Executive Summary

EPA Issues Public Draft of Transportation Conformity Guidance for Quantitative Hot-spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas

Overview

For the first time, the U.S. Environmental Protection Agency (EPA) has released draft conformity guidance for quantifying the local air quality impacts of certain transportation projects on the $PM_{2.5}$ and PM_{10} national ambient air quality standards (NAAQS). Once finalized, this guidance will be used by state and local agencies to conduct "hot-spot analyses" for new highway and transit projects that involve significant diesel emissions. EPA intends to finalize the guidance later this year, and, after a grace period, quantitative hot-spot analyses would apply in $PM_{2.5}$ and PM_{10} nonattainment and maintenance areas. Until then, qualitative analyses continue to apply in PM areas, using previously issued joint EPA-FHWA guidance on such analyses. EPA has not issued this PM hot-spot modeling guidance in the past because appropriate models were not available for quantifying PM emissions from individual transportation projects. Now that EPA has released its new MOVES2010 emissions model, an appropriate model is available for EPA to use to develop guidance for the use of quantitative PM hot-spot analyses in conformity determinations. EPA developed this draft guidance in coordination with the Department of Transportation, state and local agencies, and other stakeholder groups.

EPA is seeking public comment on all aspects of the draft guidance by **July 19, 2010**; see below for further details on how to submit comments.

Purpose of the Draft Guidance

This draft guidance describes how to complete quantitative PM hot-spot analyses. A hot-spot analysis is an analysis of a project's impact on the NAAQS in the local

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area of the project. A hot-spot analysis is required only for new highway and transit projects that involve significant diesel truck or bus traffic.

This draft guidance describes how to estimate project emissions using EPA's MOVES2010 model, California's EMFAC2007 model, and other methods. It also outlines how to apply air quality models (AERMOD and CAL3QHCR) for PM hot-spot analyses. Finally, the draft guidance includes appendices that provide additional resources and examples that may assist state and local agencies in conducting quantitative PM hot-spot analyses. A description of each section of the draft guidance is included below.

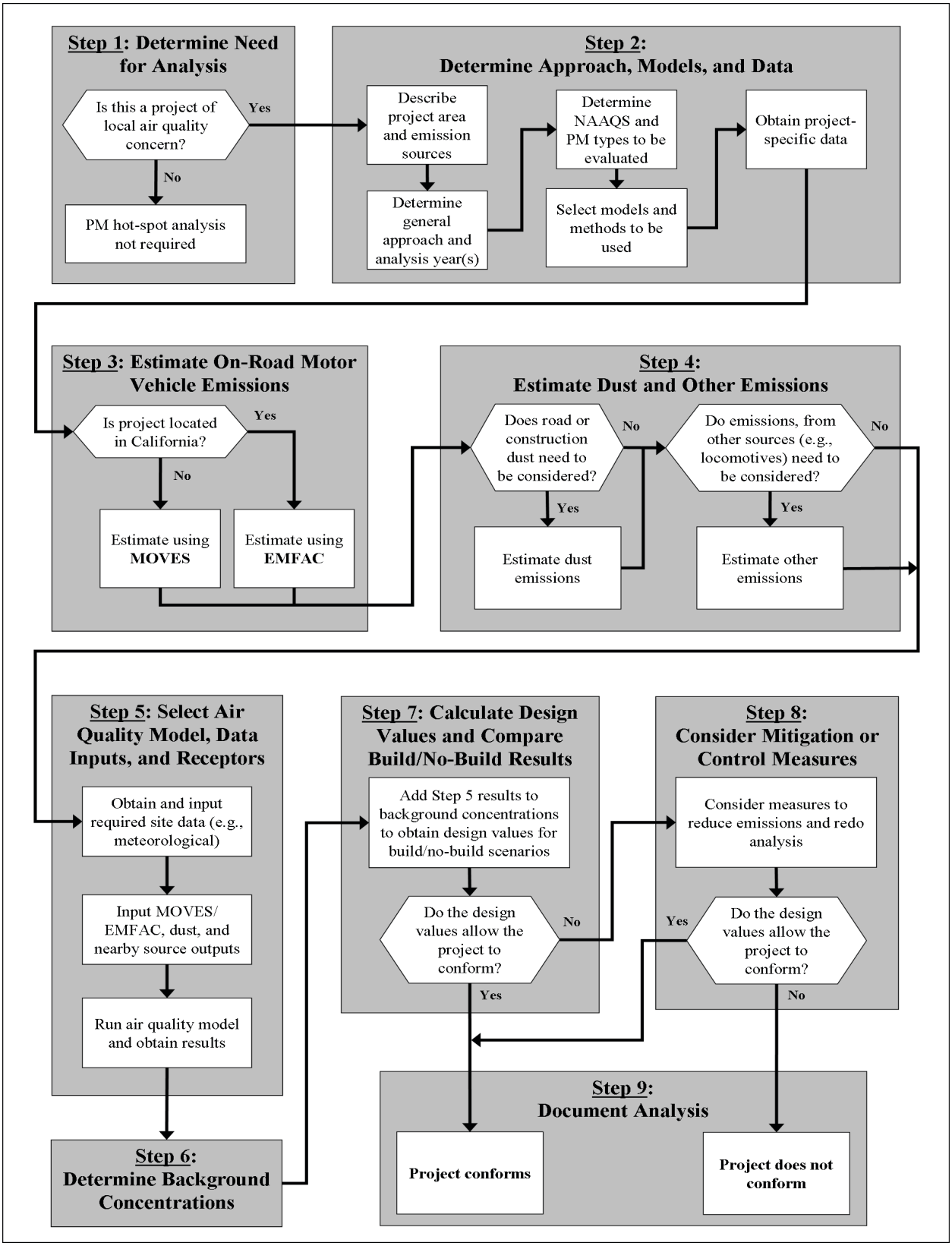
Background

Transportation conformity is a Clean Air Act requirement that ensures that federally supported highway and transit projects are consistent with state air quality implementation plans. Conformity helps protect public health through early consideration of the air quality impacts of transportation decisions in places where air quality does not currently meet the NAAQS or has not met them in the past.

Steps for Completing a Quantitative PM Hot-spot Analysis

The flowchart on the next page illustrates the basic steps for completing a quantitative PM hot-spot analysis as described in the draft guidance. In general, a hot-spot analysis compares the air quality concentrations with the proposed project (the "build" scenario) to air quality concentrations without the project (the "no-build" scenario). For either scenario, it is necessary to consider emissions from the project and any nearby sources, as well as determine background concentrations. From this information, design values can be calculated to determine if a project conforms. If the build design values are less than or equal to the relevant NAAQS, the project is considered to conform. A project will also conform if the build scenario design values are greater than the NAAQS but less than or equal to the design values for the no-build scenario.

Overview of the Quantitative PM Hot-spot Analysis Process



Summary of Contents of Draft Guidance

The following is a section-by-section description of the contents of the draft guidance:

Section 1: Introduction
This section provides general information about PM hot-spot analyses and introduces the guidance.

Section 2: Transportation Conformity Requirements
This section outlines the transportation conformity requirements for quantitative PM hot-spot analyses. This section also describes general statutory and regulatory requirements, specific analytical requirements, and the different types of agencies that are involved in developing hot-spot analyses.

Section 3: Overview of a Quantitative PM Hot-Spot Analysis
This section provides an overview of the process for conducting a quantitative PM hot-spot analysis. This section may be particularly helpful to those who are looking for a general understanding of this process. All individual elements or steps presented in this section are covered in more depth throughout the remainder of the guidance.

Section 4: Estimating Project-level PM Emissions Using MOVES
This section describes how to use EPA's MOVES2010 emissions model to estimate a project's exhaust, brake wear, and tire wear emissions for PM hot-spot analyses outside of California. This section focuses on determining what the appropriate project-level inputs are and how MOVES should be run to provide the necessary information to complete air quality modeling.

Section 5: Estimating Project-Level PM Emissions Using EMFAC (in California)
This section addresses the necessary steps to use the EMFAC model to estimate a project's exhaust, brake wear, and tire wear emissions for PM hot-spot analyses in California. The California Air Resources Board maintains EMFAC, which is approved by EPA for developing on-road motor vehicle emission inventories and conformity analyses in California.

Section 6: Estimating Emissions from Road Dust, Construction, and Other Emission Sources
This section describes how to estimate re-entrained road dust and transportation-related construction dust emissions. This section also includes information on quantifying emissions from construction vehicles and equipment, locomotives, and other sources of emissions in the project area, when applicable.

Section 7: Selecting an Air Quality Model, Data Inputs, and Receptors
This section describes the recommended air quality models (AERMOD and CAL3QHCR), data inputs, and receptor considerations for PM hot-spot analyses. This guidance is consistent with the conformity rule and recommendations for air quality modeling in EPA's "Guideline on Air Quality Models" (Appendix W to 40 CFR Part 51).

Section 8: Determining Background Concentrations from Nearby and Other Emission Sources
This section describes how to determine background concentrations for PM hot-spot analyses,

which can include nearby sources (e.g., locomotive emissions at a freight terminal) and other sources of emissions not from the project itself.

Section 9: Calculating PM Design Values and Determining Conformity
This section describes how to combine all previous steps of a PM hot-spot analysis into a design value so that a project sponsor can determine if conformity requirements are met. For conformity purposes, a design value is a statistic that describes a future air quality concentration in the project area that can be compared to a particular NAAQS.

Section 10: Mitigation and Control Measures
This section describes mitigation and control measures that could be considered by project sponsors to reduce emissions and any new or worsened PM NAAQS violation that is predicted in a PM hot-spot analysis.

Appendices
The draft guidance also contains the following appendices to supplement the above sections and assist state and local agencies when conducting PM hot-spot analyses:

- Appendix A is a clearinghouse of information and resources external to this guidance which may be useful when completing PM hot-spot analyses.
- Appendix B gives examples of projects of local air quality concern.
- Appendix C discusses what projects need a hot-spot analysis if a state's approved conformity SIP is based on pre-2006 requirements.
- Appendix D demonstrates how to characterize links in an intersection when running MOVES.
- Appendices E and F are abbreviated PM hot-spot analysis examples (using MOVES) for a highway and transit project, respectively.
- Appendices G and H are examples of how to configure and run EMFAC for a highway and transit project, respectively.
- Appendix I includes guidance for estimating locomotive emissions in the project area.
- Appendix J includes details on how to input air quality modeling data and run AERMOD and CAL3QHCR for a PM hot-spot analysis and prepare outputs for design value calculations.
- Appendix K has examples of how to calculate design values and determine transportation conformity.

Request for Comments

EPA is seeking public comment on all aspects of the draft guidance by July 19, 2010. In particular, EPA is seeking comments on the following:

- Does the guidance provide sufficient information on how to configure and run MOVES2010 and EMFAC2007 at the project level?
- Do the air quality modeling sections of the guidance and references to other existing documents provide sufficient detail for air quality modelers to conduct PM hot-spot analyses using AERMOD or CAL3QHCR?
- Is there sufficient information in the guidance to calculate design values and determine appropriate receptors? If not, what additional information is necessary?

- Are there issues that the draft guidance does not address that should be addressed in the final guidance or in other EPA efforts?
- What types of outreach, training, and other technical assistance would be helpful in implementing the final guidance?

EPA encourages those submitting comments to provide specific details and/or examples wherever possible.

Submitting Comments

Comments can be submitted to EPA via the following methods:

Email: Comments can be sent electronically to PMhotspot-comments@epa.gov

Mail: Comments sent by mail should be addressed to

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

Fax: Comments can also be faxed to the attention of Meg Patulski at (734) 214-4052.

For More Information

The draft quantitative PM hot-spot guidance can be found on EPA's Office of Transportation and Air Quality website at: www.epa.gov/otaq/stateresources/transconf/policy.htm.

For further information on the draft guidance, please contact:

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734-214-4842

E-mail: patulski.meg@epa.gov (Note that comments on the guidance should be submitted directly to PMhotspot-comments@epa.gov)