

the low height to which re-entrained road dust is lifted (75% of unpaved road dust emissions were less than 2 meters above the ground when they were measured; compared to emissions released from stacks at stationary sources or vertical exhaust pipes on heavy-duty trucks) (Desert Research Institute Document 6110.4F, May 2000). This low-lifting height provides an extended "opportunity" for impaction, filtration, agglomeration and other physical mechanisms that lead to particle removal to occur. The third factor is that the lack of any thermal buoyancy for dust emissions would somewhat reduce their impact, in contrast to emissions from vehicle exhaust and other combustion or high temperature sources. All three factors increase the likelihood that road dust particles would settle out of the atmosphere onto the ground or adhere onto other surfaces such as vegetation, structures, *etc.*, before contributing substantially to the PM<sub>2.5</sub> regional air quality problem.

There are other reasons for uncertainty associated with the current method for estimating PM<sub>2.5</sub> re-entrained road dust emissions. The original data used to develop this method were based on measurements of PM<sub>10</sub> rather than PM<sub>2.5</sub>. The PM<sub>10</sub> data were subsequently adjusted to reflect the fraction of PM<sub>2.5</sub> in PM<sub>10</sub>, but these adjustments add uncertainty. In addition, the data used to develop the emissions estimation method are highly variable. This variability adds to uncertainty about its interpretation. ("AP-42, Fifth Edition, Volume 1, Chapter 13: Miscellaneous Sources", U.S. EPA Office of Air Quality Planning and Standards).

Attempting to adjust for discrepancies between estimated inventories and air quality measurements, EPA has discounted national PM<sub>2.5</sub> emissions inventories by 75% in air quality analyses for recent EPA rulemakings and other national analyses, to create the "effective emissions" that are used as input into regional air quality models. (Desert Research Institute Document 6110.4F, May 2000). Even with this discount, absolute air quality model predictions of the concentration of chemical elements associated with road dust typically have remained higher than observed at most urban PM<sub>2.5</sub> monitoring sites, suggesting that an even larger discount may be needed in at least some situations. In areas where PM<sub>2.5</sub> transportation conformity for road dust is required, we believe that discounting local re-entrained road dust inventories is necessary to ensure that the overall impact of road dust is

properly estimated, and that decisions about control strategies for road dust emissions and exhaust emissions reflect actual relative impacts on ambient concentrations and attainment. Without these adjustments, planners may not apply the proper combination of control measures on dust and vehicle emissions needed to properly address the regional PM<sub>2.5</sub> air quality problem. Based on observed discrepancies, EPA believes that controls on road dust would have a much smaller impact on regional air quality than would initially appear based on unadjusted emission inventories.

Preliminary analysis of air quality data and modeling studies indicates that there will likely be wide local variation in the size of the necessary adjustments to PM<sub>2.5</sub> dust emissions. For this reason, it would be inappropriate to apply EPA's 75% downward adjustment for national inventories for all areas. EPA believes it is more appropriate for PM<sub>2.5</sub> areas to create locally-specific adjustments based on the amount of road dust on an area's monitoring filters and its relationship to an area's nonattainment problem. Therefore, EPA intends to develop methods to make these adjustments locally both before and after a regional SIP air quality analysis has been done. EPA would issue this guidance by the time PM<sub>2.5</sub> designations are made. EPA invites comments and suggestions for possible methods for determining such local adjustments in areas where road dust is included in conformity analyses.

#### **X. Construction-Related Fugitive Dust in PM<sub>2.5</sub> Regional Emissions Analyses**

##### *A. Background*

Construction-related fugitive dust is granular material released into the atmosphere during construction. Activities associated with construction-related fugitive dust emissions include land clearing, drilling and blasting, ground excavation, cut and fill operations (*i.e.* earth moving), and facility construction. Often, a large portion of such emissions results from equipment traffic over temporary roads at the construction site. Construction-related fugitive dust is distinct from re-entrained road dust, which is emitted by motor vehicles traveling over permanent paved or unpaved roads. The discussion here applies only to fugitive dust emitted during the construction of highway or transit projects.

##### *B. What Are We Proposing?*

EPA proposes to include construction-related fugitive dust from highway or transit projects in regional

emissions analyses in PM<sub>2.5</sub> nonattainment and maintenance areas only if the SIP identifies such dust as a *significant contributor* to the regional air quality problem. In other words, PM<sub>2.5</sub> areas would only include construction-related fugitive dust if the SIP identifies it as contributing to an area's air quality problem. Construction-related dust emissions would not be included in any PM<sub>2.5</sub> conformity analyses before adequate or approved PM<sub>2.5</sub> SIP budgets are established. EPA has included proposed regulatory text for this option as § 93.122(e).

Under this proposal, if construction-related fugitive dust is included in transportation conformity, we propose to allow PM<sub>2.5</sub> SIP budgets and conformity analyses to be adjusted to reflect the true impact of construction-related fugitive dust on regional air quality, as explained in Section IX.D. EPA would issue guidance on how to calculate PM<sub>2.5</sub> construction dust emissions to more accurately reflect the impact of construction dust on regional air quality before EPA's final PM<sub>2.5</sub> nonattainment designations. Construction dust SIP emissions inventories and regional emissions analyses for conformity should be calculated using methods described in EPA's guidance entitled, "AP-42, Fifth Edition, Volume 1, Chapter 13, Miscellaneous Sources" (US EPA Office of Air Quality Planning and Standards; available at <http://www.epa.gov/ttn/chief/ap42/ch13/>) or locally developed estimation methods approved through the consultation process.

Under EPA's future guidance, calculated emissions would then be adjusted downward to account for discrepancies based on an analysis of the relative impact of construction dust on ambient PM<sub>2.5</sub> concentrations as determined by regional air quality monitors in a given area. See previous discussion in Section IX.D. for more details on ideas that EPA is considering for its future guidance. EPA is also requesting comment from the public on such guidance.

##### *C. Why Are We Proposing This Option?*

Section 176(c) of the Clean Air Act requires that the air quality impacts of transportation projects be evaluated so that new violations or worsened violations do not occur. If emissions of fugitive dust from highway or transit projects contribute to air quality problems in PM<sub>2.5</sub> areas and as a result, air quality is worsened, then it may be appropriate to evaluate those emissions in conformity before federal funding or approval is given. Section 93.122(d) of the transportation conformity rule