



METROPOLITAN
TRANSPORTATION
COMMISSION

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Memorandum

TO: Partnership Technical Advisory Committee

DATE: December 12, 2011

FR: Stefanie Hom

W. I.

RE: Quantitative PM Hot-Spot Analysis Requirements

In December 2010, the US Environmental Protection Agency (EPA) released new guidance to be used by state and local agencies to conduct quantitative particulate matter (PM) hot-spot analyses in non-attainment areas or maintenance areas for new highway and transit projects that involve significant diesel emissions. This new guidance transitions the PM hot-spot analysis from a qualitative analytical method to a quantitative analytical method. Beginning December 20, 2012, project sponsors will be required to complete a quantitative PM hot-spot analysis. Until then, PM hot-spot analyses can continue to be done qualitatively; quantitative analyses are optional.

Background

The nine-county San Francisco Bay Area region was designated by EPA as a non-attainment area for the national 24-hour fine PM_{2.5} standards. Under this designation, sponsors of certain projects that involve significant levels of diesel vehicle traffic are required to complete a PM_{2.5} hot-spot analysis for project-level conformity determinations made by the Federal Highway Administration (FHWA) or Federal Transit Administration (FTA). A PM hot-spot analysis estimates likely future localized PM_{2.5} pollutant concentrations and compares those concentrations to the national ambient air quality standards (NAAQS) and/or no-build conditions. Such an analysis is a means of demonstrating that a transportation project meets Clean Air Act conformity requirements to support state and local air quality goals with respect to potential localized air quality impacts.

New Quantitative Requirements

A quantitative analytical method is necessary due to the complex nature of PM emissions, the statistical form of each NAAQS, and temperature variability over the course of a year. The new quantitative PM hot-spot analyses will need to be based on latest planning assumptions to estimate likely future localized pollutant concentrations in comparison to the relevant PM_{2.5} and PM₁₀ national ambient air quality standards (NAAQS) or no-build conditions. Project emissions, including emissions from vehicles, road dust, and construction, can be calculated using the most recent EMFAC emissions model, and the AERMOD and CAL3QNCR air quality models.

A PM hot-spot analysis compares air quality concentrations with the project (build scenario) to either the NAAQS or to air quality concentrations without the project (no-build scenario). A transportation project will meet conformity requirements if at each appropriate receptor:

- PM concentration of the build scenario is equal to or less than the NAAQS; or,

- PM concentration of the build scenario is equal to or less than the PM concentration of the no-build scenario.

MTC's Role

MTC currently facilitates interagency consultation for PM_{2.5} hot-spot analyses through the Air Quality Conformity Task Force, which includes staff from EPA, FHWA, FTA, Caltrans, California Air Resources Board (CARB), Association of Bay Area Governments (ABAG), Bay Area Air Quality Management District (BAAQMD), congestion management agencies (CMAs), and transit operators. MTC will be expected to provide data and technical support to project sponsors completing the quantitative PM hot-spot analysis.

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