

July 19, 2010

Meg Patulski  
State Measures and Conformity Group  
Transportation and Regional Programs Division  
U.S. Environmental Protection Agency  
2000 Traverwood Drive  
Ann Arbor, MI 48105

**Re: EPA's Request for Comments on the Draft Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM<sub>2.5</sub> and PM<sub>10</sub> Nonattainment and Maintenance Areas.**

Dear Ms. Patulski:

The American Association of State Highway and Transportation Officials (AASHTO) and the Association of Metropolitan Planning Organizations (AMPO) appreciate the opportunity to review and comment on EPA's Draft Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM<sub>2.5</sub> and PM<sub>10</sub> Nonattainment and Maintenance Areas. We would also welcome the opportunity to review the draft guidance document that EPA proposes to develop on how to use MOVES for CO project-level analyses.

In reviewing the draft guidance, AASHTO and AMPO have identified a number of features that it supports as well as a number that it does not or that would need improvement before they could be supported. These are summarized below.

Examples of features that are supported include:

- Limiting requirements to conduct PM quantitative analysis to new and/or expanded highway and transit projects that involve significant diesel emissions, consistent with current federal regulation and guidance.
- Limiting requirements to conduct build analyses for purposes of conformity to projects for which design values are estimated to be less than or equal to the applicable National Ambient Air Quality Standards (NAAQS).
- Being able to demonstrate conformity if the design values for the build scenario are less than or equal to the design values for the no-build scenario, even if the design values for the build scenario are greater than the NAAQS.

- Relying on the interagency consultation process, but only to the extent that it is consistent with the federal conformity regulation and the associated long-standing federal, state and local consultation and coordination practices established in response to that regulation. Any additional interagency consultation or coordination introduced with this guidance should be on a voluntary basis, at the discretion of the implementing agency.
- Providing the maximum grace period (two years) currently allowed by regulation before quantitative PM hot-spot analyses are required.

AASHTO and AMPO have also identified a number of areas of improvement for the final guidance. Having these issues addressed will allow State DOTs and MPOs to more meaningfully and effectively transition to the new requirements for completing quantitative hot-spot analysis in PM<sub>2.5</sub> and PM<sub>10</sub> nonattainment and maintenance areas.

Key features of the draft guidance that need improvement include:

- Requirements in the guidance that reduce the flexibility allowed under existing regulations and long-standing practice, including:
  - Not allowing current and applicable federal regulations (at 40 CFR 93.123(c)(2)) regarding the determination of future background concentration levels to be applied.
  - Interpreting existing federal conformity rule requirements for interagency consultation to greatly expand the role of interagency consultation.
  - In accordance with the Office of Management and Budget’s January, 2007 *Final Bulletin for Agency Good Guidance Practices*, “...significant guidance documents should not include mandatory language such as “shall,” “must,” “required,” or “requirement” unless the agency is using these words to describe a statutory or regulatory requirement, or the language is addressed to agency staff...”. This proposed guidance uses the word “must” multiple times not in reference to describing a statutory or regulatory requirement, giving the impression in many places that the guidance document has the same legal effect as regulation.
- Introduction of a model (AERMOD), which to our knowledge was originally designed for application to industrial sources and has not yet undergone a comprehensive technical review or study process for application to transportation projects. Such process should include proactive and comprehensive interagency consultation with major stakeholders such as state departments of transportation and metropolitan planning organizations.
- Significantly increased costs for compliance for modeling studies and consultation as well as increases in project delays and uncertainty in the project review and approval process without explicit consideration of options to mitigate those costs and other impacts.

These and other topics are addressed further below.

### **General Comments:**

#### **Coordinate Project-Level Conformity and NEPA Hot-Spot Analyses:**

AASHTO and AMPO support the maximum (2 year) grace period allowed by regulation before the use of the MOVES2010 and EMFAC2007 models are required for quantitative conformity hot-spot analyses in PM<sub>2.5</sub> and PM<sub>10</sub> nonattainment and maintenance areas. However, we recommend

that the guidance encourage the responsible federal agencies to coordinate the use of MOVES for NEPA purposes with the conformity grace period to provide greater consistency between project-level conformity and NEPA analyses. This would increase the continuity in the use of models and reduce or eliminate the need to conduct project-level NEPA analyses using the MOVES2010 model and project-level conformity analyses using the MOBILE6.2 model for the same project during the grace period. This would also lessen confusion and adverse comments from the public, review agencies, and various stakeholders. Since this may be addressed in Federal Highway Administration (FHWA) guidance, we are copying them on this comment letter.

**Provide a comprehensive testing, evaluation, and review process for the AERMOD Model for transportation projects:**

The draft guidance indicates that CAL3QHCR and AERMOD are both recommended models for highways and intersection projects, but that AERMOD is the recommended model for transit and other terminal projects, and for projects that involve both highway/intersections and terminals, and/or nearby sources. Since AERMOD could become the dominant model under this guidance, and it has not to our knowledge been tested extensively for transportation projects, we strongly recommend that it go through a comprehensive testing, evaluation, and review process involving extensive and proactive interagency and public consultation similar to the process used for the MOVES model before it is required for use in project-level analyses for transportation projects.

The evaluation process should include an assessment of model accuracy including specifically comparing predicted concentration levels for a variety of typical types of transportation projects against monitored values for both AERMOD and CAL3QHCR (as well as any other dispersion model that may be under consideration for application in transportation projects in the future).

The interagency and public consultation process should proactively involve all interested stakeholders (including specifically federal, state and local transportation agencies and organizations) and evaluate a wide range of transportation projects. Once such comprehensive studies have been completed for the AERMOD model, and any adjustments needed for the model or the modeling process identified, the model and the draft guidance should be revised as appropriate. The final guidance should include references to the completed studies and synopses of their results.

**Start the 2-year grace period after completing the comprehensive testing, evaluation, and review process for the AERMOD Model.**

AASHTO and AMPO recommend that the 2-year grace period for quantitative conformity hot-spot analyses not start until after the AERMOD model has completed a comprehensive testing, evaluation, and review process as noted above and has been released in final form with all the necessary supporting technical guidance, and the draft guidance for hot-spot analyses updated and revised as appropriate consistent with the results of the review for AERMOD.

**Coordinate with DOT on the completion of PM categorical hot-spot findings during the two year grace period:**

Section 93.123(b)(3) of the conformity regulations allows DOT, in consultation with EPA, to make categorical PM hot-spot findings. AASHTO and AMPO, therefore, recommend that DOT and EPA coordinate on the completion of PM hot-spot categorical findings prior to the end of the 2 year grace period after which time hot-spot analyses will be required for project-level conformity determinations in PM nonattainment and maintenance areas. This would greatly reduce resource demands on State and local agencies by eliminating project-specific modeling for projects that do not cause or contribute to local air quality problems.

**Provide training and technical assistance for the AERMOD model:**

AERMOD is a very complex model and we understand it is still undergoing development, including adding a highway dispersion algorithm. Since the AERMOD model is essentially a guideline model for modeling industrial sources, most State DOTs and MPOs do not have experience with it and will need extensive training and technical assistance from both EPA and FHWA to help learn this model. This training and technical assistance needs to be provided well in advance of the requirement to use the AERMOD model for purposes of conformity or NEPA.

**Ensure consistency with existing regulations and long-standing practice:**

Two issues are of primary concern with the draft guidance: 1) the introduction of effectively new or expanded requirements for interagency consultation on a project-by-project basis on an extensive array of model inputs and data, and 2) the introduction of apparent approval authority for parties involved in that consultation. Both of these changes are inconsistent with existing regulations and reduce the flexibility that is provided in the existing regulations and long-standing practices established in response to those regulatory requirements.

With regard to the first point, as noted above, AASHTO and AMPO support use of the interagency consultation process but only to the extent that it is consistent with current regulatory requirements and long-standing consultation practices established at the federal, state and local levels in response to those existing regulations. The guidance would require interagency consultation on a project-by-project basis in place of the long-established practice implemented pursuant to the federal conformity regulation of interagency consultation on the general approach (models, methods and assumptions) for project-level analyses consistent with 40 CFR 93.105(b)(1) and (c)(1) and public consultation on a project-by-project basis consistent with 40 CFR 93.105(e). Most States have general interagency consultation agreements or processes in place that are designed not only to meet federal regulatory requirements for conformity but also NEPA requirements including federal efforts to streamline the latter.

Related to this, the FHWA recently introduced the *Every Day Counts (EDC) Innovation Initiative* designed to shorten project delivery, enhance safety, and improve environmental sustainability. Process streamlining for NEPA is directly related to the EDC Innovation Initiative through the goal of shortening project delivery times (while maintaining sustainability). Extensive

consultation as provided in this guidance would make it very difficult to meet the objectives of the EDC initiative.

Therefore, as long as individual projects are consistent with these general agreements or processes, there should be no need for extensive (and redundant) interagency consultation on each aspect of the air quality analysis of every project as currently proposed in the PM hot-spot guidance. The proposed approach that would require detailed inter-agency consultation on inputs and associated assumptions for air quality modeling for particulate on a project-by-project basis would be contrary to long-standing efforts to streamline NEPA processes, and would serve to introduce unnecessary delay and uncertainty into the overall project delivery and approval process.

As an option, AASHTO and AMPO recommend that State and local officials be given the flexibility to apply the interagency consultation process on a project-by-project basis if they so choose, but not as a requirement for every project as presented within the draft guidance.

With regard to the second point, it should be made clear that requirements to consult are not the same as granting review and approval authority. In some cases we are concerned that the proposed process goes beyond just consultation. For example, Section 3.3.4, *Determining which PM NAAQS to be evaluated*, states that, "...a project sponsor could choose to complete emissions and air quality modeling for only that quarter [of an analysis year] if agreed to through the interagency consultation process." (Emphasis added). Such language gives the review agency a concurrence, rather than a consultation, role in the process. Also there are several references throughout the document with regard to determining background levels, receptors sites, etc that would appear to also give review agencies a stronger role than required by current regulations. All that is required by regulation is to consult; anything more (such as gaining agreement) should be on a voluntary basis, at the discretion of the local agency implementing the project.

**Include a summary of the interagency consultation process upfront in the guidance:**

There are extensive references to the interagency consultation process throughout the draft guidance. It would assist the reader to better understand the general requirements for interagency consultation at various points in the hot-spot analyses process if these steps were summarized, perhaps in a table format with appropriate page references, in the beginning of the guidance document. The table should note which steps are required by regulation and which would be voluntary and conducted at the sole discretion of the agency implementing the project.

**Include a summary of "projects of local air quality concern" upfront in the guidance:**

AASHTO and AMPO recommend that the discussion of projects of local air quality concern be expanded in either Section 3.2 on page 25, or summarized upfront in the document. This should include a description of the projects and the various AADT and percent diesel truck thresholds that are used to determine whether a detailed PM hot-spot analysis is required. This comment is to be considered in context with recommendations for the completion of categorical determinations and screening procedures.

## **Streamlining Comments:**

AASHTO and AMPO appreciate the fact that the EPA PM regulation and guidance limits the number of projects that are subject to a detailed quantitative PM analysis. However, the draft guidance is very detailed and complex for the projects that will need such an analysis and will result in substantial time, effort, and funding in order to complete. AASHTO and AMPO therefore recommend the following to help further streamline the process:

### **Develop screening processes for projects of air quality concern that may reasonably be expected to conform:**

AASHTO and AMPO recommend that EPA develop screening processes for projects that might meet the ADT or other criteria to be considered one of the types of “projects of air quality concern” defined in the conformity rule but otherwise might reasonably be expected to be found to conform if detailed dispersion modeling were to be conducted for the project. For example, a project in which build emissions would be equal to or less than the no-build emissions, and source-receptor distances are not decreasing, may reasonably be expected to be found to conform and should not require detailed dispersion modeling with its attendant costs and delay.

We anticipate there may be projects that don't get screened out as “projects that are not of air quality concern” but clearly reduce emissions compared to the no build scenario. State and local agencies need a way to deal with these types of projects other than spending substantial amounts of time and money on essentially sub-regional modeling studies that could each take anywhere from a few months to a year or more to complete (depending on availability of background data and consultant contracts), delaying project implementation and introducing additional uncertainty into the project review and approval process.

We recommend that EPA define a quantitative-screening step based mainly on emission comparisons. For example, if such an analysis clearly shows that the emissions for the build scenario would be less than the emissions for the no-build scenario, and source-receptor distances are not decreasing, it should be possible to end the analysis there since this would demonstrate that the projects contribute to reducing the number and severity of existing violations (if any) in the immediate area. Other examples are possible. EPA should review and identify general criteria for screening projects to meet conformity requirements that would also serve to minimize the potential for unnecessary increases in project costs, delays and uncertainties.

### **Develop default values for MOVES off-network inputs:**

The guidance indicates that there are no default values available for any of the MOVES Off-Network inputs so users will need to input information describing vehicle activity in the off-network area being modeled. While AASHTO and AMPO recognize that local data is preferable, we encourage EPA to develop default values where possible, especially for the start fraction, extended idle fraction and parked vehicle fraction, to help streamline the process in situations where the data are not readily available.

**Streamline the analysis process and reduce the data needs by developing spreadsheet tools and a screening procedure for the AERMOD model:**

The guidance indicates that EPA “is considering whether spreadsheet tools can be developed to assist state and local agencies in calculating design values for PM hot-spot analyses.” AASHTO and AMPO encourage EPA to develop such spreadsheet tools, as well as screening analysis tools, to help streamline the hot-spot analyses procedures. The proposed analysis procedures are data intensive, and the data may not be readily available, so any procedures that will help streamline the process and make it less data intensive would be helpful.

**Allow mitigation measures to be considered before requiring no-build analysis:**

The draft guidance indicates that the no-build design values need to be calculated at all the receptors that exceed the NAAQS in the build scenario. Then, if the build design values are greater than the no-build design values, mitigation measures can be considered and the analysis redone to test for conformity. AASHTO and AMPO recommend that project sponsors be given the flexibility to consider mitigation measures at any point in the project analysis process. For example, if the build design values exceed the NAAQS at one or more receptors, the project sponsor should have the option of considering mitigation measures and re-running the analysis for the build scenario, or proceeding on to do a build/no-build analysis. If this is already allowed, then the guidance needs to make clear that this flexibility exists.

**Allow project sponsors the flexibility to use the interagency coordination process to determine appropriate receptor sites for the annual PM<sub>2.5</sub> NAAQS:**

Section 9.4.2 of the draft guidance indicates that, “.....the appropriateness of receptor locations for the 24-hour PM<sub>2.5</sub> NAAQS (and the 24-hour PM<sub>10</sub> NAAQS) can be determined prior to air quality modeling. However, for the annual PM<sub>2.5</sub> NAAQS, appropriate receptors should be determined after air quality modeling is completed.” The guidance further states that, “State and local air quality agencies and EPA have significant expertise in air quality planning and monitoring purposes that may be useful resources in determining appropriate receptor locations for the annual PM<sub>2.5</sub> NAAQS.” AASHTO and AMPO recommend that the guidance give project sponsors the flexibility to use the interagency consultation process to determine appropriate receptor sites for the annual PM<sub>2.5</sub> NAAQS prior to air quality modeling in order to eliminate unnecessary analyses and associated delay.

**Technical Comments:**

**Provide periodic updates of the CAL3QHCR Model:**

The draft guidance indicates that EPA’s Office of Air Quality Planning and Standards is no longer updating, or providing technical support for, CAL3QHCR. AASHTO and AMPO are concerned that this could result in the AERMOD model becoming the required model in the near future even for highway and intersection projects. Since the CAL3QHCR model is the most extensively tested model for highways, we strongly encourage EPA and FHWA to continue to support updates to this

model. The guidance should also recognize that “other approved models” besides AERMOD and CAL3QHCR might become available over time.

**Allow PM background concentration levels to be determined in accordance with Section 93.123(c)(2) of the conformity rule, or revise the rule:**

As noted in the draft guidance, Section 93.123(c)(2) of the conformity rule states that, “... The future background concentration should be estimated by multiplying current background by the ratio of future to current traffic and the ratio of future to current emission factors.” While EPA asserts that this simplified procedure for determining background concentration levels is not a technically viable option for PM hot-spot analyses, this guidance should not override a regulatory requirement. Since Section 93.123(c)(2) applies to CO, PM<sub>2.5</sub>, and PM<sub>10</sub> hot-spot analysis, it should remain applicable until such time as EPA has gone through a rule making process to change it.

**Expand the discussion of other mitigation measures that may affect project mitigation and background concentrations:**

Section 10.2.5 of the draft guidance addresses possible mitigation of other source emissions. Future concentrations may be reduced in general by control measures implemented as part of a State Implementation Plan (SIP) revision, new or revised federal regulations (that may or may not be reflected in available SIP revisions), and/or emission trading introduced under 40 CFR 93.124(b) of the federal conformity rule. The sections on mitigation and background concentrations should address these possible contingencies.

**A better algorithm is needed for re-entrained dust:**

A better algorithm is needed to develop re-entrained road dust emissions for PM<sub>10</sub> and PM<sub>2.5</sub> areas rather than relying on the AP-42 estimates. The algorithm should use reduced silt loadings for high-traffic roads, or even cap the freeway emissions at some point to reflect full entrainment at some traffic level. Currently some projects undergoing analysis with AP-42 (even with locally-adjusted silt loading) incorrectly result in the project alone producing more re-entrained dust than an entire PM<sub>10</sub> air basin. In addition, State DOTs and MPOS should have the flexibility to use locally derived data rather than AP-42 estimates if such data are readily available.

**Need more complete description on how to develop background concentrations:**

Section 8 on background concentrations levels needs to be expanded and clarified. This section indicates that background concentration levels may include “nearby sources” and “other sources.” This section should better define what is included in each of these categories. For example, are area sources included? In addition, the appendix should include an analysis that contains a nearby stationary source(s) and/or area source(s) to demonstrate how this analysis is to be done if such sources are not reflected in existing monitoring data.

Section 8.3.2 states that, “To account for future emission changes that are documented in the SIP, background concentrations based on monitored PM concentrations may be adjusted with a

chemical transport model (CTM).” However, PM quantitative hot-spot analyses may go beyond the attainment years that are modeled in the SIPs, so the guidance needs to address how to adjust the background levels beyond the attainment years. AASHTO and AMPO recommend that the background concentration levels be rolled back further from the attainment year to the hot-spot analysis year if there is a demonstrated emissions reduction during this period. Therefore, the guidance should provide a methodology for “rollback” beyond the attainment date, other than using the attainment date background further into the future.

The guidance should not result in transportation agencies effectively doing work (inventories and ambient modeling for sources other than transportation sources) that would normally be done by air agencies and then only for specific years required (i.e., for SIP revisions or inventories) and not typically for the opening year of a project or the design year of a transportation plan.

### **Reduce number of receptor sites:**

The proposed guidance appears to require an excessive number of receptor sites and analysis points. This includes receptors in all directions from the project and those extending a sufficient distance out from the project. AASHTO and AMPO recommend that the guidance make clear that the placement and number of receptors should be reasonable and not extend outside of the area affected by the project.

### **Community Wide Monitors and Receptors:**

The guidance should clarify the selection of receptors for community-wide purposes given the three criteria for micro- and middle-scale receptors on page 131 of the proposed guidance. Care should be taken to not unnecessarily or inadvertently require the use of near-road receptors for community-wide purposes. For example, if a school is located near an interchange and within the field of receptors specified for the 24-hour standard, would the criteria listed on page 131 require that such near-road receptors be considered representative also of community-wide air quality?

In principle, a community-wide monitor/receptor site should be located well away from significant emission sources. Modeling of such sites is normally not done for SIP purposes using dispersion techniques alone. The guidance should be careful not to place projects in a position of performing SIP-level airshed-type modeling for estimating community-based monitors. There is clear evidence from research studies that pollutant concentrations decline to background levels within a few hundred meters of the source for freeways, so it would seem excessive to require modeling of receptors farther away than that for purposes of PM hot-spot analyses. Community-based receptors should be farther away and we would suggest that the community-based issue is covered if the project is part of a suitable regional analysis, such as a RTP/TIP conformity analysis, demonstrating conformity with a SIP emission budget.

### **Consider data limitations for interstate and/or international traffic:**

For areas with high levels of interstate and/or international traffic, the availability of fleet age distribution and other data for long-haul trucks and inter-city buses may be quite limited. This should be recognized in the guidance.

## **Conduct Benefit/Cost Analysis:**

Costs and other potential burdens for compliance with the proposed guidance for state and local agencies and organizations with responsibilities for implementing transportation projects are not presented in the draft document and therefore may not have been appropriately considered in its development. Given the level of detail for the proposed analyses, and the associated extensive consultation requirements, the costs could be significant. We recommend that EPA run a cost benefit analysis on this guidance document because of its complexity, and the extensive amount of input data, receptor sites, assumptions, etc. that need to go into the analysis. Among other things, this analysis should evaluate model sensitivity of the various factors that are needed for the analysis, the cost and time of obtaining the data, and the accuracy and utility of the various factors for predicting the end result. The analysis should also include an estimate of the level of effort needed, both in terms of cost and staffing, to complete a PM quantitative analysis for various typical types of roadway and transit projects.

More specifically, the analysis should include comparison between alternative modeling tools such as AERMOD and CAL3QHCR for common types of transportation project including, at least: interchange construction/modification; freeway widening; road relocation; transit terminal construction/modification (including consideration of a 'de minimus' level of bus traffic or engine types), and rail station/terminal (including bus terminal aspects and development/use of locomotive emission factors and consideration of rail sources as part of background determination).

The analysis should also consider the traffic modeling, emission modeling, and dispersion modeling steps separately, and provide recommendations for optimal resource allocations to achieve a given level of accuracy in the final modeling result (i.e., for the design values) among those three steps. In other words, it may not be beneficial to focus too much effort on one step in the modeling process if data are limited or have significant uncertainty for one or both of the other steps; the level of effort should be commensurate among the three steps, and this should be linked with the overall level of analysis desired (e.g., screening level, or detailed).

Also, options to reduce costs of compliance, such as categorical determinations, or screening methods involving emission forecasting only (and not the costly additional step of dispersion modeling), should be included in the guidance. Detailed cost assessments for PM hot-spot analyses for various types of transportation projects along with options to mitigate those costs should be presented in revised draft guidance for interagency and public review before the guidance is finalized.

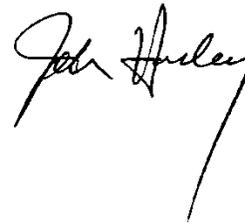
## **Conclusion**

In light of these comments, we recommend that EPA implement a pilot program involving state DOTs and other local agencies that would be affected by the new guidance before it is finalized. A mix of large agencies (that have substantial resources) and smaller ones (those with fewer resources) should be involved on a volunteer basis. A pilot program would be beneficial in recommending revisions to the draft guidance that not only improve the efficiency and effectiveness of the proposed analytical process for particulate but also help identify means to

minimize or mitigate cost impacts. A pilot program could also include consideration of related or pending guidance documents, such as may be forthcoming for carbon monoxide (CO) hot-spot analyses or related National Environmental Policy Act (NEPA) requirements.

Thank you for the opportunity to comment on EPA's proposed PM quantitative hot-spot guidance. Should you have any questions, please contact: Shannon Eggleston from AASHTO at 202-624-3649 or Rich Denbow from AMPO at 202-296-7051, ext. 5.

Sincerely,

A handwritten signature in black ink, appearing to read "John Horsley". The signature is fluid and cursive, with a long, sweeping tail on the final letter.

John Horsley  
Executive Director  
AASHTO

A handwritten signature in black ink, appearing to read "DeLania Hardy". The signature is cursive and somewhat stylized, with a prominent loop at the end.

DeLania Hardy  
Executive Director  
AMPO

CC: April Marchese, FHWA