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Draft Guidance on Quantitative PM Hot-Spot Analyses for Transportation Conformity

The South Coast Air Quality Management (SCAQMD) staff appreciates the opportunity to comment on the Draft Guidance on Quantitative PM Hot-spot Analyses for Transportation Conformity (Guidance). SCAQMD staff is pleased that EPA is releasing quantitative transportation conformity guidance that provides a more rigorous analysis of potential air quality impacts from transportation projects than the currently promulgated qualitative guidance. The more thorough analysis described in this Draft Guidance will provide the public and decision makers more insight into potential local air quality impacts from transportation projects.

Based on SCAQMD staff review of the draft guidance, there are some areas where this document may be improved. SCAQMD staff would appreciate EPA's consideration of the attached comments prior to finalizing the Guidance. Should you have any questions, feel free to contact me at (909) 396-3244.

Sincerely,

Ian MacMillan
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South Coast Air Quality Management District

Attachment

1) Timeline for Review of Hot Spot Analyses by Public and Local Agencies

The Draft Guidance specifies a very detailed methodology for determining whether a transportation project achieves conformity. This includes extensive calculations and use of several computer models. However, the guidance does not appear to provide information about how the public review process should be conducted for these detailed analyses. Recommendations regarding the length of time to comment on the draft conformity determinations and backup documentation should be provided in the Final Guidance.

2) Guidance Limited to Hot Spot Analysis for Transportation Conformity

Page 9 of the Draft Guidance indicates that the purpose of the guidance is to quantitatively determine if a project conforms to the State Implementation Plan. While the methodology in the Draft Guidance evaluates impacts based on federal conformity requirements, it does not evaluate potential impacts based on state-specific standards. The Final Guidance should contain a clarifying statement indicating that the scope and methodology presented may not meet state-specific standards for air quality analysis, and that local agencies should be contacted for more information where appropriate.

3) Acceleration Speed Estimation

Page 60 of the Draft Guidance indicates that the average speed of a roadway link should be estimated to determine which emission factor to use from EMFAC. This method may underestimate the emissions for roadway links defined by vehicle acceleration. This average speed calculation using EMFAC differs from the method used with EPA's MOVES model. The MOVES model allows the user to determine emission factors that are based both on speed, and acceleration. SCAQMD staff encourages EPA to work with ARB to develop acceleration based emission factors for future versions of EMFAC. In the interim, EPA may want to consider providing an alternative method to calculating the increased emissions from acceleration, such as with the methodology described in the CALINE 4 guidance[1].

4) Determining HHDT Emission Factors

Page 65 of the Draft Guidance indicates that modifications to emission factors in EMFAC for diesel engine retrofits should follow guidance on the EPA website or ARB website. However it is unclear from these references how to modify emission factors from a diverse fleet of trucks traveling along a California roadway. More specific guidance should be provided to avoid ambiguity in the preferred calculation methodology.

5) Determining Truck Percentage for Use in EMFAC

Pages 71 and G-3 of the Draft Guidance provide an example that modifies the vehicle class distribution in EMFAC based on the percentage of truck traffic expected for a project. The example includes renormalizing the vehicle class distribution from the county-wide average to the project specific average. It would be helpful if some

[1] CALINE 4 – A Dispersion Model for Predicting Air Pollutant Concentrations Near Roadways, Revised June 1989. California Dept. of Transportation

additional explanation was added that indicates that when more detailed information is available regarding the breakdown of the type of trucks, then this generalized normalizing methodology may over- or under-estimate potential emissions. For example, the overall truck percentage may increase from 19% to 25% of the fleet, but the HHDT portion may increase from 20% to 65% of the truck fleet.

In addition, truck traffic counts are most commonly presented in terms of the number of axles; however EMFAC presents data by vehicle class (technology and weight). EPA should therefore consider specifying a method to convert from the number of axles to the truck class. One potential example may be found in Table B.5 of the Transportation Project-Level Carbon Monoxide Protocol.[2]

6) Road Dust Calculations

Page 77 of the Draft Guidance refers to the November, 2006 AP-42 methodology for calculating road dust, however a newer draft section for calculating road dust was released in June, 2010. The methodology and reference provided in the Draft Guidance should be revised based on the new AP-42 guidance. Further, page 78 of the Draft Guidance indicates that the default silt loading data from AP-42 should not be used, and site-specific data should be obtained. This data is often very difficult to obtain, and may not be readily available for most projects. If site-specific data is required, then additional information should be provided regarding how to obtain this data, and how to predict future silt loading for new projects.

7) Modeling Near Source Concentrations

Page 97 of the Draft Guidance states that modeled receptors should be placed as near as 3 meters from a source if there is the possibility of routine exposure at that location. Due to the nature of modeling roadways as volume sources in AERMOD, aberrant modeling results may occur if the receptor-source spacing is shorter than the volume source spacing representing the roadway. Additional guidance should be provided that describes how to avoid this situation. While this could include removing receptors, if the volume source spacing is large (e.g., for wide, multi-lane roadways), the areas most affected by roadway emissions could be inadvertently omitted from the analysis. An alternative may be to model individual lanes discretely in multiple lane roadways (thus reducing volume source spacing) if receptors of concern are located very close to the roadway.

8) Number of Years of Meteorological Data

Page 112 of the Draft Guidance states that five years of meteorological data is required to conduct modeling sufficient for transportation conformity. It is unclear how a project should be analyzed if five years of meteorological data are unavailable. For example, the SCAQMD has made available 3 years of AERMOD-ready meteorological data for various locations throughout the South Coast basin. This data has already been approved for use with New Source Review by the EPA, and SCAQMD staff would recommend that in order to maintain consistency this data be allowable for use in Transportation Conformity analyses.

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[2] Transportation Project-Level Carbon Monoxide Protocol, 1996. Prepared by UC Davis for the CA Dept. of Transportation. UCD-ITS-RR-96-1.