Attachment F -
Reviews by FHWA Experts Relied Upon in this Decision

ATTACHMENT F

U.S. Department of Transportation
Federal Highway Administration

Memorandum

Office of Planning

Subject: Review of March 23rd Letter from Environmental Coalition

Date: May 10, 2006

From: Bruce D. Spear
Travel Model & GIS Specialist

In Reply Refer To:
HEPP-1

To: Fred Skaer, Director
Office of Project Development & Environmental Review

Per your request, I reviewed those sections of the March 23rd comment letter from the coalition of environmental groups (hereafter referred to as "the coalition") that pertained to the traffic and induced growth impacts in Final Environmental Impact Study (EIS) for the Intercounty Connector project (ICC).

I could find nothing new in either the coalition's summary comments on Transportation Effects (pp 59 – 67), or in the accompanying statement by Norman Marshall of Smart Mobility Inc. (hereafter referred to as "Smart Mobility"), which had not already been raised in earlier correspondence from the coalition, and were addressed in the Final EIS document. Each of the specific points raised in the comments letter and statement are discussed briefly below.

1. Flaws in the underlying travel forecasting model.

The letter reiterates a number of flaws in the travel demand models used to forecast the traffic impacts of the ICC preferred alternative against current conditions and a "no build" alternative. The essence of the argument is that the EIS forecasts are based on an "older" version of the MWCOG model (version 2.1C), instead of a more recent model (version 2.1D) that has since been adopted by MWCOG, and which corrects certain conceptual and methodological deficiencies identified in earlier correspondence as well as in a peer review conducted by TRB. The letter states that, in order to satisfactorily correct these flaws, the traffic forecasts need to be rerun using the more recent model. However, in the accompanying statement from Smart Mobility, Mr. Marshall acknowledges that "the ranking of alternatives probably would be the same with either model." (Smart Mobility, pg 11).

MWCOG updates and enhances its travel demand models on a continuing basis. At the time of the draft EIS, the consultants who conducted the traffic forecasts for the ICC alternatives did use the latest approved model set from MWCOG (Version 2.1C). Although a newer version of the MWCOG model set has since been approved, I don't believe that any of the enhancements incorporated into the newer model would significantly change the ranking of alternatives in the

EIS. Given that their own consultant also seems unconvinced that the newer travel models would significantly change the results of the analysis, it appears that the only purpose served by the recommended remedy would only be to delay a final decision on the EIS.

2. Flaws in modeling induced development.

The coalition letter states that the Final EIS failed to properly account for the induced development resulting from the construction of the ICC. It claims that the Draft EIS used population and employment forecasts (Round 6.3) for the no-build and preferred alternative that overestimated employment growth in Montgomery County by 50,000 jobs. These estimates were subsequently revised by MWCOG, first to decrease the employment forecast by 50,000 jobs (Round 6.4), and subsequently to add back 25,000 jobs in Montgomery County and 35,000 jobs in Prince Georges County based on recommendations from the expert land use panel (ELUP) to reflect increased development attracted by the ICC (Round 6.4A). Sensitivity analyses conducted for the Final EIS recomputed the traffic forecasts for the preferred alternative using the Round 6.4A population and employment forecasts. However, the coalition letter contends that this sensitivity test was inadequate because it did not recompute the traffic forecasts for the no build alternative using the Round 6.4 baseline population and employment forecasts. The Final EIS does not mention the Round 6.4 forecasts.

In a subsequent discussion with the consultants who conducted the traffic forecasts for the ICC alternatives, I learned that the Round 6.4 land use forecast did not reflect a land use forecast exclusive of the ICC, and consequently is not a valid basis for comparing the land development impacts of the ICC against a "no build" alterative, as suggested in the coalition letter. Moreover, the Round 6.4A forecast represents the most current approved land use forecast for the MWCOG planning area, and therefore provides a reasonable basis for testing the sensitivity of the alternatives to changes in land use.

More generally, there is no widely accepted methodology for quantifying the impacts of a specific transportation project on land development, and there is considerable disagreement within the transportation planning profession on just how significant a role transportation improvements play in influencing development relative to other factors, such as zoning regulations, regional economic growth, or availability of public water and sewer. The approach taken by the ICC Study team – to convene an expert panel of land use stakeholders to reach consensus on the impacts of the transportation project on land development in the corridor – is consistent with current transportation planning practice.

3. The ICC will have little impact on traffic conditions or crashes

The statement from Smart Mobility applies several summary measures to argue that the ICC preferred alternative is not significantly better than the "no build" in reducing traffic congestion or crashes in the corridor. Smart Mobility compares east-west traffic across screen lines on arterials parallel to the ICC, and on the Capital Beltway under current conditions with forecasts under the no build and preferred alternatives. They show that traffic volumes are nearly the same for the preferred and no build alternatives, and both are substantially higher than current traffic levels on the Capital Beltway and parallel arterials. However, a closer examination of the

plots shows that under the preferred alternative, an average of 10,000 vehicles/day are diverted from parallel arterials compared to the no build alternative. Comparison of traffic impacts on the Capital Beltway is largely irrelevant, because the origin-destination flows served by the ICC are not the same as those served by the Capital Beltway, as discussed in the EIS analyses. Comparing future (2030) traffic against current conditions simply shows that traffic volumes throughout the corridor are projected to increase, whether the ICC is built or not.

The discussion of intersection and roadway levels of service actually seems to support the argument that the ICC preferred alternative would improve overall service levels. Smart Mobility points out that the total number of hours that study area intersections would be at or over capacity is reduced by 24 percent under the preferred alternative compared to the no build, but this is 42 percent higher than current traffic volumes. This latter observation merely reinforces the argument that traffic conditions will continue to worsen in the study area, and that the ICC is not intended to improve upon or even maintain today's traffic levels, but rather to help mitigate the impacts of significantly increased traffic volumes.

The accident analysis conducted by Smart Mobility indicates that the difference in total number of crashes between the build and no build alternatives is not significant. However, a more meaningful measure is not total crashes, but rather crash rate per total vehicle miles traveled (VMT). Since total VMT increases under the preferred alternative (an observation that the coalition readily points out in discussing other impacts), the crash rate under the preferred alternative actually decreases relative to the no build. This impact measure is used in the Final EIS.

Smart Mobility suggests that the more appropriate measures to use in comparing the impacts of the ICC preferred alternative against the no build are total vehicle hours of travel (VHT) and vehicle hours of delay (VHD) across the study area. They note that by using these measures, the ICC preferred alternative results in both higher VHT and VHD than the no build. However, as with the accident analysis, this conclusion ignores the fact that total number of vehicle trips and VMT also increase under the ICC preferred alternative. If VHT and/or VHD were measured on a per-trip or per-mile basis (by dividing by total number of trips or total VMT), these measures would be lower under the preferred alternative.

The underlying issue in these alternative interpretations of traffic impacts is whether increased travel volume (i.e., VMT) should be treated as a benefit or a cost. The travel demand analyses conducted for the FEIS and the coalition letter both agree that traffic volumes in the study area will continue to increase over current levels whether or not the ICC is built. They also agree that building the ICC will result in even more vehicle traffic in the study area than under a no build alternative, due to induced travel and induced development (although the magnitude of these effects is certainly an area of disagreement). However, whereas the Final EIS treats reductions in travel times and delays for individual trips within the study area as a benefit (i.e., increased mobility for trip makers within the study area), the analysis conducted by Smart Mobility suggests that these reductions are negated by the additional VMT (from new and longer vehicle trips). From an economic and transportation planning perspective, increased mobility in the form of more trips and greater choice of destinations, should be treated as a benefit. The negative consequences of additional travel (i.e., increased energy use and mobile source pollution) are accounted for using other impact measures.

4. The FEIS should consider a broader set of alternatives

The statement from Smart Mobility reiterates arguments made by the coalition in earlier comments on the Draft EIS that the range of alternatives considered is too narrowly scoped, that it only includes highway options, and that other alternatives involving mixes of improved transit service and land use policies could satisfy the purpose and need with significant improvements in specific performance measures including VMT, VHT, VHD, transit mode share, and mobile source air pollution.

Each of the proposed alternatives was addressed and dismissed in the Final EIS as not meeting the purpose and need for the project. Smart Mobility contends that the scope of the project was unnecessarily (and arbitrarily) limited to only include highway alternatives between specified end points, and did not give transit options a fair evaluation. However, none of the transit alternatives proposed by the coalition addresses the movement of goods or commercial vehicles, which was clearly presented as a project need.

In addition, the performance measures used by Smart Mobility to evaluate the transit alternatives are all directly related to a reduction in total vehicle trips (i.e., any alternative that reduces the number of vehicle trips in the study area will yield improved performance along these selected measures). Again, whether or not these are the appropriate measures of performance is a matter of perspective. For example, moving significant numbers of trip makers out of their vehicles and onto public transit will decrease the number of vehicle trips and the total VHT (where VHT = number of vehicle trips x average trip time). However, total <u>person</u> hours of travel (where PHT includes the sum of both vehicle and transit trips multiplied by their respective trip times) would most likely increase. Is VHT or PHT a better measure of personal mobility?

Lastly, as I discussed in my previous review of the proposed alternatives, there are serious flaws in the analyses conducted by Smart Mobility comparing their transit alternatives with the ICC preferred alternative. One major question that is not satisfactorily addressed in Smart Mobility's statement is the feasibility or likelihood of achieving the transit-supportive land use scenario, which is central to proposed alternatives 1 and 4. Smart Mobility dismisses this question by arguing that the adopted land plans used in the FEIS "are an artifact of the political process, just as a new highway is. The point of considering them together is to determine whether better outcomes are possible if land use and transportation planning are better coordinated." (Smart Mobility, pg. 7)

The fallacy of this argument is that, unless there is some <u>demonstrated</u> willingness on the part of local governments to adopt the highly restrictive land use controls required to realize the transit-oriented development scenario, alternatives based on this scenario are not realistic. The purpose of an EIS document is not to evaluate all possible alternatives, but to focus on those that satisfy the stated purpose and need, and that have a realistic expectation of being implemented. The proposed alternatives satisfy neither of these criteria.

Please let me know if you need any additional information from me. I am also attaching, per your request, a copy of my resume and list of publications. Feel free to use them as you see fit.

Attachment

U.S. Department of Transportation
Federal Highway Administration

Memorandum

Subject: **INFORMATION**: Review of Comments on ICC Land Use Analysis

Date: May 18, 2006

Original Signed By:
From: Mike Culp, Project Development Specialist
Office of Project Development and Environmental Review (HEPE-30)
Original Signed By:
Fred Ducca, Team Leader
Office of Interstate & Border Planning (HEPI-30)

Reply to
Attn. of: HEPE

To: Mr. Frederick Skaer, Director
Office of Project Development and Environmental Review (HEPE-1)

Per your request, we have reviewed the comments dated March 23, 2006 of the Audubon Society et al, providing on the ICC FEIS/4(f) Evaluation. More specifically we are responding to the comments in Section III. Environmental Consequences, Subsection B. Water Quality, Number 3.) Underestimation of Induced Development Results In a Deficient Analysis of Water Quality and Ecological Impacts.

Regarding the comments under comment (a.) of this section, "The FEIS Fails to Adequately Respond to Modeling that shows that the FEIS's Induced Development Forecasts are Underestimated", and (b.), "The Lead Agencies' Reliance of the ELUP Process Over Well-Accepted Objective Models and Studies Defies Logic", the authors, in general, argue that the land development impacts are underestimated, and that the appropriate method for estimating land development impacts was not used. The common basis for these arguments is the authors' proposal that a different method of analysis for estimating land development changes than the method chosen for the ICC Study should have been used. We reviewed the FEIS and supporting technical documentation, and would offer the following response.

The decision to use the Expert Land Use Panel (ELUP) on the ICC was based on SHA's previous experience with various techniques, which led to the ELUP being proposed as the method of choice for the ICC project. According to meeting minutes, the ELUP method was presented to the Interagency Working Group (IAWG) (June 16, 2003) and the Principals +1 (July 6, 2003) as the proposed method for estimating land development effects as a basis for the Secondary and Cumulative Effects Analysis. To our knowledge, there were no objections by the Principals+1 or the IAWG to using this procedure. We believe this early coordination with the Principals+1 and IAWG are consistent with the FHWA guidance on indirect and cumulative impacts ("Questions and Answers Regarding the Consideration of Indirect and Cumulative Impacts in the NEPA Process"), in that SHA communicated and coordinated with the cooperating agencies regarding their proposed method early in the NEPA process.

SHA has responded to criticisms of the ELUP method by stating that the method was proposed for the ICC Study based on past experience with other methods, and that the ELUP method has been proven to provide reasonable results, and takes into consideration complex land use and jurisdictional issues that are difficult to capture in most quantitative methods. We agree that the ELUP method itself is but one method of many, and if applied in a reasonable fashion, would meet the "hard look" requirements needed to meet NEPA requirements. In addition, several reports and syntheses have been written on this technique, and it is our belief that it is a "state-of-the-practice" method.

We have reviewed the available documentation on how the Expert Land Use Panel (ELUP) was conducted, including the panelist screening procedures and individual panelist reports offered during the application of the panel technique. The ELUP had a broad cross-section of members representing the public sector, private sector and academia. The panel did not achieve consensus, but did appear to converge toward a reasonable range of possible outcomes, consistent with the results of a typical Delphi-type technique applied for similar purposes. The records indicate that some panel members felt that an analytic process would have helped the panel draw more informed conclusions, yet there is no indication that participants felt the conclusions would have been significantly different. The panel appeared to be conducted in a reasonable, unbiased manner, without preordained conclusions being thrust upon it. Overall, the ELUP process seems to have been conducted in fair and reasonable manner, consistent with the state-of-the-practice in conducting expert land use panels for estimating potential effects of transportation projects.

Memorandum

U.S. Department
of Transportation

Federal Highway
Administration

Subject: **INFORMATION:** Review of March 23rd Letter from Environmental Coalition

Date: May 24, 2006

From: Patricia A. Cazenas
Highway Engineer

Reply to: HEPN-30

To: Fred Skaer, Director
Office of Project Development
and Environmental Review

I have reviewed those sections of the March 23rd comment letter from the coalition of environmental groups that deals with water quality and offer the following comments on the issues raised in the letter on the Final Environmental Impact Statement (FEIS) on the Intercounty Connector (ICC).

Water Quality

The water quality analysis estimated the potential impacts from the ICC's impervious surfaces to compared annual pollutant loads for a variety of non-point source pollutants for pre and post ICC land use conditions. This analysis focused on the corridor of land anticipated to be ICC right-of-way (rather than a narrower limits of disturbance), and summarized the pollutant loads for each watershed in both corridors. Post-construction conditions were analyzed assuming all runoff would be treated from the ICC right-of-way with stormwater Best Management Practices (BMPs).

The Corridor 2 alignment is in close proximity to the Rocky Gorge Reservoir, which is a drinking water reservoir. The reservoir provides a vital drinking water source to between 550,000 to 600,000 people. The pollutant load model indicates that the right-of-way corridor associated with either alignment would not experience significant changes in water quality when compared to existing land uses. But with the potential for secondary development in Corridor 2, further analysis from nonpoint sources in the watershed was done from a source water protection standpoint. The results showed that the selection of Corridor 2, may in time increase the need for additional water treatment processes to keep and maintain the drinking water supply and regional emergency supply of potable water. The potential for this alignment to impact a drinking water reservoir warrants the additional evaluations of secondary impacts, land use and Comparative Water Resources Hazard Assessments in Corridor 2.

The Simple Method is one of the models referenced in several of EPA's guidance documents, including the EPA's "Handbook for Developing Watershed Plans to Restore and Protect Our Waters", Chapter 8: Estimate Pollutant Loads, October 2005 and the "Compendium of Tools for Watershed Assessment and TMDL Development, USEPA, 1997. Although approaches used in estimating pollutant loads have different features, there are a wide range of models (specifically there are over 35 models listed in EPA guidance) that can provide loads by sources, help predict conditions, and evaluate BMPs. There are several models that can be used to evaluate projects and watersheds, but among the various models, they represent a range of complexity, areas of emphasis and types of pollutants. But all models are an approach for estimating pollutant loads, providing source load estimates and evaluating alternatives. These models can be highly sophisticated or more generalized, like the simple method based on relationships that estimate the amount of runoff based on precipitation. These cause and effect relationships models are used to forecast or estimate future conditions the might occur. Models vary in accuracy and you need to rely on peer review of journal articles written about the use of a model to establish credibility. All models reviewed in the EPA guidance have been validated, at least to some extent and this review includes the GLIF model referenced in coalition's letter, but it also included the Simple Method. A detailed description of water quality models of all types can be found in these EPA publications.

In this FEIS analysis, the pollutant loading was evaluated for the corridor of land anticipated to be the ICC right-of-way, and a pollutant load analysis was not completed for the entire watershed. The analysis and prediction of pollutant loads were evaluated based on the impacts associated with the highway construction footprint. This "Simple Method" provides reasonable estimates of changes in pollutants resulting from urban development activities. This method estimated pollutant loads generated during storm events, as that is the time period in which stormwater runoff will be draining from the highway system. The model may be simple, hence it's name, because the technique requires a modest amount of information on drainage area, impervious cover, stormwater runoff pollutant concentrations and annual precipitation. A simplified technique can be a more effective model if it addresses the necessary issues and provides a useful tool in decsionmaking over a more complex model.

The FEIS states that in temperature sensitive watersheds such as Paint Branch and Upper Rock Creek, stormwater management facilities would be designed to infiltrate a portion of the heated runoff and allow for treatment by cooler groundwater. The water temperature in some of these subwatersheds is at the upper limit of what is considered sustainable for the resident brown trout population. Addition of impervious areas within these subwatersheds has the potential to raise water temperatures to a level not suitable for the trout population. This is any additional **untreated** impervious surfaces. The upper watershed already experiences temperatures consistently above 68 degrees F and additional **untreated** impervious areas may add to the already existing problem. The planned stormwater management BMPs associated with the construction of the ICC may sustain or even improve an existing situation related to temperature of the water in these areas. The study done in 2004 concluded that despite warm water inflows in the headwaters of the tributaries the baseflow contributions to theses tributaries and the Good Hope mainstem were able to mitigate these effects and maintain an average temperature below

the Use III standard in 2004. This data presents one season of existing information; over time and with various BMPs, we can work to improve the situation as long as all players in the watershed are willing to work towards mitigating the existing threats and providing management measures for future threats beyond the ICC. The FEIS mitigation package makes a commitment to ensure the project is designed and operated in a fashion that serves and protects the environmental health of the project corridor. The water quality mitigation package covers the water quality impacts of the project itself and also provides measures to improve and help to solve water quality issues that already exist in the planned ICC corridors.