

CLARIFICATION TO THE 2006 JOINT EPA/FHWA TRANSPORTATION CONFORMITY GUIDANCE FOR QUALITATIVE HOT-SPOT ANALYSIS IN PM2.5 AND PM10 NONATTAINMENT AND MAINTENANCE AREAS -- DRAFT

Background

On March 29, 2006, the Environmental Protection Agency (EPA) and the Federal Highway Administration (FHWA) issued joint guidance on how to perform qualitative hot-spot analyses in PM2.5 and PM10 nonattainment and maintenance areas titled, "Transportation Conformity Guidance for Qualitative Hot-spot Analysis in PM2.5 and PM10 Nonattainment and Maintenance Areas" (March 2006 guidance). The guidance provides information for State and local agencies to meet the PM2.5 and PM10 hot-spot analysis requirements established in the March 10, 2006, final transportation conformity rule (71 FR 12468).

The March 10, 2006 final transportation conformity rule requires PM2.5 and PM10 hot-spot analyses to be performed for projects of air quality concern as defined in 40 CFR 93.123(b)(1). Projects of air quality concern are certain highway and transit projects that involve significant levels of diesel vehicle traffic, or any other project that is identified in the PM2.5 or PM10 SIP as a localized air quality concern. Per 40 CFR 93.123(b)(2) qualitative hot-spot analyses are required for these projects because appropriate methods and modeling guidance for a quantitative analysis are not yet available.

Since issuing the March 2006 guidance, a lawsuit was filed challenging a project's conformity determination, including the project's PM2.5 hot-spot analysis that relied on method A (comparison to another location with similar characteristics). Method A is described in question 4.1 of the March 2006 guidance. As part of a settlement agreement on that lawsuit (*Environmental Defense, et al. v. USDOT, et al.*, No. 08-1107 (4th Cir., dismissed Nov. 17, 2008)), FHWA agreed to issue a clarification on a specific schedule, in coordination with EPA, to the March 2006 guidance. This clarification does not supersede the March 2006 guidance or the March 10, 2006 final transportation conformity rule; it only further explains how to implement the existing guidance and the hot-spot analysis requirements in the final rule. The clarification also does not create any new requirements and does not serve as guidance for PM2.5 and PM10 quantitative hot-spot analyses.

The questions in this clarification arose during the settlement negotiations. Where appropriate, reference is made to specific questions from the March 2006 guidance to assist in providing further explanation on how to conduct a qualitative PM2.5 or PM10 hot-spot analysis using method A (comparison to another location with similar characteristics). Question 4.1 of the March 2006 guidance also includes other types of PM2.5 or PM10 hot-spot analyses that rely on air quality studies for the proposed project location or a combination of both methods which are not discussed in this clarification. A copy of the March 2006 guidance is attached for easy reference.

Clarification

1. What factors should be considered in selecting a "surrogate" monitor to allow an evaluation of PM10 and PM2.5 air quality concentrations for the proposed project?

The critical factors that should be considered in determining an appropriate monitor(s) to use in the PM2.5 or PM10 qualitative analysis include: comparable traffic characteristics; distance from sources (including highways) that may influence the monitor(s); relevant development trends and land use characteristics; the terrain of the area; and other environmental data such as prevailing wind direction. Each of these factors is described in more detail in Question 4.3 of the March 2006 guidance. Question 4.3 also states that monitors closer to the project location, but still within the nonattainment or maintenance area are preferable to those further away. State and local agencies should also consider the future development patterns in the vicinity of the proposed project area, including other emissions sources that could contribute to current and future air quality concentrations. The interagency consultation process should be used to determine what project(s) and air quality monitor(s) are appropriate to be used as a surrogate for the air quality impacts of the proposed project, as discussed in Question 4.1 of the March 2006 guidance. The reasons why the selected monitor was chosen should be clearly documented as part of the qualitative PM2.5 or PM10 hot-spot analysis.

2. If more than 1 monitor is within the vicinity of the proposed project area that will provide data on local PM2.5 and PM10 concentrations, what factors should be considered to determine the most appropriate monitor to use in the qualitative analysis?

It is important to balance the relative merits of each monitor when determining which monitor is an appropriate surrogate for the air quality impacts of the proposed project. Some factors that should be considered between the monitor location and the proposed project area are: comparable traffic characteristics; similar land use patterns; similar terrain; and similar weather patterns to the proposed project area. Each of these factors is described in more detail in Question 4.3 of the March 2006 guidance.

It may be appropriate to conduct the qualitative analysis using more than one monitor, if no one monitor's location is similar to the project area on all four factors but there are enough similarities to use the monitors. This is a determination that should be made using the best professional judgment of the agencies involved in the interagency consultation process as discussed in question 4.1 of the March 2006 guidance. If more than one monitor is used in the analysis then the hot-spot analysis should demonstrate how Clean Air Act requirements are met by evaluating multiple surrogate monitor locations. Conformity determinations should document why such monitors were selected to understand future air quality concentrations in the proposed project area.

3. What monitoring information should be considered if all the monitors within the project area are deemed inappropriate to use in the qualitative analysis?

If there are no monitors within or close to the proposed project area that adequately meet the factors described in question 2 above, then the project sponsor should look at the other monitors in the nonattainment or maintenance area. When choosing a monitor from outside the vicinity of the project, the same factors mentioned in question 2 should be used to determine the most appropriate surrogate for the air quality impacts of the proposed project. The project sponsor may also consider reviewing data from monitoring stations in other PM_{2.5} or PM₁₀ nonattainment or maintenance areas that more closely match the proposed project area if no monitors in the nonattainment or maintenance area are sufficiently similar to the project area on all four factors in question 2. See question 4.3 in the March 2006 guidance for more detail.

4. What process would be used to determine which air quality monitor(s) are appropriate for the proposed project?

As discussed in question 4.1 of the March 2006 guidance, the interagency consultation process should be used to determine what project(s) and air quality monitor(s) are appropriate to be used as a surrogate for the air quality impacts of the proposed project. During the consultation process, the project sponsor should keep track of all the monitors considered and document why each monitor either was or was not acceptable for use in the qualitative analysis. The factors discussed in question 2 above should be used to determine the appropriate monitor(s). A chart or database could be used to list this information and easily compare the relative merits of each monitor.

The project sponsor should document in the project-level conformity determination the reasons for picking the surrogate project and/or air quality monitor used in the qualitative analysis, including similarities to and differences between the surrogate and the proposed project and location. If project sponsors use a chart or database to compare potential monitors, such documentation should be attached to the project level conformity determination to help explain how the final monitor(s) were chosen for the analysis.

5. How should the results from the chosen surrogate monitor(s), and other qualitative factors, be considered and documented in the conclusions of the qualitative PM_{2.5} or PM₁₀ hot-spot analysis?

The qualitative factors used to interpret the chosen surrogate monitor(s) results are the same four factors considered in choosing the most appropriate monitor in question 2 above: traffic characteristics; land use patterns; terrain; and weather patterns, as well as any other relevant factors that may be unique to the circumstances being considered. The project sponsor should document in the project-level conformity determination how these factors impact the conclusion that the proposed project meets the conformity hot-spot analysis requirements in 40 CFR 93.116 and 93.123. See question 4.2 of the March 2006 guidance for more detailed discussion on what should be documented in a PM_{2.5} or PM₁₀ qualitative hot-spot analysis.

6. How are the general requirements of 40 CFR 93.123(c) applied when conducting qualitative PM2.5 and PM10 hot-spot analyses?

Section 93.123(c) of the transportation regulation (40 CFR 93.123(c)) provides the general requirements of hot-spot analysis in CO, PM10 and PM2.5 nonattainment and maintenance areas. Specifically, section 93.123(c)(1) requires that “(E)stimated pollutant concentrations must be based on the total emissions burden which may result from the implementation of the project, summed together with future background concentrations.” It also requires that “total concentration must be estimated and analyzed at appropriate receptor locations in the area substantially affected by the project.” The hot-spot analysis is intended to assess possible new or worsened air quality violations due to the project in combination with changes in background concentrations over time. Estimation of background concentration may take into account the effectiveness of anticipated control measures such as finalized lower emissions standards, fuel standards (or control measures in the SIP if they are already enforceable and creditable in the SIP.) In the absence of an applicable quantitative modeling procedure for PM2.5 and PM10 hot-spot analyses, a qualitative assessment of available information should be conducted in accordance with the March 2006 guidance in order to meet these requirements. The qualitative assessment is done by considering data from existing monitor(s) and a thorough consideration of local data that may influence PM2.5 and PM10 concentrations in the project area. This qualitative assessment meets the requirements of 93.123(c) until the EPA requires a PM10 or PM2.5 quantitative hot-spot analysis in this context. Question 3.1 of the March 2006 guidance describes all the general requirements in 40 CFR 93.123(c) for hot-spot analyses.