

6 GREENHOUSE GAS EMISSIONS

6.1 INTRODUCTION

The California Environmental Quality Act (CEQA) requires that lead agencies consider the reasonably foreseeable adverse environmental effects of projects they are considering for approval. Greenhouse gas (GHG) emissions have the potential to adversely affect the environment because they contribute, on a cumulative basis, to global climate change. In turn, global climate change has the potential to result in rising sea levels, which can inundate low-lying areas; affect rain and snow fall, leading to changes in water supply; affect habitat, leading to adverse effects on biological and other resources. Thus, GHG emissions require consideration in CEQA documents.

Climate change is a global problem. GHGs are global pollutants, unlike CAPs and TACs, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about 1 day), GHGs have long atmospheric lifetimes (1 year to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Similarly, impacts of GHGs are also borne globally. The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; however, it is clear that the quantity is enormous, and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature, or to global, local, or micro climate. Therefore, from the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

Prominent GHGs of primary concern from land use development projects include carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). Other GHGs such as hydrofluorocarbons, chlorofluorocarbons, and sulfur hexafluoride are of less concern because construction and operational activities associated with land use development projects are not likely to generate substantial quantities of these GHGs.

Land use development projects typically include the following sources of GHG emissions:

- Construction activities resulting in exhaust emissions of GHGs from fuel combustion for mobile heavy-duty diesel- and gasoline-powered equipment, portable auxiliary equipment, material delivery trucks, and worker commuter trips;
- Motor vehicle trips generated by the particular land use (i.e. vehicles arriving and leaving the project site), including those by residents, shoppers, workers, and vendors;

- Onsite fuel combustion for space and water heating, landscape maintenance equipment, and fireplaces/stoves; and
- Offsite emissions at utility providers associated with the project's electricity and water demands.

Generally, the District believes that GHG emissions are best analyzed and mitigated at the program-level; however, until more program-level GHG analyses have been performed in Sacramento County, the District offers the guidance contained in this chapter for addressing the GHG emissions associated with individual development projects. Please refer to [Chapter 9, Program Level Analysis of Plans](#) for recommendations for assessing and mitigating GHG emissions-related impacts at the program-level.

The guidance presented in this chapter takes into consideration the following bodies of work produced by other agencies and organizations in the state:

- California Air Pollution Control Officers Association's (CAPCOA) white paper titled [CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act](#) (January 2008);
- California Air Resources Board's (ARB) [Climate Change Scoping Plan](#) (December 2008);
- ARB's [Preliminary Draft Staff Proposal: Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act](#) (October 2008);
- Governor's Office of Planning and Research's (OPR) technical advisory, [CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act Review](#) (June 2008);
- The California Natural Resources Agency's [CEQA Guidelines Amendments](#) (March 2010);
- California Air Pollution Control Officers Association's (CAPCOA) white paper titled [Model Policies for Greenhouse Gases in General Plans](#) (June 2009); and
- California Air Pollution Control Officers Association's (CAPCOA) [Quantifying Greenhouse Gas Mitigation Measures](#) (August 2010).

In November 2008, Governor Arnold Schwarzenegger issued [Executive Order S-13-08](#) to enhance the state's management of climate impacts from sea level rise, increased temperatures, shifting precipitation, and extreme weather events. The Executive Order directs the state agencies to request that the National Academy of Sciences convene an independent panel to complete the first California Sea Level Rise Assessment Report. The agencies involved in the project include the California Resources Agency; the Department of Water Resources; the California

Coastal Commission; the California Ocean Protection Council; California State Parks; and the California Energy Commission (CEC). The Executive Order directs OPR to provide state land-use planning guidance related to sea level rise and other climate change impacts. Therefore, the District recommends that lead agencies address the impacts of climate change on a proposed project and its ability to adapt to these changes in CEQA documents. It is anticipated that guidance on addressing this issue will be provided by the state agencies identified above and not the District. The District acknowledges that the warming trends associated with climate change in the Sacramento region are expected to result in more episodes of unhealthy levels of ground-level ozone that would adversely affect residents and workers of proposed projects. Nevertheless, the primary focus of this chapter is to provide guidance about evaluating whether the GHG emissions associated with a proposed project would be a cumulatively considerable contribution to global climate change.

EVOLVING REGULATORY SETTING

In September 2006, Governor Arnold Schwarzenegger signed [Assembly Bill \(AB\) 32](#), the California Global Warming Solutions Act of 2006. AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 also includes guidance to institute emission reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions. AB 32 demonstrates California's commitment to reducing the rate of GHG emissions and the state's associated contribution to climate change, without intent to limit population or economic growth.

CEQA requires lead agencies to identify the potentially significant effects on the environment of projects they intend to carry out or approve, and to mitigate significant effects whenever it is feasible to do so. Although AB 32 did not amend CEQA, it identifies the myriad environmental problems in California caused by global warming ([Health and Safety Code, Section 38501\(a\)](#)).

[Senate Bill \(SB\) 97](#), enacted in 2007, amended the CEQA statute to establish that GHG emissions and their effects are a prominent environmental issue that requires analysis under CEQA. This bill directed OPR to prepare, develop, and transmit to the California Natural Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA by July 1, 2009. The Natural Resources Agency was required to certify or adopt those guidelines by January 1, 2010. On April 13, 2009, OPR submitted to the Secretary for Natural Resources proposed amendments to the state CEQA Guidelines for GHG emissions, as required by SB 97. These proposed CEQA Guideline amendments provide guidance to lead agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. The Natural Resources Agency began the [formal rulemaking process](#) on July 3, 2009, for certifying and adopting the amendments, as required by SB 97. After going through a public review process, the Natural Resources Agency transmitted the adopted amendments and the entire

rulemaking file to the Office of Administrative Law (OAL) on December 31, 2009. On February 16, 2010, the Office of Administrative Law approved the amendments, and filed them with the Secretary of State for inclusion in the California Code of Regulations. The amendments became effective on March 18, 2010.

In June of 2008, OPR published a technical advisory, entitled “[CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act Review.](#)” OPR recommends that the lead agencies under CEQA make a good-faith effort, based on available information, to estimate the quantity of GHG emissions that would be generated by a proposed project, including the emissions associated with vehicular traffic, energy consumption, water usage, and construction activities, to determine whether the impacts have the potential to result in a project or cumulative impact and to mitigate the impacts where feasible. In that document, OPR acknowledged that “perhaps the most difficult part of the climate change analysis will be the determination of significance,” and noted that “OPR has asked the California Air Resources Board (ARB) technical staff to recommend a method for setting thresholds which will encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the state.” To date, ARB has not adopted any thresholds.

In October of 2008, ARB published its [Climate Change Proposed Scoping Plan \(Proposed Scoping Plan\)](#), which is the State’s plan to achieve GHG reductions in California required by AB 32. The *Proposed Scoping Plan* contains the main strategies California will implement to achieve a reduction of 169 million metric tons (MMT) of carbon dioxide equivalent (CO₂e), or approximately 30 percent from the state’s projected 2020 emission level of 596 MMT of CO₂e under a business-as-usual scenario (this is a reduction of 42 MMT CO₂e [approximately 10 percent] from 2002-2004 average emissions). The *Proposed Scoping Plan* also includes ARB-recommended GHG reductions for each emission sector of the state’s GHG inventory. The largest proposed GHG reductions are recommended from improving emission standards for light-duty vehicles (estimated reductions of 31.7 MMT CO₂e), implementation of the Low-Carbon Fuel Standard (15.0 MMT CO₂e, discussed below), energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO₂e), and a renewable portfolio standard for electricity production (21.3 MMT CO₂e). ARB has not yet determined what statewide reduction in GHG emissions should be achieved from changes in local government (municipal) operations; however, the *Proposed Scoping Plan* does state that land use planning and urban growth decisions will play an important role in the state’s GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions. ARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. The *Proposed Scoping Plan* was approved by the ARB on December 11, 2008.

In addition to the *Scoping Plan*, ARB has also released the [*Preliminary Draft Staff Proposal: Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act*](#) (*ARB Draft Staff Proposal*). The *ARB Draft Staff Proposal* includes potential interim performance standards for project types and emissions sources including construction, energy, water use, waste, transportation, and total mass GHG emissions. Specific thresholds and performance criteria for these categories have yet to be developed.

In addition, SB 375, signed in September 2008, aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS), which will prescribe land use allocation in that MPO's Regional Transportation Plan (RTP). Please refer to [Chapter 9](#) for further detail on SB 375.

6.2 ANALYSIS EXPECTATIONS

The District recommends that CEQA analyses addressing the potential impacts of project-generated GHG emissions include the following:

- A summary of the current state of the science with respect to GHGs and climate change;
- A description of the existing environmental conditions or setting, without the project, which constitutes the baseline physical conditions for determining the project's impact;
- A discussion of the existing regulatory environment pertaining to GHGs;
- Identification of the thresholds of significance applicable to the proposed project. When adopting thresholds of significance, a lead agency may consider thresholds of significance adopted or recommended by other lead agencies, or adopt its own thresholds, provided the decision is supported by substantial evidence;
- A discussion of the GHG emission sources associated with the project's construction and operational activities;
- Identification of the earliest year in which operational emissions of GHGs are anticipated to commence;
- A quantification of the finite mass emissions of GHGs that would be generated by project construction, and the input parameters and assumptions used to estimate these values;
- A quantification of the annual mass emissions of GHGs that would be generated by project operations, and the input parameters and assumptions used to estimate these values;

- A discussion of whether project construction- and operations-related GHG emissions would exceed the established significance threshold and the resulting determination of whether the construction and operational GHG emissions, without mitigation, would represent a cumulatively considerable contribution to the significant cumulative impact; and
- A discussion of feasible construction and operational mitigation necessary to reduce impacts and make a determination whether the mitigation would be sufficient to reduce the project's GHG contribution to the significant cumulative impact to a less-than-considerable level.

6.3 METHODOLOGIES

The evaluation of GHG emissions pertains to the following questions regarding “Greenhouse Gas Emissions” from the Environmental Checklist Form ([Appendix G](#)) of the State CEQA Guidelines:

- VII.a. Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?
- VII.b. Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs?

OPR's amendments to the State CEQA Guidelines indicate that a lead agency should make a good faith effort, based on available information, to describe, calculate, or estimate the amount of GHG emissions resulting from a project. The guidelines give the lead agency the discretion to select the most appropriate tools based on substantial evidence. The District's recommendations on appropriate methodology and tools for analyzing GHG emissions are provided below.

6.3.1 ASSESSING MASS EMISSIONS

LAND USE DEVELOPMENT PROJECTS

Screening

The District has not developed screening levels for GHG emissions from projects in Sacramento County. The District assumes that projects described in CEQA's categorical and statutory exemption provisions (Articles [18](#) and [19](#) of the California Code of Regulations, Title 14) would not interfere with achieving emission reductions from new projects subject to CEQA. The District also assumes that GHG emissions from residential and commercial projects that are described in the categorical exemption language appear to be relatively small from a GHG perspective and may be considered less-than-cumulatively considerable.

Quantification of GHG Emissions

CEQA is a public disclosure law that requires lead 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. For proposed projects that do not meet the requirements of a categorical or statutory exemption, the District recommends that lead agencies should quantify the GHG emissions anticipated to be generated by the project. Direct and indirect emissions of GHGs from the project, which includes construction emissions, area- and mobile-source emissions, and indirect emissions from in-state energy production and water consumption (energy for conveyance, treatment, distribution, and wastewater treatment), should be quantified and disclosed in the CEQA document. This is in accordance with the OPR's [Technical Advisory on CEQA and Climate Change](#) which states that "Lead agencies should make a good-faith effort, based on available information, to calculate, model, or estimate the amount of CO₂ and other GHG emissions from a project, including the emissions associated with vehicular traffic, energy consumption, water usage and construction activities".

NOTE: Until February 2011, the District recommended the use of the Urban Land Use Emissions Model (URBEMIS) for estimating emissions from land use development projects. In February 2011, the South Coast Air Quality Management District released a new analysis tool, the California Emissions Estimator Model ([CalEEMod](#)) that is capable of calculating both criteria and GHG emissions. The District will accept both URBEMIS and CalEEMod analyses for CEQA purposes.

Construction Emissions

District-recommended methodologies for quantifying construction GHGs include using the [Urban Land Use Emissions Model](#) (URBEMIS) for proposed land use development projects and the [Roadway Construction Emissions Model](#) for proposed projects that are linear in nature.

When possible, the quantification of GHG emissions associated with the construction of land use development projects should be performed using the most recent version of URBEMIS. Please note that sources of construction-related GHGs only include exhaust, for which the lead agency can follow the same detailed guidance as described in [Chapter 3, Construction-Generated Criteria Air Pollutant and Precursor Emissions](#) for criteria air pollutants and precursors. It should be noted that URBEMIS gives the modeled emissions output in units of English tons. The lead agency should convert the URBEMIS output to metric tons by multiplying by 0.91. The URBEMIS output for construction-related GHG emissions should be disclosed in the CEQA document, treated entirely as a net increase in emissions.

The construction module in URBEMIS is recommended to quantify GHG emissions from construction of land use development projects. However, for linear construction projects such construction of a new roadway, road widening, roadway overpass, levees, or pipelines the District recommends the use of the most recent version of the Roadway Construction Emissions Model. The Roadway Construction Emissions Model is a spreadsheet-based model able to use basic project information (e.g., total construction months, project type, total project area) to

estimate a construction schedule and quantify GHG emissions from heavy-duty construction equipment, haul trucks, and worker commute trips associated with linear construction projects. Lead agencies should refer to [Chapter 3](#) and the [Example Construction Analyses](#) for detailed guidance on using the Roadway Construction Emissions Model. The Roadway Construction Emissions Model gives the modeled emissions output in tons per construction project. Lead agencies should convert the URBEMIS and Roadway Construction Emissions Model outputs from English tons to metric tons by multiplying by 0.91.

Operational Emissions

Direct Emissions

Direct emissions from area- and mobile-sources associated with the operation of land use development projects should be estimated using the most recent version of URBEMIS and in accordance with the [URBEMIS User's Guide](#) and the program's help menu. The District generally recommends using the default values in URBEMIS if detailed information about the project is not known at the time of analysis. Please note that sources of operational-related GHGs do not include all the operational categories discussed in [Chapter 4, Operational Criteria Air Pollutant and Precursor Emissions](#) (e.g., Road Dust); however, the lead agency can follow the same detailed guidance as described in Chapter 4 for CAPs and precursors for quantifying GHGs. Again, the lead agency should convert the URBEMIS output from English tons to metric tons by multiplying by 0.91.

Indirect Emissions

The incremental increase in energy production and water consumption associated with operational-related activities should be accounted for in the project's total GHG emissions. URBEMIS does not provide modeled emissions from indirect sources of emissions, such as those emissions that would occur off-site at utility providers associated with the project's energy and water demands. The District recommends the use of the [California Climate Action Registry \(CCAR\) General Reporting Protocol \(GRP\)](#) for this purpose. The GRP contains emission factors for CO₂, CH₄, and N₂O for electricity generation. Most of the State of California is served by the "CALI" region grid.

The lead agency should estimate the electricity consumption for the project's proposed land uses during the project buildout year. If project-specific information is not available, data from the California Energy Commission ([CEC](#)) for electrical demand per household or per square foot of commercial space may be used to estimate the project's electricity consumption. Chapter 5 of the CEC report includes data for the Sacramento Municipal Utility District that can be used to develop the estimates.

Similarly, the lead agency should obtain project-specific anticipated water consumption data. Water consumption data based on [California Green Building Standards Code](#) may be used if project-specific information is not available. However, the District recommends that the lead agency obtain project-specific water needs whenever possible. CEC routinely reports data on water-related

energy use in California, which accounts for the electricity consumption associated with the conveyance, storage, treatment, distribution, wastewater collection, treatment, and discharge sectors of the water use cycle. The lead agency should use the data reported for northern California for the projects within Sacramento County. Once the level of electricity consumption related to water use is estimated, the emission factors from the GRP should be used to quantify associated GHG emissions as described above.

Lead agencies should report the project's total GHG emissions in units of metric tons CO₂e in the CEQA document. The finite amount of a project's construction-related GHG emissions and the operational GHG emissions generated per year over the lifetime of the project should be disclosed separately. In some cases, lead agencies may decide to amortize the level of short-term construction emissions over the expected (long-term) operational life of a project. Operational life of a building can be estimated to be 40 years for new residential and 25 years for conventional commercial. These estimates are derived from the State of California [Executive Order D-16-00](#) and US Green Building Council's October 2003 report on [The Costs and Financial Benefits of Green Buildings](#). The US Green Building Council's report provides longer operational life estimates for LEED certified buildings.

Metrics for Evaluating Land Use Development Projects

To assess whether the incremental quantity of GHG emissions generated by a project is cumulatively considerable, a context for comparison must first be established. Though the context of the impact is global, comparing the magnitude of project-generated GHG emissions to the global inventory, or even to the state inventory, can minimize the extent of the impact or cause the impact to appear trivial, when, in fact, if the existing condition is substantially adverse, the impact should be held to the strictest of scrutiny.

Therefore, it is critical that the adopted threshold convey information about a project's GHG emissions to the public and lead agency in an appropriate, meaningful, and consistent context. The metric should provide a useful means by which to compare one project to another and also evaluate whether a project is consistent with statewide goals.

AB 32 demonstrates California's commitment to reducing the rate of GHG emissions and the state's associated contribution to climate change, without intent to limit population or economic growth within the state. Thus, to achieve the goals of AB 32, which are tied to GHG emission rates of specific benchmark years (i.e., 1990), California would have to achieve a lower rate of emissions per unit of population and per unit of economic activity than it has now. Further, in order to accommodate future population and economic growth, the state would have to achieve an even lower rate of emissions per unit than was generated in 1990. The goal to achieve 1990 quantities of GHG emissions by 2020 means that this will need to be accomplished in light of 30 years of population and economic growth in place beyond 1990. Thus, future land use development projects that

would not encourage new development to achieve its fair share of reductions in GHG emissions would conflict with the spirit of the policy decisions contained in AB 32, thus impeding California's ability to comply with the mandate. Please refer to [Chapter 9](#) for detailed guidance on possible metrics for evaluating GHG emissions from land use development projects.

STATIONARY-SOURCE FACILITIES

A stationary source consists of a single emission source with an identified emission point, such as a stack, at a facility. Facilities can have multiple emission point sources located on-site and sometimes the facility as a whole is referred to as a "stationary source." Stationary sources are typically associated with industrial processes. Examples include boilers, heaters, flares, cement plants, and other types of combustion equipment.

AB 32 requires ARB to adopt regulations that require the monitoring and annual reporting of GHG emissions from the sources that "contribute the most to statewide emissions", and account for the GHG emissions from all electricity consumed in California, including transmission and distribution line losses from electricity generated within the state or "imported from outside the state." Pursuant to AB 32, ARB adopted the [Greenhouse Gas Mandatory Reporting Regulation](#) in December 2007. The regulations require certain stationary sources including but not limited to, cement plants, petroleum refineries, operators, retail providers and marketers involved in electric generation within California or the import or export of electricity across California borders, to comply with monitoring and reporting guidelines associated with their GHG emissions. The rule also applies to operators of other facilities in California that emit greater than or equal to 25,000 metric tons CO₂/year from stationary combustion sources.

Manual Estimation

ARB has published sector-specific [guidance](#) for estimating and reporting emissions to assist operators and facilitate successful and accurate GHG reporting. The District recommends that the methodology used to estimate stationary-source emissions be consistent with Appendices A through C of the ARB instruction guidance for operators.

GHG Emissions Reporting Tool

The [California GHG Emissions Reporting Tool](#) is a web-based annual reporting tool managed by ARB. The tool facilitates tracking and reporting of annual data required under the ARB Mandatory Reporting Regulation. It provides for the assignment of reporting personnel, set-up of source inventory information, and annual reporting of emissions and other data in a manner that directly addresses the requirements of the regulation. Additional elements of the same tool provide for tracking and certification of emission reports and data verification by third-party verifiers. Reporters subject to California's [Greenhouse Gas Mandatory Reporting Regulation](#) must submit their data to ARB using the online GHG

Reporting Tool. The Reporting Tool can be used to disclose a stationary source's GHG emissions in a CEQA document.

6.3.2 DETERMINING LEVEL OF SIGNIFICANCE

LAND USE DEVELOPMENT PROJECTS

As discussed in Section 6.3.1, AB 32 demonstrates California's commitment to reducing the rate of GHG emissions and the state's associated contribution to climate change, without intent to limit population or economic growth within the state. To meet AB 32 goals, California would need to generate less GHG emissions than current levels. The District recognizes, however, that for most projects there is no simple metric available to determine if a single project would substantially increase or decrease overall GHG emission levels.

The District recommends that thresholds of significance for GHG emissions should be related to AB 32's GHG reduction goals. For example, a possible threshold of significance could be to determine whether a project's emissions would substantially hinder the State's ability to attain the goals identified in AB 32 (i.e., reduction of statewide GHG emissions to 1990 levels by 2020; approximately a 30 percent reduction from projected 2020 emissions). Another possible threshold option could include determining whether the project is consistent with the State's strategy to achieve the 2020 GHG emissions limit, as outlined in ARB's AB 32 Scoping Plan. The District also reminds CEQA practitioners that a lead agency's conclusions be supported by substantial evidence pursuant to [CEQA Guidelines Section 15384](#) (search Title 14, CA Code of Regulations).

[CEQA Guidelines Section 15183.5](#) includes the provision for tiering and streamlining the analysis of GHG emissions in CEQA documents. Under this provision, lead agencies may analyze and mitigate the effects of greenhouse gas emissions at a programmatic level, such as in a general plan, a long range development plan, or a separate plan to reduce greenhouse gas emissions such as a Climate Action Plan developed by a local jurisdiction. Later project-specific CEQA documents may tier and/or incorporate by reference that existing programmatic review if the proposed project is consistent with the applicable regional or local plan that adequately addresses GHG emissions, and that that plan has been evaluated pursuant to CEQA and has a certified or approved environmental document. More guidance on program-level GHG emissions analysis is included in [Chapter 9](#).

Pursuant to CEQA Guidelines Sections [15064\(h\)\(3\)](#) and [15130\(d\)](#) (search Title 14, CA Code of Regulations), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project complies with the requirements in a previously adopted plan or mitigation program under specified circumstances. CEQA Guidelines Section [15183.5\(b\)\(2\)](#) provides additional detail regarding use of an adopted greenhouse gas emissions reduction plan with later projects.

The District recommends that lead agencies stay abreast of any efforts by OPR, the Natural Resources Agency or any other jurisdiction to establish thresholds of significance for GHGs that occur after the publication of the District’s CEQA Guide and the State’s CEQA Guidelines, as amended in 2010.

STATIONARY SOURCE FACILITIES

Stationary source GHGs should be evaluated in the context of the applicable regulatory environment that is coming into place under the mandate of AB 32, such as ARB’s AB 32 Scoping Plan. Over time, implementation of AB 32 will reduce or mitigate GHG emissions from industrial sources. Once such requirements are in place, they could become the performance standard for industrial projects for CEQA purposes.

6.4 MITIGATION

The State CEQA Guidelines [Section 15126.4\(c\)](#) (search Title 14, CA Code of Regulations) requires lead agencies to consider feasible means of mitigating greenhouse gas emissions that may include, but not be limited to:

1. Measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency’s decision which plan or program provides specific requirements that will avoid or substantially lessen the potential impacts of the project;
2. Reductions in emissions resulting from a project through implementation of project features, project design, or other measures, such as those described in CEQA Guidelines [Appendix F - Energy Conservation](#);
3. Off-site measures, including offsets, to mitigate a project’s emissions;
4. Measures that sequester greenhouse gases; and
5. In the case of the adoption of a plan, such as a general plan, long range development plan, or GHG reduction plan, mitigation may include the identification of specific measures that may be implemented on a project-by-project basis. Mitigation may also include the incorporation of specific measures or policies found in an adopted ordinance or regulation that reduces the cumulative effect of emissions.

GHG mitigation measures could also be included in a Climate Action Plan or similar plan-level document adopted by a lead agency.

The lead agency must impose all mitigation measures that are necessary to reduce GHG emissions to a less-than-cumulatively considerable level. CEQA does not require mitigation measures that are infeasible for specific legal, economic, technological, or other reasons. A lead agency is not responsible for wholly eliminating all GHG emissions from a project; the CEQA standard is to mitigate to a level that is “less than significant” or, in the case of cumulative impacts, less

than cumulatively considerable. For every GHG emission reduction measure included in a CEQA document, the District recommends that the text should be as detailed as possible and should clearly identify who is responsible for implementation, funding, monitoring, enforcement, and any required maintenance activities. The lead agency should also explain why the measure would be effective in reducing emissions and why each measure is considered to be feasible. In the case that GHG emission reduction measures relate directly or indirectly to policies in the local jurisdiction's General Plan, the District encourages the explanation of these relationships also be included.

If, after the identification of all feasible mitigation measures, a project is still deemed to have a cumulatively considerable contribution to a significant cumulative environmental impact, the lead agency can approve a project, but must adopt a Statement of Overriding Consideration to explain why further mitigation measures are not feasible, and why approval of a project with significant unavoidable impacts is warranted.

6.4.1 REDUCING MASS EMISSIONS FROM LAND USE DEVELOPMENT PROJECTS

When a lead agency does not have a previously approved community-wide GHG Reduction Plan or Climate Action Plan from which it could tier subsequent CEQA analyses for land use development projects that exceed the thresholds of significance for GHG emissions, the District recommends the project proponent develop a project-specific GHG Reduction Plan describing how the project would reduce GHG emissions generated during both the construction and the operational phases of the project.

The District provides [Recommended Measures](#) for Reducing GHG emissions from construction activities. These measures are best management practices and many are not easy to quantify GHG emission reductions.

The District's [Guide to Land Use Emissions Reductions](#) (District Guidance) provides a description of the most current feasible mitigation measures to reduce a project's operational criteria pollutant emissions. The District Guidance provides an appendix that consists of a [list of GHG emission reductions](#) that can be associated with the criteria pollutant mitigation measures. All of the measures in the District Guidance include information about the percent reduction achieved by each measure from the affected source type. These percent reductions have been substantiated through research identified by a comprehensive literature review. The District Guidance provides a variety of reduction measures for residential, commercial, and mixed-use projects. Lead agencies and project proponents can also research and develop additional measures, in consultation with the District, which have reductions that are both quantifiable and substantiated.

To assist in documenting, quantifying, and monitoring the mitigation measures selected by the project proponent, the District has prescribed that the selected GHG mitigation measures be explained in the context of a project-specific GHG Reduction Plan. The GHG Reduction Plan is a standalone document separate from

any other documents or plans required by CEQA or other laws, ordinances, or regulations. During the environmental review process, and before certification of the CEQA environmental document by the lead agency, the District independently endorses the GHG Reduction Plan with a letter. The endorsed GHG Reduction Plan should then be referenced in the CEQA document as a GHG mitigation measure, appended to the document, and referenced as a condition of approval by the lead agency.

NOTE: In August 2010, the California Air Pollution Control Officers Association (CAPCOA) released [Quantifying Greenhouse Gas Mitigation Measures](#), a document that provides technical justification of numerous GHG emissions mitigation measures. This CAPCOA document is a good resource for local governments developing program-level and plan-level mitigation plans. Mitigation measures are fully described and documented and example calculations are provided. Additionally, the mitigation measures in the CAPCOA document are incorporated into the South Coast Air Quality Management District's CalEEMod emissions analysis tool. The District recommends project proponents and local governments consult with the District regarding the appropriate selection of mitigation measures, either from the District's list of GHG mitigation measures in its [Guide to Land Use Emissions Reductions](#), or mitigation measures from the CAPCOA document and/or CalEEMod.

6.4.2 REDUCING EMISSIONS FROM STATIONARY SOURCES

Mitigations measures developed for reducing GHG emissions from stationary-source facilities should be developed on a case-by-case basis. Area- and mobile-source emissions could be mitigated in the same ways as land use development projects, as discussed in Section 6.4.1. Additional offsets could be implemented, including but not limited to the purchase of verified emission reduction credits, to ensure that a facility's GHG emissions are reduced to a less-than-cumulatively considerable level.