

## Background

The California Supreme Court in the case of *Sierra Club v. County of Fresno* (2018) 6 Cal. 5th 502 regarding the proposed Friant Ranch project determined the air quality analysis in the environmental impact report (EIR) was inadequate because it did not make “a reasonable effort to substantively connect the project’s air quality impacts to likely health consequences.” The Court determined that “the EIR should be revised to relate the expected adverse air quality impacts to likely health consequences or explain in meaningful detail why it is not feasible at the time of drafting to provide such an analysis.”

## Need

Lead agencies and practitioners preparing documents to comply with the California Environmental Quality Act (CEQA) have requested guidance from the Sacramento Metropolitan Air Quality Management District (Sac Metro Air District) on implementing the Friant Ranch decision in the review and analysis of proposed projects in Sacramento County.

## Interim Recommendation

The Sac Metro Air District does not currently have a methodology that would correlate the expected air quality emissions of projects to the likely health consequences of the increased emissions. The Sac Metro Air District is in the process of developing a methodology to assess these impacts, and anticipates releasing it in the fall of 2019. In the interim, agencies should follow the Friant Court’s advice to explain in meaningful detail why this analysis is not yet feasible.

This explanation should describe the background underlying air regulations, the regional nature of the regulatory approach, and why the approach is not amenable to project level assessments. This should include a discussion of the public health impact analyses that form the basis for the state and federal health-based pollutant concentration standards, and the application of the standards to regions that were established based upon a commonality of factors impacting air quality. Air districts, in turn, have focused on reducing regional emissions from all sectors to meet the health-based concentration standards, thereby reducing the pollutant specific health impacts for the entire population. For example, the Sac Metro Air District prepared plans to attain and maintain the ozone and particulate matter ambient air quality standards. These attainment plans include emissions inventories, air monitoring data, control measures, modeling, future pollutant-level estimates, and general health information. Attainment planning models rely on regional inputs to determine ozone and particulate matter formation and concentrations in a regional context, not a project specific context. Because of the complexity of ozone formation, the pounds or tons of emissions from a proposed project in a specific geographical location does not equate to a specific concentration of ozone formation in a given area, because in addition to emission levels, ozone formation is affected by atmospheric chemistry, geography, and weather. Secondary formation of particulate matter is very similar to the complexity of ozone formation, and localized impacts of directly emitted particulate matter do not always equate to local particulate matter concentrations due to transport of emissions. The analysis should explain that because air district attainment plans and supporting air model tools are regional in nature, they do not allow for analysis of the health impacts of specific projects on any given geographic location. More information is included in the threshold justification documents developed by the Sac Metro Air District, and available at our website at [www.airquality.org](http://www.airquality.org).

The analysis should also discuss the current models<sup>1</sup> used in CEQA in air quality analyses, which, in contrast to attainment models, are designed to calculate and disclose the mass emissions expected from the construction and operation of a proposed project (pounds/day and tons/year). The estimated emissions are then compared to significance thresholds, which are in turn keyed to reducing emissions to levels that will not interfere with the region’s ability to attain the health-based standards. The Sac Metro Air District adopted operational emission thresholds for ozone precursors, nitrogen oxides (NOx) and reactive organic gasses (ROG), with the goal of obtaining 0.45 tons/year of NOx and 0.49 tons/year of ROG reductions from new

development projects exceeding the thresholds by including emission reducing design features as mitigation.<sup>ii</sup> More recently, the Sac Metro Air District adopted particulate matter thresholds, PM10 and PM2.5, to align with the new source review permit offset levels, which are designed to prevent new emission sources from affecting attainment progress.<sup>iii</sup> Sac Metro Air District thresholds are set at 65 pounds/day NOx (11.8 tons/year), 65 pounds/day ROG (11.8 tons/year), 80 pounds/day PM10 (14.6 tons/year), and 82 pounds/day PM2.5 (15 tons/year).<sup>iv</sup> CEQA thresholds are a tool Sac Metro Air District uses to obtain emission reductions from development projects to support attainment of the Federal and State ambient air quality standards. This protects public health in the overall region, but there is currently no methodology to determine the impact of emissions on concentration levels in specific geographic areas.

The CEQA analysis should consider the degree to which various other tools, such as CalEEMod, EMFAC, OFFROAD, AERMOD, and HARP and CAMx, could assist in assessing specific health impacts of a project, and, where those tools would not be useful, explain why. For example, while CalEEMod may be useful in comparing emissions to significance thresholds, it is not able to assess transport of pollutants or the impacts of external factors (weather, terrain, etc.) on pollutant concentrations at particular locations.

In Sacramento, concentration modeling of ozone has not been an analytical tool used for project level emissions due to the complex nature of pollution concentration formation and numerous regional influences (multiple emission sources, meteorology, atmospheric chemistry and geography). Although some particulate matter concentration modeling has been conducted for project specific emissions for stationary source permitting purposes, concentration modeling has mainly been used to support ozone attainment demonstration.

Outside of these tools, neither the Sac Metro Air District nor any other air district currently have methodologies that would provide Lead Agencies and CEQA practitioners with a consistent, reliable, and meaningful analysis to correlate specific health impacts that may result from a proposed project's mass emissions.

An expanded discussion of health impacts resulting from specific air pollutants may also be warranted for projects with emissions exceeding the Sac Metro Air District's thresholds of significance. There is an array of information on health impacts related to exposure to ozone<sup>v</sup> and particulate matter<sup>vi</sup> emissions published by the US EPA and the California Air Resources Board. Health studies are used by these agencies to set the Federal and State ambient air quality standards. A more general discussion of health impacts related to air pollution is also available on [www.sparetheair.com](http://www.sparetheair.com) and in the Sac Metro Air District's *Guide to Air Quality Assessment in Sacramento County*.<sup>vii</sup> None of the health-related information can be directly correlated to the pounds/day or tons/year of emissions estimated from a single, proposed project.

## **Developing Guidance**

The interim recommendation is in place to assist lead agencies and practitioners with CEQA document preparation until Sac Metro Air District develops a methodology that provides a consistent, reliable and meaningful analysis to address the Court's direction on correlating health impacts to a project's emissions.

Sac Metro Air District staff have initiated discussions with the other air district's in the Sacramento Federal Ozone Nonattainment area regarding developing guidance in response to Friant Ranch since we share air quality issues and use the same growth assumptions, mobile source emissions, and modeling efforts to support our ozone and particulate matter attainment plans.

One potentially useful tool in developing a methodology is the US EPA's BenMap tool<sup>viii</sup>. According to US EPA's website, BenMap is an "open-source computer program that calculates the number and economic value of air pollution-related deaths and illnesses. The software incorporates a database that includes many of the concentration-response relationships, population files, and health and economic data needed to quantify these impacts." BenMap may be able to provide the detailed health information needed for the guidance under development.

Sac Metro Air District is working with its engineering and environmental technical support consultant, Ramboll USA Corporation, to develop a methodology that will provide a consistent, reliable, efficient, and meaningful analysis that correlates health impacts from proposed projects' emissions for the Sacramento region. The current strategy will analyze how various levels of emissions (the CEQA tonnage estimates) impact attainment pollutant concentration levels, and use BenMap to correlate increases in concentration levels to health impacts. Once a methodology is available, Sac Metro Air District staff will inform interested stakeholders and provide updated guidance in this document and in its *Guide to Air Quality Assessment in Sacramento County*.

## Contact Information

Lead agencies and CEQA practitioners may contact Mr. Paul Philley, CEQA and Land Use Section Program Supervisor at 916-874-4882 or [pphilley@airquality.org](mailto:pphilley@airquality.org) regarding Sac Metro Air District's recommendations.

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<sup>i</sup> CalEEMod, Road Construction Emissions Model, EMFAC, OFFROAD

<sup>ii</sup> Foundation for a Threshold, Justification for Air Quality Thresholds of Significance In the Sacramento Federal Nonattainment Area, August 15, 2001, Adopted March 28, 2002.

<sup>iii</sup> Proposed Particulate Matter CEQA Thresholds of Significance, March 19, 2015, Adopted May 28, 2015.

<sup>iv</sup> Sac Metro Air District, Guide to Air Quality Assessment in Sacramento County, December 2009 (latest update September 2018), Chapter 2, Thresholds of Significance table. <http://www.airquality.org/LandUseTransportation/Documents/CH2ThresholdsTable5-2015.pdf>

<sup>v</sup> <https://www.epa.gov/ozone-pollution-and-your-patients-health/health-effects-ozone-general-population>

<sup>vi</sup> <https://www.arb.ca.gov/research/health/pm-mort/PMmortalityreportFINALR10-24-08.pdf>

<sup>vii</sup> Sac Metro Air District, Guide to Air Quality Assessment in Sacramento County, December 2009 (latest update September 2018), Chapter 1. <http://www.airquality.org/LandUseTransportation/Documents/Ch1IntroAq%20FINAL12-2016.pdf>

<sup>viii</sup> <https://www.epa.gov/benmap>