

Memo

To: Planning Division Staff

From: Ashley Brodtkin, Associate Planner

Date: March 24, 2020

Re: Guidance for Greenhouse Gas Emissions Analysis

This memo is intended to provide guidance to City Planning Division staff for evaluating greenhouse gas (GHG) emissions analyses in CEQA documents for all non-exempt projects in which the City of Orange is the lead agency, including GHG emissions analyses prepared by Project Applicants. As such, it may also be reviewed by Project Applicants and their consultants, as appropriate.

STATE LAW AND REGULATORY FRAMEWORK

Executive Order S-3-05 was issued by the California Governor in 2005 and established statewide GHG reduction targets for California. The Executive Order required GHG emissions to be reduced to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

Assembly Bill (AB) 32, the California Global Warming Solutions Act, was signed in 2006 and formally recognized California as a substantial source of GHG emissions contributing to global warming. It further stated that global warming is a “serious threat” to the “economic well being, public health, natural resources, and the environment of California,” and identified impacts to air quality, water supply, sea level rise (flooding), fire hazards, and an increase in health-related problems as environmental consequences of global warming.

AB 32 designated the California Air Resources Board (CARB) as the lead agency for implementing GHG targets. As such, CARB adopted the “California Greenhouse Gas Emissions Inventory” (December 2007) and its “Scoping Plan” (2008) which outlines how GHG reductions to 1990 levels would be achieved. The 2008 Scoping Plan identifies the 2002-2004 “existing” average GHG emissions as 469 million metric tons of CO₂ equivalent (MMT_{CO₂e}). The 2020 “business as usual” GHG emissions were projected at 596 MMT_{CO₂e}, and the 1990 GHG emissions were projected at 433 MMT_{CO₂e}.

CARB approved the First Update to the Scoping Plan (Update) in 2014. The Update identifies the next steps for California’s climate change strategy. The Update shows how

California continues on its path to meet the near-term 2020 GHG limit, but also sets a path towards long-term, deep GHG emissions reductions.

Senate Bill (SB) 32 was signed in 2016, and codified a 2030 GHG emissions reduction target of 40 percent below 1990 levels. With SB 32, the State passed companion legislation AB 197, which provided additional direction for developing the Scoping Plan. The Second Update to Scoping Plan addressing the SB 32 targets was adopted on December 14, 2017.

Senate Bill (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 that will prescribe land use allocation in that MPOs regional transportation plan. CARB, in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. The SCS contains land use, housing and transportation strategies that allow regions to meet their GHG emissions reductions targets. The Southern California Association of Governments (SCAG) is responsible for the adoption of the SCS for the region and it is a required element of the Regional Transportation Plan, which is adopted every four years.

In August 2010, CARB released the proposed GHG reduction targets for the MPOs to be adopted in September 2010. The proposed reduction targets for the SCAG region were 8 percent by year 2020 and 13 percent by year 2035. In September 2010 and February 2011, the 8 percent and the 13 percent targets were adopted, respectively.

On April 4, 2012, SCAG's Regional Council adopted the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy: Towards a Sustainable Future. (2012 RTP/SCS). On April 7, 2016, SCAG's Regional Council adopted an update to the 2012 RTP/SCS, the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS). Through proactive land use planning and improvements to the transportation network, implementation of the 2016 RTP/SCS will result in an 8 percent reduction in greenhouse gas emissions per capita by 2020, an 18 percent reduction by 2035, and a 21 percent reduction by 2040 when compared with 2005 levels.

State CEQA Guidelines Updates

Senate Bill (SB) 97, signed in 2007, added Section 21083.05 to the Public Resources Code (PRC) and directed the California Office of Planning and Research (OPR) to draft State CEQA Guidelines (CEQA Guidelines) for GHG emissions analysis and mitigation by July 1, 2009 (to be adopted by the California Resources Agency by January 1, 2010).

The California Resources Agency adopted State CEQA Guidelines that address GHG emissions on December 30, 2009. The guidelines became effective on March 18, 2010. In

summary, the State CEQA Guidelines provide the following guidance regarding greenhouse gas emissions analysis in CEQA documents.

- CEQA documents must make a good faith effort to describe, calculate or estimate GHGs from a project and determine whether that contribution is “cumulatively considerable”.
- A GHG analysis may be quantitative, qualitative or rely on performance based standards. Which methodology or model to use for a quantitative analysis is left to the discretion of the lead agency.
- In determining whether a GHG impact is significant, the GHG analysis should consider the following:
 - A project’s GHG emissions compared to the existing environment;
 - Whether a project exceeds a “threshold of significance”; and
 - Whether a project complies with regulations adopted to implement a statewide, regional or local plan to reduce GHG emissions.
- The GHG analysis must discuss a project’s consistency with general plans, specific plans or regional plans (including plans to reduce greenhouse gas emissions);
- In adopting thresholds, the CEQA Guidelines allow lead agencies to consider thresholds previously adopted or recommended by other agencies, or experts, provided there is substantial evidence to support the threshold.
- The CEQA Guidelines list options for mitigating impacts, including:
 - Measures incorporated into an existing plan, program, ordinance or regulation to reduce GHGs;
 - Project features that reduce GHGs;
 - Offsite measures including offsets;
 - Measures that sequester GHGs.
- Appendix G of the CEQA Guidelines (the Initial Study checklist) was amended to add “Greenhouse Gas Emissions” as a separate environmental issue area with two new checklist questions. Appendix F (Energy Conservation) of the CEQA Guidelines was also amended.

In 2018, the California Natural Resources Agency finalized amendments to the State CEQA Guidelines, including changes to CEQA Guidelines Section 15064.4, which addresses the analysis of GHG emissions. The amendments became effective on December 28, 2018. The revision of CEQA Guidelines Section 15064.4 clarified several points, including the following:

- Lead agencies must analyze the greenhouse gas emissions of proposed projects.
- The focus of the lead agency’s analysis should be on the project’s effect on climate change.

- A project’s incremental contribution may be cumulatively considerable even if it appears relatively small compared to statewide, national or global emissions.
- Lead agencies should consider a timeframe for the analysis that is appropriate for the project.
- A lead agency’s analysis must reasonably reflect evolving scientific knowledge and state regulatory schemes.
- Lead agencies may rely on plans prepared pursuant to CEQA Guidelines Section 15183.5 in evaluating a project’s GHG emissions.
- In determining the significance of a project’s 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 consistent with those plans, goals, or strategies.
- 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.

LOCAL GUIDANCE

Based on the above described regulatory framework, GHG analysis is required to be included in CEQA documents for all non-exempt projects for which the City of Orange is the lead agency.

Who should prepare a GHG analysis?

In the City of Orange, Project Applicants are allowed to prepare or directly retain consultants to prepare environmental studies and CEQA documents, per the City’s Local CEQA Guidelines. GHG analysis should principally be prepared by a qualified technical expert in the air quality modeling and analysis field. As the lead agency, Planning Division staff are responsible for ensuring that the analysis reflects the City’s independent judgment and analysis of the issue.

What are the required components of a GHG analysis?

The required content of a GHG analysis should generally follow the guidance provided in the CEQA Guidelines. The City’s Initial Study checklist template has been revised to reflect the changes made to Appendix G of the CEQA Guidelines. The intent of this memo is to supplement the guidance provided by the State, where needed.

- **Regulatory Background**

The greenhouse gas emissions analysis should briefly review State law and the regulatory framework applicable to GHGs.

- **Environmental Setting**

The analysis should define “greenhouse gases” and provide a description of the following seven GHGs and their major sources: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF₆), and nitrogen trifluoride (NF₃). The cumulative effects of GHGs should also be discussed.

- **Quantify Greenhouse Gas Emissions Generated by the Project**

The CEQA Guidelines state that a lead agency must make a good faith effort to describe, calculate or estimate GHGs from a project and determine whether that contribution is “cumulatively considerable,” but it defers to the lead agency as to the methodology or model used to estimate project GHGs.

The City of Orange is located within the South Coast Air Basin, overseen by the South Coast Air Quality Management District (SCAQMD). The California Emissions Estimator Model (CalEEMod) is a statewide land use emissions computer model designed to provide a uniform platform to quantify potential criteria pollutant and GHG emissions associated with both construction and operational from a variety of land use models. SCAQMD staff recommends all projects evaluate emissions with CalEEMod if software is used for the analysis. Therefore, as a matter of policy, most CEQA documents for non-exempt projects in the City will be required to contain a quantitative analysis of GHGs using CalEEMod (or another approved model accepted by SCAQMD, subject to City approval).

In some cases and at the discretion of the Community Development Director or designee, a qualitative analysis may be accepted for very small projects which clearly could not generate significant GHG emissions. For example, a qualitative GHG analysis may be accepted for projects that are consistent with the CEQA categorical exemption classes, but for some reason unrelated to project size, density, or other factors affecting GHG emissions, the project is not exempt from CEQA. As another example, a qualitative analysis may be accepted for projects that are so small that they do not trigger the need for a traffic study per the City’s Traffic Impact Analysis Guidelines.

The quantitative GHG analysis must identify the type and source of GHG’s generated by the project and should follow the methodology recommended in Chapters 3 and 4 of the SCAQMD’s Interim Thresholds document. Generally, GHG estimates should include emissions from indirect sources, and direct sources including construction emissions (amortized over a 30-year period) and operational emissions. Operational emissions will typically include mobile source emissions and building emissions (including emissions from building energy usage, energy usage due to water consumption, etc.). Emissions should be expressed in metric tons of CO₂ equivalent (MTCO_{2e}) per year.

- **Determine Significance**

The CEQA Guidelines include “Greenhouse Gas Emissions” as an environmental issue area in the Initial Study checklist and include the following two checklist questions:

“Would the project:

- a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?”

The CEQA Guidelines also suggest that in determining significance a lead agency may consider a project’s GHG emissions compared to the existing environment, whether a project exceeds a “threshold of significance” and whether a project complies with regulations adopted to implement a statewide, regional, or local plan aimed at reducing GHG emissions. However, the CEQA Guidelines are silent on an appropriate quantitative threshold for GHGs and initial efforts by CARB to establish a statewide threshold are no longer being pursued. Therefore, the following approach is recommended to determine significance in CEQA documents for which the City is the lead agency.

The GHG analysis should identify the project’s GHG contribution compared to existing conditions (citing the adopted State inventory, the GHG estimates contained in the City’s 2010 General Plan EIR, and/or other regional or local inventory, if available). A project’s consistency with the goals, policies and implementation programs of the City’s 2010 General Plan related to GHGs must also be discussed. In particular, the analysis should review Table NR-1 in the Natural Resources Element of the General Plan and discuss the project’s consistency with identified climate change-related policies. In addition, the analysis should discuss CARB’s 2017 Scoping Plan or future updates to the Scoping Plan, as well as the most recent draft of the SCAG Regional Transportation Plan/Sustainable Communities Strategies (RTP/SCS), and identify the extent to which the project complies with emissions reduction measures and policies applicable to the project (if any).

The City has not adopted a quantitative threshold of significance for GHG. Nonetheless, as a CEQA lead agency, the City desires to have a consistent GHG analysis methodology in its CEQA documents, and to this end, offers the following threshold guidance.

In 2008, the SCAQMD formed a working group to identify GHG emissions thresholds for land use projects that could be used by local lead agencies in the air basin. The working group developed several different options that are contained in the “Interim Greenhouse Gas Emissions Significance Thresholds” that could be applied by lead agencies. The working group has not provided additional guidance since release of the interim guidance in 2008. The SCAQMD Board has not approved the thresholds; however, the Guidance Document provides substantial evidence supporting the approaches to significance of GHG

emissions that can be considered by the lead agency in adopting its own threshold. The current interim thresholds consist of the following tiered approach:

- Tier 1 consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA.
- Tier 2 consists of determining whether the project is consistent with a GHG reduction plan. If a project is consistent with a qualifying local GHG reduction plan, it does not have significant GHG emissions.
- Tier 3 consists of screening values, which the lead agency can choose, but must be consistent with all projects within its jurisdiction. A project's construction emissions are averaged over 30 years and are added to the project's operational emissions. If a project's emissions are below one of the following screening thresholds, then the project is less than significant:
 - All land use types: 3,000 metric tons (MT) carbon dioxide equivalents (CO₂e) per year
 - Based on land use type: residential: 3,500 MTCO₂e per year; commercial: 1,400 MTCO₂e; or mixed use: 3,000 MTCO₂e
- Tier 4 has the following options:
 - Option 1: Reduce business as usual (BAU) emissions by a certain percentage; this percentage is currently undefined.
 - Option 2: Early implementation of applicable Assembly Bill (AB) 32 Scoping Plan measures
 - Option 3: 2020 target: 3.0 MTCO₂e/SP/year for projects and 4.1 MTCO₂e/SP/year for plans
- Tier 5 involves mitigation offsets to achieve target significance threshold.

The SCAQMD's draft thresholds uses the Executive Order S-3-05 Year 2050 goal as the basis for the Tier 3 screening level. Achieving the Executive Order's objective would contribute to worldwide effort to cap CO₂ concentrations at 450 parts per million, thus stabilizing global climate.

The City will accept GHG analyses that use the "Tier 3" quantitative thresholds recommended in the SCAQMD's Interim Thresholds document for commercial, residential, mixed use, and industrial development projects, as follows.

- Industrial Projects - 10,000 MTCO₂e per year.
- Residential, Commercial, and Mixed Use Projects (including industrial parks, warehouses, etc.) - 3,000 MTCO₂e per year. (This is generally equivalent to an approximately 70 unit single family residential development.)

Projects that would be considered "Industrial Projects" would be facilities that use stationary sources of GHG emissions requiring a permit from the SCAQMD. Examples include: cement plants, landfills, wastewater treatment plants, and industrial boilers.

The City will accept documents that use this threshold because it has been recommended by SCAQMD and SCAQMD is the expert agency and regional authority for air quality in the South Coast Air Basin. Further, the Interim Thresholds document provides substantial evidence that the thresholds are consistent with the policy goals and GHG reduction targets set by the State. Specifically, the thresholds were set at levels that capture 90 percent of the GHG emissions from the above described uses, consistent with the Executive Order S-3-05 target of reducing GHGs to 80 percent below 1990 levels by 2050. Further, the threshold is a reasonable threshold because it will require medium and large size projects to reduce project GHGs, while allowing smaller projects, which are generally infill development projects and are not the focus of future GHG reductions, to proceed.

It should be noted that due to the global scale of the effects of GHG emissions, the thresholds above function as both the project-level threshold and the cumulative impact threshold of significance for GHG analysis.

If a project generates GHG emissions below the threshold, it is acceptable to conclude that the project's GHG contribution is not "cumulatively considerable" and is therefore "less than significant" under CEQA. If a project generates GHG emissions above the threshold, the analysis must identify mitigation measures to reduce GHG emissions.

- **Identify Mitigation Measures**

The CEQA Guidelines suggest mitigating GHG impacts through measures incorporated into an existing GHG reduction plan; project design features that reduce GHGs; offsite mitigation measures including offsets; and measures that sequester GHGs.

As stated above, at the time of the writing of this memo, the City does not have an adopted Climate Action Plan and no other regional GHG reduction plans have yet been adopted. Further, although the CARB Scoping Plan is an applicable Statewide GHG reduction plan, implementation of its GHG reduction measures may not specifically apply to or mitigate a local project's GHG emissions, as required by CEQA. In addition, the CARB Cap-and-Trade Program is only applicable to electricity generators and large industrial facilities emitting 25,000 MTCO_{2e} or more annually. Therefore, at this time, it is largely not feasible to mitigate GHG impacts under CEQA by demonstrating compliance with an existing GHG reduction plan or through offsets. As such, if a project generates GHG's above the quantitative thresholds identified above, the analysis should focus on project design features or mitigation measures that reduce or sequester GHGs, such that project emissions are reduced to below the SCAQMD threshold. Feasible offsite GHG reduction projects could also be considered as a last option.

- **Determine Significance After Mitigation**

The GHG reductions resulting from project design features and mitigation measures should be estimated using best available information, and the analysis should show the project GHG emissions before- and after-mitigation. If it can be demonstrated that project design

features and mitigation measures reduce the project's GHG emissions to below the SCAQMD threshold, it is acceptable to conclude that the project's GHG contribution is not "cumulatively considerable" and the GHG impact is either "less than significant" or "less than significant with mitigation incorporated" under CEQA.

If the project continues to generate emissions above the threshold after all feasible mitigation measures have been incorporated into the project, the analysis should conclude that the project contributes GHG emissions that may be "cumulatively considerable" and the impact is significant and unavoidable. In this case, an Environmental Impact Report, Findings, and a Statement of Overriding Considerations would be required in accordance with CEQA.

ADDITIONAL INFORMATION

GHG technical guidance and regulatory mandates are constantly evolving. The guidance provided in this memo is based on information available at the time. If plans, strategies or other specific thresholds, such as performance based standards, are developed or adopted by the State or SCAQMD in the future, the City will update its guidance and/or defer to those thresholds at that time. In all cases, the City will use its independent judgment in determining whether the GHG analysis submitted by Project Applicants or prepared for City project is acceptable for CEQA purposes. If you have any questions regarding this memo, please contact Ashley Brodtkin at abrodtkin@cityoforange.org or (714) 744-7238.

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