Air Quality Analysis in CEQA Roadway Project Review

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This document provides guidance on frequently questioned topics in air quality analysis, including greenhouse gas (GHG) analysis, for roadway projects reviewed under the California Environmental Quality Act (CEQA). Some of the guidance addresses common misconceptions about adequate CEQA analysis and some incorporates recent legal rulings or opinions.

This guidance is intended for use by lead agencies in preparing air quality analysis for roadway projects under CEQA review. It is also intended for use by air quality management or air pollution control districts (air districts) in reviewing and commenting on CEQA documents for roadway projects. Further, it is intended for use by community and other stakeholders in the CEQA review process for roadway projects, to help them assess the adequacy of the CEQA analysis.

Please note that this is not comprehensive guidance on air quality analysis for CEQA review of roadway projects. It only responds to common questions and current misconceptions. Air districts often have guidance on a full range of topics in CEQA air quality analysis, which is appropriate for overall air quality analysis in their geographic area. Please consult the local air district in which the project is located to determine the appropriate methodology for project analysis under CEQA. This guidance is supplemental to more comprehensive guidance, and will be updated regularly, as future issues arise. Further, the applicability of specific guidance in this document may vary depending on the air district and project characteristics.

CEQA Baseline

For any CEQA review, a baseline must be selected for determining the existing air quality impacts from criteria pollutants, generated by both construction and operational phases of a project. The CEQA analysis typically describes changes to the environment attributable to project activities, by comparing baseline conditions to conditions anticipated to result from the project. CEQA's purpose is to disclose the environmental impacts of the project to the public and decision makers, so careful judgement should be exercised when selecting a CEQA baseline since it affects the significance determination.

For the emissions analysis on some roadway projects with long-term construction build-out or peak operations scenarios, the CEQA baseline year is held constant (i.e., using emission rates current at the time when CEQA review begins pursuant to the CEQA Guidelines) and compared to future year (i.e., using emission rates projected for a future year when construction or operations are occurring). This approach may underestimate a project's actual impacts, due to adopted state and federal rules and regulations, and technology advancements that are independent of the project.

In *Neighbors for Smart Rail v. Exposition Metro Line Construction (2013) 57 Cal.4th 439*, the California Supreme Court held that using a future baseline is proper in some cases, if using existing environmental conditions would be unrepresentative, uninformative, or misleading to decision makers and the public. Lead agencies may wish to use a future baseline for roadway projects that have a long term construction build-out or peak operations scenario, for example projects that become fully operational 20

or 30 years after CEQA review. In those instances, lead agencies may wish to select a future baseline year, and compare emissions estimated without the project to emissions estimated with the project, for that same year. Use of a future baseline is only proper, however, if estimated emissions for future conditions are supported by reliable projections (e.g. increased ridership for transit projects), or required emissions standards, based on substantial evidence in the record rather than hypothetical conditions.

Air District Guidance, Standards, Thresholds and Recommended Mitigation

CEQA air quality impact significance determinations should incorporate the local air district's guidance, standards, thresholds and recommended mitigation. Air districts ensure conformity with the state implementation plan for federal air quality standards at the regional level. Their guidance, standards, thresholds and recommended mitigation are informed by a thorough knowledge and understanding of the air quality conditions and conformity considerations for the geographic area of their jurisdiction. Consequently, Courts have upheld CEQA review that relies on district thresholds. For example, in *Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal.App.4th 899, 933, the court upheld a CEQA analysis of cumulative air quality impacts, because the analysis relied on the air district's recommended thresholds. Air district thresholds should also be used for cumulative impacts and project alternatives analysis.

Any decision to not use air district guidance, standards, and thresholds for CEQA air quality and health risk analysis, or use recommended mitigation to lessen significant impacts, should be justified and supported by substantial evidence in the administrative record, to adequately provide the public disclosure required by CEQA. While lead agencies are not required to use air district thresholds, the use of a less stringent threshold, or less comprehensive standards, could make the CEQA analysis vulnerable. In contrast, when using the air district thresholds, the agency could reasonably defend the standard as one developed through a public process by experts in air quality analysis, and developed to assist in meeting state and federal air quality standards for that region.

Because one of the basic purposes of CEQA is to inform government decision makers and the public about the potential, significant environmental effects of any proposed activities (CEQA Guidelines § 15002(a)(1)), use of air district thresholds is generally best practice for CEQA significance determinations for criteria pollutant and GHG emissions. Many air districts have developed thresholds that provide a clear quantitative benchmark to determine the significance of project and project alternative air quality impacts. They help identify the magnitude of the impacts, facilitate the identification of feasible mitigation measures, and evaluate the level of impacts after mitigation. If a lead agency has adopted its own air quality or GHG CEQA thresholds through a public process and the thresholds are supported by substantial evidence, use of the lead agency's adopted CEQA threshold is appropriate (CEQA Guidelines § 15064.7). If a lead agency or air district has developed a climate action plan that applies the tiering concept (provided for in CEQA Guidelines § 15183.5), use of such alternative is appropriate.

Due to air districts' unique role in ensuring transportation conformity, and expertise in air quality and public health, CEQA analysis should include all applicable feasible mitigation measures recommended by air districts. This applies to mitigating project impacts identified in operations and construction, including health risks.

Many smaller air districts may not have their own guidance, standards, thresholds, and recommended mitigation. They may instead recommend the use of guidance, standards, thresholds and mitigation from other sources. Any decision to not use their recommendations should be justified and supported by substantial evidence in the administrative record.

Complete Construction and Operations Emissions Analysis for All Projects

Air quality impacts should be assessed for construction and operational emissions for all projects under CEQA review.[1,2] Air districts develop their air quality thresholds in large part to assess cumulative impacts that affect attainment of the air quality standards for which they are responsible. Neglecting an air quality analysis based on more subjective guidance undermines the purpose of air district thresholds.

For example, failing to assess air quality impacts for projects, because the construction period is short, would underestimate overall impacts and undermine the air district thresholds' objective of meeting air quality standards. Construction duration is not an appropriate screening threshold. Even construction of a short duration can generate significant pollutants.

Further, transportation conformity analysis, including hotspot analysis, should not be used as a substitute for CEQA analysis. CEQA analysis and transportation conformity analysis under the federal Clean Air Act meet two separate sets of requirements. Transportation conformity requirements are codified in 40 Code of Federal Regulations Parts 51 and 93, while CEQA requirements are codified in Sections 21000 through 21178 of the California Public Resources Code. To ensure a good faith effort at full disclosure, project-specific CEQA analysis of air quality impacts from both construction and operations should be adequate and complete.

Finally, it is important to report and assess all construction and operational air pollutants, including toxic, criteria pollutant, and GHG emissions. Potential emission sources may include, but are not limited to, the operation of construction equipment including haul trucks, vehicle trips made by construction workers, and operational emissions from vehicle use on roadways. Moreover, construction and operation of roadways have the potential to generate significant toxic air pollutants that are detrimental to human health, regardless of duration. The OEHHA Air Toxics Hotspot Program Risk Assessment Guidelines (Section 8.2.10) and the CAPCOA Health Risk Assessments for Proposed Land Use Projects provide guidance for evaluating cancer and other risk from projects. When project construction and operation phases overlap, project proponents should consult the air district where the project is located, to determine the appropriate methodology for evaluating the emissions from each phase.

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[1] CEQA Guidelines §15063 Initial Study (a)(1) requires consideration of all phases of project planning, implementation and operation in considering potential significant impacts.

[2] CEQA Guidelines §15003 Policies – In addition to the policies declared by the Legislature concerning environmental protection and administration of CEQA in Sections 21000, 21001, 21002 and 21002.1 of the Public Resources Code, the courts of this state have declared the following policies to be implicit in CEQA. (h) The lead agency must consider the whole of an action, not simply its constituent parts, when determining whether it will have a significant environmental effect.

Vehicle Miles Traveled and Induced Vehicle Miles Traveled

CEQA review of roadway projects should assess and report vehicle miles traveled (VMT), including induced VMT, quantitatively. The California Governor's Office of Planning and Research (OPR) April 2018 Technical Advisory on Evaluating Transportation Impacts in CEQA provides guidance on assessing and reporting VMT, including induced VMT, which lead agencies may use at their discretion. The OPR technical advisory also provides guidance on which projects require an induced VMT analysis, and which projects do not (p.16).

The VMT analysis should specifically address the projected change in VMT resulting from a project, including any change associated with induced VMT. Project proponents should tabulate air pollutant emissions resulting from VMT and induced VMT, including GHG and criteria pollutants, and including toxic emissions where appropriate. Project proponents should compare emissions to air district thresholds or other relevant standards, as appropriate for the air district in which the project is proposed. If thresholds are exceeded, mitigation measures will likely be necessary. For toxics analysis, consult the local air district in which the project is located to determine appropriate methods, including whether toxics analysis is necessary for the project.

Induced VMT occurs when the addition of roadway capacity affects the amount of VMT by changing travel behavior such as trip length and mode use.[3] A substantial body of research exists quantifying the increase in VMT induced by added roadway capacity.[4,5,6] A quantitative assessment of induced VMT is critical to an accurate assessment of project VMT and associated GHG, criteria pollutant, and toxic emissions. A quantitative assessment of induced VMT is thus critical to assess the impact of those emissions on the environment and public health, and their impact on achieving GHG emission reductions goals required by state law and policy.

CEQA requires public agencies to document and consider the environmental implications of their actions, and to analyze the direct, indirect (or secondary effects), and cumulative physical changes in the environment that proposed projects would cause. VMT, including induced VMT, may be a reasonably foreseeable impact for roadway projects that should be analyzed under CEQA. Induced VMT resulting

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[3] California Governor's Office of Planning and Research. *Technical Advisory on Evaluating Transportation Impacts in CEQA.* http://opr.ca.gov/docs/20180416-743_Technical_Advisory_4.16.18.pdf.

[4] Handy, S. (2015). *Increasing Highway Capacity Unlikely to Relieve Traffic Congestion.* National Center for Sustainable Transportation Policy Brief. http://www.dot.ca.gov/research/researchreports/reports/2015/10-12-2015-NCST_Brief_InducedTravel_CS6_v3.pdf.

[5] Handy, S. and Boarnet, M. (2014). *Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions.* California Air Resources Board Policy Brief. https://www.arb.ca.gov/cc/sb375/policies/hwycapacity/highway_capacity_brief.pdf.

[6] Handy, S. and Boarnet, M. (2014). *Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions.* California Air Resources Board Technical Background Document. https://www.arb.ca.gov/cc/sb375/policies/hwycapacity/highway_capacity_bkgd.pdf.

from secondary effects is recognized as a potential significant irreversible environmental change under CEQA (CEQA Guidelines § 15126.2 (c)).

As part of documenting these physical changes, roadway capacity expansion project review should include analysis of the effects of induced travel on achieving GHG emissions reductions in accordance with state law. The California Air Resources Board (CARB) calculates the maximum amount of additional vehicle travel that is possible while still achieving climate stabilization and attainment of air quality standards. CARB reports those VMT amounts in its Mobile Source Strategy and Scoping Plan.[7,8] The amount of induced VMT from roadway capacity expansion projects contributes, both individually and cumulatively with other roadway capacity expansion projects, towards the maximum amounts. CEQA review should link the project's VMT outcomes to the VMT goals articulated in those documents.

CEQA requires analysis of project growth-inducing impacts, and disclosure of the resulting effects on transportation and air quality. For example, a project that expands roadway capacity could contribute to more disperse land use development, increased vehicle travel, and increased GHG, criteria pollutant, and toxic emissions, in addition to other environmental impacts.[9, 10, 11, 12] Growth-inducing and emissions impacts are also cumulative, and must be assessed accordingly to comply with CEQA requirements. The Caltrans Guidance for Preparers of Growth-related, Indirect Impact Analyses (referenced in the OPR 2018 Technical Advisory) provides guidance on growth-related, indirect impact analyses, which lead agencies may use at their discretion, where appropriate.

To address changes in land use generated by the project, the analysis must discuss (1) "the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment," and (2) "the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively" (CEQA Guidelines § 15126.2(d)).

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[7] California Air Resources Board 2016 Mobile Source Strategy, https://www.arb.ca.gov/planning/sip/2016sip/2016mobsrc.htm.

[8] California Air Resources Board AB 32/SB 32 Scoping Plan, https://www.arb.ca.gov/cc/scopingplan/scopingplan.htm.

[9] Stone, B. (2008). Urban Sprawl and Air Quality in Large U.S. Cities. *Journal of Environmental Management*, 86(4), 688-698. http://urbanclimate.gatech.edu/pubs/Urban%20Sprawl%20and%20AQ_Stone2.pdf and https://www.ncbi.nlm.nih.gov/pubmed/17368703.

[10] Litman, T. (2017). *Evaluating Transportation Land Use Impacts.* Victoria Transport Policy Institute. http://www.vtpi.org/landuse.pdf.

[11] Moore, T. and Thorsnes, P. (2007). *The Transportation / Land Use Connection.* American Planning Association, Planning Advisory Service Report Number 546 / 547.

[12] Cervero, R. (2010). Road Expansion, Urban Growth, and Induced Travel: A Path Analysis. *Journal of the American Planning Association*, 69(2), 145-163.

Greenhouse Gas Analysis

Pursuant to the CEQA Guidelines, CEQA documents must disclose a project's potential GHG emissions impacts, and make a GHG significance determination. GHG emissions must be considered under CEQA per SB 97, and climate science is sufficiently advanced to develop significance thresholds for GHG emissions, or alternative approach (e.g. the tiering concept). There is also ample technical information and evaluation criteria available to make significance determinations. The California Code of Regulations guidelines for CEQA implementation includes factors for consideration in assessing the significance of impacts from GHG emissions on the environment (CEQA Guidelines § 15064.4). The California Air Pollution Control Officers (CAPCOA) guidance, CEQA & Climate Change, also provides guidance on developing thresholds and determining significance.

Significance determinations should consider GHG emissions from VMT, including induced VMT , which can be quantified using readily available methods.[13,14] Because almost 40% of California's GHG emissions are generated from the transportation sector,[15] the assessment, significance determination, and mitigation of transportation impacts are essential to satisfying the CEQA disclosure requirement for GHG impacts, in addition to achieving GHG emissions reductions in accordance with state law (including but not limited to AB 32, SB 32, and SB 375). Technical considerations, including methodologies and modeling, are detailed in OPR's April 2018 Technical Advisory on Evaluating Transportation Impacts in CEQA .

Finally, consistency with a Regional Transportation Plan (RTP) and / or consistency with a regional Sustainable Communities Strategy (SCS) may not be sufficient to demonstrate a less-than-significant VMT or GHG impact. RTP/SCS implementation alone may not provide VMT reductions sufficient to meet CARB's 2017 Climate Change Scoping Plan Update statutory goals.[16] Additional VMT mitigation at the project level may be necessary to achieve VMT reduction levels necessary to meet state climate goals. The OPR April 2018 Technical Advisory also provides guidance on VMT mitigation and alternatives, which lead agencies may use at their discretion.

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[13] Handy, S. and Boarnet, M. (2014). *Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions.* California Air Resources Board Policy Brief. https://www.arb.ca.gov/cc/sb375/policies/hwycapacity/highway_capacity_brief.pdf.

[14] Handy, S. and Boarnet, M. (2014). *Impact of Highway Capacity and Induced Travel on Passenger Vehicle Use and Greenhouse Gas Emissions.* California Air Resources Board Technical Background Document. https://www.arb.ca.gov/cc/sb375/policies/hwycapacity/highway_capacity_bkgd.pdf.

[15] California Air Resources Board Greenhouse Gas Emission Inventory – 2017 Edition, https://www.arb.ca.gov/cc/inventory/data/data.htm.

[16] California Air Resources Board, Updated Final Staff Report Proposed Update to the SB 375 Greenhouse Gas Emission Reduction Targets, see p. 15 and p. 35. https://www.arb.ca.gov/cc/sb375/sb375_target_update_final_staff_report_feb2018.pdf.