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 adversely affect the environment through contributing, on a cumulative basis, to global climate change. In turn, global climate change will increase sea levels, which can inundate low-lying areas; affect rain and snow fall, leading to changes in water supply; and increase temperatures, leading to adverse effects on habitats and 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, the effects of GHGs are also borne globally. The atmospheric concentration of GHGs determines the intensity of climate change, with current levels already leading to increases in global temperatures, sea level rise, severe weather, and other environmental impacts. The continued increase in atmospheric GHG concentrations will only worsen the severity and intensity of climate change, locking in perhaps irrevocable environmental changes. 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 (CO_2), methane (CH_4), and nitrous oxide (N_2O). 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 demand for electricity, water conveyance, and wastewater processing.

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, re-approved August 24, 2011);
- ARB's *First Update to the Climate Change Scoping Plan* (May 2014);
- 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;
- 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. OPR's website contains resources and links related to adaptation. Additional resources include the California Climate Change Portal, Safeguarding California, and Cal-Adapt. 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 will 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 will be responsible for making 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 and identification of feasible mitigation under CEQA. GHG was included in the CEQA Guidelines 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 will 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 thresholds.

In December 2008, ARB adopted its *Climate Change Scoping Plan* (*Scoping Plan*), which is the State's plan to achieve GHG reductions in California required by AB 32. The *Scoping Plan* 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 , implementation of the Low-Carbon Fuel Standard, energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems, and a renewable portfolio standard for electricity production. ARB has not determined what statewide reduction in GHG emissions shall be achieved from changes in local government (municipal) operations; however, the *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 *Scoping Plan* was re-approved by the ARB on August 24, 2011, after ARB updated its Functional Equivalent Document. ARB adopted the First Update to the Climate Change Scoping Plan on May 22, 2014. The update reports on the progress made towards meeting the 2020 GHG reduction goals; lays groundwork for longer term reduction goals; and discusses opportunities to leverage funds to drive additional GHG reductions.

In addition, SB 375, signed in September 2008, aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocations. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy (APS), which will prescribe land use allocations in that MPO's Regional Transportation Plan (RTP). On April 19, 2012, SACOG adopted its 2035 Metropolitan Transportation Plan and associated SCS to meet the requirements of SB 375. 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 (The Intergovernmental Panel on Climate Change and the U.S. Global Change Research Program provide good resources.);

- 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. The District provides recommended thresholds for agencies without adopted GHG reduction plans (climate action plans) or their own adopted thresholds;
- 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 annual and finite mass emissions of GHGs that will 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 will be generated by project operations, and the input parameters and assumptions used to estimate these values:
    - If comparing to the District's recommended operational threshold, the quantification should show emissions from the first fully operational year,
    - If demonstrating a 21.7% reduction consistent with the ARB Scoping Plan, the quantification should show emissions in 2020 as a No Action Taken scenario and emissions in 2020 including all state measures and project-specific mitigation measures;
- A discussion of whether project construction- and operations-related GHG emissions will exceed the established significance threshold and the resulting determination of whether the construction and operational GHG emissions, without mitigation, will 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 will 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. Will the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

VII.b. Will the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs?

The State CEQA Guidelines indicate that a lead agency shall 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 assumes that projects described in CEQA's categorical and statutory exemption provisions (Articles 18 and 19 of the California Code of Regulations, Title 14) will 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.

CEQA Guidelines Section 15183.5 (search Title 14, CA Code of Regulations) 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 GHG emissions at a programmatic level, such as in a general plan, a long range development plan, or a separate plan to reduce GHG emissions such as a Climate Action Plan developed by a local jurisdiction or a sustainable communities strategy developed by the metropolitan planning organization. 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 GHG emissions reduction plan with later projects.

The District has developed screening levels to help lead agencies analyze operational GHG emissions from projects in Sacramento County. The GHG Operational Screening Levels table represents the size of development by land use type at which the District's operational GHG emissions thresholds of significance would not be exceeded. Therefore, emissions from the operation of projects that are below the screening levels presented in the table 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; cannot show consistency with the jurisdiction's adopted GHG reduction plan (if applicable); or exceed the screening levels in the GHG Operational Screening Levels table, the District recommends that lead agencies quantify the GHG emissions anticipated to be generated by the project. Direct and indirect emissions of GHGs from the project, which include 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), shall be quantified and disclosed in the CEQA document. The annual and total amount of a project's construction-related GHG emissions and the operational GHG emissions generated per year over the lifetime of the project shall be disclosed separately. The *California Emissions Estimator Model* (CalEEMod) is the recommended analysis tool to quantify project GHG emissions.

Construction Emissions

District-recommended methodologies for quantifying construction GHG emissions include using CalEEMod for proposed land use development projects and the Roadway Construction Emissions Model for proposed projects that are linear in nature.

Please note that sources of construction-related GHG emissions 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. CalEEMod output for

construction-related GHG emissions shall be disclosed in the CEQA document and treated as a net increase in emissions.

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 shall refer to Chapter 3 for guidance on using the Roadway Construction Emissions Model. The Roadway Construction Emissions Model reports the emissions output in tons per construction project. To enable comparison to the SMAQMD's threshold, the emissions need to be estimated in tons per year. Additionally, lead agencies shall convert the Roadway Construction Emissions Model outputs from English tons to metric tons by multiplying by 0.91.

Operational Emissions

Operational GHG emissions for a project should be calculated for the first full year of operations to compare to the GHG operational threshold of 1,100 metric tons per year. Direct and indirect emissions from the project shall be estimated using the most recent version of CalEEMod in accordance with the CalEEMod User's Guide and the District's User Tips. The District generally recommends using the default values in CalEEMod if detailed information about the project is not known at the time of analysis, but encourages the use of project-specific information whenever possible. Lead agencies shall report the project's annual GHG emissions in units of metric tons of carbon dioxide equivalent (CO_2e) in the CEQA document.

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; however, the lead agency can follow the same detailed guidance as described in Chapter 4 for CAPs and precursors for quantifying GHGs.

If project emissions exceed the GHG operational threshold, the project would calculate emissions for the fully mitigated project scenario in 2020, and the no action taken project scenario in 2020 (absent project mitigation and state reduction measures). The District provides technical guidance to conduct this analysis: Quantification of GHG Emissions for Transportation Activities and Quantification of GHG Emissions for Non-Transportation Activities. The results of the analysis will measure emission reductions from the project and demonstrate consistency with AB 32 and ARB Scoping Plan reduction goals. Adequate mitigation levels and measures are fully described in Section 6.4, Mitigation.

STATIONARY-SOURCE FACILITIES

An emissions unit consists of a single emission source with an identified emission point, such as a stack, at a facility. Facilities can have multiple emission units

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, and 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 CO_2/year from stationary combustion sources.

GHG Emissions Reporting Tool

The California Electronic Greenhouse Gas Reporting Tool, or Cal e-GGRT, 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 Cal e-GGRT. The Reporting Tool can be used to disclose a stationary source's GHG emissions in a CEQA document.

Manual Estimation

Stationary source GHG emissions may be estimated manually. District staff should be consulted to ensure the emission factors and calculation methods are appropriate for CEQA and permitting purposes.

6.3.2 Determining Level of Significance

Land Use Development Projects

AB 32 demonstrates California's commitment to reducing 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 will need to reduce GHG emissions to 1990 levels by 2020. The District recognizes, however, that although there is no known level of emissions that determines if a single project will substantially impact overall GHG emission levels in the

atmosphere, a threshold must be set to trigger a review and assessment of the need to mitigate project GHG emissions. Recommended thresholds were developed to ensure at least 90 percent of new GHG emissions would be reviewed and assessed for mitigation, thereby contributing to GHG emissions reduction goals of AB 32 and the Scoping Plan.

Lead agencies shall compare the project's estimated GHG emissions to the District's recommended thresholds of significance for construction, operational, and stationary source emissions:

- Construction phase of projects - 1,100 metric tons of CO2e per year.
- Operational phase of a land development project - 1,100 metric tons of CO2e per year.
- Stationary source projects - 10,000 metric tons of CO2e per year.

If a project's emissions exceed the thresholds of significance, then the project emissions may have a cumulatively considerable contribution to a significant cumulative environmental impact, answering Appendix G's first GHG-related question on whether the project would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

For projects that exceed the District's threshold of significance, lead agencies shall implement all feasible mitigation to reduce GHG emissions.

The second GHG-related question in Appendix G asks if the project will conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs. In order to answer this question, project emissions should be evaluated with respect to consistency with the following plans that have been adopted to reduce GHG emissions:

- AB 32 and the Scoping Plan, and
- The Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS).

The District's recommended thresholds and mitigation measures were developed to show consistency with AB 32 and the Scoping Plan. The Sacramento Area Council of Governments provides a consistency worksheet for comparison to the MTP/SCS.

Construction Emissions

Lead agencies shall estimate and present a project's construction GHG emissions on an annual basis. Lead agencies shall compare the project's annual construction GHG emissions to the District's 1,100 metric ton per year threshold of significance. If the threshold is exceeded, then the project may have a cumulatively considerable contribution to a significant cumulative environmental impact, and all feasible mitigation is required.

Operational Emissions

Lead agencies shall estimate and present a project's operational GHG emissions on an annual basis. Lead agencies shall compare the project's annual operational GHG emissions to the District's 1,100 metric ton per year threshold of significance. If the threshold is exceeded, then the project may have a cumulatively considerable contribution to a significant cumulative environmental impact, and all feasible mitigation is required.

STATIONARY SOURCE FACILITIES

Lead agencies shall compare the stationary source project's annual direct operational GHG emissions to the District's 10,000 metric ton per year threshold of significance for stationary sources. If the project's annual direct GHG emissions will exceed the District's threshold of significance, then the project may have a cumulatively considerable contribution to a significant cumulative environmental impact. Additionally, the GHG emissions from the construction of a stationary source shall be compared to the 1,100 metric ton per year construction threshold of significance.

Stationary source GHG emissions shall also be evaluated in the context of the applicable regulatory environment that is in place under the mandate of AB 32, and ARB's Scoping Plan. Over time, implementation of AB 32 will reduce or mitigate GHG emissions from industrial sources.

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 GHG 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 in which the 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 (search Title 14, CA Code of Regulations);

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.

Along with the recommended thresholds of significance, the District provides that a 21.7 percent reduction of GHG emissions is adequate mitigation and shows consistency with AB 32 and ARB Scoping Plan GHG reduction goals.

For every GHG emission reduction measure included in a CEQA document, the District recommends that the text shall be as detailed as possible and shall clearly identify who is responsible for implementation, funding, monitoring, enforcement, and any required maintenance activities. The lead agency shall also explain why the measure will 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 and project GHG emissions exceed the thresholds of significance, the District recommends the project proponent develop a project-specific GHG Reduction Plan describing how the project will reduce GHG emissions to a minimum 21.7 percent from a no action taken scenario for the operational phase of the project. Mitigating construction emissions by 21.7 percent from a project that exceeds the threshold of significance is also described.

Construction Emissions

The District provides Recommended Measures for Reducing GHG emissions from construction activities. These measures are best management practices, and some do not produce easily quantifiable GHG emission reductions. Other options for reducing GHG emissions from construction activities include obtaining emission reduction offsets or amortizing the construction emissions along with the operational emissions prior to applying mitigation.

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.

Operational Emissions

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 and GHG emissions. The District Guidance provides detailed information on how to utilize CalEEMod to select the most appropriate mitigation measures for the project and quantify GHG emission and criteria pollutant reductions from the mitigation measures selected. Additionally, the District provides technical documents (Quantification of GHG Emissions for Transportation Activities and Quantification of GHG Emissions for Non-Transportation Activities) describing how to conduct the GHG analyses to demonstrate the 21.7 percent reduction of project operational emissions compared to the project no action taken scenario. All of the measures in the District Guidance include information about the reductions that might be achieved by each measure. The measures and reductions have been substantiated through research identified by a comprehensive literature review including the California Air Pollution Control Officers Association's *Quantifying Greenhouse Gas Mitigation Measures* document. 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 can be a standalone document or incorporated into the environmental document. During the environmental review process, and before certification of the CEQA environmental document by the lead agency, the District independently verifies the benefits of the selected measures in the GHG Reduction Plan with a letter. The GHG Reduction Plan shall 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.

6.4.2 Reducing Emissions from Stationary Sources

Mitigation measures developed for reducing GHG emissions from stationary-source facilities shall be developed on a case-by-case basis in consultation with the District's permitting staff. To be consistent with AB 32, a 21.7 percent reduction is the target for stationary source mitigation. Area- and mobile-source emissions shall 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.

SMAQMD Thresholds of Significance Table

All Projects Subject to CEQA		
	Construction Phase	Operational Phase
Mass Emission Thresholds for Ozone Precursors		
NO_X	85 pounds/day	65 pounds/day
ROG (VOC)	NONE	65 pounds/day
Concentration Thresholds (based on the California Ambient Air Quality Standard, identical threshold for both phases of development)		
PM_{10}	50 $\mu g/m^3$ 24-hour standard; 20 $\mu g/m^3$ Annual Arithmetic Mean	
$PM_{2.5}$	12 $\mu g/m^3$ Annual Arithmetic Mean	
CO	20 ppm 1-hour standard (23 mg/m^3); 9 ppm 8-hour standard (10 mg/m^3)	
NO_2	0.18 ppm 1-hour standard (339 $\mu g/m^3$); 0.03 ppm Annual Arithmetic Mean (57 $\mu g/m^3$)	
SO_2	0.25 ppm 1-hour standard (665 $\mu g/m^3$); 0.04 ppm 24-hour standard (105 $\mu g/m^3$)	
Lead	1.5 $\mu g/m^3$ 30-day average	
Visibility Reducing Particles	Extinction coefficient of 0.23 per kilometer - visibility of ten miles or more due to particles when relative humidity is less than 70 percent	
Sulfates	25 $\mu g/m^3$ 24-hour standard	
H_2S	0.03 ppm (42 $\mu g/m^3$) 1-hour standard	
Vinyl Chloride	0.01 ppm (26 $\mu g/m^3$) 24-hour standard	

Land Development and Construction Projects		
	Construction Phase	Operational Phase
Greenhouse Gas Emissions (GHG) Thresholds		
GHG as CO2e	1,100 metric tons/year	1,100 metric tons/year

Stationary Source Only	
Toxic Air Contaminant (TAC) Thresholds	
Cancer Risk	An incremental increase in cancer risk greater than 10 in one million at any off-site receptor.
Non-cancer (Hazard Index)	Ground-level concentration of project-generated TACs that would result in a Hazard Index greater than 1 at any off-site receptor.

	Construction Phase	Operational Phase
Greenhouse Gas Emissions (GHG) Thresholds		
GHG as CO2e	1,100 metric tons/year	10,000 metric tons/year

Notes:
The SMAQMD Board of Directors adopted the air quality thresholds of significance for criteria pollutants on March 28, 2002, via resolution AQMD2002018.
A project is considered significant if emissions exceed a CAAQS or contribute substantially to an existing or projected violation of a CAAQS.
A substantial contribution is considered an emission that is equal to or greater than 5% of a CAAQS.
Revisions to the CAAQS are automatically adopted as revisions to these thresholds.
Official citation for the CAAQS: California Code of Regulations, Title 17, Section 70200, Table of Standards.
The TAC thresholds were developed as part of the SMAQMD's AB2588 program.
The SMAQMD Board of Directors has not established a threshold for mobile source or non-permitted sources of TAC, see Chapter 5.
The SMAQMD Board of Directors adopted GHG thresholds on October 23, 2014, via resolution AQMD2014-028