

previously agreed upon and included in the SIP are implemented.

XII. PM_{2.5} Hot-Spot Analyses

A. What Are We Proposing?

EPA is taking comment on two options concerning the need to conduct hot-spot analyses for FHWA and FTA projects in PM_{2.5} nonattainment and maintenance areas. A hot-spot analysis as defined in § 93.101 of the rule for CO and PM₁₀ areas is an estimation of likely future localized pollutant concentrations and a comparison of those concentrations to the air quality standard. A hot-spot analysis assesses impacts on a scale smaller than the entire nonattainment or maintenance area, including for example, congested roadway intersections and highways or transit terminals, and uses a dispersion model to determine the effects of emissions on air quality. In general, a hot-spot analysis must show that the project does not cause any new violations of the air quality standard or increase the frequency or severity of existing violations. The conformity rule currently requires hot-spot analyses in CO and PM₁₀ nonattainment and maintenance areas. The reader should refer to §§ 93.116 and 93.123 of the current conformity regulation for specific CO and PM₁₀ hot-spot analysis requirements.

The first proposed option would not require hot-spot analyses for FHWA and FTA projects in PM_{2.5} nonattainment and maintenance areas, for the reasons described below. We recognize that there is on-going research on PM_{2.5} and, if this research provides evidence in the future that clearly indicates that transportation-related PM_{2.5} hot-spots exist, we would revise the conformity rule in the future to require PM_{2.5} hot-spot analyses at locations that are most likely to experience hot-spot problems. We invite commenters with data relevant to the existence of transportation-related PM_{2.5} hot-spots to submit this data during the comment period for this proposal.

EPA also requests comment on a second option that would require PM_{2.5} hot-spot analyses for FHWA and FTA projects at certain types of locations if the PM_{2.5} SIP for the area identifies such locations. Under this option, PM_{2.5} hot-spot analyses would not be required for any projects prior to the submission of a SIP and then only if the PM_{2.5} SIP identifies susceptible types of locations.

We request comment on what potential PM_{2.5} hot-spot location types could be identified in the SIP, including locations of: significant congestion, highest traffic volumes, existing or

suspected future localized violations of the PM_{2.5} standard, or high diesel vehicle traffic such as near freight or transit terminals. EPA seeks comment on these potential location types or others that may be appropriate to consider for the second proposed option. The locations listed above are similar to those described in §§ 93.123(a)(1)(i)–(iv) and 93.123(b)(1)(i)–(iii) of the current conformity rule where quantitative hot-spot analyses must be performed for CO and PM₁₀. However, under this proposal, PM_{2.5} hot-spot analyses would only be required for projects at the types of locations identified in the SIP. This option would not require qualitative analyses for all projects in the PM_{2.5} nonattainment or maintenance area as is currently required for CO and PM₁₀ nonattainment and maintenance areas.

If the second option is finalized, the required hot-spot analysis would address only the contribution of directly emitted particles to ambient PM_{2.5} concentrations, including re-entrained emissions if those are addressed under conformity in that area. Typically, a hot-spot analysis would be done for an intersection, a short segment of roadway or the immediate vicinity of a transit terminal. Since secondary particles take several hours to form in the atmosphere giving emissions time to disperse beyond the immediate area of concern, hot-spot analyses could only examine direct particulate emissions that are attributable to an individual project. In other words, precursor emissions from a project would not be considered in a hot-spot analysis. Secondary particles would only be considered as part of the PM_{2.5} background concentration that would be included in the assessment of whether or not a hot-spot exists.

If EPA finalizes the second option, we would provide guidance on how to identify locations where transportation-related PM_{2.5} hot-spots may exist. This guidance would be available for use when states prepare PM_{2.5} SIPs. We would also provide guidance and appropriate models for carrying out quantitative analyses at identified locations of concern, prior to the requirement to perform any PM_{2.5} hot-spot analyses.

Finally, under the second option we are also proposing that prior to making a project-level conformity determination in a PM_{2.5} nonattainment or maintenance area, FHWA or FTA must obtain from the project sponsor and/or operator enforceable written commitments to implement any required control or mitigation measures otherwise applicable to the project. These control or mitigation measures

may be a condition of either a NEPA approval or a conformity determination for a plan or TIP or be included in the design concept and scope of the project that is used in the regional emissions analysis required by §§ 93.118 or 93.119. These measures may be applicable during construction and/or operation of the project. Such measures would already be applicable to such projects, however including commitments to them in conformity determinations will provide an additional enforcement tool. Section 93.125(a) of the conformity rule already includes this requirement for CO and PM₁₀ nonattainment and maintenance areas, and EPA would include similar language if a PM_{2.5} hot-spot analysis requirement is included in the final rule. Although EPA has not proposed regulatory language, either of these proposals could be finalized as described above.

B. Existing Research on PM_{2.5} Hot-Spots and Request for Additional Information

EPA has reviewed a number of key studies that represent the range of research that is currently available on the impact of on-road mobile source emissions of particles on air quality near roadways. The results of these studies are not conclusive as to whether or not transportation-related PM_{2.5} hot-spots exist. The majority of these studies indicate that concentrations of some components of PM_{2.5} increase near roadways, such as black carbon and ultrafine particles. However, it is difficult to relate these measures directly to PM_{2.5}, as many of the studies did not measure PM_{2.5} directly. The magnitude of increased concentrations appears to be related to several factors including the total number of vehicles operating on the roadway, the number of diesel vehicles operating on the roadway and the level of congestion or amount of stop-and-go driving on the roadway. However, these studies were less clear as to whether or not PM_{2.5} hot-spots exist. Several studies concluded that on-road sources were one of several contributors to the concentrations measured near roadways. At least one study concluded that hot-spots do not exist. Several studies reported that they had identified hot-spots caused by local on-road emissions. However, it is difficult to relate the conclusions of many of these studies to the PM_{2.5} standards, because a number of these studies collected individual air quality samples for less than 24 hours and only collected data over a period of several months. All of the studies that were reviewed are available in the docket for this rulemaking. We invite others with