DISCUSSION DRAFT

CEQA AND CLIMATE CHANGE ADVISORY

December 2018

Discussion Draft
CEQA and Climate Change Advisory

I. INTRODUCTION

The role of the California Environmental Quality Act (CEQA)[1] in addressing climate change and greenhouse gas (GHG) emissions continues to be the topic of much discussion. That was true in June 2008 when the Governor's Office of Planning and Research (OPR) first prepared an advisory on greenhouse gas impacts, and it continues to be true today. Since 2008, there have been developments in statutes, regulations, and science, as well as a growing body of case law focused on addressing climate change and greenhouse gas emissions.

This ***discussion draft*** contains initial thoughts on updates to the 2008 advisory. This document incorporates developments since June 2008, including regulatory changes made to the regulations that implement CEQA (commonly known as the "CEQA Guidelines"[2]) in late 2018 by the California Natural Resources Agency (Agency).[3] Although this document largely focuses on project-level analyses of greenhouse gas impacts, Section IV briefly addresses community-scale greenhouse gas reduction plans as one pathway to streamline CEQA analyses. This discussion draft is intended to address some common issues and topics that arise in greenhouse gas emissions analyses under CEQA, but is not intended to address every single issue and topic.

OPR seeks your input on this discussion draft document. In particular, we seek comments on the following:

1. Are there any important points that we missed that we should address?
2. Do you have any suggestions on how to clarify the topics that we did address?

Since this discussion draft addresses the existing provisions in the CEQA statute and Guidelines as well as case law, OPR encourages commenters to focus their input on those directives.

[1] The CEQA statute is found at Public Resources Code section 21000 and following.
[2] The CEQA Guidelines are found at the California Code of Regulations, Title 14, section 15000 and following.
[3] The California Office of Administrative Law (OAL) is currently reviewing the Agency's rulemaking package for the updates to the CEQA Guidelines. OAL is anticipated to complete its review in late December 2018.

Input may be submitted electronically to **comments@opr.ca.gov**. Please submit all comments before **Friday, March 15** at **5:00 pm**.

OPR issues technical assistance on issues that broadly affect the practice of land use planning and CEQA. (Gov. Code, § 65040, subds. (g), (l), (m).) This discussion draft does not alter lead agency discretion in preparing environmental documents subject to CEQA. This document should not be construed as legal advice. OPR is not enforcing or attempting to enforce any part of the recommendations contained in this draft document. (Gov. Code, § 65035 ["It is not the intent of the Legislature to vest in the Office of Planning and Research any direct operating or regulatory powers over land use, public works, or other state, regional, or local projects or programs."].)

The CEQA Guidelines do not require specific methodologies for determining environmental impacts, prescribe specific thresholds of significance, or require specific mitigation measures. Instead, the CEQA Guidelines acknowledge lead agency discretion in determining the appropriate methodologies, thresholds, and if necessary, mitigation measures that are tailored to the project. Approaches and methodologies for calculating greenhouse gas emissions and addressing the environmental impacts through CEQA review continue to improve and are increasingly available to assist public agencies to prepare their CEQA documents and make informed decisions. Many public agencies—along with academic, business, and community organizations—are striving to determine the appropriate means by which to evaluate and mitigate the impacts of proposed projects on climate change. Once finalized, the purpose of this document will be to provide advice and recommendations, which public agencies and other entities may use at their discretion.

II. BACKGROUND

The impacts of climate change pose an immediate and growing threat to California's economy, environment, and to public health. Cities and counties will continue to experience the effects of climate change in various ways, including increased likelihood of droughts, flooding, wildfires, heat waves and severe weather. Climate change may result from natural factors, natural processes, and human activities that change the composition of the atmosphere and alter the surface and features of the land. Significant changes in global climate patterns are associated with global warming, an average increase in the temperature of the atmosphere near the Earth's surface, attributed to accumulation of greenhouse gas emissions in the atmosphere. Greenhouse gases trap heat in the atmosphere, which in turn heats the surface of the Earth. Some greenhouse gas emissions occur naturally and are emitted to the atmosphere through natural processes, while others are created and emitted solely through human activities. The emission of greenhouse gases through the combustion of fossil fuels (i.e., fuels containing carbon) in conjunction with other human activities is the leading cause of climate change.

State law defines greenhouse gases to include the following: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (Health and Safety Code, section 38505(g).) The most common greenhouse gas that results from human activity is carbon dioxide, followed by methane and nitrous oxide. Other contributors to climate change, such as black carbon, may also be appropriate for lead agencies to consider as part of the environmental analysis.

A. Regulatory Background, Relevant Statutes, Executive Orders, and Planning Documents

Various legislative mandates and state policies address the reduction of greenhouse gas emissions and establish quantitative emission reduction targets. For example:

- **Executive Order S-3-05** (2005) established a progressive series of targets: by 2010, reduce greenhouse gas emissions to 2000 levels; by 2020, reduce greenhouse gas emissions to 1990 levels; and by 2050, reduced greenhouse gas emissions to 80 percent below 1990 levels.

- **Assembly Bill 32** (2006, Nunez) requires statewide greenhouse gas reductions to 1990 levels by 2020 and continued reductions beyond 2020. The law requires the California Air Resources Board (CARB) to establish a program to track and report greenhouse gas emissions; approve a scoping plan for achieving the maximum technologically feasible and cost effective reductions from sources of greenhouse gas emissions; adopt early reduction measures to begin moving forward; and adopt, implement and enforce regulations to ensure the required reductions occur.

- Pursuant to **Senate Bill 375** (2008, Steinberg), CARB establishes greenhouse gas emissions reduction targets for metropolitan planning organizations (MPOs) to achieve based on land use patterns and transportation systems specified in Regional Transportation Plans and Sustainable Community Strategies. Current targets for the State's largest MPOs call for a 19 percent reduction in greenhouse gas emissions from cars and light trucks from 2005 emissions levels by 2035.[4]

- **Senate Bill 391** (Liu, 2009) requires the California Transportation Plan to support 80 percent reduction in greenhouse gas emissions below 1990 levels by 2050.

- **Executive Order B-16-12** (2012) specifies a greenhouse gas emissions reduction target of 80 percent below 1990 levels by 2050 specifically for transportation.

[4] See the California Air Resources Board's February 2018 Updated Staff Report, p. 34, available at https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets.

- **Executive Order B-30-15** (2015) extends the goal of AB 32 and sets a greenhouse gas emissions reduction goal of 40 percent below 1990 levels by 2030. The executive order also addresses the need for climate adaptation and directs state governments to take a number of actions, including factoring climate change in state agencies' planning and investment decisions.

- **Senate Bill 32** (2016, Pavley) codifies the 2030 emissions reduction goal of Executive Order B-30-15 by requiring a reduction goal of 40 percent below 1990 levels by 2030.

- CARB's **Mobile Source Strategy** (2016) describes California's strategy for containing air pollutant emissions from vehicles, and quantifies growth in vehicle miles traveled that is compatible with achieving state climate targets.

- CARB's **2017 Climate Change Scoping Plan** (2017 Scoping Plan) describes California's strategy for achieving the 2030 greenhouse gas emissions reduction target established by SB 32. The Scoping Plan also recognized the critical and complementary role of local governments in achieving the State's climate goals. (CARB, 2017, Scoping Plan, p. 97; see also Chapter 8 of OPR's General Plan Guidelines.)

- **Senate Bill 100** (2018, De León) establishes a state goal of 100 percent clean electricity goal by 2045, and advances the Renewables Portfolio Standard to 50 percent by 2025 and 60 percent by 2030.

- **Executive Order B-55-18** (2018) directs the state to achieve carbon neutrality no later than 2045 and achieve and maintain net negative emissions thereafter.

B. Requirements of CEQA and CEQA Guidelines Section 15064.4

CEQA is a public disclosure law that requires public agencies to make a good-faith, reasoned effort, based upon available information, to identify the potentially significant direct and indirect environmental impacts—including cumulative impacts—of a proposed project or activity. The CEQA process is intended to inform the public of the potential environmental effects of proposed government decisions and to encourage informed decision-making by public agencies. In addition, CEQA obligates public agencies to consider less environmentally-damaging alternatives and adopt feasible mitigation measures to reduce or avoid a project's significant impacts.

The lead agency is required to prepare an Environmental Impact Report (EIR), a Mitigated Negative Declaration (MND), or equivalent document, when it determines that the project's

impacts on the environment are potentially significant. This determination of significance must be based upon substantial evidence in light of all the information before the agency. The lead agency's evaluation of a project's environmental impacts "need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible." (CEQA Guidelines, § 15151.)

Although the CEQA Guidelines, at Appendix G, provide a checklist of suggested issues that should be addressed in an EIR, neither the CEQA statute nor the CEQA Guidelines prescribe thresholds of significance or particular methodologies for performing an impact analysis. This is left to lead agency judgment and discretion, based upon factual data and guidance from regulatory agencies and other sources where available and applicable. A threshold of significance is essentially the level at which a lead agency finds a particular environmental effect of a project to be significant. Compliance with a given threshold means the effect normally will be considered less than significant. Lead agencies are encouraged but not required to adopt thresholds of significance for environmental impacts. (CEQA Guidelines, § 15064.7, subd. (b).) Lead agencies may also use thresholds adopted or recommended by other agencies or recommended by experts, provided the lead agency's decision to use such thresholds is supported by substantial evidence. (*Id.*, subd. (c).) A lead agency may also use thresholds on a case-by-case basis. (*Id.*, subd. (b).) Even in the absence of clearly defined thresholds for greenhouse gas emissions, such emissions must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact.

Through SB 97 (2007, Dutton), the Legislature acknowledged that greenhouse gas emissions and the effects of those emissions are appropriate subjects for CEQA analysis. SB 97 directed OPR to develop amendments to the CEQA Guidelines to address analysis and mitigation of the potential effects of greenhouse gas emissions in CEQA documents and processes. (Pub. Resources Code, § 21083.05.) The Agency adopted those amendments at CEQA Guidelines section 15064.4 in 2009. In late 2018, the Agency adopted further revisions to section 15064.4 that are intended to reflect recent case law and existing practice.

The revised CEQA Guidelines section 15064.4 states:

(a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

    (1) Quantify greenhouse gas emissions resulting from a project; and/or

(2) Rely on a qualitative analysis or performance based standards.

(b) In determining the significance of a project's greenhouse gas emissions, the lead agency should focus its analysis on the reasonably foreseeable incremental contribution of the project's emissions to the effects of climate change. A project's incremental contribution may be cumulatively considerable even if it appears relatively small compared to statewide, national or global emissions. The agency's analysis should consider a timeframe that is appropriate for the project. The agency's analysis also must reasonably reflect evolving scientific knowledge and state regulatory schemes. A lead agency should consider the following factors, among others, when determining the significance of impacts from greenhouse gas emissions on the environment:

(1) The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;

(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

(3) The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions (see, e.g., section 15183.5(b)). Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project. In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.

(c) A lead agency may use a model or methodology to estimate greenhouse gas emissions resulting from a project. The lead agency has discretion to select the model or methodology it considers most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change. The lead agency must support its selection of a model or methodology with

substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use.

The CEQA Guidelines generally address greenhouse gas emissions as a cumulative impact due to the global nature of climate change. (Pub. Resources Code, § 21083, subd. (b)(2).) As the California Supreme Court explained, "because of the global scale of climate change, any one project's contribution is unlikely to be significant by itself." (*Cleveland National Forest Foundation v. San Diego Assn. of Governments* (2017) 3 Cal.5th 497, 512.) A project's significant greenhouse gas impacts must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact. (CEQA Guidelines, §§ 15064.4, subd. (b), 15183.5.) Thus, "[t]he question therefore becomes whether the project's incremental addition of greenhouse gases is 'cumulatively considerable' in light of the global problem, and thus significant." (*Cleveland National Forest Foundation San Diego Assn. of Governments, supra,* 3 Cal.5th at 512, citation omitted.)

III. POTENTIAL APPROACHES

Each public agency that serves as a CEQA lead agency should develop its own approach to performing a climate change analysis for projects that generate greenhouse gas emissions. A consistent approach should be applied for the analysis of projects, and the analysis must keep apace with scientific knowledge and regulatory schemes. (*Cleveland National Forest Foundation v. San Diego Assn. of Governments*, *supra*, 3 Cal.5th at 519.) For these projects, compliance with CEQA entails three basic steps: identify and quantify the greenhouse gas emissions; determine the significance of those emissions in the context of climate change; and if the impact is found to be significant, identify alternatives and/or mitigation measures that will reduce the impact below significance.

Lead agencies must use their best efforts to determine whether greenhouse gases may be generated by a proposed project, and if so, quantify or estimate the GHG emissions by type and source. (CEQA Guidelines, § 15064.4, subd. (a).) Second, the lead agency must determine whether the project's incremental contribution is cumulatively considerable. (*Id*., § 15064.4, subd. (b), 15183.5.) When determining whether a project's effects on climate change are "cumulatively considerable" even though its greenhouse gas contribution may be individually limited, the lead agency must consider the impact of the project when viewed in connection with the effects of past, current, and probable future projects. Finally, if the lead agency determines that the greenhouse gas emissions from the project as proposed are potentially significant, it must investigate and implement ways to avoid, reduce, or otherwise mitigate the impacts of those emissions.

The following discussion includes some general factors, based on existing laws and regulations, for lead agencies consider when analyzing whether a proposed project has the potential to cause a significant climate change impact on the environment.

A. Establish an Appropriate Methodology and Identify Greenhouse Gas Emissions

- Lead agencies shall make a good-faith effort, based on available information, to describe, evaluate, calculate, or estimate the amount of CO_2 and other greenhouse gas emissions from a project, including, but not limited to, the emissions associated with vehicle use, energy consumption, water usage and construction activities, and the impact on natural environments that sequester carbon. CEQA defines a "project" broadly to include "whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment." (CEQA Guidelines, § 15378, subd. (a).) Thus, the analysis must consider all phases of the project.

- Lead agencies have the discretion to use a model or methodology to analyze greenhouse gas emissions that is appropriate for the project. (*Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 62 Cal.4th 204, 228; see, e.g., *Eureka Citizens for Responsible Gov't v. City of Eureka* (2007) 147 Cal.App.4th 357, 371-372) Various models exist that could be used in a greenhouse gases analysis, but not every model will be appropriate for every project. (CEQA Guidelines, § 15204, subd. (a).)

- A lead agency may take either a quantitative or qualitative approach to the environmental analysis. Under either approach, the lead agency's analysis must demonstrate a good-faith effort to disclose the amount and significance of greenhouse gas emissions resulting from a project, based to the extent possible on scientific and factual data. (CEQA Guidelines, § 15064.4, subd. (a).) In preparing an EIR, a lead agency's evaluation of project impacts need not be exhaustive, but an EIR's sufficiency will be viewed in light of what is reasonably feasible. (*Id*., § 15151.)

- A qualitative analysis may be appropriate in some circumstances. For instance, in some cases, methods do not exist to model project emissions, or the project is small in scale and quantification of emissions may not reveal information that would assist the lead agency in determining the significance of emissions. A lead agency is not required "to conduct every test or perform all research, study, and experimentation recommended or demanded by commentors." (CEQA Guidelines, § 15204, subd. (a).) That said, a qualitative approach must still be based to the extent possible on scientific and factual data and demonstrate a good-faith effort at disclosure of project impacts. (*Ibid.*)

- Although a lead agency may use a qualitative approach to the impacts analysis, when possible, lead agencies should quantify the project's construction and operational greenhouse gas emissions, using available data and tools, to determine the amount, types, and sources of greenhouse gas emissions resulting from the project. Quantification may allow the lead agency to more accurately evaluate the project's emissions compared to state greenhouse gas reduction targets, which are in turn based on scientific consensus on the greenhouse gas emissions reduction needed to avert the worst effects of climate change. Even where a lead agency does not apply a numeric threshold of significance to a proposed project, quantification may still be useful for lead agencies to determine the significance of the project's greenhouse gas emissions. (See *Berkeley Keep Jets Over the Bay v. Bd. of Port Commissioners* (2001) 91 Cal.App.4th 1344, 1367-1370; but see Mission Bay Alliance v. Office of Community Investment & Infrastructure (2016) 6 Cal.App.5th 160, 200-202.) Additionally, quantification may be useful in indicating to the lead agency and the public whether emissions reductions are possible, and if so, from which sources. Thus, if quantification reveals that a substantial portion of a project's emissions result from energy use, a lead agency may consider whether design changes could reduce the project's energy demand.

- Technical resources, including a variety of modeling tools, are available to assist public agencies to quantify greenhouse gas emissions. (See Section IV below.) Emissions models for particular types of projects continue to improve. Lead agencies must make a good-faith effort to describe or calculate a project's greenhouse gas emissions based to the extent possible on available data. (CEQA Guidelines, § 15064.4, subd. (a); see also § 15151 [standards for adequacy of an EIR].) Perfection is not required.

- To determine transportation-generated greenhouse gas emissions in particular, lead agencies may decide it is appropriate to use the same method or methodology used to determine the transportation impacts associated with a project's vehicle miles traveled (VMT). For more information, lead agencies should refer to **Appendices A and B** of this discussion draft, and to OPR's Technical Advisory on Evaluating Transportation Impacts in CEQA, which provides a potential method for connecting the greenhouse gas assessment to thresholds of significance based on state greenhouse gas emissions reduction goals. Using a consistent approach for both the greenhouse gas and transportation analyses can provide efficiency and consistency in the environmental analysis.

- There is no standard format for including the analysis in a CEQA document. A greenhouse gas/climate change analysis can be included in one or more of the typical

sections of an environmental document (e.g., air quality, transportation, energy) or may be provided in a separate section on cumulative impacts or climate change.

- When determining a project's greenhouse gas emissions, lead agencies must describe the existing environmental conditions or setting, without the project, which normally constitutes the baseline physical conditions for determining whether a project's impacts are significant. (CEQA Guidelines, § 15125.)

B. Determine Significance

- As with any environmental impact, lead agencies must determine what constitutes a significant impact on climate change that may be caused by the project's physical changes. (Pub. Resources Code, § 21002; CEQA Guidelines; § 15064, subd. (d); *Protect the Historic Amador Waterways v. Amador Water Agency* (2003) 116 Cal.App.4th 1099, 1106-07.) Because the issue of climate change is discussed in a cumulative context, an important consideration in selecting and developing significance thresholds is identifying the level at which a project's individual emissions would be cumulatively considerable. In the absence of regulatory standards for greenhouse gas emissions or other scientific data to clearly define what constitutes a "significant impact", individual lead agencies may undertake a project by-project analysis, consistent with available guidance and current CEQA practice.

- The potential effects of a project may be individually limited but cumulatively considerable. (CEQA Guidelines, § 15064.4, subd. (b); *Cleveland National Forest Foundation v. San Diego Assn. of Governments*, *supra*, 3 Cal.5th at p. 515 ["The fact that a regional plan's contribution to reducing greenhouse gas emissions is likely to be small on a statewide level is not necessarily a basis for concluding that its impact will be insignificant in the context of a statewide goal."].) Lead agencies should not dismiss a proposed project's direct and/or indirect climate change impacts without careful consideration, supported by substantial evidence. Documentation of available information and analysis should be provided for any project that may significantly contribute new greenhouse gas emissions, either individually or cumulatively, directly or indirectly (e.g., transportation impacts).

- Although climate change is ultimately a cumulative impact, not every individual project that emits greenhouse gases must necessarily be found to contribute to a significant cumulative impact on the environment.

- A number of models exist to quantify greenhouse gas emissions, and Guidelines section 15064.4, subdivision (b), provides a list of non-exhaustive factors that can be utilized by the lead agency when conducting an impacts analysis. Although the

sufficiency of an EIR is viewed in light of what is reasonably feasible, lead agencies must ensure that greenhouse gas impact analyses "stay in step with evolving scientific knowledge and state regulatory schemes." (*Cleveland National Forest Foundation v. San Diego Assn. of Governments*, *supra*, 3 Cal.5th at p. 504.) As with the analyses for other environmental impacts under CEQA, the lead agency must support its analysis with substantial evidence.

- CEQA authorizes reliance on previously approved plans and mitigation programs that have adequately analyzed and mitigated greenhouse gas emissions to a less-than-significant level as a means to avoid or substantially reduce the cumulative impact of a project. (See Section D.)

1. *Thresholds of Significance*

A lead agency has the discretion to select and develop appropriate thresholds of significance to analyze a project's environmental impacts, or rely on thresholds developed by other agencies that it deems applies to the project. The CEQA Guidelines define a "threshold of significance" as "an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant." (CEQA Guidelines, § 15064.7, subd. (a).) The selection and development of thresholds requires a lead agency to "make a policy decision in distinguishing between substantial and insubstantial adverse environmental impacts based, in part, on the setting." (*North Coast Rivers Alliance v. Marin Municipal Water Dist. Bd. of Directors* (2013) 216 Cal.App.4th 614, 625.") The California Supreme Court further explained that "[a]lthough lead agencies have discretion in designing an EIR, the exercise of that discretion must be 'based to the extent possible on scientific and factual data.'" (*Cleveland National Forest Foundation v. San Diego Assn. of Governments*, *supra*, 3 Cal.5th at p. 515, quoting CEQA Guidelines, § 15064, subd. (b).)

The following discussion includes *some* of the methods that a lead agency may use in selecting the appropriate threshold below which the lead agency may find an impact is less than significant. The lead agency has the discretion to select the appropriate significance threshold, which may differ among projects depending on the project design, location, and other circumstances. Each case must be analyzed in light of its own facts and circumstances. The discussion below merely provides information on some of the significance thresholds that are currently in practice and have been identified by the courts as acceptable methods.

In the context of analyzing greenhouse gas emissions, the threshold of significance will assist the lead agency in determining whether a project's incremental contribution of emissions is cumulatively considerable in light of the global issue. A lead agency should be able to

conclude that an impact on climate change is less than significant if, based on substantial evidence, the lead agency determines that a project's incremental contribution is not cumulatively considerable. That said, a lead agency must evaluate any substantial evidence supporting a fair argument that, despite compliance with thresholds, the project's impacts are nevertheless significant. (*Protect the Historic Amador Waterways*, *supra*, 116 Cal.App.4th at pp. 1108-1109.)

A lead agency may choose to review a project's environmental impacts using more than one threshold of significance. (*Cleveland National Forest Foundation v. San Diego Assn. of Governments*, *supra*, 3 Cal.5th at p. 507 [EIR proposed three different significance thresholds and applied each to three different years].) Regardless of which threshold or combination of thresholds the lead agency uses, the agency must support its analysis and significance determination with substantial evidence. (CEQA Guidelines, § 15064.7.)

a. Significance Threshold Based on Efficiency

A significance threshold that is based on an efficiency metric—rather than an absolute number—would allow lead agencies to compare projects of various types, sizes, and locations equally, and determine whether a project is consistent with the State's reduction goals. For example, an efficiency metric for a residential project can be expressed on a per-capita basis, and a metric for an office project can be expressed on a per-employee basis. A lead agency may use a threshold that another agency has developed or the lead agency may develop its own. In the context of analyzing greenhouse gas emissions, the California Supreme Court has explained that an efficiency metric is an appropriate method to measure impacts that are global, such as greenhouse gas emissions:

> . . . the global scope of climate change and the fact that carbon dioxide and other greenhouse gases, once released into the atmosphere, are not contained in the local area of their emission means that the impacts to be evaluated are also global rather than local. For many air pollutants, the significance of their environmental impact may depend greatly on *where* they are emitted; for greenhouse gases, it does not. For projects, like the present residential and commercial development, which are designed to accommodate long-term growth in California's population and economic activity, this fact gives rise to an argument that a certain amount of greenhouse gas emissions is as inevitable as population growth. Under this view, a significance criterion framed in terms of efficiency is superior to a simple numerical threshold because CEQA is not intended as a population control measure.

(*Center for Biological Diversity v. Department of Fish & Wildlife*, 62 Cal.4th at pp. 219-220.)

A lead agency relying on an efficiency metric derived from statewide data should be careful to support with substantial evidence how the selected metric appropriately applies to the lead agency's impacts analysis for a particular project. Additionally, if relying on consistency with state plans as a basis for determining significance, a lead agency should align its quantitative metrics and locally-appropriate emission reductions goals with the methodology used to derive CARB's statewide per capita targets of no more than six metric tons CO_2e per capita by 2030 and no more than two metric tons CO_2e per capita by 2050. (CARB, 2017 Scoping Plan, pp. 98-99.)

b. Compliance with State Goals and Percentage Reduction from BAU Emissions

Pursuant to the California Supreme Court's decision in *Center for Biological Diversity v. Department of Fish & Wildlife*, *supra*, 62 Cal.4th 204, a lead agency may use compliance with state goals as a threshold. The most recently codified goal is contained in SB 32 (2016, Pavley), which codified the 2030 emissions reduction goal of Executive Order B-30-15 by requiring a reduction goal of 40 percent below 1990 levels by 2030. A lead agency may also choose to advance towards the State's goal of carbon neutrality by 2045 established by Executive Order B-55-18. This goal was established following the completion of the 2017 Scoping Plan and reflects the global scientific community's consensus of what is needed to avoid the worst impacts of climate change and maintain a climate of less than 2 degrees Celsius above the 20th century average. For a complete list of state goals, please see pages 3-4 of this document.

Agencies may also look to the state's percentage goal of reducing emissions below the "business as usual" (BAU) scenario discussed in CARB's Scoping Plan as the basis for a project's significance threshold. (*Center for Biological Diversity v. Department of Fish & Wildlife*, *supra*, 62 Cal.4th at p. 216.) The BAU scenario represents the forecast of greenhouse gas emission levels in the absence of conservation or regulatory efforts beyond what was in place when the forecast was made. (CARB, 2017 Scoping Plan, p. 22.) If a lead agency relies on the BAU scenario, the agency must be careful to support with substantial evidence the identified project-level percentage reduction of greenhouse gas emissions compared to BAU with achieving the statewide goal of percentage reduction from BAU emissions. The lead agency should rely on local or regional inventories of emissions that include land uses relevant to the project at hand. Notably, correlating the project-level percentage reduction with the statewide goals may be difficult to achieve in practice and thus this particular threshold may not be readily implemented.

c. Consistency with Relevant Regulations, Plans, Policies, and Regulatory Programs

Relevant regulations, plans, and policies adopted to reduce greenhouse gas emissions can assist in establishing a significance threshold. "Such requirements must be adopted by the

relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse gas emissions." (CEQA Guidelines, § 15064.4, subd. (b).) In *Center for Biological Diversity v. Department of Fish & Wildlife, supra,* the court noted that "[a] significance analysis based on compliance with such statewide regulations, however, only goes to impacts within the area governed by the regulations. That a project is designed to meet high building efficiency and conservation standards, for example, does not establish that its greenhouse gas emissions from transportation activities lack significant impacts." (*Id.* at p. 229.)

A lead agency may also consider project compliance with community-scale climate action plans or other greenhouse gas emissions reductions plans prepared pursuant to CEQA Guidelines section 15183.5. (See *Center for Biological Diversity v. Department of Fish & Wildlife*, *supra*, 62 Cal.4th at 230 [discussing climate action plans or greenhouse gas emissions reduction plans as appropriate means to analyze a project's greenhouse gas impact].) As discussed briefly in Section III.D. below, a lead agency may be able to streamline the environmental analysis if the proposed project is consistent with a greenhouse gas emissions reduction plan that meets the requirements of CEQA Guidelines section 15183.5.

d. Absolute Numerical/Quantitative Threshold

A lead agency may establish a numerical threshold of significance for greenhouse gas emissions expressed as an absolute number, or use an existing threshold that another agency has developed that it deems applies to a project, such as a local air district. (CEQA Guidelines, § 15064.4, subd. (b)(2); *Center for Biological Diversity v. Department of Fish & Wildlife*, *supra*, 62 Cal.4th at p. 230 ["a lead agency may rely on existing numerical thresholds of significance for greenhouse gas emissions, though . . . use of such thresholds is not required."].) The numerical threshold would be the emissions level below which a project's incremental contribution to global climate change would be less than "cumulatively considerable." A lead agency may establish a threshold on a case-by-case basis, or apply a general-use threshold for different land use types and projects that the lead agency adopted pursuant to Guidelines section 15064.7, subdivision (b). (See CARB, 2017 Scoping Plan, p. 102 ["[l]ead agencies have the discretion to develop evidence-based numeric thresholds (mass emissions, per capita, or per service population) consistent with this Scoping Plan, the State's long-term greenhouse gas goals, and climate change science."].) A quantitative threshold should be based on compliance with statewide emission reductions targets, and the lead agency would need to ensure that the quantitative project-level threshold was properly correlated to statewide targets.

2. *Timeframe for the Analysis of Impacts*

The CEQA Guidelines acknowledge lead agency discretion in establishing the timeframe for the analysis of project impacts that is appropriate for the proposed project. (CEQA Guidelines, § 15064.4, subd. (b).) CEQA does not prescribe a particular horizon year or years. Lead agencies, however, must consider a project's direct and indirect significant impacts on the environment, "giving due consideration to both the short-term and long-term effects." (CEQA Guidelines, § 15126.2, subd. (a).) The Legislature also declared that state policy requires "governmental agencies at all levels to consider . . . long-term benefits and costs, in addition to short-term benefits and costs[.]" (Pub. Resources Code, § 21001, subd. (d).) Thus, a lead agency should be careful to select an appropriate timeframe for the analysis to adequately addresses all potentially significant short-term and long-term effects.

For some projects, a lead agency may determine that a timeframe of a few years is appropriate for the impacts analysis, such as for a project with only short-term impacts. But projects with a longer-term implementation period, such as a long-range planning document, will likely require a longer time horizon for the impacts analysis. For such projects, it would be appropriate for lead agencies to analyze the project's greenhouse gas impacts for horizon years that are consistent with existing state policy and goals for greenhouse gas emission reductions. In analyzing a project's impacts, a lead agency may also consider multiple horizon years.

In the past, lead agencies generally have analyzed project consistency with AB 32, which requires statewide greenhouse gas reductions to 1990 levels by 2020. But for longer-term projects, a 2020 time horizon will not be adequate in the near future because we will soon surpass that year. The California Supreme Court explained that for EIRs using a climate goal-consistency approach, "year 2020 goals will become a less definitive guide, especially for long term projects that will not begin operations for several years." Rather, these EIRs "may in the near future need to consider the project's effects on meeting longer term emissions reduction targets." (*Center for Biological Diversity v. Department of Fish & Wildlife*, *supra*, 62 Cal.4th at p. 223.) The appropriate scope and timeframe for a lead agency's greenhouse impacts analysis will likely evolve and shift over time. Thus, in developing and preparing evidence-based impact analyses, lead agencies "must ensure that CEQA analysis stays in step with evolving scientific knowledge and state regulatory schemes." (*Cleveland National Forest Foundation v. San Diego Assn. of Governments*, *supra*, 3 Cal.5th at p. 519.)

C. Mitigate Impacts

- The lead agency must impose all mitigation measures that are necessary to reduce greenhouse gas emissions to a less-than-significant level. CEQA does not require mitigation measures that are infeasible for specific legal, economic, technological, or other reasons.

- Mitigation measures will vary with the type of project being contemplated, but may include alternative project designs or locations that conserve energy and water, measures that reduce vehicle miles traveled by fossil-fueled vehicles, measures that contribute to established regional or programmatic mitigation strategies, and measures that sequester carbon to offset the emissions from the project**.**

- In some cases, greenhouse gas emissions reduction measures will not be feasible or may not be effective at a project level. Rather, it may be more appropriate and more effective to develop and adopt program-level plans, policies and measures that will result in a reduction of greenhouse gas emissions on a community or regional level. Further, it may be more effective to incorporate greenhouse gas-reducing elements into the proposed project, such as using renewable non-emitting energy generated on-site and siting a project near transit.

- If there are not sufficient mitigation measures that the lead agency determines are feasible to achieve a less-than-significant level, the lead agency should adopt those measures that are feasible, and adopt a Statement of Overriding Considerations that explains why further mitigation is not feasible. A Statement of Overriding Considerations must be prepared when the lead agency has determined to approve a project for which certain impacts are unavoidable. These statements should explain the reasons why the impacts cannot be adequately mitigated in sufficient detail and discuss the project benefits that outweigh the unavoidable impacts. This discussion must be based on specific facts, so as not to be conclusory.

- Lead agencies may want to consider the loading order of mitigation measures to reduce or avoid greenhouse gas emissions that may be appropriate for a proposed project. OPR notes, however, that lead agencies have the discretion to determine the precise method of mitigation for their projects. (CEQA Guidelines, § 15126.4, subd. (a)(1)(B).) Additionally, the effectiveness and feasibility of any proposed mitigation measure is within the lead agency's discretion based on the substantial evidence before it.

  As a first level of mitigation, lead agencies may determine it is appropriate to focus on all reasonable and feasible on-site strategies to reduce or avoid greenhouse gas emissions such as on-site design features. As the Scoping Plan recommends, lead agencies should "prioritize on-site design features that reduce emissions, especially from VMT, and direct investments in GHG reductions within the project's region that contribute potential air quality, health, and economic co-benefits locally." (CARB, 2017 Scoping Plan, p. 102; see also, OPR's General Plan Guidelines.) Additionally, there may be practical reasons to prefer on-site mitigation. There may be

circumstances in which requiring on-site mitigation may result in various co-benefits for the project and local community, and that monitoring the implementation of such measures may be easier.

Next, if the project requires further mitigation, lead agencies may consider off-site measures that are additional to on-site measures. A lead agency has the discretion to select off-site mitigation measures that are based locally, regionally, or in-state over investments in out-of-state or international mitigation measures. As with on-site mitigation measures, there may be practical reasons related to prefer local off-site measures over measures farther afield. Examples of off-site mitigation could include funding a local or regional off-site greenhouse gas mitigation project or purchasing verifiable carbon credits. CEQA does not prohibit off-site mitigation measures, but lead agencies must support with substantial evidence in the record their determination that mitigation will be effective and fully enforceable. (CEQA Guidelines, § 15126.4.) To do so, lead agencies may need to require more stringent protocols to verify the effective and enforceability of off-site mitigation measures. (*Id*., §§ 15126.4, 15364.)

D. Streamlining Greenhouse Gas Analyses Using Greenhouse Gas Emissions Reduction Plans

The Legislature has made it clear that lead agencies should tier or streamline their environmental documents whenever feasible, specifically stating that tiering "will promote construction of needed housing and other development projects" by streamlining regulatory procedures and avoiding repetitive analyses. (Pub. Resources Code, § 21093.) The Legislature's declaration for tiering or streamlining is applicable to greenhouse gas emissions analyses because emissions resulting from individual projects may be best analyzed and mitigated at a programmatic level. To streamline the environmental analysis, a lead agency may consider preparation of a greenhouse gas emission reduction plan, such as a climate action plan, that is compliant with CEQA Guidelines section 15183.5. Later project-specific environmental documents may tier from and/or incorporate by reference the existing programmatic review so long as the plan meets the requirements in section 15183.5. (CEQA Guidelines, 15183.5, subd. (a); *Center for Biological Diversity v. Department of Fish & Wildlife*, *supra*, 62 Cal.4th at p. 230.) More detailed information and guidance on greenhouse gas emission reduction plans is contained in Chapter 8, Climate Change, of OPR's General Plan Guidelines.

IV. GREENHOUSE GAS EMISSIONS TOOLS

Quantification would assist lead agencies in preparing an adequate analysis of greenhouse emissions using currently available data and tools. Quantification is possible using currently available tools for most, if not all, projects.

The following includes a list of some of the more useful climate change tools and resources that a lead agency can use to quantify greenhouse emissions and determine the significance of project impacts to climate change. Not every tool or resource will be appropriate for every project.

- **General Plan Guidelines:** State of California developed guidance on how to develop a general plan, and contains specific information on developing a qualified climate action plan (see Chapter 8, Climate Change), available at http://www.opr.ca.gov/planning/general-plan/guidelines.html

- **Cool California website**: State of California supported online resource that hosts links to various tools and case studies, available at https://coolcalifornia.arb.ca.gov/. This website also includes the Climate Action Map Portal (CAPMap), an open data tool provided by the California Air Resources Board to help local governments learn more about other climate action plans and climate change policies being implemented across the state.

- **California State Energy Efficiency Collaborative**: Outlines the steps to reduce greenhouse gas emissions and includes templates supported by the State of California, available at http://californiaseec.org/

- **California Air Pollution Control Officers Association (CAPCOA) website**: Outlines examples of policies and programs to reduce greenhouse gas emissions, available at http://www.capcoa.org/. Also see CAPCOA's white paper, "Quantifying Greenhouse Gas Mitigation Measures," August 2010, available at http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf.

- **California Emissions Estimator Model (CalEEMod)**: Widely used for project-level greenhouse gas emissions quantification, available at http://www.caleemod.com

- **CARB's Emission Factors (EMFAC) Web Database**: Database containing emissions and emission rates data from motor vehicles, available at https://www.arb.ca.gov/emfac/

Appendix A: Analyzing Greenhouse Gas Emissions from Transportation

To streamline the analysis of transportation-generated greenhouse gas (GHG) emissions, lead agencies may use the same method or methodology used to determine the transportation impacts associated with a project's vehicle miles traveled (VMT). However, lead agencies have the discretion to use a model or methodology to analyze greenhouse gas emissions that is appropriate for the particular project. (*Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 62 Cal.4th 204, 228.)

The following sections provide some guidance summarized from OPR's Technical Advisory on Evaluating Transportation Impacts in CEQA, which may be useful to lead agencies when determining the greenhouse gas impacts associated with transportation. Lead agencies may refer to the technical advisory on transportation impacts for more detailed information on assessing vehicle travel and selecting an appropriate threshold. That technical advisory is non-regulatory and lead agencies may use the advisory at their discretion.

This appendix is a ***discussion draft***. OPR invites the public to provide comments on this document.

Avoid truncating or discounting vehicle trips. CEQA requires environmental analyses to reflect a "good faith effort at full disclosure." (CEQA Guidelines, § 15151.) Thus, where methodologies exist that can estimate the full extent of vehicle travel from a project and associated greenhouse gas emissions, the lead agency should apply them to do so. Where vehicle miles traveled impacts will grow over time, analyses should consider both a project's short- and long-term effects associated with vehicle miles traveled and greenhouse gas emissions. Lead agencies should also consider all impacts and not truncate analyses because of jurisdictional or other boundaries. For additional details, see the "Consideration for All Projects" section of OPR's technical advisory.

Approach for Residential and Office Projects. Tour- and trip-based approaches[5] are sound methods for assessing both vehicle miles traveled and greenhouse gas emissions from residential/office projects. These approaches are also the most straightforward methods for assessing reductions in vehicle miles traveled and greenhouse gas emissions from mitigation measures. For additional details, see the "Technical Considerations in Assessing Vehicle Miles Traveled" section of OPR's technical advisory.

[5] See OPR's Technical Advisory on Evaluating Transportation Impacts in CEQA, "Appendix 1: Considerations About Which VMT to Count", for a description of these approaches.

Approach for Retail and Transportation Projects. Generally, lead agencies should analyze the effects of a retail or transportation project by assessing the greenhouse gas emissions resulting from the change in total vehicle miles traveled[6] because retail projects typically re-route travel from other retail destinations. A retail project might lead to increases or decreases in vehicle miles traveled and associated greenhouse gases, depending on previously existing retail travel patterns. For additional details, see the "Technical Considerations in Assessing Vehicle Miles Traveled" and "Considering the Effects of Transportation Projects on Vehicle Travel" sections and Appendix 2 of OPR's technical advisory.

Land Use Plans. For land use plans, lead agencies should analyze the associated vehicle miles traveled and greenhouse gas emissions across the full area over which the plan may substantively affect travel patterns. This may include looking beyond the boundary of the plan or jurisdiction's geography. Lead agencies should avoid under-counting the vehicle miles traveled and emissions associated with travel between the project and destinations that are located outside of the boundary of the plan or the jurisdiction's geography. Lead agencies should count, in full, a project's vehicle miles traveled and associated greenhouse gas emissions.

Analysis of specific plans may employ the same thresholds as the thresholds used for projects. A general plan, area plan, or community plan may have a significant greenhouse gas emissions impact if the proposed new residential, office, or retail land uses in the plan would exceed, in the aggregate, the respective vehicle miles traveled threshold recommended in OPR's technical advisory.

Where the lead agency tiers from a general plan environmental impact report pursuant to CEQA Guidelines sections 15152 and 15166, the lead agency generally focuses on the environmental impacts that are specific to the later project and were not analyzed as significant impacts in the prior EIR. (Pub. Resources Code, § 21068.5; Guidelines, § 15152, subd. (a).) Thus, in analyzing the later project, the lead agency should focus on the greenhouse gas impacts that were not adequately addressed in the prior environmental impact report. In the tiered document, the lead agency should continue to apply the thresholds recommended above.

Using Vehicle Miles Traveled Data to Determine Greenhouse Gas Emissions. A lead agency may calculate transportation-generated greenhouse gas emissions from a project's vehicle miles traveled either by using a CO_2 per vehicle miles traveled multiplier, or by using methods that factor in variations in vehicle speed (such as used in the Emission Factors (EMFAC) model).

[6] See OPR's Technical Advisory on Evaluating Transportation Impacts in CEQA, "Appendix 1: Considerations About Which VMT to Count" and the "Assessing Change in Total VMT" section, for a description of this approach.

Appendix B: Potential Streamlining of the Greenhouse Gas Emissions Analysis for Transportation-Efficient Projects and Projects that Reduce Vehicle Miles Traveled

This appendix is a ***discussion draft*** of one potential pathway to streamline the project-level CEQA analyses for operational impacts associated with greenhouse gas emissions and vehicle miles traveled. This discussion draft appendix does not address potential streamlining for construction-related impacts. In addition to the main body of the discussion draft advisory, OPR invites the public to provide comments on this discussion draft appendix.

Most greenhouse gas (GHG) emissions that result from land use development in California come from transportation and building energy use.[7] Building in a more transportation-efficient manner, so long as it is in accordance with best practices and building standards focused on building energy conservation, leads to overall energy savings and minimization of greenhouse gas emissions.

A path to streamline the transportation and greenhouse gas analyses may be possible for some projects, depending on the project-specific circumstances. Projects that produce low vehicle miles traveled (VMT) can be expected to have low transportation greenhouse gas emissions. Research shows that low-VMT land uses also tend to produce low levels of emissions associated with building energy.[8] Further, in California, building energy efficiency standards and greenhouse gas emissions are moving toward carbon neutrality.[9] Finally, appliance efficiency programs such as the United States Environmental Protection Agency's Energy Star program can also help reduce energy use.

Therefore, a land use development project that produces low vehicle miles traveled, achieves applicable building energy efficiency standards, uses no natural gas or other fossil fuels, and includes Energy Star appliances where available, may be able to demonstrate a less-than-significant greenhouse gas impact associated with project operation.

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[7] California Air Resources Board, California Greenhouse Gas Emissions Inventory, available at https://www.arb.ca.gov/cc/inventory/data/data.htm.

[8] See Kevin Fang and Jamey Volker (Mar. 2017) *Cutting Greenhouse Gas Emissions Is Only the Beginning: A Literature Review of the Co-Benefits of Reducing Vehicle Miles Traveled*, available at https://ncst.ucdavis.edu/wp-content/uploads/2017/03/NCST-VMT-Co-Benefits-White-Paper_Fang_March-2017.pdf; see also Reid Ewing and Fang Rong (2018) *The Impact of Urban Form on U.S. Residential Energy Use*.

[9] See, e.g., Title 24 of the California Code of Regulations, Executive Order B-55-18, and SB 100 (2018, de León).

Greenhouse Gas Emissions Associated with Transportation

California policy efforts to reduce transportation greenhouse gas emissions generally can be divided into three broad categories:

1. Addressing vehicle energy efficiency
2. Addressing carbon content of fuels
3. Addressing the amount of vehicle miles traveled

Land use development does not affect vehicle energy efficiency or the carbon content of fuels, but contributes to greenhouse gas emissions by adding vehicle travel or modifying vehicle travel patterns.

Pursuant to SB 743 (Steinberg, 2013), the CEQA Guidelines were amended to establish vehicle miles traveled as the metric of transportation impact statewide, replacing level of service (LOS). To provide technical assistance in implementing this change, OPR provides information that users can use at their discretion in its Technical Advisory on Evaluating Transportation Impacts in CEQA. This technical advisory includes non-regulatory recommended approaches and methods for using the vehicle miles traveled metric for various project types. A lead agency could use the recommended methods and thresholds in OPR's technical advisory on transportation to help correlate the assessment of both vehicle miles traveled and transportation-sector greenhouse gas emissions. The recommendations for thresholds in that technical advisory are based on state climate goals.

For example, to streamline the CEQA analyses of both transportation greenhouse gas emissions and transportation impacts using the vehicle miles traveled metric, a lead agency could consider the following when analyzing the operation of proposed land use development projects:

Residential. A residential project that would generate vehicle travel that is 15 or more percent below existing residential vehicle miles traveled per capita, measured against the region or city, may have a less-than-significant impact both for transportation and the greenhouse gas emissions associated with transportation.

Office. An office project that would generate vehicle travel that is 15 or more percent below existing office vehicle miles traveled per employee, measured against the region, may have a less-than-significant impact for both transportation and the greenhouse gas emissions associated with transportation.

Retail. A retail development that leads to a reduction in vehicle miles traveled may have a less-than-significant impact both for transportation and the greenhouse gas emissions associated with transportation.

These potential suggested thresholds are based on the recommended methodology for calculating vehicle miles traveled in OPR's Technical Advisory on Evaluating Transportation Impacts in CEQA. Because OPR's recommendations are non-binding and non-regulatory, a lead agency may use its discretion to undertake a different approach to analyzing transportation impacts. Accordingly, the potential suggested thresholds may not apply or be appropriate in those cases.

Greenhouse Gas Emissions Associated with Building Energy Use

The preceding section addressed greenhouse gas emissions from transportation associated with operation of a land use project. This section discusses greenhouse gas emissions associated with energy use associated with operation of project buildings.

Greenhouse gas emissions from buildings in California are generated mostly from the use of electricity and natural gas, mainly from space heating and cooling, water heating, use of lighting and electronics, and refrigeration. Title 24 of the California Code of Regulations, known as the California Building Standards Code or simply "Title 24," addresses the energy efficiency of buildings, while Title 20, known as the Appliance Efficiency Regulations, addresses the energy efficiency of federally and non-federally regulated appliances.

As stated earlier, in California, building energy efficiency standards and greenhouse gas emissions are moving toward carbon neutrality. Therefore, one can expect greater reductions in greenhouse gas emissions associated with electricity use in the future. Still, electricity use is likely to generate greenhouse gas emissions through approximately 2045, so it remains important to consider programs like the United States Environmental Protection Agency's Energy Star program, which certifies appliances that are particularly energy efficient. Meanwhile, appliances powered directly by natural gas or another fossil fuel would continue to emit greenhouse gas emissions.

In conclusion, a building designed to use electricity as its sole energy source (e.g., is not powered by natural gas), follows applicable Title 24 building standards codes, and uses only Energy Star-rated appliances for appliance types that are offered Energy Star ratings, may have a less-than-significant greenhouse gas impact with respect to energy use during building operations.

Greenhouse Gas Emissions Associated with Construction and Other Sources

In some situations, cumulative greenhouse gas emissions associated with construction from a land use development project may be orders of magnitude lower than the operational emissions from the project, simply because construction emissions are generally short term in duration compared to the project's overall lifetime. But due to differences in projects, it is difficult to make these conclusions in all cases. For example, some projects may have long construction periods (e.g., 20 years) and may result in a large amount of emissions that may be considered significant. Thus, while a lead agency may be able to streamline the greenhouse gas emissions analysis associated with a project's operational emissions, a lead agency should still carefully consider whether a project's construction emissions are cumulatively considerable.

Similarly, operational greenhouse gas emissions associated with water consumption and solid waste disposal are typically nominal in comparison to the operational emissions from transportation and building energy. However, a lead agency should consider whether there are unique circumstances associated with the project that would lead to significant emissions from water consumption and solid waste disposal.

Summary of Vehicle Miles Traveled and Greenhouse Gas Emissions Streamlining for Land Use Development Projects

In sum, a land use development consisting of residential, office, and/or retail, which meets the following criteria may have less-than-significant operational greenhouse emissions with respect to transportation and building energy:

1. Results in below threshold vehicle miles traveled, either without mitigation or after mitigation;
2. Uses only electricity (no natural gas or other fossil fuels), for energy in all buildings that constitute the project;
3. Uses Energy Star appliances for any appliance category where they are available; and
4. Is in alignment with applicable Title 24 building standards codes in effect at the time the project is constructed.

Transportation Projects

Generally, transportation projects affect greenhouse gas emissions mostly through their effect on vehicle miles traveled. Therefore, a transportation project that leads to a reduction in vehicle miles traveled, such as a transit or active transportation project, may be able to demonstrate a less-than-significant impact both for transportation and for the greenhouse gas emissions associated with project operations. Transit and active transportation projects

generally reduce vehicle miles traveled and greenhouse gas emissions from transportation operations.