

FACT SHEET
EFFECTS OF NEW PARTICULATE MATTER AIR QUALITY STANDARDS IN AREAS OF CALIFORNIA

**How Transportation Project Schedule/Delivery may be Affected
by Projected PM_{2.5} Levels in Selected Areas of California**

I should read this if...

- a. I am proposing or planning a transportation project within the South Coast Air Basin or the San Joaquin Valley Air Basin; AND
- b. My project is subject to federal funding/approval; AND
- c. My project is capacity-increasing; AND
- d. My project is a new highway that will have a significant number of diesel vehicles¹ OR an expanded highway that will have a significant increase² in the number of diesel vehicles.³

These projects will need a “hot spot” analysis for particulate matter with a diameter less than or equal to 2.5 microns (PM_{2.5}).⁴ A PM_{2.5} hot spot analysis takes added time and expertise, so planning ahead is advisable. Some planning suggestions are included in this paper since additional time will be needed to fulfill this requirement. For more detailed information about PM_{2.5} hot spot analysis, see the link to the United States Environmental Protection Agency’s (U.S. EPA) website at the end of this paper.

Background

In December of 2012, the U.S. EPA strengthened the annual PM_{2.5} ambient air quality standard from 15.0 to 12.0 micrograms per cubic meter (µg/m³). This new standard became effective on April 15, 2015, and the one-year grace period for transportation projects ended on April 15, 2016. The areas unable to meet the federal air quality PM_{2.5} standards are designated as PM_{2.5} “nonattainment.” Individual projects in the PM_{2.5} “nonattainment” and “maintenance⁵” areas that are subject to federal funding/approval are required to meet federal transportation conformity requirements, including hot-spot analyses for the projects listed in 40 CFR 93.123(b)(1). A project must be shown to conform before it can be funded or approved.

Because background concentrations of PM_{2.5} are already above the new PM_{2.5} standard in the South Coast and San Joaquin Valley nonattainment areas, any projects meeting the conditions under c. or d. above will face added challenges in demonstrating conformity with air quality requirements. A hot-spot analysis will entail added time and expense to engage in an iterative Interagency Consultation (IAC) process; obtain technical expertise in air quality modeling; and conduct air quality modeling.

¹ No numerical values are provided to define “significant number of diesel vehicles.” Each project is considered on a case-by-case basis through the Interagency Consultation Process as established under the Federal Clean Air Act.

² No numerical values are provided to define “substantial increase in truck volumes.” Each project is considered on a case-by-case basis through the Interagency Consultation Process as established under the Federal Clean Air Act.

³ The phrase “significant number of diesel vehicles” is taken verbatim from the federal Clean Air Act. It does not refer to a determination of significance pursuant to the National Environmental Policy Act or the California Environmental Quality Act.

⁴ See the transportation conformity regulations at 40 CFR 93.123(b). Note that where an area is nonattainment or maintenance for the PM₁₀ NAAQS, a PM₁₀ hot-spot analysis would be needed as well.

⁵ “Maintenance”: Areas that were previously under nonattainment status but subsequently redesignated to attainment with a maintenance plan.

How a project proponent can prepare:

In short: Find out what is required for your project using the IAC process. A quantitative PM_{2.5} "hot-spot" analysis is complex; it requires significant effort and resources. Develop the schedule, knowing that some projects could take longer. Assemble the necessary skill sets.

- **Data:** Obtain data on project's projected changes in truck volumes (not just changes in overall traffic data).
- **Geographic Information:** Identify whether project is on or near a truck corridor. A national effort to designate "Critical Urban and Rural Freight Corridors" is under way. Once it is finalized it will be a resource (see the link below for additional information). Coordinate with the Metropolitan Planning Organization about the transportation system in the project area. Identify how the project will affect nearby routes, and vice versa. The project cannot be looked at in isolation; regional modeling and truck movement matters.
- **Consultation:** Start by presenting the project data to the area's IAC, request that the group determine whether the project is a Project of Air Quality Concern (POAQC), i.e., requires a hot-spot analysis because it is one of the types listed in 40 CFR 93.123(b)(1). If it is, develop a modeling protocol along with IAC concurrence for conducting the required PM_{2.5} "hot-spot" analysis. Timely responses and knowledgeable reviewers are critical.
- **Schedule:** Allow more time—from six months to one year. Develop a plan for the required, iterative IAC process. Consider aligning the project-level conformity process with the National Environmental Policy Act (NEPA) process and identifying what shared milestones can be coordinated to reduce overall project review timeframes.
- **Project team:** Assemble the right technical expertise: highly skilled air quality modelers who can perform quantitative PM_{2.5} analysis.
- **Refined Conformity Analysis:** If the project is a POAQC, once the air quality protocol is approved, the quantitative modeling should be completed and a report shared with the area's IAC for review.
- **Plan for Mitigation:** Additional IAC will be critical for concurrence on acceptable mitigation measures. PM_{2.5} emissions reduction is an evolving field; quantifying results may be difficult. As of 2017, many accepted measures are appropriate at a regional scale (e.g., retrofitting or replacing vehicles/engines, using cleaner fuels, and reducing truck and bus idling). Examples of project-specific measures include redesigning the transportation project itself, and controlling fugitive dust. There is still a need for approved measures to reduce near-road air pollutant concentrations, and modeling tools to quantify their effectiveness.

Where to go for more information:

- Contact Caltrans' District Environmental Staff for projects on the State Highway System
- Link to the air quality section of Caltrans' Standard Environmental Reference:
<http://www.dot.ca.gov/ser/vol1/sec3/physical/ch11air/chap11.htm>
- Link to Southern California Association of Governments' Project Level Conformity page, with a template for PM hot spot Interagency Review:
<http://www.scag.ca.gov/programs/Pages/ProjectLevel.aspx>
- Link to EPA's PM hot-spot section of the transportation conformity page:
<https://www.epa.gov/state-and-local-transportation/project-level-conformity-and-hot-spot-analyses#pmguidance>
- Link to information about Critical Urban and Rural Freight Corridors in California:
<http://www.dot.ca.gov/hq/tpp/offices/ogm/cufc-crhc.html>.