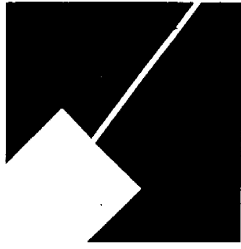


M-NCPPC



MONTGOMERY COUNTY DEPARTMENT OF PARK AND PLANNING

THE MARYLAND-NATIONAL CAPITAL
PARK AND PLANNING COMMISSION

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**MCPB
Item # 5
1/13/05**

To: Montgomery County Planning Board
From: ICC Internal Review Team (301/495-4545) *JAV.*
Date: January 7, 2005
Subject: Intercounty Connector Study
Planning Board Briefing # 5

Our purpose for this agenda item is to inform the Planning Board about the contents of the Draft Environmental Impact Statement (DEIS), staff's assessment of outstanding issues and receive from the Board direction for the next briefing that will include public testimony and recommendations to the State Highway Administration (SHA) on the preferred alternative. Staff will make specific recommendations for the February 3 briefing and recommend a corridor with specific options in that corridor.

This staff memorandum is divided into three parts.

Part I

- DEIS Summary of Findings
- Draft Section 4(f) Findings

Part II

- Menu of Choices for Preferred Alternative

Part III

- Relevant Activities and Revised Schedule

PART I

The facts, information and findings of the study effort to date are contained in the *Draft Environmental Impact Statement/Draft Section 4(f) Evaluation, November 22, 2004.*

The purpose of the entire draft environmental impact statement is to come to conclusions on whether and how to proceed with the Intercounty Connector. Not building the highway is an alternative that does not satisfy the Purpose and Need for the highway, but avoids physical impacts. If the ICC is to be built, the fundamental question is where should it be built; Corridor 1 which is the Master Planned alignment or Corridor 2, which is north of the Master Plan alignment. Within each corridor there are a variety of options. Each option tries to avoid specific impacts. In all, there are many combinations within alternatives identified in the DEIS. There are literally dozens of different criteria evaluated for each alternative including 15 criteria in the DEIS summary tables S-2 and S-3. It is possible to take any individual criteria and find the alternative that minimizes a specific impact. For example, there is sufficient information in the DEIS to find the corridor and options with that corridor that minimizes wetland impacts. There is no alternative that minimizes all impacts. The alternative that minimizes wetland impacts does not minimize impacts to historic structures. Any decision maker reviewing this data can come to completely different conclusions depending upon the weight they place upon any particular type of impact.

The Planning Board has selected a build alternative in every opportunity it has had to comment on the highway in the past. The ICC is an element of the county General Plan, the General Plan Refinement, the Master Plan of Highways and area master plans. The ICC was also an element of the Transportation Policy Report II recommend by the Planning Board to the County Council. **Staff has not found a fatal flaw in the DEIS that would change the conclusion to select a build alternative.**

There are some fundamental differences between Corridor 1 and Corridor 2 that hold true despite the options within each corridor. Only Corridor 1 creates increased areas of accessibility where they were anticipated by local master plans. Only Corridor 1 avoids having most of its impacts outside the state defined priority funding area. Only Corridor 1 can completely avoid the Patuxent watershed. (Even the options that are mostly south of Spencerville Road must cross into the watershed approaching Columbia Pike.) Only Corridor 1 can avoid impacts to many historic sites and settings. Only Corridor 2 can avoid a roadway that goes through Paint Branch Park. Corridor 2 can minimize the use of county and M-NCPPC land, but it maximizes the need to acquire private land.

The full DEIS may be characterized as meeting the avoidance and minimization elements of the National Environmental Policy Act (NEPA) in such

specificity that a choice between alternatives may be made. Yet to be resolved are details of mitigation and compensation that will extend even beyond the Federal Highway Administration (FHWA) Record of Decision (ROD), anticipated in July 2005. Detailed design will begin after the ROD. Indeed, a specific alternative must be identified to finalize stewardship elements that include compensatory mitigation and the features of stewardship that, while linked to impact, are over and above the NEPA process itself. What we can expect now is a conceptual mitigation package in some detail. The present effort will reach a benchmark point at roughly 20% design. Staff anticipates a mandatory referral at the 30% design point. Other elements to be resolved prior to the mandatory referral submission include resolution of the Park-SHA Memorandum of Understanding and Special Protection Area water quality details.

The public hearing process on the Draft Environmental Impact Statement for the Intercounty Connector is still in progress. Four dates have been set for January 4, 5, 8 and 22, 2005.

The following Part I elements of this report are:

- Environment - page 3
- Community - page 17
- Park Resources/Section 4(f) - page 18
- Historic and Archaeologic - page 19
- Bike Path - page 22
- Transportation Performance - page 23
- Noise - page 34

ENVIRONMENT

The DEIS evaluates and quantifies the direct and indirect impacts of the ICC alternatives to natural environmental features and resources. The document groups these features and resources into 11 natural resource categories: topography, geology, and soils; groundwater; floodplains; prime and unique farmland soils and farmland properties; surface water resources; aquatic biota; waters of the U.S. including wetlands; vegetation; terrestrial wildlife; rare, threatened and endangered species; and unique and sensitive areas. Chapter II documents specific features and characteristics of each resource category within the study corridor. Impacts to these natural resources by the various ICC alternatives are found in Chapter IV. This chapter also identifies measures to avoid and reduce damage to natural resources, as well as conceptual compensatory mitigation measures. The Environmental Stewardship Chapter (Chapter VI) conceptually identifies possible projects that could augment or complement compensatory mitigation measures.

Natural resource impacts of the ICC are documented in the DEIS in a multitude of tables and text. The magnitude of “direct” impacts on broad categories of natural resource features such as wetlands, streams, and forests are fairly easy to determine from the document.

For certain natural resources, staff believes that the DEIS could have included information presented in a way to clearly show the relative quality and value of these natural resources that will be affected by the various ICC alternatives. It is difficult to evaluate the magnitude of losses or degradation to high quality or highly valued resources for the different ICC alternatives. For example, the following information from the DEIS summary table S-2 (Volume I, page S-40) gives broad categories of impacts for broad categories of natural environmental resources:

Corridors 1 and 2 Range of Impacts on Natural Environmental Resources (from DEIS Table S-2)		
<i>Resources</i>	<i>Corridor 1</i>	<i>Corridor 2</i>
Wetlands (acres)	22.3 - 30.1	25.6 - 38.2
Wetlands created by mining (acres)	37.4	37.1
Streams (no./ linear feet)	63/ 39,251 - 69/ 46,204	52/ 35,517 - 62/ 48,920
Floodplain (acres)	47.9 - 59.4	54.6 - 68.7
Forest (acres)	737.0 - 794.1	588.9 - 685.7

This kind of data provides part of the information for comparing impacts. To provide a more complete comparison of natural resource impacts between the ICC alternatives, the reader must excerpt information from several different DEIS tables as consolidated in the table below.

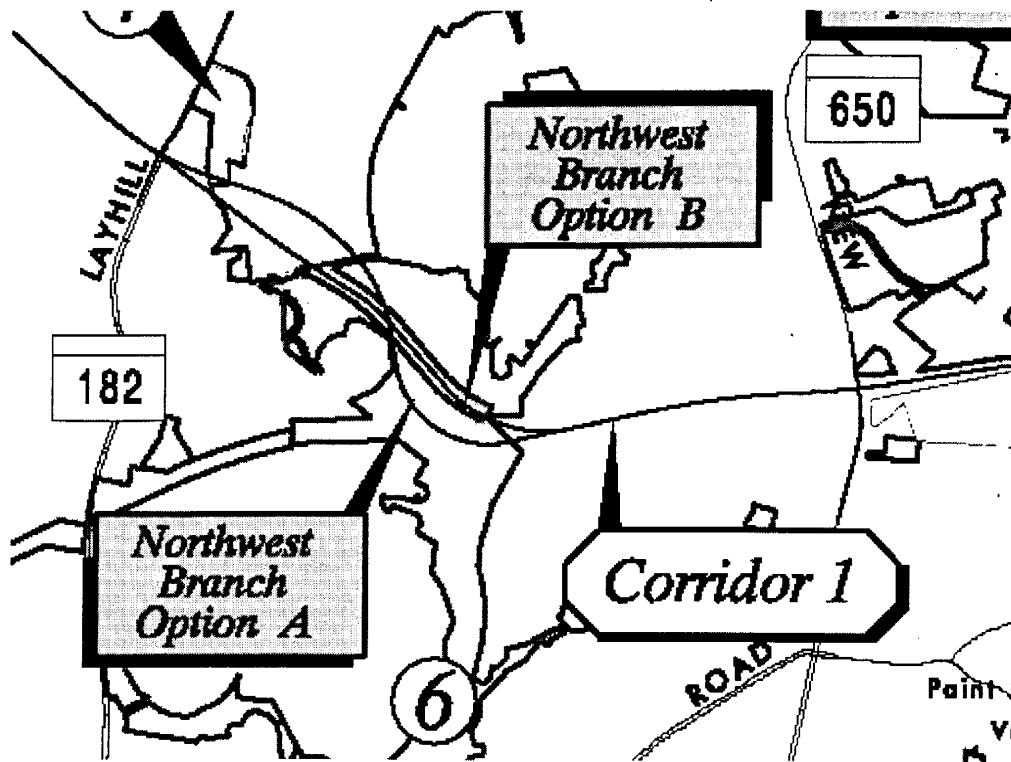
Corridors 1 and 2 Range of Impacts on High Quality and Highly Valued Natural Areas		
<i>Resources</i>	<i>Corridor 1</i>	<i>Corridor 2</i>
Biodiversity Areas -- in Montgomery Co. parkland only (acres)	99.3 - 133.3	35.3 - 56.4
Best Natural Areas -- in Montgomery Co. parkland only (acres)	93.4	22.6
Special Protection Areas (acres)	165.4	57.8 - 161.4

Forest-interior dwelling species habitats (FIDS): <ul style="list-style-type: none"> • Forest cleared (acres) • Forest remains but no longer FIDS habitat (acres) 	<ul style="list-style-type: none"> • 88.5 - 109.8 • 187.4 - 217.5 	-	<ul style="list-style-type: none"> • 37.8 - 58.7 • 67.8 - 119.3
Patuxent Watershed Area (acres) Most Northern Alignment			<ul style="list-style-type: none"> • 202.7-254.5

The challenge in providing qualitative interpretation of quantitative data can perhaps best be illustrated by comparing the summary tabulations and staff concerns in two optional alignments, the Northwest Branch alignment options and the Rock Creek alignment options. The Northwest Branch alignment options apply only to Corridor 1 and the Rock Creek alignment options apply to both Corridor 1 and Corridor 2.

Northwest Branch Alignment Options

The figure below shows the two Northwest Branch alignment options. Northwest Branch Option B (the straighter alignment of the two) is actually the master planned alignment and the 300' wide right-of-way has already been established through a portion of the park. Northwest Branch Option A is a more curvilinear alignment that was developed to minimize impacts on environmental resources, despite the fact that it is longer and requires more designated parkland. The reader is referred to DEIS Appendix A plates 19, 20, 23, and 24 for more detailed images of the proposed designs.



The following table summarizes the information in DEIS Table S-3 that compares the impacts of the two Northwest Branch options for those measures where the results are different. (In both cases, the table references the options that include the Layhill Road interchange). For each resource, the option with lower impacts is shown in bold text.

Differences Between Northwest Branch Option Impacts in DEIS Table S-3

Resource	Option A with Interchange at Layhill Road	Option B with Interchange at Layhill Road (Master Plan)
Business and Community Facility Displacements (No.)	2	1
Total Right-of-way (Acres)	168.8	150.1
Noise Impacted Areas (No. Residences / No. Noise Sensitive Areas)	31/3	47/3
Wetlands	1.6	1.4

Streams (No./Linear Feet)	10/2,958	9/2,238
Floodplain (Acres)	8.0	9.7
Forest (Acres)	58.5	48.3
Construction Cost (\$M)	189	271
Right-of-Way Cost (\$M)	35	32
Total Cost (\$M)	224	303

The overall differences between the two options is difficult to ascertain from a mere tabular review of the quantitative information. Even within the natural environmental features, the shorter master plan alternative (Option B) appears to minimize impacts to wetlands, streams, and forest, whereas Option A is only better in terms of floodplain impacts.

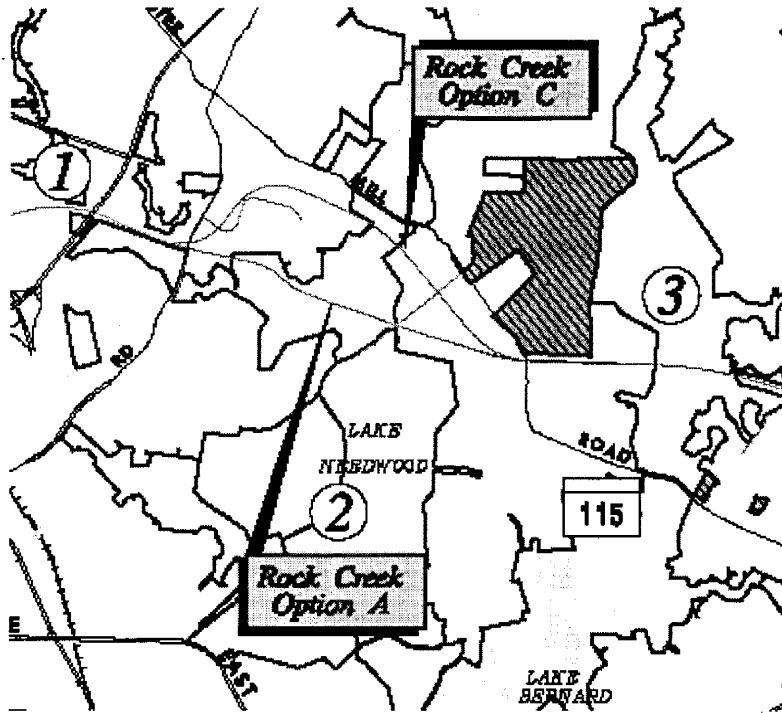
The basic difference between the two options, however, is that Option B (the Master Plan alignment) runs more parallel to the Northwest Branch stream valley, whereas Option B shifts from side to side across the stream valley. Both options necessarily cross the Northwest Branch mainstem three times (as well as several tributaries). The more significant mainstem stream crossings are at skewed angles in Option B, but nearly perpendicular in Option A, a preferred approach. The more perpendicular stream crossings in Option A also result in shorter bridge lengths, and therefore substantially lower capital costs. **In summary, the Northwest Branch Option comparisons demonstrate that the alternative with the lower-quantity impacts may not necessarily provide most sensitive design relative to natural resources.**

Rock Creek Alignment Options

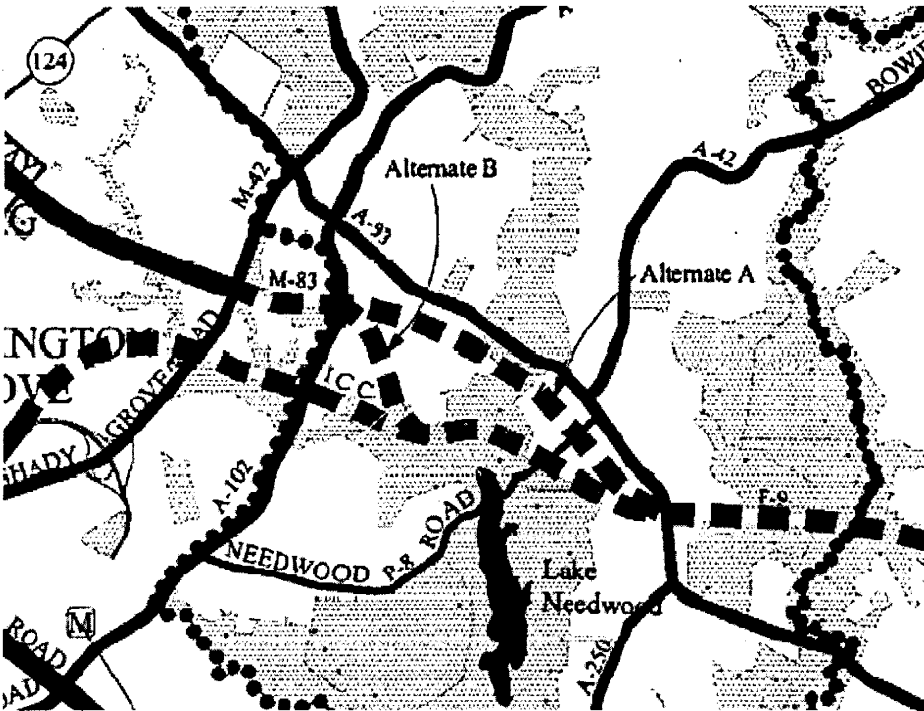
The Rock Creek Alignment options represent, in microcosm, the basic tradeoffs between natural environmental impacts, community impacts, and capital costs. The first figure below shows the location of the Rock Creek Options A (the master plan alignment for the ICC) and C (which includes a portion of the master plan alignment for Midcounty Highway Extended, or M-83). Option C includes two suboptions to address access to the southern half of the Winters Run community:

- a grade-separated option with a depressed ICC roadway beneath Olde Mill Run drive and an adjacent roadway cap, and
- a cul-de-sac option with existing Olde Mill Run Drive turned into a cul-de-sac and a new access roadway connected via Garrett Road to Redland Road.

The reader is referred to DEIS Appendix A plates 3 through 11 for more detailed images of the proposed designs.



The following figure shows the roadway designations and alignments in the current Upper Rock Creek master plan for the area. The current master plan envisions the ICC along the Corridor 1 Option A alignment and preserves two options for the future extension of Midcounty Highway (M-83):



- M-83 Alternate A traverses the Winters Run community on the historic “MD 115 Relocated” alignment with a new crossing of the mainstem of Rock Creek.
- M-83 Alternate B, added to the 1985 Upper Rock Creek Plan, turns south through the Cashell Estates community to join the ICC west of the mainstem of Rock Creek, thereby limiting new roadways to a single stream crossing.

The following table summarizes the information in DEIS Table S-3 that compares the impacts of the three Rock Creek options for those measures where the results are different.

Differences Between Rock Creek Option Impacts in DEIS Table S-3

Resource	Option A (Master Plan)	Option C with Olde Mill Run Grade Separation	Option C with Olde Mill Run Cul-de-Sac
Business and Community Facility Displacements (No.)	0	1	1

Residential Displacements	3	17	17
Total Right-of-way (Acres)	108.5	122	121
Noise Impacted Areas (No. Residences / No. Noise Sensitive Areas)	14/3	45/3	57/3
Wetlands	0.9	0.6	0.6
Streams (No./Linear Feet)	4/1,669	5/2,050	4/1,833
Floodplain (Acres)	5.8	1.7	2.3
Forest (Acres)	51.7	50.4	47.8
Construction Cost (\$M)	88	131	101
Right-of-Way Cost (\$M)	25	38	41
Total Cost (\$M)	113	169	142

In the case of the Rock Creek Options, the Master Plan alignment has the greatest quantitative environmental impacts. Staff feels in this case, however, that the relative natural environmental impacts in Option A are even greater than reflected in the table for several reasons:

- The forest acreage in Option A is primarily high-quality interior forest whereas the forest along Option C (although only 3 to 4 fewer total acres) encompasses lower quality stands including some forested remnants within the 150' wide M-83 right-of-way
- Option A traverses the Redland Spring ecologically sensitive area along the Mill Creek tributary. This resource, described on DEIS page II-27, has been one particular focus of concern among civic testimony received to date by the SHA. Option C does not have direct impacts to the Redland Spring ecologically sensitive area.
- Option A traverses the northern tip of Lake Needwood, causing concern regarding both impacts to the natural environment as well as the park user experience.

Staff will, however, need to balance the natural environmental advantages of Option C with the substantially more adverse community impacts. In addition to those quantified in the table above, Option C creates the following issues and concerns:

- Whereas the Winters Run community is already bisected by a master planned highway alignment (M-83), it is not a facility with the same expected function and traffic volumes as the proposed ICC.
- Option C is more expensive for SHA to construct, but would provide the shortest, and therefore least expensive option for any agency to complete the M-83 extension.
- While Option A avoids direct impacts to the Winters Run and Cashell Estates communities, either one of those communities would be impacted by the eventual completion of M-83, either along M-83 Alternate A (Winters Run) or M-83 Alternate B (Cashell Estates).

Environmental Concerns

The Planning Board must consider the DEIS conclusion that the design has been minimized in their assessment of mitigation actions during the FEIS. In some regards, such as estimates relating to stormwater management area needs, the DEIS makes conservative estimates of impacts. This practice ensures that any Location and Design approval covers reasonable planning contingencies. **The minimization efforts described in the DEIS, therefore, reflect a level of minimization acceptable to federal review agencies, but more efforts can be pursued during detailed design, should a build alternative be selected.**

There are several significant staff issues and concerns that remain unresolved and have not been adequately addressed in the DEIS. Overall, staff believes that there are additional reasonable and practicable measures that should be incorporated in the project design that will substantially improve the impact avoidance and minimization efforts set forth in the DEIS. Staff believes these outstanding issues illustrate the point that not all natural environmental impacts have been minimized and highlight the need for stronger efforts by SHA to reduce these impacts. In identifying these issues, staff has focused on high quality and highly valued natural resource areas in existing or proposed parkland.

Staff believes that there are additional measures available to reduce "footprint" impacts to natural resources that should be incorporated into the DEIS, particularly in known, high-quality and highly-valued natural resource areas in existing or proposed parkland. These are impacts associated with the loss or degradation of a natural resource area (forests, steep slopes, stream corridors within interior forest communities, Biodiversity Areas, Best Natural Areas, and/or SPAs) due to permanent changes of the land cover or form. Clearing forest, clearing and grading on forested steep slopes, and crossing a stream valley with a culvert and fill are examples of what staff calls footprint impacts.

For over a year staff has participated in SHA's interagency process of identifying, evaluating, and discussing possible measures to avoid, minimize, and mitigate impacts of an ICC on the natural environment. To SHA's credit, there have been various design features of the ICC that have evolved through this process to better avoid or reduce natural environmental impacts.

Stream Crossings

Over the course of this process, some bridges have been lengthened over stream valleys. For a few stream crossings, SHA has changed its original proposal of a culvert to a more environmentally friendly bridge. SHA has conducted many discussions to identify specific locations where deer passage under the ICC is important both to maintain a wildlife corridor and to prevent deer-vehicle accidents; design features to allow for deer and other wildlife passage have also been part of these discussions.

In two stream valleys with high quality characteristics, staff recommends more environmentally friendly crossing structures than what are shown in the DEIS. Staff recommends a bridge at one location (Station 173) within a large forest of the Mill Creek Stream Valley Park to maintain a viable connection for wildlife and humans between the remaining portions of the bisected stream valley and to minimize impacts to a high-quality network of forested wetlands, seeps, and springs. Within the Dungan Property, which is recommended in the newly adopted Upper Rock Creek Master Plan for park acquisition, staff recommends a culvert stream crossing that should be large enough to allow deer and human passage. The Dungan Property encompasses a natural area that is identified in the master plan as important in buffering and expanding the adjoining, high quality resources in the North Branch Biodiversity Area. Staff believes that preserving an adequate connection between the bisected portions of the natural area for wildlife and human use is important at this location. These comments will be incorporated into the staff recommendation to the Board on February 3rd.

Stormwater Management

Staff will recommend a greater effort and commitment to provide stormwater management controls that reduce pollutant discharge and minimize damage to receiving stream systems. The proposed approach indicates that the use of grass swales will be the only technique for water quality treatment for significant portions of the road outside SPAs. Additionally, stormwater runoff from bridge decks are not proposed to be treated outside the SPAs. Staff is also concerned that in some areas, the road's storm drain system and SWM facilities could result in diverting water flows away from smaller streams and

increasing runoff to larger streams. This could effectively "starve off" some streams, while destabilizing others if this issue is not resolved at this stage of the project.

Design features of the ICC through natural areas and wildlife habitats have been evaluated to varying levels of detail. Some design parameters, such as criteria to maintain deer and other mammal passage through stream valleys have been fairly well defined. Others, such as defining the extent of deer-exclusion fencing or criteria for preserving amphibian passage corridors within stream valleys, are very conceptual in nature. Staff is concerned that some design parameters that are not considered thoroughly at this time (i.e., the planning phase) may not be viable at the final design stage.

Paint Branch

There may be some high quality natural resource systems that will be irreversibly damaged by an ICC and cannot be restored or replaced because, by their nature, they are unique to the county. For example, the upper Paint Branch is recognized by the county as a unique and valuable natural resource. The naturally reproducing brown trout that inhabit the Paint Branch represent the high-quality, delicately balanced aquatic ecosystem that exists in this watershed and is unique to the Washington, D.C. metropolitan area.

However, an ICC that traverses through Paint Branch could significantly and adversely affect this resource. This is of particular concern for Corridor 1, which crosses through the two most critical and high quality streams within the ecosystem. As the DEIS discusses, construction and operation of a major highway generates impacts of warm water discharges, loss of stream base flow, increased sediment loads, and increased chemical pollutants. All these impacts can irreversibly damage Paint Branch's high quality resource if not adequately minimized and mitigated.

Many governmental agencies, including the Md. Department of Natural Resources, Montgomery County Department of Environmental Protection, and SHA itself, have monitored and collected much data on the Paint Branch's resource over many years. Recent data have indicated that the resource has been under particular stress because of combined factors of natural conditions (drought) and past land use activities (uncontrolled stormwater runoff from old subdivisions). The DEIS indicates that the data is not clear as to whether the resource can successfully recover from these stresses with more normal weather conditions and recent construction of SWM retrofit and restoration projects, even without an ICC. The DEIS, however, views the resource as an important and valuable one that requires stringent measures to avoid, minimize and mitigate impacts. It proposes several design features, and stormwater management (SWM) and sediment and erosion control measures that exceed federal and Maryland requirements.

However, there remains a significant question as to whether such measures are sufficient to protect the Paint Branch resource. Staff cannot make such a determination. It is well documented that there are limitations to the effectiveness of even the most stringent controls for stormwater runoff and land disturbance and construction activities. In addition, although the DEIS states that stringent SWM controls are proposed within the Paint Branch watershed, it also includes more traditional and less effective SWM controls as "optional" and indicates that the more stringent controls are about four times more costly than traditional structures. Staff is concerned that some of the more stringent and costly control measures may not be pursued at a later time if project costs become a major concern. If the Paint Branch is damaged, the mitigation measures may not be adequate to restore the resource.

For the Paint Branch resource, staff believes that an ICC alternative that traverses through the watershed, particularly Corridor 1, has a high and significant risk of significant damage to the high quality and unique resource. The protection measures that the county has put in place to protect and improve this resource (SPA designation, Environmental Overlay Zone, park acquisition program, stormwater management retrofit and stream restoration projects) have been crafted with the recognition that **all development, including private development and supporting infrastructure must be implemented with the aim of truly protecting the Paint Branch.**

The following table is a compilation of information taken from the DEIS to demonstrate the range of impacts to selected resources in addition to those featured in Table S-2.

SELECTED ENVIRONMENTAL IMPACTS - CORRIDOR COMPARISON

<u>I SURFACE WATER RESOURCES</u>	<u>CORRIDOR 1</u>	<u>CORRIDOR 2</u>	<u>CWA*</u>
DIRECT IMPACTS:			Section
#	75-77	60-66	402
Linear feet	45,170*- 45,963	41,894**- 48,704	NPDES**
			SWM
*Corridor 1 Least Impact: Rock Creek Option A & NW Option B			
**Corridor 2 Least Impact: Rock Creek Option A & Norbeck Option B & Spencerville, Burtonsville Fairland Options A.			
<u>II NEW IMPERVIOUS COVER:</u>			
Acres	262.5-267.9	258.4-268.3	

III WATERS OF THE U.S. INCLUDING WETLANDS

Wetland & Waterway Impacts

			-	
PEM	acres	38.4-38.5	41.1-44.8	
PFO	acres	28.4-28.8	29.2-31.9	
	s	45,170-45,963	41,894-48,704	
WATERS	e	11,978-12,238	12,504-12,930	
	p	7.5-8.0	5.5-7.6	

CWA*

Section

404

COE

Section

401

MDE

Water Quality

Certification

s=Perennial and Intermittent Streams (linear feet)

e=Ephemeral Channels (linear feet)

p=Area of POW (open water ponds in acres)

PEM=Palustrine Emergent wetlands

PFO=Palustrine Forested wetlands

IV FOREST IMPACTS

Acres	780.1-794.2	631.0-685.7
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V FOREST INTERIOR DWELLING SPECIES IMPACTS (FIDS) (ACRES)

Proximity to ROW	877	662.5
FIDS Habitat	88.5-109.8	37.8-58.7
Converted to Edge	187.4-217.5	67.8-119.3
Remaining FIDS	549.7-601.1	487.0-554.4

VI VERNAL POOL IMPACTS

Square feet	17,863-21,449	13,007-16,274
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VII ECOLOGICALLY SENSITIVE (ES) AREAS

Acres	27.0-49.0	31.1-55.8
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* Clean Water Act; ** National Pollutant Discharge Elimination System

The following table S-2 is taken from the DEIS Summary, page S-40:

Table S-2: Corridors 1 and 2 Range of Environmental Impacts		
Resources	Corridor 1	Corridor 2
Socioeconomic/Cultural Environmental Resources		
Section 4(f) Use (No. of Resources)	7	7-11
Adversely Affected National Register of Historic Places (NRHP) Eligible Properties (No.)	2	7 - 10
Business and Community Facility Displacements (No.) *	5 - 9	8 - 18
Residential Displacements (No.)	43 - 57	45 - 87
Total Right of Way (Acres)	1,252.6 - 1,397.6	1,254.2 - 1,538.1
Noise Impacted Areas (No. Residences/No. Noise Sensitive Areas)	562/26 - 621/26	246/19 - 352/24
Natural Environmental Resources		
Wetlands (Acres)	22.3 - 30.1	25.6 - 38.2
Wetlands Created by Mining** (Acres)	37.4	37.1
Streams (No./ Linear Feet)	63/39,251 - 69/46,204	52/35,517 - 62/48,920
Floodplain (Acres)	47.9 - 59.4	54.6 - 68.7
Forest (Acres)	737.0 - 794.1	588.9 - 685.7
Cost Estimate (Expressed in 2004 Dollars)		
Construction Cost*** (\$ Billion)	1.378-1.615	1.211-1.440
Right of Way Cost (\$ Billion)	0.338-0.390	0.332-0.471
Other Cost**** (\$ Billion)	0.217-0.219	0.216-0.218
Total Cost (\$ Billion)	1.933-2.224	1.759-2.129

* Business and Community Facility Displacements also includes displacements for properties that are both Business and Residential.

** A series of low-quality, emergent wetlands created by mining occurs throughout the abandoned portion of the mined lands in the vicinity of I-95. These account for an additional 37.1 to 37.4 acres of wetland impacts.

*** Capital costs include construction, engineering and contingencies

**** Other Cost includes Toll Facilities, Maintenance Facilities, Transit Capital Cost, Intelligent Transportation System, Design Build Stipends, Incentives, Weigh-In-Motion Technology, Environmental Stewardship Package, and Hazardous Materials Mitigation.

Note: The lower range of cost estimate assumes termination of the ICC at I-95.

Environmental Stewardship Features

Chapter VI of the ICC DEIS describes a series of Environmental Stewardship features that can be associated with either Corridor 1, Corridor 2, or both corridors. These features are designed to meet the study Purpose and Need, which includes an Environmental Stewardship need to improve the natural environment by addressing environmental issues that are unrelated to the ICC.

Staff understands that some environmental stewardship features are therefore needed for SHA to select a preferred alternative that meets the study Purpose and Need. The DEIS indicates that within each build alternative, some funding (\$216M to \$219M) has been set aside for a number of other costs, including:

- Toll facilities
- Maintenance facilities
- Transit Capital Cost
- Intelligent Transportation System
- Design Build Stipends
- Incentives
- Weigh-In-Motion Technology
- **Environmental Stewardship Package**
- Hazardous Materials Mitigation

SHA has not yet made a selection of, or specific commitment to provide, any or all of the Environmental Stewardship features described in Chapter VI. Staff requests that SHA describe how much of the \$216M to \$219M are allocated to Environmental Stewardship package and how the Planning Board can best provide guidance on the final selection of Environmental Stewardship features in their recommendation to the County Council.

COMMUNITY

The staff continues to be extremely concerned that Corridor 2 is not in conformance with the General Plan ... on Wedges and Corridors, and the local area master plans for this area. Corridor 2 would severely impact Hampshire Greens, Spencerville, the Southeast Quadrant of Olney, and the future Fairland Golf Course Community. In addition to specific homes, Corridor 2 impacts the fabric of the communities and the community cohesion that has been created through our master plan processes. Corridor 2 divides communities that were never intended to be divided, it

reduces the ability of local roads to link communities, and it significantly disrupts the local traffic pattern.

While Corridor 1 has long been defined, the alignment will create the greatest direct impacts to the higher-density communities that most closely border it, including Redland Station, Winters Run, and Longmead Crossing. Several communities, including those active in the Shady Grove Sector Plan amendment process, will experience reduced pedestrian access through the disruption to people's choice trails. Staff will reflect these impacts in the development of recommendations for the next Board's worksession.

The DEIS quantifies the extent of impacts on socioeconomic and cultural resources that can be determined at this stage of design. The DEIS does not convey the extent of impacts on the fabric of the communities and the community cohesion. Corridor 2 has significantly more community impacts than Corridor 1, mostly because no road has been planned along the length of Corridor 2. The impact of the potential selection of Corridor 2 on the public trust associated with master planning in Montgomery County is of great concern to the staff and Planning Board.

PARK RESOURCES/SECTION 4(f)

Chapter V, Section A. of the DEIS states: "Section 4(f) of the U.S. Department of Transportation Act of 1966 (49 USC 303(c)) permits the use of land from a publicly owned public park, recreation area, wildlife or waterfowl refuge or land of a historic site of national, state or local significance (as determined by the Federal, State, or local officials having jurisdiction over the resource), only if there is no feasible and prudent alternative to the use of such land and if the action includes all possible planning to minimize harm to the protected property resulting from such use".

Not all land titled in the name of the county or M-NCPPC is parkland. Some property was purchased with advanced land acquisition funds for the purpose of a future highway. The DEIS refers to this land as Designated Transportation Areas. The DEIS devotes a full chapter to the 4(f) issue. If the single criteria to evaluate this issue was acres of parkland taken, then the only possible build alternative would be Corridor 2 which avoids more parkland. Corridor 2 has more historic impacts. The federal agencies must interpret the implication of 4(f) mandates on the ICC. M-NCPPC can inform other decision makers of its opinion on the competing values involved. The Planning Board Chairman has provided his view on the status of this parkland to SHA in October 2004 correspondence. See Attachment # 1.

See also attachment # 2 for a summary of Section 4(f) parkland data.

Beyond 4f Impacts

There will be impacts to parkland that are not directly used for the right of way itself. Staff has discussed the issue previously with the Planning Board on July 15, 2004. The most direct evidence of impact is noise as it affects forest interior dwelling animals. Noise impacts are only measured for human receptors by both federal and state standards. Even if there were accepted noise standards by which to evaluate impacts, each species of animal reacts differently to various noise levels. A definable gauge of the impact of development to animal habitat is the total amount of forest interior area (forest that remains inside of a 300 foot buffer of forest after building compared to the amount of forest interior before building) lost in parkland. Forest interior is a recognized impact in the DEIS. **Staff has proposed that interior forest is the principal measure by which replacement parkland should be evaluated.**

The following table indicates the acres of interior forest lost beyond direct 4f park impacts.

	Corridor 1	Corridor 2
Rock Creek Regional Park	39.8*	39.8*
North Branch Stream Valley Park	28.3	28.3
Northwest Branch Stream Valley Unit 5	44.0**	0
Upper Paint Branch Stream Valley Park	44.0	0
Patuxent Conservation Park	0	18.0
T. Howard Duckett Watershed	0	5.0
Total	156.1	91.5

*Rock Creek Option C = 13.0

**Northwest Branch Option B= 61.6

HISTORIC AND ARCHAEOLOGIC

The DEIS for the ICC is a key step in the Section 106 and NEPA review of historical and archaeological resources.

Process

As a reminder, the Section 106 law requires federal agencies to consider the effects of their actions on historic properties and provide the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on federal projects prior to implementation. Section 106 review encourages, but does not mandate, preservation.

Sometimes there is no way for a needed project to proceed without harming historic properties. Section 106 review does, however, ensure that preservation values are factored into federal agency planning and decisions. Because of Section 106, federal agencies must assume responsibility for the consequences of their actions on historic properties and be publicly accountable for their decisions.

The ICC will be a federally funded highway, however, the MD State Highway Administration (SHA) is taking the lead on the project and is following the Section 106 procedures. SHA contracted with an architectural history consulting firm – EHT Traceries – to evaluate all older properties within the area of potential effect (APE) and to determine which properties are eligible for the National Register of Historic Places. They have also prepared an *Impact Assessment Technical Report* that discusses the impacts on the identified resources and/or their settings.

It is important to note that SHA (in conjunction with the Maryland Historical Trust) may determine that properties that have not been locally designated on the Montgomery County *Master Plan for Historic Preservation* are actually eligible for the National Register. If they are eligible for the National Register, then they must be addressed through the Section 106 process. Thus, there are more historic standing structures identified in the *Impacts Assessment Technical Report* than there are historic sites identified in the county's master plans.

In July 2004, the Planning Board wrote to SHA Administrator Neil Pedersen and offered two specific comments on the ICC study regarding historical and archaeological resources. For reasons that are not completely clear, these comments were not addressed in the preparation of the DEIS. It is important for the Planning Board's comments to be strongly reiterated so that they can be addressed in the final EIS.

- That the National Register (NR) boundary for Drayton needed to be revised to include the open field in front of the historic house, which provides a vista from Spencerville Road to the Drayton residence.
- Although the impacts on each National Register property are discussed in detail, there is no discussion or analysis of the impact of either corridor on the overall cultural landscape in which these NR eligible properties are located. Although alternatives may be developed that skirt the edges of the NR boundaries for specific properties, there is a larger impact on the historic and cultural landscape - particularly in relation to Corridor 2. The Board felt that this is a major gap in the Section 106 analysis.

Impacts

Many variations on alignment options for Corridor 1 and Corridor 2 have been evaluated.

To summarize the results for standing structures, Corridor 1 will have adverse impacts to:

- Cashell Farm, and
- White's Hardware Store and Residence.

ICC Corridor 1 avoids the majority of the historic properties in the area of potential effect.

Corridor 2 will have adverse impacts to:

- Alloway Site and Cemetery (all Spencerville Options);
- Amersley;
- Issac Burton Jr. House (Fairland Option A);
- Cashell Farm;
- Columbia Primitive Baptist church;
- Drayton (all Spencerville Options);
- Edgewood II (all Spencerville Options);
- Free Methodist Church Camp Meeting Ground (Burtonsville Option A);
- Holland Store and James Holland House;
- Llewellyn Fields;
- White's Hardware Store and Residence (Norbeck Options A and B);
- Willow Grove (Norbeck Option B); and
- Woodburn (Norbeck Option B).

In terms of archaeological resources, SHA contracted with The Louis Berger Group to undertake identification and evaluation studies for archaeological resources. Berger reviewed the project corridors and used predictive models to identify 465 acres of the ICC study area with high potential to contain archaeological sites. Of this total, 133 acres had been previously surveyed, 202 acres were surveyed by Berger for the current investigation, and 130 acres remain to be surveyed (94 acres on Corridor 2 and 36 acres on Corridor 1).

Clearly, Corridor 1 is much less destructive to historical and archaeological resources. Not only does Corridor 1 affect fewer resources, but also the actual impacts to affected resources are much less severe. Corridor 2 would likely have devastating impacts to very important historic sites – Drayton and Edgehill II – and could possibly (if Burtonsville Option A is selected) destroy one of the last functioning historic Camp Meetings in the state of Maryland.

Although staff is concerned about the impact of Corridor 2 on all the resources listed above, the construction of Spencerville Option C at Edgewood II, construction of Burtonsville Option A near the Free Methodist Church Camp Meeting Ground, and construction of Norbeck Option B at Willow Grove would be particularly destructive to these important and unique historic sites.

BIKE PATH

The DEIS does not include a paved bike path along the ICC right-of-way as recommended in county master plans. The highway design only includes provisions for a future bike path in certain segments, but not all segments. Provisions are defined as grading and earthwork, sufficient bridge widths and stormwater management capacity.

Attachment 3, in Planning Board packet only, shows the SHA alignment for the complete east-west bikeway, both within the ICC ROW and outside the ROW. Segments in pink are ones for which the SHA intends to include provisions for the future bike path, but not the paving. The portions in blue are ones for which the SHA is proposing to do nothing.

The total cost of the bike path segments shown in pink in attachment 3 is estimated at \$35 million for Corridor 1, and \$28 million for Corridor 2. As noted on the attachment, these costs are expressed in 2004 dollars and include right of way, preliminary items, earthwork, drainage, stormwater management, structures, fence, landscaping, traffic management, utilities, design, and administrative fees. The costs do not include paving or lighting.

SHA this month clarified to planning staff and to the public that the \$100 million figure reported to the County Council last month referred to the total cost of the bike path alignment that was shown in the 1997 DEIS; it does not refer to the bike path concept studied by SHA in the 2004 DEIS. SHA also recently clarified that most of the anticipated cost of the bike path is for the future provisions, not for the paving. SHA also recently reported that the rationale for not paving the trail is to avoid slowing the process while SHA coordinates with local agencies on how to connect the trail to local paths, who would do the work, and other details.

Attachment 3 also shows projected environmental impacts for the segments of the path studied by SHA. In Corridor 1, the path is estimated to impact 1.4 acres of parkland, 0.34 acres of wetlands, 644 linear feet of stream valleys, 0.7 acres of floodplains, 2.1 acres of special protection areas, 14.7 acres of forest, and 13.4 acres of private property (59 properties). In Corridor 2, the path is estimated to impact 1.5 acres of parkland, 0.04 acres of wetlands, 310 linear feet of stream valley, 0.8 acres of floodplain, 2.1 acres of special

protection area, 5.8 acres of forest, one cultural site, and 5.2 acres of private property (62 properties).

Staff requests clarification from SHA on three issues before we complete our recommendation to the Planning Board:

- SHA has not provided cost estimates for paving the pink segments of the path shown in Attachment 3.
- SHA still has not justified and documented their decision to not provide the path for the entire length of the ICC for either Corridor 1 or 2. SHA staff has consistently cited environmental impact (“footprint”) as a reason for excluding the path in certain segments, specifically the impact of additional impervious cover. However, SHA has not provided any data on the number of acres of additional impervious cover the path might cause (for the pink segments or for a path along entire length of ICC ROW) and the percentage of total impervious cover of the entire highway project that the path represents.
- The path alignment shown for Corridor 1 fails to provide connections to major park trails such as Matthew Henson Trail and the Northwest Branch Trail/Rachel Carson Greenway. (Corridor 2 would not provide these connections under any proposed design or alignment, however).

Federal (FHWA) guidelines require bicycle and pedestrian accommodation on all federally funded highway projects with few exceptions, and their exclusion requires well-documented justification, which the ICC DEIS does not include. One exception is if a bicycle or pedestrian facility exceeds 20-percent of total project cost. Even at \$100M, the trail represents less than five percent of the total highway cost, but the cost of the bike path is likely much lower. Again, the pink segment shown in the attachment is estimated to cost \$35 million in Corridor 1 and \$28 million in Corridor 2 (although these costs only include “provisions”).

The County Council, the County Executive and the Planning Board support a continuous bike path along the ICC right of way. The bike path also maintains strong support from both bicycle and environmental advocacy groups, if the highway is built, and these groups are highly concerned about the state’s plan to drop the bike path completely.

TRANSPORTATION PERFORMANCE

Section IV of the DEIS describes the effects of the ICC alternatives on a variety of transportation measures of effectiveness. Staff characterizes these measures of

effectiveness as falling into one of four categories, described as improved accessibility, improved mobility, improved safety, and secondary land use and economic effects. Staff concludes that both ICC Corridor 1 and Corridor 2 provide benefits in all four categories.

Overall, staff concludes that Corridor 1 provides substantially better transportation performance than Corridor 2. This finding is based on the fact that Corridor 1 provides far greater accessibility than Corridor 2. In the other three categories, the relative performance of the two corridors is similar.

Several alternative options in Corridor 1 and Corridor 2 are described in the DEIS. Staff finds that the transportation sensitivity to the options described below is not a discriminating factor in comparing Corridor 1 to Corridor 2 for the following reasons:

- **Toll Sensitivity** is similar for both Corridor 1 and Corridor 2; the DEIS presents comparison of conditions described as the “baseline toll rate”, equal to \$0.17 per mile in peak periods and \$0.13 per mile in off-peak periods.
- **Truncation at I-95** has similar effects on both Corridor 1 and Corridor 2, including a reduction in ICC volumes by about 4,000 ADT in the eastern part of Montgomery County and by about 1,000 ADT across Rock Creek. From a transportation perspective, the relative value of the I-95 Truncation is therefore an issue for Prince George’s County to address. Staff therefore focuses on the transportation performance of the full ICC options in this memorandum.
- **Layhill Road Interchange** results in reduced study area mobility and increased travel on local roads. The state’s study team has preliminarily concluded that the interchange is cost-effective in either Corridor 1 or Corridor 2. The interchange is master planned in Corridor 1 and essential to providing access within Corridor 2. Staff therefore concurs with the state’s preliminary conclusions and focuses on the transportation performance of Corridors 1 and 2 with the Layhill Road interchange included.
- **Individual Alignment Options**, include the Rock Creek options in both Corridors 1 and 2, the Northwest Branch options in Corridor 1, and the Norbeck, Spencerville, Burtonsville, and Fairland options in Corridor 2. These options have significant effects on natural and human environmental impacts, but do not change the access to the ICC, nor materially affect the function of the roadway (in terms of travel time or capacity). Therefore, staff concurs with the DEIS conclusion that the transportation system performance is unaffected by the selection of individual alignment options within each corridor.

The following table provides a summary of the transportation performance measures described in this memorandum. Each of the measures is described in greater detail in the following paragraphs. For measures where either Corridor 1 or Corridor 2 appears measurably superior (generally at least a 5% difference between the two corridors), the better performing corridor is highlighted in bold text.

Measure of Effectiveness	No-Build	Corridor 1 (with percent change from No-Build)	Corridor 2 (with percent change from No-Build)	DEIS reference
Accessibility				
Net number of travel time matrix cells with significant (10 minute or 20%) travel time savings	N/A	106	89	Tables IV-92 and IV-93, reassessed
Number of jobs within 45 minute commute for study area residents	585,640	741,584 (27%)	692,282 (18%)	Figure IV-9
Daily east-west vehicle trips west of Georgia Avenue on study area roads north of I-495 (Screenline B)	261,000	347,000 (33%)	330,000 (26%)	Table IV-91
Mobility				
Number of study area intersections with V/C ratios > 0.9 (AM total added to PM total)	65	55 (15%)	52 (20%)	Table IV-98
Total number of intersection-hours exceeding capacity	220	168 (24%)	163 (26%)	Chart IV-2
Safety				
Forecasted vehicle crashes	5085	5075 (0%)	5002 (2%)	Table IV-104
Secondary Effects				
Year 2030 economic value to study area travelers (Univ. of Md.	N/A	\$370M	\$310M	Page IV-93

Study)				
Number of new jobs created (U of MD study)		14,200	16,850	Page IV-93
Number of subregional jobs (Expert Land Use Panel)	2,611,000	2,647,000 (1%)	2,641,000 (1%)	SCEA Technical Memorandum Tables 5 and 6
Number of subregional households (Expert Land Use Panel)	1,361,000	1,386,000 (2%)	1,385,000 (2%)	SCEA Technical Memorandum Tables 5 and 6

Accessibility

Accessibility measures are those that describe travel opportunities for persons in the study area. Both ICC build alternatives significantly improve accessibility. The amount of accessibility improvement provided by Corridor 1 is substantially superior to that provided by Corridor 2.

Travel Time Savings

Forecasted travel times are often viewed as the most immediate and meaningful demonstration of the benefits afforded by a transportation project. Tables IV-92 and IV-93 presents a summary of year 2030 morning peak period travel times between selected origins and destinations for the No-Build, Corridor 1, and Corridor 2 scenarios.

The travel time benefits provided by the ICC, of course vary greatly depending upon the origin and destination pair considered. The greatest time-savings attributable to the ICC in Tables IV-92 or IV-93 is a 39-minute reduction associated with travel from Shady Grove to Laurel in the PM peak period afforded by either Corridor 1 or Corridor 2, from 75 minutes to 36 minutes (a 52% reduction in travel time). The greatest percentage travel time reduction in Tables IV-92 or IV-93 is 63% for a trip from Konterra to Shady Grove (from 50 minutes to 20 minutes).

Tables IV-92 and IV-93 provide a sampling of travel times between eleven significant origins and destinations in the study area. The DEIS indicates that the shaded cells represent origin-destination pairs where either Corridor 1 or Corridor 2 reduces travel time by at least 10 minutes or 20%. The cell shading in the DEIS contains some typographical errors and does not facilitate a comparison of Corridor 1 as compared to Corridor 2. Staff analysis indicates that of the 200 cells in the two tables:

- Corridor 1 provides a significant time savings for 113 of the cells
- Corridor 1 also provides a significant time increase (again, of either 10 minutes or 20%) for 7 of the cells
- Corridor 2 provides a significant time savings for 90 of the cells
- Corridor 2 also provides a significant time increase (again, of either 10 minutes or 20%) for 1 of the cells

Staff proposes that the net difference between cells with significant time savings and those with significant time increases provides a useful indication of the relative time-savings potential for each corridor.

The presentation of travel times between selected origin-destination pairs is frequently critiqued on two counts. First, any group of selected origin-destination pairs, reflect only a small sample of total travel. Second, travel times do not reflect land use patterns; it may be less important to reach a certain destination if there are many intermediate destinations that serve the same function.

Accessibility measures address these concerns by describing how easy it is for travelers throughout the study area to reach desired destinations, considering both the land use and transportation network. The tradeoff is that while accessibility measures are generally more comprehensive than travel time, they are also more abstract and do not provide the same human scale of reference.

Increased Access to Jobs

A common measure of accessibility is the number of jobs that are accessible within a constant travel time from study area households.

For the ICC, preliminary forecasts indicate that in the year 2030:

- For the No-Build scenario, the typical study area resident can reach 585,640 jobs within 45 minutes by auto;
- For the Corridor 1 scenario, the typical study area resident can reach 741,584 jobs within 45 minutes by auto (a 27% increase over the No-Build);
- For the Corridor 2 scenario, the typical study area resident can reach 692,282 jobs within 45 minutes by auto (an 18% increase over the No-Build).

The increased accessibility and opportunity results in increased travel for both transit highway and transit trips, as described below.

East-West Travel Volumes

The travel demand forecasting process incorporates and reflects the phenomenon that travel behavior is capacity-constrained. This phenomenon is described by several closely related terms, including “induced travel” or “latent demand” and is summarized in the cliché “if you build it they will come”. In the travel demand forecasting process, the latent demand is addressed by an iterative speed-feedback loop, which adjusts trip distribution, mode split, and trip assignment to reflect changing transportation system options.

This phenomenon can be confusing in evaluating the effectiveness of a transportation system as related to travel volumes. The prevailing philosophy from a land use perspective, as pursued in our master planning and development review activities, is that arranging land uses and travel demand management programs to reduce total vehicle miles of travel is a worthy goal. From a transportation project perspective, however, reduced vehicular travel is frequently a symptom of roadway capacity constraints. In the ICC DEIS, the build alternatives result in increased vehicular travel, a positive indication that capacity constraints are being relieved. **Increased vehicular travel, therefore, is a result of increased accessibility.**

The conundrum relating to latent demand and vehicle miles of travel might best be described by considering the situation taken to its extremes. If all roadways in a given study area were closed, the vehicle miles of travel would drop to zero. The fuel consumption and emissions associated with vehicle travel would also drop to zero, perhaps a desirable result from a narrow perspective. However, economic productivity and the overall quality of life would also drop without the ability to deliver goods and services.

DEIS Table IV-91 summarizes average weekday volumes (AWDT) for seven screenlines shown graphically on DEIS Figure IV-8. Five of the screenlines (labeled A through F) are “drawn” in a north-south direction to measure total east-west travel at different locations in the ICC study area. Table IV-91 describes how much travel occurs on the Capital Beltway, on the ICC, and on the other local roads. The ICC DEIS concludes (as did the previous 1997 DEIS) that the effect of the ICC on Capital Beltway (I-495) volumes is negligible. The effect of increased east-west travel in Montgomery County is therefore best examined by comparing total screenline volumes on those east-west roadways located north of the Capital Beltway, as shown in the following table.

Daily East-West Vehicle Travel Crossing Screenlines in Montgomery County North of the Capital Beltway

Screenline	2030 No-Action	2030 Corridor 1	2030 Corridor 2
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A (east of I-270)	760,000	793,000	790,000
B (west of MD 97/MD 185)	261,000	347,000	330,000
C (east of MD 182)	243,000	300,000	308,000
D (west of US 29)	209,000	272,000	244,000

In each case the ICC substantially increases total travel volumes in response to latent demand for east-west travel. The effect of each corridor at each location varies depending upon several factors including specific land use and network constraints.

The Planning Board's 2002 Transportation Policy Report stated on page 23 that: "The corridor between I-270 and Georgia Avenue (MD 97) crossing Rock Creek will have the greatest corridor capacity deficiency in the county. While the total volume of travel is greater in the I-270 corridor, the gap between the amount of roadway capacity provided and the traffic demand is greatest for east-west trips outside of the Beltway".

Staff has therefore selected screenline B, the closest to Rock Creek, as the most representative of the ICC effectiveness in meeting east-west travel demand.

Transit Ridership

The ICC will facilitate east-west express bus service between rail transit stations and key employment centers in the study area. The value pricing mechanism associated with the ICC is designed to provide free-flow speed for the portions of the bus trip on the ICC so that the travel time benefits shown for auto users are also provided for transit trips. The travel demand forecasting includes six new express bus routes that utilize a portion of the ICC between the following termini:

- Shady Grove Metrorail station and Columbia;
- Shady Grove Metrorail station and Muirkirk and Laurel MARC stations;
- Shady Grove Metrorail station and Greenbelt Metrorail station;
- Shady Grove Metrorail station and Glenmont Metrorail station;
- Rockville Metrorail station and Muirkirk MARC station;
- Greenbelt Metrorail station and Burtonsville park-and-ride lot.

For Corridor 1, these six routes are forecasted to serve a total of 11,500 daily trips of which 4,400 are new transit trips. For Corridor 2, the six routes are forecasted to serve a total of 9,100 daily trips, of which 4,900 are new transit trips.

Mobility

Mobility measures are those that describe the level of service throughout the study area. Both Corridor 1 and Corridor 2 moderately improve mobility in the study area with similar effects.

The ICC study assessed traffic congestion at 51 intersections in the study area. The analysis considers both the level of service during the morning and evening peak periods (the severity of congestion) as well as the degree to which peak spreading causes level of service (LOS) F conditions at other times of day (the duration of congestion).

Number of Congested Intersections

DEIS Table IV-98 describes the number of study area intersections forecast to operate at various volume-to-capacity (V/C) ratios, where a V/C ratio of 1.0 represents a Critical Lane Volume (CLV) of 1600, the threshold between level of service (LOS) E and LOS F operations. Table IV-98 aggregates three types of operations, generally corresponding to the Highway Capacity Manual planning methodology for considering intersections to be either:

- Under capacity (V/C ratio < 0.9)
- Near or at capacity (V/C ratio between 0.9 and 1.2), and
- Over capacity (V/C ratio > 1.2)

The current Annual Growth Policy congestion standards vary by policy area. Most of the study area has congestion standards that range from a CLV of 1400 (a V/C ratio of 0.875) in the rural areas of the County to a CLV of 1600 in Kensington/Wheaton (a V/C ratio of 1.00). Staff therefore considered the 0.9 V/C ratio threshold the most valuable measure of the degree to which the ICC affects intersection congestion.

For each of the 51 intersections, the DEIS tabulates the AM and PM peak hour V/C ratio, resulting in a total of 102 study area intersection / peak period observations. In the No-Action scenario, 65 of those observations have a V/C ratio greater than 0.9 (29 intersections during the AM peak period and 36 intersections during the PM peak period). Corridor 1 results in 55 observations with a V/C ratio greater than 0.9 (a 15% reduction in congested locations) and Corridor 2 results in 52 observations with a V/C ratio greater than 0.9 (a 20% reduction in congested locations). In this regard, Corridor 2 performs slightly better than Corridor 1.

Duration of Congestion

An aggregate measure of both congestion severity and duration is the number of hours that LOS F conditions occur at the study area intersections. Currently, the 51 study area intersections experience a total of 116 hours of congestion at or over intersection capacity (or roughly a little more than two hours per intersection per weekday). By the year 2030, five of the intersections, all in Montgomery County, are planned for conversion to grade-separated interchange, based on the region's current Constrained Long Range Plan. Nevertheless, the aggregate hours of LOS F conditions will nearly double by 2030, with 220 hours of LOS F conditions forecast. With the ICC build alternatives, the hours at or over intersection capacity are reduced to 168 for Corridor 1 and 163 for Corridor 2. Both Corridor 1 and Corridor 2 therefore provide essentially the same level of performance in reducing the duration of congestion at intersections in the study area.

Safety

The DEIS examines the effect of the ICC on roadway safety by evaluating forecast vehicle miles of travel and existing crash rates on different types of representative study area roadways to develop an estimate of the number of annual vehicle crashes that might be expected in the study area. This analysis results in three pertinent findings:

- The ICC, as a controlled-access divided highway, would be expected to have a crash rate of about 0.44 crashes per million vehicle miles (MVMT) of travel, substantially lower than the arterial roadways in the study area, which generally have crash rates between 1.0 and 3.0 crashes per MVMT.
- Because the ICC would result in an overall increase in vehicle miles of travel, the facility would not be expected to significantly reduce the total number of crashes in the study area (Table IV-104 forecasts roughly 5000 to 5100 crashes per year regardless of the ICC scenario selected).

In summary, the ICC provides an option for motorists to choose a safer travel route (with its associated toll). The ICC will therefore improve the average level of safety on roadways in the county, but that effect is forecast to be dampened by latent demand.

Secondary Effect

The DEIS incorporates two new sources of information used to analyze the potential **secondary and cumulative land use impacts (SCEA)** of ICC construction in modifying economic activity. As part of the ICC study process, three independent sources of data have been developed to assess the secondary impacts in Montgomery County. Two of these sources are described in the DEIS (the University of Maryland study and the

Expert Land Use Panel analysis) and the third was performed by staff during participation in the MWCOG cooperative forecasting for CLRP air quality conformance.

These three sources used in the SCEA concur that building the ICC would have some effect in increasing development activity in Montgomery County by 2030 but the sources differ on the type and extent of development and whether or not Corridor 1 or Corridor 2 would have a more favorable impact.

University of Maryland Study

The Maryland Transportation Initiative at the University of Maryland performed an independent economic impact study to assess the current dollar value of travel time savings and potential increase in economic activity as indicated by total jobs for both Montgomery County and Prince George's County. The study concluded that for Montgomery County:

- The total annual value in overall user benefits in the year 2030 (travel time, time saved by improved travel time reliability, and vehicle operating costs) would be \$370M for Corridor 1 and \$310M for Corridor 2.
- The number of increased jobs in the study area likely to be associated with the ICC would be 14,200 for Corridor 1 and 16,850 for Corridor 2.

Expert Land Use Panel

Section IV-K of the DEIS contains the Secondary and Cumulative Effects Analysis (SCEA) required as part of the NEPA planning process. The SCEA examines the potential additional land use effects of building the ICC, summarized in DEIS Table IV-108. This analysis was performed in two stages:

1. Maryland DOT convened an Expert Land Use Panel (ELUP) consisting of 15 individuals to develop forecasts for what changes in jobs and housing units they believed would occur in different SCEA study area sub-zones. This methodology has been used elsewhere in Maryland for the I-270 Corridor/US 15 Multi-modal Study and for MD Route 32. There are other national examples as well.

The SCEA study area includes all Montgomery County, Howard County, and the District of Columbia as well as portions of Prince George's, Anne Arundel, Frederick, and Baltimore Counties. The SCEA study area was divided into 34 sub-zones for analysis, including 15 in Montgomery County. The 15 individuals met periodically as a group to compare philosophical and mathematical approaches to their efforts and developed their land use forecasts iteratively with

the benefit of shared information. Nevertheless, the 15 ELUP members developed 13 independent forecasts by zone that were then mathematically averaged using a weighting system to discount the effect of outlying estimates.

2. The ICC study team developed a procedure to convert the ELUP land use forecasts into an estimate of acres of development and compare those acreage estimates against remaining undeveloped, yet developable, properties in the SCEA study area. This procedure is defensible and well documented, yet necessarily quite simplistic given the complexity of the task. In many sub-zones, the ICC study team concluded that insufficient land area remained to accommodate the ELUP forecast growth. In these cases, the ICC study team concluded that the secondary impacts would include rezoning and/or redevelopment, with the areas of greatest risk identified in DEIS Table IV-105.

From a regional perspective, the ELUP concluded that the ICC would have a net impact on development as follows:

- Corridor 1 would increase 2030 development in the SCEA study area by 36,000 households and 25,000 jobs.
- Corridor 2 would increase 2030 development in the SCEA study area by 30,000 households and 24,000 jobs.

For the most part, the greatest relative change in households and jobs would take place in the US 29 Corridor (Burtonsville, Cloverly, White Oak) of Montgomery County and the bordering areas of Fulton and Deer Park. Other areas of Montgomery County where increases in jobs and households would be of less relative impact include Gaithersburg, Montgomery Village, Olney, and Laytonsville.

Staff provided technical support to the ELUP and SCEA efforts and understands the process followed to develop the SCEA findings. Staff concurs that the process provides a reasonable comparison of relative impacts for the DEIS. Staff also recognizes however, that the ELUP and SCEA processes require substantial judgment and that the SCEA conclusions rely on and reflect judgments made by individual ELUP members in step 1 and the ICC study team members in step 2 that may not comport with technical staff of the M-NCPPC.

Staff Analysis

Staff provides support to the MWCOG Cooperative Forecasting process, including local development forecasts for five-year increments through the year 2030. To support MWCOG air quality conformity testing of the ICC, staff submitted versions of the Round

6.4 demographic forecasts, one without the ICC (Round 6.4) and one with the ICC (Round 6.4A). Staff concluded that adding either Corridor 1 or Corridor 2 would increase Montgomery County employment by 25,000 jobs in the year 2030 but that there would be no effect on the number of households in the county. Staff did not attempt to project the effects of Corridor 2 on potential land use changes for this exercise.

Summary of Secondary Land Use Effects

In comparing and contrasting the various year 2030 forecasts for secondary effects, one basic question should be asked: does a change in the 2030 forecast reflect a change in total development potential through zoning changes and modifying other policies, or merely a change in the rate at which ultimate development potential is reached? Staff believes that the ICC Corridor 1 will accelerate the amount of development that occurs by 2030 without requiring changes in zoning because the existing zoning was planned recognizing the planned roadway.

NOISE

The purpose of the DEIS *Noise Quality Technical Report* is to determine: existing noise levels; future (2030) noise levels due to the implementation of the ICC build alternatives; if noise mitigation is necessary; and if noise mitigation is feasible and reasonable. Noise levels are presented in terms of A-weighted equivalent sound level, abbreviated as Leq. Leq is the single number presentation of fluctuating sound level for all sound sources during a specific period. Leq is measured in decibels (dBA).

The Technical Report uses the Federal Highway Administration's Traffic Noise Model (TNM) to forecast future noise levels. The TNM is a state-of-the-art computer program used for predicting noise impacts near highways. The model includes vehicle type and mix, pavement types, tollbooths, on ramp starting positions, atmospheric conditions, existing topography, or other intervening land uses to design effective and cost-efficient highway noise barriers.

The analysis assessed ambient and future noise levels by collecting data for 219 receptor sites in 53 noise sensitive areas. The majority of the individual receptor sites are in residential areas. The evaluation indicates federal noise abatement levels would exceed or approach 67 decibels (dBA) at 44 noise sensitive areas. The Technical Report estimates that 721 residences will benefit from noise walls for an approximate construction cost of \$18.3 million, or \$25,427 per residence, along Corridor 1. If Corridor 2 were implemented, 386 residences would benefit from noise walls for an approximate cost of \$13.8 million to construct, or \$35,933 per residence. These estimates do not

include the residences that would benefit from noise walls when the cost per residence exceeds the State Highway Administration's 1998 Noise Barrier Policy of \$50,000.

Since the completion of the preliminary draft analysis, the State Highway Administration conducted noise analysis at additional receptor sites. The DEIS identifies ambient noise levels at 13 noise sensitive areas on park property. These areas are the following: Northwest Golf Course; Rock Creek Regional Park picnic area; Rock Creek Regional Park Archery Field; Layhill Park on Layhill Road; Northwest Park near the trolley museum; Upper Paint Branch Stream Valley Park near the Drew School; Upper Paint Branch Stream Valley Park near Cavendish Drive; East Norbeck Recreation Center; Spencerville Local Park near Good Hope Road; Patuxent River Watershed Park near Kruhn Road; McKnew Park Saddlebrook Drive; Fairland Regional Park near Gunpowder Road; and Brown's Corner Neighborhood Conservation Park.

In addition, to identifying existing ambient conditions at the above locations, the technical analysis also estimates future noise levels in 2030 in the no build and build scenarios. The noise analysis indicates that only one of the 13 receptors on park property would exceed 67 decibels under the 2030-build scenario. This site, Brown's Corner Neighborhood Conservation Area is located on the south side of the proposed Corridor 2 alignment at the intersection of New Hampshire Avenue. The noise technical study does not analyze noise levels at the edge of the ICC right-of-way immediately adjacent to park property, nor does it assess the impacts noise will have on the natural environment.

Staff has found several studies documenting the impacts of traffic noise on wildlife (mostly birds). The findings from these studies indicate:

- Many native wildlife species are less common or absent near roads. This creates a road-avoidance area. Researchers have demonstrated traffic noise as the underlying factor for reduced wildlife near roads.
- About 60% of bird species in woodland and meadow habitats had lower densities near highways.
- When traffic volumes are 50,000 vehicles per day at 75 miles per hour, the affected area in which wildlife species diversity and numbers decreased, extended 0.5 miles from the roadway.

Within the affected area, both total bird density and species richness were approximately one-third lower and species progressively disappeared with proximity to the road.

- Noise level at which the total population density of all woodland birds began to decline averaged 42 dBA with some species declining at 35 dBA. The louder the noise the greater the decline in population density.
- Grassland birds are the most sensitive to noise. When traffic volumes reached 30,000 vehicles per day at 55 miles per hour, both bird presence and regular breeding was significantly reduced up to 0.75 mile from the road. Within this avoidance area, researchers found no regular breeding birds and the presence of grassland birds during breeding season was rare.
- Roads with 8,000 to 15,000 vehicles per day had no impact on bird numbers but still had a small impact on breeding out to 0.25 miles.
- Roads with less than 8,000 vehicles per day had no impact on bird numbers.
- Similar, though smaller in scale, road avoidance areas have been demonstrated for large and small mammals, and amphibians.
- When looking at the ecological impacts of roads on wildlife, researchers find reductions in populations are more attributable to vehicle traffic noise and associated avoidance areas than either road-kills or habitat loss.

Unfortunately, there are no federal noise standards for non-human receptors. The federal government has never constructed noise walls for wildlife. The State Highway Administration is not proposing any noise mitigation on park property for wildlife purposes.

Nevertheless, staff proposes that the Planning Board consider these studies in evaluating alternative selection.

PART II

Based on staff review of the all the DEIS materials, we believe Corridor 1 is the superior alternative. A menu of choices based on Corridor 1, the master plan alternative, is proposed to be voted upon at the February 3, 2005 Planning Board meeting, representing the final recommendations to the State Highway Administration on the DEIS. Proceeding in this manner is supported also by attachment # 1, a letter sent to the State Highway Administrator from the Chairman of the Montgomery County Planning Board dated October 25, 2004.

MASTER PLAN CONSISTENCY

The alternative that most closely represents the Master Plan consists of the following elements:

Corridor 1 with:

- Rock Creek Option A
- Northwest Branch Option B
- Layhill Road interchange

Nevertheless, this alternative has several elements that are inconsistent with the Plan. In most cases, these elements are inconsistencies of omission of master planned elements that the state has not included in the DEIS. In a few cases, the elements are inconsistencies where the state proposes an element that is not in the master plan. These inconsistencies include:

- The design does not include the continuous hiker-biker trail
- The design does not include three pedestrian connections across the ICC (recommended in the Planning Board Draft of the Shady Grove Sector Plan)
- The design does not include the Midcounty Highway Extended (M-83) connection to the ICC, and the future connections suggested in Appendix A appear to require substantial redesign of proposed structures
- The design of the Georgia Avenue interchange does not preserve sufficient median width to implement the Georgia Avenue Busway
- The proposed interchange ramps to Old Columbia Pike are not a master plan element
- The proposed interchange ramps to Briggs Chaney Road are not a master plan element

In the packet for the February 3rd briefing, staff will recommend how the Planning Board and County Council should address any master plan inconsistencies in the staff's recommended alternative.

PART III

• **ACTIVITIES UPDATE**

Since the last Planning Board briefing on July 15, 2004, several matters of importance have occurred during the environmental impact study (EIS) process.

Members of the internal review team met with park managers and several park Division Chiefs to brief them on the alternatives and their expected impacts on park property. This will begin the consideration of many park related details that follow from the possible selection of a build alternative. In that event, additional, not currently scheduled Planning Board meetings will be needed.

One of the procedural characteristics of this expedited ICC study is that proposals and the evaluation of impacts is an iterative process. Responses to agency and public concerns in one functional area typically have a ripple effect on other functional areas. The result is a process in which the alternatives are refined on a continual basis.

The Interagency Working Group received the preliminary DEIS July 26, 2004. A venue of meetings was established on August 12, 13, 16 and 17 for all group members to simultaneously review and reconcile elements of the document. The meetings also provided an opportunity to discuss and clarify in person any matters a participant might have.

- **STATEMENT REGARDING SMALL STREAM CROSSINGS**

The DEIS contains the larger stream crossings in some detail, which number approximately 25. The remaining approximately 150 smaller stream crossings are still under preliminary design, and were not discussed in detail in the DEIS. Staff expects an interactive process with SHA that includes park managers and other park leadership personnel, to assist in effectively implementing the Memorandum of Understanding with the State Highway Administration, in detailing the mitigation and compensatory elements of any road construction decision. Any final decisions regarding park property will be brought to the Planning Board for their action as the stewards of all M-NCPPC park property. Joint federal and state permit hearings are occurring as part of the DEIS public hearings.

- **COG AIR QUALITY CONFORMITY**

The Washington Metropolitan Area meets federal air emission standards for carbon monoxide, nitrogen dioxide, sulfur dioxide, lead, and particulate matter (PM 10) but is in severe non-attainment for ozone, and non-attainment for carbon monoxide. Since the project area is located in an ozone non-attainment area, the metropolitan area must conform to specific measures identified in a State Implementation Plan (SIP). Conformance with the SIP is determined through a regional air quality analysis. The ICC is included in the regional air quality analysis. On November 17, 2004, the National Capital Region Transportation Planning Board (TPB) endorsed regional transportation plans that include the ICC. TPB members found that the plans meet federal air quality standards.

The DEIS only evaluated carbon dioxide (CO) emissions and compliance with ambient air quality standards for CO. The DEIS indicates that none of the build

alternatives will result in a violation of the 1-hour CO concentration of 35 parts per million (ppm) or the 8-hour CO concentration of 9 ppm at any receptor location.

On December 17, 2004, the United States Environmental Protection Agency designated the Washington Metropolitan Area as a non-attainment area for fine particulates (PM 2.5). The DEIS does not address fine particulates. The EPA timeline for fine particulates requires state implementation plans to be submitted in April 2008 and for the region to comply with the plans by April 2010. Since the designation occurred during the DEIS process, the State Highway Administration did not identify the Washington Metropolitan Area as being a non-attainment area for fine particulates. It may take a considerable time for the Washington Council of Governments to determine the sources and contributions to PM 2.5 non-attainment, and to make the necessary model adjustments to assess the contributions from the construction and use of the ICC.

The Metropolitan Washington Council of Governments (COG) Transportation Planning Board (TPB) has responsibility for approving a transportation Constrained Long Range Plan (CLRP) and Transportation Improvement Program (TIP).

On November 17, 2004 the TPB met and voted to include for construction the master plan alignment of the ICC in the 2004 CLRP and FY 2005-2010 TIP. The CLRP includes staging through the year 2030 for projects with an approved financial plan. As part of the associated air quality conformity analysis, Park and Planning staff updated and submitted to COG the Round 6.4 Cooperative Forecast land activity data at the traffic zone level to reflect the ICC build alternatives.

This action by the TPB allows the ICC to be eligible for federal funding if a decision is reached for a build master plan alternative pursuant to an acceptable environmental impact statement.

FUTURE SCHEDULE OF EVENTS

The future schedule of events and Planning Board briefings from this date forward are currently summarized as follows:

Joint Location/Design/Section 404 Public Hearing	January 22, 2005
Planning Board # 6 (Public Testimony-Recommendation)	February 3, 2005
Close of Public Comment Period	February 15, 2005
SHA Selection of Preferred Alternative	
Planning Board # 7 (No public testimony)	March 24, 2005
Preliminary FEIS Publication	April 2005
Planning Board # 8 (No public testimony)	July 2005

FHWA Record of Decision (ROD)

July 2005

Start Detailed Design

Possible Future Planning Board Meetings

- Mid 2005-2006

Start Construction

October 2006

General State Election

November 2006

In addition, the following excerpt from the DEIS Summary, page S-39, provides further details on the study next steps.

K. Next Steps

Regulatory resource agencies and the public will have the opportunity to review this document and submit comments at the Public Hearing and/or during the defined comment period. Selection of a Preferred Alternative will not be made until the alternatives impacts and comments on the DEIS from the public hearing have been fully evaluated and addressed. If the preferred alternative is a build alternative, a Preferred Alternative and Conceptual Mitigation Package (PACM) will be coordinated with the IAWG. IAWG concurrence and/or comments on the PACM package will be requested. A FEIS identifying the preferred alternative will then be submitted to the FHWA for approval and filed with the EPA. Following a review period the FEIS is approved by FHWA and a Record of Decision (ROD) is issued by FHWA, which documents compliance with NEPA and contains FHWA's approval of the preferred alternative. Should a Build Alternative be selected, this would conclude the Project Planning Process and allow the project to advance to the final design and construction phases.

Attachments:

- # 1- October 25, 2004 Letter from Chairman Derick P. Berlage to SHA Administrator Neil Pedersen.
- # 2 - M-NCPPC Staff Evaluation of Section 4 (f) Parkland Data.
- # 3 - ICC Study Area Optional Bicycle and Pedestrian Plan- Planning Board Packet Only.
- # 4 - Communication Received Since Planning Board Briefing # 4 - Planning Board Packet Only.
- # 5 - Updated Briefing Schedule.
- # 6 - Priority Funding Areas Map.
- # 7 - *Intercounty Connector Memorandum of Understanding* between M-NCPPC and SHA 1989.