

**PETITION FOR PREPARATION OF SUPPLEMENTAL EIS TO EVALUATE  
ENVIRONMENTAL IMPACTS OF EMISSIONS FROM THE ICC  
NOT CONSIDERED IN THE FINAL EIS or ROD.**

Environmental Defense and Sierra Club request that US DOT withdraw its approval of the Intercounty Connector highway project (“ICC” or “Project”) pending further review as required by NEPA, Federal Aid Highway Act § 109(h) and the Clean Air Act, because new evidence not previously considered in the environmental review of the Project --

- 1) demonstrates that emissions from the Project will cause or contribute to violations of the revised 24-hour NAAQS for PM<sub>2.5</sub> promulgated by US EPA on October 17, 2006;
- 2) demonstrates that emissions from the Project will reasonably be expected to cause harm to the health of sensitive populations, including but not limited to—
  - harm to children who reside, attend school or recreate within 500 meters of the ICC and other highways in the study area where average annual daily traffic levels will exceed 45,000 vehicle trips by impairing normal lung development, increasing the severity of asthma attacks thereby requiring more frequent emergency care or hospitalization, increasing immune and allergic disabilities among young children; and
  - harm to elderly residents from increased respiratory; and
  - increased risk of cardiovascular disease among women.
- 3) demonstrates that modeling tools are available to perform a health risk assessment for the purpose of estimating the likely community exposures to toxic air pollutants emitted from the Project, and to estimate the likely public health consequences of

these exposures to pollutants that are known human carcinogens and/or known to cause other severe life-threatening diseases.

To properly assess and disclose the impacts on the human environment demonstrated by this new evidence, and to consider and adopt appropriate mitigation measures adequate to prevent, avoid or minimize these adverse impacts, the National Environmental Policy Act requires that FHWA prepare a Supplemental Environmental Impact Statement (SEIS). An SEIS is required to address significant impacts of air pollutants emitted from the Project that have been identified after the March 2006 close of the public comment record, and that were not evaluated in the Final EIS or discussed in the Record of Decision approving the ICC. The impacts revealed by new evidence not included or considered in the FEIS include 1) the emissions modeling analysis submitted herewith that demonstrates emissions from the Project will, when added to emissions from traffic in the I-95 corridor, cause or contribute to violations of the new 24-hour NAAQS for PM<sub>2.5</sub>, 2) the recently published peer-reviewed studies of public health impacts of highway emissions that became available after the close of the comment period on the FEIS in March, 2006, and 3) the guidance published in March 2007 on behalf of the American Association of State Highway and Transportation Officials (AASHTO), Standing Committee on the Environment, that recommends available modeling tools and procedures for “Analyzing, Documenting, and Communicating The Impacts of Mobile Source Air Toxic Emissions in the NEPA Process.”

#### **I. Clean Air Act Requires Conformity with Revised NAAQS for PM<sub>2.5</sub>.**

FHWA is barred from proceeding with the Project by the prohibition contained in section 176(c)(1) of the Clean Air Act. The Act declares that US DOT shall not “engage

in, support in any way or provide financial assistance for, license or permit, or approve, any activity” such as a transportation project unless the head of the Department has undertaken the “affirmative responsibility” to determine that the project conforms to applicable implementation plan. The Act defines “[c]onformity to an implementation plan” to mean --

- (A) conformity to an implementation plan's purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards and achieving expeditious attainment of such standards; and
- (B) that such activities [highway project] will not--
  - (i) cause or contribute to any new violation of any standard in any area;
  - (ii) increase the frequency or severity of any existing violation of any standard in any area; or
  - (iii) delay timely attainment of any standard or any required interim emission reductions or other milestones in any area.

As of the date that US EPA promulgated the more protective 24-hour NAAQS for PM<sub>2.5</sub> in October 2006, the US DOT had not granted all approvals and funding commitments that are required by law for the ICC. These remaining approvals cannot lawfully be granted until US DOT determines that emissions from the project satisfy the statutory conformity tests. These tests require a demonstration that emissions from the Project “will not -- cause or contribute to any new violation..., increase the frequency or severity of any existing violation..., [or] delay timely attainment of any standard.” [Emphasis added.] US DOT made a conformity finding with respect to the NAAQS in effect as of May 2006, including the 24-hour NAAQS which was then 65 µg/m<sup>3</sup>. *See* Record of Decision, Appendix H. But US DOT has not made a determination that the Project conforms to the more protective 24-hour NAAQS for PM<sub>2.5</sub> (35 µg/m<sup>3</sup>) promulgated after the initial conformity determination was made, but before all required Project approvals were completed. No further Project approvals or funding commitments may

lawfully be made until US DOT makes a determination that emissions from the Project will not cause or contribute to PM<sub>2.5</sub> in excess of 35 µg/m<sup>3</sup>.

**A. ICC Approvals Remained to be Granted by Federal Highway Administration When EPA Revised NAAQS.**

The Intercounty Connector Project (“ICC”) is an 18 mile, 6 lane, limited access tolled highway designed to link I-95 at its eastern terminus in Prince Georges County, to I-370 and I-270 at its western terminus in Montgomery County, Maryland. The ICC will be built in five segments, otherwise known as “design-build contracts”, which are referred to as Contracts A, B, C, D, and E. The U.S. Department of Transportation (“USDOT”), acting through the Federal Highway Administration (“FHWA”), issued a Record of Decision (“ROD”) approving the ICC on May 29, 2006. As part of the ROD, the USDOT issued a “Project Level Conformity Determination for the Intercounty Connector Project in Maryland.” (Attachment H)

Making a conformity determination is a prerequisite for the issuance by FHWA of the project approvals required by 23 U.S.C. § 106. These include the approval of “plans, specifications and estimates,” and project agreements that commit the respective federal and State shares of funds for the project. § 106(a)(1), (a)(2), and (b).

By letter dated July 14, 2006, the USDOT, acting through the FHWA, authorized “eligible costs for construction of ICC Contract A (from I-270/I-370 to east of MD 97) and eligible [Right of Way] Acquisition costs for ICC contracts A, B, C, D and E.” However, the July 14, 2006 authorization for construction is limited to Contract A and is subject to certain conditions, including the following: (1) the project is authorized as “advanced construction”, and the obligation of federal funds will not occur until the project is converted to regular financing; and (2) the Maryland State Highway Agency

(“MSHA”) is required to submit a Project Management Plan (“PMP”) consistent with by § 106(h) for FHWA acceptance and approval prior to requesting concurrence in an award for Contract A; FHWA will not concur in the award of the contract if MSHA fails to obtain FHWA approval for the PMP. To date, neither FHWA nor SHA has informed the public that the conditions precedent for making federal funding obligations have been satisfied, or that the obligations of funds have been completed. Even if they had been completed, contracts to proceed with construction were not signed, and notices to contractors to proceed with construction as provided for in the contracts had not been issued. No final approvals to proceed with construction for the segment included within Contract A had been made final before EPA promulgated the final revised 24-hour NAAQS for PM<sub>2.5</sub>.

Nor had any authorization for an award of federal funds pursuant to 23 U.S.C. § 106 been granted for ICC Contracts B, C, D or E prior to EPA’s announcement of the revised 24-hour NAAQS. In addition, no approval of plans, specifications and estimates for the ICC, as required by 23 U.S.C. § 106(a), has been granted by USDOT, nor have access permits to allow the ICC to be connected to existing federal interstate highways I-95 and I-370 been approved by USDOT.

On September 21, 2006, the U.S. Environmental Protection Agency (“EPA”) announced a final revision of the National Ambient Air Quality Standards (“NAAQS”) for fine particulate matter known as PM<sub>2.5</sub>. Final Rule, National Ambient Air Quality Standards for Particulate Matter, 71 Fed.Reg. 61,143 (October 17, 2006). Based on numerous studies that documented the causal link between short-term inhalation of PM<sub>2.5</sub> and premature mortality, heart attacks, and respiratory diseases, including lung cancer

and asthma, the EPA concluded that the former “suite of primary PM<sub>2.5</sub> standards, taken together, is not sufficient and thus not requisite to protect public health.” 71 Fed. Reg. 61,161. EPA revised the former 24-hour standard of 65 micrograms per cubic meter (µg/m<sup>3</sup>) to 35 µg/m<sup>3</sup>. By its terms, the revised NAAQS became effective on December 16, 2006, 60 days after publication.

**B. Section 176(c) of the Clean Air Act Requires A Conformity Determination for the ICC With the Revised NAAQS for PM<sub>2.5</sub>.**

Section 176(c) of the Clean Air Act establishes mandatory requirements that must be satisfied before a transportation plan, program or **project** can be approved by the United States Department of Transportation, and before a Metropolitan Planning Organization (“MPO”) may adopt a transportation plan or program that includes a transportation project such as the ICC. *See* 42 U.S.C. § 7506(c)(1), (2). Paragraph (c)(1) states that “[n]o Department of the Federal Government shall engage in, support in any way, or provide financial assistance for, license or permit, or approve, any activity which does not *conform* to an implementation plan after it has been approved or promulgated under section 7410 of this title . . . . [t]he assurance of conformity to such an implementation plan shall be an affirmative responsibility of the head of such department.” 42 U.S.C. § 7506(c)(1) (emphasis added).

Section 176(c)(1) of the Clean Air Act further states that “[n]o metropolitan planning organization designated under section 134 of Title 23, shall give its approval to any project, program, or plan which does not *conform* to an implementation plan approved or promulgated under section 7410 of this title.” 42 U.S.C. § 7506(c)(1) (emphasis added). The Transportation Planning Board of the Metropolitan Washington Council of Governments is the organization designated pursuant to 23 U.S.C. § 134(d) as

the MPO for the National Capital Planning Region, which includes Montgomery and Prince Georges Counties in Maryland where the ICC is to be constructed.

The conformity determination required by paragraphs 176(c)(1)(A) and (B) is to be made based on facts showing that emissions from an activity will not cause or contribute to violations of the NAAQS, or delay timely attainment of the NAAQS. EPA has determined that these tests apply whether or not an attainment strategy SIP has been adopted and approved for each pollutant subject to conformity. *See* 71 Fed. Reg. 12,471/col. 3.

Montgomery and Prince Georges Counties are included in the National Capital Interstate Air Quality Control Region, 40 C.F.R. § 81.12, and have been designated nonattainment for the pollutant PM<sub>2.5</sub>. 40 C.F.R. § 81.321. Therefore the Act requires that conformity for the ICC be determined for the pollutant PM<sub>2.5</sub>. 42 U.S.C. § 7506(c)(5). The NAAQS with respect to which conformity must be determined is the NAAQS in effect at the time federal approvals or funding commitments are made.

The Clean Air Act's requirements for making conformity determinations established by Section 176(c) are supplemented by criteria and procedures for making conformity determinations promulgated by the EPA by rule. *See* 42 U.S.C. § 7506(c)(4)(A); 40 C.F.R. Part 93 (transportation conformity). Pursuant to these regulations, a federally funded highway project may not proceed unless FHWA determines that "[t]he FHWA/FTA project must not cause or contribute to any new localized CO, PM<sub>10</sub>, and/or PM<sub>2.5</sub> violations or increase the frequency or severity of any existing CO, PM<sub>10</sub>, and/or PM<sub>2.5</sub> violations in CO, PM<sub>10</sub>, and PM<sub>2.5</sub> nonattainment and maintenance areas." 40 C.F.R. § 93.116(a).

The U.S. Court of Appeals for the D.C. Circuit has interpreted the Act to require that the term “conform” means present conformity, i.e., that a project must conform when an agency takes an action that is prohibited under § 176(c)(1) unless the Department has first determined that the project conforms. The Court overturned an EPA rule that allowed a project to be approved for funding during a conformity lapse if the project had been found to conform at some time in the past, and actions were taken to advance the project. *See Environmental Defense Fund v. Environmental Protection Agency*, 167 F.3d 641 (D.C. Cir. 1999). The rejected section 93.102 of EPA’s 1997 rule allowed a project to conform based upon past conformity determinations so long as major actions continued to be taken to advance the project every three years. The Court held that EPA’s interpretation of the Act “is foreclosed by Congress’s use of the terms ‘conforming plan and program’ in section 7506(c)(2)(D), by the general conformity criteria in section 7506(c)(1), and by the legislative history of the conformity requirements.” *Id.*, 646. The Court’s holding specifically relies upon its understanding that the conformity status required as a precondition for a current funding or approval action may not be based upon past determinations because it would defeat the purpose of the statutory conformity criteria in § 176(c)(1)(A) and (B).

[W]ere we to read the word “conforming” the way EPA suggests, then there would be no assurance that projects approved under section 7506(c)(2)(C) would help eliminate, reduce, or prevent violations of national ambient air quality standards, as required by section 7506(c)(1). *Id.* at 646-47.

Here, where the statutory conformity tests in section 7506(c)(1)(A) and (B) prescribe the exclusive criteria for determining whether the ICC conforms, it is clear that a conformity determination based on the 1997 NAAQS for PM<sub>2.5</sub> provides “no assurance” that the

ICC will “help eliminate, reduce, or prevent violations of [the] national ambient air quality standard” for PM<sub>2.5</sub> now in effect.

After analyzing all three grounds for rejecting EPA’s interpretation that current project approvals could rely on past conformity determinations, the Court concluded that—

Congress wanted no transportation projects to proceed without assurance that they would not undermine attainment or maintenance of *current* air quality standards. Directly contravening this mandate, the Agency’s rule allows local officials to approve transportation projects included in plans and programs that previously conformed, but presently do not. \*\*\* Because the conformity status of such projects bears no relation to current air quality attainment or maintenance goals, their approval carries no guarantee that their emissions will neither violate current standards nor contribute to existing violations. *Id.* At 648 [emphasis in original].

Here, it is undisputed that DOT’s May 29, 2006 Project Level Conformity Determination did not find that emissions from the ICC will not violate the revised 24-hour NAAQS for PM<sub>2.5</sub> published by the EPA on October 17, 2006. It is also undisputed that no determination has been made by FHWA as to whether this project now violates Section 176(c) of the Clean Air Act; namely, whether it conforms “to an implementation plan’s purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards and achieving expeditious attainment of such standards” and “will not --cause or contribute to any new violation of any standard in any area, increase the frequency or severity of any existing violation..., [or] delay timely attainment of any standard.” 42 U.S.C. § 7506(c)(1)(A), (c)(1)(B).

Because there has been no determination that the ICC *currently* conforms to the NAAQS for PM<sub>2.5</sub> now in effect, section 176(c) of the Clean Air Act prohibits the US DOT and FHWA from providing any additional approvals or executing any project agreements to provide financial assistance pursuant to 23 U.S.C. § 106(a) and (b), or

otherwise in any way supporting the commencement of construction of the ICC, until the ICC is demonstrated to conform to the revised NAAQS for PM<sub>2.5</sub>.

## **II. NEPA Requires the Preparation of a Supplemental Environmental Impact Statement.**

The National Environmental Protection Act (“NEPA”) requires that a Supplemental Environmental Impact Statement (“SEIS”) be prepared to disclose the evidence of harm to health at the levels of the revised NAAQS for PM<sub>2.5</sub> and the new evidence of harm associated with exposure to the full mix of motor vehicle emissions, to determine if emissions from the project threaten to violate the revised NAAQS, to consider alternatives and mitigation options for eliminating, avoiding or minimizing these adverse impacts, and to employ the tools now recognized as available for making these assessments.

A federal agency’s responsibilities under NEPA do not end upon completion of the initial environmental analysis for a proposed project. Rather, NEPA imposes upon federal agencies a continuing obligation to gather and evaluate new information that is relevant to the environmental impacts of ongoing actions. Warm Springs Dam Task Force v. Gribble, 621 F.2d 1017, 1023 (9th Cir. 1980). An SEIS is required when “[t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impact.” *See* 40 C.F.R. § 1502.9(c)(ii). US DOT regulations governing FHWA evaluation of highway projects require an SEIS when “new information or circumstances relevant to environmental concerns and bearings (sic) on the proposed action or its impacts would result in significant environmental impacts not evaluated in the EIS.” 23 C.F.R. § 771.130(a)(2).

Thus new information relevant to the environmental impacts of a project that has already received initial approval triggers an obligation by the agency to determine whether the project will cause significant impacts that have not been considered. “[I]f the new information is sufficient to show that the remaining action will ‘affec[t] the quality of the human environment’ in a significant manner or to a significant extent not already considered, a supplemental EIS must be prepared.” *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 374 (1989). Supplemental NEPA documentation is required if the new information meets the “threshold standard” of “significant or uncertain” environmental impacts. *Price Road Neighborhood Ass’n v. United States Dep’t of Transp.*, 113 F.3d 1505, 1508-09 (9th Cir. 1997). An SEIS must be prepared if “the proposed roadwork will have a significant impact on the environment in a manner not previously evaluated and considered.” *South Trenton Associates Against 29 v. Fed. Highway Admin.*, 176 F.3d 658, 663 (3<sup>rd</sup> Cir. 1999). *See also City of Olmsted Falls, OH v. F.A.A.*, 292 F.3d 261, 274 (D.C. Cir. 2002), *citing Wisconsin v. Weinberger*, 745 F.2d 412, 418 (7<sup>th</sup> Cir. 1984) (holding that SEIS is required where new information “presents a *seriously* different picture of the environmental landscape”) (emphasis in original).

Once it is determined that an SEIS is required, the document must be prepared and circulated to the public and other agencies in the same fashion as the initial EIS. 40 C.F.R. § 1502.9(c)(4). This includes the obligation to “provide” to the decisionmaker and the public --

full and fair discussion of significant environmental impacts and shall inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment.

40 C.F.R. § 1502.1. This obligation includes, at a minimum, a full assessment of whether emissions from the Project will violate the CAA by causing or contributing to violations

of the revised NAAQS, whether the Project will adversely affect the human environment by contributing to the kinds of adverse health effects associated with exposure to PM<sub>2.5</sub> concentrations greater than the revised NAAQS, and the full mixture of mobile vehicle-related pollutants that have been identified in the recent health effects research, and whether alternatives are available to avoid or minimize these adverse impacts, or even “enhance” the human environment.

Environmental impact statements shall state how alternatives considered in it and decisions based on it will or will not achieve the requirements of sections 101 and 102(1) of the Act and other environmental laws and policies. 40 C.F.R. § 1502.2(d).

This Petition presents “significant new circumstances or information relevant to environmental concerns” that bear on the impacts of the proposed Project, and demonstrate that these “significant environmental impacts [were] not evaluated in the EIS.” This Petition also presents new information to show that modeling tools are now available and suitable for the purpose of assessing the impacts of exposure to some of these pollutants on human health. Therefore Petitioners request that further action to implement the Project be withheld until an SEIS is prepared to fully disclose these impacts, and consider the alternatives and mitigation options available to eliminate, avoid or minimize these impacts as required by NEPA and 23 U.S.C. § 109(h).

**A. Revised NAAQS Presents New Circumstances Not Considered in the EIS.**

The Final EIS (“FEIS”) for the ICC was issued on January 3, 2006. Neither the draft EIS nor the FEIS contained any analysis of the ICC’s potential effects with respect to PM<sub>2.5</sub>. An air quality technical report was prepared in November 2004 and circulated with the draft EIS<sup>1</sup> that included modeling analyses and estimated emissions of other air

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<sup>1</sup> INTERCOUNTY CONNECTOR AIR QUALITY TECHNICAL REPORT--MONTGOMERY AND

pollutants, but omitted any assessment of PM emissions. Instead, the FEIS stated that it would not address PM until after April 5, 2006, when the EPA was expected to published its rule regarding air quality “hot spots.” See FEIS at IV, 307 (“transportation conformity requirements for fine particulate matter do not apply until April 5, 2006 and are therefore not addressed herein.”). EPA published the final “hot spot” conformity rule on March 10, 2006, effective April 5, 2006. 71 Fed.Reg. 12,468. Thereafter, FHWA announced that it had determined the hot spot rule applied to the ICC, and prepared a draft Hot Spot Conformity Determination that was made available for public comment on March 24, 2006. After receiving and rejecting comments that included a suggestion that FHWA consider whether the Project emissions would possibly violate the more protective 24-hour NAAQS that EPA had proposed two months earlier on January 17, 2006,<sup>2</sup> FHWA issued a final Conformity Determination for the ICC as Appendix H to the Record of Decision, May 2006. The analysis only considered the existing NAAQS for PM<sub>2.5</sub>, and did not evaluate the then-proposed revised NAAQS.

**1. Environmental Documents Contain No Analysis or Data Relevant to Determine if Project Emissions Will Violate Revised NAAQS.**

Thus, when EPA announced in September that it had finally revised the NAAQS for PM<sub>2.5</sub>, lowering the 24-hour standard from 65 µg/m<sup>3</sup> to 35 µg/m<sup>3</sup>, no environmental document<sup>3</sup> had been prepared that disclosed the expected concentrations of PM<sub>2.5</sub> expected to result from Project emissions, or discussed likely adverse health effects associated with exposure to emissions of PM<sub>2.5</sub> from the Project, or whether any of the

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PRINCE GEORGE’S COUNTIES, MARYLAND (Ballard and Company, SHA CONTRACT NO. AT376 B11, November 2004).

<sup>2</sup> 71 Fed. Reg. 2619.

<sup>3</sup> As defined by 40 C.F.R. § 1508.10.

alternatives and mitigation measures considered in the environmental impact statement would eliminate, avoid or minimize the ambient concentrations of PM emissions, or the adverse health effects associated with exposure to such ambient concentrations of PM<sub>2.5</sub>. The EIS never evaluated whether emissions would likely violate either the old or new 24-hour NAAQS for PM<sub>2.5</sub>.

Separately from the environmental documents prepared for the Project, FHWA had determined that emissions of PM<sub>2.5</sub> were not expected to violate the 1997 NAAQS. But FHWA's Conformity Determination did not include any analysis to allow a determination that the Project would not violate the proposed 24-hour NAAQS if it were finally revised as EPA had proposed in January 2006. Now that the NAAQS has been revised, FHWA has an obligation to determine whether emissions from the Project will violate the revised NAAQS.

**2. Revised NAAQS Raises Significant New Circumstance That Trigger Duty to Determine if Project Emissions Will Violate NAAQS.**

An SEIS is required in this instance because the EPA's revision of the NAAQS for PM<sub>2.5</sub> presents new circumstances that will result in significant environmental impacts not evaluated in the original EIS, namely the likelihood that emissions from the project will violate the newly revised 24-hour NAAQS for PM<sub>2.5</sub>. The term "significantly" is defined by the NEPA regulation to include actions that threaten to violate a federal, state, or local law designed to protect the environment. *See* 40 CFR § 1508.27(b)(2), (b)(10). The NEPA regulation also requires that an agency disclose whether an action will interfere with or violate requirements of environmental laws such as the CAA. 40 C.F.R. § 1502.2(d).

Courts interpreting NEPA have held that an SEIS is required when new rules or designations are promulgated after an EIS has been performed that change the benchmarks for determining whether an action will have a significant impact on the human environment. In *Friends of the Clearwater v. Dombeck*, 222 F.3d 552 (9<sup>th</sup> Cir. 2000), the court held an SEIS must be prepared when several animal species potentially affected by proposed timber sales on federal land had been designated as “sensitive” pursuant to the Endangered Species Act between the time that the Final EIS had been prepared and the agency’s award of contracts to timber companies. Similarly, in *Wyoming v. Dep’t of Agriculture*, 277 F. Supp. 2d 1197 (D. Wyoming 2003) (overruled on other grounds), the court held that an SEIS must be prepared to address the Forest Services’ newly promulgated “roadless rule” that had been enacted between the time that the DEIS and the FEIS were prepared. In *Oregon Natural Resources Council v. Forsgren*, 252 F. Supp.2d 1088 (D. Oregon 2003), the court required a SEIS with regard to a forest management plan because the EIS did not consider the U.S. Forest Service changes to its management of lynx, the identification of lynx habitat, and because lynx had been newly designated under the Endangered Species Act as “threatened.”

Here, EPA’s newly revised 24-hour standard for PM<sub>2.5</sub> cuts almost in half the allowable amount of fine particulate matter in the air during a 24-hour period, and makes unlawful concentrations of PM<sub>2.5</sub> that were formerly permissible. This change in the legal benchmark for determining acceptable levels of PM<sub>2.5</sub> constitutes a new circumstance because it changes the legal threshold for determining whether air quality resulting from the Project will cause significant harm to health, and whether the Project will no longer comply with the CAA. For these reasons, NEPA mandates that an SEIS be prepared to

disclose these changes to the public and the decision-maker, to determine whether emissions from the Project will violate the revised NAAQS, and to evaluate alternatives and mitigation measures for their potential to eliminate, avoid or minimize potential violations of the NAAQS.

**3. Air Quality Modeling Analysis Presents New Information Not Considered in the EIS That Demonstrates “Significance” of Unevaluated Impact.**

The obligation to prepare an SEIS to evaluate the likely violations of the revised NAAQS is triggered by credible evidence that emissions from the Project will violate the NAAQS. The Supreme Court has made it clear that the significance of the unexamined impacts is the controlling factor for determining whether an SEIS is required. *Marsh v. Oregon Natural Res, Council*, 490 U.S. 360 (1989). Petitioners have prepared an air quality modeling analysis to predict the likely impact that emissions from the Project will have on the revised 24-hour NAAQS for PM<sub>2.5</sub>.

In support of this Petition, Petitioners submit a report of an “Air Quality Modeling Analysis of PM<sub>2.5</sub> Emissions from the ICC” that demonstrates potential violations of the revised 24-hour NAAQS for PM<sub>2.5</sub> in 2012 when the project is scheduled to open for traffic. The analysis estimates emissions from traffic on the ICC and I-95 near the interchange between the two highways (Hot Spot location #2 identified by FHWA in its conformity determination), and models the expected incremental contribution to 24-hour concentrations of PM<sub>2.5</sub> that are likely in that location. The best estimate provided by the modeling analysis is that the cumulative impact of emissions from traffic on the ICC and emissions from the traffic on I-95 will add more than 4.0 µg/m<sup>3</sup> to the baseline concentrations of PM<sub>2.5</sub> in that location. An increase of 1.5 µg/m<sup>3</sup> or more above current baseline concentrations reported in the area will cause or contribute to violations of the

24-hour NAAQS for PM<sub>2.5</sub>. This analysis provides compelling new evidence that emissions from the Project will cause or contribute to violations of the NAAQS, that the Project does not conform, that approval of the Project violates the CAA. In addition, this modeled violation of the NAAQS triggers the obligation under NEPA and § 109(h) to identify alternatives and/or mitigation sufficient to avoid, eliminate or minimize these violations of the NAAQS, and to determine whether such mitigation must be adopted to satisfy the best overall public interest standard pursuant to § 109(h).

**B. Harm to Health From Exposure to Highway Emissions Must be Disclosed and Proper Consideration Given to Alternatives and Other Mitigation to Avoid, Eliminate, or Minimize These Adverse Health Effects.**

In addition to the duty to determine NAAQS compliance, NEPA and FAHA § 109(h) also require analysis and disclosure of the massive body of evidence of harm to human health that has been developed by health effects researchers. Much of this evidence related to PM<sub>2.5</sub> had been reported in the Criteria Document and other materials published by EPA prior to the DEIS and FEIS for the ICC pursuant to its review of the NAAQS for PM<sub>2.5</sub> under §§ 108(a) and 109(b) of the Clean Air Act. This research showed that the 1997 NAAQS was not adequate to protect public health, and that exposures to PM<sub>2.5</sub> in compliance with the 1997 NAAQS would be associated with significant, potentially severe or fatal impacts on human health. In addition to the evidence of harm attributed to PM<sub>2.5</sub>, other research has linked significant adverse impacts to human health with exposure to the complex mixture of pollutants emitted from highways. The highway health studies available at the time of the comment period on the FEIS were summarized in comments submitted by Dr. John Balbus. Those comments

have now been supplemented with new studies published since the close of the comment period that demonstrate significant new health effects not disclosed in the FEIS.

### **1. Highway-Related Health Effects Not Disclosed in EIS, or ROD.**

FHWA did not disclose in the FEIS or the Conformity Determination for PM<sub>2.5</sub> that harm to public health would be caused by emissions from the ICC that would result in human exposures to concentrations that were allowed under the 1997 NAAQS, and that the Project emissions would exceed levels of PM pollution at which harm had been found. Nor did FHWA disclose that EPA had collected and summarized these research reports in the Criteria Document, had published its proposed conclusion that the NAAQS must be made more protective in order to protect public health as required by the CAA, and that the Project might contribute to PM concentrations that would exceed levels that EPA had recognized as associated with harm.

Nor did FHWA disclose in the FEIS that harm to public health would be caused by emissions from the ICC that would result in human exposures to the complex mixture of 93 mobile source air toxic (“MSAT”) pollutants and four criteria pollutants (i.e., pollutants regulated by a NAAQS) emitted from motor vehicles that have been identified by EPA as harmful to human health.<sup>4</sup> EPA’s updated list was released in February 2006, but was not disclosed in the EIS.

Comments on the FEIS submitted by Dr. John Balbus in March 2006 identified numerous studies that demonstrate harm to human health associated with exposure to the complex mixture of pollutants emitted from highways. FHWA did not disclose those studies to the public or the decision-maker. FHWA explained that it did not attempt to

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<sup>4</sup> See “Expanding and Updating the Master List of Compounds Emitted by Mobile Sources - Phase III. Final Report.” (US EPA, Office of Air and Radiation EPA420-R-06-005), cited in EPA’s final rule “Control of Hazardous Air Pollutants From Mobile Sources.” 72 Fed. Reg. 8471 (February 26, 2007).

perform a quantitative risk assessment because of the errors associated with emissions factors for the MSAT pollutants, and range of uncertainty attributed to the modeling tools available for estimating pollutant concentrations in the ambient air. FHWA did not draw any conclusions regarding the effects of those pollutants on human health, and did not use the information in comparing alternatives, assessing the public health benefits of available mitigation, or in making any public interest determination under § 109(h).

## **2. New Studies Show Significant Health Effects Not Previously Examined.**

Since the close of the public comment period in March 2006, statistically powerful long-term cohort studies, and other significant new evidence of harm to human health attributable to highway emissions has become available in the peer-reviewed health effects literature. These research reports published through April 2007 are summarized by Dr. Balbus in the attached report “SUMMARY OF NEW SCIENTIFIC LITERATURE DOCUMENTING ADVERSE HEALTH EFFECTS IN PEOPLE EXPOSED TO HIGH-TRAFFIC ROADWAYS.” Important contributions from the recent research include more confident evidence of the distances from highways at which various adverse health effects are observed, more evidence of the daily traffic levels associated with adverse effects, new health outcomes not previously observed including impairment in lung development in children between the ages of 10 and 18, increased incidence of allergy and asthma responses among pre-school aged children, a three fold-greater severity of asthma symptoms requiring emergency or hospital care among children, and adverse effects among the elderly.

This evidence identifies significant health effects not examined in the EIS. It demonstrates that the adverse effects revealed by the research literature are observed in

populations located in proximity to roadways with traffic as low as 10,000 vehicle trips per day. The expected daily traffic on the ICC—125,000 trips per day—well exceed the thresholds for harm identified in these most recent reports. For example, Dr. Gauderman, author of the lung development research study, reports that the threshold of statistically significant results were observed near a highway with 45,000 vehicle trips/day. The same study finds positive correlations between impaired lung development among children and highways when the children's residence is located within 500 meters of a major highway.

If these were the only studies, they would provide ample evidence of effects not examined in the EIS to require an SEIS. But given the fact that FHWA failed to disclose the health effects reported in the earlier literature, the most recent studies serve to highlight the importance of undertaking a comprehensive review of the health effects literature to adequately inform the public and the decision-maker of the health risks faced by sensitive population groups who reside or attend school within the impact zone where highway emissions are elevated.

NEPA requires that an SEIS be prepared regardless of the uncertainty associated with quantifying effects. Health effects are significant; and controversy regarding the effects make them more significant. 40 C.F.R. § 1508.27(b)(2), (4). The FHWA relied primarily on the uncertainty of being able to quantify health effects because of uncertainty in various inputs that would be required to perform a formal risk assessment. Petitioners believe that a quantitative risk assessment can be prepared for the SEIS which explicitly identifies the range of uncertainty for each major input, and estimates the range

of likely health impacts. FHWA has not identified reasons why a risk assessment cannot be performed that meets the guidelines established by the National Academy of Sciences.

But even if a quantitative risk assessment could not be performed, this is not a valid reason for not disclosing the effects demonstrated in the research literature, identifying the factors such as AADT and distance from the highway that would provide a basis for identifying the effects that have been demonstrated in similar population exposures, identifying and characterizing the exposed population in the ICC corridor, estimating the numbers of sensitive populations in the corridor who would be at risk to the adverse health outcomes identified in the literature, estimating the share of the exposed population that would likely suffer adverse health consequences, and quantify the costs of adverse health consequences using methodologies similar to those applied in the preparation of FHWA's estimate of the national costs of air pollution.<sup>5</sup> This information can be developed from the health effects research and population data for the census tracts in the corridor, and used in making the determination of whether the Project, or alternatives that have less impact on public health, are in the best overall public interest.

Whether a formal risk assessment is performed to inform the decision-maker and the public of the public health impacts of the Project, and to provide the information most useful in making the public interest determination, is a decision to be made in the context of the SEIS, subject to public comment. Uncertainty is not a reason to ignore these impacts. Environmental impacts can be significant even if "possible effects ... are highly uncertain or involve unique or unknown risks." 40 C.F.R. § 1508.27(b)(5). Here the risks

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<sup>5</sup> Addendum to the 1997 Federal Highway Cost Allocation Study Final Report (U.S. Department of Transportation, Federal Highway Administration, May 2000) [submitted herewith].

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are proven by compelling scientific research, leaving open uncertainties only regarding the magnitude of the impact among exposed populations. When uncertainty relates to the intensity of environmental effects, rather than whether they are likely to occur at all, an EIS is required. See *Mid-States Coalition for Progress v. Surface Transportation Board*, 345 F3d 520, 549 (8<sup>th</sup> Cir.2003); *National Parks and Conservation Ass'n v. Babbitt*, 241 F3d 722, 732 (9th Cir. 2001). For the purpose of this Petition it is enough that strong new scientific evidence shows harm to health not examined in the EIS, and that methods are available for providing to the public and decision-maker valuable information regarding the public health impacts and health costs of emissions from the Project so that informed decisions can be made regarding the comparative health benefits of alternatives, and the health-related consequences of alternatives and mitigation options to make the public interest determination.

Because the DEIS and FEIS prepared for the ICC have not disclosed any of the health effects research associated with exposure to PM<sub>2.5</sub> or with exposure to the complex mixture of toxic and criteria pollutants emitted from highways, NEPA, its implementing regulations and 23 U.S.C. § 109(h) require that these adverse impacts of air pollution must now be evaluated and disclosed to the public and the decision-maker before construction is commenced and opportunities remain to consider alternatives and mitigation as required by law. In *Marsh*, the Supreme Court held that an SEIS must address the previously unexamined impacts so long as options regarding the action remain open to the agencies. As discussed, *supra*, major commitments remain to be made including final project design and authorizations to proceed with various portions of the Project. No construction has yet commenced. Now is the time to consider this additional

evidence of harm before construction commences. This evidence of harm must be considered in the evaluation of alternatives that can avoid, eliminate or minimize these adverse effects, and if not avoided or eliminated, then the Administration must also consider additional mitigation measures that can reduce emissions from the Project and associated health effects and/or eliminate population exposures by re-locating sensitive populations from the high impact zone in the corridor to protect the public health.

For these reasons, Petitioners ask that an SEIS be prepared to disclose these additional significant impacts, to identify alternatives and mitigation that can avoid, eliminate or minimize these impacts, to determine whether alternatives are in the best overall public interest, and to adopt mitigation consistent with the requirements of § 109(h). While the SEIS is being prepared, further development of the Project must be delayed to preserve the options open to the decision-maker, and to avoid committing resources before a final evaluation of alternatives has been completed.

### **3. Modeling Tools Recommended in AASHTO Guidance for Assessing Impacts of Motor Vehicle Emissions.**

The American Association of State Highway and Transportation Officials has released a technical report summarizing the tools and methodology available for the assessment of health risks associated with exposure to highway emissions. *See* “Analyzing, Documenting, and Communicating The Impacts of Mobile Source Air Toxic Emissions in the NEPA Process,” ICF (March 2007). This report sets out the steps involved in a human health risk assessment routinely employed by some environmental, resource and transportation agencies for the purpose of estimating human health risks associated with exposure to MSATs. It explains how these methods and procedures can be applied to estimate the health risks experienced by populations exposed to MSATs.

Petitioners believe that such an assessment represents the state of the science for the purpose of quantifying health risks associated with human exposure to pollutants that have been studied for years or even decades such as benzene. For this reason Petitioners believe that this methodology is available and suitable for application in an SEIS prepared to assess health risks associated with the ICC. However, given the limitations of the IRIS data base, the fact that EPA has not updated the risk factors for some pollutants, and the fact that the health risk methodology is not designed to take account of the cumulative or biologically integrative effect of exposure to the complex mixture of MSATs emitted from highways, Petitioners believe it is not appropriate to use health risk assessment as the exclusive method for estimating human health risk attributable to highway emissions.

In addition to traditional health risk assessment based on estimates of exposure to individual pollutants, Petitioners also ask that FHWA estimate risks of adverse health effects documented in highway exposure studies based on the comparison of factors related to exposure identified in the studies of adverse effects with exposures expected as a result of the proposed project. For example, the Gauderman study of impaired lung development (Lancet 2007) establishes risks for a cohort of children ages 10-18 based on exposure to emissions from highways within 500 meters distance from each child's residence, and the annual average daily traffic on the nearby roadway. These parameters can be used to estimate the risk of impaired lung development among children living within 500 meters of proposed projects such as the ICC. Using such a risk estimate technique is necessary because no single pollutant has been identified in IRIS as being associated with impaired lung development during adolescence. If only a pollutant-by-

pollutant approach is used, effects that may be the result of exposure to the complex mixture of hazardous pollutants emitted from highways would be omitted from the effects analysis.

### **III. Modeling Analysis Provides a More Reliable Assessment of Impacts from PM2.5.**

The hot-spot modeling analysis submitted in support of this Petition was prepared by the independent environmental consulting firm, E.H. Pechan. The modeling analysis was prepared using EPA's approved model for estimating PM2.5 emissions from motor vehicles, MOBILE6.2, and an EPA-approved atmospheric dispersion model to predict the concentrations of PM2.5 in the ambient air that will be caused directly by emissions from the highways at the interchange between the ICC and I-95. The modeling study compares four alternative scenarios of emissions factors and traffic projections for 2012 with emissions from the no-build scenario.

The modeling analysis is submitted to show the FHWA that a significant environmental impact of the ICC Project was not considered, and that an SEIS must be prepared to disclose this impact. The modeling analysis uses the best information and scientific methods available to estimate the cumulative impact of emissions from the ICC and the I-95 at the interchange between the two highways where impacts on ambient air quality are expected to be the greatest.

The results of the analysis demonstrate that all five emissions and traffic scenarios modeled (including the no-build scenario) will cause violations of the revised 24-hour NAAQS on the 8<sup>th</sup> highest day of the year (i.e., the 98<sup>th</sup> percentile day), which is the "regulatory" day that compares to the 98<sup>th</sup> percentile form of the NAAQS. The most credible estimate of emissions from the Project (Scenario 5) will add approximately 4.6

$\mu\text{g}/\text{m}^3$  of PM<sub>2.5</sub>. Even the most conservative estimate of emissions from the Project (Scenario 2), will add 2.7  $\mu\text{g}/\text{m}^3$  to background concentrations at the highest receptor, and will add at least 1.5  $\mu\text{g}/\text{m}^3$  on the 8<sup>th</sup> highest 24-hour period (the 98<sup>th</sup> percentile value) to the background design value for the area at seven receptor locations.

To determine the expected concentrations of PM<sub>2.5</sub> in the area affected by emissions from the Project, the modeled ambient impact of emissions from the Project are added to the local background concentration of PM<sub>2.5</sub> measured in the ambient air outside the impact zone of emissions from the project, but within 2 miles of the Hot-spot location. The modeling analysis demonstrates that Project emissions have a significant incremental impact within 300 meters or less, but are not measurable at the State ambient air quality monitor located on the Old Baltimore Pike. The 24-hour design value of the nearest PM<sub>2.5</sub> monitor is 34  $\mu\text{g}/\text{m}^3$  based upon data available since the inception of the monitor in 2004.<sup>6</sup> The revised 24-hour NAAQS is 35.0  $\mu\text{g}/\text{m}^3$ , measured on the 98<sup>th</sup> percentile day. This requires that the level of the standard be exceeded at least 8 days per year.

To demonstrate expected violations of the NAAQS, Project emissions will need to add at least 1.5  $\mu\text{g}/\text{m}^3$  to the design value at the nearest monitor because EPA's data handling methodology requires that fractions be rounded to the nearest whole number. *See* 40 C.F.R. Part 50, Appendix N, ¶ 4.3(b). When the Project opens for traffic in 2012, the modeling analysis demonstrates under all scenarios that modeled Project emissions will increase concentrations at numerous receptor locations near the highway to at least 35.5  $\mu\text{g}/\text{m}^3$  on at least 2% of the days each year.

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<sup>6</sup> The nearest monitor is located No design value

Air quality in the area affected by the Project will be expected to violate the revised 24-hour NAAQS. The modeling analysis demonstrates in scenario #5 that emissions from the Project will cause the 8<sup>th</sup> high 24-hour concentration to equal or exceed 35.5 µg/m<sup>3</sup> (i.e., adding at least 1.5 µg/m<sup>3</sup>) at 33 receptor locations, and the 8<sup>th</sup> high at the peak receptor will add 4.6 µg/m<sup>3</sup> to the design value resulting in expected 98<sup>th</sup> percentile concentrations of 38.6 µg/m<sup>3</sup>. The incremental concentration added at the peak receptor will be 100% greater than the no-build scenario (2.3 µg/m<sup>3</sup>), and will cause many more days to violate the NAAQS. But even if the seriously flawed traffic volumes and truck share values are used along with EPA's original emission factors for heavy duty vehicles to estimate emissions from the Project (Scenario #2), the expected concentration on the 8<sup>th</sup> high 24-hour period during 2012 (2.71 µg/m<sup>3</sup>) will result in a peak violation of the NAAQS of 36.7 µg/m<sup>3</sup>, and will contribute to violations where total concentrations exceed 35.5 µg/m<sup>3</sup> at 7 receptor stations.

For reasons explained in more detail in E.H. Pechan's Air Quality Modeling Analysis Report, Petitioners believe that emissions calculated using the traffic volumes, truck share of traffic and the revised emission factors for heavy duty diesel vehicles that are included in Scenario #5 provide the most likely estimate of emissions in the area of Hot-spot location #2. The traffic data projections for 2012 used in Scenario #5 are derived from 12 years of traffic trend data, including the most recent traffic volumes counted in the I-95 corridor, whereas the 2010 traffic estimate used by SHA in the FEIS and Conformity Determination was lower than actual traffic counts measured since 2004. The truck share data in Scenario #5 are based on more recent traffic counts, and are derived from multiple counts over a six year period compared to data used by SHA which

are based on one single counting day two weeks after September 11, 2001. The emission factors used in Scenario #5 are revised to account for the higher emission rates reported by EPA in emission tests of heavy duty diesel engines, compared to the emission rates in MOBILE6.2 based upon engineering estimates of future engine performance. For all of these reasons, Scenario #5 is based on more realistic factors that more closely approximate the expected actual traffic and emissions rates that will be emitted from vehicles in the area affected by the Project.

### **1. Modeling Analysis Required for Hot-spot analysis.**

Petitioners submit this modeling analysis to comply with applicable regulatory requirements in the Hot-spot rule.

First, the definition of a “Hot-spot analysis” requires –

an estimation of likely future localized CO, PM10, and/or PM2.5 pollutant concentrations and a comparison of those concentrations to the national ambient air quality standards. Hot-spot analysis assesses impacts on a scale smaller than the entire nonattainment or maintenance area, including, for example, congested roadway intersections and highways or transit terminals, and uses an air quality dispersion model to determine the effects of emissions on air quality.

40 C.F.R. § 93.101. In the Hot-spot rulemaking EPA explained that “it is essential that a quantitative PM2.5 or PM10 hot-spot analysis be performed for all projects of air quality concern.” 71 Fed. Reg. 12494/3. EPA also explained that “new highway or expressway facilities that serve a significant volume of diesel traffic are considered projects of air quality concern under today's final rule.” *Id.* FHWA determined that the ICC is a project of air quality concern. Conformity Determination, ROD, Appendix H.

Accordingly the Hot-spot rule requires that the Hot-spot analysis use an air quality dispersion model to determine the effects of emissions from the ICC on air quality.

Second, § 93.111(a) requires that all conformity analyses use the latest emission factor model approved by EPA, and that emission factors used in a conformity analysis be consistent with the emission factors used in the emissions modeling analysis for development of the State Implementation Plan. EPA announced in May 2004 that –

EPA has not yet finalized implementation policy for the PM<sub>2.5</sub> National Ambient Air Quality Standards (NAAQS). However, when that policy is finalized and PM<sub>2.5</sub> nonattainment areas have been designated, MOBILE6.2 (except in California) and AP-42 (except in areas where another dust methodology has been approved) will be the approved models for estimating motor vehicle exhaust, brake and tire wear, and re-entrained road dust emissions in PM<sub>2.5</sub> SIPs and conformity determinations, until they are replaced by newer models or methods.  
\*\*\* MOBILE6.2 ... must be used in all PM<sub>2.5</sub> conformity analyses.

69 Fed. Reg. 28,832. This announcement implements the requirements of § 93.111, and remains the latest emission factor model approved by EPA for PM<sub>2.5</sub>. EPA's recent guidance for modeling PM<sub>2.5</sub> continues to require the use of emission factors in MOBILE6.2. *See* "Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, PM<sub>2.5</sub>, and Regional Haze," US EPA, Office of Air Quality Planning and Standards (EPA -454/B-07-002 April 2007), p. 169 (authorizing the use of MOBILE6.2 for modeling emissions from individual highway links). Accordingly, to satisfy § 93.111 and EPA's most recent modeling Guidance for PM<sub>2.5</sub>, Petitioners have prepared the air quality modeling analysis using emission factors contained in MOBILE6.2.

Third, the general conformity requirements in § 93.123(c)(2) require that the same inputs be used to estimate emissions for a hot-spot conformity analysis as are used in a regional conformity analysis prepared pursuant to § 93.122. EPA explained that "all hot-spot analyses include [the general hot-spot requirements]." 69 Fed. Reg. 72,146/1. The regional conformity analysis for PM<sub>2.5</sub> in the Washington Capital Region was prepared

by the Transportation Planning Board using the emission factors in MOBILE6.2.

Petitioners used MOBILE6.2 to comply with this rule.

Fourth, Petitioners included revised emission factors in Scenario #5 to satisfy the requirement recognized by the D.C. Circuit Court of Appeals that “[a]n agency’s use of a model is arbitrary if that model ‘bears no rational relationship to the reality it purports to represent.’ *American Iron & Steel Inst. v. EPA*, 115 F.3d 979, 1005 (D.C. Cir. 1997) (quotations and citations omitted).” *Columbia Falls Aluminum Co. v. EPA*, 139 F.3d 914, 923 (D.C.Cir.1998). In this case, EPA has performed emissions testing on heavy duty diesel engines that shows actual emissions from in-use vehicles are higher by a factor of 2.3 than the estimates of future engine emissions used to develop the emissions factors in MOBILE6.2. This test data demonstrate that the emission factors in the model are no longer reasonably representative of emissions from heavy duty diesel vehicles, and therefore with respect to that class of vehicles “bears no rational relationship to the reality it purports to represent.” To satisfy this test for rational decisionmaking, the modeling analysis in Scenario #5 increased the emission rates for these vehicles classes by the factor identified by EPA in its test report, i.e., 2.3, to account for the observed in-use emission performance of these vehicles.

### **3. Modeling Analysis Provides Low Estimate of Highway Emissions.**

In the final hot-spot rule, EPA identifies factors affecting emissions of PM<sub>2.5</sub> that are not accounted for in MOBILE6.2. *See* 71 Fed. Reg. 12499. These factors include speeds, driving cycles, temperature, humidity and related factors. Because of the omission of these factors from the model, EPA believes that the model is inappropriate for use in assessing localized impacts of projects of concern.

EPA does not discuss whether the bias in the model results created by each these omissions is directionally consistent, thereby creating a general model bias toward over-predicting or under-predicting emissions, or whether the bias for each factor are random or counter-directional. Petitioners consulted Michael P. Walsh, an internationally recognized expert in the field of vehicle emission control technology and emissions. Mr. Walsh has worked with the MOBILE model, and understands the deficiencies in the model. In the attached memo, Mr. Walsh offers his expert opinion that the omissions in the characterization of PM<sub>2.5</sub> in MOBILE6.2 are mostly biased toward underestimating emissions.

For example, a major drive cycle factor not accounted for by the model are the changes in speed when vehicles decelerate from free-flowing freeway speeds onto an exit ramp at an interchange, and then accelerate when entering onto free-flowing freeway lanes again. Mr. Walsh observes that the model does not account for these changes in speeds, but that an activity such as acceleration that involves increased fuel combustion will increase PM emissions.

Based on this evidence that omissions in MOBILE6.2 generally underestimates PM<sub>2.5</sub> emissions makes the model useful for the purpose of demonstrating when PM<sub>2.5</sub> emissions from motor vehicles will be sufficient to cause NAAQS violations, but not suitable for reliably determining the likely magnitude of concentrations above the standard. In other words, if the model consistently under-predicts emissions, and use of the model predicts violations of the NAAQS, then there is significant confidence that violations will occur, but little confidence regarding the extent to which ambient concentrations will exceed the NAAQS. Thus it is suitable for the purpose of showing

that emissions from the ICC will be more than enough to cause NAAQS violations at the interchange with the I-95, but not well-suited for determining the magnitude of the violation and the degree of emission reduction needed to avoid or prevent the violations.

#### **4. Receptor Locations Meet Exposure Criteria.**

EPA explains that modeling analyses must use receptor stations that are located consistent with EPA's monitoring guidance.

Quantitative hot-spot analyses for conformity purposes would consider how projects of air quality concern are predicted to impact air quality at existing and potential PM<sub>2.5</sub> monitor locations which are appropriate to allow the comparison of predicted PM<sub>2.5</sub> concentrations to the current PM<sub>2.5</sub> standards, based on PM<sub>2.5</sub> monitor siting requirements (40 CFR part 58).

71 Fed. Reg. 12471. EPA's monitor siting guidance was reviewed as part of EPA's review and revision of the NAAQS for PM<sub>2.5</sub>, and left largely unchanged. The siting criteria generally require that PM<sub>2.5</sub> be monitored at the neighborhood scale. But the monitoring criteria also allow microscale monitors to be compared against the 24-hour NAAQS. 71 Fed. Reg. 61264, n.18. To satisfy this guidance, the closest receptors were located 15 meters from the roadway to qualify as microscale locations, and the next rank of receptors were located 41 meters from the roadway at the neighborhood.

#### **CONCLUSION.**

The air quality modeling analysis of emissions in the area identified in the ICC Conformity Determination as Hot Spot # 2, when added to the design value of the air quality monitor on Old Baltimore Pike, demonstrates that emissions from the Project can be expected to contribute to increased severity and frequency of violations of the NAAQS for PM<sub>2.5</sub>. Violation of a NAAQS violates the Clean Air Act, and triggers the obligation under NEPA to reconsider the Project along with alternatives to determine if

these violations can be avoided. In addition, reconsideration is also required under 23 USC § 109(h) to determine whether a Project that will contribute to violations of the NAAQS can be in the best overall public interest without adopting mitigation necessary to prevent such violations.

In addition, the new health effects research summarized by Dr. Balbus shows that emissions from a project carrying 125,000 vehicles per day will impair the development of normal lung size and capacity among children and adolescents living and attending school within 500 meters of the Project, will cause more young children to develop asthma and other allergy-related immune conditions, and will cause children with asthma to suffer much more severe symptoms requiring more frequent emergency care and hospitalization. Women and men will be at greater risk of cardiovascular disease, and the elderly residents in the corridor will experience greater respiratory disease. This new evidence of these serious adverse health effects also triggers the obligation under NEPA and § 109(h) to reconsider the Project along with alternatives and mitigation to avoid, eliminate or minimize these effects, and to determine whether a Project that causes this much harm can be in the best overall public interest.

Respectfully submitted,

Robert E. Yuhnke  
Counsel for Petitioners  
Environmental Defense and  
Sierra Club

2910 County Road 67  
Boulder, CO 80303  
(303) 499-0425