Memo

To: Planning Division Staff
From: Jennifer Le, Senior Planner/Environmental Review Coordinator
Date: April 26, 2010
Re: Interim Guidance for Greenhouse Gas Emissions Analysis

This memo is intended to provide guidance to City Planning Staff for evaluating greenhouse gas (GHG) emissions analyses in CEQA documents prepared by Project Applicants for non-exempt projects in the City of Orange. 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. Specifically, GHGs are required to be reduced to 2000 levels by 2010, to 1990 levels by 2020 and to 80% below 1990 levels by 2050. Reducing GHG’s to 1990 levels by 2020 means cutting 30% of GHG emissions projected for 2020 (or cutting approximately 15% of existing GHG emissions). Reducing GHG’s to 80% below 1990 levels by 2050 means cutting existing GHG emissions by 90%.

Assembly Bill (AB) 32, the California Global Warming Solutions Act, was passed 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 (MMTCO2e). The 2020 “business as usual” GHG emissions were projected at 596 MMTCO2e, and the 1990 GHG emissions were projected at 433 MMTCO2e.
Senate Bill (SB) 97 was passed in 2007 and directed the California Office of Planning and Research (OPR) to draft CEQA Guidelines for GHG emissions analysis and mitigation by July 1, 2009 (to be adopted by the California Resources Agency by January 1, 2010).

OPR issued Interim Guidelines ("Technical Advisory on CEQA & Climate Change") on June 19, 2008. The Interim Guidelines described the steps a lead agency should take when analyzing greenhouse gas emissions, and were intended to be used until the State CEQA Guidelines for GHGs were developed and formally adopted.

In December 2008, the South Coast Air Quality Management District (SCAQMD) adopted “Interim Greenhouse Gas Emissions Significance Thresholds” addressing projects for which the SCAQMD was the lead agency. The adopted thresholds are for industrial uses/stationary sources only which are regulated by SCAQMD. Although the SCAQMD stopped short of adopting a GHG threshold for commercial and residential projects, their thresholds document recommends a tiered approach to determining significance, develops quantitative thresholds for commercial and residential projects, and discusses their intent to adopt the threshold in the future. At the time of the writing of this memo, SCAQMD had not yet formally adopted a GHG threshold for commercial, residential or mixed use development.

2010 State CEQA Guidelines Update

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 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";
  - 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.

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 (2006). 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 State CEQA Guidelines. The City’s Initial Study checklist template has been revised to reflect the changes made to Appendix G of the State 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.

- Existing GHG Setting

The analysis should define “greenhouse gases” and provide a description of the following six GHGs and their major sources: carbon dioxide, methane, nitrous oxide,
hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride. The cumulative effects of GHGs should also be discussed (e.g. climate change and its secondary effects as described in AB32 and subsequent State Climate Action Team reports). In addition, the GHG setting should discuss the statewide inventory of GHGs adopted by CARB and the GHG estimates generated for the City’s 2010 Comprehensive General Plan Update EIR. The City’s 2010 General Plan EIR contains an analysis of GHG emissions that includes a City-wide estimate of “existing” GHGs (using 2004 as the analysis year) and also projects GHG emissions for General Plan buildout (using 2030 as the buildout year).

- Quantify Greenhouse Gas Emissions Generated by the Project

The State 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 SCAQMD. Although currently there is not a single accepted air quality model available that estimates all of a project’s direct and indirect GHG emissions, the URBEMIS model is capable of calculating CO2 emissions for development projects, is widely used in California for air quality analyses, and is accepted by SCAQMD. Therefore, using URBEMIS to quantify GHGs is feasible.

It is understood that URBEMIS (like all models) has limitations, including that the output focuses on CO2 and methane (mobile source) emissions and does not cover all GHGs. However, given that projects likely to be proposed in the City of Orange (based on current and projected land use patterns outlined in the City’s 2010 General Plan) are primarily commercial, residential or mixed use projects involving land development (not stationary sources or heavy industrial uses); and given that CO2 is the most prevalent GHG associated with land development, the URBEMIS model will capture the majority of project GHGs and is therefore a reasonable choice.

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 URBEMIS (or another approved model accepted by SCAQMD, subject to City approval). Guidance on how to use URBEMIS to model GHGs is provided in Chapters 3 and 4 of the SCAQMD Interim Thresholds (2008), and in Chapter 8 of the “CEQA & Climate Change” report generated by the California Air Pollution Control Officers Association (CAPCOA) in January 2008.

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 (MTCO2e) per year.

- **Determine Significance**

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

“Does 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 State 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 State 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 2008 Scoping Plan and identify the extent to which the project complies with emissions reduction measures applicable to the project (if any).

It should be noted that the City of Orange does not yet have an adopted GHG inventory or an adopted GHG reduction plan (such as a Climate Action Plan [CAP]). As stated in the City’s 2010 General Plan Implementation Program I-35, the City expects to develop and adopt a CAP in the future. The City also has not adopted a quantitative threshold of significance for GHGs. 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.

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.)

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% of the GHG emissions from the above described uses, consistent with the Executive Order S-3-05 target of reducing GHGs to 80% below 1990 levels by 2050 (or a 90% reduction from existing levels). 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 State 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 CAP 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, there is no established “cap and trade” or other offset market at this time. 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. Potential mitigation measures are listed in Appendix B of the CAPCOA report. Project level mitigation measures are also identified in the “Addressing Climate Change at the Project Level” document developed by the State Attorney General's Office. Energy conservation measures are also listed in Appendix F of the State CEQA Guidelines.

- Determine Significance After Mitigation

The GHG reduction 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 "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 "potentially 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 interim only and 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 is acceptable for CEQA purposes. If you have any questions regarding this memo, please contact me at jle@cityoforange.org or (714) 744 7238.