC over or under Thompson Road is feasible. However, there would be an increase in construction costs, residential displacements, right of way and maintenance of traffic complexity. Thompson Road is thus shown in the FEIS with a cul-de-sac north and south of the ICC with no grade separation. It was determined that a pedestrian bridge over the ICC at Thompson Road was feasible with the cul-de-sac option noted above. Therefore, a pedestrian bridge over the ICC at Thompson Road is also presented in the FEIS. The pedestrian bridge can be viewed in ***Appendix A, Plates 53, 55 and 57.***

ICC under Good Hope Road- Corridor 2

At the request of several agencies and as an option to avoid adverse effects to the Edgewood II historic site, a study was conducted to grade separate the ICC under Good Hope Road along two options presented in the DEIS. These options are: Spencerville Option A to Burtonsville Option A (A to A) and Spencerville Option B to Burtonsville Option A (B to A). The study found that grade separating the ICC under Good Hope Road along each option was feasible, but only if Good Hope Road were raised. A to A was found to increase residential impacts by two. Option B to A was found to increase construction costs by $1 million (excluding increased right of way) due to increased excavation. Maintenance of traffic would be more challenging with the ICC grade separated under Good Hope Road. Visual impacts of the ICC on the residents along Upland Drive would be reduced, but not eliminated, as the profile of Good Hope Road would be raised approximately 15' at the crossing of the ICC. Given that the profile of Good Hope Road is raised, the ICC is not fully depressed below existing grades and thus the adverse effects on Edgewood II are not eliminated (Further lowering of the ICC would result in drainage problems). Noise barriers are not warranted for the ICC under Good Hope Road option along B to A. These studies have been shared with the Maryland Historical Trust (MHT). On July 8, 2005, MHT commented that although the impacts would be minimized, the alignment would continue to have an adverse effect on Edgewood II, as the project would remain in proximity to the property, altering the setting and viewshed *(**Appendix B**).* As the adverse effects to Edgewood II are not removed and the option to grade separate the ICC under Good Hope Road is more costly, this option was dropped from further consideration. The option to grade separate the ICC over Good Hope Road is presented in the FEIS and can be viewed in ***Appendix A, Plates 53 and 55.***

Landscaping Planting Details

The ICC "Draft" Aesthetic Design Guidelines for Section Engineers (SHA, 2004) was used during the DEIS to promote visual continuity and context-sensitive design throughout the corridor. The ICC study team convened an Aesthetics Working Group (including Federal, State and local agencies) that provided input into the "Draft" Aesthetic Design Guidelines. The document has been used by the Project Team's Section Engineers as general guidance in developing the alternatives. The "Draft" Aesthetic Design Guidelines are based on context

sensitive design principles, highway safety, functionality, environmental stewardship, and accepted visual preferences to help design a highway that is compatible with local aesthetics. Additional typical planting designs for the highway corridor have been developed since publication of the DEIS and are presented in the FEIS. Please see ***Appendix H*** for examples of aesthetic treatments proposed for the ICC.

Maintenance Facilities and Operations Centers

In order to properly operate and maintain the ICC, two facilities would be needed. These facilities were not shown in the DEIS but are shown in this FEIS. The western maintenance facility would be located near the intersection of Shady Grove Road/Crabbs Branch Way. The eastern facility would have maintenance, police and administrative services. This operations center would be located in the northeast quadrant of the ICC/Virginia Manor Road Interchange. Please refer to ***Chapter III, Section E.5*** for additional information regarding maintenance facilities.

c. Additional Analyses Based on Public/Agency Comments

Geo-Technical Concerns at I-95- Corridors 1 and 2

Studies are being conducted to assess the feasibility of constructing the interchange ramps in the areas of the wash pond wetlands. In the Indian Creek watershed at the I-95 Interchange, the USACE expressed concerns over the difficulty of road construction on top of the sediment basins and also requested that the Lead Agencies investigate ways that relocation of the dam might avoid the replacement of in-stream impoundments upstream. Based on these concerns, the Lead Agencies initiated two investigations, soil borings in the vicinity of the wash ponds, including borings in the pond, and an investigation of potential methods for constructing on top of the wash ponds and their accumulated fine materials.

Borings on the pond side of the largest dam noted that there were up to 30' of fines that would need to be consolidated if constructed over. Since avoidance of this area was not possible and the removal and disposal of the material of the fines a costly and time consuming process, other methods were investigated and summarized in a "Memorandum of Alternative Design and Construction Methods to Removal and Replacement of Poor Material, dated April 2005". Six basic methods and examples of each, for constructing on top of these materials, were included in this memorandum. The interim results of these investigations were presented to the USACE and MDE on April 21, 2005.

During this presentation the agencies agreed that the relocated wash pond would be constructed in such a way so that when no longer needed by the aggregate mining operations in the area, Indian Creek could be routed around it, not through it, taking it off-line and eliminating the potential of its fine materials being washed downstream. It was also agreed that Indian Creek would be routed around or piped around the two existing wash ponds to prevent their fines from being discharged downstream.

The Lead Agencies would continue to investigate these identified methods as the project moves forward into final design and would continue to coordinate closely with the agencies on the results of these studies.

ICC Profile studies at MD 97- Corridors 1 and 2

The DEIS showed the ICC over MD 97. Numerous comments from nearby residents have suggested that the ICC go under rather than over MD 97. Initial studies conducted since publication of the DEIS in response to these comments indicate that placing the ICC under rather than over MD 97 would increase the project's costs, primarily due to increased excavation, relocation of utilities and maintenance of traffic on MD 97 during construction. The configuration shown in this FEIS continues to have the ICC over MD 97; however, the study team continues to evaluate both options and the impact area shown in this document is slightly larger than that shown in the DEIS to accommodate either configuration. More detailed engineering will be needed to make the final determination. The Lead Agencies are committed to working with the nearby communities in both making this determination and developing appropriate screening and aesthetic treatments. The interchange design for the ICC over MD 97 can be viewed in ***Appendix A, Plates 13 – 15 and 41 - 46***.

Bridge Lengths

As a result of continuing coordination with the Lead Agencies and as part of the "Potential Construction Impacts in Parks" study noted above, several bridge lengths were refined at the sensitive crossings. Additional environmental impacts are not anticipated. The lengths of the following bridges have been refined since publication of the DEIS:

- Sta. 204+, Mill Creek
- Sta. 226+, Rock Creek (Rock Creek Option A)
- Sta. 240+, Rock Creek (Rock Creek Option C)
- Sta. 319+, North Branch of Rock Creek
- Sta. 328+, Tributary to North Branch of Rock Creek
- Sta. 472+, Tributary to Batchellors Run (Norbeck Option A)
- Sta. 468+, Tributary to Batchellors Run, (Norbeck Option B)
- Sta. 762+, Tributary to Patuxent River
- Sta. 595+, Northwest Branch (Northwest Branch Option A)
- Sta. 673+, Tributary to Good Hope (replaced with culvert)
- Sta. 745+, Good Hope and Paint Branch (combined two bridges into a single bridge)
- Sta. 559+, Northwest Branch (Northwest Branch Option A)

The bridge locations can be viewed in ***Appendix A, Plates 4, 7, 10, 12, 19, 20, 25, 27, 42, 45, 46, and 73.***

Sensitivity Analysis

As a result of the public and agency review of the DEIS, a sensitivity analyses was performed to determine if updates made to the Metropolitan Washington Council of Governments (MWCOG)

travel forecasting model after the DEIS analysis was completed (Version 2.1D) would alter the results and decisions for the ICC alternatives. In addition, a sensitivity analysis was performed to determine the effect of using the most recently approved MWCOG land use forecast, Cooperative Forecast Round 6.4a, to analyze 2030 traffic forecasts for the ICC alternatives. As expected, the analyses indicated that the DEIS results would not be different if Version 2.1D or Round 6.4a land use forecasts were used. More information on these sensitivity analyses can be found in ***Chapter IV, Section J***.

2. Environmental

a. Mitigation Studies

Aquatic Resources Mitigation Package

Following the publication of the DEIS, the mitigation package was refined through close coordination with resource agencies. Resource agency personnel participated in a series of workshops and field meetings between January and April 2005 to review the proposed aquatic resources conceptual mitigation package. The Agencies provided comment on the ability of individual projects and the overall package to compensate for project impacts, and projects were either dropped from further consideration, or brought forward accordingly, to develop a proposed conceptual mitigation package. At a meeting on April 6, 2005, the proposed conceptual mitigation package along with backup sites were presented to the agencies. The package proposed at the meeting is provided in ***Table IV-70*** in ***Chapter IV, Section F.7.e.*** Based on this package of proposed mitigation projects, the regulatory agencies gave preliminary concurrence.

Parkland Replacement

Parkland mitigation studies have been coordinated throughout the DEIS process and after its publication with the Maryland-National Capital Park and Planning Commission (M-NCPPC), National Park Service (NPS) and the InterAgency Working Group (IAWG) to identify and prioritize replacement sites to mitigate for parkland impacts and natural environmental impacts. The parkland replacement sites would provide replacement land to the park system. Details about the parkland replacement plan can be reviewed in ***Chapter V, Section H***.

Section 106 Mitigation

A Memorandum of Agreement (MOA) between SHA, FHWA, and MHT/ SHPO has been developed and executed to identify mitigation measures for Section 106 resources. A copy of the executed MOA can be found in ***Appendix J.***

Reforestation

Reforestation would be accommodated within the ICC right of way and at parkland mitigation sites. Additional reforestation sites have been identified in coordination with M-NCPPC, Washington Suburban Sanitary Commission (WSSC), and other public landowners throughout Montgomery and Prince George's Counties. Also, a large parcel (a total of 459 acres) in the Seneca Creek area would be purchased to accommodate natural resource mitigation. This site has

340 acres of mature forest including 214 acres of Forest Interior Dwelling Species (FIDS) habitat. 118 acres are available for reforestation, which could increase the overall FIDS habitat to 340 acres.

b. Environmental Stewardship Studies

Environmental Stewardship Package

Following the publication of the DEIS, the Environmental Stewardship package underwent further refinement through the use of various screening criteria and agency coordination. Resource agency personnel participated in a series of workshops and field meetings between January and April 2005 to review the proposed package. At an interagency meeting on April 20, 2005 final refinements to the environmental stewardship package were made in coordination with the agencies. The package, as well as potential backup projects, is presented in ***Chapter VI***. Sites presented in the package are currently undergoing more detailed technical assessments. If these assessments identify issues that render a project unfeasible, a site from the backup list would be brought forward.

c. Additional Analyses Based on Public/Agency Comments

Comparative Water Resources Hazard Assessment at the Rocky Gorge Reservoir

SHA in coordination with the WSSC has conducted additional analyses since the publication of the ICC DEIS to more thoroughly assess the potential impacts to the Rocky Gorge Reservoir. A water resources hazard analysis was conducted to: 1) address concerns expressed by the WSSC with respect to the potential effects of the ICC on the WSSC's ability to provide safe, reliable, and cost effective service to its customer base; 2) evaluate the direct and indirect impacts of Corridor 2 on the Rocky Gorge watershed and the Patuxent Reservoirs; 3) evaluate the potential for, and implications of a hazardous materials releasing incident affecting the Rocky Gorge Reservoir under Corridor 2; and 4) identify the short and long term effects from the closure of the Patuxent Treatment Facility. Additional information on this analysis can be found in the reservoir section in ***Chapter IV Section F.5.c.***

Pollutant Loading Analysis

The Lead Agencies developed a spreadsheet-based nonpoint source (NPS) pollutant load model for the purpose of estimating and comparing annual pollutant loads for a variety of NPS pollutants for pre- and post-ICC land use conditions. Two analyses were performed: 1) to compare pollutant loads from ICC Build Alternatives by analyzing the strip of right of way, and 2) to understand the effects that the ICC would have on the Rocky Gorge watershed from both the strip of right of way and the SCEA scenario. Additional information on this analysis can be found in the water quality section in ***Chapter IV, Section F.5.b*** and the reservoir section in ***Chapter IV, Section F.5.c.***

Air Toxics Study

A study for seven air toxics was performed to estimate levels of these air toxics for the No-Build Alternative and the Corridor 1 and 2 alignments in 2030. The 2000 levels were also calculated to establish a baseline. The scope of this study involved obtaining emission factors for the air toxics; obtaining ADT's for intersection approach links; lengths of intersection approach links; 24-hour delays at signalized intersections; and calculation of operating speed on intersection approach links. For more information regarding the air toxics study, refer to ***Chapter IV, Section H.7.***

Deep Well Study

The regulatory agencies requested that the Lead Agencies study ways to potentially augment the cool-water baseflows that sustain the trout population in the Good Hope Tributary. The Lead Agencies conducted a preliminary study of the feasibility of augmenting baseflow during the summer months with groundwater from a drilled well. Based on a fracture trace analysis and an environmental records search, it was determined that the available groundwater in the area is limited, and pumping of groundwater in the Good Hope to augment streamflow would most-likely diminish the amount of groundwater naturally discharging to the stream. Due to these potential negative consequences, the agencies agreed that no further study of this option was warranted. However, the Lead Agencies have continued to investigate other potential methods to augment cool baseflow including storage and cooling of stormwater for release during summer months, with a potential potable water back-up when stormwater quantities are not adequate. Challenges that are being investigated related to these options include storing the amount of water needed and removal of chlorine from a back-up potable water supply. The Lead Agencies will continue to coordinate with the resource agencies, including the Brown Trout Work Group, regarding the feasibility of these options.

Parkland Noise Analysis

The parkland adjacent to the ICC alignments was analyzed to calculate noise impacts and impact zones were calculated. For more information regarding the results of noise analyses conducted within the vicinity of parklands, please refer to ***Chapter IV, Section G.3.c.***

D. Final Section 4(f) Evaluation

The Final Section 4(f) Evaluation presented as ***Chapter V*** in this FEIS includes information that is new or revised since the circulation of the DEIS/Draft Section 4(f) Evaluation in December 2004. Among the changes in the Section 4(f) Evaluation are revisions based on refined engineering, public and agency comments, and additional coordination with the jurisdictional officials. This document also includes a detailed evaluation of alternatives ***(Sections I through O),*** which describes the evaluation process and offers FHWA's preliminary Section 4(f) conclusion. Final approval of the Final Section 4(f) Evaluation will be made during the Record of Decision.

Continual refinement of engineering throughout the planning process resulted in the need to make revision in the Final Section 4(f) Evaluation. The Section 4(f) Evaluation has been updated to reflect the most current design and to present the current acreages of Section 4(f) property that would be used by the Build Alternatives. Additional revisions have been made as a result of public and agency comments received on the Draft Section 4(f) Evaluation. These revisions include updated descriptions of Section 4(f) resources and uses. In addition, major revisions to the discussion of avoidance and minimization alternatives, particularly in relation to the Free Methodist Church Camp Meeting Ground, have been included.

Since the Draft Section 4(f) Evaluation, coordination has occurred with M-NCPPC to reach an agreement on the proposed mitigation for Section 4(f) uses. A detailed mitigation plan is presented in ***Chapter V, Final Section 4(f) Evaluation***. Highlights of the plan include replacement of all parkland used at a ratio of greater than 2:1. Replacement sites included in this plan were selected not solely based on their size, but also on their ability to replace the functions and values of the parkland that would be used by the ICC.

Following the identification of the preferred options, a comparison of end-to-end alternatives, which utilize the preferred options, was conducted. This analysis preliminarily concluded that, considering all appropriate factors including uses of Section 4(f) resources, proposed mitigation, and other actions that would minimize harm to Section 4(f) resources, Corridor 1 with Rock Creek Option C – Olde Mill Run Grade Separation, Interchange at Layhill Road, Northwest Branch Option A, and Terminus at US 1 is the Preferred Alternative under Section 4(f).

E. Preferred Alternative

1. Alternative

During the alternatives analysis, various options for Corridors 1 and 2 were examined to select the most accommodating option combination for each Corridor. Decisions for each option were made to best balance the natural, cultural, and socioeconomic impacts of the options while best meeting the project Purpose and Need. Detailed information on the decisions made, and the reasoning for those decisions is included in ***Chapter VII*** of this FEIS. Based on this analysis, three alternatives were identified for end-to-end comparison. These included the following:

Corridor 1	***Corridor 2AX***	***Corridor 2DB***
Rock Creek Option C*	Rock Creek Option C	Rock Creek Option C
Northwest Branch Option A	Norbeck Option A	Norbeck Option A
Interchange at Layhill Road	Interchange at Layhill Road	Interchange at Layhill Road
Termination at US 1	Spencerville A to Burtonsville X	Spencerville D to Burtonsville B
	Fairland Option A	Fairland Option A
** Old Mill Run Grade Separation*	Terminus at US 1	Termination at US 1

These three alternatives were then compared for each of three analysis categories: Transportation; Socioeconomic/Land Use; and Environment. Federal, State, and local agency comments were also considered in reaching a decision on the Preferred Alternative. The analysis included examination of qualitative and quantitative data in making a decision. For many factors, including impacts to the natural environment, neither Corridor 1 nor Corridor 2 (AX or

DB) is clearly better, nor is the magnitude of difference between the alternatives great enough to make it a determining factor. Instead, an accumulation of important factors where one Corridor is better than the other (albeit by varying degrees of magnitude) leads to the selection of the Preferred Alternative. After considering in great detail the comparable advantages and disadvantages of the alternatives, Corridor 1 was determined to best meet the Purpose and Need of the project while balancing impacts to the natural, cultural, and socioeconomic environment, and has therefore been identified as the Preferred Alternative.

2. Environmental Impacts

Construction-related impacts were evaluated in detail for the Preferred Alternative. The IAWG members participated with the study team in reaching consensus on any construction-related impacts and the avoidance, minimization, or mitigation efforts that would be employed during the construction phase.

3. Mitigation

Compensatory mitigation planning has been coordinated with the USACE, MDE, US Fish and Wildlife Service (USFWS), US Environmental Protection Agency (EPA), and other resource agencies. Appropriate and practicable compensatory mitigation is required for unavoidable adverse impacts to wetlands and other waters. Compensatory mitigation is being evaluated in accordance with State and Federal regulations and guidance, and focuses on the replacement of the functions provided by an aquatic resource or wetland, in addition to the acreage affected. A subset of the IAWG was formed to assist in the compilation of the final conceptual mitigation package. The final conceptual mitigation has been prepared and proposed to offset the unavoidable impacts associated with each alternative. Mitigation for Waters of the U.S., parkland, cultural resources, and forested land is included in the compensatory mitigation package. Details on the mitigation are included in ***Chapters IV*** and ***VII***.

4. Environmental Stewardship

Environmental Stewardship features include activities intended to improve the existing cultural, community, and natural resources within the ICC study area, which have been impacted by past development, in order to help improve the relationship between transportation and the environment. The Environmental Stewardship features were developed in coordination with the IAWG. Since the DEIS, further feasibility studies have been conducted resulting in refinement of the proposed list of specific projects for each alternative. The package shown in ***Chapter VI*** is the current commitments for specific projects associated with each alternative. If any of the identified Environmental Stewardship projects is found not to be feasible in the future, the Lead Agencies would replace that project with another project including a site or sites of similar functional value. These replacement sites would be taken in order of priority from the list of "back-up" sites that has been developed throughout the study and identified in the FEIS and technical reports. The use of any specific back-up site would need to be further evaluated to ensure it provides appropriate benefits and be coordinated fully with the IAWG.

F. Next Steps

Following a review period, the FEIS will be submitted for approval by FHWA and issuance of the Record of Decision (ROD). The ROD documents will be in compliance with NEPA regulations/requirements and will contain FHWA's approval of the selected alternative as well as the Final Section 4(f) Evaluation. The ROD will conclude the Project Planning Process and allow the project to advance to the final design and construction phases.