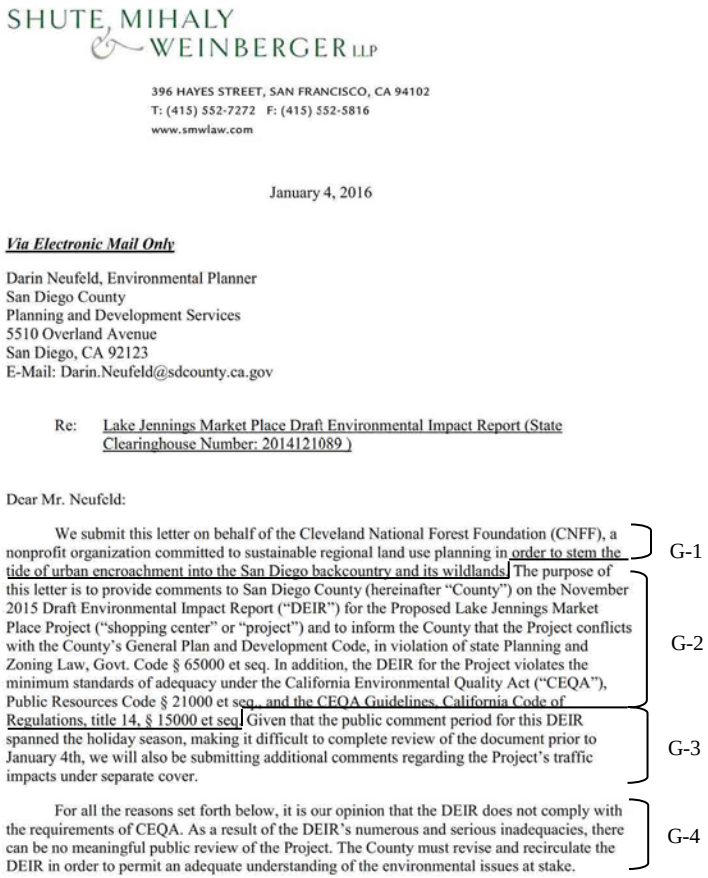

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January 4, 2016

Via Electronic Mail Only

Darin Neufeld, Environmental Planner
San Diego County
Planning and Development Services
5510 Overland Avenue
San Diego, CA 92123
E-Mail: Darin.Neufeld@sdcounty.ca.gov

Re: Lake Jennings Market Place Draft Environmental Impact Report (State Clearinghouse Number: 2014121089)

Dear Mr. Neufeld:

We submit this letter on behalf of the Cleveland National Forest Foundation (CNFF), a nonprofit organization committed to sustainable regional land use planning in order to stem the tide of urban encroachment into the San Diego backcountry and its wildlands. The purpose of this letter is to provide comments to San Diego County (hereinafter "County") on the November 2015 Draft Environmental Impact Report ("DEIR") for the Proposed Lake Jennings Market Place Project ("shopping center" or "project") and to inform the County that the Project conflicts with the County's General Plan and Development Code, in violation of state Planning and Zoning Law, Govt. Code § 65000 et seq. In addition, the DEIR for the Project violates the minimum standards of adequacy under the California Environmental Quality Act ("CEQA"), Public Resources Code § 21000 et seq., and the CEQA Guidelines, California Code of Regulations, title 14, § 15000 et seq. Given that the public comment period for this DEIR spanned the holiday season, making it difficult to complete review of the document prior to January 4th, we will also be submitting additional comments regarding the Project's traffic impacts under separate cover.

For all the reasons set forth below, it is our opinion that the DEIR does not comply with the requirements of CEQA. As a result of the DEIR's numerous and serious inadequacies, there can be no meaningful public review of the Project. The County must revise and recirculate the DEIR in order to permit an adequate understanding of the environmental issues at stake.

G-1

G-2

G-3

G-4

Response to Comment Letter G

Cleveland National Forest Foundation
Shute Mihaly & Weinberger
January 4, 2016

G-1 This comment summarizes the purpose of the Cleveland National Forest Foundation. As the comment does not directly raise an issue with the adequacy of the EIR, no further response is required.

G-2 The County disagrees that the project conflicts with the County's General Plan and Development Code and that it is in violation of state planning and Zoning Law, and CEQA. The project's compliance with the General Plan, Development Code, and other applicable plans and ordinances is evaluated throughout the EIR, with detailed discussions in EIR Chapters 2.0 Significant Environmental Effects and 3.0 Environmental Effects Found Not to Be Significant. These analyses demonstrate that the proposed project is consistent with the goals and policies of the General Plan. See Final EIR Table 3.1-9 for the project's consistency with applicable plans and requirements. The County has evaluated the project with respect to all applicable General Plan goals and policies and has found that the proposed project "meets community desires and balances the environmental protection goals with the need for housing, agriculture, infrastructure, and economic viability."

The County acknowledges that the project is inconsistent with the existing designations set forth by the General Plan and Zoning Ordinance, and that a General Plan Amendment and Rezone is required for project implementation. Please

		see Final EIR page 1-12 which indicates that the project complies with all of the above-named plans and ordinances with the exception of the Land Use Element of the General Plan and the Zoning Ordinance. The project is inconsistent with the current designation and a General Plan Amendment is required. Also, the project is inconsistent with the current zoning designation, and a rezone is required to eliminate this inconsistency. Further, a project may be found consistent with the General Plan even if it is not "in perfect conformity with each and every general plan policy." *Sierra Club v. County of Napa*, 121 Cal.App.4th 1490, 1509 (2004).
	G-3	The Governor's Office of Planning and Research, State Clearinghouse and Planning Unit has acknowledged that the County has "complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act." See State Clearinghouse letter dated January 5, 2016 (comment letter "A" in this responses to comments document). The public review and comment period for the Draft EIR closed on January 4, 2016. This comment indicates that "additional comments regarding the Project's traffic impacts under separate cover" will be provided. However, no additional traffic comments were received from the commenter as part of the Draft EIR public review period. Please refer to responses to comments V-1 through V-33 which were submitted as a part of the Draft Revised EIR comment period (July 28, 2016 to September 12, 2016). In accordance with CEQA Guidelines 15088.5(a), 15088.5(f)(2) and Public Resources Code 21091(d)(1), the County has responded to comments received during the Draft EIR and Draft Revised EIR notice comment period.

	G-4 This comment summarizes the more detailed comments that are provided in subsequent portions of this comment letter. Please refer to detailed responses to each comment as provided in responses to comments G-5 through G-69. The County has evaluated the comments received on the Draft EIR, and several additions or changes were made to the environmental analysis, including the addition of a new GHG emissions analysis, and revisions to portions of the aesthetics, and alternatives sections. Due to these additions and changes made to the Draft EIR, the County recirculated a Draft Revised EIR for public review between July 28, 2016 and September 12, 2016.

I. Introduction

The Project site is designated Village Residential (VR-15) and zoned Urban Residential (RU-15). This designation and zoning were established in the most recent update of the Lakeside Community Plan. The Project includes applications for a General Plan amendment and rezoning to change the designation and zoning from residential use to commercial use. DEIR at 1-11. The Project proposes to construct more than 100,000 square feet of commercial uses and parking for 389 vehicles. Id. at 1-1. G-5

The applicant came before the County with a proposal to develop the site as a shopping center in 2002. The community voiced strong opposition to that development proposal because the Project was out of scale and out of character with the surrounding community and would have resulted in significant traffic impacts and congestion. The San Diego Planning Commission twice denied the Project and the applicant withdrew the application. Subsequently, the County approved the Lake Jennings Village Project in 2009, which allows construction of 160 residential units. DEIR at 4-6. G-6

Since then, the County undertook a General Plan update, which included updating the Lakeside Community Plan. The County Board of Supervisors certified the Final Program Environmental Impact Report (EIR) for the General Plan Update and adopted the update to the General Plan on August 3, 2011. The County invested a substantial amount of time and resources in the update process to achieve the purpose of the General Plan Update, which was "to establish a blueprint for future land development projects in the unincorporated County that meets community desires and balances the environmental protection goals with the need for housing, agriculture, infrastructure, and economic vitality." General Plan EIR at S-2. G-7

It is therefore perplexing that the County is again contemplating a twice-rejected regional-scale shopping center, which is clearly incompatible with the General Plan Update's Village Residential land use designation for the site. This Project will have serious long-term consequences for the residents of the Lakeside Community. Those consequences include significant traffic congestion, loss of open space, loss of habitat for sensitive species, visual impacts, an increased risk of air and water pollution, and a significant increase in greenhouse gas emissions. Yet, this DEIR fails to adequately analyze and mitigate these significant impacts. G-8

In addition, the DEIR is silent as to the need for such a shopping center in the Lake Jennings area. According to area residents, existing shopping centers in the area suffer vacancies (i.e., the Walmart Shopping Center on Los Coches currently has seven vacancies and the available area for a grocery store is vacant.) Moreover, the region has multiple grocery stores/shopping centers to serve the area including Barrons in Alpine, which opened this year, and Walmart, which also sells groceries. Similarly, there are two gas stations in the immediate area. Thus, the DEIR has not established a clear need for the Project. G-9

G-5 The commenter incorrectly states the square footage of the proposed project as "more than 100,000 square feet of commercial uses." As provided on Draft EIR page S-1, the project would involve the development of a 76,100-square-foot shopping center. The commenter is including the 42,210 square-foot pad (which is simply a graded pad for development) for the gas station, which will actually only comprise a 3,000 square foot building located on a 42,210 square foot (or 0.96 acre) pad. This 42,210 square foot pad does not comprise buildings and therefore is not included in the project's total building square footage (76,100 square feet) (see Draft EIR page S-2).

G-6 This comment summarizes information pertaining to previously proposed projects but does not directly address the currently proposed commercial project or adequacy of the EIR. With regards to the currently proposed project, a complete analysis of visual resources impacts, including a description of significance criteria, existing conditions, and photographs is provided in Final EIR Section 3.1.1. The EIR determined that all visual resources impacts associated with the proposed project would be less than significant. Further, the Lakeside Planning Group and design review committee have reviewed and approved this project, and have not expressed a concern that the project is out of scale and not in character with the surrounding area. Please also refer to response to comment G-17.

G-7 This comment does not directly raise an issue with the adequacy of the EIR; therefore, no further response is required.

G-8 The proposed project involves a General Plan Amendment to General Commercial (C-1) and a zone change to General

Commercial (C36). As discussed on Draft EIR page 3-60, the C36 zone allows for uses such as Eating and Drinking Establishments, Financial, Insurance and Retail Services, Retail Sales, and gas stations with a car wash subject to approval of a use permit. In addition to staff's analysis of the proposed project's consistency with the General Plan, the County Planning Commission and Board of Supervisors will also review and evaluate the project's consistency with adopted plans and policies at the time the project is heard by these two decision making bodies.

The County disagrees with the commenter's assertion that the project is a regional-scale shopping center. Based on SANDAG's "(Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region:"

- A "Regional Shopping Center" would occupy a site between 40 and 80 acres of land, and would comprise between 400,000-800,000 square feet of commercial building area.
- A "Community Shopping Center" would occupy a site between 15-40 acres of land, and would comprise between 125,000-400,000 square feet of commercial building area.
- A "Neighborhood Shopping Center" occupies a site less than 15 acres, is less than 125,000 square feet in size and usually includes a grocery, drugstore, cleaners, barber shop, and fast food services.

The project site is 13 acres in size (with only 9 acres proposed to be developed), and proposes 76,100 square feet of commercial uses which is consistent with the definition of

		a Neighborhood Shopping Center based on these criteria. Compared to the Neighborhood Shopping Center criteria, the proposed project is actually approximately 40 percent smaller in acreage (9 acres of development area vs. 15 acres), and is approximately 40 percent smaller in square footage as well (76,100 square feet vs. 125,000 square feet). The proposed project involves a General Plan Amendment to General Commercial (C-1) and a zone change to General Commercial (C36). As discussed on Draft EIR page 3-60, the C36 zone allows for uses such as Eating and Drinking Establishments, Financial, Insurance and Retail Services, and Retail Sales. The EIR adequately analyzed and mitigated all significant impacts to levels below significance. This comment is a general assertion that there are impacts to traffic, biology, visual resources, air quality, water quality, and GHGs, which are adequately addressed in Section 2.7, 2.1, Chapter 3.0 , as well as Section 2.3 of the Final EIR, respectively. **G-9** CEQA does not require that an EIR demonstrate the need for a project. This comment appears to confuse the requirements under the National Environmental Policy Act (NEPA) related to the establishment of the underlying purpose and need for a project, with the CEQA requirement that an EIR contain a statement of project objectives. Specifically, the NEPA regulations require a description of "the underlying purpose and need to which the agency is responding" in considering a project (40 CFR §1502.13). Whereas, the CEQA Guidelines require that an EIR contain a "statement of objectives sought by the proposed project (14 CCR §15124(b))." In compliance with this provision, the objectives of the proposed project

The job of community leaders in evaluating projects such as this one is to achieve a balance between protection of resources, which represents the long term interest of the entire community, from the short term interest and gain of a few individuals. As discussed throughout this letter, the County determined years ago that the proposed Project site would be designated for housing to serve unmet current and projected future demand for housing in the Lakeside community. As discussed further below, the proposed Project is inconsistent with the County's General Plan and the designated use of the site for housing. G-10

II. The EIR Fails to Comply with CEQA.

Given the proposed change to the site's General Plan land use designation and related zoning, and the community's concerns about this Project, the EIR for this proposal should be of the highest quality, giving both decision-makers and the public a full opportunity to understand and analyze environmental repercussions of the Project. An EIR is "the heart of CEQA." *Laurel Heights Improvement Ass'n v. Regents of University of California* (1988) 47 Cal.3d 376 at 392 ("*Laurel Heights I*"). In particular, the County "should not be allowed to hide behind its own failure to gather relevant data." *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296, 311. "The EIR is also intended 'to demonstrate to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its action.' Because the EIR must be certified or rejected by public officials, it is a document of accountability." *Laurel Heights I*, 47 Cal.3d at 392 (citations omitted). Unfortunately, the DEIR fails entirely to live up to this mandate. G-11

The DEIR suffers from several major problems and is insufficient to support a decision on the Project. In some cases, the DEIR fails altogether to provide the necessary analysis. In other cases, the DEIR attempts to cover the document's flaws by deferring needed studies and plans until after Project approval, and by recharacterizing these critical studies as "mitigation measures" in themselves. This is entirely impermissible under CEQA.

The document also substantially understates the severity and extent of a range of environmental impacts, including significant impacts related to visual resources, traffic, and climate change, and thus fails to provide adequate mitigation. Finally, the DEIR presents a faulty analysis of feasible alternatives to the Project that would substantially lessen its environmental impacts. This failure defeats CEQA's purpose of creating a process by which the public and decision-makers can fully appreciate the consequences of Project approval. G-12

Most disturbing, the Project demonstrates a complete disregard for the General Plan's provisions developed to protect the community character. Although the applicant proposes to amend to the General Plan, these amendments would only serve to undermine the integrity of the County's planning efforts. Thus, because the Project conflicts with fundamental General Plan provisions so as to result in significant environmental impacts, and because the County has failed to adequately identify these conflicts in the EIR, approval of the Project would violate not just G-13

are provided on Draft EIR page 1-1. The applicant is proposing a commercial use at this location based on their understanding of the commercial market and service needs in the area.

G-10 The commenter does not specifically address any inadequacies of the EIR; therefore, no further response is required. Please refer to response to comment G-2 regarding the project's consistency with the General Plan.

G-11 The County does not concur that the EIR does not meet the standards of CEQA and the CEQA Guidelines. Please refer to responses to comments G-12 through G-69 which address each of the specific comments related to the adequacy of the EIR.

G-12 The County disagrees with the commenter's general assertion that the EIR fails to properly analyze visual resources, traffic and climate change. Impacts to these resource sections are adequately analyzed in Chapters 2.0 and 3.0 of the Final EIR. In addition, the County disagrees that the EIR fails to provide adequate mitigation for these resources and an adequate alternatives analysis. The project's alternatives analysis is provided in Final EIR Chapter 4.0. The commenter does not specifically state how the EIR fails to analyze the aforementioned; therefore, no further response is required.

G-13 The County disagrees that the project conflicts with the County's General Plan and Development Code and that it is in violation of the California Planning and Zoning Law, and the Subdivision Map Act. Please refer to response to comment G-2 regarding consistency with the General Plan and the Zoning Code. Refer also to response to comment G-17 regarding community character. This comment

CEQA, but also the California Planning and Zoning Law, Gov't Code § 65000 et seq., and the Subdivision Map Act, Gov't Code §§ 66473.5, 66474. G-13 Cont.

To ensure that the public and the County's decision-makers have adequate information to consider the effects of the proposed Project – as well as to comply with the law – the County must prepare and recirculate a revised DEIR that properly describes the Project, analyzes its impacts, and considers meaningful alternatives and mitigation measures that would help ameliorate those impacts. G-14

A. The DEIR Fails to Provide an Adequate Description of the Project.

Under CEQA, the inclusion in the EIR of a clear and comprehensive description of the proposed project is critical to meaningful public review. *County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 193 ("*Inyo II*"). The court in *Inyo II* explained why a thorough project description is necessary:

> "A curtailed or distorted project description may stultify the objectives of the reporting process. Only through an accurate view of the project may affected outsiders and public decision-makers balance the proposal's benefit against its environmental cost, consider mitigation measures, assess the advantage of terminating the proposal (i.e., the "no project" alternative) and weigh other alternatives in the balance."

Id. at 192-93. Thus, "[a]n accurate, stable and finite project description is the sine qua non of an informative and legally sufficient EIR." *Santiago County Water District v. County of Orange* (1981) 118 Cal.App.3d 818, 830.

The DEIR fails to describe aspects of the Project critical to its analysis. The DEIR acknowledges significant impacts to nearby sensitive receptors and wildlife resulting from foreseeable construction noise. DEIR at 2.4-15 and 2.4-17. Therefore, the DEIR must fully describe all procedures relevant to these potential impacts, such as a description of the construction methods to be used and the locations of the loudest noise events. The DEIR fails to provide this crucial information. For example, the DEIR mentions a Construction Noise Blasting Plan, but the plan does not seem to appear anywhere in the document. *See* DEIR at 2.4-16. Similarly, other plans, including an Hazardous Materials Business Plan, are cited in mitigation measures for potentially significant impacts, yet these plans do not appear in the DEIR. DEIR at 2.3-16. In sum, the DEIR fails to describe the project with sufficient accuracy and specificity to enable either substantive public comment or an informed decision on the Project. G-15

generally states that the project conflicts with the California Planning and Zoning and the Subdivision Map Act, but does not specifically state why or which section of these regulations. Therefore, no further response can be provided.

G-14 In response to comments received from the circulation of the Draft EIR, several additions or changes were made to the environmental analysis, including GHG emissions, aesthetics, and alternatives. Therefore, the County decided to prepare a Draft Revised EIR which was circulated for public review from July 28, 2016 to September 12, 2016. The range of alternatives originally evaluated in the Draft EIR and provided in the Draft Revised EIR are considered appropriate and are considered to be adequate because they contain enough variation to facilitate informed decision making and public participation that leads to a reasoned choice. (CEQA Guidelines, 15126.6(a)-(f)). The Final EIR provides additional mitigation measures and a revised estimate of the greenhouse gas emissions reductions that would be achieved by proposed project mitigation measures.

G-15 The County disagrees that the project description is inadequate. A detailed description of the proposed project is provided on Final EIR pages 1-1 through 1-39. This description provides both construction and operational details of the proposed project that are necessary to evaluate the potential environmental effects of the project and include all the elements required by CEQA Guidelines Section 15124. Specifically, Section 15124 requires that an EIR project description contain the following information "but should not supply extensive detail beyond that needed for evaluation and review of the environmental impact."

- ***Precise location and boundaries on a detailed map and a regional map***

	Final EIR Figure 1-1 provides the project site plan, including project boundaries. Final EIR Figure 1-6 provides the project site location in a regional context. • ***A statement of objectives sought by the proposed project.*** The Lake Jennings Market Place project objectives are provided on Final EIR page 1-1. • ***A general description of the project's technical, economic, and environmental characteristics, considering the principal engineering proposals if any and supporting public service facilities.*** Final EIR pages 1-1 through 1-39 satisfy this requirement. Final EIR Section 1.2.1 provides a complete description of the project's component parts (commercial shopping center characteristics, trail component, access, walls and signage, parking, landscaping plan, car wash, and water usage (both construction and operation). Final EIR Section 1.2.2 Technical, Economic, Environmental Characteristics describes the proposed discretionary actions, biological buffer and revegetation plan, archaeological resources capping program, earthwork activities, visual quality, infrastructure and utilities improvements, and off-site improvements. • ***A statement briefly describing the intended uses of the EIR*** Final EIR Section 1.5 describes the intended use of the EIR. Final EIR Section 1.5.1 provides a Matrix of Project Approvals/Permits, listing the discretionary approvals associated with the project, and the corresponding approval agency.

	Regarding noise, a description of the construction equipment type and quantity is provided on Final EIR Table 2.5-14. Final EIR Figure 2.5-4 depicts the 50, 55 and 60 dB(A) Leq-(h) contours at the project site property line. This figure indicates that the loudest noise during construction would be 56.0 dBA at the project site western property line. Noise and vibration impacts associated with blasting are disclosed on Final EIR page 2.5-12 and Figure 2.5-3. EIR Mitigation Measure M-NOI-2 requires the preparation of a Construction Noise Blasting Plan that would be approved prior to issuance of a Blasting Permit. The Plan is prepared by the specific tenant of the commercial space that it would occupy. As such, the Plan will be prepared and approved at the time the specific tenant of the gas station is known. The Plan is required to specify methods, such as increased setbacks, equipment limit operations, temporary barriers, that shall demonstrate compliance with County Noise Ordinance Section 36.409 & 36.410. With implementation of Mitigation Measure M-NOI-2, impacts would be reduced to a less than significant level. The requirement for a Hazardous Materials Business Plan is not a proposed mitigation measure; rather, this is a standard requirement for any business within the County that intends to utilize hazardous materials. The Plan is prepared by the specific tenant of the commercial space that it would occupy. As such, the Plan will be prepared and approved at the time the specific tenant of the gas station is known. As described in the EIR, California Government Code §65850.2 requires that no final certificate of occupancy or its substantial equivalent be issued unless there is verification that the owner or authorized agent has met, or is meeting, the applicable requirements of the Health and Safety Code, Division 20, Chapter 6.95, Article 2, Section 25500-25520.

	Final EIR page 2.4-15 describes the components of Hazardous Materials Business Plan (HMBP). As discussed in the EIR, the HMBP is required to contain basic information on the location, type, quantity and health risks of hazardous materials stored, used, or disposed of onsite. The plan also contains an emergency response plan which describes the procedures for minimizing a hazardous release, procedures and equipment for minimizing the potential damage of a hazardous materials release, and provisions for immediate notification of the HMD, the Office of Emergency Services, and other emergency response personnel such as the local Fire Agency having jurisdiction. Implementation of the emergency response plan facilitates rapid response in the event of an accidental spill or release, thereby reducing potential adverse impacts. Furthermore, the County Department of Environmental Health (DEH) Hazardous Materials Division (HMD) is required to conduct ongoing routine inspections to ensure compliance with existing laws and regulations; to identify safety hazards that could cause or contribute to an accidental spill or release; and to suggest preventative measures to minimize the risk of a spill or release of hazardous substances. Based on conformance with the described requirements for hazardous materials, the project would result in less than significant impacts related to use of hazardous substances. Therefore, the EIR concludes a less than significant impact to this issue and no mitigation is required.

B. The EIR Fails to Adequately Evaluate the Project's Environmental Impacts.

The discussion of a proposed project's environmental impacts is at the core of an EIR. *See* CEQA Guidelines § 15126.2(a) ("[a]n EIR *shall* identify and focus on the significant environmental effects of the proposed project") (emphasis added). As explained below, the EIR's environmental impacts analysis is deficient under CEQA because it fails to provide the necessary facts and analysis to allow the County and the public to make informed decisions about the Project. An EIR must effectuate the fundamental purpose of CEQA: to "inform the public and responsible officials of the environmental consequences of their decisions before they are made." *Laurel Heights Improvement Assn. v. Regents of the University of California*, 6 Cal. 4th 1112 at 1123 (1993). To do so, an EIR must contain facts *and* analysis, not just an agency's bare conclusions. *Citizens of Goleta Valley v. Board of Supervisors*, 52 Cal. 3d 553, 568 (1990). Thus, a conclusion regarding the significance of an environmental impact that is not based on an analysis of the relevant facts fails to fulfill CEQA's informational goal.

G-16

Additionally, an EIR must identify feasible mitigation measures to mitigate significant environmental impacts. CEQA Guidelines § 15126.4. Under CEQA, "public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects. . . ." Pub. Res. Code § 21002.

1. The EIR Fails to Adequately Analyze the Project's Aesthetic Impacts.

The proposed project is located within a scenic corridor (Interstate 8) along a designated County Scenic Highway that is also eligible for designation as a State Scenic Highway, that extends from the El Cajon city limits to State Route 79. It is located in an area that is predominantly residential and agricultural. If approved, the Lake Jennings Market Place Project would irreparably alter the visual character of the Project site and the surrounding area. Given the Project's proposed change in use, the DEIR should have devoted particular attention to the Project's visual impacts. Instead, the DEIR pays short shrift to this important issue.

G-17

(a) The DEIR Fails to Use Correct Thresholds of Significance for Evaluating the Project's Visual Impacts.

San Diego County has adopted thresholds of significance for determining impacts to visual resources in the County. *See* San Diego County, Guidelines for Determining Significance and Report and Content Requirements: Visual Resources, July 30, 2007, attached as Exhibit A. These Guidelines differ entirely from the Guidelines used in the Initial Study or the DEIR. Compare Exhibit A at 13-14 with Initial Study at 7 and DEIR at 3-1 to 3-4. The County must

G-18

G-16 This comment does not specifically identify the manner in which the EIR "fails to adequately evaluate the project's environmental impacts." Therefore, no further response is required. Detailed responses to specific comments regarding the adequacy of the EIR are provided in ensuing responses.

G-17 Analysis of aesthetics and visual resources was initially included in Draft EIR Section 3.1.1. The Initial Study concluded that the proposed would not have an adverse effect on a scenic vista, scenic resources within a State scenic highway, or degrade the existing visual character or quality of the site and its surroundings. Therefore, these issues were initially eliminated from further analysis in the Draft EIR. However, as described in the Recirculation Readers Guide of the Draft Revised EIR, in response to comments on the Draft EIR the aesthetics analysis was re-organized to include the analysis of the project's effect on scenic vistas, scenic resources, and degradation in visual character. The revised analysis is included in the Draft Revised EIR and Final EIR as Section 3.1.1 (previously located in Section 3.2, Effects Found Not Significant During Initial Study in Draft EIR).

As described in the Final EIR (page 3-1), according to the California Scenic Highway Mapping System, I-8, which passes the project site approximately 500 feet to the north, is eligible for official designation as a State Scenic Highway. In addition, according to the Conservation and Open Space Element of the General Plan, I-8 is also included in the County Scenic Highway System.

Final EIR Figure 3.1-2 depicts a view of the project site looking southeast from eastbound I-8 as key observation point (KOP) 1. This viewpoint looks towards the project site

	from a higher vantage point. Motorists along I-8 have a view of the commercial uses (including the newly constructed Lakeside Tractor Supply building) along Olde Highway 80, riparian vegetation, and mobile homes. As stated on Final EIR page 3-6, based on the brief view of the project site, the existence of more readily visible commercial development that is located adjacent to I-8, and visual buffer provided by the proposed landscaping plan, the proposed project would result in a less than significant impact related to scenic resources within a state scenic highway. A consistency analysis with pertinent Lakeside Community Plan goals and policies and the Lakeside Design Guidelines is provided on Final EIR pages 3-97 through 3-103. The project was found to be consistent with the goals and policies of the Lakeside Community Plan and Lakeside Design Guidelines. Furthermore, the proposed project was unanimously approved by the Lakeside Planning Group at its February 2, 2016 meeting. The County disagrees with the commenter's characterization of the project area. The project site is not located in an area that is predominantly residential and agricultural. The project site is surrounded by a variety of land uses. While residential uses do exist in the immediate vicinity of the project site, the site is also surrounded by roadways, commercial uses to the north, west, and northeast, and a light industrial business park to the east of the project site. As shown in Final EIR Figure 3.1-17, there are no parcels of land in the immediate vicinity that are zoned for agricultural use. The nearest agriculturally zoned land is located approximately 0.25 miles southwest of the project site. Regarding community character, as described on Final EIR page 3-7, the project would implement a Site Plan that

	includes the "Western Style" of architectural design for all of the commercial structures within the project. As shown in Final EIR Figures 1-2 and 1-3, the proposed project's building form would meet the Lakeside Design Guidelines. In addition, a consistency analysis with pertinent Lakeside Community Plan goals and policies and the Lakeside Design Guidelines is provided on Final EIR pages 3-97 through 3-103. The project is also subject to a design review consistent with Zoning Ordinance Sections 3750-5799. The purpose of design review is to evaluate site planning, architecture, landscape design, signage and lighting to ensure that new development is compatible with surrounding development and community goals. These regulations provide for the maintenance and enhancement of a community's individual character and identity. Furthermore, the proposed project was unanimously approved by the Lakeside Planning Group at its February 2, 2016 meeting. Further, as stated on Final EIR page 3-7, given that the proposed project would adhere to the Lakeside Community Plan and Lakeside Design Guidelines development standards and design criteria for commercial development, the project would not substantially degrade the visual character or quality of the project site or the surrounding area. For these reasons, this impact is considered less than significant. Furthermore, the project is consistent with the building height requirements of the Lakeside Community Plan and Lakeside Design Guidelines. The previously approved residential project proposed residential building heights ranging between 34 and 36 feet with architectural towers up to 40 feet in height. The previously approved residential project was determined to have a less than significant impact

with regard to the degradation of the existing visual character or quality of the site and its surroundings. Compared to the height of the residential buildings, the maximum height of the grocery store would be 35 feet and the proposed shops would not exceed 32 feet in height.

G-18 The commenter is correct in stating that the County has adopted thresholds for visual resources. However, the commenter is in error stating that the County guidelines differ entirely from the guidelines used in the Initial Study or the Draft EIR.

The CEQA Initial Study prepared for the proposed project is based on the State CEQA Guidelines, Appendix G. These are the same exact thresholds in the County Guidelines for Determining Significance and Report Format and Content Requirements: Visual Resources, July 30, 2007.

Page 1 of the County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements: Visual Resources, July 30, 2007 states the following:

> This document provides guidance for evaluating adverse environmental effects that a proposed project may have to visual resources. Specifically, this document addresses the following questions listed in the CEQA Guidelines, Appendix G, I. Aesthetics:
>
> a) Would the project have a substantial adverse effect on a scenic vista?

apply its validly adopted Guidelines. It has no discretion to abandon these Guidelines for the new thresholds of significance that it has apparently adopted for the DEIR. G-18 Cont.

To the extent that the DEIR attempts to implement new thresholds of significance, this directly violates CEQA. CEQA mandates that an agency's decision "to adopt such thresholds is supported by substantial evidence." CEQA Guidelines § 15064.7(c). Yet, the DEIR contains no substantial evidence to support the County's decision to use alternative guidelines. The DEIR merely ignores the County Guidelines and relies on the scant discussion in the Initial Study. This approach is invalid under CEQA. G-19

(b) The DEIR 's Analysis and Conclusions Regarding Aesthetic Impacts to Interstate Highway 8 and to the Area's Visual Character Are Unsupported.

The DEIR completely fails to evaluate the Project's impacts on the visual character of the surrounding area and relies on the Initial Study for the Project, which concludes that these impacts would be less than significant. Initial Study at 8. The Initial Study defines the term "visual character" and describes how visual character is typically analyzed. Id. Unfortunately, aside from one sentence stating that the Project will change the project site from undeveloped land containing mature coast live oak trees and non-native grassland to a commercial development, the Initial Study fails to actually conduct *any* analysis at all. Instead, the Initial Study concludes, without any evidence, that "the project would not substantially degrade the existing visual character or quality of the site and its surroundings." Id. G-20

Similarly, the DEIR dismisses the Project's impacts to a designated scenic corridor. Once again, the DEIR relies on the Initial Study's summary conclusion that impacts to scenic resources would be less than significant. Initial Study at 7. However, rather than analyze the impacts, the Initial Study rests its conclusion on the single, unsupported statement that "the visibility of the project site from I-8 is limited." Id. G-21

Replacing thirteen undeveloped acres with a massive shopping center that is out of scale with the surrounding community would indisputably have significant visual impacts. The accepted approach to analyzing visual and aesthetic impacts is as follows: G-22

i. Describe the criteria for significance thresholds.

ii. Characterize the existing conditions of the project site and the surrounding area by photograph and description, and select key viewpoints within the area, including scenic corridors and landscapes.

iii. Use photomontages or visual simulations, to illustrate the change in character of the project site before and after project implementation.

b) Would the project substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a State scenic highway?

c) Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

Please also refer to response to comment G-19.

G-19 As described in response to comment G-18, the Draft EIR does not implement new thresholds of significance. The two topics under Aesthetics (light and glare) that were identified during the Initial Study as having potential significant impacts were further analyzed in the Draft EIR under Section 3.1.1, Aesthetics. Scenic vistas, scenic resources within State Scenic Highways and impacts on visual character were evaluated in Draft Revised EIR (Section 3.1.1). These issue areas were analyzed according to the following: Appendix G of the CEQA Guidelines; County Guidelines for Determining Significance and Report Format and Content Requirements: Visual Resources, July 30, 2007; and the County of San Diego's adopted thresholds, Guidelines for Determining Significance and Report Format and Content Requirements: Dark Skies and Glare, July 30, 2007.

G-20 As previously described, the aesthetics analysis was revised and expanded to include impacts to scenic vistas, scenic resources within State Scenic Highways, and impacts on visual character. The revised analysis is included in Section 3.1.1 of the Final EIR. Also refer to response to comment G-17.

G-21 Please refer to response to comment G-17.

iv. Identify feasible mitigation measures and alternatives to reduce or eliminate significant impacts.

v. Where mitigation measures are proposed, use the simulations to illustrate the change in character before and after project mitigation measures are imposed (e.g., landscaping at various stages of growth, setbacks, clustering, reduced scale and height, building color modification). G-22 Cont.

Tellingly, the DEIR does not provide a single simulation of the Project at full buildout, despite a multitude of public comments submitted on earlier development proposals for this site that emphasized the importance of maintaining the visual character of the community. An analysis consistent with the approach detailed above would allow decision makers and the public to evaluate the aesthetic impacts of the project. G-23

Photomontages or visual simulations would provide a direct experience of the visual impact of a 100,000 square-foot commercial development located at the visual entrance to the community. Such an analysis could assist decision makers in determining whether a smaller, less intrusive development should be permitted on that site. Such an analysis would also demonstrate that the project's aesthetic effects render it incompatible with the General Plan's Land Use Element, which requires that "development be located, scaled, and designed to be compatible with the unique character of the community." County of San Diego General Plan, Land Use Element Policy LU-11.2. Because the Project would develop a 13-acre site with commercial use in place of the designated residential uses for the site, and because the development would be out of scale with the neighborhood commercial development in the surrounding area, the Project would not be compatible with the character of the community and would thus be inconsistent with the General Plan. This inconsistency means that the Project cannot lawfully be approved. Simply asserting that the project will not have an effect on visual character of the area does not represent adherence to the General Plan. G-24

A revised EIR must include a detailed and thorough analysis of the project's likely aesthetic impacts, as outlined above. It must provide an adequate analysis that would permit informed decisions about the project, effective mitigation measures, and alternatives that could have less intensive impacts. The revised EIR must also analyze all project components that could impact views. G-25

2. The EIR Fails to Adequately Analyze the Project's Inconsistency with County Plans.

A local government's general plan serves as the "constitution for future development," to which all subordinate land use decisions (e.g., zoning ordinances, subdivision map approvals, and other approvals) must conform. *See DeVita v. County of Napa*, 9 Cal.4th at 772-73 (1995); *Neighborhood Action Group v. County of Calveras*, 156 Cal.App.3d 1176, 1183-84 (1984) G-26

G-22 A complete analysis of visual impacts including a description of significance criteria, existing conditions, and photographs is provided in Final EIR Section 3.1.1. As the EIR determined that all impacts would be less than significant, no mitigation measures are required.

The aesthetics analysis was prepared in compliance with CEQA Guidelines, Appendix G. Visual simulations are not mandatory under CEQA and are determined appropriate on a project-by project basis. Since the project would be consistent with the existing visual setting and character of the area and result in less than significant impacts to aesthetics, the County determined visual simulations were not necessary. Please refer to response to comments G-17, G-18, and G-19, as well as existing setting photographs in Final EIR Section 3.1.1.

G-23 Draft EIR Figure 1-1 provides the project site plan. Draft EIR Figures 1-2 and 1-3 depict the architectural elevations for the proposed commercial buildings. Regarding the evaluation of the project's aesthetic impacts, please refer to response to comment G-22.

G-24 The commenter incorrectly states the square footage of the proposed project as "100,000 square foot commercial development." As provided on Final EIR page S-1, the project would involve the development of a 76,100 square foot neighborhood commercial shopping center. Of the 13 total acres, nine acres would be developed with the 76,100 square foot shopping center and parking spaces for 389 vehicles. The remaining four acres would be dedicated for open space and easements. Refer also to response to comment G-5 regarding the correct footprint of the proposed project.

	Regarding an adequate aesthetics analysis of the proposed project, please refer to responses to comments G-17 through G-23. Regarding the scale of the project site in relation to the community, the proposed project was reviewed and approved by the Lakeside Planning Group Design Review Committee. Additionally, the project was considered by the Lakeside Community Planning Group on February 3, 2016. At this meeting, the Planning Group unanimously approved the project. In addition, the Tractor Supply Project, which is located immediately north of the project site along Olde Highway 80, has been constructed. The Tractor Supply business occupies a 19,000 square foot building that is 20 feet in height. The Tractor Supply building is located on a site that is elevated approximately 10-20 higher than the proposed project. Refer also to response to comment G-17 regarding consistency with community character and G-2 regarding consistency with the General Plan. **G-25** Please refer to response to comment G-22. **G-26** This comment is acknowledged. This comment provides an overview of court cases related to general plan consistency. This comment also provides an overview of the purpose of the County's General Plan. As this comment does not specifically address the adequacy of the EIR, no further response is warranted. Please refer to Section 1.6 of the Final EIR for a discussion of the project's consistency with the General Plan.

(validity of permit process derives from compliance with hierarchy of planning laws). Approval of a development project is invalid if the project is inconsistent with a "fundamental, mandatory and specific" general plan provision. *Families Unafraid to Uphold Rural El Dorado County v. Board of Supervisors*, 62 Cal.App.4th 1332, 1342 (1998) (project inconsistent with general plan where it conflicted with land use density policy); *San Bernardino Valley Audubon Soc'y v. County of San Bernardino*, 155 Cal.App.3d 738, 753 (1984) (project inconsistent with general plan where it conflicted with a single policy in conservation element). The project need not present an "outright conflict" with the general plan to be considered inconsistent; the determining question is instead whether the project "is compatible with and will not frustrate the General Plan's goals and policies." *Napa Citizens for Honest Gov't v. County of Napa*, 91 Cal.App.4th 342, 379 (2001).

The County of San Diego General Plan Update establishes a blueprint for future land development projects in the unincorporated County that meets community desires and balances the environmental protection goals with the need for housing, agriculture, infrastructure, and economic vitality. County General Plan Update EIR at S-2. According to the County, the General Plan "will direct population growth and plan for infrastructure needs, development, and resource protection." *Id.*

G-26 Cont.

The General Plan EIR identified Lakeside as one of the County Subregions with the highest population. General Plan EIR at 2.12-2. During the General Plan Update in 2011, the County Board of Supervisors increased the allocation of future housing units in Lakeside reflecting the need for additional affordable housing in the Plan Area. General Plan EIR, Volume IV, Appendix C at 2, Table 1. To that end, the County designated the proposed Project site as Village Residential (VR-15) to ensure adequate housing sites in the area. Therefore, the General Plan, the Housing Element of the General Plan, and the EIR for the General Plan, all assume that the Project site is designated for, and will be developed as, multi-family residential uses.

G-27

Although the DEIR concludes that the Project is consistent with the County's General Plan (DEIR at 3-119), this is not the case. Among other failings in this regard, the DEIR fails to analyze the effects of the proposed change from residential to commercial uses. Instead, the DEIR asserts that the change in designation is consistent with the General Plan because both the existing designation for the site (Village Residential) and the proposed designation (General Commercial) are included in the Village Regional Category, making the change consistent with the Community Development Model. However, according to the General Plan Land Use Element, "Regional Categories do not specify allowable land uses, but rather the general regional structure, character, scale, and intensity of development." Land Use Element at 3-6. In other words, residential and commercial uses are not interchangeable simply because both are considered compatible with the Village Regional Category. The proposed Project would result in a development of commercial uses on a site designated for affordable housing. This is an inconsistency with the General Plan that must be disclosed and properly evaluated.

G-28

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G-27 The commenter is correct in stating that the project site is currently designated Village Residential (VR-15) by the County's General Plan and is therefore assumed to be developed as a multi-family residential use. However, the project is requesting a General Plan Amendment to change the existing Residential Land Use Designation from Village Residential (VR-15) to the General Commercial (C-1) Land Use Designation. Furthermore, General Plan EIR, Volume IV, Appendix C at page 2, Table 1 does not state that the increased allocation of additional housing units in Lakeside is a reflection of a need for additional affordable housing. As this comment does not specifically address the adequacy of the Draft EIR, no further response is warranted.

G-28 The project site is currently vacant. Consistent with CEQA, the EIR provides a ground to plan (i.e., the proposed project) analysis of the potential environmental impacts (i.e., the environmental effects associated with development of the existing vacant site with the proposed commercial project). Final EIR Chapter 4.0 Alternatives to the Proposed Project provides an analysis of the existing, approved residential use of the site as compared to the proposed project (beginning on page 4-6).

The County disagrees the Draft EIR asserts that the change in designation (from residential to commercial) is consistent with the General Plan because both the existing and proposed designations are included in the Village Regional Category, making the change consistent with the Community Development Model. As discussed in response to comment G-2, the County acknowledges that the project is inconsistent with the existing designations set forth by the General Plan and Zoning Ordinance, and that a General Plan Amendment and Rezone is required for

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The Project is inconsistent with General Plan Land Use Policy LU-2.2, which states that Community Plans must be consistent with the General Plan goals and policies of which they are a part. The DEIR reasons that because the project site included two commercial land use designations in the past and is adjacent to lands designated as General Commercial, the change in designation would be consistent with the General Plan and Community Plan. DEIR at 3-107. However, this reasoning makes no sense. First, the former General Plan designation for the site is irrelevant. Second, the land use designations for adjacent sites do not provide a basis for changing the designation of the Project site. G-29

Moreover, the Lakeside Plan area already has approximately 300 acres devoted to commercial uses. Lakeside Community Plan at 11. These commercial areas are concentrated in the Lakeside Town Center and other small commercial developments oriented towards local needs. *Id.* "The Lakeside Town Center was developed to ensure that the Town Center remains in the business nucleus of the community." *Id.* The proposed Project is neither a small, local-serving business nor is it located in the Town Center. Siting a regional-scale shopping center on land not designated for commercial use and located outside the Town Center is inconsistent with the intent and goals of the Lakeside Community Plan. G-30

General Plan Policy LU-11.2 requires that "development be located, scaled, and designed to be compatible with the unique character of the community." The DEIR asserts that the Site Plan for Project is "consistent with the unique commercial architectural design objectives of the Lakeside Community Design Guidelines." However, the DEIR provides no evidence to support this assertion. G-31

For the foregoing reasons, the Project is inconsistent with the General Plan and the Lakeside Community Plan. Because of the Project's inconsistencies with these planning documents, approval of this Project would violate State Planning and Zoning Law. G-32

3. The DEIR Fails to Properly Analyze the Project's Impacts on Water Supply Resources.

The Project will unquestionably require significant amounts of water in order to serve construction and operational needs. While the DEIR acknowledges this need, it fails to account for the impacts associated with providing this water. G-33

CEQA requires that an EIR present decision makers "with sufficient facts to evaluate the pros and cons of supplying the amount of water that the [project] will need." *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* , 40 Cal.4th 412, 430-31 (2007) . This includes identifying and analyzing water supplies that "bear a likelihood of actually proving available; speculative sources and unrealistic allocations ('paper water') are insufficient bases for decisionmaking under CEQA." *Id.* at 432. The fact that an agency has identified a likely source of water for the Project does not end the inquiry. G-34

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project implementation. Please see Final EIR page 1-12 which indicates that the project complies with all of the above-named plans and ordinances with the exception of the Land Use Element of the General Plan and the Zoning Ordinance. The project is inconsistent with the current designation and a General Plan Amendment is required to eliminate this inconsistency. Also, the project is inconsistent with the current zoning designation, and a rezone is required to eliminate this inconsistency.

For clarification, the proposed project site is not currently designated for affordable housing.

G-29 A General Plan Amendment and Rezone is being requested to allow the development of the site with a commercial use. The project has been analyzed and determined to be consistent with applicable goals and policies in the General Plan and Community Plan. As noted in Final EIR Table 3.1-9, the project site has included at least two commercial land use designations between 1978 and 2012 and currently is adjacent to the C-2 General Commercial designation on three sides of the property. Additionally, the site is adjacent to a freeway off ramp. Implementation of the General Plan Amendment (change to C-1) would be consistent both with the General Plan Guiding Principles (as detailed above), and with the Lakeside community character and Lakeside community objectives. The Community Plan, which is part of the overall General Plan, is required to be consistent with the general plan of which it is a part. The General Plan Guidelines (2003) prepared by the Governor's Office of Planning and Research states, "An area or community plan is adopted by resolution as an amendment to the general plan, in the manner set out in §65350, et. seq. It refines the policies of the general plan as they apply to a smaller geographic area and is implemented by ordinances and other

	discretionary actions, such as zoning… An area or community plan must be internally consistent with the general plan of which it is a part." Therefore, the proposed project is consistent with General Plan Policy LU-2.2, which states that Community Plans must be consistent with the General Plan goals and policies of which they are a part. Refer also to response to comment G-2 regarding General Plan consistency and G-17 regarding the existing character of the area.
	G-30 The commenter refers to the proposed project as a "regional-scale shopping center" suggesting a much larger project. The scale of the proposed project is characteristic of a "Neighborhood Shopping Center." Please also refer to response to comment G-8. The proposed project's consistency with pertinent Community Plan goals and policies are provided in Final EIR Table 3.1-9. As shown in Final EIR Table 3.1-9, the proposed project would be consistent with the commercial goal and policies of the Lakeside Community Plan. The proposed project would provide for the orderly growth of well-designed and located commercial areas that are necessary and convenient for shopping needs and compatible with the character of the community. All facilities are present to serve the development and the project fronts on Olde Highway 80 and is adjacent to the Lake Jennings Park Road interchange with Interstate 8. The implementation of the proposed General Plan Amendment and Site Plan would enhance and complete an existing commercial node designed to meet commercial community character standards of the Lakeside Design Guidelines.

	G-31 Refer to response to comment G-17 regarding consistency with community character and response to comment G-24 regarding the scale of the project. **G-32** The County disagrees that the project conflicts with the County's General Plan and Development Code and that it is in violation of state planning and Zoning Law. Please refer to response to comment G-2. **G-33** The proposed project's estimated water consumption is provided on Final EIR page 3-49 and presented on Final EIR Table 1-1. An analysis of the project's potential impacts regarding water supply is provided on Final EIR pages 3-48 through 3-52. See response to comment G-34. **G-34** The Padre Dam Municipal Water District (PDMWD) has indicated that it can provide water to the project. The PDMWD's water availability form is dated August 17, 2015 and is provided as RTC Attachment 2 of this response to comments. It should be noted that the project's water availability form from PDMWD dated August 17, 2015 expired on August 17, 2016. The project applicant has obtained an updated water availability letter dated April 6, 2017 and is provided as RTC Attachment 3 of this response to comments. Both water availability letters indicate that the project is within the service area of the PDMWD. The facilities necessary to serve the project area are currently in place and would continue to be reasonably expected to be available within the next five years based on the capital facility plans of the district. As a District condition, adequate water facility commitment shall be committed prior to final project approval/map recordation and shall be available concurrent with project need.

	California Senate Bill (SB) 610 states that water supply assessments for certain projects that meet a threshold must be furnished to local governments for inclusion in environmental documentation for certain projects subject to CEQA. SB 610 takes a significant step toward managing the demand of California's water supply as it provides regulations and incentives to preserve and protect future water needs. The intent of this bill is to coordinate local water supply and land use decisions to help provide California's cities, farms, rural communities, and industrial developments with adequate water supplies. With the introduction of SB 610, any project that meets the SB 610 threshold under CEQA shall provide a Water Supply Assessment (WSA) as defined in the Water Code Section 10912. The criteria established in Section 10912 include "a proposed residential development of more than 500 dwelling units" and "a proposed shopping center…having more than 500,000 square feet of floor space." Also, according to Section 10912, a Water Supply Assessment would be required for "a mixed-use project that includes one or more of the projects specified in this subdivision." The proposed project is not subject to the requirements of SB 610 because the proposed project does not meet the development thresholds as established in Section 10912 of the Code. The Urban Water Management Planning Act requires every urban water supplier in California that provides over 3,000 acre feet of water annually, or serves 3,000 or more connections, to prepare an Urban Water Management Plan (UWMP) that assesses the reliability of its water resources over a 20-year planning horizon considering normal, dry, and multiple dry years. Suppliers must update their UWMP every five years and submit it to California's Department of Water Resources, where it is reviewed to assure compliance

	with all requirements set forth in the Urban Water Management Planning Act and all subsequent amendments. The Board of Directors to the California Department of Water Resources adopted PDMWD's 2010 UWMP on June 28, 2011. PDMWD's 2015 UWMP is currently under preparation. Section 5 of PDMWD's 2010 UWMP discusses the reliability of their water resources and those of their suppliers, Metropolitan Water District (MWD) of Southern California and the California Department of Water Resources. PDMWD imports 100 percent of its potable water supply from the San Diego County Water Authority (SDCWA). The UWMP concluded that if MWD, SDCWA and member agency supplies are developed as planned, along with achievement of the Water Conservation Act (SB X7-7) retain conservation target, no shortages are anticipated within the Water Authority's service area in a normal year and single dry year through 2035. Multiple dry water year assessments in five year increments are also provided in the UWMP. Based on these multiple dry water year assessments, regional shortfalls were projected to occur within the Water Authority's service area. However, these potential shortfalls do not mean that supplies will not be sufficient to meet demand, but rather show that multiple dry-year scenarios may occur as a forecasted component of California's variable hydrology and that supplies and demands must be managed during those times through extraordinary measures to ensure sufficient supplies on a regional basis.[1] The Water Authority has invested in carryover storage supply capacity, which can be utilized in dry-years to improve reliability. The carryover storage investment

[1] Padre Dam Municipal Water District, 2010. 2010 Urban Water Management Plan. Available on-line at http://www.padredam.org/DocumentCenter/View/86.

	includes both surface water storage in San Vicente Reservoir and out-of-region groundwater storage in California's central valley, for a total of approximately 170,000 acre feet of storage capacity available by 2012, when the San Vicente Dam raise is scheduled for completion. Once completed, it will take three to five years to fill the reservoir. In years where shortages may still occur, after utilization of carryover storage, additional regional shortage management measures, consistent with the Water Authority's Water Shortage and Drought Response Plan, will be taken to fill the supply shortfall. These measures could include securing dry-year transfers, which the Water Authority successfully acquired and utilized during the recent shortage period. In addition to dry-year supplies, extraordinary conservation, achieved through voluntary or mandatory water-use restrictions, could also assist in managing shortages. Padre Dam's Water Supply Management Plan establishes water management requirements necessary to conserve water, enable effective water supply planning, assure reasonable and beneficial use of water, prevent waste of water, prevent unreasonable use of water, prevent unreasonable method of use of water within Padre Dam in order to assure adequate supplies of water to meet the needs of the public, and further the public health, safety, and welfare, recognizing that water is a scarce natural resource that requires careful management not only in times of drought, but at all times. At the time the Draft EIR and Draft Revised EIR were released for public review, California was facing a severe statewide drought and PDMWD was at a Level 2 Drought Alert Condition. It should be noted that as of June 2016, PDMWD moved out of a Level 2 Drought Alert Condition

	and back to Level 1: Drought Watch. In Level 1, conservation is voluntary. The San Diego Water Authority Board declared the drought over in San Diego County in January 2017. As described on Final EIR pages 3-49 through 3-50, the project will be required to implement and comply with PDMWD's mandatory water use efficiency measures. Drought tolerant landscaping is identified as a project design consideration, as provided on Final EIR page 1-37. Additionally, the Final EIR states on page 1-37 that "all irrigated areas would receive uniform coverage by means of an automatically controlled, electrically activated underground piped irrigation system for water conservation and to minimize erosion. Remote control valves would be utilized with low precipitation heads for reduced water consumption. An automatic, water efficient irrigation system would be provided to establish and maintain landscaping. All irrigation would be designed per the County of San Diego water conservation ordinance." The County will require these project design features as conditions of certification. Further, the car wash includes a system where water is recycled and reused for vehicle washing. Commercial vehicle car washes utilize less water per car than hand washing. Further, wastewater is disposed into the sewer system, and is therefore treated; whereas in cases where cars are hand washed (non-commercial), the wastewater enters the stormwater drainage system and carries untreated pollutants into downstream water bodies. The proposed recycled water system is a component of the gas station car wash. Because the carwash is subject to a use permit, the County will require the carwash to utilize a recycled water system as a condition of project approval.

> The ultimate question under CEQA . . . is not whether an EIR establishes a likely source of water, but whether it adequately addresses the reasonably foreseeable *impacts* of supplying water to the project. If the uncertainties inherent in long-term land use and water planning make it impossible to confidently identify the future water sources, an EIR may satisfy CEQA if it acknowledges the degree of uncertainty involved, discusses the reasonably foreseeable alternatives—including alternative water sources and the option of curtailing the development if sufficient water is not available for later phases—and discloses the significant foreseeable environmental effects of each alternative, as well as mitigation measures to minimize each adverse impact.

G-34 Cont.

Id. at 434. This analysis is crucial in light of the drought that has gripped this State for the past several years.

The DEIR discloses that construction activities would require 3.02 million gallons of water and operational needs will require an additional 9.98 million gallons annually. DEIR at 3-64. The DEIR claims that the relevant water utility—Padre Dam Municipal Water District ("PDMWD")—provided a letter indicating "adequate water resources and entitlements." *Id.* This appears to be the extent of the DEIR's analysis. Such an approach violates CEQA.

G-35

First, it appears that the DEIR's estimates of water consumption are based on pure speculation. The Project contains a car wash, and according to the DEIR, "the car wash would use . . . 584,000 gallons per year. However, the project architect indicates that the car wash system proposed for the project could use as little as seven gallons of water per wash with the proposed water recycling system [resulting in a demand of] approximately 102,000 gallons per year." DEIR at 1-4. The DEIR conveniently uses the lower figure (DEIR at Table 1-1) but provides no evidence showing that the lower figure is accurate. Indeed, there is no indication in the DEIR that the recycled system is a mandatory design element. The DEIR must provide substantial evidence supporting this lower number.[1]

G-36

The DEIR also fails to examine the impact of providing these water supplies in light of Executive Order B-29-15 which requires immediate reductions of 25 percent in potable water use by commercial properties. The DEIR references the existence of E.O. B-29-15, but provides no analysis of the Project's consistency with the order. DEIR at 3-61. Furthermore, the DEIR lists several applicable General Plan policies, but declines analyze their application to the Project. For example, LU-13.1 requires new development to "include[] both indoor and outdoor water conservation measures to reduce demand." DEIR at 3-62. Other policies require

G-37

[1] The DEIR also fails to reveal which estimate of water use was provided to PDMWD before the utility determined that it could serve the Project with existing entitlements. The DEIR should disclose this information, and should release the August 2015 letter from PDMWD in order to verify whether the utility has in fact made such a determination.

G-36 (footnote)

G-35 An analysis of the project's potential impacts regarding water supply is provided on Final EIR pages 3-48 through 3-52. Please see response to comment G-34.

G-36 The proposed recycled water system is a component of the gas station car wash. Because the carwash is subject to a use permit, the County will require the carwash to utilize a recycled water system as a condition of project approval. Further, to clarify, the following text has added to Final EIR page 1-4 through 1-5:

Commercial carwashes are categorized as either conveyor, in-bay automatic or self-serve. The proposed car wash equipment would be an in-bay automatic carwash, which is characterized by a wash bay in which the customer stays in their car as the carwash equipment uses either spray nozzles or brushes, or a combination of both to process the individual cycles. The project applicant anticipates serving approximately 40 vehicles per day at the proposed car wash. Assuming water use of 40 gallons per vehicle, the car wash would use 1,600 gallons per day, or 584,000 gallons per year. Water use of 40 gallons per wash is estimated based on the International Car Wash Association's report titled *Water Use in the Professional Car Wash Industry* (2002). However, the car wash proposes a water recycling system which would reduce water consumption and is considered a GHG emission reduction measure. The car wash system proposed for the project could use as little as seven gallons of water per wash with the proposed water recycling system. At seven gallons per wash, the project would use approximately 102,000 gallons per year, or about 280 gallons per day. Because the project applicant has committed to the recycling water systems, the GHG emissions calculation for water use appropriately uses this lower factor.

	The following footnote has been added to Final EIR page 1-5: Water use of 40 gallons per wash is estimated based on International Car Wash Association (ICWA), *Water Use in the Professional Car Wash Industry* (Table 1.2, p. 34), 2002. Available online at: http://www.carwash.org/docs/defaultdocument-library/water-use-in-the-professional-car-wash-industry.pdf?sfvrsn=0. This report found a range of potable water use for so-called "in bay automatic" car washes of between about 23 gallons and 73 gallons per wash in three different cities.
G-36	**(footnote)** The project applicant provided the proposed site plan, including the car wash, to PDMWD. PDMWD has reviewed the site plan and proposed commercial uses and has determined that an adequate water supply is available to serve the project. PDMWD's water availability form is dated August 17, 2015 and is provided as RTC Attachment 2 of this response to comments. It should be noted that the project's water availability form from PDMWD dated August 17, 2015 expired on August 17, 2016. The project applicant has obtained an updated water availability letter dated April 6, 2017 and is provided as RTC Attachment 3 of this response to comments. Both water availability letters indicate that the project is within the service area of the Padre Dam Municipal Water District and that facilities to serve the project area are reasonably expected to be

conservation design elements including drought-efficient landscaping. DEIR at 3-63 (citing COS-4.1 and 4.2). None of these elements are included in the Project description as enforceable design elements or mitigation measures. G-37 Cont.

Finally, the DEIR fails to analyze the cumulative impacts associated with providing water for this Project. According to the DEIR, "[i]t is expected that adherence to existing regulations will reduce any potential impacts associated with [the] cumulative projects . . . to a less than significant level. Furthermore, the cumulative projects considered in this analysis would be required to prepare and receive approval from utility providers for each respective project prior to construction." DEIR at 3-66. This analysis does not discuss the "reasonably foreseeable impacts of supplying water to the project." *Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova*, 40 Cal.4th at 434 (2007). The DEIR should disclose what effect the development of the cumulative projects will have on PDMWD's existing entitlements and facilities. Also, there is no reason that prior approval from local utilities will ameliorate any potential impacts. The County must undertake its own analysis of the impacts associated with the Project. The DEIR must be revised to include facts and analysis regarding cumulative water supply impacts. CEQA Guidelines § 15064(b) (significance determinations must reflect "careful judgment . . . based to the extent possible on scientific and factual data."); *Californians for Alternatives to Toxics v. Dept. of Food & Agriculture*, 136 Cal.App.4th 1, 17 (2005) ("[C]onclusory statements do not fit the CEQA bill."). G-38

4. The DEIR Fails to Properly Analyze and Mitigate the Project's Contribution to Climate Change.

The DEIR's analysis of greenhouse gas ("GHG") emissions attributable to the Project is deficient. The document's conclusion that the Project—which consists of more than 76,000 square feet of commercial development in an undeveloped area—would meet the State's GHG reduction goals in 2020 is completely lacking in substantial evidence. The document provides no data or information to substantiate that a new development with estimated annual emissions of 3,093.6 metric tons of carbon dioxide ("CO2") equivalent is doing its fair share to meet GHG reduction targets. Moreover, the DEIR relies on an inappropriate way to measure the significance of the Project's impacts, underestimates the Project's GHG emissions, ignores that the Project conflicts with various relevant GHG-reduction policies, and uses other flawed analyses. Because the DEIR concludes that the Project would not have a significant climate-related impact in 2020, it fails to adopt feasible mitigation for the development. The DEIR also fails to offer any analysis or mitigation of impacts from GHG emissions after 2020. Because the Project's impact would be significant, the DEIR must identify and include adequate mitigation measures to reduce or avoid the Project's contribution to global warming. G-39

available within the next five years based on the capital facility plans of the district. It should be noted that the water facilities necessary to serve the project are currently in place. Please also see response to comment G-36.

G-37 Executive Order B-29-15 directed the State Water Resources Control Board to impose restrictions to achieve a statewide 25 percent reduction in potable urban water usage through February 28, 2016. At the time the Draft EIR and Draft Revised EIR were released for public review, California was facing a severe statewide drought and PDMWD was at a Level 2 Drought Alert Condition. It should be noted that as of June 2016, PDMWD moved out of a Level 2 Drought Alert Condition and back to Level 1: Drought Watch. In Level 1, conservation is voluntary. The San Diego Water Authority Board declared the drought over in San Diego County in January 2017. On April 7, 2017, Governor Brown lifted the drought state of emergency in most of California (except Fresno, Kings, Tulare and Tuolumne counties). Although the drought state of emergency has been lifted in San Diego County, the project will still be required to implement and comply with PDMWD's mandatory water use efficiency measures. Please also see response to comment G-34.

G-38 As described in Final EIR Section 3.1.6.3, the cumulative projects within PDMWD's potable service area boundary includes the Lakeside Tractor Supply Project, Eastern Service Area Secondary Connection Project, Peter Rios Estates Apartment Complex Project, and the Eastern Service Area Secondary Connection Project. The proposed project, along with the cumulative projects considered in the cumulative impacts analysis would be required to provide availability and commitment letters demonstrating sufficient water resources and access to available water

(a) The DEIR's Significance Threshold for Measuring GHG Emissions is Flawed.

Determining whether or not a project may result in a significant adverse environmental effect is a key aspect of CEQA. CEQA Guidelines § 15064(a) (determination of significant effects "plays a critical role in the CEQA process"). Under CEQA, agencies use thresholds of significance as a tool for judging the significance of a Project's impacts. CEQA Guidelines §§ 15064.4, 15064.7. The Resources Agency recently updated the CEQA Guidelines by adopting recommendations on how agencies may analyze the significance of a project's GHG emissions. One of the factors for determining the significance of Project GHG impacts in the Guidelines is whether the project "may increase or reduce greenhouse gas emissions compared to the *existing environmental setting*." Guideline § 15064.4(b)(1) (emphasis added). The Guidelines also instruct the lead agency to determine "[t]he extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions." Guideline § 15064.4(b)(3); *See also* DEIR at 3-37. G-40

Here, while the DEIR quantified the Project's anticipated GHG emissions, it relied on an impermissibly narrow significance threshold. The DEIR looked to the San Diego County Recommended Approach for Addressing Climate Change ("County GHG Guidance") to set a significance threshold for GHG emissions. DEIR at 3-37. Pursuant to the County GHG Guidance, the DEIR applies a 900 tonne annual screening threshold. Because the Project emissions exceed this screen, the DEIR performs additional analysis to determine whether the Project "would conform with the GHG reduction targets set forth in the 2011 Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document." *Id.* According to the DEIR, preexisting state policies would reduce the Project's emissions by more than 16% below business as usual ("BAU") thereby reducing the Project's GHG emissions to an insignificant level. While the DEIR quantifies the Project's anticipated GHG emissions, the document does not analyze the impact of those emissions as compared to the "existing environmental setting." Guideline § 15064.4(b)(1).[2] G-41

Moreover, the DEIR identifies applicable policies of the General Plan and then fails to analyze the Project's consistency with those policies. For example, General Plan policy COS-14.9 "[r]equire projects that generate potentially significant levels of air pollutants and/or GHGs such as quarries, landfill operations, or large land development projects to incorporate renewable energy, and the best available control technologies and practices into the project design." DEIR at 3-35. At no point does the DEIR explain why this policy should not require the incorporation G-42

[2] Other agencies have been able to adopt numerical thresholds of significance. For example, the Sacramento Metropolitan Air Quality Management District applies a 1,100 metric ton threshold for construction and operational phases of projects. *See* Exhibit B at 6-10. The operational emissions associated with this Project would be more than twice as large.

facilities prior to building permit issuance. Similar to the proposed project, the cumulative projects will also be required to implement and comply with PDMWD's mandatory water use efficiency measures. Please also refer to response to comment G-34.

G-39 Revisions to the proposed project have resulted in the identification of new significant environmental impacts since the Draft EIR was circulated to GHG emissions. Accordingly, the Greenhouse Gas Emissions section of the Draft EIR has been moved from Chapter 3.0, Environmental Effects Found not to be Significant to Chapter 2.0, Significant Environmental Effects in the Draft Revised EIR. The analysis in the Final EIR includes an analysis of the project's impacts on GHG emissions, consistency with applicable policies and mitigation measures to reduce GHG emissions to net zero emissions.

G-40 Comment noted. Refer to responses to comments V-17 and V-19 for a discussion of the methodology used in the Draft Revised EIR GHG analysis.

G-41 As described in the Recirculation Readers Guide of the Draft Revised EIR, the Draft EIR GHG analysis was revised (Section 2.3 of the Draft Revised EIR). Refer to responses to comments V-17 and V-19 for a discussion of the Draft Revised EIR GHG analysis.

G-42 The project's compliance with the General Plan, Development Code, and other applicable plans and ordinances is evaluated throughout the Draft EIR, with discussion in Draft EIR Chapters 2.0 and 3.0. Section 1.6 of the Final EIR also discusses the project's consistency with the General Plan. The analysis demonstrates that the project is consistent with the goals and policies of the General Plan.

of renewable energy and other project design elements given the Project's potentially significant emissions. G-42 Cont.

Finally, this guidance and threshold are procedurally defective. The guidance was not developed through a public review process or adopted by ordinance, resolution, rule, or regulation, as required by CEQA. Guidelines § 15064.7; Exhibit C [Email from M. Slovick to E. Chalmers (Jul. 31, 2015)]. Moreover, the County's issuance of this guidance and CEQA threshold appears to violate the supplemental writ filed on May 4, 2015 in the *Sierra Club v. County of San Diego* case, Case No. 37-2012-00101054-CU-TT-CTL. *See* Exhibit D. This writ ordered the County to set aside its November 7, 2013 Guidelines for Determining Significance and Report Format and Content Requirements and not to reissue its Guidelines for Determining Significance for Greenhouse Gas Emissions until it complies with CEQA. *Id.*; *see also Sierra Club v. County of San Diego* (2014) 231 Cal.App.4th 1152. Yet the County issued its January 2015 GHG guidance without public review, without conducting appropriate CEQA review, and apparently without filing a return to the writ in the *Sierra Club v. County of San Diego* case. For all of these reasons, the County may not utilize or rely on its January 2015 GHG guidance. G-43

(b) The DEIR Fails to Provide Substantial Evidence for Its Application of the "Business As Usual" Approach.

Even if the stand-alone 16% below BAU threshold were a legitimate means for determining significance, which it is not, there is no evidence supporting the DEIR's assumption that new development that is 16% below BAU will help achieve California's emission reduction objectives. The DEIR's significance determination mistakenly presumes, without any support, that emission reduction expectations are the same for existing and new sources of emissions to meet AB 32 targets. The Supreme Court has rejected this presumption. *Center for Biological Diversity v. California Dep't of Fish & Wildlife* (2015) 62 Cal.4th 204, 261-63. Indeed, the Scoping Plan is silent as to the obligation of new development to mitigate GHG emissions under CEQA. Contrary to the DEIR's naked assumptions, as opportunities for reducing emissions from the built environment are more limited and present greater challenges, expectations for minimizing emissions from new development, through energy efficiency, renewables, increased density, mixed use and siting close to transit, should be greater than that of existing development, where emission reduction opportunities may be more constrained. *Id.* at 262. G-44

As recognized by the California Air Pollution Control Officers Association ("CAPCOA") in its CEQA & Climate Change White Paper, "greater reductions can be achieved at lower cost from new projects than can be achieved from existing sources." Exhibit E at p. 33 (CAPCOA, CEQA & Climate Change).[3] Similarly, as one of its reasons for finding that a proposed 29% G-45

[3] As explained on its website, CAPCOA "is a non-profit association of the air pollution control officers from all 35 local air quality agencies throughout California. CAPCOA was

Regarding General Plan Policy COS 14.9, as described in Final EIR Section 2.3, Greenhouse Gas Emissions, the project is incorporating GHG mitigation measures (M-GHG-1 through M-GHG-18) to reduce GHG emissions associated with the project to zero-net GHG emissions. Specifically, the project is incorporating solar at minimum rooftop coverage of PV panels of 45 percent of roof dedicated to panels on the grocery store and a cumulative total of 5 percent of the other five buildings (mitigation measure M GHG-4). In addition, project design features (see Final EIR Table 1-2) are proposed as a part of the project to reduce air quality emissions. Mitigation Measure M-GHG-18 requires the purchase of carbon off-set credits for the remaining GHG emissions, so that total net GHG emissions of the project are zero (no net increase in GHG emissions).

G-43 Refer to response to comment V-17 regarding the County's climate change guidance.

G-44 As described in the Recirculation Readers Guide of the Draft Revised EIR, the Draft EIR GHG analysis was revised (Section 2.3 of the Draft Revised EIR) to address the Newhall Ranch case ruling. Refer to responses to comments V-17 through V-19 for a discussion of the Draft Revised EIR GHG analysis.

G-45 See responses to comments G-44 and V-17 through V-19.

below BAU threshold of significance "will not withstand legal scrutiny," the Attorney General noted that "it seems that new development must be more GHG efficient than this average, given that past and current sources of emissions, which are substantially less efficient than this average, will continue to exist and emit." Exhibit F at p. 3. Moreover, the densities in the Project area may be different than statewide density averages, thereby skewing the analysis. *CBD*, 62 Cal.4th at 263.

The Supreme Court has also rejected the idea that statewide reduction targets can be applied mindlessly to individual projects. The *CBD* Court's summary of that EIR's failings applies equally to the Lake Jennings Market Place DEIR:

> At bottom, the EIR's deficiency stems from taking a quantitative comparison method developed by the Scoping Plan as a measure of the greenhouse gas emissions reduction effort required by the state as a whole, and attempting to use that method, without consideration of any changes or adjustments, for a purpose very different from its original design: To measure the efficiency and conservation measures incorporated in a specific land use development proposed for a specific location.

Id.

Accordingly, there is no scientific or factual basis supporting the DEIR's unsubstantiated opinion that new development that is 16% below a hypothetical BAU baseline will not interfere with California's near-term emission reduction objectives. *See* Pub. Res. Code § 21082.2(c) ("[a]rgument, speculation, unsubstantiated opinion or narrative, [and] evidence which is clearly inaccurate or erroneous" does not constitute substantial evidence); *see also CBD*, 62 Cal.4th at 263; *Californians for Alternatives to Toxics v. Dept. of Food & Agric.* (2005) 136 Cal. App. 4th 1, 17 ("[C]onclusory statements do not fit the CEQA bill."). By simply assuming that AB 32 emission reduction targets would be achieved because Project emissions are purportedly 16% below a hypothetical "business as usual," the EIR's significance criteria does not reflect "careful judgment . . . based to the extent possible on scientific and factual data." Guidelines § 15064(b).

While it is important to assess the Project's consistency with the goals of AB 32, to reduce statewide GHG emissions to 1990 levels by 2020 through maximum economically and technologically feasible measures without limiting economic growth (*see* Health & Saf. Code §§ 38501, 38550), the statewide BAU approach is inappropriate for a proposed new development project. *See* CEQA Guidelines § 15064.4(b)(3)). As explained by the Supreme Court, the DEIR must provide an appropriate efficiency goal for new development, backed by substantial evidence. Alternatively, the DEIR should compare the Project's projected emissions in 2020 with

formed in 1976 to promote clean air and to provide a forum for sharing of knowledge, experience, and information among the air quality regulatory agencies around the State."

G-45 Cont.

G-46

G-47

G-46 See responses to comments G-44 and V-17 through V-19.

G-47 See response to comment G-44.

those in the Project area in 1990. If the projected emissions would exceed those in the Project area, this should be considered a significant impact. G-47 Cont.

(c) The DEIR's Analysis of Post-2020 GHG Emissions is Deficient.

The DEIR makes no attempt to analyze the Project's GHG impacts after 2020 despite the fact that the project might not even be built out by 2020 and certainly will continue in operation for many years after 2020. This approach is unacceptable. According to the Supreme Court,

> [O]ver time consistency with year 2020 goals will become a less definitive guide, especially for longterm projects that will not begin operations for several years. An EIR taking a goal-consistency approach to CEQA significance may in the near future need to consider the project's effects on meeting longer term emissions reduction targets.

G-48

CBD, 62 Cal. 4th at 260. [T]he very same GHG guidance relied upon by the DEIR explicitly requires the County to "disclose the project's emissions for 2030 and 2050, in addition to 2020, and should show the progress the project would make towards achieving the GHG reduction goals for these years" as defined by the executive orders. County GHG Guidance at 4. The DEIR makes no attempt to do so.

In addition to properly analyzing consistency with the reduction goals set under AB 32 as described above, the DEIR must analyze the Project's consistency with the following plans and policies for GHG reduction.

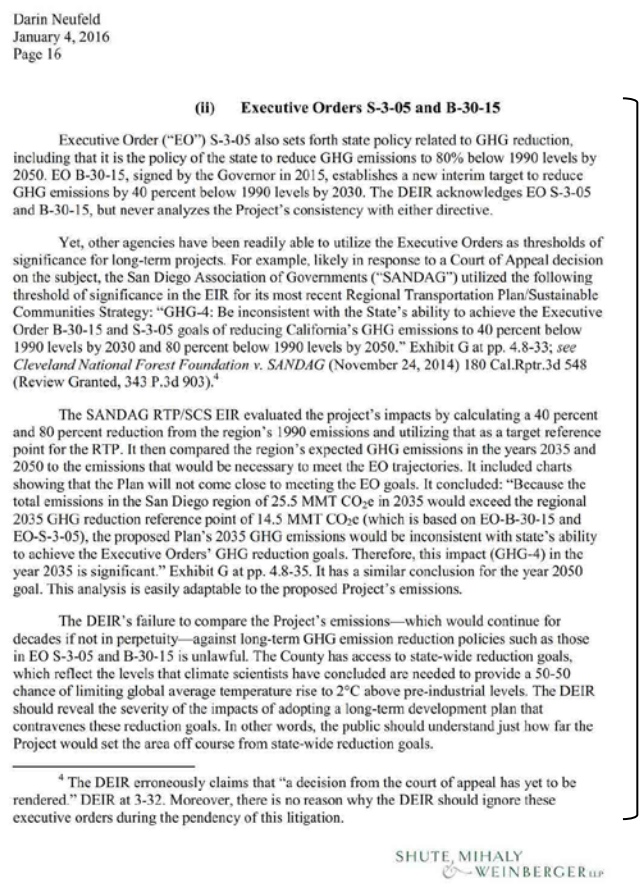
(i) The Regional Transportation Plan/Sustainable Communities Strategy

SANDAG's RTP/SCS is an applicable plan for GHG reduction, and thus the DEIR must analyze the Project's consistency with this Plan. The RTP/SCS was adopted to comply with the requirements of SB 375 and covers the Project area. SB 375 sets regional reduction targets including per capita emissions reduction targets for light duty trucks and cars by 2020 and 2035, respectively. G-49

The DEIR recognizes the existence of the RTP/SCS and these reduction targets, but, without explanation, fails to analyze the project's consistency with them. *See* DEIR at 3-32. Moreover, in October 2015, SANDAG approved an updated RTP/SCS which incorporates even more ambitious emissions reduction goals from several executive orders, as discussed below. The County must analyze the Project's consistency with this most recent regional plan.

G-48 As described in the Recirculation Readers Guide of the Draft Revised EIR, the Draft EIR GHG analysis was revised (Section 2.3 of the Draft Revised EIR) to address the Newhall Ranch case ruling. Both SB 32 and AB 197 include extending GHG emission reduction targets through 2030. Since the proposed project buildout year is 2018, using a 2020 target is the most appropriate for the project. As discussed on EIR page S-4, the project is estimated to be completed in approximately 9 ½ months and would be completed in one phase. The County Planning Commission and Board of Supervisors are anticipated to consider approval of the project in summer of 2017. The Applicant would commence construction soon after project approval and obtaining necessary permits (e.g., grading permit) and is therefore expected to complete the project in 2018. The approach of using a 2020 target is consistent with the California Association of Environmental Professional's (AEP's) White Paper *Beyond Newhall and 2020: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California* (October, 2016).

G-49 Determining whether a project is consistent with a locally applicable Sustainable Communities Strategy (SCS): applies to certain residential/mixed-use projects consistent with an SCS adopted under SB 375. First, the project is a commercial project that does not contain residential or mixed use elements. As a result, consistency with an SCS is not an appropriate methodology to analyze the potential GHG emissions from this project. Next, although SCS consistency is a helpful approach for considering the car and light-duty truck emissions sector of projects, GHG emissions from other sources such as building energy and water are not accounted for and still need evaluation. The



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(ii) Executive Orders S-3-05 and B-30-15

Executive Order ("EO") S-3-05 also sets forth state policy related to GHG reduction, including that it is the policy of the state to reduce GHG emissions to 80% below 1990 levels by 2050. EO B-30-15, signed by the Governor in 2015, establishes a new interim target to reduce GHG emissions by 40 percent below 1990 levels by 2030. The DEIR acknowledges EO S-3-05 and B-30-15, but never analyzes the Project's consistency with either directive.

Yet, other agencies have been readily able to utilize the Executive Orders as thresholds of significance for long-term projects. For example, likely in response to a Court of Appeal decision on the subject, the San Diego Association of Governments ("SANDAG") utilized the following threshold of significance in the EIR for its most recent Regional Transportation Plan/Sustainable Communities Strategy: "GHG-4: Be inconsistent with the State's ability to achieve the Executive Order B-30-15 and S-3-05 goals of reducing California's GHG emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050." Exhibit G at pp. 4.8-33; *see Cleveland National Forest Foundation v. SANDAG* (November 24, 2014) 180 Cal.Rptr.3d 548 (Review Granted, 343 P.3d 903).[4]

The SANDAG RTP/SCS EIR evaluated the project's impacts by calculating a 40 percent and 80 percent reduction from the region's 1990 emissions and utilizing that as a target reference point for the RTP. It then compared the region's expected GHG emissions in the years 2035 and 2050 to the emissions that would be necessary to meet the EO trajectories. It included charts showing that the Plan will not come close to meeting the EO goals. It concluded: "Because the total emissions in the San Diego region of 25.5 MMT CO_2e in 2035 would exceed the regional 2035 GHG reduction reference point of 14.5 MMT CO_2e (which is based on EO-B-30-15 and EO-S-3-05), the proposed Plan's 2035 GHG emissions would be inconsistent with state's ability to achieve the Executive Orders' GHG reduction goals. Therefore, this impact (GHG-4) in the year 2035 is significant." Exhibit G at pp. 4.8-35. It has a similar conclusion for the year 2050 goal. This analysis is easily adaptable to the proposed Project's emissions.

The DEIR's failure to compare the Project's emissions—which would continue for decades if not in perpetuity—against long-term GHG emission reduction policies such as those in EO S-3-05 and B-30-15 is unlawful. The County has access to state-wide reduction goals, which reflect the levels that climate scientists have concluded are needed to provide a 50-50 chance of limiting global average temperature rise to 2°C above pre-industrial levels. The DEIR should reveal the severity of the impacts of adopting a long-term development plan that contravenes these reduction goals. In other words, the public should understand just how far the Project would set the area off course from state-wide reduction goals.

[4] The DEIR erroneously claims that "a decision from the court of appeal has yet to be rendered." DEIR at 3-32. Moreover, there is no reason why the DEIR should ignore these executive orders during the pendency of this litigation.

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G-50

proposed project's transportation-related emissions would include cars and light-duty trucks along with emissions from medium and heavy duty vehicles such as delivery trucks. In addition, the project's emissions would include sources such as electricity, natural gas, water consumption, and solid waste. Therefore, the entirety of the project's emissions cannot be assessed using the SCS consistency approach.

G-50 The commenter states that the County should have compared the project-level emissions associated with this project to the state-wide, regional emissions that are addressed in Executive Orders S-3-05 and B-30-15. The comment states that SANDAG in their RTP/SCS evaluated these state goals on a regional basis and that regionally they needed to be consistent with those goals. And not comparing the single project's reductions to the state goals was "unlawful" and that the County should realize "just how far the project would set the area off course from the state-wide goals."

The project's consistency with EO S-3-05 and B-30-15 is discussed on Draft Revised EIR page 2.3-29. The State, and to a somewhat lesser level, local regional agencies, have available to them larger reductions through reasonably cost-effective measures. However, individual projects, especially ones that are not mixed-use, not infill, and not part of a village design that makes Transit Oriented Design (TOD) effective, do not have the ability to do large-scale reductions and are not usually held to the same standard.

Even the RTP/SCS does not reach its goals by itself, but as a coalition of regional governments, which have at their disposal means to make more significant reductions than

(d) The DEIR Underestimates the Project's GHG Emissions.

Putting aside the DEIR's reliance on an incomplete and misleading threshold of significance, the DEIR appears to miscalculate the Project's anticipated emissions. An accurate emissions inventory would demonstrate that the Project will have significant GHG emissions, even under the County's chosen threshold of significance. The DEIR also obscures some of its calculations, making it difficult to verify whether there might be additional miscalculations and casting further doubt on the DEIR's usefulness as an informational document.

The DEIR overestimates emissions reductions associated with the 33% Renewable Portfolio Standard ("RPS"). The DEIR explains that "using the 33% RPS brings the effective CO2 reduction to 83.8% of unmitigated levels" or a reduction of 193.8 tonnes per year due to electrical load at the project site. DEIR at 3-41. However, assuming the 83.8% co-efficient is correct, 83.8% of 1020.2 tonnes (the unmitigated emissions from electrical load) is 854.92 tonnes—a reduction of only 165.27 tonnes, not 193.8 tonnes as the DEIR claims. That correction would add back 28.53 tonnes of annual emissions into the project's 2020 emissions profile. As a result, the project's emissions will be mitigated by only 15.68% below BAU, thereby failing to achieve the 16% reduction below BAU required to avoid a significant impact.

G-51

It is also possible that the DEIR improperly double counts the some of the emissions reductions resulting from the transition from a 20% RPS to a 33% RPS. According to the DEIR, this shift will correspondingly reduce emissions due to electricity demand at the Project by 16.2%. DEIR at 3-41. However, it appears that this overstates the emissions reductions that should be anticipated from a 13% increase in the State's portfolio of renewable electricity generation. Assuming there are *no emissions whatsoever* associated with the additional 13% of renewable energy (likely an inappropriately optimistic assumption), such an increase would presumably only reduce emissions by 13%. Therefore it would be incorrect to project a corresponding 16.2% reduction in emissions. The DEIR makes it impossible to verify these assumptions, however, because it provides no explanation for how it arrived at its conclusion that the 33% RPS would reduce these emissions by 16.2%. *See* DEIR at 3-41; Appx. K at 21 (claiming without citation or explanation that a new energy conversion factor was "derived by scaling the unmitigated 20% RPS CO2 intensity factor to account for the State required 33% RPS by the year 2020"). The assumptions and calculations underpinning this analysis must be included in a revised and recirculated version of the DEIR and the Greenhouse Gas Assessment.[5]

G-52

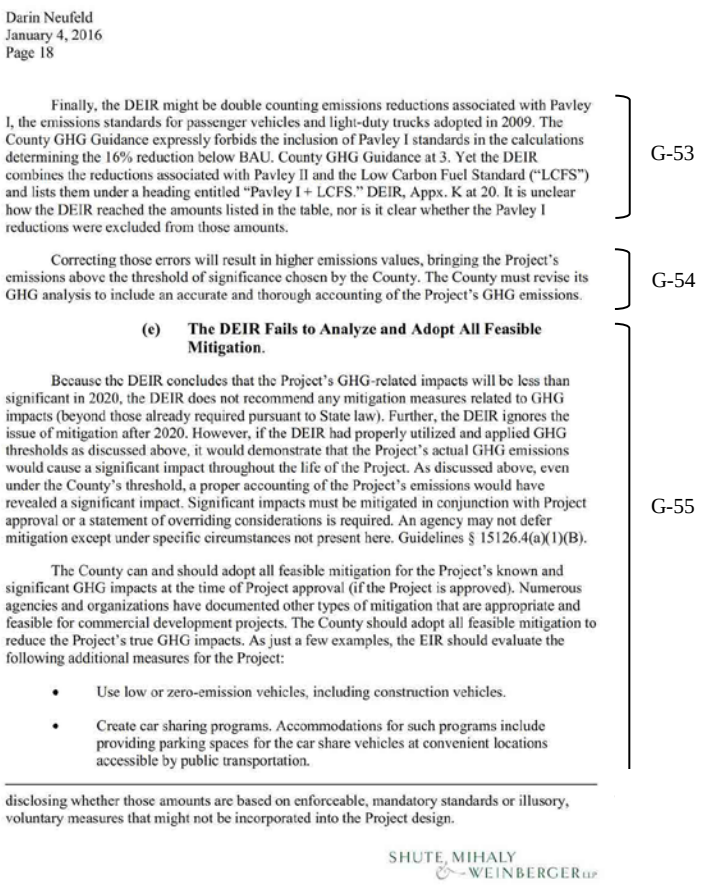
[5] The DEIR also obscures the calculations underpinning the reductions due to compliance with Title 24 and other building efficiency policies. The DEIR credits the Project with reductions due to these policies, but the policies themselves are a mix of mandatory and voluntary elements. *See, e.g.*, DEIR at 3-34, 35 (noting that the California Green Building Standards are a mix of both mandatory and voluntary elements). The DEIR applies emissions reductions without

do individual projects. Just as mixed-use, TOD projects have much more at their disposal than do individual projects that consist of commercial only, residential only, or industrial only uses.

In fact, the location and local service supplied, would be seen from a regional planning perspective as a beneficial project for the region in that it provides a needed neighborhood shopping site that would have the effect of reducing regional travel by supplying a location for people to travel shorter distances for their shopping needs.

G-51 This comment refers to an outdated analysis in that the County no longer uses the 16% below BAU reductions threshold. The GHG analysis has been revised as a part of the Draft Revised EIR. See Section 2.3 of the Draft Revised EIR.

G-52 This comment refers to the originally circulated Draft EIR and states that the project improperly double counts some emission reductions. However, as previously described, the GHG analysis was revised as a part of the Draft Revised EIR. The Draft Revised EIR provides additional mitigation measures and a revised estimate of the greenhouse gas emissions reductions that would be achieved by proposed project mitigation measures. Regardless, the accounting for the potential sources of the GHG emissions, as identified in this comment, would result in just a slight increase in the resultant emissions and not change the significance determination as provided in the Draft Revised EIR, and proposed project mitigation measures to reduce GHG emissions to zero-net emissions.



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Finally, the DEIR might be double counting emissions reductions associated with Pavley I, the emissions standards for passenger vehicles and light-duty trucks adopted in 2009. The County GHG Guidance expressly forbids the inclusion of Pavley I standards in the calculations determining the 16% reduction below BAU. County GHG Guidance at 3. Yet the DEIR combines the reductions associated with Pavley II and the Low Carbon Fuel Standard ("LCFS") and lists them under a heading entitled "Pavley I + LCFS." DEIR, Appx. K at 20. It is unclear how the DEIR reached the amounts listed in the table, nor is it clear whether the Pavley I reductions were excluded from those amounts.

G-53

Correcting those errors will result in higher emissions values, bringing the Project's emissions above the threshold of significance chosen by the County. The County must revise its GHG analysis to include an accurate and thorough accounting of the Project's GHG emissions.

G-54

(e) The DEIR Fails to Analyze and Adopt All Feasible Mitigation.

Because the DEIR concludes that the Project's GHG-related impacts will be less than significant in 2020, the DEIR does not recommend any mitigation measures related to GHG impacts (beyond those already required pursuant to State law). Further, the DEIR ignores the issue of mitigation after 2020. However, if the DEIR had properly utilized and applied GHG thresholds as discussed above, it would demonstrate that the Project's actual GHG emissions would cause a significant impact throughout the life of the Project. As discussed above, even under the County's threshold, a proper accounting of the Project's emissions would have revealed a significant impact. Significant impacts must be mitigated in conjunction with Project approval or a statement of overriding considerations is required. An agency may not defer mitigation except under specific circumstances not present here. Guidelines § 15126.4(a)(1)(B).

The County can and should adopt all feasible mitigation for the Project's known and significant GHG impacts at the time of Project approval (if the Project is approved). Numerous agencies and organizations have documented other types of mitigation that are appropriate and feasible for commercial development projects. The County should adopt all feasible mitigation to reduce the Project's true GHG impacts. As just a few examples, the EIR should evaluate the following additional measures for the Project:

- Use low or zero-emission vehicles, including construction vehicles.
- Create car sharing programs. Accommodations for such programs include providing parking spaces for the car share vehicles at convenient locations accessible by public transportation.

G-55

disclosing whether those amounts are based on enforceable, mandatory standards or illusory, voluntary measures that might not be incorporated into the Project design.

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G-53 CARB's EMFAC 2011 Model has two sets of CO_2 emission factors for each vehicle class - with and without the effects of Pavley and low carbon fuel standard (LCFS). The analysis uses the two different emission factors to show a reduction percentage. This is the recommended methodology to show the GHG results of Pavley+LCFS used by the Sacramento Metropolitan Air Quality Management District.

G-54 See response to comment G-51.

G-55 As described in the Recirculation Readers Guide of the Draft Revised EIR, the Draft EIR GHG analysis was revised (Section 2.3 of the Draft Revised EIR) to address the Newhall Ranch case ruling. A robust analysis of feasible mitigation measures to address potential GHG emissions associated with the project is provided on Draft Revised EIR pages 2.3-18 through 2.3-28. Mitigation measures were derived from the California Air Pollution Control Officers Association (CAPCOA) report titled *Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures* (herein referred to as the CAPCOA Report) (CAPCOA, 2010[2]). In total, 18 mitigation measures have been determined to be applicable to the project, feasible, and will be implemented. These measures will be enforced as part of the conditions of approval for the project. As provided on Final EIR pages 2.3-31 through 2.3-35, Mitigation Measures M-GHG-1 through M-GHG-18 include a description of the enforceability mechanisms for each measure (i.e., timing, responsibility, proof of compliance). Further, Final EIR

[2] *Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from Greenhouse Gas Mitigation Measures.* August 2010. Available on-line at http://www.capcoa.org/wp-content/ uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

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- Create local "light vehicle" networks, such as neighborhood electric vehicle ("NEV") systems.
- Provide the necessary facilities and infrastructure to encourage the use of low or zero-emission vehicles (e.g., electric vehicle charging facilities and conveniently located alternative fueling stations).
- Provide zero emission shuttle service to public transit and Project buildings/amenities.
- Provide public transit incentives such as free or low-cost monthly transit passes.
- Provide information on energy management services for large energy users.
- Install light emitting diodes (LEDs) for traffic, street and other outdoor lighting.
- Limit the hours of operation of outdoor lighting.
- Provide education on energy efficiency.
- Reduce the use of pavement and impermeable surfaces.
- Require the installation of on-site, distributed generation of low carbon, renewable energy sources such as photovoltaic panels to reduce electricity load.

There are additional guidance documents that provide a full suite of GHG mitigation measures. The County must review and consider all of the measures listed in these documents in a recirculated EIR, and it must adopt all feasible measures in order to reduce the Project's impacts to a level below significance, or as much as feasible:

- Governor's Office of Planning and Research. 2008. Technical Advisory. CEQA AND CLIMATE CHANGE: Addressing Climate Change through California Environmental Quality Act (CEQA) Review. *See* Attachment 3, "Examples of GHG Reduction Measures." Available: http://www.opr.ca.gov/ceqa/pdfs/june08-ceqa.pdf.
- California Air Pollution Control Officers Association (CAPCOA). 2008 (January). CEQA & Climate Change. Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act. *See* page 79, "Mitigation Strategies for GHG." Available: http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf.

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Cont.

Table 2.3-11 lists and provides the rationale for all the mitigations that were determined to be infeasible, not applicable to the proposed project, or not the responsibility of the applicant. Implementation of Mitigation Measures M-GHG-1 through M-GHG-18 would reduce all project GHG emissions to zero-net emissions.
Regarding the specific measures identified in this comment:

Use low or zero-emission vehicles, including construction vehicles:

As described on Final EIR page 3-18, Tier III, or higher, construction equipment would be used (use of Tier III or higher construction equipment will be included as conditions of approval for the project). Tier III equipment uses clean-fuel technologies or electric-based engines.

Create car sharing programs. Accommodations for such programs include providing parking spaces for the car share vehicles at convenient locations accessible by public transportation.

As described on Final EIR page 2.3-46, providing ride-sharing programs is infeasible. However, the proposed project would encourage the use of alternative transportation such as biking and public transportation by providing on-site amenities. In addition, the proposed project would include parking stalls designated for carpool/van pool.

- California Air Pollution Control Officers Association (CAPCOA). 2010 (August). Quantifying Greenhouse Gas Mitigation Measures. A Resource for Local Government to Assess Emission Reduction from Greenhouse Gas Mitigation Measures. Available: http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf.

- Attorney General of the State of California. 2008 (December). The California Environmental Quality Act. Addressing Global Warming Impacts at the Local Agency Level. Available: http://ag.ca.gov/globalwarming/pdf/GW_mitigation_measures.pdf.

These documents, in addition to providing lists of mitigation measures and design features maintained by other organizations, cover a wide range of topics, including (1) land use, urban design, transportation measures; (2) shade and sequestration, including using trees to shade buildings; (3) energy conservation; (4) water conservation; and (5) carbon offset credits. The County must consider all of these types of mitigation measures for the Project's significant GHG impacts.

Other agencies routinely require mitigation for commercial and mixed-use development projects that include requirements to use renewable energy or install on-site solar power. For instance, Riverside County has previously required large development projects to meet the following standard: "80 percent of residential units shall meet 60 percent of their baseline demand power energy needs with renewable energy; and 80 percent of commercial building square footage shall meet 40 percent of their baseline demand power energy needs with renewable energy." Excerpts of Travertine Point Specific Plan Conditions of Approval, attached as Exhibit H. If the developer cannot show that the local electricity provider is meeting these standards, than renewable energy must be provided from on-site sources. *Id.*

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5. The DEIR Fails to Properly Analyze and Mitigate the Project's Air Quality Impacts.

The San Diego Air Basin suffers from poor air quality; monitoring stations near the Project site have recently recorded ozone and 2.5 micron particulate matter (PM 2.5) in excess of applicable standards. DEIR at 3-6; see also DEIR at 3-17 (noting that the Air Basin is a federal non-attainment area for ozone, and a state non-attainment area for ozone, PM-10 and PM-2.5). Nevertheless, the DEIR concludes that this large commercial development which will involve extensive grading and will generate thousands of daily vehicle trips will cause neither project-specific nor cumulative impacts to the area's air quality. The County's existing air pollution problems make it especially important that the DEIR accurately identify the Project's potential to increase air pollutant emissions and evaluate how these increased emissions affect the public's health. Unfortunately, the DEIR's analysis fails in numerous ways.

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Create local "light vehicle" networks, such as neighborhood electric vehicle systems.

As described on Final EIR page 2.3-46, implementing a neighborhood electric vehicle network or urban non-motorized zones is not the responsibility of the project applicant.

Provide the necessary facilities and infrastructure to encourage the use of low or zero-emission vehicles (e.g., electric vehicle charging facilities and conveniently located alternative fueling stations).

The proposed project would implement Mitigation Measure M-GHG-9, which requires the project applicant to demonstrate that the project incorporates 16 parking stalls designated for low-emitting, fuel efficient, and carpool/van pool. Also, EV charging stations shall be installed (Measure SDT-8 of CAPCOA Report).

Provide zero emission shuttle service to public transit and project buildings/amenities.

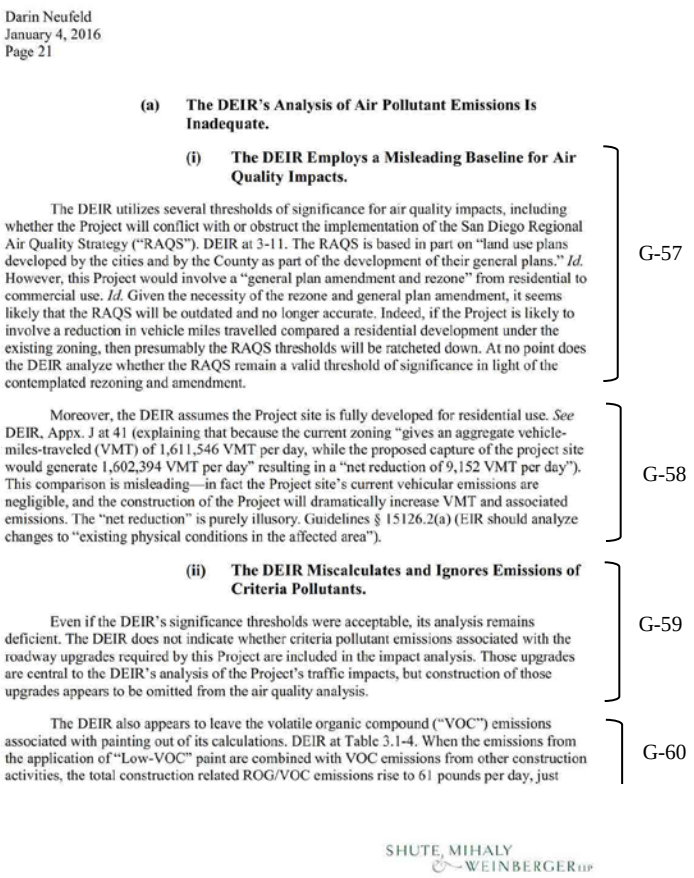
As described on Final EIR page 2.3-46, the applicant will consider the provision of a local shuttle to serve the surrounding neighborhoods and the entire commercial development; however, it is not feasible to place this requirement at this time because future tenants of the commercial center are currently not known.

Provide public transit incentives such as free or low-cost monthly transit passes.

As described on Final EIR page 2.3-46, implementing a subsidized or discounted transit program is not feasible

	because the commercial operator cannot subsidize public transit fares. **Provide information on energy management services for large energy users.** Providing information on energy management services for large energy users is not the responsibility of the project applicant. **Install light emitting diodes (LEDs) for traffic, street and other outdoor lighting.** As described on Final EIR page 2.3-45, the replacement of traffic lights with LED traffic lights is not the responsibility of the project applicant. **Limit the hours of operation of outdoor lighting.** The proposed project would implement Mitigation Measure M-GHG-3, which requires the project applicant to demonstrate that the operation hours of outdoor lights will be limited and that the buildings support the use of LED lights (Measure LE-2 of CAPCOA Report). **Provide education on energy efficiency.** The proposed project would implement Mitigation Measure M-GHG-1, which would require the project applicant to demonstrate that the design of the proposed buildings or structures exceed Title 24 requirements by a minimum of 20 percent (Measure BE-1 of CAPCOA Report). Also, Mitigation Measure M-GHG-2 would require the project applicant to demonstrate that the grocery store incorporates Energy star-rated refrigeration equipment (Measure BE-2 of CAPCOA Report).

	Reduce the use of pavement and impermeable surfaces. The proposed project would include landscaping, which would allow water to continue to infiltrate into the ground. **Require the installation of on-site, distributed generation of low carbon, renewable energy sources such as photovoltaic panels to reduce electricity load.** The proposed project would implement Mitigation Measure M-GHG-4, which requires the project applicant to demonstrate that the project incorporates onsite renewable energy production, including installation of PV panels on the grocery store and five other buildings on the project site (Measure AE-2 of CAPCOA Report). **G-56** This comment provides a summary of more detailed comments that occur later in the comment letter. As such, this comment is noted and detailed responses to the issues mentioned in this comment are provided in responses to G-57 through G-62.



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(a) The DEIR's Analysis of Air Pollutant Emissions Is Inadequate.

(i) The DEIR Employs a Misleading Baseline for Air Quality Impacts.

The DEIR utilizes several thresholds of significance for air quality impacts, including whether the Project will conflict with or obstruct the implementation of the San Diego Regional Air Quality Strategy ("RAQS"). DEIR at 3-11. The RAQS is based in part on "land use plans developed by the cities and by the County as part of the development of their general plans." *Id.* However, this Project would involve a "general plan amendment and rezone" from residential to commercial use. *Id.* Given the necessity of the rezone and general plan amendment, it seems likely that the RAQS will be outdated and no longer accurate. Indeed, if the Project is likely to involve a reduction in vehicle miles travelled compared a residential development under the existing zoning, then presumably the RAQS thresholds will be ratcheted down. At no point does the DEIR analyze whether the RAQS remain a valid threshold of significance in light of the contemplated rezoning and amendment.

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Moreover, the DEIR assumes the Project site is fully developed for residential use. *See* DEIR, Appx. J at 41 (explaining that because the current zoning "gives an aggregate vehicle-miles-traveled (VMT) of 1,611,546 VMT per day, while the proposed capture of the project site would generate 1,602,394 VMT per day" resulting in a "net reduction of 9,152 VMT per day"). This comparison is misleading—in fact the Project site's current vehicular emissions are negligible, and the construction of the Project will dramatically increase VMT and associated emissions. The "net reduction" is purely illusory. Guidelines § 15126.2(a) (EIR should analyze changes to "existing physical conditions in the affected area").

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(ii) The DEIR Miscalculates and Ignores Emissions of Criteria Pollutants.

Even if the DEIR's significance thresholds were acceptable, its analysis remains deficient. The DEIR does not indicate whether criteria pollutant emissions associated with the roadway upgrades required by this Project are included in the impact analysis. Those upgrades are central to the DEIR's analysis of the Project's traffic impacts, but construction of those upgrades appears to be omitted from the air quality analysis.

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The DEIR also appears to leave the volatile organic compound ("VOC") emissions associated with painting out of its calculations. DEIR at Table 3.1-4. When the emissions from the application of "Low-VOC" paint are combined with VOC emissions from other construction activities, the total construction related ROG/VOC emissions rise to 61 pounds per day, just

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G-57 General Plan Amendments and Rezoning of properties are common actions among the jurisdictions located within the San Diego Air Basin. These actions do not, in and of themselves, require redrafting of the San Diego Regional Air Quality Strategy (RAQS) or "ratcheting down of thresholds" as suggested in this comment.

As stated on Draft EIR page 3-12, the RAQS is updated on a triennial (every three years) basis. The RAQS outlines San Diego Air Pollution Control District's plans and control measures designed to attain the state air quality standards for O_3. As stated on Draft EIR page 3-12, "The RAQS relies on SANDAG growth projections based on population, vehicle trends, and land use plans developed by the cities and by the County as part of the development of their general plans. As such, projects that include proposed development that is consistent with the growth anticipated by local plans would be consistent with the RAQS. However, if a project includes development that is greater than that anticipated in the local plan and SANDAG's growth projections, the project might be in conflict with the RAQS and may contribute to a potentially significant cumulative impact on air quality."

The RAQS details emission reductions necessary to prove to the EPA that the path towards attainment is valid. In fact, the RAQS has established a "budget" of emissions that established an upper boundary of potential County-wide emissions of VOC, NO_X, and CO to maintain progress to attainment of the 8-hour ozone and to maintain CO attainment. The current budget for 2050 is 53 tons per day (t/d) of VOC, 98 t/d of NO_X, and 730 t/d of CO. The RTP/SCS currently projects that the regions emissions in 2050 will be only 19 t/d of VOC, 31 t/d of NO_X, and 157 t/d of CO. To provide a measure of magnitude, the SDAPCD

	project-level screening thresholds equate to 0.07 t/d of VOC, 0.13 t/d of NOX, and 0.28 t/d of CO. Because the project involves a General Plan Amendment, a conformity analysis was performed to determine whether the project is in conflict with the RAQS. Based on the EIR analysis, implementation of the proposed project would not conflict with or obstruct the implementation of the RAQS and/or applicable portions of the State Implementation Plan (SIP); therefore, impacts are considered less than significant. See Draft EIR Chapter 3.1.2.
	G-58 The Draft EIR does not assume that the project site is fully developed. The Draft EIR states throughout that the project site is undeveloped and evaluates it as such. Consistent with Section 15126.2(a) of the CEQA Guidelines, the EIR's analysis of potential air quality impacts associated with the proposed project is a ground to plan (i.e. the proposed project) analysis. The EIR does not suggest that a net reduction of emissions would result from the proposed project (e.g., see Draft EIR Tables 3.1-3 and 3.1-4 which provide a net emissions summary of the project for both construction and operation). Because the RAQS is based on adopted plans (refer to response to comment G-57), the conformity analysis appropriately analyzes the conformity of the project as compared to the residential use (i.e., the currently adopted land use) that is considered for this site in the RAQS.
	G-59 The thresholds used in the Draft EIR are acceptable pursuant to CEQA. As stated on Draft EIR page 3-12, air quality was analyzed according to the County's Guidelines for Determining Significance, Air Quality (2007). The following text has been added to Final EIR Section 3.1.2 Air Quality to

	clarify that proposed roadway improvements are included in the air quality analysis for the proposed project: <u>All components of the proposed project, including proposed roadway improvements, were considered and evaluated in the air quality analysis for the proposed project. Project emissions from construction vehicles, fugitive dust, blasting, and architectural coating are discussed in detail below.</u>
G-60	The commenter does not explain the specific calculations to arrive at the 45.57 pounds/day stated in the comment. The VOC emission factor for architectural coating is based on the VOC content of the paint, and San Diego Air Pollution Control District Rule 67.0.1 (Architectural Coatings) which became effective on January 1, 2016. Rule 67.0.1 reduced the VOC limit from 150 grams per liter to 50 grams per liter, which would be one third less emissions. As described on Draft EIR page 3-15, "…the proposed project would require painting a maximum of 5,000 square-feet of surface area every day, resulting in a total unmitigated architectural-generated VOC level of 71.2 pounds per day. Through the application of Low VOC paints, the VOC load can be reduced by a factor of 0.36, thereby resulting in final VOC levels of 25.6 pounds of VOC per day." The project's VOC emissions was calculated by taking the total unmitigated architectural-generated VOC level of 71.2 pounds per day and multiplying it by a reduced factor of 0.36 (per San Diego Air Pollution Control District Rule 67.0.1), which totals 25.6 pounds of VOC per day.

below the 75 pound threshold. DEIR at Table 3.1-4.[6] Moreover, the DEIR appears to overestimate the amount of emissions reductions associated with using "Low VOC" paints. The DEIR notes that through the application of these paints, "the VOC load can be reduced by a factor of 0.36, thereby resulting in final VOC levels of 25.6 pounds of VOC per day." DEIR at 3-15. However, reducing those emission by a factor of 0.36 yields final VOC levels of 45.57 pounds per day, not 25.6 pounds per day. When the correct amount is combined with other construction emissions of ROGs, the total of 80.97 pounds per day exceeds the significance threshold.

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(iii) The DEIR Fails to Analyze Cumulative Air Quality Impacts.

The DEIR fails to analyze the Project's cumulative impact on air quality. The DEIR acknowledges that a project "may still have a cumulatively considerable impact on air quality if the emissions of concern from the proposed project, in combination with the emissions of concern from other proposed projects or reasonably foreseeable future projects within a proximity relevant to the pollutants of concern, are in excess of the guidelines." DEIR at 3-17. At no point, however, does the DEIR perform this analysis. Instead, the DEIR reasons that the project itself will not exceed applicable screening thresholds and that other nearby projects will be required to implement "dust control measures during construction." DEIR at 3-20. This analysis completely misses the point. The DEIR does not reveal whether *together* these nearby projects will emit significant amounts of particulate matter. Moreover, the DEIR completely ignores cumulative impacts related to other criteria pollutants such as nitrogen oxides and VOCs, for example, by focusing exclusively on dust. The DEIR must be revised to include an analysis that satisfies the analytical requirements that the County itself has chosen.

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(b) The DEIR Fails to Analyze and Adopt All Feasible Mitigation of the Project's Air Quality Impacts.

Finally, because the DEIR fails to adequately analyze the Project's air quality impacts, it likewise fails to adopt all feasible mitigation of those impacts. In light of the potentially significant impacts from the Project's construction-related VOC emissions and the Project's cumulative impacts to air quality in the Air Basin, the DEIR must consider and adopt measures to mitigate those impacts. The DEIR should consider mitigation measures including the following:

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[6] Confusingly, the DEIR elsewhere claims that "VOC emissions from painting are regulated at the state (CARB) level at 250 grams of VOC per liter of paint regardless of application" indicating that "the project would not cause significant VOC emissions" regardless of the overall amount of VOC emissions from paint used at the Project site. DEIR at 3-14. This suggestion is both absurd and undercut by the DEIR's indication that the SCAPCD employs a 75 pound per day threshold of significance.

G-61 As described in Draft EIR Section 3.1.2.3, because air quality is a regional issue, the cumulative study area for air quality impacts cannot be limited to a defined localized area, but rather includes the SDAB as a whole. Therefore, impacts related to regional plans and policies, such as the RAQS and the SIP, must be considered as part of the cumulative analysis. Additionally, based on the County's Guidelines for Determining Significance, Air Quality, a project would have a significant cumulative impact on air quality if it would result in a cumulatively considerable net increase of any criteria pollutant for which the San Diego Air Basin (SDAB) is listed as nonattainment under an applicable California Ambient Air Quality Standards (CAAQS). As previously stated, the SDAB is currently classified as a federal nonattainment area for ozone and a state nonattainment area for ozone, particulate matter less than or equal to 10 microns (PM_{10}), and 2.5 microns ($PM_{2.5}$).

The analysis contained within the air quality study demonstrates that the project would not exceed San Diego Air Pollution Control District's (SDAPCD's) major source screening levels for PM_{10}, $PM_{2.5}$, NO_x, and/or VOCs during the construction phase of the project. The project applicant will be required to implement the dust control measures listed in SDAPCD's Rule 55. In addition, all construction activity within the project site will comply with the dust control provisions outlined in Section 87.428 of the County of San Diego Grading Ordinance. The cumulative projects (Draft EIR Table 1-3) will also be required to implement these dust control measures during construction. With regards to cumulative impacts to NO_x, and/or VOCs, as described in Final EIR Section 3.1.2, based on the County's Guidelines for Determining Significance, Air Quality, "a project that has a significant direct impact on air quality with

	regard to emissions PM_{10}, $PM_{2.5}$, NO_x, and/or volatile organic compounds (VOCs) would also have a significant cumulatively considerable net increase." The analysis contained within the air quality study demonstrates that the project would not exceed SDAPCD's major source screening levels for NO_x and/or VOCs during the construction phase of the project. Therefore, the project would not result in a significant cumulatively considerable net increase in NO_x and/or VOCs. Therefore, because the proposed project does not result in a cumulatively considerable net increase in criteria pollutants and is consistent with the RAQS, the proposed project, in combination with other cumulative projects would not result in a cumulative air quality impact.
G-62	The Draft EIR adequately analyzes the project's impacts associated with air quality. Please refer to Section 3.1 of the Draft EIR. No significant air quality impact has been identified; therefore, no air quality mitigation measures are required. CEQA requires mitigation measures only where significant impacts have been identified. This comment identified the following specific measures to reduce air quality emissions: • Install Energy Star (or equivalent) cool roofing systems on all buildings. • Increase wall and attic insulation to 20 percent above Title 24 requirements (residential and commercial). • Orient buildings to take advantage of solar heating and natural cooling, and use passive solar designs (residential, commercial, and industrial).

- Install Energy Star (or equivalent) cool roofing systems on all buildings;
- Increase wall and attic insulation to 20 percent above Title 24 requirements (residential and commercial);
- Orient buildings to take advantage of solar heating and natural cooling, and use passive solar designs (residential, commercial, and industrial);
- Provide energy-efficient windows (double pane and/or Low-E) and awnings or other shading mechanisms for windows, porches, patios, and walkways;
- Consider passive solar cooling and heating designs, ceiling and whole house fans, and programmable thermostats in the design of heating and cooling systems; and
- Use day lighting systems, such as skylights, light shelves, and interior transom windows.

See Recommended Guidance for Land Use Emission Reductions Version 3.2 (For Operational Emissions), SMAQMD, April 2015, attached as Exhibit I. The EIR must be revised to consider the feasibility of each of these measures.

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6. The DEIR Defers Analysis and Mitigation of the Project's Significant Noise Impacts.

An EIR is inadequate if it fails to suggest mitigation measures, or if its suggested mitigation measures are so undefined that it is impossible to evaluate their effectiveness. *San Franciscans for Reasonable Growth v. City and County of San Francisco*, 151 Cal.App.3d 61 at 79 (1984) . The City may not use the inadequacy of its impacts review to avoid mitigation: "The agency should not be allowed to hide behind its own failure to collect data." *Sundstrom v. County of Mendocino*, 202 Cal.App.3d at 306 (1988). The formulation of mitigation measures may not properly be deferred until after Project approval; rather, "[m]itigation measures must be fully enforceable through permit conditions, agreements, or legally binding instruments." CEQA Guidelines § 15126.4(a). As explained below, the DEIR's identification and analysis of mitigation measures are legally inadequate.

This DEIR identifies significant noise impacts related to construction and operational noise. DEIR at 2.4-8 through 2.4-12. These impacts include construction noise ranging from 75 dBA to more than 104 dBA sound exposure level during rock blasting, and operational noise from particular Project features. *Id.* Despite the extreme noise impacts associated with the Project, the DEIR fails to adequately analyze or mitigate these significant effects. For example, in the case of noise from rock blasting, the DEIR merely proposes as mitigation that the applicant would submit a Construction Noise Blasting Plan. DEIR at 2.4-16. The DEIR explains

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- Provide energy-efficient windows (double pane and/or Low-E) and awnings or other shading mechanisms for windows, porches, patios, and walkways.
- Consider passive solar cooling and heating designs, ceiling and whole house fans, and programmable thermostats in the design of heating and cooling systems.
- Use day lighting systems, such as skylights, light shelves, and interior transom windows.

As detailed in Section 2.3, Greenhouse Gas Emissions, of the Final EIR, the project applicant would implement mitigation measures to minimize GHGs (which would also further minimize air quality emissions). Furthermore, the project's building plans would be prepared to be consistent with Green Building standards as they are developed and implemented by local and State codes. All buildings would meet all applicable energy standards, including Title 24.

G-63 As described in response to comment G-15, EIR Mitigation Measure M-NOI-2 requires the preparation and approval of a Construction Noise Blasting Plan that would be approved prior to issuance of a Blasting Permit. The Plan is prepared by the specific tenant of the commercial space that it would occupy. As such, the Plan will be prepared and approved at the time the specific tenant is known. This mitigation measure is adequate because it provides performance standards that must be achieved in order to ensure no significant noise impact would result from blasting. As stated in M-NOI-2, the plan is required to specify methods, such as increased setbacks, limits on equipment operations, temporary barriers, and must demonstrate compliance with the County Noise Ordinance Section 36.409 & 36.410.

that this plan will identify the location of the blasting, inventory receptors of affected receptors, and calculate the area affected by the blasting. Id. This is exactly the analysis that CEQA requires take place now, not after Project approval. *See Stanislaus Natural Heritage Project v. County of Stanislaus*, 48 Cal.App.4th 182, 195 (1996) (agency may not use vague mitigation measures to avoid disclosing impacts). G-63 Cont.

In other cases, the DEIR identifies specific mitigation measures but fails to evaluate the effectiveness of the measures for both operational and construction noise. Specifically, the DEIR proposes to mitigate significant operational noise impacts associated with the car wash facility, HVAC equipment, and trash compactor by requiring setbacks and noise barriers to comply with the County's Noise Ordinance. DEIR at 2.4-16. However, the DEIR fails to evaluate the amount of noise reduction that will be provided by these measures. Therefore the DEIR fails to provide a basis for the public and decision makers to evaluate the significance of impacts and whether or not the proposed mitigation measures will reduce impacts to a less-than-significant level.

A detailed analysis of the noise barrier effectiveness must be conducted now to determine whether it is feasible to construct noise barriers that would have the potential to afford a reasonable degree of protection to adjacent residences. Without such a study the conclusion that the Project's noise impacts would be less-than-significant is without merit.

In short, the DEIR's analysis of noise impacts dramatically understates the Project's potential to significantly affect area residents. At the same time, the DEIR fails to provide effective, enforceable measures to mitigate such potentially significant impacts. To comply with CEQA, the County must prepare a revised DEIR fully analyzing the Project's potential impacts to these resources and identifying effective mitigation measures. Revisions of the required magnitude will in turn require recirculation of the DEIR. CEQA Guidelines 15088.5(a)(4). G-64

C. The EIR's Analysis of Project Alternatives is Inadequate.

1. The EIR's Failure to Adequately Analyze Project Impacts Results in Inadequate Range of Alternatives.

Every EIR must describe a range of alternatives to the proposed project and its location that would feasibly attain the project's basic objectives while avoiding or substantially lessening the project's significant impacts. Pub. Res. Code § 21100(b)(4); CEQA Guidelines § 15126(d). A proper analysis of alternatives is essential for the City to comply with CEQA's mandate that significant environmental damage be avoided or substantially lessened where feasible. Pub. Res. Code§ 21002; CEQA Guidelines §§ 15002(a)(3), 15021(a)(2), 15126(d); Citizens for Quality Growth v. City of Mount Shasta (1988) 198 Cal.App.3d 433, 443-45. As stated in *Laurel Heights Improvement Association v. Regents of University of California*, 47 Cal.3d 376, 404 (1988) "[w]ithout meaningful analysis of alternatives in the DEIR, neither the courts nor the G-65

G-64 The effective noise attenuation that would be achieved by proposed mitigation measures was modeled as part of the Acoustical and Ground Vibration Site Assessment (see Draft EIR Appendix I). As described in Draft EIR Section 2.4 Noise, the proposed mitigation measures have been determined to achieve the necessary attenuation in order to achieve County noise standards. The criteria for recirculation as set forth in CEQA Guidelines Section 15088.5 have not been met.

G-65 The County disagrees that the EIR fails to disclose the extent and severity of the proposed project's impacts and as such, the EIR's evaluation of alternatives is adequate. The EIR evaluates a reasonable range of alternatives to the project, and explains the basis of rejecting each alternative (see Final EIR Chapter 4.0, Alternatives to the Proposed Project). Therefore, the County finds the alternatives analysis adequate and in compliance with CEQA.

public can fulfill their proper roles in the CEQA process. . . . [Courts will not] countenance a result that would require blind trust by the public, especially in light of CEQA's fundamental goal that the public be fully informed as to the consequences of action by their public officials." The DEIR's discussion of alternatives in the present case fails to live up to these standards.

As a preliminary matter, the DEIR's failure to disclose the extent and severity of the Project's broad-ranging impacts necessarily distorts the document's analysis of Project alternatives. As a result, the alternatives are evaluated against an inaccurate representation of the Project's impacts. Proper identification and analysis of alternatives is impossible until Project impacts are fully disclosed. Moreover, as discussed above, the document's analysis is incomplete and/or inaccurate so that it is simply not possible to conduct a comparative evaluation of the Project's and the alternatives' impacts.

G-65 Cont.

Far from complying with its obligations to suggest and analyze a reasonable range of alternatives to the proposed site, the DEIR offers "straw men" alternatives that are simply meant to bolster the case for the proposed project. For example, the DEIR discusses two "reduced commercial" alternatives: Alternative 1 and Alternative 2, both of which reduce the size of the market building. However, these alternatives still represent a use that is far too intensive for the proposed area and offer limited environmental benefits. Specifically, the two "reduced commercial" alternatives would develop 50,400 square feet and 63,600 square feet of commercial uses respectively. The two alternatives would do little to reduce the most impactful features of the Project (i.e., carwash, HVAC units, trash compactor) and would still result in significant impacts related to traffic, noise, air quality, greenhouse gases, and changes to the site's visual character. Thus, these two "reduced commercial" alternatives are not taken seriously in the RDEIR, and do not satisfy CEQA's mandate that an EIR discuss a reasonable range of alternatives that "offer substantial environmental advantages over the project proposal." *Citizens of Goleta Valley v. Board of Supervisors*, 52 Cal.3d at 566 (1990).

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Moreover, the DEIR asserts that Reduced Commercial Alternative 1 is the Environmentally Superior Alternative, however, this conclusion is not supported by evidence. Of the alternatives analyzed, the No Project/General Plan Designation Alternative reduces the number of average daily traffic trips ("ADT") by two thirds (1,600 ADT compared to the proposed Project trips of 4,683). By comparison, Reduced Commercial Alternative 1 would result in 3,233 ADT, or more than double the No Project/General Plan Designation Alternative. Despite this clear evidence that the No Project/General Plan Designation Alternative substantially reduces traffic impacts, the DEIR erroneously concludes that traffic impacts from this alternative would be similar to the proposed Project. DEIR at 4-12. As discussed above, a reduction of traffic by two thirds has enormous implications not only for traffic congestion but for noise, air quality, and greenhouse gases. Had the DEIR correctly analyzed this alternative, it would have concluded that the No Project/General Plan Designation Alternative is the Environmentally Superior Alternative. CEQA mandates selection of the environmentally superior alternative if it can feasibly attain most of the project's objectives, "even if it would

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G-66 The purpose of the reduced commercial alternatives would be to avoid, or reduce, the significant traffic, noise, and GHG impacts associated with the proposed project by reducing the vehicular trips generated by the project. As described in Chapter 4.0 Alternatives to the Proposed Project of the Final EIR and shown in Table 4-2, both reduced commercial alternatives would reduce impacts to biological resources, cultural resources, noise, and transportation/traffic associated with the proposed project.

The purpose of Reduced Commercial Alternative 1 would be to avoid, or reduce, the significant traffic, noise, and GHG impacts associated with the proposed project by reducing the vehicular trips generated by the project. This alternative would generate 3,233 ADT, which is a reduction of 1,450 ADT compared to the proposed project. Therefore, mobile-source GHG emissions are anticipated to be less compared to the proposed project. This would also reduce noise associated with vehicular trips.

The purpose of Reduced Commercial Alternative 2 would be to avoid or reduce, the significant traffic, noise, and GHG impacts associated with the proposed project by reducing the vehicular trips generated by the project. This alternative would generate 3,978 ADT, which is a reduction of 705 ADT compared to the proposed project. Therefore, mobile-source GHG emissions are anticipated to be less compared to the proposed project. This would also reduce noise associated with vehicular trips.

The alternatives studied constitute a reasonable range because they contain enough variation to facilitate informed decision making and public participation that leads to a reasoned choice. (CEQA Guidelines, 15126.6(a)-(f)).

G-67 As described in Section 4.7 Environmentally Superior Alternative of the EIR**,** pursuant to the CEQA Guidelines Section 15126.6(e)(2), if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives. In addition to the No Project/No Development Alternative, the No Project/Existing General Plan Designation Alternative is a no project alternative; therefore it cannot be selected as the environmentally superior alternative. As shown in Final EIR Table 4-2, the Reduced Commercial Alternative 1 would reduce impacts for the following environmental issue areas as compared to the proposed project: biological resources, cultural resources, noise, and traffic. Although the Reduced Commercial Alternative 2 would also reduce impacts to biological resources, cultural resources, noise, and traffic, the Reduced Commercial Alternative 1 would be considered the environmentally superior alternative because it would result in a greater reduction in ADT. The Reduced Commercial Alternative 1 would realize slightly greater reductions in noise.

The transportation/traffic analysis has been updated in Final EIR Section 4.4.2, as follows:

> Compared to the proposed project, access to would be provided via a driveway on Rios Canyon Road and Ridge Hill Road. No driveways are proposed along Olde Highway 80. Therefore, compared to the proposed project, the No Project/Existing General Plan Alternative would avoid the following impacts along Olde Highway 80:
>
> - Olde Highway 80 from Lake Jennings Park Road to Project Driveway 1 (LOS F) (**Impact TR-1**)

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impede to some degree the attainment of the project objectives, or would be more costly." CEQA Guidelines § 15126.6(b); CEQA § 21002. G-67 Cont.

D. The DEIR Must Be Revised and Recirculated. G-68

CEQA requires recirculation of an EIR when significant new information is added to the document after notice and opportunity for public review was provided. Pub. Res. Code § 21092.1; CEQA Guidelines § 15088.5. *Laurel Heights II*, 6 Cal. 4th at 1130. As this letter explains, the DEIR clearly requires extensive revision, which will include new information and analysis. This analysis will likely result in the identification of new, substantial environmental impacts or substantial increases in the severity of significant environmental impacts. Consequently, the County must revise and recirculate the EIR for public review and comment.

III. Conclusion G-69

For the reasons set forth above, we respectfully request that the County deny the requested permit applications. Additionally, we request that no further consideration be given to the Project as proposed until an EIR is prepared that fully complies with CEQA.

Very truly yours,

SHUTE, MIHALY & WEINBERGER LLP

Catherine C. Engberg
Benjamin J. Brysacz

Carmen J. Borg, AICP
Urban Planner

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SHUTE, MIHALY & WEINBERGER LLP

- Olde Highway 80 from Project Driveway 1 to Project Driveway 2 (LOS F) (**Impact TR-2**)
    - Olde Highway 80 from Project Driveway 2 to Project Driveway 3 (LOS E) (**Impact TR-3**)
    - Olde Highway 80 from Project Driveway 3 to Rios Canyon Road extension (LOS E) (**Impact TR-4**)
- Based on a signal warrant analysis, Project Driveway 2 at Olde Highway 80 warrants a traffic signal (**Impact TR-11**).
    - Olde Highway 80 from Lake Jennings Park Road to Project Driveway 1 – LOS F (**Impact TR-12**)
    - Olde Highway 80 from Project Driveway 1 to Project Driveway 2 – LOS F (**Impact TR-13**)
    - Olde Highway 80 from Project Driveway 2 to Project Driveway 3 – LOS F (**Impact TR-14**)
    - Olde Highway 80 from Project Driveway 3 to Rios Canyon Road – LOS F (**Impact TR-15**)

Although the No Project/Existing General Plan Alternative would reduce the amount of traffic and avoid impacts along Olde Highway 80 (Impacts TR-1 through TR-4 and TR-11 through TR-15), ~~impacts would still occur to the same facilities and~~ the I-8 interchange related improvements would still be the responsibility of Caltrans. Therefore, although slightly reduced, traffic impacts would be similar to the proposed project.

G-68 Please refer to response to comment G-4.

G-69 Comment noted. This comment provides a conclusion and does not address the adequacy of the EIR; therefore, no further comment is required.

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List of Exhibits:

Exhibit A	San Diego County, Guidelines for Determining Significance and Report and Content Requirements: Visual Resources, July 30, 2007.
Exhibit B	Sacramento Metropolitan Air Quality Management District, CEQA Guide: Greenhouse Gas Emissions, June 2015.
Exhibit C	Email from M. Slovick to E. Chalmers (Jul. 31, 2015).
Exhibit D	Supplemental Writ of Mandate, *Sierra Club v. County of San Diego*, Case No. 37-2012-00101054-CU-TT-CTL (May 4, 2015).
Exhibit E	California Air Pollution Control Officers Association ("CAPCOA"), CEQA & Climate Change, Jan. 2008.
Exhibit F	Letter from T. Sullivan (on behalf of the Attorney General) to D. Warner (Nov. 4, 2009).
Exhibit G	San Diego Association of Governments (SANDAG), Regional Plan EIR: Greenhouse Gas Emissions, Oct. 2, 2015.
Exhibit H	Excerpts of Riverside County, Travertine Point Specific Plan, Conditions of Approval.
Exhibit I	Sacramento Metropolitan Air Quality Management District, Recommended Guidance for Land Use Emission Reductions Version 3.2 (For Operational Emissions), April 2015.

G-70

736214.1

SHUTE, MIHALY & WEINBERGER LLP

G-70 Comment noted. This comment provides a list of attached exhibits which are references cited throughout the comment letter. Individual responses are not provided for each exhibit as they were utilized in support of the detailed comments responded to above.

EXHIBIT A

COUNTY OF SAN DIEGO

GUIDELINES FOR DETERMINING SIGNIFICANCE AND REPORT FORMAT AND CONTENT REQUIREMENTS

VISUAL RESOURCES

LAND USE AND ENVIRONMENT GROUP

Department of Planning and Land Use
Department of Public Works

July 30, 2007

APPROVAL

I hereby certify that these **Guidelines for Determining Significance and Report Format and Content Requirements for Visual Resources** are a part of the County of San Diego, Land Use and Environment Group's Guidelines for Determining Significance and Technical Report Format and Content Requirements and were considered by the Director of Planning and Land Use, in coordination with the Director of Public Works on the 30th day of July, 2007.

ERIC GIBSON
Interim Director of Planning and Land Use

JOHN SNYDER
Director of Public Works

I hereby certify that these **Guidelines for Determining Significance and Report Format and Content Requirements for Visual Resources** are a part of the County of San Diego, Land Use and Environment Group's Guidelines for Determining Significance and have hereby been approved by the Deputy Chief Administrative Officer (DCAO) of the Land Use and Environment Group on the 30th day of July, 2007. The Director of Planning and Land Use is authorized to approve revisions to these Guidelines for Determining Significance and Report Format and Content Requirements for Visual Resources except any revisions to the Guidelines for Determining Significance presented in Section 4.0 must be approved by the DCAO.

Approved, July 30, 2007

CHANDRA WALLAR
Deputy CAO

COUNTY OF SAN DIEGO

GUIDELINES FOR DETERMINING SIGNIFICANCE

VISUAL RESOURCES

LAND USE AND ENVIRONMENT GROUP

Department of Planning and Land Use
Department of Public Works

July 30, 2007

EXPLANATION

These Guidelines for Determining Significance for Visual Resources and information presented herein shall be used by County staff for the review of discretionary projects and environmental documents pursuant to the California Environmental Quality Act (CEQA). These Guidelines present a range of quantitative, qualitative, and performance levels for particular environmental effects. Normally, (in the absence of substantial evidence to the contrary), non-compliance with a particular standard stated in these Guidelines will mean the project will result in a significant effect, whereas compliance will normally mean the effect will be determined to be "less than significant." Section 15064(b) of the State CEQA Guidelines states:

> "The determination whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on factual and scientific data. An ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting."

The intent of these Guidelines is to provide a consistent, objective and predictable evaluation of significant effects. These Guidelines are not binding on any decision-maker and do not substitute for the use of independent judgment to determine significance or the evaluation of evidence in the record. The County reserves the right to modify these Guidelines in the event of scientific discovery or alterations in factual data that may alter the common application of a Guideline.

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List of Acronyms

BLM	Bureau of Land Management
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
FCC	Federal Communications Commission
FHWA	Federal Highway Administration
DTAC	Departmental Transportation Advisory Committee
NEPA	National Environmental Policy Act
NHS	National Highway System
SHC	Streets and Highways Code
USC	United States Code
USFS	United States Forest Service

INTRODUCTION

This document provides guidance for evaluating adverse environmental effects that a proposed project may have to visual resources. Specifically, this document addresses the following questions listed in the California Environmental Quality Act (CEQA) Guidelines, Appendix G, I. Aesthetics:

a) Would the project have a substantial adverse effect on a scenic vista?

b) Would the project substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a State scenic highway?

c) Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

Appendix G also requires evaluation of a proposed project that would create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. This issue is addressed in the County's "Guidelines for Determining Significance for Dark Skies and Glare."

In the context of CEQA, aesthetics addresses scenic vistas, scenic resources, and visual character and quality. Determining what is considered to be a visual resource worth consideration under CEQA is an interpretative process that can lead to wide-ranging analyses. Therefore, standardizing the analysis of project impacts on visual resources is useful to ensure both comparable results between projects and defensible conclusions regarding impacts and their significance. This document provides the standards for evaluating impacts to visual resources in unincorporated San Diego County. The companion document, "Report Format and Content Requirements for Visual Resources Analysis" describes how to evaluate impacts to visual resources.

The visual assessments most widely used in the U.S., and those consulted to prepare these County guidelines, are:

- US Department of Transportation, Federal Highway Administration (FHWA) Visual Impact Assessment for Highway Projects;[1]
- US Department of Agriculture, Forest Service (USFS) Visual Management System; and
- US Department of the Interior, Bureau of Land Management (BLM) modified Visual Management System.

The concepts in them are very similar and have analogous approaches to determining the significance of impacts to visual resources.

[1] This document is used by Caltrans.

1.0 GENERAL PRINCIPLES AND EXISTING CONDITIONS

Visual resource analysis generally involves the identification of visual resources (natural and built) within the visual landscape and the overall evaluation of the quality and character of that landscape. Evaluating aesthetics and visual resources of a proposed project involves both objective and subjective elements.

The visual landscape can be examined as if it were a landscape painting within a frame, with the frame being the edges of the view. On the objective side, the components of the landscape and the relationships of the elements within it can be described (Figure 1). The landscape can be dissected and its parts (the patterns, lines, shapes, forms, etc.) and their relationships to each other, as well as what is seen as a whole from a particular vantage point, can be described. However, a viewer perceives the visual landscape and its elements subjectively, and determines whether it is scenic or not based on his/her background, culture, and personal experiences. Therefore, the consideration of various viewer groups must be considered in the evaluation.

Existing visual resources define a region's character and identity. Scenic vistas, scenic resources, and community character and quality are resources that are valued in San Diego County. They are important to the quality of life enjoyed here and to tourism, one of the leading industries.

Aesthetic value is not limited to open space and rural lands, but can also be held in historic structures and districts, architectural design, streetscapes and manufactured landscapes. These valuable aesthetic elements of the human-made environment can be found throughout the unincorporated County, even though it is mostly undeveloped. A well-known example is the historic gold-mining community of Julian.

1.1 Viewsheds

The visual environment can be vast; therefore, for purposes of analyzing impacts, boundaries must be placed on it. The area within those boundaries is commonly referred to as the viewshed. The viewshed is the area visible from an observer's viewpoint, including the screening effects of intermediate vegetation and structures. The most comprehensive viewsheds are generally from scenic viewpoints, singular vantage points that offer an unobstructed view of expansive visible landscape components. Its components include the underlying landform (topography, e.g. foothills, mountains, flatlands) and the overlaying landcover (e.g. water features, vegetation, cultural sites, and buildings).

Caltrans sometimes designates State scenic vistas along major highways and also designates certain highways or portions of highways as scenic. Highways and other travelways provide a composite viewshed, a compilation of overlapping areas that are visible from a series of viewpoints along a road or similar network (e.g. biking and hiking trails). The best examples of composite viewsheds exist along scenic highways and corridors. A composite viewshed encompasses all the surface areas from an on-site viewer's viewpoint and all surface areas from which a project is seen.

The composite viewshed is the basis for analysis as this is the most comprehensive (largest) and conservative estimate of area which could be visually affected by a proposed project.

1.2 Landscape Units

While projects that are small in size or located within a homogeneous visual area or viewshed can be addressed as a whole, for linear projects of some length, or development projects covering a large number of acres, the *landscape unit* generally provides a useful analytic tool and technical analysts should carefully consider whether use of this concept would benefit their study. The concept and function of landscape units is discussed below.

The underlying topographic form, vegetation type and coverage present, and type of existing land use (or absence thereof) combine to visually create an outdoor "room" (landscape unit) that exhibits a distinct visual character. The edges dividing one unit from other landscape units are often defined by slope types, watershed ridges or other spatial constrictions. Within each of the landscape units the potential modification of its components and addition of proposed project elements will have an identifiable, and different, effect.

Where there are variations in the above existing elements that result in different "rooms," or landscape units, the clear definition of these different units as part of the existing conditions discussion will help draw a clearer picture of baseline conditions, as well as create a basis for defensible impact analyses and significance conclusions.

For example, a rural project area with equestrian uses and avocado groves separated into different areas may be proposed for residential development. Identification of the area as agricultural in nature is accurate. It does not, however, help the reader understand that the equestrian facility consists of a barn and a hundred acres of non-native grassland on rolling hillside, while the avocado groves are tightly massed and obscure the steep hillside on which they are located.

Describing each of these very different visual experiences in terms of their geographic extent and landscape/development content provides an excellent basis for comparing the amount of visible change to a specific landscape unit that is associated with project development. It also allows a logical base for finding different levels of impact significance for what could otherwise appear to be the same existing condition and impact (i.e., agricultural uses being transformed to residential uses), etc. For instance, homes placed on the equestrian facility may result in such a difference from existing conditions that the resulting impact is significant, while inserting homes into the grove area could result in either no visually perceived change (if the homes are snugged into retained grove plantings) or a significant adverse amount of change if the trees are removed and the hillside terraced (with resultant changes in line, form, etc.).

1.3 Visual Character

A viewer observes the visual environment as a whole, not one object at a time. However, the viewer's understanding of that environment is based on the visual character of objects and the relationships between them. Visual character is the order and combination of patterns that are created by visual elements in a scene. Defining visual character for analyzing impacts under CEQA is an objective process based on a hierarchy of elements, pattern, and order, as described in detail in the Report Format and Content Requirements for Visual Resources.

1.4 Visual Quality

Visual quality is dependent upon the visual environment's brilliance, distinction, and/or excellence, as described in detail in the Report Format and Content Requirements for Visual Resources. The two most commonly used criteria to define visual quality are vividness and intactness/unity. A visual resource with a high degree of vividness and intactness/unity will typically have a high level of visual quality.

1.5 Viewers' Response

Perception is the basic act of seeing or recognizing an object. An individual's perception of a view and his/her enjoyment of a view can vary with each individual. The visual experience of the viewer is a combination of the visual resources in the landscape and the viewer's response to what he/she sees. A viewer may have preferences, standards, ideals, opinions, or bias about visual resources based on his/her background, culture and personal experiences. For example, a viewer may have a strong preference for a visual resource within a dramatic natural area or an area of cultural, historical, local or scientific importance, all of which may influence his/her perception of visual quality.

Exposure is the degree to which viewers are exposed to a view or visual resource, both in time and in space. As the distance between the viewer and an object increases, the ability to see details in the object decreases, which may decrease the importance of the object in the view. If the viewer is driving along a highway, as speed increases, the sharpness of lateral views decreases, and the viewer tends to focus along the line of travel; he/she sees what is seemingly advancing toward him/her and the lateral views would be perceived as blurs of color, rather than as objects.

Viewer exposure varies based on the physical location of the viewer, and the distance and position of the viewer in relation to the resource; the number of viewers of the resource; and the duration and frequency of viewer's contact with the resource. For comparison, typical viewer exposure from a vehicle traveling along a highway as described in the previous paragraph is different than the viewer exposure in someone's front yard in a residential community. From the highway the composite view is from the right-of-way; the viewing distance may be extensive; the number of viewers would probably be high; and the duration of viewing time of any particular view would be limited to the travel time through a particular highway segment and the type of road

(commuter highway vs. scenic highway). In contrast, front yard views from a residential community would have a focused viewshed, the number of viewers would be low and limited to residents and visitors to the home; and the duration of viewing time may be extensive depending on front yard views and activities.

Many of the factors, particularly human factors, affecting a viewer's preferences are usually shared among large groups of people. Since preference is personal and unique to each viewer, judgments must be made about the likes and dislikes of groups in order to assess impacts to visual resources. Therefore, visual resources are usually analyzed from the perspective of groups of people, such as commuters, sightseers, hikers, residents, etc.

1.6 Existing Conditions

San Diego County is a visually diverse place with a dramatic coastline, mountains, and desert. The County's sunny weather allows people to spend much of their time outside throughout the year. For that reason, people come from all over the world at all times of the year to partake of the County's resources. The County is rich in natural open space, unique topographic resources, scenic highways, scenic vistas, and other diverse aesthetic resources. These natural features contribute greatly to the overall quality of the existing visual setting.

1.6.1 San Diego County's Scenic Environment

San Diego County has three distinctive geographic regions that provide a backdrop for visual resources: the low-lying Coastal Plain, the mountainous Peninsular Range, and the lowlands of the Desert. The diversity of these regions provides San Diego County residents and visitors with an array of natural vistas and scenic environments that provide a unique aesthetic collection from the ocean to the desert.

Coastal Plain
The Coastal Plain ranges in elevation from sea level to approximately 600 feet above mean sea level (AMSL) and lies mostly within incorporated cities in San Diego County, with the exception of the lower elevation foothills of the San Dieguito Community. This region's primary aesthetic resources are coastlines, bays, lagoons, canyons, mesas, natural vegetation, urban and commercial development, and agricultural lands.

Peninsular Ranges
The foothills of the Peninsular Ranges region rise in elevation from 600 to 2,000 feet AMSL and are characterized by rolling to hilly uplands that contain frequent narrow, winding valleys. This region is traversed by several rivers as well as a number of intermittent drainages. The foothills are developed with various urban, suburban, and rural land uses, including the communities of Ramona, Lakeside, Crest-Dehesa, Valle de Oro, Spring Valley, and Otay. Notable scenic resources in the foothills of the unincorporated County include the Otay River, Sweetwater River, upper San Diego River, Upper and Lower Otay Lakes, Sweetwater Reservoir, Lake Hodges, and San Vicente Reservoir.

The higher elevations of 2,000 to 6,000 feet AMSL are dominated by steep mountains typically covered with granite boulders and chaparral vegetation on the western slopes, evergreen and temperate forests at and near the top, and desert chaparral on the eastern slopes. The largely undeveloped mountain areas surround scattered rural communities, including Alpine, Pine Valley, Jamul-Dulzura, Campo, and Julian. Scenic resources in this region are plentiful, including large open spaces such as Cleveland National Forest, Agua Tibia Wilderness Area, San Mateo Canyon Wilderness, Palomar Mountain State Park, Cuyamaca Rancho State Park and various County reserves and parks, as well as the large water bodies of El Capitan Reservoir, Barrett Lake, Lake Morena, Lake Cuyamaca and Lake Henshaw.

Desert
The eastern portion of San Diego County is within the Desert region. Elevations range from sea level to 3,000 feet AMSL and the terrain includes mountains, alluvial fans, and desert floor. Most of the Desert region is within the Anza-Borrego Desert State Park, a valuable visual resource providing scenic beauty for its many visitors. Development within the Desert region of the incorporated County includes the small desert communities of Borrego Springs and Ocotillo. The Desert region provides expansive views characterized by dramatic landforms, native desert habitat, and low desert valleys.

Throughout these three distinctive geographic provinces are vast amounts of publicly owned lands that provide open space and visual relief from the human-made environment. Examples include the United States Marine Corps Camp Pendleton in the Coastal Plain region of northern San Diego County; the Cleveland National Forest in the Peninsular Range region; and Anza-Borrego Desert State Park in the Desert region. In addition to these examples of large expanses of open space, County parks, habitat preserves, reservoirs, farmland and undeveloped lands contribute to San Diego County's open space lands and overall aesthetic resource value.

1.6.2 Scenic Highways

Both the State and County designate roadways as scenic. Each is briefly described below.

State Scenic Highways
State Scenic Highways are those highways that are either officially designated as State scenic highways by Caltrans or are eligible for such designation. Eligible scenic highways are identified in Section 263 of the Streets and Highways Code. The status of a State scenic highway changes from "eligible" to "officially designated" when the local jurisdiction adopts a scenic corridor protection program, applies to Caltrans for scenic highway designation, and receives notification from Caltrans that the highway has been designated as an official State Scenic Highway.

Of the officially designated State scenic highways, one, a portion of State Route (SR) 78 through Anza-Borrego State Park, is within the unincorporated County of San Diego. Eligible highways are the entire portions of SR 94, I-8, SR 79, SR 78, and SR 76 within

the unincorporated County. For more information, refer to the State website at http://www.dot.ca.gov/hq/LandArch/scenic_highways/sdiego.htm.

County Scenic Highway System
The County Scenic Highway System is the master plan for official State Scenic Highway designations. The system consists of a map and a priority list (Attachment A) as presented in the Scenic Highway Element of the General Plan.

Scenic Corridors
Scenic corridors refer to any designated freeway, highway, road, street, boulevard, or other vehicular right-of-way that traverses an area of unusual scenic quality. A scenic corridor is the land generally adjacent to and visible from the vehicular right-of-way. The dimension of a scenic corridor is usually identified using a motorist's line of vision, but a "reasonable" boundary is selected when the view extends to the distant horizon. The County has "Scenic Preservation Guidelines for the I-15 Corridor" and a Scenic Highway Element of the General Plan that aim to maintain existing scenic highways and corridors.

Even though the County has an abundance of natural and human-made visual resources, only portions of these visual resources are viewed regularly. The most readily accessible means to observe these resources is within scenic corridors along the County's roadways, particularly scenic highways. Two highways in San Diego County have been officially designated as scenic by the State, one of which is in the unincorporated County. In addition, the County has several first, second and third priority scenic routes that are not officially designated, but do provide viewing access to aesthetic resources. First priority scenic routes are listed in Attachment A and in the County's Scenic Highway Element.

2.0 EXISTING REGULATIONS AND STANDARDS

A number of Federal, State, and local laws have been enacted to protect a specific aesthetic resource (e.g., scenic highways) or include provisions to allow the protection of aesthetic resources. The regulations and programs have been chosen for their applicability to land development in San Diego County.

2.1 Federal Regulations and Standards

National Environmental Policy Act [as amended (Pub. L. 91-190, 42 U.S.C. 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, and Pub. L. 97-258, § 4(b), Sept. 13, 1982). Link: NEPA of 1969]
Federal agencies that implement the National Environmental Policy Act (NEPA) are required to consider aesthetic/visual resource impacts for applicable projects.

National Highway System Designation Act of 1995 [Title III, Section 304. 23U.S.C. 109. Design Criteria for the National Highway System, FHWA Legislation and Regulations]
This landmark legislation designates almost 260,000 kilometers (160,955 miles) of roads as the National Highway System (NHS). Title III, Section 304 of the legislation

allows, but does not mandate, design standards for NHS projects that take into account the constructed and natural environment of the area including the environmental, scenic, aesthetic, historic, community, and preservation impacts of the proposed activity.

National Historic Preservation Act (NHPA) of 1966[2] [Public Law 89-665, October 15, 1966; 16 U.S.C. 470 et seq., http://www.cr.nps.gov/local-law/FHPL_HistPrsrvt.pdf
The NHPA requires federal agencies to take into account the effects of their undertakings on historic properties. In addition to other projects, prospective issuance of an FCC license for construction of cell towers and other wireless communication facilities is an "undertaking" subject to Section 106 of the NHPA.

Telecommunications Act of 1996 [Telecommunications Act of 1996, Pub. LA. No. 104-104, 110 Stat. 56 (1996) FCC - Telecommunications Act of 1996]
This legislation of the Federal Communications Commission standardizes the playing field for telecommunications businesses. The legislation also prohibits local governments from banning wireless telecommunications towers, but gives local governments the right to enact ordinances to ensure wireless towers are sited and designed appropriately.

2.2 State Regulations and Standards

California Environmental Quality Act (CEQA) [Public Resources Code 21000-21178; California Code of Regulations, Guidelines for Implementation of CEQA, Appendix G, Title 14, Chapter 3, §15000-15387. [http://ceres.ca.gov/topic/env_law/ceqa/guidelines/]
Under the CEQA State and local agencies are required to consider impacts to aesthetic resources. The State CEQA guidelines provide specific guidance to lead agencies to consider impacts to aesthetic resources such as trees, rock outcroppings, and historic buildings within a state scenic highway or scenic vistas. Additionally, the guidelines provide more general guidance regarding the protection of visual character and quality.

California Scenic Highway Law [California Streets and Highways Code, Section 260-283, www.leginfo.ca.gov, CA Codes (shc:260-284)]
The California Scenic Highway Law created the California Scenic Highway Program to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of adjacent lands. The State Legislature established the program through Senate Bill 1467 (Farr), which was then added to the Streets and Highways Code, Section 260-283. The program defines the process for the designation of official scenic highways. A legislatively appointed body, the Departmental Transportation Advisory Committee (DTAC), recommends program criteria, reviews applications, and advises the Caltrans Director to revoke scenic highways that are no longer in compliance with the program.

[2] Compliance with Section 106 of the NHPA is a separate statutory requirement unrelated to any NEPA requirements that may apply.

California Street and Highways Code [California Street and Highways Code, Section 260-283, www.leginfo.ca.gov, CA Codes (shc:260-284)]
The California Street and Highways Code establishes standards for undertaking the development and designation of official scenic highways and assigns responsibility for the development of scenic highways to local jurisdictions. It establishes the State Scenic Highway system by designating highways that are either eligible for designation as a State Scenic Highway or have been designated as such. The code defines the criteria under which freeways may be designated a California Historic Parkway as a part of the overarching State Scenic Highway system.

2.3 Local Regulations and Standards

San Diego County General Plan
The General Plan provides guidance for the preservation of aesthetic resources. The General Plan incorporates specific community plans; which include goals, policies, and recommendations to guide development of a region. These community plans identify a variety of specific planning considerations that may include guidelines for protecting visual character and quality through development guidelines designed to minimize adverse aesthetic affects. The General Plan also includes specific guidelines for scenic highways and open space, as described below.

San Diego County General Plan, Scenic Highway Element, Part VI
The General Plan's Scenic Highway Element includes objectives to: (1) establish a comprehensive County Scenic Highway Program, (2) protect and enhance scenic resources within both rural and urban scenic highway corridors (3) encourage and promote increased coordination and implementation of the program and (4) increase public awareness and involvement in the program. The goal of County's Scenic Highway Program is to protect and enhance the County's "scenic, historic, and recreational resources" within the viewshed of all scenic highway corridors. The Scenic Highway Element includes criteria to be used when reviewing and recommending changes to the County Scenic Highway System.

San Diego County Scenic Highway Program
The County's Scenic Highway Program establishes a scenic highway system priority list, which is included in Scenic Highway Element, Part VI. Two officially designated state scenic highways exist in the County, one of which is in the unincorporated County. The rest of the routes in the County's scenic highway program are listed as First, Second, or Third Priority Scenic Routes. There are six (6) first priority routes, sixteen (16) second priority routes, and thirty-eight (38) third priority routes.

San Diego County General Plan, Open Space Element
The Open Space Element provides guidelines for the conservation, development, and use of natural resources with a section discussing unique geologic features. For more information on unique geologic features refer to the "Guidelines for Determining Significance for Unique Geologic Features."

San Diego County Zoning Ordinance, Scenic Area Regulations [Section 5200-5299, http://www.sdcounty.ca.gov/dplu/docs/z5000.pdf]
The Scenic Area Regulations of the County Zoning Ordinance serve to regulate development in areas of high scenic value in order to exclude incompatible uses and structures, and preserve and enhance the scenic resources in adjacent areas. The regulations apply to areas of unique scenic value including but not limited to: scenic highway corridors designated by the County General Plan; critical viewshed and prime viewshed areas as designated on the Local Coastal Program Land Use Plan; and areas adjacent to significant recreational, historic or scenic resources, including but not limited to Federal and State parks. The designation for scenic areas is identified on a parcel-by-parcel basis by the special area designator "S".

San Diego County Zoning Ordinance, Specific Historic Districts [Section 5749, http://www.sdcounty.ca.gov/dplu/docs/z5000.pdf]
The County Zoning Ordinance includes a provision for the establishment of Specific Historic Districts having their own review boards and specific review criteria. Currently, Julian is the only community that has developed a historic district and associated design criteria. Section 5749 of the Zoning Ordinance defines the Julian Historic District's overall design criteria and design guidelines. Parcels within the Julian Historic District have a "J" zoning designator to identify the requirement for site plan review by the Julian Historic District Architectural Review Board. For more information of historic districts refer to the "Guidelines for Determining Significance for Cultural Resources."

San Diego County Zoning Ordinance, Community Design Review Area Regulations [Section 5750-5799, http://www.sdcounty.ca.gov/dplu/docs/z5000.pdf]
The County Zoning Ordinance includes provisions to provide for the maintenance and enhancement of a community's individual visual character and identity. The provisions require that a site plan be submitted for development within those areas having a "B" Community Design Review Area Special Designator. The provisions include exemptions to the site plan requirement for certain project types and provisions for granting a site plan waiver for Community Design Review. Currently, the following communities have developed Design Guidelines: Valley Center, Sweetwater, Fallbrook, Lakeside, Ramona, Spring Valley, Bonsall, and Alpine.

The "B" Design Review Area Special Designator also covers portions of Interstate 15 (I-15). The I-15 corridor has its own Scenic Preservation Guidelines and Design Review Board to review discretionary projects that are subject to the guidelines.

San Diego County Zoning Ordinance, Design Review Area Regulations [Section 5900-5910, (http://www.sdcounty.ca.gov/dplu/docs/z5000.pdf)
The County Zoning Ordinance includes provisions to ensure that future structures and development of a site will complement not only the site to be developed but also the surrounding areas and existing development. The provisions require that a site plan be submitted for certain discretionary project applications within those areas having a "D" zoning designator indicating the need for design review. The regulation requires that specific criteria be reviewed to achieve the objectives of the approving authority. These criteria include a review of building characteristics, building structure and placement,

landscaping, roads, pedestrian walkways, parking and storage areas, grading, signs, and lighting. These criteria are assigned at the time of ordinance review for the project site. Applicable community planning or sponsor groups have an opportunity to review such site plans and to present their recommendations to the Director of the Department of Planning and Land Use.

San Diego County Zoning Ordinance, Historic/Archaeological Landmark and District Area Regulations [Section 5700-5749, http://www.sdcounty.ca.gov/dplu/docs/z5000.pdf]
The County Zoning Ordinance includes provisions intended to identify, preserve and protect the historic, cultural, archeological and/or architectural resource values of designated landmarks and districts and encourages compatible uses and architectural design. Areas designated by the Historic/Archaeological Landmark District have an "H" special area designator while areas within a Specific Historic District are noted with a "J" special area designator. Where a "J" designator exists, these areas will be subject to the guidelines and review of the specific historic district. Where an "H" designator exists, the Historic Site Board may provide guidance, a board appointed by the Board of Supervisors, to advise the Director of the Department of Planning and Land Use on historical/archeological matters. The Historic/Archeological Landmark and District Area Regulations include the requirements for a site plan review for certain discretionary projects, site plan review criteria, and site plan waiver provisions.

County Board of Supervisors Policy I-104: Policy and Procedures for Preparation of Community Design Guidelines [Section 396.10 of the County Administrative Code and Section 5750 et seq. of the County Zoning Ordinance, http://www.co.san-diego.ca.us/cob/policy/I-104.doc]
This Board policy establishes policy and procedures to ensure adequate community support and citizen involvement in the preparation of community design guidelines.

Resource Protection Ordinance (RPO) [http://www.co.san-diego.ca.us/cnty/cntydepts/landuse/planning/Resource/5_regs_stat/res_prot_ord.pdf]
The RPO protects a variety of resources. One of the resources the ordinance protects is steep slopes. The ordinance limits development on steep slopes through density restrictions on steep slope lands and through requirements for steep slope areas to be placed in easements. The requirements of this ordinance therefore will often result in the protection of slopes in their natural state, which provides the added benefit of protecting a potential aesthetic resource. In terms of the preservation of aesthetic resources, this policy encourages the preservation of the existing natural terrain, established vegetation, and visually significant geologic displays. Because the Resource Protection Ordinance is stricter in its requirements for preservation of steep slopes, it has become the main planning tool for preservation of this resource, and therefore generally supersedes the Hillside Development Policy described below.

Board of Supervisors Policy I-73, Hillside Development Policy
[http://www.sdcounty.ca.gov/cob/policy/I-73.doc]
The Hillside Development policy was adopted by the County of San Diego Board of Supervisors in 1979 to minimize the effects of disturbing natural terrain and provides for creative design of hillside developments. The Hillside Development Policy provides flexible guidelines for reducing the effects of disturbance of steep slopes. Specifically,

the guidelines aim to "preserve, enhance or improve the physical features of the area consistent with providing building sites while at the same time optimizing the aesthetic quality of the final product."

Design Review Guidelines (http://www.co.san-diego.ca.us/dplu/docs/DRB.pdf)
Design review guidelines have been developed for the I-15 Corridor from the Escondido City Limit to the Riverside County Line and for the following communities of unincorporated San Diego County: Alpine, Bonsall, Fallbrook, Lakeside, Ramona, Rancho San Diego, Spring Valley, Sweetwater, and Valley Center. The design guidelines specify the types of design permitted in each community; including but not limited to architecture, landscaping, building uses, designation of scenic roads, slope modifications, and overall visual effect. Design guidelines are similar in form and content from community to community, but may vary in terms of defining specific community character. Vegetation types, especially tree species, are specifically designated in each community plan. The preservation of naturally occurring topography is encouraged by minimizing grading and carefully siting structures.

Wireless Communications Ordinance [San Diego County Code of Regulatory Ordinances. http://www.co.san-diego.ca.us/dplu/docs/POD0103ord.pdf]
This Ordinance provides a uniform and comprehensive set of standards for the development, siting and installation of wireless telecommunications facilities.

3.0 TYPICAL ADVERSE EFFECTS

Analysis of a project's impacts to visual resources is based on the identification of the change that would occur when a project proposes to alter the existing visual character and/or visual quality of the environment. The viewers' response to the change must also be considered in the impact analysis. If the project is hidden from sight and will only be seen by the project users, viewer response will likely be minimal. However, if the project is visible to many existing viewers, the viewers' sensitivity to and expectations of the view may place more importance on the change. The change must alter either the visual character or quality, or the viewers' response to the view, in a negative way to be considered an adverse impact.

Adverse effects to visual resources may result in regional or local impacts. On a regional level, multiple detrimental changes in the visual environment may indirectly affect the economy, tourism, history, culture, recreation, or lifestyle.

On a local level, visual resources within an identified viewshed may be adversely affected in numerous ways. In regard to visual character typical adverse effects include proposing changes that create non-compatible visual patterns in terms of dominance, scale, diversity and continuity. Adverse effects to visual quality typically may occur when changes to the visual environment modify a visual resource's vividness and/or intactness/unity.

Adverse visual effects can include the loss of natural features or areas, the removal of urban features with aesthetic value, or the introduction of contrasting urban features into natural areas of urban settings.

Adverse effects to aesthetics and visual resources may be permanent or temporary. Adding a building to a view would be a permanent effect; visual change related to grading could be a temporary effect if landforms are not substantially modified.

Typical adverse effects on visual resources in the unincorporated portion of the County may be caused by any of the following, or others, either temporarily or permanently:

- Altered landforms (i.e., cutting down hills and mesa tops, filling in canyons, encroaching on steep slopes, creating extensive cut or fill slopes, flattening of any topographic feature);
- Incompatible design features;
- Incompatible uses;
- Noise and retaining walls;
- Vegetation clearing;
- Insensitive siting; and/or
- Grading that does not modify landform to a noticeable level once it is vegetated (i.e., remedial grading [cut and fill] beyond pads to be revegetated with native plants).

4.0 GUIDELINES FOR DETERMINING SIGNIFICANCE

The following significance guidelines should guide the evaluation of whether a significant impact to visual resources will occur as a result of project implementation. A project will generally be considered to have a significant effect if it proposes any of the following, absent specific evidence to the contrary. Conversely, if a project does not propose any of the following, it will generally not be considered to have a significant effect on visual resources, absent specific evidence of such an effect:

1. ***The project would introduce features that would detract from or contrast with the existing visual character and/or quality of a neighborhood, community, or localized area by conflicting with important visual elements or the quality of the area (such as theme, style, setbacks, density, size, massing, coverage, scale, color, architecture, building materials, etc.) or by being inconsistent with applicable design guidelines.***

2. ***The project would result in the removal or substantial adverse change of one or more features that contribute to the valued visual character or image of the neighborhood, community, or localized area, including but not limited to landmarks (designated), historic resources, trees, and rock outcroppings.***

3. ***The project would substantially obstruct, interrupt, or detract from a valued focal and/or panoramic vista from:***

- ***a public road,***
- ***a trail within an adopted County or State trail system,***
- ***a scenic vista or highway, or***
- ***a recreational area.***

4. ***The project would not comply with applicable goals, policies or requirements of an applicable County Community Plan, Subregional Plan, or Historic District's Zoning.***

These guidelines address the three CEQA questions listed in the Introduction. Significance Guideline 1 protects the existing visual character and visual quality by not allowing adverse changes or contrasts. The guideline ensures that the community and/or neighborhood will maintain its particular character, which in most cases will be a rural setting or country town. The visual quality is based on the viewers' responses to changes in the character and quality of views of the project site, and whether the project contributes or detracts from the existing character and quality. These aspects of the project should be assessed by analyzing changes that would occur in particular "key" views and the viewers' responses to the changes, as described in Section 5.2 of the Report Format and Content Requirements for Visual Resources.

Significance Guideline 2 addresses potential substantial damage to particular resources that represent or characterize a community or neighborhood. Loss or damage to one or more of these particular resources can change the visual character and may also degrade the visual quality. The effect of the change is determined by the viewer response to the changes. The assessment of visual character and quality, per the directions of Section 5.3 of the Report Format and Content Requirements for Visual Resources, would result in the determination of significance.

Significance Guideline 3 is directed at potentially substantial adverse effects from travelways or recreational areas to particular scenic vistas. Public vantage points, such as roads and trails, allow scenic views to be seen by many people. Scenic views are so important to people that highways and viewpoints are sometimes designated as scenic by the County for County routes or Caltrans for State routes. Adverse changes to these resources could be significant, depending on the degree and nature of the change, particularly if the view is obstructed. Directions for assessing impacts are given in Section 5.3 of the Report Format and Content Requirements for Visual Resources.

The documents listed in Significance Guideline 4 have been developed to maintain the visual character and quality of communities and neighborhoods in the County which are currently regulated by the General Plan or Zoning. Projects that substantially stray from those regulations may result in significant adverse effects, depending on the degree and nature of the variation.

The cumulative impacts must be evaluated for the first three guidelines. A project may contribute to a significant adverse cumulative effect even though the project itself does not cause a significant adverse impact.

5.0 STANDARD MITIGATION AND PROJECT DESIGN CONSIDERATIONS

A project will be evaluated for its effect on visual resources under the criteria specified in Section 4.0. If mitigation or project design factors are identified that could reduce a significant effect, those shall be incorporated into the project. While project design elements and/or mitigation shall be incorporated into a project, it may not always be possible to reduce the impact to below a level of significant. In general, if mitigation or project redesign does not reduce a significant impact to visual resources to below a level of significant, the impact will be considered significant and unmitigable.

Both design considerations and mitigation measures are dependent on the specifics of the project. Following are samples of appropriate design considerations and mitigation measures.

5.1 Landforms

To reduce size of cut and fill slopes, consider:

- relocating to an area with less slope;
- changing road width, grade, etc.;
- changing alignment to follow existing grades; and
- minimizing grading.

To reduce earthwork contrasts, consider:

- rounding and/or warping slopes;
- retaining rocks, trees, drainages, etc.;
- toning down freshly broken rock faces with asphalt emulsion spray or with appropriately colored paint;
- adding mulch, hydromulch, or topsoil;
- shaping cuts and fills to appear as natural forms;
- cutting rock areas so forms are irregular;
- designing to take advantage of natural screens (i.e., vegetation, land forms); and
- seeding of cut and fill slopes.

To maintain topographic integrity, consider:

- locating projects away from prominent topographic features;
- designing projects to blend with topographic forms in shape and placement;
- designing structures to conform to the existing natural terrain; and
- modifying structure design to eliminate or screen contrasting/detracting features;

5.2 Vegetation

Loss of vegetation is an important component of visual impacts. Maintaining vegetation in place or vegetating slopes may cause a potentially significant impact to be avoided, minimized or mitigated.

To retain as much existing vegetation as possible, consider:

- using retaining walls on fill slopes to maximize the amount of existing vegetation that is retained;
- reducing surface disturbance; and
- protecting roots from damage during excavations.

Consider minimizing the impact on existing vegetation by:

- using irregular clearing shapes;
- feathering/thinning edges;
- controlling construction access;
- using existing roads;
- limiting work within construction area;
- minimizing clearing size; and
- seeding or planting of cleared areas.

To enhance vegetation, consider:

- mulching cleared areas;
- controlling planting times;
- furrowing slopes;
- choosing native plant species;
- stockpiling and reusing topsoil; and
- fertilizing, mulching, and watering vegetation.

To maintain the integrity of vegetative units, consider maintaining native vegetation communities to the maximum extent possible.

5.3 Structures

Following are suggestions to consider in the design and treatment of structures to avoid or reduce impacts:

- Minimize the number of visible structures;
- Reduce the width and/or height of new structures to reduce the extent of obstruction;
- Adapt important existing structures for reuse;
- Design structures to conform to existing natural terrain;

- Locate new structures on portions of the site that do not interfere with existing views;
- Arrange the window design of the structure so that views through windows are unobstructed;
- Use four-sided architecture (e.g. design details on all sides of structures rather than facades with blank side and back walls); and
- Relate design details to surrounding architecture/history.

To minimize structure contrast, consider:

- using earth-tone paints and stains;
- using cor-ten steel (self-weathering);
- treating wood for self-weathering;
- using natural stone surfaces;
- burying all or part of the structure; and
- selecting paint finishes with low levels of reflectivity (i.e., flat or semi-gloss).

Redesign structures that do not blend or fit. Consider:

- using rustic designs and native building materials in rural areas;
- using natural appearing forms to complement landscape character (use special designs only as a last resort); and
- relocating structure.

Minimize Impact of Utility Crossings. Consider:

- making crossings at right angles;
- setting back structures as far as possible from the crossing;
- leaving vegetation along the roadside;
- minimizing viewing time;
- using natural screening; and
- Placing new utilities underground.

The value of color on structures has limitations in reducing visual impacts. Color (hue) is most effective within 1,000 feet. Beyond that the paint color becomes more difficult to distinguish and tone or value (light and dark) determines visibility and resulting visual contrast. Using color has limited effectiveness (in the background distance zone) in reducing visual impacts on structures that are silhouetted against the sky.

Consider these suggestions:

- painting structures somewhat darker than the adjacent landscape to compensate for the effects of shade and shadow; and
- selecting color to blend with the land and not the sky.

5.4 Roads and Scenic Highways

Consider design road networks to minimize view obstruction and/or enhance existing views. Also consider designing roads to follow existing topography.

5.5 Other Design Considerations and/or Mitigation Measures

Replace existing natural aesthetic features that are proposed for removal. Incorporate designs that integrate natural aesthetics into the project (i.e. cluster development, greenbelts, landscaping, open space, etc.).

6.0 REFERENCES

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California Streets and Highways Code
California Scenic Highway Act and Program (SHC §260-283)
Streets and Highways Code

County of San Diego
Board of Supervisor's Policy I-73: Hillside Development Policy.
Design Review Guidelines (Alpine, Bonsall, Fallbrook, I-15 Corridor, Lakeside, Ramona, Rancho San Diego, Spring Valley, Sweetwater, Valley Center) (http://www.co.san-diego.ca.us/dplu/docs/DRB.pdf)
General Plan Scenic Highway Element (ELIB:960)
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Light Pollution Code (http://www.sdcounty.ca.gov/dplu/Resource/docs/3~pdf/LightPollutionCode.pdf)

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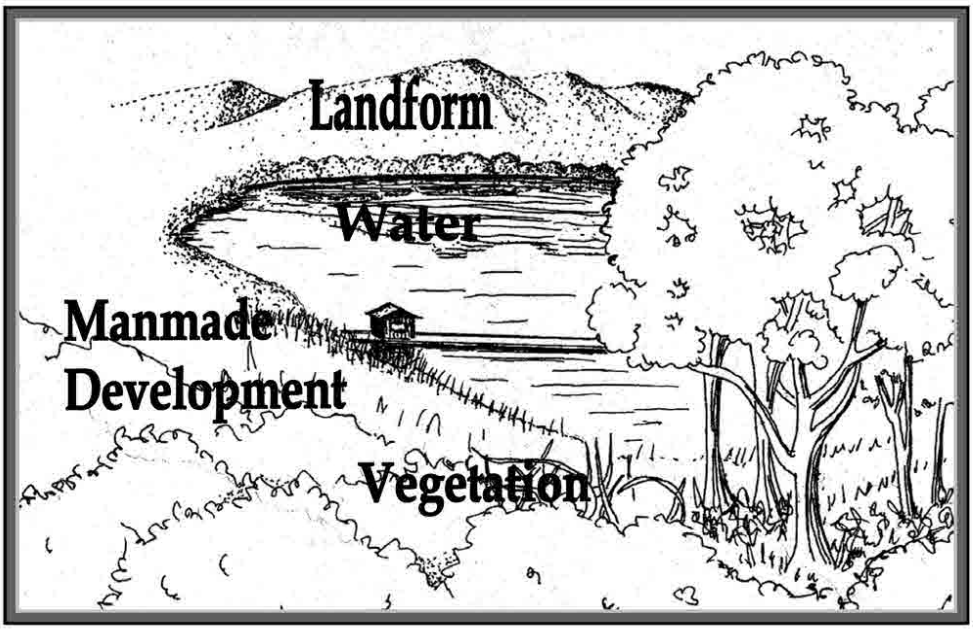
National Park Service Website, Protection of Aesthetic Values.

United States Department of Transportation
Federal Highway Administration (FHWA) Visual Impact Assessment for Highway Projects, http://www.elevated.org/_downloads/project/eis/4.5.pdf

Figure 1
Visible Landscape Components



[ATTACHMENT A]

County of San Diego
Scenic Highway System Priority List[3] for
Scenic Highway Corridor Planning and Implementation

Existing Official Scenic Highways

- State Route 78, from the western to the eastern boundary of Anza-Borrego Desert State Park (18.2 miles)
- State Route 125, from SR 94 north to Interstate 8 (2 miles)

First Priority

- SR 76, from El Camino Real east to Interstate 15, except portions within City of Oceanside.
- SR 79, from I-8 to intersection of Sunrise Highway (S1).
- Bonita Road, San Miguel, Guajolote, and Sweetwater River Roads (SC2126) from I-805 to SR 94, except the portions within City of Chula Vista.

Second Priority

- N. Santa Fe Avenue and Osborne Street, from Oceanside City Limits, east to Vista Way.
- Gird, Reche, Live Oak Park, and Mission Roads, from SR 76 to I-15.
- Tecate Road, from the International Border north to SR 94.
- SR 76, from East Grade Road, east to SR 79.
- Telegraph Canyon/Otay Lakes Roads from Chula Vista City Limits east to Proctor Valley Road.
- Via de la Valle, El Escondido, Del Dios (S6) Highway from highway 101 north to Via Rancho Parkway.
- I-8, from El Cajon City Limits to SR 79.
- Lake Wohlford road, from Valley Center Road east to Guejito road.
- SR 78, from Via Rancho Parkway to SR 79, except portions within City of San Diego.
- SR 52 from San Diego City Limits to SR 67.
- Willow and El Monte Roads, from SR 67 to the southern end of El Capitan Reservoir.
- Proctor Valley Road, from Otay lakes Road to SR 94.
- SR 79 and Sunrise Highway (S1) from Wynola Road south to Recreational Parkway.
- Potrero Valley Road, from SR 94 to Potrero County Park.
- Lake Morena Drive, from Buckman Springs Road, north to Morena Lake.
- Oak Drive, from Lake Morena Drive north to Buckman Springs Road.

Third Priority

- I-15, from SR 76 north to Riverside County line.
- Mission and Green Valley Roads, from SR 76 north and east to Gird Road.

[3] This list is from the Scenic Highway Element of the County of San Diego General Plan, with minor changes to reflect the current alignments of the highways.

- Otay Lakes Road, from Proctor Valley Road east to State Route 94.
- Honey Springs Road, from SR 94 to Lyons Valley Road.
- Vista Way, Oransby Street, Gopher Canyon Road, Old Castle Road, Lilac Road and Valley Center Road, from Vista City Limits to SR 76.
- Lake Wohlford Road, from Guejito Road north to Valley Center Road.
- Twin Oaks Valley Road, from Gopher Canyon Road to San Marcos city limits.
- Proposed extension of Twin Oaks Valley road, from San Marcos city limits to Camino Del Norte.
- Proposed extension of Camino Del Norte, from El Camino Real to Del Dios Highway.
- Via Rancho Parkway, from Del Dios Highway to SR 78, except in the cities of Escondido and San Diego.
- Bear Valley Road and SR 78, from Valley Center Road to Via Rancho Parkway.
- SR 125 from the International Border north to Telegraph Canyon Road.
- Espola Road, from San Diego city limits to Sorrento Freeway
- Sorrento Freeway, from Espola Road to SR 67.
- Anza Expressway, from SR 67 to SR 78.
- SR 79, from Riverside County line to Anza Expressway.
- SR 78, from Wynola Road to western boundary of Anza-Borrego Desert State Park.
- SR 78, from eastern boundary of Anza-Borrego State Park to Imperial County line.
- Black Mountain Road, between north San Diego city limits (west of Rancho Bernardo).
- Old Overland Stage Route (S2) from Imperial County line north to SR 78.
- Recreation Park Road, from I-8 north to SR 79.
- San Felipe Road, Montezuma Valley road, Hoberg Road and Truckhaven Trail (S22) from SR 79 east to Imperial County line.
- I-5, from Oceanside city limits north to Orange County line.
- San Vicente Road, Conejos Valley Road, Goudie Road, Boulder Creek Road and Viejas Boulevard from Anza Expressway to SR 79.
- Old SR 79 loop to Warner Springs, from SR 79 to SR 79.
- I-8, from SR 79 east to Imperial County line.
- Pomerado Road and Beeler Canyon Road (SA 780), from San Diego city limits to SR proposed SR 125.
- SR 94, from SR 125 to I-8.
- Lyons Valley Road (SA 390, SA 410), Pine Creek Trail, Morena Stokes Valley Road, and Buckman Springs road, from SR 94 to Oak Drive.
- Buckman springs Road, from Lake Morena Drive to SR 94.
- Japatul Road, from Lyons Valley road (SA 390/410) to I-8.
- Highland Valley Road, between city limits east to Lake Hodges.
- El Monte Park Road, from southern end of El Capitan Reservoir to I-8.
- Harvest Road and Otay Freeway, from International Border to Proctor Valley Road.
- Canfield Road, Divide Drive and oak Grove Road, from SR 76 to SR 79.

EXHIBIT B

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. On April 29, 2015, Governor Edmund Brown issued Executive Order B-30-15. Going beyond reductions required by AB 32, Executive Order B-30-15 requires that greenhouse gas emissions in California are reduced by 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050.

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.

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;
- Discussion of whether the project's scope and size qualify it to be analyzed using either or both of the District's operational screening levels table or the District's construction screening level for GHG emissions, discussed in Section 6.3.1;
- If the analysis cannot be completed using the District's construction screening level, 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;
- If the analysis cannot be completed using the District's operational screening levels table, 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 as a Project scenario.
- With the issuance of Executive Order B-30-15, establishing state-wide reduction targets in 2030 and 2050, analysts are advised to include a

discussion of the reduction targets and disclose the emissions from the project in those years;

- A discussion of whether project construction- and operations-related GHG emissions will exceed the established significance thresholds 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 Section 15064.4 (Search Title 14) states 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 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.

The District has developed screening levels to help lead agencies analyze operational and construction GHG emissions from projects in Sacramento County. The GHG Operational Screening Levels table shows the size of development (by land use type) at which the District's operational GHG emissions thresholds of significance would not be exceeded. In addition, the District has determined that projects below the GHG Operational Screening Levels would not exceed the District's construction GHG threshold of significance if the project meets the parameters in Chapter 3, Section 3.3.1 for the construction NOx screening level.

Therefore, operational and construction emissions from projects that are smaller than the land use sizes in the Operational Screening Levels table, that also meet the parameters outlined in Chapter 3, Section 3.3.1 regarding construction may be considered less-than-cumulatively considerable.

CEQA Guidelines Section 15183.5 (search Title 14) 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), 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.

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 a proposed project that does not meet the requirements of a categorical or statutory exemption; cannot show consistency with the jurisdiction's adopted GHG reduction plan (if applicable); or exceeds the screening levels in the GHG Operational Screening Levels table, the District recommends the lead agency 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 from 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 then 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 on conducting 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. To meet the goals of Executive Order B-30-15, California will need to reduce GHG emissions 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050. 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 and policies that have been adopted to reduce GHG emissions:

- AB 32 and the Scoping Plan,
- The Metropolitan Transportation Plan/Sustainable Communities Strategy

(MTP/SCS), and

- Executive Order B-30-15 goals.

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 mandates of AB 32, ARB's Scoping Plan and Executive Order B-30-15. Over time, implementation of AB 32 and Executive Order B-30-15 will reduce or mitigate GHG emissions from industrial sources.

6.4 MITIGATION

The State CEQA Guidelines Section 15126.4(c) (search Title 14) 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 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 way 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.

EXHIBIT C

Subject: RE: Please provide the National Green Building Standards

From: Slovick, Mark [mailto:Mark.Slovick@sdcounty.ca.gov]
Sent: Friday, July 31, 2015 1:28 PM
To: Erin B. Chalmers
Subject: RE: Please provide the National Green Building Standards

Hi Erin,

The interim guidance was prepared by PDS and was not adopted by the Board of Supervisors.

Thanks,

Mark Slovick, Planning Manager
County of San Diego | Planning & Development Services
T. 858.495.5172

From: Erin B. Chalmers [mailto:Chalmers@smwlaw.com]
Sent: Thursday, July 30, 2015 12:00 PM
To: Slovick, Mark
Subject: RE: Please provide the National Green Building Standards

Thanks, Mark. Did the BOS adopt this, or did PDS just informally issue the guidance?

Regards,
Erin

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www.smwlaw.com

Please consider the environment before printing this e-mail or attachments.

From: Slovick, Mark [mailto:Mark.Slovick@sdcounty.ca.gov]
Sent: Tuesday, July 28, 2015 8:39 AM
To: Erin B. Chalmers
Subject: RE: Please provide the National Green Building Standards

Hi Erin,

Attached is the guidance.

Thanks,

Mark Slovick, Planning Manager

1

County of San Diego | Planning & Development Services
T. 858.495.5172

From: Erin B. Chalmers [mailto:Chalmers@smwlaw.com]
Sent: Monday, July 27, 2015 5:01 PM
To: Slovick, Mark
Subject: RE: Please provide the National Green Building Standards

Hello again Mark,

The Final EIR states that it analyzes the climate impacts of the project using the County of San Diego's 2015 GHG Guidance: Recommended Approach to Addressing Global Climate Change in CEQA Documents. I've never heard of this guidance before and I can't find any mention of it online. Nor does it appear to be included in the public materials on the County's website. Would you please direct me to this new guidance document?

Regards,
Erin

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EXHIBIT D

FILED
Clerk of the Superior Court
MAY 04 2015
K. BRECKENRIDGE

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF SAN DIEGO

SIERRA CLUB, Plaintiff and Petitioner, v. COUNTY OF SAN DIEGO, Defendant and Respondent.	No. 37-2012-00101054-CU-TT-CTL Action Filed: July 20, 2012 ~~[PROPOSED]~~ **SUPPLEMENTAL WRIT OF MANDATE** Dept: C-72 ICJ: Honorable Timothy Taylor

Judgment on Petition for Peremptory Writ of Mandate was entered in favor of Plaintiff/Petitioner Sierra Club and against Defendant/Respondent County of San Diego on April 24, 2013. A Peremptory Writ of Mandate was issued on April 24, 2013. The judgment was affirmed by the Fourth District Court of Appeal on October 29, 2014.

Sierra Club filed a Supplemental Petition for Writ of Mandate on February 18, 2014. The parties entered into a Stipulation regarding the disposition of the Supplemental Petition on December 11, 2014.

In accordance with the Judgment, the April 24, 2013 Writ of Mandate, and the Stipulation and Order re Disposition of the Supplemental Petition,

///

IT IS NOW ORDERED that upon service of this Supplemental Writ of Mandate:

1. Respondent shall, within 30 days, file and serve an initial return demonstrating that, prior to April 10, 2015 it set aside: (a) the June 12, 2012 Climate Action Plan; (b) the June 20, 2012 environmental findings ("Addendum"); (c) the November 7, 2013 Guidelines for Determining Significance and Report Format and Content Requirements.

2. Respondent shall also include in the initial return an estimated schedule for preparing a new Climate Action Plan ~~and/or deleting or amending mitigation measure GC 1.3~~, preparing Guidelines for Determining Significance for Greenhouse Gas Emissions, and complying with CEQA as it applies to those actions. The schedule shall be updated by filing supplemental returns at reasonable intervals not to exceed six months.

3. This Court shall retain jurisdiction over Respondent by way of a return to this Writ until the Court has determined that the Respondent has complied with CEQA.

4. Nothing in this Writ directs Respondent to exercise its discretion in any particular manner.

5. This Writ may be served upon Respondent pursuant to Code of Civil Procedure 1010.6.

THE FOREGOING WRIT IS IMMEDIATELY ISSUED.

Date: May 4, 2015

Hon. Timothy B. Taylor
Judge of the Superior Court

Witness my hand and the official seal of this Court.

Date: _____, 2015

Clerk, Superior Court

Date: _____, 2015

Deputy Clerk, Superior Court

APPROVED AS TO FORM:

Date: _____, 2015

Jan Chatten-Brown
Malinda Dickenson
Attorneys for Petitioner

Date: April 14, 2015

C. Ellen Pilsecker
C. Ellen Pilsecker
Attorneys for Respondent

EXHIBIT E

CAPCOA

CALIFORNIA AIR POLLUTION CONTROL OFFICERS ASSOCIATION

CEQA & Climate Change

Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act

January 2008

Disclaimer

The California Air Pollution Control Officers Association (CAPCOA) has prepared this white paper consideration of evaluating and addressing greenhouse gas emissions under the California Environmental Quality Act (CEQA) to provide a common platform of information and tools to support local governments.

This paper is intended as a resource, not a guidance document. It is not intended, and should not be interpreted, to dictate the manner in which an air district or lead agency chooses to address greenhouse gas emissions in the context of its review of projects under CEQA.

This paper has been prepared at a time when California law has been recently amended by the Global Warming Solutions Act of 2006 (AB 32), and the full programmatic implications of this new law are not yet fully understood. There is also pending litigation in various state and federal courts pertaining to the issue of greenhouse gas emissions. Further, there is active federal legislation on the subject of climate change, and international agreements are being negotiated. Many legal and policy questions remain unsettled, including the requirements of CEQA in the context of greenhouse gas emissions. This paper is provided as a resource for local policy and decision makers to enable them to make the best decisions they can in the face of incomplete information during a period of change.

Finally, this white paper reviews requirements and discusses policy options, but it is not intended to provide legal advice and should not be construed as such. Questions of legal interpretation, particularly in the context of CEQA and other laws, or requests for advice should be directed to the agency's legal counsel.

Acknowledgements

This white paper benefited from the hard work and creative insights of many people. CAPCOA appreciates the efforts of all who contributed their time and energy to the project. In particular, the Association thanks the following individuals:

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List of Acronyms and Abbreviations

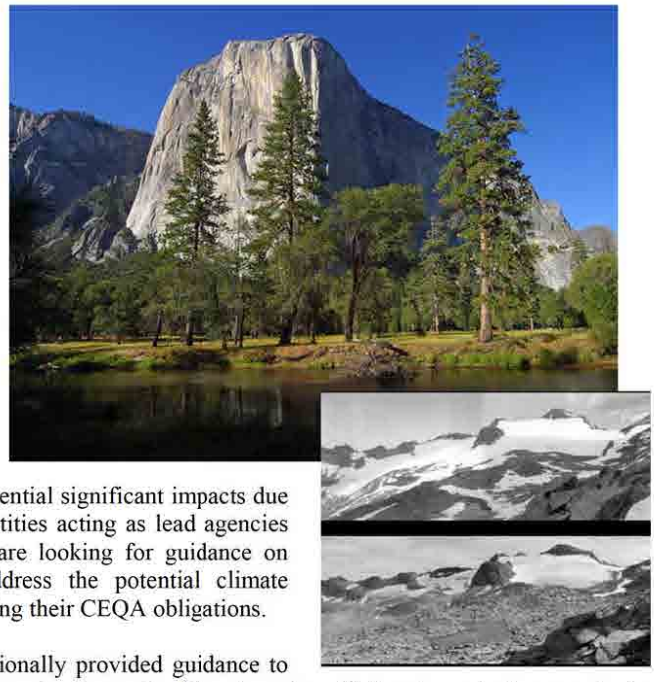
Acronym/ Abbreviation	Meaning
AB 32	Assembly Bill 32 Global Warming Solutions Act of 2006
AG	Attorney General
ARB	Air Resources Board
ASTM	American Society of Testing and Material
BAAQMD	Bay Area Air Quality Management District
BAU	Business as Usual
BEES	Building for Environmental and Economic Sustainability
Calfire	California Fire
Caltrans	California Department of Transportation
CAP	Criteria Air Pollutants
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resource Board
CAT	Climate Action Team
CCAP	Center for Clean Air Policy
CCAR	California Climate Action Registry
CDFA	California Department of Food and Agriculture
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CF	Connectivity Factor
CH_4	Methane
CIWMB	California Integrated Waste Management Board
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CNG	Compressed Natural Gas
CPUC	California Public Utilities Commission
CUFR	California Urban Forestry
DGS	Department of General Services
DOE	U.S. Department of Energy
DOF	Department of Finance
DPF	Diesel Particulate Filter
DWR	Department of Water Resources
E85	85% Ethanol
EEA	Massachusetts Executive Office of Energy and Environmental Affairs
EERE	Energy Efficiency and Renewable Energy
EIR	Environmental Impact Report
EOE	Encyclopedia of Earth
EPA	U.S. Environmental Protection Agency
ETC	Edmonton Trolley Coalition
EV	Electric Vehicles
FAR	Floor Area Ratio

GHG	Greenhouse Gas
GGEP	Greenhouse Gas Emissions Policy
GGRP	Greenhouse Gas Reduction Plan
GP	General Plan
GWP	Global Warming Potential
IGCC	Integrated Gasification Combined Cycle
IOU	Investor Owned Utility
IPCC	International Panel on Climate Change
IT	Information Technology
ITE	Institute of Transportation Engineers
J&S	Jones & Stokes
km	Kilometer
LandGem	Landfill Gas Emissions Model
LEED	Leadership in Energy and Environmental Design
LNG	Liquefied Natural Gas
MBUAPCD	Monterey Bay Unified Air Pollution Control District
MEPA	Massachusetts Environmental Policy Act
MND	Mitigated Negative Declaration
MMT CO_2e	Million Metric Tons Carbon Dioxide Equivalent
MW	Megawatts
N_2O	Nitrous Oxide
NACAA	National Association Clean Air Agencies
ND	Negative Declaration
NEV	Neighborhood Electric Vehicle
NIST	National Institute of Standards and Technology
NO_X	Oxides of Nitrogen
NREL	National Renewable Energy Laboratory
NSCAPCD	Northern Sonoma County Air Pollution Control District
NSR	New Source Review
OPR	State Office of Planning and Research
PFC	Perfluorocarbon
PG&E	Pacific Gas & Electric
POU	Publicly Owned Utility
PM	Particulate Mater
RoadMod	Road Construction Emissions Model
ROG	Reactive Organic Gas
RPS	Renewable Portfolio Standards
RTP	Regional Transportation Plan
S-3-05	Executive Order S-3-05
SB	Senate Bill
SBCAPCD	Santa Barbara County Air Pollution Control District
SCAQMD	South Coast Air Quality Management District
SCM	Sustainable Communities Model
SIP	State Implementation Plan
SJVAPCD	San Joaquin Valley Unified Air Pollution Control District
SLOCAPCD	San Luis Obispo County Air Pollution Control District

SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utilities District
SO_X	Sulfur Oxides
SP	Service Population
SRI	Solar Reflectance Index
SWP	State Water Project
TAC	Toxic Air Contaminants
TBD	To Be Determined
TDM	Transportation Demand Management
TMA	Transportation Management Association
THC	Total Hydrocarbon
UC	University of California
ULEV	Ultra Low Emission Vehicle
UNFCCC	United Nations Framework Convention on Climate Change
URBEMIS	Urban Emissions Model
USGBC	U.S. Green Building Council
VMT	Vehicle Miles Traveled
VTPI	Victoria Transit Policy
YSAQMD	Yolo-Solano Air Quality Management District

Introduction

The California Environmental Quality Act (CEQA) requires that public agencies refrain from approving projects with significant adverse environmental impacts if there are feasible alternatives or mitigation measures that can substantially reduce or avoid those impacts. There is growing concern about greenhouse gas emissions[1] (GHG) and recognition of their significant adverse impacts on the world's climate and on our environment. In its most recent reports, the International Panel on Climate Change (IPCC) has called the evidence for this "unequivocal." In California, the passage of the Global Warming Solutions Act of 2006 (AB 32) recognizes the serious threat to the "economic well-being, public health, natural resources, and the environment of California" resulting from global warming. In light of our current understanding of these impacts, public agencies approving projects subject to the CEQA are facing increasing pressure to identify and address potential significant impacts due to GHG emissions. Entities acting as lead agencies in the CEQA process are looking for guidance on how to adequately address the potential climate change impacts in meeting their CEQA obligations.



Air districts have traditionally provided guidance to local lead agencies on evaluating and addressing air pollution impacts from projects subject to CEQA. Recognizing the need for a common platform of information and tools to support decision makers as they establish policies and programs for GHG and CEQA, the California Air Pollution Control Officers Association has prepared a white paper reviewing policy choices, analytical tools, and mitigation strategies.

This paper is intended to serve as a resource for public agencies as they establish agency procedures for reviewing GHG emissions from projects under CEQA. It considers the application of thresholds and offers three alternative programmatic approaches toward

[1] Throughout this paper GHG, CO_2, CO_2e, are used interchangeably and refer generally to greenhouse gases but do not necessarily include all greenhouse gases unless otherwise specified.

determining whether GHG emissions are significant. The paper also evaluates tools and methodologies for estimating impacts, and summarizes mitigation measures. It has been prepared with the understanding that the programs, regulations, policies, and procedures established by the California Air Resources Board (CARB) and other agencies to reduce GHG emissions may ultimately result in a different approach under CEQA than the strategies considered here. The paper is intended to provide a common platform for public agencies to ensure that GHG emissions are appropriately considered and addressed under CEQA while those programs are being developed.

Examples of Other Approaches

Many states, counties, and cities have developed policies and regulations concerning greenhouse gas emissions that seek to require or promote reductions in GHG emissions through standards for vehicle emissions, fuels, electricity production/renewables, building efficiency, and other means. A few have developed guidance and are currently considering formally requiring or recommending the analysis of greenhouse gas emissions for development projects during their associated environmental processes. Key work in this area includes:

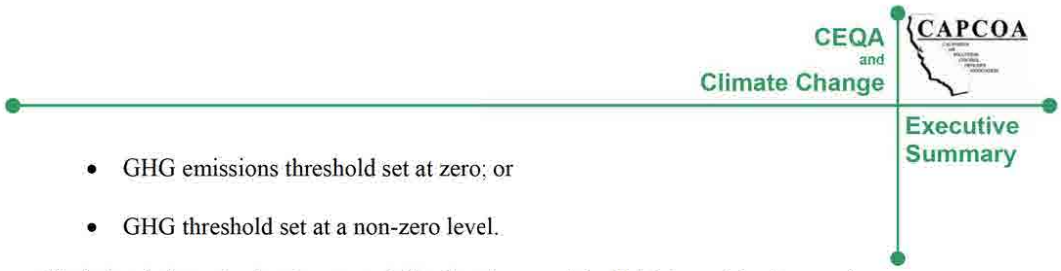
- Massachusetts Office of Energy and Environmental Affairs Greenhouse Gas Emissions Policy;
- King County, Washington, Executive Order on the Evaluation of Climate Change Impacts through the State Environmental Policy Act;
- Sacramento AQMD interim policy on addressing climate change in CEQA documents; and
- Mendocino AQMD updated guidelines for use during preparation of air quality impacts in Environmental Impact Reports (EIRs) or mitigated negative declarations.

The following paper evaluates options for lead agencies to ensure that GHG emissions are appropriately addressed as part of analyses under CEQA. It considers the use of significance thresholds, tools and methodologies for analyzing GHG emissions, and measures and strategies to avoid, reduce, or mitigate impacts.

Greenhouse Gas Significance Criteria

This white paper discusses three basic options air districts and lead agencies can pursue when contemplating the issues of CEQA thresholds for greenhouse gas emissions. This paper explores each path and discusses the benefits and disbenefits of each. The three basic paths are:

- No significance threshold for GHG emissions;



- GHG emissions threshold set at zero; or
- GHG threshold set at a non-zero level.

Each has inherent advantages and disadvantages. Air districts and lead agencies may believe the state or national government should take the lead in identifying significance thresholds to address this global impact. Alternatively, the agency may believe it is premature or speculative to determine a clear level at which a threshold should be set. On the other hand, air districts or lead agencies may believe that every GHG emission should be scrutinized and mitigated or offset due to the cumulative nature of this impact. Setting the threshold at zero will place all discretionary projects under the CEQA microscope. Finally, an air district or lead agency may believe that some projects will not benefit from a full environmental impact report (EIR), and may believe a threshold at some level above zero is needed.

This paper explores the basis and implications of setting no threshold, setting a threshold at zero and two primary approaches for those who may choose to consider a non-zero threshold. The first approach is grounded in statute (AB 32) and executive order (EO S-3-05) and explores four possible options under this scenario. The options under this approach are variations of ways to achieve the 2020 goals of AB 32 from new development, which is estimated to be about a 30 percent reduction from business as usual.

The second approach explores a tiered threshold option. Within this option, seven variations are discussed. The concepts explored here offer both quantitative and qualitative approaches to setting a threshold as well as different metrics by which tier cut-points can be set. Variations range from setting the first tier cut-point at zero to second-tier cut-points set at defined emission levels or based on the size of a project. It should be noted that some applications of the tiered threshold approach may require inclusion in a General Plan or adoption of enabling regulations or ordinances to render them fully effective and enforceable.

Greenhouse Gas Analytical Methodologies

The white paper evaluates various analytical methods and modeling tools that can be applied to estimate the greenhouse gas emissions from different project types subject to CEQA. In addition, the suitability of the methods and tools to characterize accurately a project's emissions is discussed and the paper provides recommendations for the most appropriate methodologies and tools currently available.

The suggested methodologies are applied to residential, commercial, specific plan and general plan scenarios where GHG emissions are estimated for each example. This chapter also discusses estimating emissions from solid waste facilities, a wastewater treatment plant, construction, and air district rules and plans.

Another methodology, a service population metric, that would measure a project's overall GHG efficiency to determine if a project is more efficient than the existing statewide average for per capita GHG emissions is explored. This methodology may be more directly correlated to a project's ability to help achieve objectives outlined in AB 32, although it relies on establishment of an efficiency-based significance threshold. The subcommittee believes this methodology may eventually be appropriate to evaluate the long-term GHG emissions from a project in the context of meeting AB 32 goals. However, this methodology will need further work and is not considered viable for the interim guidance presented in this white paper.

Greenhouse Gas Mitigation Measures

Common practice in environmental protection is first to avoid, then to minimize, and finally to compensate for impacts. When an impact cannot be mitigated on-site, off-site mitigation can be effectively implemented in several resource areas, either in the form of offsetting the same impact or preserving the resource elsewhere in the region.

This white paper describes and evaluates currently available mitigation measures based on their economic, technological and logistical feasibility, and emission reduction effectiveness. The potential for secondary impacts to air quality are also identified for each measure. A summary of current rules and regulations affecting greenhouse gas emissions and climate change is also provided.

Reductions from transportation related measures (e.g., bicycle, pedestrian, transit, and parking) are explored as a single comprehensive approach to land use. Design measures that focus on enhancing alternative transportation are discussed. Mitigation measures are identified for transportation, land use/building design, mixed-use development, energy efficiency, education/social awareness and construction.

Purpose

CEQA requires the avoidance or mitigation of significant adverse environmental impacts where there are feasible alternatives available. The contribution of GHG to climate change has been documented in the scientific community. The California Global Warming Solutions Act of 2006 (AB 32) mandates significant reductions in greenhouse gases (GHG); passage of that law has highlighted the need to consider the impacts of GHG emissions from projects that fall under the jurisdiction of the California Environmental Quality Act (CEQA). Because we have only recently come to fully recognize the potential for significant environmental impacts from GHG, most public agencies have not yet established policies and procedures to consider them under CEQA. As a result, there is great need for information and other resources to assist public agencies as they develop their programs.

Air districts have historically provided guidance to local governments on the evaluation of air pollutants under CEQA. As local concern about climate change and GHG has increased, local governments have requested guidance on incorporating analysis of these impacts into local CEQA review. The California Air Pollution Control Officers Association (CAPCOA), in coordination with the CARB, the Governor's Office of Planning and Research (OPR) and two environmental consulting firms, has harnessed the collective expertise to evaluate approaches to analyzing GHG in CEQA. The purpose of this white paper is to provide a common platform of information and tools to address climate change in CEQA analyses, including the evaluation and mitigation of GHG emissions from proposed projects and identifying significance threshold options.

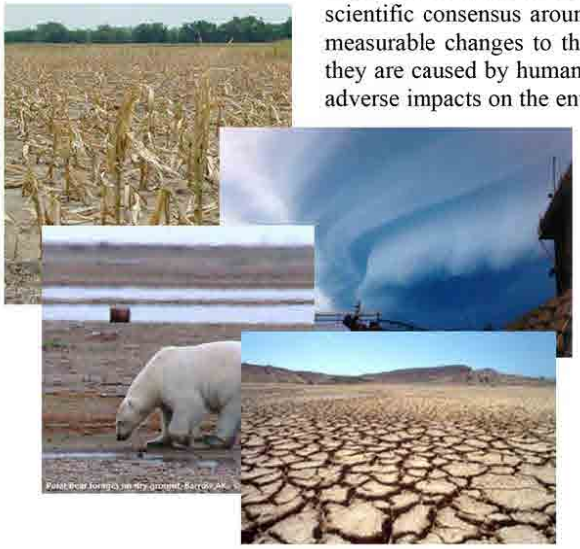
CEQA requires public agencies to ensure that potentially significant adverse environmental effects of discretionary projects are fully characterized, and avoided or mitigated where there are feasible alternatives to do so. Lead agencies have struggled with how best to identify and characterize the magnitude of the adverse effects that individual projects have on the global-scale phenomenon of climate change, even more so since Governor Schwarzenegger signed Executive Order S-3-05 and the state Legislature enacted The Global Warming Solutions Act of 2006 (AB 32). There is now a resounding call to establish procedures to analyze and mitigate greenhouse gas (GHG) emissions. The lack of established thresholds does not relieve lead agencies of their responsibility to analyze and mitigate significant impacts, so many of these agencies are seeking guidance from state and local air quality agencies. This white paper addresses issues inherent in establishing CEQA thresholds, evaluates tools, catalogues mitigation measures and provides air districts and lead agencies with options for incorporating climate change into their programs.

CEQA and Climate Change

Background

National and International Efforts

International and Federal legislation have been enacted to deal with climate change issues. The Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. In 1988, the United Nations and the World Meteorological Organization established the IPCC to assess the scientific, technical and socioeconomic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation. The most recent reports of the IPCC have emphasized the scientific consensus around the evidence that real and measurable changes to the climate are occurring, that they are caused by human activity, and that significant adverse impacts on the environment, the economy, and human health and welfare are unavoidable.



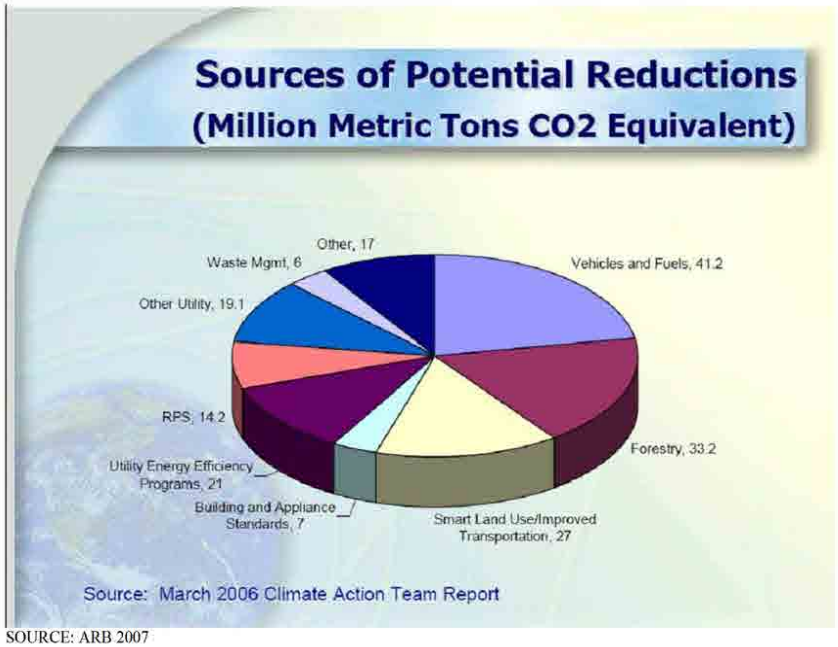
In October 1993, President Clinton announced his Climate Change Action Plan, which had a goal to return greenhouse gas emissions to 1990 levels by the year 2000. This was to be accomplished through 50 initiatives that relied on innovative voluntary partnerships between the private sector and government aimed at producing cost-effective reductions in greenhouse gas emissions. On March 21, 1994, the United States joined a number of countries around the world in signing the United Nations Framework Convention on Climate Change (UNFCCC). Under the Convention, governments agreed to gather and share information on greenhouse gas emissions, national policies, and best practices; launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

These efforts have been largely policy oriented. In addition to the national and international efforts described above, many local jurisdictions have adopted climate change policies and programs. However, thus far little has been done to assess the significance of the affects new development projects may have on climate change.

Executive Order S-3-05

On June 1, 2005, Governor Schwarzenegger issued Executive Order S-3-05 (S-3-05). It included the following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels. To meet the targets, the Governor directed the Secretary of the California Environmental Protection Agency to coordinate with the Secretary of the Business, Transportation and Housing Agency, Secretary of the Department of Food and Agriculture, Secretary of the Resources Agency, Chairperson of the CARB, Chairperson of the Energy Commission and President of the Public Utilities Commission on development of a Climate Action Plan.

The Secretary of CalEPA leads a Climate Action Team (CAT) made up of representatives from the agencies listed above to implement global warming emission reduction programs identified in the Climate Action Plan and report on the progress made toward meeting the statewide greenhouse gas targets that were established in the Executive Order.



SOURCE: ARB 2007

In accord with the requirements of the Executive Order, the first report to the Governor and the Legislature was released in March 2006 and will be issued bi-annually thereafter. The CAT Report to the Governor contains recommendations and strategies to help ensure the targets in Executive Order S-3-05 are met.

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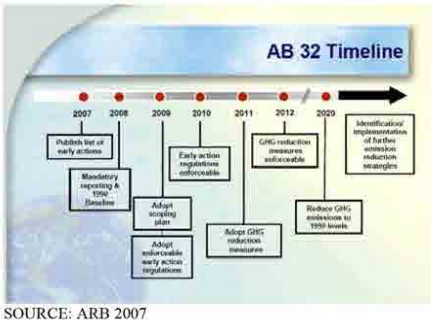
California Global Warming Solutions Act of 2006 (AB 32)

In 2006, the California State Legislature adopted the California Global Warming Solutions Act of 2006. AB 32 establishes a cap on statewide greenhouse gas emissions and sets forth the regulatory framework to achieve the corresponding reduction in statewide emissions levels. AB 32 charges the California Air Resources Board (CARB), the state agency charged with regulating statewide air quality, with implementation of the act. Under AB 32, greenhouse gases are defined as: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

The regulatory steps laid out in AB 32 require CARB to: adopt early action measures to reduce GHGs; to establish a statewide greenhouse gas emissions cap for 2020 based on 1990 emissions; to adopt mandatory reporting rules for significant source of greenhouse gases; and to adopt a scoping plan indicating how emission reductions will be achieved via regulations, market mechanisms and other actions; and to adopt the regulations needed to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gases.

AB 32 requires that by January 1, 2008, the State Board shall determine what the statewide greenhouse gas emissions inventory was in 1990, and approve a statewide greenhouse gas emissions limit that is equivalent to that level, to be achieved by 2020. While the level of 1990 GHG emissions has not yet been approved, CARB's most recent emission inventory indicates that California had annual emissions of 436 million metric tons of carbon dioxide equivalent (MMT CO_2e) in 1990 and 497 MMT CO_2e in 2004.



SOURCE: ARB 2007

The regulatory timeline laid out in AB 32 requires that by July 1, 2007, CARB adopt a list of discrete early action measures, or regulations, to be adopted and implemented by January 1, 2010. These actions will form part of the State's comprehensive plan for achieving greenhouse gas emission reductions. In June 2007, CARB adopted three discrete early action measures. These three new proposed regulations meet the definition of "discrete early action greenhouse gas reduction measures," which include the following: a low carbon fuel standard; reduction of HFC-134a emissions from non-professional servicing of motor vehicle air conditioning systems; and improved landfill methane capture. CARB estimates that by 2020, the reductions from those three discrete early action measures would be approximately 13-26 MMT CO_2e.

CARB evaluated over 100 possible measures identified by the CAT for inclusion in the list of discrete early action measures. On October 25, 2007 CARB gave final approval to the list of Early Action Measures, which includes nine discrete measures and 35

additional measures, all of which are to be enforceable by January 1, 2010. AB 32 requires that by January 1, 2009, CARB adopt a scoping plan indicating how emission reductions will be achieved via regulations, market mechanisms and other actions.

Senate Bill 97

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is an important environmental issue that requires analysis under CEQA. This bill directs the OPR to prepare, develop, and transmit to the Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, by July 1, 2009. The Resources Agency is required to certify or adopt those guidelines by January 1, 2010. This bill also protects projects funded by the Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006, or the Disaster Preparedness and Flood Protection Bond Act of 2006 (Proposition 1B or 1E) from claims of inadequate analysis of GHG as a legitimate cause of action. This latter provision will be repealed on January 1, 2010. Thus, this "protection" is highly limited to a handful of projects and for a short time period.

The Role of Air Districts in the CEQA Process

Air districts assume one of three roles in the CEQA process. They may be lead agencies when they are adopting regulations and air quality plans. In some instances, they can also be a lead agency when approving permits to construct or operate for applicants subject to district rules. However, in many cases where an air district permit is involved, another agency has broader permitting authority over the project and assumes the role of lead agency. In these situations, the air district becomes what is referred to as a responsible agency under CEQA. When CEQA documents are prepared for projects that do not involve discretionary approval of a district regulation, plan or permit, the air district may assume the role of a concerned or commenting agency. In this role, it is typical for air districts to comment on CEQA documents where there may be air quality-related adverse impacts, such as projects that may create significant contributions to existing violations of ambient standards, cause a violation of an ambient standard or create an exposure to toxic air contaminants or odors. In some cases, the air district may also act in an "advisory" capacity to a lead agency early on in its review of an application for a proposed development project.

A few air districts in California began developing significance thresholds for use in CEQA analyses in the late 1980's and early 1990's. By the mid-1990's most air districts had developed CEQA thresholds for air quality analyses. Many of the districts have included in their guidance the analysis of rule development and permits that may be subject to CEQA.

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What is Not Addressed in this Paper

Impacts of Climate Change to a Project

The focus of this paper is addressing adverse impacts to climate change and the ability to meet statewide GHG reduction goals caused by proposed new land development projects. CEQA also requires an assessment of significant adverse impacts a project might cause by bringing development and people into an area affected by climate change (CEQA Guidelines §15126.2). For example, an area that experiences higher average temperatures due to climate change may expose new development to more frequent exceedances and higher levels of ozone concentrations. Alternatively, a rise in sea level brought on by climate change may inundate new development locating in a low-lying area. The methodologies, mitigation and threshold approaches discussed in this paper do not specifically address the potential adverse impacts resulting from climate change that may affect a project.

Impacts from Construction Activity

Although construction activity has been addressed in the analytical methodologies and mitigation chapters, this paper does not discuss whether any of the threshold approaches adequately addresses impacts from construction activity. More study is needed to make this assessment or to develop separate thresholds for construction activity. The focus of this paper is the long-term adverse operational impacts of land use development.

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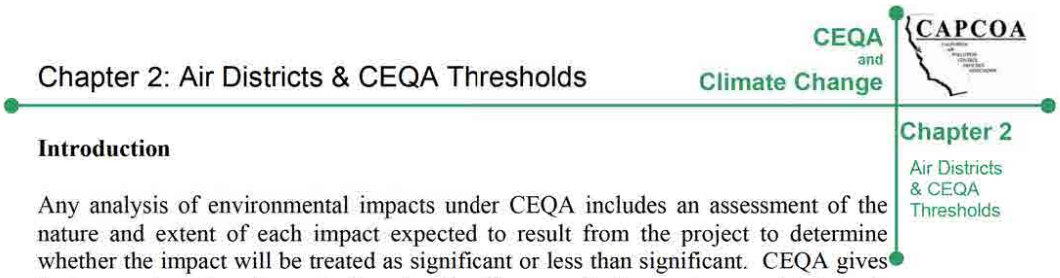

Chapter 2: Air Districts & CEQA Thresholds

Introduction

Any analysis of environmental impacts under CEQA includes an assessment of the nature and extent of each impact expected to result from the project to determine whether the impact will be treated as significant or less than significant. CEQA gives lead agencies discretion whether to classify a particular environmental impact as significant. "The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved," ref: CEQA Guidelines §15064(b) ("Guidelines"). Ultimately, formulation of a standard of significance requires the lead agency to make a policy judgment about where the line should be drawn distinguishing adverse impacts it considers significant from those that are not deemed significant. This judgment must, however, be based on scientific information and other factual data to the extent possible (Guidelines §15064(b)).

CEQA does not require that agencies establish thresholds of significance. Guidelines §15064.7(a) encourages each public agency "…to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects. A threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which normally means the effect will be determined to be less than significant."

Once such thresholds are established, an impact that complies with the applicable threshold will "normally" be found insignificant and an impact that does not comply with the applicable threshold will "normally" be found significant.

Additionally, Guidelines §15064.7(b) requires that if thresholds of significance are adopted for general use as part of the lead agency's environmental review process they must be adopted by ordinance, resolution, rule or regulation, and developed through a public review process and be supported by substantial evidence.

While many public agencies adopt regulatory standards as thresholds, the standards do not substitute for a public agency's use of careful judgment in determining significance. They also do not replace the legal standard for significance (i.e., if there is a fair argument, based on substantial evidence in light of the whole record that the project may have a significant effect, the effect should be considered significant) (Guidelines §15064(f)(1). Also see *Communities for a Better Environment v. California Resource Agency* 103 Cal. App. 4th 98 (2002)). In other words, the adoption of a regulatory standard does not create an irrebuttable presumption that impacts below the regulatory standard are less than significant.

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Summary of CEQA Thresholds at Air Districts

This section briefly summarizes the evolution of air district CEQA significance thresholds. Ventura County APCD, in 1980, was the first air district in California that formally adopted CEQA significance thresholds. Their first CEQA assessment document contained impact thresholds based on project type: residential, nonresidential, and government. Then, as now, the District's primary CEQA thresholds applied only to ROG and NO_x. The 1980 Guidelines did not address other air pollutants.

Santa Barbara County APCD and the Bay Area AQMD adopted thresholds in 1985. The South Coast AQMD recommended regional air quality thresholds in 1987 for CO, SO_2, NO_2, particulates, ROG, and lead. Most of the other California air districts adopted CEQA guidance and thresholds during the 1990's. Air districts have updated their thresholds and guidelines several times since they were first published.

Originally, most districts that established CEQA thresholds focused on criteria pollutants for which the district was nonattainment and the thresholds only addressed project level impacts. Updates during the 1990's began to add additional air quality impacts such as odors, toxic air contaminants and construction. Several air districts also developed thresholds for General Plans that relied on an assessment of the plan consistency with the district's air quality plans. A consistency analysis involves comparing the project's land use to that of the general plan and the population and employment increase to the forecasts underlying the assumptions used to develop the air quality plan.

Most air district thresholds for CEQA are based on the threshold for review under the New Source Review (NSR). The NSR threshold level is set by district rule and is different depending on the nonattainment classification of the air district. Areas with a less severe classification have a higher NSR trigger level while the most polluted areas have the lowest NSR trigger level. Some districts, such as Ventura County APCD, have significantly lower CEQA thresholds that are not tied to the NSR requirements. In Ventura, one set of CEQA thresholds is 25 pounds per day for all regions of Ventura County, except the Ojai Valley. The second set of CEQA thresholds was set at 5 pounds per day for the Ojai Valley.

The Sacramento Metropolitan AQMD bases its thresholds for ozone precursors on the projected land use share of emission reductions needed for attainment. The emission reductions needed to reach attainment are based on commitments made in the state implementation plan (SIP) prepared for the federal clean air act.

CEQA Considerations in Setting Thresholds

Public agencies use significance thresholds to disclose to their constituents how they plan on evaluating and characterizing the severity of various environmental impacts that could be associated with discretionary projects that they review. Significance thresholds are also used to help identify the level of mitigation needed to reduce a potentially significant impact to a less than significant level and to determine what type of an environmental document should be prepared for a project; primarily a negative declaration, mitigated negative declaration or an environmental impact report.

While public agencies are not required to develop significance thresholds, if they decide to develop them, they are required to adopt them by ordinance, resolution, rule or regulation through a public process. A lead agency is not restrained from adopting any significance threshold it sees as appropriate, as long as it is based on substantial evidence. CEQA Guidelines §15064.7 encourages public agencies to develop and publish significance thresholds that are identifiable, quantitative, qualitative or performance level that the agency uses in the determination of the significance of environmental effects. The courts have ruled that a "threshold of significance" for a given environmental effect is simply that level at which the lead agency finds the effects of the project to be significant.

Before an agency determines its course with regard to climate change and CEQA, it must be made clear that a threshold, or the absence of one, will not relieve a lead agency from having to prepare an EIR or legal challenges to the adequacy of an analysis leading to a conclusion, or lack of a conclusion, of significance under CEQA. CEQA has generally favored the preparation of an EIR where there is any substantial evidence to support a fair argument that a significant adverse environmental impact may occur due to a proposed project. This paper explores three alternative approaches to thresholds, including a no threshold option, a zero threshold option and a non-zero threshold option.

Fair Argument Considerations

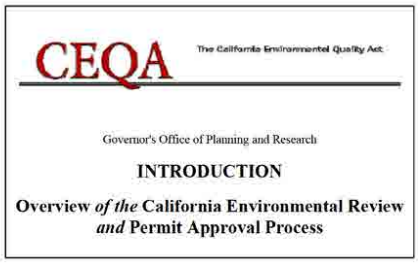
Under the CEQA fair argument standard, an EIR must be prepared whenever it can be fairly argued, based on substantial evidence in the administrative record, that a project may have a significant adverse effect on the environment. "Substantial evidence" comprises "enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached." (Guidelines §15384) This means that if factual information is presented to the public agency that there is a reasonable possibility the project could have

a significant effect on the environment, an EIR is required even if the public agency has information to the contrary (Guidelines §15064 (f)).

The courts have held that the fair argument standard "establishes a low threshold for initial preparation of an EIR, which reflects a preference for resolving doubts in favor of environmental review." (*Santa Teresa Citizen Action Group v. City of San Jose* [2003] 114 Cal.App.4th 689) Although the determination of whether a fair argument exists is made by the public agency, that determination is subject to judicial scrutiny when challenged in litigation. When the question is whether an EIR should have been prepared, the court will review the administrative record for factual evidence supporting a fair argument.

The fair argument standard essentially empowers project opponents to force preparation of an EIR by introducing factual evidence into the record that asserts that the project may have a significant effect on the environment. This evidence does not need to be conclusive regarding the potential significant effect.

In 1998, the Resources Agency amended the State CEQA Guidelines to encourage the use of thresholds of significance. Guidelines §15064 (h) provided that when a project's impacts did not exceed adopted standards, the impacts were to be considered less than significant. The section went on to describe the types of adopted standards that were to be considered thresholds. Guidelines § 15064.7 provided that agencies may adopt thresholds of significance to guide their determinations of significance. Both of these sections were challenged when environmental groups sued the Resources Agency in 2000 over the amendments. The trial court concluded that §15064.7 was proper, if it was applied in the context of the fair argument standard.


CEQA The California Environmental Quality Act

Governor's Office of Planning and Research

INTRODUCTION

Overview *of the* California Environmental Review *and* Permit Approval Process

At the appellate court level, §15064(h) was invalidated. [2] Establishing a presumption that meeting an adopted standard would avoid significant impacts was "inconsistent with controlling CEQA law governing the fair argument approach." The Court of Appeal explained that requiring agencies to comply with a regulatory standard "relieves the agency of a duty it would have under the fair argument approach to look at evidence beyond the regulatory standard, or in contravention of the standard, in deciding whether an EIR must be prepared. Under the fair argument approach, any substantial evidence supporting a fair argument that a project may have a significant environmental effect would trigger the preparation of an EIR." (*Communities for a Better Environment v. California Resources Agency* [2002] 103 Cal.App.4th 98)

[2] Prior §15064(h) has been removed from the State CEQA Guidelines. Current §15064(h) discusses cumulative impacts.

In summary, CEQA law does not require a lead agency to establish significance thresholds for GHG. CEQA guidelines encourage the development of thresholds, but the absence of an adopted threshold does not relieve the agency from the obligation to determine significance.

Defensibility of CEQA Analyses

The basic purposes of CEQA, as set out in the State CEQA Guidelines, include: (1) informing decision makers and the public about the significant environmental effects of proposed projects; (2) identifying ways to reduce or avoid those impacts; (3) requiring the implementation of feasible mitigation measures or alternatives that would reduce or avoid those impacts; and (4) requiring public agencies to disclose their reasons for approving any project that would have significant and unavoidable impacts (Guidelines §15002). CEQA is enforced through civil litigation over procedure (i.e., did the public agency follow the correct CEQA procedures?) and adequacy (i.e., has the potential for impacts been disclosed, analyzed, and mitigated to the extent feasible?).

The California Supreme Court has held that CEQA is "to be interpreted in such manner as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language." (*Friends of Mammoth v. Board of Supervisors* [1972] 8 Cal.3d 247, 259) Within that context, the role of the courts is to weigh the facts in each case and apply their judgment. Although the court may rule on the adequacy of the CEQA work, the court is not empowered to act in the place of the public agency to approve or deny the project for which the CEQA document was prepared. Further, the court's review is limited to the evidence contained in the administrative record that was before the public agency when it acted on the project.

Putting aside the issue of CEQA procedure, the defensibility of a CEQA analysis rests on the following concerns:

- whether the public agency has sufficiently analyzed the environmental consequences to enable decision makers to make an intelligent decision;
- whether the conclusions of the public agency are supported by substantial evidence in the administrative record; and
- whether the agency has made a good faith effort at the full disclosure of significant effects.

CEQA analyses need not be perfect or exhaustive -- the depth and breadth of the analysis is limited to what is "reasonably feasible." (Guidelines §15151) At the same time, the analysis "must include detail sufficient to enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed

project." (Laurel Heights Improvement Assn. v. Regents of University of California (1988) 47 Cal.3d 376)

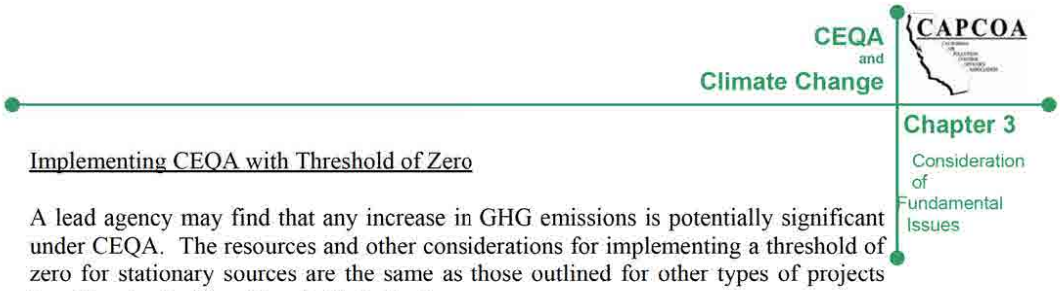
By itself, establishment of a GHG threshold will not insulate individual CEQA analyses from challenge. Defensibility depends upon the adequacy of the analysis prepared by the lead agency and the process followed. However, the threshold can help to define the boundaries of what is a reasonable analysis by establishing when an analysis will be required and the basic scope of that analysis. The threshold would attempt to define the point at which an analysis will be required and when a level of impact becomes significant, requiring preparation of an EIR. If the threshold includes recommendations for the method or methods of analysis, it can establish the minimum level of analysis to address this issue.

Considerations in Setting Thresholds for Stationary Source Projects

In many respects, the analysis of GHG emissions from stationary sources is much more straightforward than the analysis of land use patterns, forecasted energy consumption, and emissions from mobile sources. The reason is that, for the most part, the latter analyses depend largely on predictive models with myriad inputs and have a wider range of error. Emissions from stationary sources involve a greater reliance on mass and energy balance calculations and direct measurements of emissions from the same or similar sources. Energy demand is more directly tied to production, and even associated mobile source emissions will likely fall within narrower predictive windows.

Implementing CEQA Without a Threshold

A lead agency is not required to establish significance thresholds for GHG emissions from stationary sources. The lead agency may find that it needs more information or experience evaluating GHG from these types of projects to determine an appropriate significance threshold. As with other project types, the lead agency could conduct a project specific analysis to determine whether an environmental impact report is needed and to determine the level of mitigation that is appropriate. The agency might also rely on thresholds established for criteria pollutants as a screening method, and analyze GHG emissions (and require mitigation) from projects with emissions above the criteria pollutant thresholds. Over time, the agency could amass information and experience with specific project categories that would support establishing explicit thresholds. The lead agency may also choose to base local CEQA thresholds on state guidelines or on the category-specific reduction targets established by ARB in its scoping plan for implementing AB32. Resource constraints and other considerations associated with implementing CEQA without GHG thresholds for stationary sources would be similar to those outlined for other types of projects (see Chapter 5 – No Threshold Option).



Implementing CEQA with Threshold of Zero

A lead agency may find that any increase in GHG emissions is potentially significant under CEQA. The resources and other considerations for implementing a threshold of zero for stationary sources are the same as those outlined for other types of projects (see Chapter 6 – Zero Threshold Option).

Implementing CEQA with a Non-Zero Threshold

A lead agency may identify one or more non-zero thresholds for significance of emissions of GHG from stationary sources. The agency could elect to rely on existing thresholds for reviewing new or modified stationary sources of GHG, if the state or local air district has established any. The agency could also apply the threshold(s) established for non-stationary sources to GHG emissions from stationary sources. Significance thresholds could also be established by ordinance, rule, or policy for a given category of stationary sources; this approach is especially conducive to a tiered threshold approach. For example, the agency could establish significance and mitigation tiers for stationary compression-ignition diesel-fueled generators. Under such an approach, the project proponent could be first required to use a lower GHG-emitting power source if feasible, and if not, to apply mitigation based on the size of the generator and other defined considerations, such as hours of operation. Certain classes of generators could be found to be insignificant under CEQA (e.g., those used for emergency stand-by power only, with a limit on the annual hours of use). As with non-stationary projects, the goal of establishing non-zero thresholds is to maximize environmental protection, while minimizing resources used. Resource and other considerations outlined for non-stationary projects are applicable here (see Chapter 7 – Non-Zero Threshold Options).

Implementing CEQA with Different Thresholds for Stationary and Non-stationary Projects

Although a lead agency may apply the same thresholds to stationary and non-stationary projects, it is not required to do so. There are, in fact, some important distinctions between the two types of projects that could support applying different thresholds. The lead agency should consider the methods used to estimate emissions. Are the estimates a "best/worst reasonable scenario" or are they based on theoretical maximum operation? How accurate are the estimates (are they based on models, simulations, emission factors, source test data, manufacturer specifications, etc.)? To what extent could emissions be reduced through regulations after the project is constructed if they were found to be greater than originally expected (i.e., is it possible to retrofit emissions control technology onto the source(s) of GHG at a later date, how long is the expected project life, etc.)? Are there emission limits or emissions control regulations (such as New Source Review) that provide certainty that emissions will be mitigated? Generally, stationary source emissions are based on maximum emissions (theoretical or allowed under law or regulation), are more accurate, and are more amenable to retrofit at a later time than non-stationary source emissions. It is also more likely that category specific

rules or some form of NSR will apply to stationary sources than non-stationary projects. Notwithstanding, it is almost always more effective and cost-efficient to apply emission reduction technology at the design phase of a project. There are, therefore, a number of considerations that need to be evaluated and weighed before establishing thresholds – and which may support different thresholds for stationary and non-stationary projects. Furthermore, the considerations may change over time as new regulations are established and as emissions estimation techniques and control technology evolves.

Direct GHG Emissions from Stationary Sources

The main focus of this paper has been the consideration of projects that do not, in the main, involve stationary sources of air pollution, because stationary source projects are generally a smaller percentage of the projects seen by most local land use agencies. That said, some discussion of stationary sources is warranted. As the broader program for regulating GHG from these sources is developed, the strategies for addressing them under CEQA will likely become more refined.

The primary focus of analysis of stationary source emissions has traditionally been those pollutants that are directly emitted by the source, whether through a stack or as fugitive releases (such as leaks). CAPCOA conducted a simplified analysis of permitting activity to estimate the number of stationary source projects with potentially significant emissions of greenhouse gases that might be seen over the course of a year. This analysis looked only at stationary combustion sources (such as boilers and generators), and only considered direct emissions. A lead agency under CEQA may see a different profile of projects than the data provided here suggest, depending on what other resources are affected by projects. In addition, air districts review like-kind replacements of equipment to ensure the new equipment meets current standards, but such actions might not constitute a project for many land use agencies or other media regulators. The data does provide a useful benchmark, however, for lead agencies to assess the order of magnitude of potential stationary source projects. A similar analysis is included for non-stationary projects in Chapter 7.

Table 1: Analysis of GHG Emissions from Stationary Combustion Equipment Permits[3]

	BAAQMD	SMAQMD	SJVUAPCD	SCAQMD
Total Applications for Year	1499	778	1535	1179
Affected at threshold of:				
900 metric tons/year	26	43	63	108
10,000 metric tons/year	7	5	26	8
25,000 metric tons/year	3	1	11	4

[3] District data varies based on specific local regulations and methodologies.

Emissions from Energy Use

In addition to the direct emissions of GHG from stationary projects, CEQA will likely need to consider the project's projected energy use. This could include an analysis of opportunities for energy efficiency, onsite clean power generation (e.g., heat/energy recovery, co-generation, geothermal, solar, or wind), and the use of dedicated power contracts as compared to the portfolio of generally available power. In some industries, water use and conservation may provide substantial GHG emissions reductions, so the CEQA analysis should consider alternatives that reduce water consumption and wastewater discharge. The stationary project may also have the opportunity to use raw or feedstock materials that have a smaller GHG footprint; material substitution should be evaluated where information is available to do so.

Emissions from Associated Mobile Sources

The stationary project will also include emissions from associated mobile sources. These will include three basic components: emissions from employee trips, emissions from delivery of raw or feedstock materials, and emissions from product transport. Employee trips can be evaluated using trip estimation as is done for non-stationary projects, and mitigations would include such measures as providing access to and incentives for use of public transportation, accessibility for bicycle and pedestrian modes of transport, employer supported car or vanpools (including policies such as guaranteed rides home, etc). Upstream and downstream emissions related to goods movement can also be estimated with available models. The evaluation will need to determine the extent of the transport chain that should be included (to ensure that all emissions in the chain have been evaluated and mitigated, but to avoid double counting). Mitigations could include direct actions by operators who own their own fleet, or could be implemented through contractual arrangements with independent carriers; again, the evaluation will need to consider how far up and down the chain mitigation is feasible and can be reasonably required.

Comparing Emissions Changes Across Pollutant Categories

The potential exists for certain GHG reduction measures to increase emissions of criteria and toxic pollutants known to cause or aggravate respiratory, cardiovascular, and other health problems. For instance, GHG reduction efforts such as alternative fuels and methane digesters may create significant levels of increased pollutants that are detrimental to the health of the nearby population (e.g.; particulate matter, ozone precursors, toxic air contaminants). Such considerations should be included in any CEQA analysis of a project's environmental impacts. While there are many win-win

strategies that can reduce both GHG and criteria/toxic pollutant emissions, when faced with situations that involve tradeoffs between the two, the more immediate public health concerns that may arise from an increase in criteria or toxic pollutant emissions should take precedence. GHG emission reductions could be achieved offsite through other mitigation programs.

Introduction

Under state law, it is the purview of each lead agency to determine what, if any, significance thresholds will be established to guide its review of projects under CEQA. While the state does provide guidelines for implementing CEQA, the guidelines have left the decision of whether to establish thresholds (and if so, at what level) to individual lead agencies. Frequently, lead agencies consult with resource-specific agencies (such as air districts) for assistance in determining what constitutes a significant impact on that specific resource.

With the passage of AB 32, the ARB has broad authority to regulate GHG emissions as necessary to meet the emission reduction goals of the statute. This may include authority to establish emission reduction requirements for new land use projects, and may also enable them to recommend statewide thresholds for GHG under CEQA.

In developing this white paper, CAPCOA recognizes that, as the GHG reduction program evolves over time, GHG thresholds and other policies and procedures for CEQA may undergo significant revision, and that uniform statewide thresholds and procedures may be established. This paper is intended to serve as a resource for public agencies until such time that statewide guidance is established, recognizing that decisions will need to be made about GHG emissions from projects before such guidance is available. This paper is not, however, uniform statewide guidance. As stated before, it outlines several possible approaches without endorsing any one over the others.

Some air districts may choose to use this paper to support their establishment of guidance for GHG under CEQA, including thresholds. This paper does not, nor should it be construed to require a district to implement any of the approaches evaluated here. Decisions about whether to provide formal local guidance on CEQA for projects with GHG emissions, including the question of thresholds, will be made by individual district boards.

Each of the 35 air districts operates independently and has its own set of regulations and programs to address the emissions from stationary, area and mobile sources, consistent with state and federal laws, regulations, and guidelines. The independence of the districts allows specific air quality problems to be addressed on a local level. In addition, districts have also established local CEQA thresholds of significance for criteria pollutants – also to address the specific air quality problems relative to that particular district.

The overall goal of air district thresholds is to achieve and maintain health based air quality standards within their respective air basins and to reduce transport of emissions to other air basins. In establishing recommended thresholds, air districts consider the existing emission inventory of criteria pollutants and the amount of emission reductions needed to attain and maintain ambient air quality standards.

However, unlike criteria pollutants where individual districts are characterized by varying levels of pollutant concentrations and source types, greenhouse gases (GHG) and their attendant climate change ramifications are a global problem and, therefore, may suggest a uniform approach to solutions that ensure both progress and equity.

Under SB97, the Office of Planning and Research is directed to prepare, develop, and transmit to the Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions through CEQA by July 1, 2009. Those guidelines may recommend thresholds. As stated, this paper is intended to provide a common platform of information and tools to support local decision makers until such time that statewide guidance or requirements are promulgated.

Local Ability to Promulgate District-Specific GHG Thresholds

One of the primary reasons behind the creation of air districts in California is the recognition that some regions within the state face more critical air pollution problems than others and, as has often been pointed out – one size does not fit all. For example, a "Serious" federal nonattainment district would need greater emission reductions than a district already in attainment – and, therefore, the more "serious" district would set its criteria pollutant CEQA thresholds of significance much lower than the air district already in attainment.

The action of GHGs is global in nature, rather than local or regional (or even statewide or national). Ultimately there may be a program that is global, or at least national in scope. That said, actions taken by a state, region, or local government can contribute to the solution of the global problem. Local governments are not barred from developing and implementing programs to address GHGs. In the context of California and CEQA, lead agencies have the primary responsibility and authority to determine the significance of a project's impacts.

Further, air districts have primary authority under state law for "control of air pollution from all sources, other than emissions from motor vehicles." (H&SC §40000) The term air contaminant or "air pollutant" is defined extremely broadly, to mean "any discharge, release, or other propagation into the atmosphere" and includes, but is not limited to, soot, carbon, fumes, gases, particulate matter, etc. Greenhouse gases and other global warming pollutants such as black carbon would certainly be included in this definition, just as the U.S. Supreme Court held in Massachusetts v. EPA that greenhouse gases were air pollutants under the federal Clean Air Act. Therefore, air districts have the primary authority to regulate global warming pollutants from nonvehicular sources. AB 32 does not change this result. Although it gives wide responsibility to CARB to regulate greenhouse gases from all sources, including nonvehicular sources, it does not preempt the districts. AB 32 specifically states That "nothing in this division shall limit or expand the existing authority of any district..."(H&SC § 38594). Thus, districts and CARB retain concurrent authority over nonvehicular source greenhouse gas emissions.

Introduction

The CEQA statutes do not require an air district or any lead agency to establish significance thresholds under CEQA for any pollutant. While there are considerations that support the establishment of thresholds (which are discussed in other sections of this document), there is no obligation to do so.

An air district or other lead agency may elect not to establish significance thresholds for a number of reasons. The agency may believe that the global nature of the climate change problem necessitates a statewide or national framework for consideration of environmental impacts. SB 97 directs OPR to develop "guidelines for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions by July 1, 2009," and directs the California Resources Agency to certify and adopt the guidelines by June 30, 2010.

An agency may also believe there is insufficient information to support selecting one specific threshold over another. As described earlier, air districts have historically set CEQA thresholds for air pollutants in the context of the local clean air plan, or (in the case of toxic air pollutants) within the framework of a rule or policy that manages risks and exposures due to toxic pollutants. There is no current framework that would similarly manage impacts of greenhouse gas pollutants, although the CARB is directed to establish one by June 30, 2009, pursuant to AB 32. A local agency may decide to defer any consideration of thresholds until this framework is in place.

Finally, an agency may believe that the significance of a given project should be assessed on a case-by-case basis in the context of the project at the time it comes forward.

Implementing CEQA Without Significance Thresholds for GHG

The absence of a threshold does not in any way relieve agencies of their obligations to address GHG emissions from projects under CEQA. The implications of not having a threshold are different depending on the role the agency has under CEQA – whether it is acting in an advisory capacity, as a responsible agency, or as a lead agency.

Implications of No Thresholds for an Agency Acting in an Advisory Capacity

Air districts typically act in an advisory capacity to local governments in establishing the framework for environmental review of air pollution impacts under CEQA. This may include recommendations regarding significance thresholds, analytical tools to assess emissions and impacts, and mitigations for potentially significant impacts. Although districts will also address some of these issues on a project-specific basis as responsible agencies, they may provide general guidance to local governments on these issues that

are program wide, and these are advisory (unless they have been established by regulation).

An air district that has not established significance thresholds for GHG will not provide guidance to local governments on this issue. This does not prevent the local government from establishing thresholds under its own authority. One possible result of this would be the establishment of different thresholds by cities and counties within the air district. Alternatively, the air district could advise local governments not to set thresholds and those jurisdictions may follow the air district's guidance.

It is important to note here (as has been clearly stated by the Attorney General in comments and filings) that lack of a threshold does *not* mean lack of significance. An agency may argue lack of significance for any project, but that argument would have to be carried forth on a case-by-case, project specific basis. By extension then, a decision not to establish thresholds for GHG is likely to result in a greater workload for responsible and lead agencies as they consider individual projects under CEQA.

Implications of No Thresholds for a Responsible Agency

If there are no established thresholds of significance, the significance of each project will have to be determined during the course of review. The responsible agency (e.g., the air district) will review each project referred by the lead agency. The review may be qualitative or quantitative in nature. A qualitative review would discuss the nature of GHG emissions expected and their potential effect on climate change as the district understands it. It could also include a discussion of the relative merits of alternative scenarios. A quantitative analysis would evaluate, to the extent possible, the expected GHG emissions; it would also need to evaluate their potential effect on climate change and might include corresponding analysis of alternatives. The air district, as a responsible agency, may also identify mitigation measures for the project.

The lack of established thresholds will make the determination of significance more resource intensive for each project. The district may defer to the lead agency to make this determination, however the district may be obligated, as a responsible agency, to evaluate the analysis and determination.

Implications of No Thresholds for a Lead Agency

The main impact of not having significance thresholds will be on the primary evaluation of projects by the lead agency. Without significance thresholds, the agency will have to conduct some level of analysis of every project to determine whether an environmental impact report is needed. There are three fundamental approaches to the case-by-case analysis of significance, including presumptions of significance or insignificance, or no presumption:

1. The agency can begin with a presumption of significance and the analysis would be used to support a case-specific finding of no significance. This is similar to establishing a threshold of zero, except that here, the "threshold" is rebuttable. This approach may result in a large number of projects proceeding to preparation of an environmental impact report. Because of the attendant costs, project proponents may challenge the determination of significance, although formal challenge is less likely than attempts to influence the determination.

2. The agency can begin with a presumption of insignificance, and the analysis would be used to support a case-specific finding of significance. A presumption of insignificance could be based on the perspective that it would be speculative to attempt to identify the significance of GHG emissions from a project relative to climate change on a global scale. This approach might reduce the number of projects proceeding to preparation of environmental impact reports. It is likely to have greater success with smaller projects than larger ones, and a presumption of *insignificance* may be more likely to be challenged by project opponents.

3. It is not necessary for the lead agency to have any presumption either way. The agency could approach each project from a *tabula rasa* perspective, and have the determination of significance more broadly tied to the specific context of the project; this approach is likely to be resource intensive, and creates the greatest uncertainty for project proponents. To the extent that it results in a lead agency approving similar projects based on different determinations of significance for GHG emissions, it may be more vulnerable to challenge from either proponents or opponents of the project. Alternatively, in the absence of either thresholds or presumptions, the lead agency could use each determination of significance to build its approach in the same way that subsequent judgments define the law.

CEQA
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Relevant Citations

The full text of relevant citations is in Appendix A.

Public Resources Code – §21082.2, Significant Effect on Environment; Determination; Environmental Impact Report Preparation.

State CEQA Guidelines – §15064, Determining the Significance of the Environmental Effects Caused by a Project.

Chapter 6: CEQA with a GHG Threshold of Zero

Introduction

If an air district or lead agency determines that any degree of project-related increase in GHG emissions would contribute considerably to climate change and therefore would be a significant impact, it could adopt a zero-emission threshold to identify projects that would need to reduce their emissions. A lead agency may determine that a zero-emission threshold is justified even if other experts may disagree. A lead agency is not prevented from adopting any significance threshold it sees as appropriate, as long as it is based on substantial evidence.

If the zero threshold option is chosen, all projects subject to CEQA would be required to quantify and mitigate their GHG emissions, regardless of the size of the project or the availability of GHG reduction measures available to reduce the project's emissions. Projects that could not meet the zero-emission threshold would be required to prepare environmental impact reports to disclose the unmitigable significant impact, and develop the justification for a statement of overriding consideration to be adopted by the lead agency.

Implementing CEQA With a Zero Threshold for GHG

The scientific community overwhelmingly agrees that the earth's climate is becoming warmer, and that human activity is playing a role in climate change. Unlike other environmental impacts, climate change is a global phenomenon in that all GHG emissions generated throughout the earth contribute to it. Consequently, both large and small GHG generators cause the impact. While it may be true that many GHG sources are individually too small to make any noticeable difference to climate change, it is also true that the countless small sources around the globe combine to produce a very substantial portion of total GHG emissions.

A zero threshold approach is based on a belief that, 1) all GHG emissions contribute to global climate change and could be considered significant, and 2) not controlling emissions from smaller sources would be neglecting a major portion of the GHG inventory.

CEQA explicitly gives lead agencies the authority to choose thresholds of significance. CEQA defers to lead agency discretion when choosing thresholds. Consequently, a zero-emission threshold has merits.

CEQA and Climate Change

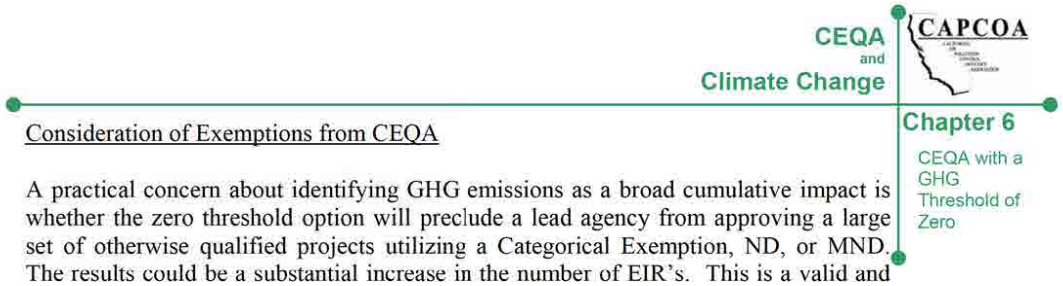
The CEQA review process for evaluating a project's impact on global climate change under the zero threshold option would involve several components. Air quality sections would be written by lead agencies to include discussions on climate change in CEQA documents, GHG emissions would be calculated, and a determination of significance would be made. The local air districts would review and comment on the climate change discussions in environmental documents. Lead agencies may then revise final EIRs to accommodate air district comments. More than likely, mitigation measures will be specified for the project, and a mitigation monitoring program will need to be put in place to ensure that these measures are being implemented.

Since CEQA requires mitigation to a less than significant level, it is conceivable that many projects subjected to a zero threshold could only be deemed less than significant with offsite reductions or the opportunity to purchase greenhouse gas emission reduction credits. GHG emission reduction credits are becoming more readily available however the quality of the credits varies considerably. High quality credits are generated by actions or projects that have clearly demonstrated emission reductions that are real, permanent, verifiable, enforceable, and not otherwise required by law or regulation. When the pre- or post-project emissions are not well quantified or cannot be independently confirmed, they are considered to be of lesser quality. Similarly, if the reductions are temporary in nature, they are also considered to be poor quality. Adoption of a zero threshold should consider the near-term availability and the quality of potential offsets.

There are also environmental justice concerns about the effects of using offsite mitigations or emission reduction credits to offset, or mitigate, the impacts of a new project. Although GHGs are global pollutants, some of them are emitted with co-pollutants that have significant near-source or regional impacts. Any time that increases in emissions at a specific site will be mitigated at a remote location or using emission reduction credits, the agency evaluating the project should ensure that it does not create disproportionate impacts.

Administrative Considerations

If electing to pursue a zero threshold, an air district or lead agency should consider the administrative costs and the environmental review system capacity. Some projects that previously would have qualified for an exemption could require further substantial analysis, including preparation of a Negative Declaration (ND), a Mitigated Negative Declaration (MND) or an EIR. Moreover, the trade-offs between the volume of projects requiring review and the quality of consideration given to reviews should be considered. It may also be useful to consider whether meaningful mitigation can be achieved from smaller projects.



Consideration of Exemptions from CEQA

A practical concern about identifying GHG emissions as a broad cumulative impact is whether the zero threshold option will preclude a lead agency from approving a large set of otherwise qualified projects utilizing a Categorical Exemption, ND, or MND. The results could be a substantial increase in the number of EIR's. This is a valid and challenging concern, particularly for any threshold approach that is based on a zero threshold for net GHG emission increases.

CEQA has specified exceptions to the use of a categorical exception. Specifically, CEQA Guidelines §15300.2 includes the following exceptions:

"(b) Cumulative Impact. All exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant."

(c) Significant Effect. A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances."

These CEQA Guidelines sections could be argued to mean that any net increase in GHG emissions would preclude the use of a categorical exemption. However, as described below, if the following can be shown, then the exceptions above could be argued not to apply:

(1) Cumulative local, regional and/or state GHG emissions are being reduced or will be reduced by adopted, funded, and feasible measures in order to meet broader state targets.

(2) Mandatory state or local GHG reduction measures would apply to the project's emissions such that broader GHG reduction goals would still be met and the project contributions would not be cumulatively considerable.

(3) Project GHG emissions are below an adopted significance threshold designed to take into account the cumulative nature of GHG emissions.

A similar argument could be made relative to the use of a ND (provided no additional mitigation (beyond existing mandates) is required to control GHG emissions) and to the use of a MND instead of an EIR. However, due to the "fair argument" standard, which is discussed in Chapter 3, caution is recommended in use of a ND or MND unless all three elements above can be fully supported through substantial evidence and there is no substantial evidence to the contrary. Establishing a significance threshold of zero is likely to preclude the use of a categorical exemption.

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Relevant Citations

The full text of relevant citations is in Appendix A.

Public Resources Code – §21004, Mitigating or Avoiding a Significant Effect; Powers of Public Agency.

State CEQA Guidelines – §15064, Determining the Significance of the Environmental Effects Caused by a Project.

State CEQA Guidelines – §15130, Discussion of Cumulative Impacts.

State CEQA Guidelines – §15064.7, Thresholds of Significance.

Introduction

A non-zero threshold could minimize the resources spent reviewing environmental analyses that do not result in real GHG reductions or to prevent the environmental review system from being overwhelmed. The practical advantages of considering non-zero thresholds for GHG significance determinations can fit into the concept regarding whether the project's GHG emissions represent a "considerable contribution to the cumulative impact" and therefore warrant analysis.

Specifying a non-zero threshold could be construed as setting a *de minimis* value for a cumulative impact. In effect, this would be indicating that there are certain GHG emission sources that are so small that they would not contribute substantially to the global GHG budget. This could be interpreted as allowing public agencies to approve certain projects without requiring any mitigation of their GHG. Any threshold framework should include a proper context to address the *de minimis* issue. However, the CEQA Guidelines recognize that there may be a point where a project's contribution, although above zero, would not be a *considerable contribution* to the cumulative impact and, therefore, not trigger the need for a significance determination.

GHG emissions from all sources are under the purview of CARB and as such may eventually be "regulated" no matter how small. Virtually all projects will result in some direct or indirect release of GHG. However, a decision by CARB to regulate a class of sources does not necessarily mean that an individual source in that class would constitute a project with significant GHG impacts under CEQA. For example, CARB has established criteria pollutant emission standards for automobiles, but the purchase and use of a single new car is not considered a project with significant impacts under CEQA. At the same time, it is important to note that it is likely that all meaningful sources of emissions, no matter how small are likely to be considered for regulation under AB 32. It is expected that projects will have to achieve some level of GHG reduction to comply with CARB's regulations meant to implement AB 32. As such all projects will have to play a part in reducing our GHG emissions budget and no project, however small, is truly being considered *de minimis* under CARB's regulations.

This chapter evaluates a range of conceptual approaches toward developing GHG significance criteria. The air districts retained the services of J&S an environmental consulting, firm to assist with the development of a Statute and Executive Order-based threshold (Approach 1) and a tiered threshold (Approach 2) based on a prescribed list of tasks and deliverables. Time and financial constraints limited the scope and depth of this analysis, however, the work presented here may be useful in developing interim guidance while AB 32 is being implemented. J&S recognized that approaches other than those described here could be used.

As directed, J&S explored some overarching issues, such as:

- what constitutes "new" emissions?

- how should "baseline emissions" be established?
- what is cumulatively "considerable" under CEQA?
- what is "business as usual" ? and
- should an analysis include "life-cycle" emissions?

The answers to these issues were key to evaluating each of the threshold concepts.

Approach 1 – Statute and Executive Order Approach

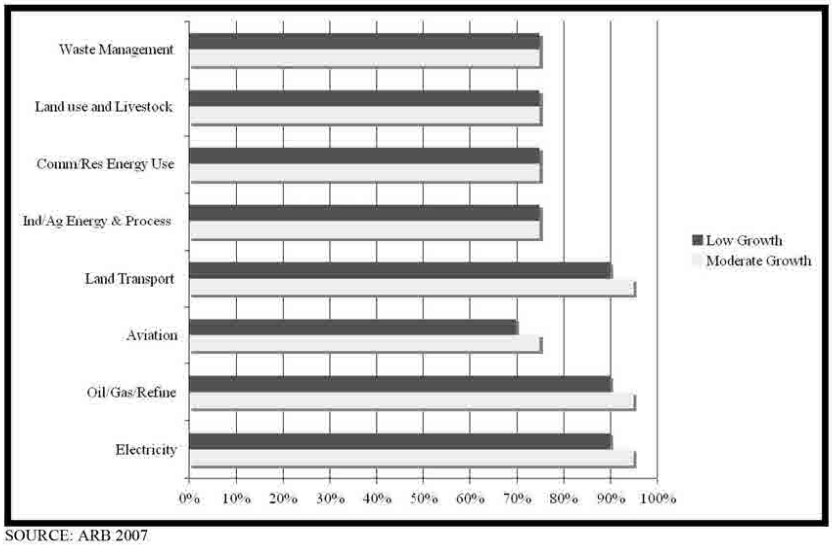
Thresholds could be grounded in existing mandates and their associated GHG emission reduction targets. A project would be required to meet the targets, or reduce GHG emissions to the targets, to be considered less than significant.

AB 32 and S-3-05 target the reduction of statewide emissions. It should be made clear that AB 32 and S-3-05 do not specify that the emissions reductions should be achieved through uniform reduction by geographic location or by emission source characteristics. For example, it is conceivable, although unlikely, that AB 32 goals could be achieved by new regulations that only apply to urban areas or that only apply to the transportation and/or energy sector. However, this approach to evaluating GHG under CEQA is based on the presumption that a new project must at least be consistent with AB 32 GHG emission reduction mandates.

The goal of AB 32 and S-3-05 is the significant reduction of future GHG emissions in a state that is expected to rapidly grow in both population and economic output. As such, there will have to be a significant reduction in the per capita GHG output for these goals to be met. CEQA is generally used to slow or zero the impact of new emissions, leaving the reduction of existing emission sources to be addressed by other regulatory means. With these concepts in mind, four options were identified for statute/executive order-based GHG significance thresholds and are described below.

Threshold 1.1: AB 32/S-3-05 Derived Uniform Percentage-Based Reduction. AB 32 requires the state to reduce California-wide GHG emissions to 1990 levels by 2020. Reducing greenhouse gas emission levels from 2020 to 1990 levels could require a 28 to 33 percent reduction of business-as-usual GHG emissions depending on the methodology used to determine the future emission inventories. The exact percent reduction may change slightly once CARB finalizes its 1990 and 2020 inventory estimates. In this context, business-as-usual means the emissions that would have occurred in the absence of the mandated reductions. The details of the business-as-usual scenario are established by CARB in the assumptions it uses to project what the state's GHG emissions would have been in 2020, and the difference between that level and the level that existed in 1990 constitutes the reductions that must be achieved if the mandated goals are to be met.

This threshold approach would require a project to meet a percent reduction target based on the average reductions needed from the business-as-usual emission from all GHG sources. Using the 2020 target, this approach would require all discretionary projects to achieve a 33 percent reduction from projected business-as-usual emissions in order to be considered less than significant. A more restrictive approach would use the 2050 targets. S-3-05 seeks to reduce GHG emissions to 80 percent below 1990 levels by 2050. To reach the 2050 milestone would require an estimated 90 percent reduction (effective immediately) of business-as-usual emissions. Using this goal as the basis for a significance threshold may be more appropriate to address the long-term adverse impacts associated with global climate change. Note that AB 32 and S-3-05 set emission inventory goals at milestone years; it is unclear how California will progress to these goals in non-milestone years.



SOURCE: ARB 2007

Threshold 1.2: Uniform Percentage-Based (e.g.50%) Reduction for New Development. This threshold is based on a presumption that new development should contribute a greater percent reduction from business-as-usual because greater reductions can be achieved at lower cost from new projects than can be achieved from existing sources. This approach would establish that new development emit 50 percent less GHG emissions than business-as-usual development. This reduction rate is greater than the recommended reduction rate for meeting the Threshold 1.1 2020 target (33 percent) but is significantly less restrictive than the Threshold 1.1 2050 target reduction rate (90 percent). If a 50 percent GHG reduction were achieved from new development, existing emissions would have to be reduced by 25 to 30 percent in order to meet the 2020 emissions goal depending on the year used to determine the baseline inventory. Although this reduction goal is reasonable for achieving the 2020 goal, it would not be possible to

reach the 2050 emissions target with this approach even if existing emissions were 100 percent controlled.

Threshold 1.3: Uniform Percentage-Based Reduction by Economic Sector. This threshold would use a discrete GHG reduction goal specific to the economic sector associated with the project. There would be specific reduction goals for each economic sector, such as residential, commercial, and industrial development. Specifying different reduction thresholds for each market sector allows selection of the best regulatory goal for each sector taking into account available control technology and costs. This approach would avoid over-regulating projects (i.e. requiring emissions to be controlled in excess of existing technology) or under-regulating projects (i.e. discouraging the use of available technology to control emissions in excess of regulations). This approach requires extensive information on the emission inventories and best available control technology for each economic sector. This data will be compiled as CARB develops its scoping plan under AB 32 and its implementing regulations; as a result, this approach will be more viable in the long term.

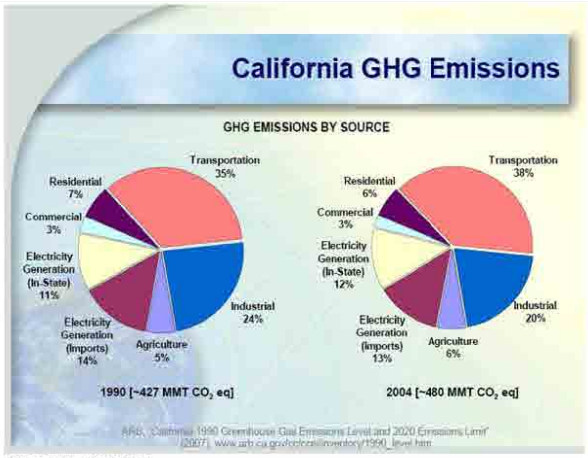
Threshold 1.4: Uniform Percentage-Based Reduction by Region. AB 32 and S-3-05 are written such that they apply to a geographic region (i.e. the entire state of California) rather than on a project or sector level. One could specify regions of the state such as the South Coast Air Basin, Sacramento Valley, or Bay Area which are required to plan (plans could be developed by regional governments, such as councils of governments) and demonstrate compliance with AB 32 and S-3-05 reduction goals at a regional level. To demonstrate that a project has less than significant emissions, one would have to show compliance with the appropriate regional GHG plan. Effectively this approach allows for analysis of GHG emissions at a landscape scale smaller than the state as a whole. Specifying regions in rough correlation to existing air basins or jurisdictional control allows for regional control of emissions and integration with regional emission reduction strategies for criteria and toxic air pollutants. Although differing GHG reduction controls for each region are possible, it is likely that all regions would be

required to achieve 1990 emission inventories by the year 2020 and 80 percent less emissions by 2050. Threshold 1.4 is considered viable long-term significance criteria that is unlikely to be used in the short term.

Implementing CEQA Thresholds Based on Emission Reduction Targets

Characterizing Baseline and Project Emissions

While the population and economy of California is expanding, all new projects can be considered to contribute new emissions. Furthermore, GHG impacts are exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective. "Business-as-usual" is the projection of GHG emissions at a future date based on current technologies and regulatory requirements in absence of other reductions. For example to determine the future emissions from a power plant for "business-as-usual" one would multiply the projected energy throughput by the current emission factor for that throughput. If adopted regulations (such as those that may be promulgated by CARB for AB 32) dictate that power plant emissions must be reduced at some time in the future, it is appropriate to consider these regulation standards as the new business-as-usual for a future date. In effect, business-as-usual will continue to evolve as regulations manifest. Note that "business-as-usual" defines the CEQA No Project conditions, but does not necessarily form the baseline under CEQA. For instance, it is common to subtract the future traffic with and without a project to determine the future cumulative contribution of a project on traffic conditions. However, existing conditions at the time of issuance of the notice of preparation is normally the baseline.



SOURCE: ARB 2007

Establishing Emission Reduction Targets

One of the obvious drawbacks to using a uniform percent reduction approach to GHG control is that it is difficult to allow for changes in the 1990 and future emission inventories estimates. To determine what emission reductions are required for new projects one would have to know accurately the 1990 budget and efficacy of other GHG promulgated regulations as a function of time. Since CARB will not outline its

regulation strategy for several more years, it is difficult to determine accurately what the new project reductions should be in the short term. Future updates to the 1990 inventory could necessitate changes in thresholds that are based on that inventory. It is important to note that it is difficult to create near term guidance for a uniform reduction threshold strategy since it would require considerable speculation regarding the implementation and effectiveness of forthcoming CARB regulations.

Of greater importance are the assumptions used to make the projected 2020 emission inventories. Projecting future inventories over the next 15-50 years involves substantial uncertainty. Furthermore, there are likely to be federal climate change regulations and possibly additional international GHG emission treaties in the near future. To avoid such speculation, this paper defines all future emission inventories as hypothetical business-as-usual projections.

This white paper is intended to support local decisions about CEQA and GHG in the near term. During this period, it is unlikely that a threshold based on emission reduction targets would need to be changed. However, it is possible that future inventory updates will show that targets developed on the current inventory were not stringent enough, or were more stringent than was actually needed.

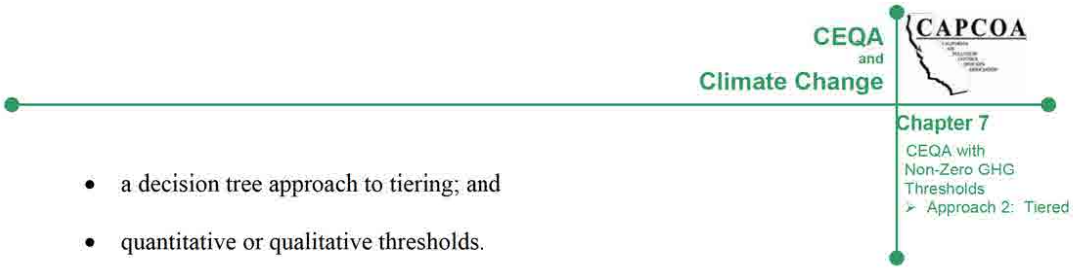
Approach 2 – Tiered Approach

The goal of a tiered threshold is to maximize reduction predictability while minimizing administrative burden and costs. This would be accomplished by prescribing feasible mitigation measures based on project size and type, and reserving the detailed review of an EIR for those projects of greater size and complexity. This approach may require inclusion in a General Plan, or adoption of specific rules or ordinances in order to fully and effectively implement it.

A tiered CEQA significance threshold could establish different levels at which to determine if a project would have a significant impact. The tiers could be established based on the gross GHG emission estimates for a project or could be based on the physical size and characteristics of the project. This approach would then prescribe a set of GHG mitigation strategies that would have to be incorporated into the project in order for the project to be considered less than significant.

The framework for a tiered threshold would include the following:

- disclosure of GHG emissions for all projects;
- support for city/county/regional GHG emissions reduction planning;
- creation and use of a "green list" to promote the construction of projects that have desirable GHG emission characteristics;
- a list of mitigation measures;



- a decision tree approach to tiering; and
- quantitative or qualitative thresholds.

Decision-Tree Approach to Tiering

CEQA guidance that allows multiple methodologies to demonstrate GHG significance will facilitate the determination of significance for a broad range of projects/plans that would otherwise be difficult to address with a single non-compound methodology. Even though there could be multiple ways that a project can determine GHG significance using a decision-tree approach, only one methodology need be included in any single CEQA document prepared by the applicant. The presence of multiple methodologies to determine significance is designed to promote flexibility rather than create additional analysis overhead. Figure 1 shows a conceptual approach to significance determination using a tiered approach that shows the multiple routes to significance determination.

Figure 1 Detail Description

Figure 1 pictorially represents how an agency can determine a project's or plan's significance for CEQA analysis using the non-zero threshold methodology. The emissions associated with a project/plan are assumed to have a significant impact unless one can arrive at a less-than-significant finding by at least one of the methodologies below.

1. Demonstrate that a General Plan (GP) or Regional Plan is in Compliance with AB32

   - For most GPs or RPs this will require demonstration that projected 2020 emissions will be equal to or less than 1990 emissions.
   - GPs or RPs are expected to fully document 1990 and 2020 GHG emission inventories.
   - Projection of 2020 emissions is complicated by the fact that CARB is expected to promulgate emission reductions in the short term. Until explicit CARB regulations are in place, unmitigated GP 2020 emission inventories represent business-as-usual scenarios.
   - EIRs for GPs or RPs which demonstrate 2020 mitigated emissions are less than or equal to 1990 emissions are considered less than significant.

2. Demonstrate the Project is Exempt Based on SB 97

   - As specified in SB 97, projects that are funded under November 2006 Proposition 1B (Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act) and 1C (Disaster Preparedness and Flood Prevention Bond Act) may be exempt from analysis until January 1, 2010.

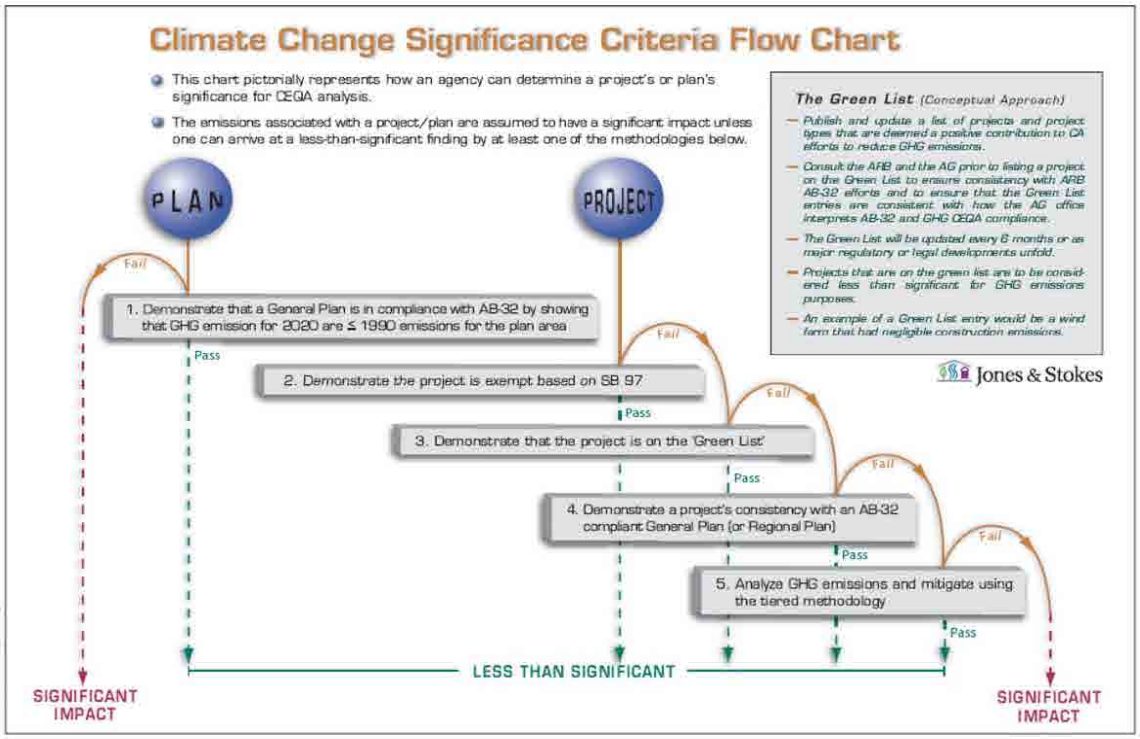
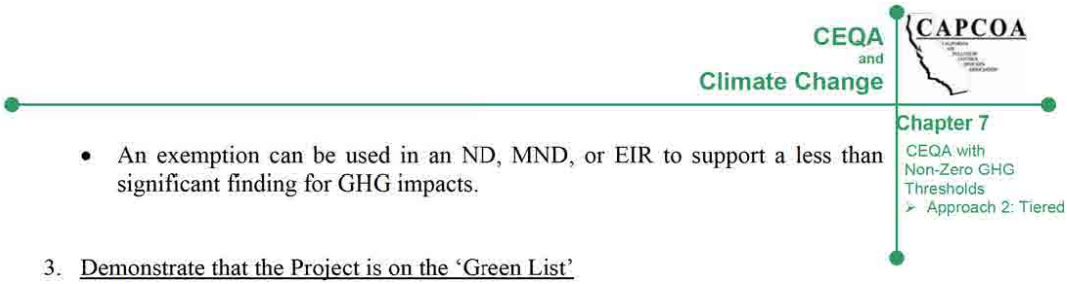


Figure 1
Climate Change Significance Criteria Flow Chart



- An exemption can be used in an ND, MND, or EIR to support a less than significant finding for GHG impacts.

3. Demonstrate that the Project is on the 'Green List'

   - This list would include projects that are deemed a positive contribution to California efforts to reduce GHG emissions. If the project is of the type described on the Green List it is considered less than significant.
   - If the Green List entry description requires mitigation for impacts other than GHG, this methodology can be used in MNDs or EIRs; if the Green List entry does not require mitigation this methodology can be used in NDs, MNDs, or EIRs.

4. Demonstrate a Project's Compliance with a General Plan

   - If a project is consistent with an appropriate General Plan's Greenhouse Gas Reduction Plan (GGRP), a project can be declared less than significant.
   - Note that at this time there are no known jurisdictions that have a GGRP that has been fully subject to CEQA review. While Marin County has adopted a forward-thinking GGRP and it is described in the most recent GP update, the associated EIR does not analyze the secondary environmental impacts of some of the GGRP measures such as tidal energy. While one can reference GGRPs that have not been reviewed fully in CEQA, to attempt to show a project's compliance with such a plan as evidence that the project's GHG emission contributions are less than significant may not be supported by substantial evidence that cumulative emissions are being fully addressed in the particular jurisdiction.
   - Compliance with a CEQA-vetted GGRP can be cited as evidence for all CEQA documents (Categorical Exemption, ND, MND, and EIR).

5. Analyze GHG Emissions and Mitigate using the Tiered Methodology

   - Guidance and mitigation methodology for various development projects (residential, commercial, industrial) are listed in the form of tiered thresholds. If a project incorporates the mitigation measures specified in the tiered threshold tables the project is considered less than significant.
   - All project emissions are considered less than significant if they are less than the threshold(s).
   - If the tiered approach requires mitigation, this methodology can be used in MNDs or EIRs; if the tiered approach does not require mitigation this methodology can be used in NDs, MNDs, or EIRs.

CEQA
and
Climate Change

The Green List

- The Green List would be a list of projects and project types that are deemed a positive contribution to California's efforts to reduce GHG emissions.
- If this approach is followed, it is suggested that CARB and the Attorney General (AG) are consulted prior to listing a project on the Green List to ensure consistency with CARB AB 32 efforts and to ensure that the Green List entries are consistent with how the AG office interprets AB 32 and GHG CEQA compliance.
- The Green List should be updated every 6 months or as major regulatory or legal developments unfold.
- Projects that are on the Green List are to be considered less than significant for GHG emissions purposes.
- A tentative list of potential Green List entries is presented below. Actual Green List entries should be far more specific and cover a broad range of project types and mitigation approaches. The list below is merely a proof-of-concept for the actual Green List.

1. Wind farm for the generation of wind-powered electricity
2. Extension of transit lines to currently developed but underserved communities
3. Development of high-density infill projects with easily accessible mass transit
4. Small hydroelectric power plants at existing facilities that generate 5 mw or less (as defined in Class 28 Categorical Exemption)
5. Cogeneration plants with a capacity of 50 mw or less at existing facilities (as defined in Class 29 Cat Exemption)
6. Increase in bus service or conversion to bus rapid transit service along an existing bus line
7. Projects with LEED "Platinum" rating
8. Expansion of recycling facilities within existing urban areas
9. Recycled water projects that reduce energy consumption related to water supplies that services existing development
10. Development of bicycle, pedestrian, or zero emission transportation infrastructure to serve existing regions

There are also several options for tiering and thresholds, as shown in Table 2 below. One could establish strictly numeric emissions thresholds and require mitigation to below the specific threshold to make a finding of less than significant. One could establish narrative emissions threshold that are based on a broader context of multiple approaches to GHG reductions and a presumption that projects of sufficiently low GHG intensity are less than significant.

In Concept 2A, a zero threshold would be applied to projects and thus only projects that result in a reduction of GHG emissions compared to baseline emissions would be less than significant absent mitigation. All projects would require quantified inventories. All projects that result in a net increase of GHG emissions would be required to mitigate their emissions to zero through direct mitigation or through fees or offsets or the impacts

Table 2: Approach 2 Tiering Options

	Concept 2A Zero	Concept 2B Quantitative	Concept 2C Qualitative
Tier 1	Project results in a net reduction of GHG emissions *Less than Significant*	Project in compliance with an AB 32-compliant General/Regional Plan, on the Green List, or below Tier 2 threshold. Level 1 Reductions (Could include such measures as: bike parking, transit stops for planned route, Energy Star roofs, Energy Star appliances, Title 24, water use efficiency, etc.) *Less than Significant*	Project in compliance with an AB 32-compliant General/Regional Plan, on the Green List, or below Tier 2 threshold. Level 1 Reductions (See measures under 2B) *Less than Significant*
Tier 2	Project results in net increase of GHG emissions Mitigation to zero (including offsets) *Mitigated to Less than Significant*	Above Tier 2 threshold Level 2 Mitigation (Could include such measures as: Parking reduction beyond code, solar roofs, LEED Silver or Gold Certification, exceed Title 24 by 20%, TDM measures, etc.) *Mitigated to Less than Significant*	Above Tier 2 threshold Level 2 Mitigation (See measures under 2B) *Mitigated to Less than Significant*
Tier 3	Mitigation infeasible to reduce emissions to zero (e.g., cost of offsets infeasible for project or offsets not available) *Significant and Unavoidable*	Above Tier 2 threshold With Level 1, 2 Mitigation Level 3 Mitigation: (Could include such measures as: On-site renewable energy systems, LEED Platinum certification, Exceed Title 24 by 40%, required recycled water use for irrigation, zero waste/high recycling requirements, mandatory transit passes, offsets/carbon impact fees) *Mitigated to Less than Significant*	Above Tier 3 thresholds Quantify Emissions, Level 3 Mitigation (see measures under 2B), and Offsets for 90% of remainder *Significance and Unavoidable*

would be identified as significant and unavoidable. This could be highly problematic and could eliminate the ability to use categorical exemptions and negative declarations for a wide range of projects.

In Concepts 2B and 2C, the first tier of a tiered threshold includes projects that are within a jurisdiction with an adopted greenhouse gas reduction plan (GGRP) and General Plan/Regional Plan that is consistent with AB 32 (and in line with S-3-05), or are on the Green List, or are below the Tier 2 threshold. All Tier 1 projects would be required to implement mandatory reductions required due to other legal authority (Level 1 reductions) such as AB 32, Title 24, or local policies and ordinances. With Level 1

reduction measures, qualifying Tier 1 projects would be considered less than significant without being required to demonstrate mitigation to zero.

In Concept 2B, the Tier 2 threshold would be quantitative, and quantified inventories would be required. Several quantitative threshold options are discussed below. A more comprehensive set of Level 2 mitigation would be required. If the project's emissions still exceed the Tier 2 threshold, an even more aggressive set of Level 3 mitigation measures would be required including offsets (when feasible) to reduce emissions below the Tier 2 threshold.

In Concept 2C, there would be two thresholds, a lower Tier 2 threshold (the "low bar") and a higher Tier 3 threshold (the "high bar"). The Tier 2 threshold would be the significance threshold for the purposes of CEQA and would be qualitative in terms of units (number of dwelling units, square feet of commercial space, etc.) or a per capita ratio. Projects above the Tier 2 threshold would be required to implement the comprehensive set of Level 2 mitigation. Projects below the Tier 2 threshold would not be required to quantify emissions or reductions. The Tier 3 threshold would be a threshold to distinguish the larger set of projects for which quantification of emissions would be required. Level 3 mitigation would be required and the project would be required to purchase offsets (when feasible) in the amount of 90 percent of the net emissions after application of Level 1 reductions and Level 2 and 3 mitigation. A variant on Concept 2C would be to require mandatory Level 3 mitigation without quantification and offsets.

Approach 2 Threshold Options

Seven threshold options were developed for this approach. The set of options are framed to capture different levels of new development in the CEQA process and thus allow different levels of mitigation. Options range from a zero first-tier threshold (Threshold 2.1) up to a threshold for GHG that would be equivalent to the capture level (i.e., number of units) of the current criteria pollutant thresholds used by some air districts (Threshold 2.4). The decision-based implementation approach discussed above could be used for any of these options. Table 3 below compares the results of each of the approaches discussed here.

Threshold 2.1: Zero First Tier Tiered Threshold.

This option would employ the decision tree concept and set the first tier cut-point at zero. The second tier cut-point could be one of the qualitative or quantitative thresholds discussed below. First-tier projects would be required to implement a list of very feasible and readily available mitigation measures.

Threshold 2.2: Quantitative Threshold Based on Market Capture

A single quantitative threshold was developed in order to ensure capture of 90 percent or more of likely future discretionary developments. The objective was to set the emission

threshold low enough to capture a substantial fraction of future residential and non-residential development that will be constructed to accommodate future statewide population and job growth, while setting the emission threshold high enough to exclude small development projects that will contribute a relatively small fraction of the cumulative statewide GHG emissions.

The quantitative threshold was created by using the following steps:

- Reviewing data from four diverse cities (Los Angeles in southern California and Pleasanton, Dublin, and Livermore in northern California) on pending applications for development.
- Determining the unit (dwelling unit or square feet) threshold that would capture approximately 90 percent of the residential units or office space in the pending application lists.
- Based on the data from the four cities, the thresholds selected were 50 residential units and 30,000 square feet of commercial space.
- The GHG emissions associated with 50 single-family residential units and 30,000 square feet of office were estimated and were found to be 900 metric tons and 800 metric tons, respectively. Given the variance on individual projects, a single threshold of 900 metric tons was selected for residential and office projects.
- A 900 metric ton threshold was also selected for non-office commercial projects and industrial projects to provide equivalency for different projects in other economic sectors.
- If this threshold is preferred, it is suggested that a more robust data set be examined to increase the representativeness of the selected thresholds. At a minimum, a diverse set of at least 20 cities and/or counties from throughout the state should be examined in order to support the market capture goals of this threshold. Further, an investigation of market capture may need to be conducted for different commercial project types and for industrial projects in order to examine whether multiple quantitative emissions thresholds or different thresholds should be developed.

The 900-ton threshold corresponds to 50 residential units, which corresponds to the 84th percentile of projects in the City of Los Angeles, the 79th percentile in the City of Pleasanton, the 50th percentile in the City of Livermore and the 4th percentile in the City of Dublin. This is suggestive that the GHG reduction burden will fall on larger projects that will be a relatively small portion of overall projects within more developed central cities (Los Angeles) and suburban areas of slow growth (Pleasanton) but would be the higher portion of projects within moderately (Livermore) or more rapidly developing areas (Dublin). These conclusions are suggestive but not conclusive due to the small sample size. The proposed threshold would exclude the smallest proposed developments

from potentially burdensome requirements to quantify and mitigate GHG emissions under CEQA. While this would exclude perhaps 10 percent of new residential development, the capture of 90 percent of new residential development would establish a strong basis for demonstrating that cumulative reductions are being achieved across the state. It can certainly serve as an interim measure and could be revised if subsequent regulatory action by CARB shows that a different level or different approach altogether is called for.

The 900-ton threshold would correspond to office projects of approximately 35,000 square feet, retail projects of approximately 11,000 square feet, or supermarket space of approximately 6,300 square feet. 35,000 square feet would correspond to the 46th percentile of commercial projects in the City of Los Angeles, the 54th percentile in the City of Livermore, and the 35th percentile in the City of Dublin. However, the commercial data was not separated into office, retail, supermarket or other types, and thus the amount of capture for different commercial project types is not known. The proposed threshold would exclude smaller offices, small retail (like auto-parts stores), and small supermarkets (like convenience stores) from potentially burdensome requirements to quantify and mitigate GHG emissions under CEQA but would include many medium-scale retail and supermarket projects.

The industrial sector is less amenable to a unit-based approach given the diversity of projects within this sector. One option would be to adopt a quantitative GHG emissions threshold (900 tons) for industrial projects equivalent to that for the residential/commercial thresholds described above. Industrial emissions can result from both stationary and mobile sources. CARB estimates that their suggested reporting threshold for stationary sources of 25,000 metric tons accounts for more than 90 percent of the industrial sector GHG emissions (see Threshold 2.3 for 25,000 metric ton discussion). If the CARB rationale holds, then a 900 metric ton threshold would likely capture at least 90 percent (and likely more) of new industrial and manufacturing sources. If this approach is advanced, we suggest further examination of industrial project data to determine market capture.

This threshold would require the vast majority of new development emission sources to quantify their GHG emissions, apportion the forecast emissions to relevant source categories, and develop GHG mitigation measures to reduce their emissions.

Threshold 2.3: CARB Reporting Threshold

CARB has recently proposed to require mandatory reporting from cement plants, oil refineries, hydrogen plants, electric generating facilities and electric retail providers, cogeneration facilities, and stationary combustion sources emitting $\geq$ 25,000 MT CO_2e/yr. AB 32 requires CARB to adopt a regulation to require the mandatory reporting and verification of emissions. CARB issued a preliminary draft version of its proposed reporting requirements in August 2007 and estimates that it would capture 94 percent of the GHG emissions associated with stationary sources.

This threshold would use 25,000 metric tons per year of GHG as the CEQA significance level. CARB proposed to use the 25,000 metric tons/year value as a reporting threshold, not as a CEQA significance threshold that would be used to define mitigation requirements. CARB is proposing the reporting threshold to begin to compile a statewide emission inventory, applicable only for a limited category of sources (large industrial facilities using fossil fuel combustion).

A 25,000 metric ton significance threshold would correspond to the GHG emissions of approximately 1,400 residential units, 1 million square feet of office space, 300,000 square feet of retail, and 175,000 square feet of supermarket space. This threshold would capture far less than half of new residential or commercial development.

As noted above, CARB estimates the industrial-based criteria would account for greater than 90 percent of GHG emissions emanating from stationary sources. However, industrial and manufacturing projects can also include substantial GHG emissions from mobile sources that are associated with the transportation of materials and delivery of products. When all transportation-related emissions are included, it is unknown what portion of new industrial or manufacturing projects a 25,000-ton threshold would actually capture.

An alternative would be to use a potential threshold of 10,000 metric tons considered by the Market Advisory Committee for inclusion in a Greenhouse Gas Cap and Trade System in California. A 10,000 metric ton significance threshold would correspond to the GHG emissions of approximately 550 residential units, 400,000 square feet of office space, 120,000 square feet of retail, and 70,000 square feet of supermarket space. This threshold would capture roughly half of new residential or commercial development.

Threshold 2.4: Regulated Emissions Inventory Capture

Most California air districts have developed CEQA significance thresholds for NOx and ROG emissions to try to reduce emissions of ozone precursors from proposed sources that are not subject to NSR pre-construction air quality permitting. The historical management of ozone nonattainment issues in urbanized air districts is somewhat analogous to today's concerns with greenhouse gas emissions in that regional ozone concentrations are a cumulative air quality problem caused by relatively small amounts of NOx and ROG emissions from thousands of individual sources, none of which emits enough by themselves to cause elevated ozone concentrations. Those same conditions apply to global climate change where the environmental problem is caused by emissions from a countless number of individual sources, none of which is large enough by itself to cause the problem. Because establishment of NOx/ROG emissions CEQA significance thresholds has been a well-tested mechanism to ensure that individual projects address cumulative impacts and to force individual projects to reduce emissions under CEQA, this threshold presumes the analogy of NOx/ROG emission thresholds could be used to develop similar GHG thresholds.

The steps to develop a GHG emission threshold based on the NOx/ROG analogy were as follows:

- For each agency, define its NOx/ROG CEQA thresholds.
- For each agency, define the regional NOx/ROG emission inventory the agency is trying to regulate with its NOx/ROG thresholds.
- For each agency, calculate the percentage of the total emission inventory for NOx represented by that agency's CEQA emission threshold. That value represents the "minimum percentage of regulated inventory" for NOx.
- The current (2004) California-wide GHG emission inventory is 499 million metric tons per year of CO_2 equivalent (MMT CO_2e). Apply the typical "minimum percentage of regulated inventory" value to the statewide GHG inventory, to develop a range of analogous GHG CEQA thresholds.

The preceding methodology was applied to two different air quality districts: the Bay Area Air Quality Management District (BAAQMD), a mostly-urbanized agency within which most emissions are generated from urban areas; and the San Joaquin Valley Air Pollution Control District (SJVAPCD), which oversees emissions emanating in part from rural areas that are generated at dispersed agricultural sources and area sources. For example, in the Bay Area the NOx threshold is 15 tons/year. The total NOx inventory for 2006 was 192,000 tons/year (525 tons/day). The threshold represents 0.008 percent of the total NOx inventory. Applying that ratio to the total statewide GHG emissions inventory of 499 MMT CO_2e (2004) yields an equivalent GHG threshold of 39,000 MMT CO_2e.

The range of analogous CEQA GHG thresholds derived from those two agencies is tightly clustered, ranging from 39,000 to 46,000 tons/year. A 39,000 to 46,000 metric ton threshold would correspond to the GHG emissions of approximately 2,200 to 2,600 residential units, 1.5 to 1.8 million square feet of office space, 470,000 to 560,000 square feet of retail, and 275,000 to 320,000 square feet of supermarket space. This threshold would capture far less than half of new residential or commercial development. Similarly, this threshold would capture less of new industrial/manufacturing GHG emissions inventory than Thresholds 2.2 or 2.3.

Threshold 2.5: Unit-Based Thresholds Based on Market Capture

Unit thresholds were developed for residential and commercial developments in order to capture approximately 90 percent of future development. The objective was to set the unit thresholds low enough to capture a substantial fraction of future housing and commercial developments that will be constructed to accommodate future statewide population and job growth, while setting the unit thresholds high enough to exclude small development projects that will contribute a relatively small fraction of the cumulative statewide GHG emissions. Sector-based thresholds were created by using the same steps

and data used to create Threshold 2.2- Quantitative Threshold Based on Market Capture above.

The distribution of pending application data suggests that the GHG reduction burden will fall on larger projects that will be a relatively small portion of overall projects within more developed central cities and suburban areas of slow growth but would be the higher portion of projects within moderately or rapidly developing areas. The proposed threshold would exclude the smallest proposed developments from potentially burdensome requirements to quantify and mitigate GHG emissions under CEQA. While this would exclude perhaps 10 percent of new residential development, the capture of 90 percent of new residential development would establish a strong basis for demonstrating that cumulative reductions are being achieved across the state. It can certainly serve as an interim measure and could be revised if subsequent regulatory action by CARB shows that a different level or different approach altogether is called for.

A similar rationale can be applied to the development of a commercial threshold. Threshold 2.5 would exclude many smaller businesses from potentially burdensome requirements to quantify and mitigate GHG emissions under CEQA. It should be noted that the GHG emissions of commercial projects vary substantially. For example, the carbon dioxide emissions associated with different commercial types were estimated as follows:

- 30,000 square-foot (SF) office = 800 metric tons/year CO_2
- 30,000 SF retail = 2,500 metric tons/year CO_2
- 30,000 SF supermarket = 4,300 metric tons/year CO_2

Thus, in order to assure appropriate market capture on an emissions inventory basis, it will be important to examine commercial project size by type, instead of in the aggregate (which has been done in this paper).

The industrial sector is less amenable to a unit-based approach given the diversity of projects within this sector. One option would be to use a quantitative threshold of 900 tons for industrial projects in order to provide for rough equivalency between different sectors. Industrial emissions can result from both stationary and mobile sources. However, if the CARB rationale for > 90 percent stationary source capture with a threshold of 25,000 metric tons holds, then a 900 metric ton threshold would likely capture at least 90 percent (and likely more) of new industrial sources. Further examination of unit-based industrial thresholds, such as the number of employees or manufacturing floor space or facility size, may provide support for a unit-based threshold based on market capture.

This threshold would require the vast majority of new development emission sources to quantify their GHG emissions, apportion the forecast emissions to relevant source categories, and develop GHG mitigation measures to reduce their emissions.

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Threshold 2.6. Projects of Statewide, Regional, or Areawide Significance

For this threshold, a set of qualitative, tiered CEQA thresholds would be adopted based on the definitions of "projects with statewide, regional or areawide significance" under the Guidelines for California Environmental Quality Act, CCR Title 14, Division 6, Section 15206(b).

Project sizes defined under this guideline include the following:

- Proposed residential development of more than 500 dwelling units.
- Proposed shopping center or business establishment employing more than 1,000 persons or encompassing more than 500,000 square feet of floor space.
- Proposed commercial office building employing more than 1,000 persons or encompassing more than 250,000 square feet of floor space.
- Proposed hotel/motel development of more than 500 rooms.
- Proposed industrial, manufacturing or processing plant or industrial park planned to house more than 1,000 persons, or encompassing more than 600,000 square feet of floor space.

These thresholds would correspond to the GHG emissions of approximately 9,000 metric tons for residential projects, 13,000 metric tons for office projects, and 41,000 metric tons for retail projects. These thresholds would capture approximately half of new residential development and substantially less than half of new commercial development. It is unknown what portion of the new industrial or manufacturing GHG inventory would be captured by this approach.

Threshold 2.7 Efficiency-Based Thresholds

For this approach, thresholds would be based on measurements of efficiency. For planning efforts, the metric could be GHG emissions per capita or per job or some combination thereof. For projects, the metric could be GHG emission per housing unit or per square foot of commercial space. In theory, one could also develop metrics for GHG emissions per dollar of gross product to measure the efficiency of the economy.

This approach is attractive because it seeks to benchmark project GHG intensity against target levels of efficiency. The thresholds would need to be set such that there is reasonably foreseeable and sufficient reductions compared to business as usual to support meeting AB 32 and S-3-05 goals in time (in combination with command and control regulations). Because this approach would require substantial data and modeling to fully develop, this is a concept considered as a potential future threshold and not appropriate

for interim guidance in the short term. Thus, it is not evaluated in the screening evaluation in the next section.

Table 3 compares the results for each of the approaches.

Table 3: Comparison of Approach 2 Tiered Threshold Options

Threshold	GHG Emission Threshold (metric tons/year)	Future Development Captured by GHG Threshold
2.1: Zero Threshold	0 tons/year	All
2.2: Quantitative Threshold Based on Market Capture	~900 tons/year	Residential development > 50 dwelling units Office space > 36,000 ft^2 Retail space >11,000 ft^2 Supermarkets >6.300 ft^2 small, medium, large industrial
2.3: CARB GHG Mandatory Reporting Threshold OR Potential Cap and Trade Entry Level	25,000 metric tons/year OR 10,000 metric tons/year	Residential development >1,400 dwelling units OR 550 dwelling units Office space >1 million ft^2 OR 400,000 ft^2 Retail space >300,000 ft^2 OR 120,000 ft^2 Supermarkets >175,000 ft^2 OR 70,000 ft^2 medium/larger industrial
2.4: Regulated Inventory Capture	40,000 – 50,000 metric tons/year	Residential development >2,200 to 2,600 dwelling units Office space >1.5 to 1.8 million ft^2 Retail space >470,000 to 560,000 ft^2 Supermarkets >270,000 to 320,000 ft^2 medium/larger industrial
2.5: Unit-Based Threshold Based on Market Capture	Not applicable.	Residential development >50 dwelling units Commercial space >50,000 ft^2 > small, medium, large industrial (with GHG emissions > 900 tonsCO2e)
2.6: Projects of Statewide, Regional, or Areawide Significance	Not applicable.	Residential development >500 dwelling units Office space >250,000 ft^2 Retail space >500,000 ft^2 Hotels >500 units Industrial project >1,000 employees Industrial project >40 acre or 650,000 ft^2
2.7: Efficiency-Based Thresholds	TBD tons/year/person TBD tons/year/unit	Depends on the efficiency measure selected.

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Implementing CEQA With Tiered Thresholds

Several issues related to Approach 2 are addressed below:

1. *Some applications of this approach may need to be embodied in a duly approved General Plan, or in some other formal regulation or ordinance to be fully enforceable.* Because CEQA does not expressly provide that projects may be deemed insignificant based on implementation of a set of mitigations, this approach may need to be supported with specific and enforceable mechanisms adopted with due public process.

2. *How would this concept affect adoption of air district rules and regulations?* Proposed air district rules and regulations may be subject to CEQA like other projects and plans. Thus, if significance thresholds were adopted by an APCD or AQMD, then they could also apply to air district discretionary actions. If GHG emissions would be increased by a rule or regulation for another regulated pollutant, that would be a potential issue for review under CEQA.

3. *Mitigation measures may not be all-inclusive; better measures now or new future technology would make these measures obsolete.* The mandatory mitigation measures could be periodically updated to reflect current technology, feasibility, and efficiency.

4. *Total reduction may not be quantified or difficult to quantify.* CEQA only requires the adoption of feasible mitigation and thus the reduction effectiveness of required mitigation should not be in question. However, the precise reduction effectiveness may indeed be difficult to identify. As described above, if a quantitative threshold is selected as the measure of how much mitigation is mandated, then best available evidence will need to be used to estimate resultant GHG emissions with mitigation adoption. If a qualitative threshold is selected, then it may not be necessary to quantify reductions.

5. *Difficult to measure progress toward legislative program goals.* One could require reporting of project inventories to the Climate Action Registry, air district, or regional council of governments, or other suitable body. Collection of such data would allow estimates of the GHG intensity of new development over time, which could be used by CARB to monitor progress toward AB 32 goals.

6. *Measures may have adverse impacts on other programs.* The identification of mandatory mitigation will need to consider secondary environmental impacts, including those to air quality.

7. *Consideration of life-cycle emissions.* In many cases, only direct and indirect emissions may be addressed, rather than life-cycle emissions. A project applicant has traditionally been expected to only address emissions that are closely related and within the capacity of the project to control and/or influence. The long chain

8. of economic production resulting in materials manufacture, for example, involves numerous parties, each of which in turn is responsible for the GHG emissions associated with their particular activity. However, there are situations where a lead agency could reasonably determine that a larger set of upstream and downstream emissions should be considered because they are being caused by the project and feasible alternatives and mitigation measures may exist to lessen this impact.

Approach 2 Tiered Threshold with Mandatory Mitigation

As shown in Table 2, due to the cumulative nature of GHG emissions and climate change impacts, there could be a level of mandatory reductions and/or mitigation for all projects integrated into a tiered threshold approach. In order to meet AB 32 mandates by 2020 and S-3-05 goals, there will need to be adoption of GHG reduction measures across a large portion of the existing economy and new development. As such, in an effort to support a determination under CEQA that a project has a less than considerable contribution to significant cumulative GHG emissions, mitigation could be required on a progressively more comprehensive basis depending on the level of emissions.

- Level 1 Reductions – These reduction measures would apply to all projects and would only consist of AB 32 and other local/state mandates. They would be applied to a project from other legal authority (not CEQA). Level 1 reductions could include such measures as bike parking, transit stops for planned routes, Energy Star roofs, Energy Star appliances, Title 24 compliance, water use efficiency, and other measures. All measures would have to be mandated by CARB or local regulations and ordinances.

- Level 2 Mitigation – Projects that exceed the determined threshold would be required to first implement readily available technologies and methodologies with widespread availability. Level 2 Mitigation could include such measures as: parking reduction below code minimum levels, solar roofs, LEED Silver or Gold Certification, exceed Title 24 building standards by 20 percent, Traffic Demand Management (TDM) measures, and other requirements.

- Level 3 Mitigation - If necessary to reduce emissions to the thresholds, more extensive mitigation measures that represent the top tier of feasible efficiency design would also be required. Level 3 Mitigation could include such measures as: on-site renewable energy systems, LEED Platinum certification, exceed Title 24 building requirements by 40 percent, required recycled water use for irrigation, zero waste/high recycling requirements, mandatory transit pass provision, and other measures.

- Offset Mitigation – If, after adoption of all feasible on-site mitigation, the project is still found to exceed a Tier 2 quantitative threshold, or exceed a Tier 3 qualitative threshold, or if a project cannot feasibly implement the mandatory on-site mitigation, then purchases of offsets could be used for mitigation. In the case

of a quantitative threshold, the amount of purchase would be to offset below the Tier 2 significance threshold. In the case of a qualitative threshold, the amount of purchase could be to offset GHG emissions overall to below the lowest equivalent GHG emissions among the Tier 2 qualitative thresholds. With Threshold 2.5, this would be approximately 900 tons of GHG emissions (corresponding to 50 residential units). With Threshold 2.6, this would be approximately 9,000 tons (corresponding to 500 residential units). Alternatively, one could require purchase of offsets in the amount of a set percentage (such as 90% or 50% for example) of the residual GHG emissions (after other mitigation). As discussed earlier, any decision to include or require the use of emission reduction credits (or offsets) must consider issues of availability, quality, and environmental justice.

Substantial Evidence Supporting Different Thresholds

If a project can be shown by substantial evidence not to increase GHG emissions relative to baseline emissions, then no fair argument will be available that the project contributes considerably to a significant cumulative climate change impact.

It is more challenging to show that a project that increases GHG emissions above baseline emissions does not contribute considerably to a significant cumulative climate change impact. It is critical therefore, to establish an appropriate cumulative context, in which, although an individual project may increase GHG emissions, broader efforts will result in net GHG reductions.

Approach 1-based thresholds that by default will require an equal level of GHG reductions from the existing economy (Thresholds 1.1, 1.3, and 1.4) may be less supportable in the short run (especially before 2012) than Approach 1.2 (which requires new development to be relatively more efficient than a retrofitted existing economy). This is because, prior to 2012, there will only be limited mandatory regulations implementing AB 32 that could address the existing economy in a truly systematic way that can be relied upon to demonstrate that overall GHG reduction goals can be achieved by 2020. Approach 1.2 will still rely on substantial reductions in the existing economy but to a lesser degree.

Approach 1-based thresholds that would spread the mitigation burden across a sector (Threshold 1.3) or across a region (Threshold 1.4) will allow for tradeoffs between projects or even between municipalities. In order to demonstrate that a sector or a region is achieving net reductions overall, there would need to be feasible, funded, and mandatory requirements in place promoting an overall reduction scheme, in order for a project to result in nominal net increased GHG emissions.

Approach 2-based thresholds that capture larger portions of the new development GHG inventory (Thresholds 2.2 and 2.5) would promote growth that results in a smaller increase in GHG emissions; they may therefore be more supportable than thresholds that do not and that have a greater reliance on reductions in the existing economy (Thresholds

2.3, 2.4, and 2.6), especially in the next three to five years. With an established cumulative context that demonstrates overall net reductions, all threshold approaches could be effective in ensuring growth and development that significantly mitigates GHG emissions growth in a manner that will allow the CARB to achieve the emission reductions necessary to meet AB 32 targets. In that respect, all of these thresholds are supported by substantial evidence.

Evaluation of Non-Zero Threshold Options

Overarching issues concerning threshold development are reviewed below. Where appropriate, different features or application of the two conceptual approaches and the various options for thresholds under each conceptual approach described above are analyzed. The screening evaluation is summarized in Tables 4 (Approach 1) and 5 (Approach 2). The summary tables rate each threshold for the issues discussed below based on the level of confidence (low, medium or high) ascribed by J&S. The confidence levels relate to whether a threshold could achieve a particular attribute, such as emission reduction effectiveness. For example, a low emission reduction effectiveness rating means the threshold is not expected to capture a relatively large portion of the new development inventory.

As described above, Threshold 2.7 is not included in this evaluation because the data to develop an efficiency-based threshold has not been reviewed at this time and because this threshold is not considered feasible as an interim approach until more detailed inventory information is available across the California economy.

What is the GHG Emissions Effectiveness of Different Thresholds?

Effectiveness was evaluated in terms of whether a threshold would capture a large portion of the GHG emissions inventory and thus require mitigation under CEQA to control such emissions within the larger framework of AB 32. In addition, effectiveness was also evaluated in terms of whether a threshold would require relatively more or less GHG emissions reductions from the existing economy verses new development. This is presumptive that gains from the existing economy (through retrofits, etc.) will be more difficult and inefficient relative to requirements for new development.

Approach 1-based thresholds that require equivalent reductions relative to business-as-usual (Thresholds 1.1, 1.3, and 1.4) for both the existing and new economy will be less effective than thresholds that support lower-GHG intensity new development (Approach 1.2). However, since Approach 1-based thresholds do not establish a quantitative threshold below which projects do not have to mitigate, the market capture for new development is complete.

Approach 2-based thresholds can be more or less effective at capturing substantial portions of the GHG inventory associated with new development depending on where the quantitative or qualitative thresholds are set. Lower thresholds will capture a broader range of projects and result in greater mitigation. Based on the review of project data for

the select municipalities described in the Approach 2 section above, thresholds based on the CARB Reporting Threshold/Cap and Trade Entry Level (Threshold 2.4) or CEQA definitions of "Statewide, Regional or Areawide" projects (Threshold 2.6) will result in a limited capture of the GHG inventory. Lower quantitative or qualitative thresholds (Thresholds 2.1, 2.2 and 2.5) could result in capture of greater than 90 percent of new development.

Are the Different Thresholds Consistent with AB 32 and S-3-05?

Thresholds that require reductions compared to business-as-usual for all projects or for a large portion of new development would be consistent with regulatory mandates. In time, the required reductions will need to be adjusted from 2020 (AB 32) to 2050 (S-3-05) horizons, but conceptually broad identification of significance for projects would be consistent with both of these mandates. Thresholds that exclude a substantial portion of new development would likely not be consistent, unless it could be shown that other more effective means of GHG reductions have already been, or will be adopted, within a defined timeframe.

All Approach 1-based thresholds would be consistent with AB 32 and S-3-05 if it can be demonstrated that other regulations and programs are effective in achieving the necessary GHG reduction from the existing economy to meet the overall state goals.

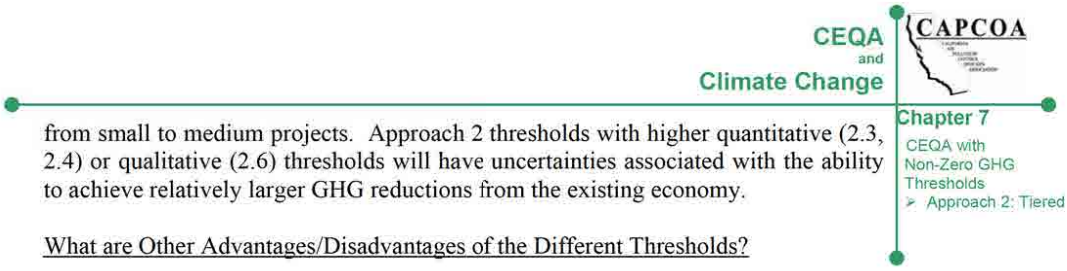
Approach 2-based thresholds that include substantive parts of the new development GHG inventory (Thresholds 2.1, 2.2 and 2.5) will be more consistent with AB 32 and S-3-05 than those that do not (Thresholds 2.3, 2.4, and 2.6) unless it can be demonstrated that other regulations and programs are effective in achieving the necessary GHG reduction from the existing economy to meet the overall state goals.

What are the Uncertainties Associated with Different Thresholds?

All thresholds have medium to high uncertainties associated with them due to the uncertainty associated with the effectiveness of AB 32 implementation overall, the new character of GHG reduction strategies on a project basis, the immaturity of GHG reduction technologies or infrastructure (such as widespread biodiesel availability), and the uncertainty of GHG reduction effectiveness of certain technologies (such as scientific debate concerning the relative lifecycle GHG emissions of certain biofuels, for example).

In general, Approach 1-based thresholds have higher uncertainties than Approach 2 thresholds because they rely on a constantly changing definition of business-as-usual. Threshold 1.2, with its relatively smaller reliance on the existing economy for GHG reductions has relatively less uncertainty than other Approach 1 thresholds. Thresholds that spread mitigation more broadly (Thresholds 1.3 and 1.4) have less uncertainty by avoiding the need for every project to mitigate equally.

Approach 2 thresholds with lower quantitative (2.1 and 2.2) or qualitative (2.5) thresholds will have uncertainties associated with the ability to achieve GHG reductions



from small to medium projects. Approach 2 thresholds with higher quantitative (2.3, 2.4) or qualitative (2.6) thresholds will have uncertainties associated with the ability to achieve relatively larger GHG reductions from the existing economy.

What are Other Advantages/Disadvantages of the Different Thresholds?

Thresholds with a single project metric (Thresholds 1.1, 1.2, 2.1, 2.2, 2.3, 2.4, 2.5, and 2.6) will be easier to apply to individual projects and more easily understood by project applicants and lead agencies broadly. Thresholds that spread mitigation across sectors (1.3) or regions (1.4), while simple in concept, will require adoption of more complicated cross-jurisdictional reduction plans or evaluation of broad sector-based trends in GHG intensity reduction over time. Approach 1 options would require all projects to quantify emissions in order to determine needed reductions relative to business-as-usual (which will change over time as described above). Concepts that are unit-based (Threshold 2.5 and 2.6) will not result in thresholds that have equal amount of GHG emissions, and thus equity issues may arise.

Table 4: Non-Zero Threshold Evaluation Matrix – Approach 1

Approach 1	1.1	1.2	1.3	1.4
	28% - 33% Reduction from BAU by 2020 by Project	**50% Reduction from BAU by 2020 by Project**	**28% - 33% Reduction by 2020 by Sector**	**28% - 33% Reduction by 2020 by Region**
GHG Emissions Reduction Effectiveness	**Low** - Captures all new projects but relies on a high level of reductions from the existing economy.	**Medium** - Captures all new projects and has a more realistic level of reductions from the existing economy.	**Low** - Captures all new projects but relies on a high level of reductions from the existing economy.	**Low** - Captures all new projects but relies on a high level of reductions from the existing economy.
Economic Feasibility	**Low** - Some projects will not be able to afford this level of reduction without effective market-based mechanisms like offsets.	**Low** - Some projects will not be able to afford this level of reduction without effective market-based mechanisms like offsets.	**Medium** - Sectors as a whole will be better able to achieve reductions than individual projects.	**Low** - Some regions and newly developed areas may not be able to afford this level of reduction without effective market-based mechanisms like offsets.
Technical Feasibility	**Medium** - Some projects will not be able to achieve this level of reduction without effective market-based mechanisms like offsets.	**Low** - Relatively larger set of projects will not be able to achieve this level of reduction without effective market-based mechanisms like offsets.	**High** - Some projects will not be able to achieve this level of reduction without effective market-based mechanisms like offsets.	**Medium** - Some regions and newly developed areas may not be able to afford this level of reduction without effective market-based mechanisms like offsets.
Logistical Feasibility	**Low** - Absent broader reductions strategies, each project may reinvent the wheel each time to achieve mandated reductions.	**Low** - Absent broader reductions strategies, each project may reinvent the wheel each time to achieve mandated reductions.	**Low** - Absent broader reductions strategies, each project may reinvent the wheel each time to achieve mandated reductions.	**Low** - Absent broader reductions strategies, each project may reinvent the wheel each time to achieve mandated reductions.
Consistency with AB-32 and S-03-05	**Medium** - Would require heavy reliance on command and control gains.	**High**	**Medium-High** - Would rely on command and control gains, but would allow sectoral flexibility.	**Medium-High** - Would rely on command and control gains, but would allow regional flexibility.
Cost Effectiveness	**Low** - Will require all types of projects to reduce the same regardless of the cost/ton of GHG reductions.	**Low** - Will require all types of projects to reduce the same regardless of the cost/ton of GHG reductions.	**Low/Medium** - Allows tradeoffs within sector between high and low cost reduction possibilities but not between sectors.	**Low/Medium** - Allows tradeoffs within region between high and low cost reduction possibilities, but not between regions.
Uncertainties	**High** - BAU changes over time. Ability to reduce GHG emissions from existing economy will take years to demonstrate. Ability to limit GHG emissions from other new development will take years to demonstrate.	**Medium/High** - BAU changes over time. Ability to limit GHG emissions from other new development will take years to demonstrate.	**High** - BAU changes over time. Ability to reduce GHG emissions from existing economy will take years to demonstrate. Ability to limit GHG emissions from other new development will take years to demonstrate.	**High** - BAU changes over time. Ability to reduce GHG emissions from existing economy will take years to demonstrate. Ability to limit GHG emissions from other new development will take years to demonstrate.
Other Advantages	Simple/easy to explain.	Simple/easy to explain.	Spreads mitigation broadly	Spreads mitigation broadly
Other Disadvantages	Requires all projects to quantify emissions.	Requires all projects to quantify emissions.	Requires all projects to quantify emissions.	Requires all projects to quantify emissions.

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Table 5: Non-Zero Threshold Evaluation Matrix – Approach 2

Approach 2	2.1	2.2	2.3	2.4	2.5	2.6
	Zero Threshold	**Quantitative (900 tons)**	**Quantitative CARB Reporting Threshold/Cap and Trade (25,000 tons/ 10,000 tons)**	**Quantitative Regulated Inventory Capture (~40,000 - 50,000 tons)**	**Qualitative Unit-Based Thresholds**	**Statewide, Regional or Areawide (CEQA Guidelines 15206(b)).**
GHG Emissions Reduction Effectiveness	**High** - Captures all sources.	**High** - Market capture at >90%. Captures diverse sources.	**Medium** - Moderate market capture.	**Low** - Low market capture.	**High** - Market capture at ~90%. Captures diverse sources; excl. smallest proj.	**Medium** - Moderate market capture. Excludes small and med. projects.
Economic Feasibility	**Low** - Early phases will be substantial change in BAU, esp. for smaller projects; may be infeasible to mitigate.	**Medium** - Early phases will be substantial change in BAU, esp. for smaller projects; may be infeasible to mitigate.	**High** - Large projects have greater ability to absorb cost.	**High** - Large projects have greater ability to absorb cost.	**Medium** - Early phases will be substantial change in BAU, esp. for smaller projects; may be infeasible to mitigate.	**High** - Large projects have greater ability to absorb cost.
Technical Feasibility	**Low** - Early phases will be substantial change in BAU, esp. for smaller projects; may be infeasible to mitigate.	**Medium** - Early phases will be substantial change in BAU, esp. for smaller projects; may be inefficient to mitigate.	**High** - Greater opportunities for multiple reduction approaches.	**High** - Greater opportunities for multiple reduction approaches.	**Medium** - Early phases will be substantial change in BAU, particularly for smaller projects may be inefficient to mitigate.	**High** - Greater opportunities for multiple reduction approaches.
Logistical Feasibility	**Low** - Unless fee or offset basis,very difficult to mitigate all projects.	**Medium** - BMPs broadly written to allow diversity; new req. will take time to integrate into new dev.	**High** - Less mitigation.	**High** - Less mitigation.	**Medium** - BMPs broadly written to allow diversity; new req. will take time to integrate into new dev.	**High** - Less mitigation.
Consistency with AB-32 and S-03-05	**High** - Market capture.	**High** - Market capture at >90%.	**Low** - Would rely on command and control success heavily.	**Low** - Would rely on command and control success heavily.	**Medium** - Need to demonstrate adequate market capture over time.	**Low** - Would rely on command and control success heavily.
Cost Effectiveness	**Low** - Will result in inefficient mitigation approaches. Efficiency will improve in time.	**Medium** - Emphasis is on new dev., req. for mitigation will result in inefficient mitigation approaches in early phases. Efficiency will improve in time.	**Medium** - Relies on command and control reductions for existing economy more heavily. With focus on larger projects, eff. of mitigation for new dev. high.	**Medium** - Relies on command and control reductions for existing economy more heavily. With focus on larger projects, eff. of mitigation for new dev. high.	**Medium** - Emphasis is on new dev., req. for mitigation will result in inefficient mitigation approaches in early phases. Efficiency will improve in time.	**Medium** - Relies on command and control reductions for existing economy more heavily. With focus on larger projects, eff. of mitigation for new dev. high.
Uncertainties	**High** - Time to adapt for res. and comm., sectors. Ability to mitigate without market-based mechanism for smaller projects unlikely.	**Medium/High** - Time to adapt for res. and comm., sectors. Ability to mitigate without market-based mechanism for smaller projects uncertain.	**High** - Gains from command and control likely longer to be realized.	**High** - Gains from command and control likely longer to be realized.	**Medium/High** - Time to adapt for res. and comm., sectors. Ability to mitigate without market-based mechanism for smaller projects uncertain.	**High** - Gains from command and control likely longer to be realized.
Other Advantages	Single threshold.	Single threshold. BMPs can be updated. Greenlist can be updated.	Single threshold. Does not change CEQA processing for most projects. CARB inventory = project inv., All projects treated same.	Single threshold. Does not change CEQA processing for most projects. Follows established SIP practice.	BMPs can be updated. Greenlist can be updated. Unit-Based thresholds can be updated.	Existing guideline. Does not change CEQA processing for most projects. Endorsed by Cal. Chapter of the APA.
Other Disadvantages	Requires all projects to quantify emissions.	Requires nearly all projects to quantify emissions.			Sectoral projects have different GHG emis. Only largest projects to quantify emis.	Sectoral projects have different GHG emissions.

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Introduction

This chapter evaluates the availability of various analytical methods and modeling tools that can be applied to estimate the greenhouse gas emissions from different project types subject to CEQA. This chapter will also provide comments on the suitability of the methods and tools to accurately characterize a projects emissions and offer recommendations for the most favorable methodologies and tools available. Some sample projects will be run through the methodologies and modeling tools to demonstrate what a typical GHG analysis might look like for a lead agency to meet its CEQA obligations. The air districts retained the services of EDAW environmental consultants to assist with this effort.

Methodologies/Modeling Tools

There are wide varieties of discretionary projects that fall under the purview of CEQA. Projects can range from simple residential developments to complex expansions of petroleum refineries to land use or transportation planning documents. It is more probably than not, that a number of different methodologies would be required by any one project to estimate its direct and indirect GHG emissions. Table 10 contains a summary of numerous modeling tools that can be used to estimate GHG emissions associated with various emission sources for numerous types of project's subject to CEQA. The table also contains information about the models availability for public use, applicability, scope, data requirements and its advantages and disadvantages for estimating GHG emissions.

In general, there is currently not one model that is capable of estimating all of a project's direct and indirect GHG emissions. However, one of the models identified in Table 9 would probably be the most consistently used model to estimate a projects direct GHG emissions based on the majority of projects reviewed in the CEQA process. The Urban Emissions Model (URBEMIS) is designed to model emissions associated with development of urban land uses. URBEMIS attempts to summarize criteria air pollutants and CO_2 emissions that would occur during construction and operation of new development. URBEMIS is publicly available and already widely used by CEQA practitioners and air districts to evaluate criteria air pollutants emissions against air district-adopted significance thresholds. URBEMIS is developed and approved for statewide use by CARB. The administrative reasons for using URBEMIS are less important than the fact that this model would ensure consistency statewide in how CO_2 emissions are modeled and reported from various project types.

One of the shortfalls of URBEMIS is that the model does not contain emission factors for GHGs other than CO_2, except for methane (CH_4) from mobile-sources, which is converted to CO_2e. This may not be a major problem since CO_2 is the most important GHG from land development projects. Although the other GHGs have a higher global warming potential, a metric used to normalize other GHGs to CO_2e, they are emitted in far fewer quantities. URBEMIS does not calculate other GHG emissions associated with

off-site waste disposal, wastewater treatment, emissions associated with goods and services consumed by the residents and workers supported by a project. Nor does URBEMIS calculate GHGs associated with consumption of energy produced off-site. (For that matter, URBEMIS does not report criteria air pollutant emissions from these sources either).

Importantly, URBEMIS does not fully account for interaction between land uses in its estimation of mobile source operational emissions. Vehicle trip rates are defaults derived from the Institute of Transportation Engineers trip generation manuals. The trip rates are widely used and are generally considered worst-case or conservative. URBEMIS does not reflect "internalization" of trips between land uses, or in other words, the concept that a residential trip and a commercial trip are quite possibly the same trip, and, thus, URBEMIS counts the trips separately. There are some internal correction settings that the modeler can select in URBEMIS to correct for "double counting"; however, a project-specific "double-counting correction" is often not available. URBEMIS does allow the user to overwrite the default trip rates and characteristics with more project-specific data from a traffic study prepared for a project.

Residential, Commercial, Mixed-Use Type Projects/ Specific Plans

Direct Emissions

URBEMIS can be used to conduct a project-specific model run and obtain CO_2e emissions for area and mobile sources from the project, and convert to metric tons CO_2e. When a project-specific traffic study is not available, the user should consult with their local air district for guidance. Many air district staff are experienced practitioners of URBEMIS and can advise the lead agency or the modeler on how to best tailor URBEMIS default input parameters to conduct a project-specific model run. When a traffic study has been prepared for the project, the user must overwrite default trip length and trip rates in URBEMIS to match the total number of trips and vehicle miles traveled (VMT) contained in the traffic study to successfully conduct a project-specific model run. URBEMIS is recommended as a calculation tool to combine the transportation study (if available) and EMFAC emission factors for mobile-sources. Use of a project-specific traffic study gets around the main shortfall of URBEMIS: the lack of trip internalization. URBEMIS also provides the added feature of quantifying direct area-source GHG emissions.

Important steps for running URBEMIS

1. Without a traffic study prepared for the project, the user should consult with the local air district for direction on which default options should be used in the modeling exercise. Some air districts have recommendations in the CEQA guidelines.

2. If a traffic study was prepared specifically for the project, the following information must be provided:

a. Total number of average daily vehicle trips *or* trip-generation rates by land use type per number of units; and,

b. Average VMT per residential *and* nonresidential trip.

c. The user overwrites the "Trip Rate (per day)" fields for each land use in URBEMIS such that the resultant "Total Trips" and the "Total VMT" match the number of total trips and total VMT contained in the traffic study.

d. Overwrite "Trip Length" fields for residential and nonresidential trips in UBEMIS with the project-specific lengths obtained form the traffic study.

3. Calculate results and obtain the CO_2 emissions from the URBEMIS output file (units of tons per year [TPY]).

Indirect Emissions

URBEMIS does estimate indirect emissions from landscape maintenance equipment, hot water heaters, etc. URBEMIS does not however, 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 demands. The California Climate Action Registry (CCAR) Protocol v.2.2 includes methodology, which could be used to quantify and disclose a project's increase in indirect GHG emissions from energy use. Some assumptions must be made for electrical demand per household or per square foot of commercial space, and would vary based on size, orientation, and various attributes of a given structure. An average rate of electrical consumption for residential uses is 7,000 kilowatt hours per year per household and 16,750 kilowatt hours per thousand square feet of commercial floor space. Commercial floor space includes offices, retail uses, warehouses, and schools. These values have been increasing steadily over the last 20 years. Energy consumption from residential uses has increased due to factors such as construction and occupation of larger homes, prices of electricity and natural gas, and increased personal income allowing residents to purchase more electronic appliances. Commercial energy consumption is linked to factors such as vacancy rates, population, and sales.

The modeler will look up the estimated energy consumption for the project's proposed land uses under year of project buildout, or use the values given in the previous paragraph for a general estimate. The CCAR Protocol contains emission factors for CO_2, CH_4, and nitrous oxide. The "CALI" region grid serves most of the State of California. If a user has information about a specific utility provider's contribution from renewable sources, the protocol contains methodology to reflect that, rather than relying on the statewide average grid. The incremental increase in energy production associated with project operation should be accounted for in the project's total GHG emissions for inclusion in the environmental document.

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The incremental increase in energy production associated with project operation should be accounted for in the project's total GHG emissions, but it should be noted that these emissions would be closely controlled by stationary-source control-based regulations and additional regulations are expected under AB 32. However, in the interest of disclosing project-generated GHG emissions and mitigating to the extent feasible, the indirect emissions from off-site electricity generation can be easily calculated for inclusion in the environmental document.

Example Project Estimates for GHG Emissions

Residential Project

Project Attributes:

- 68 detached dwelling units
- 15.9 acres
- 179 residents
- 0 jobs
- Located in unincorporated Placer County (PCAPCD jurisdiction)
- Analysis year 2009

As shown in Table 6, the project's direct GHG emissions per service population (SP) would be approximately 8 metric tons CO_2e/SP/year.

Table 6: Residential Project Example GHG Emissions Estimates

URBEMIS Output (Project Specific)	Metric Tons/Year CO_2e	Demographic Data	
Area-source emissions	251	Residents	179
Mobile-source emissions	1,044	Jobs	0
Indirect emissions (from CCAR Protocol)	174		
Total operational emissions	**1,469**	Service population	179
Operational emissions/SP	**8.2**		

Notes:
CO_2e = carbon dioxide equivalent; CCAR = California Climate Action Registry; SP = service population(see definition of service population below in discussion of Normalization/Service Population Metric).

Sources: EDAW 2007, ARB 2007b, CCAR 2007, CEC 2000

Commercial Project

Project Attributes:

- Free Standing Discount Superstore: 241 thousand square feet (ksf)
- 0 residents

- 400 jobs
- Located in the San Joaquin Valley Air Pollution Control District's (SJVAPCD) jurisdiction
- Analysis year 2009

Table 7: Commercial Project Example GHG Emissions Estimates

URBEMIS Output (Project Specific)	Metric Tons/Year CO_2e	Demographic Data	
Area-source emissions	464	Residents	0
Mobile-source emissions	13,889	Jobs	400
Indirect emissions (from CCAR Protocol)	1,477		
Total operational emissions	**15,830**	Service population	400
Operational emissions/SP	**39.6**		

Notes:
CO_2e = carbon dioxide equivalent; CCAR = California Climate Action Registry; SP = service population (see definition of service population below in discussion of Normalization/Service Population Metric).

Sources: EDAW 2007, ARB 2007b, CCAR 2007, CEC 2000

Specific Plan

If used traditionally with default trip rates and lengths, rather than project-specific (Traffic Analysis Zone-specific) trip rates and lengths, URBEMIS does not work well for specific plan or general plan-sized projects with multiple land use types proposed. However, in all instances, projects of these sizes (several hundred or thousand acres) would be accompanied by a traffic study. Thus, for large planning-level projects, URBEMIS can be used as a calculation tool to easily obtain project-specific mobile-source emissions. The user should follow the steps discussed above; wherein he/she overwrites the default ITE trip rates for each land use type with that needed to make total VMT match that contained in the traffic study. The URBEMIS interface is a simple calculator to combine the traffic study and EMFAC emissions factors for mobile-source CO_2.

Project Attributes:

- 985 acres
- Total dwelling units: 5,634
- Commercial/Mixed Use: 429 ksf
- Educational: 2,565 ksf
- 14,648 residents
- 3,743 jobs
- Located in Sacramento County (SMAQMD jurisdiction)
- Analysis year 2009

Table 8: Specific Plan Example GHG Emissions Estimates

URBEMIS Output (Project Specific)	Metric Tons/Year CO_2e	Demographic Data	
Area-source emissions	23,273	Residents	14,648
Mobile-source emissions	73,691	Jobs	3,743
Indirect emissions (from CCAR Protocol)	32,744		
Total operational emissions	**129,708**	Service population	18,391
Operational emissions/SP	**7.1**		

Notes:
CO_2e = carbon dioxide equivalent; CCAR = California Climate Action Registry; SP = service population (see definition of service population below in discussion of Normalization/Service Population Metric).

Sources: EDAW 2007, ARB 2007b, CCAR 2007, CEC 2000

The specific plan example, when compared to the residential or commercial examples, illustrates the benefit of a mixed-use development when you look at CO_2e emissions per resident or job (service population) metric (see definition of service population below in discussion of Normalization/Service Population Metric). Though this particular specific plan is not an example of a true jobs/housing balance, the trend is clear: accommodating residents and jobs in a project is more efficient than residents or jobs alone.

Stationary- and Area-Source Project Types

GHG emissions from stationary or area sources that require a permit to operate from the air district also contain both direct and indirect sources of emissions. Examples of these types of sources would be fossil fuel power plants, cement plants, landfills, wastewater treatment plants, gas stations, dry cleaners and industrial boilers. All air districts have established procedures and methodologies for projects subject to air district permits to calculate their regulated pollutants. It is anticipated that these same procedures and methodologies could be extended to estimate a permitted facility's GHG calculations. For stationary and area sources that do not require air district permits, the same methodologies used for permitted sources could be used in addition to URBEMIS and CCAR GRP to calculate GHG emissions from these facilities.

Wastewater Treatment Facilities

Direct GHG emissions associated with a proposed waste water treatment plant can be calculated using AP-42 emission factors from Chapter 4.3.5 Evaporative Loss Sources: Waste Water-Greenhouse Gases and the CCAR methodology. In general, most wastewater operations recover CH_4 for energy, or use a flare to convert the CH_4 to CO_2. There are many types of wastewater treatment processes and the potential for GHG emissions from different types of plants varies substantially. There is not one standard set of emission factors that could be used to quantify GHG emissions for a state

"average" treatment plant. Thus, research will need to be conducted on a case-by-case basis to determine the "Fraction Anaerobically Digested" which is a function of the type of treatment process. Indirect emissions from these facilities can be calculated using the CCAR energy use protocols and URBEMIS model for transportation emissions.

Solid Waste Disposal Facilities

Air districts will have emission estimate methodologies established for methane emissions at permitted landfills. In addition, EPA's Landfill Gas Emissions Model (LandGem) and the CCAR methodology could also be used to quantify GHG emissions from landfill off gassing; however, this model requires substantial detail be input. The model uses a decomposition rate equation, where the rate of decay is dependent on the quantity of waste in place and the rate of change over time. This modeling tool is free to the public, but substantial project detail about the operation of the landfill is needed to run the model. Indirect emissions from these facilities can be calculated using the CCAR energy use protocols and URBEMIS model for transportation emissions.

Construction Emissions

GHG emissions would occur during project construction, over a finite time. In addition, a project could result in the loss of GHG sequestration opportunity due primarily to the vegetation removed for construction. URBEMIS should be used to quantify the mass of CO_2 that would occur during the construction of a project for land development projects. Some construction projects would occur over an extended period (up to 20–30 years on a planning horizon for general plan buildout, or 5–10 years to construct a dam, for example). OFFROAD emission factors are contained in URBEMIS for CO_2 emissions from construction equipment. For other types of construction projects, such as roadway construction projects or levee improvement projects, SMAQMD's spreadsheet modeling tool, the Road Construction Emissions Model (RoadMod), should be used. This tool is currently being updated to include CO_2 emissions factors from OFFROAD.

The full life-cycle of GHG emissions from construction activities is not accounted for in the modeling tools available, and the information needed to characterize GHG emissions from manufacture, transport, and end-of-life of construction materials would be speculative at the CEQA analysis level. The emissions disclosed will be from construction equipment and worker commutes during the duration of construction activities. Thus, the mass emissions in units of metric tons CO_2e/year should be reported in the environmental document as new emissions.

General Plans

In the short-term, URBEMIS can be used as a calculation tool to model GHG emissions from proposed general plans, but only if data from the traffic study is incorporated into model input. The same methodology applied above in the specific plan example applies to general plans. The CCAR GRP can be used to approximate indirect emissions from

increased energy consumption associated with the proposed plan area. The same models and methodologies discussed previously for wastewater, water supply and solid waste would be used to estimate indirect emissions resulting from buildout of the general plan.

In the longer-term, more complex modeling tools are needed, which would integrate GHG emission sources from land use interaction, such as I-PLACE^{3}S or CTG Energetics' Sustainable Communities Custom Model attempt to do. These models are not currently available to the public and only have applicability in certain areas of the state. It is important that a tool with statewide applicability be used to allow for consistency in project treatment, consideration, and approval under CEQA.

Scenarios

At the general plan level, the baseline used for analyzing most environmental impacts of a general plan update is typically no different from the baseline for other projects. The baseline for most impacts represents the existing conditions, normally on the date the Notice of Preparation is released. Several comparative scenarios could be relevant, depending on the exact methodological approach and significance criteria used for GHG assessment:

- Existing Conditions. The GHG emissions associated with the existing, on-the-ground conditions within the planning area.

- 1990 conditions. The GHG emissions associated with the general plan area in 1990. This is relevant due to the state's AB 32 GHG emission reduction goals' benchmark year of 1990. The GHG-efficiency of 1990 development patterns could be compared to that of the general plan buildout.

- Buildout of the Existing General Plan. The GHG emissions associated with buildout of the existing general plan (without the subject update). This is the no project alternative for the purposes of general plan CEQA analysis.

- Buildout of the Updated General Plan. The GHG emissions associated with buildout of the general plan, as proposed as a part of the subject update. This would include analysis of any changes included as a part of the general plan update for the existing developed portions of the planning area. Many communities include redevelopment and revitalization strategies as a part of the general plan update. The general plan EIR can include assumptions regarding what level and type of land use change could be facilitated by infill and redevelopment. Many jurisdictions wish to provide future projects consistent with these land use change assumptions with some environmental review streamlining. In addition, many communities include transit expansions, pedestrian/bicycle pathway improvements, multi-modal facility construction, travel demand policies, energy efficiency policies, or other measures that could apply to the existing developed area, just as they may apply to any new growth

areas. Such policies could affect the overall GHG emissions of the built out general plan area.

- Increment between Buildout of Updated General Plan and Existing General Plan Area. There are many important considerations associated with the characterization of the impact of the General Plan update. The actual GHG emissions impact could be described as the difference between buildout under the existing and proposed land use plan (No-Build Alternative). However, the courts have held that an EIR should also analyze the difference between the proposed General Plan and the existing environment (*Environmental Planning & Information Council v. County of El Dorado* (EPIC) (1982) 131 Cal.App.3d 350). At the General Plan level, over the course of buildout, some new land uses are introduced, which could potentially add operational GHG emissions and potentially remove existing sequestration potential. Some properties become vacant and are not redeveloped. Other properties become vacant and then are redeveloped. Communities cannot pretend to understand fully in advance each component of land use change. The programmatic document is the preferred method of environmental analysis. Through this programmatic framework, communities develop buildout assumptions as a part of the General Plan that are normally used as a basis of environmental analysis. For certain aspects of the impact analysis, it becomes important not just to understand how much "new stuff" could be accommodated under the updated General Plan, but also the altered interactions between both "new" and "existing" land uses within the planning area. As addressed elsewhere, there are tools available for use in understanding land use/transportation interactions at the General Plan level. Without the GHG targets established by AB 32, a simple mass comparison of existing conditions to General Plan buildout might be appropriate.

However, within the current legal context, the GHG efficiency of the updated General Plan becomes the focus of analysis. Some options in this regard include:

- Estimate the GHG emissions associated with all the land uses included within the planning area upon buildout of the General Plan using no project specific information (regional, countywide, or statewide defaults). Estimate GHG emissions using project specific information from the transportation engineer, transportation demand policies, community design elements, energy efficiency requirements, wastewater treatment and other public infrastructure design changes, and other components. Compare these two calculations. Is the second calculation reduced by the percent needed to meet AB 32 goals compared to the first calculation?

- Estimate the GHG emissions associated with the 1990 planning area and the per-capita or per-service population GHG associated with the 1990 planning area. (Many communities are establishing GHG inventories using different tools). Estimate the GHG emissions associated with buildout of the proposed General Plan update and the resulting per-capita or per-service population GHG

emissions. Compare the two calculations. Is the General Plan buildout per-capita or per-service population level greater than the 1990 estimate?

Example General Plan Update: Proposed new growth area

Project Attributes:

- 10,050 single family dwelling units
- 652 multi-family dwelling units
- 136 acres parks
- 2,047 ksf commercial (regional shopping center)
- 2,113 ksf office
- 383 acres industrial park
- 31,293 new residents
- 4,945 new jobs
- Located in Stanislaus County (SJVAPCD jurisdiction)
- Analysis year 2025

Table 9: General Plan Example GHG Emissions Estimates

URBEMIS Output (Project Specific)	Metric CO_2e Tons/Year	Demographic Data	
Construction emissions	12,083*	Residents	31,293
Area-source emissions	45,708		
Mobile-source emissions	263,954	Jobs	4,945
Indirect emissions (from CCAR Protocol)	78,385		
Total operational emissions	**388,046**	Service population	36,238
Operational emissions/SP	**10.7**		

* Approximately 241,656 metric tons CO_2e total at general plan buildout (assumes 20-year buildout period). Construction emissions were not included in total operational emissions.
Notes:
CO_2e = carbon dioxide equivalent; CCAR = California Climate Action Registry; SP = service population (see definition of service population below in discussion of Normalization/Service Population Metric).
Sources: EDAW 2007, ARB 2007b, CCAR 2007, CEC 2000

Due to the programmatic level of analysis that often occurs at the general plan level, and potential for many relevant GHG emission quantities, it could be preferable to use a qualitative approach. Such an analysis could address the presence of GHG-reducing policy language in the general plan.

Three possible tiers of approaches to addressing GHG mitigation strategies, either as general plan policy, general plan EIR mitigation measures, or both, include:

- Forward planning
- Project toolbox
- Defer to GHG reductions plan

The three basic approaches are described below.

1. Bring reduction strategies into the plan itself. The most effective way for local jurisdictions to achieve GHG emissions reductions in the medium- and long-term is through land use and transportation policies that are built directly into the community planning document. This involves creating land use diagrams and circulation diagrams, along with corresponding descriptive standards, that enable and encourage alternatives to travel and goods movement via cars and trucks. The land use and circulation diagrams provide a general framework for a community where people can conduct their everyday business without necessarily using their cars. The overall community layout expressed as a part of the land use and circulation diagrams is accompanied by a policy and regulatory scheme designed to achieve this community layout. Impact fees, public agency spending, regulations, administrative procedures, incentives, and other techniques are designed to facilitate land use change consistent with the communities' overall vision, as expressed in policy and in the land use diagram. There are many widely used design principles that can be depicted in land use and circulation diagrams and implemented according to narrative objectives, standards, and policies:

- Connectivity. A finely-connected transportation network shortens trip lengths and creates the framework for a community where homes and destinations can be placed close in proximity and along direct routes. A hierarchical or circuitous transportation network can increase trip lengths and create obstacles for walking, bicycling, and transit access. This policy language would likely be found in the Circulation Element.

- Compactness. Compact development, by its nature, can increase the efficiency of infrastructure provision and enable travel modes other than the car. If communities can place the same level of activity in a smaller space, GHG emissions would be reduced concurrently with VMT and avoid unnecessary conversion of open space. This policy language would likely be found in the Land Use Element.

- Diversity. Multiple land use types mixed in proximity around central "nodes" of higher-activity land uses can accommodate travel through means other than a car. The character and overall design of this land use mix is, of course, different from community to community. This policy language would likely be found in the Land Use Element.

- Facilities. Pedestrian, bicycle, and public transportation improvements, planning, and programming are sometimes an afterthought. To get a more GHG-efficient mode share, safe and convenient bike lanes, pedestrian pathways, transit shelters, and other facilities are required to be planned along with the vehicular travel network. This policy language would likely be found in the Circulation Element.

- Redevelopment. One way to avoid GHG emissions is to facilitate more efficient and economic use of the lands in already-developed portions of a community. Reinvestment in existing neighborhoods and retrofit of existing buildings is appreciably more GHG efficient than greenfield development, and can even result in a net reduction in GHG emissions. This policy language would likely be found in the Conservation or Land Use Element.

- Housing and Employment. Most communities assess current and future economic prospects along with long-range land use planning. Part of the objective for many communities is to encourage the coalescence of a labor force with locally available and appropriate job opportunities. This concept is best known as "jobs-housing balance." This policy language would likely be found in the Housing Element.

- Planning Level Versus Project Level. For transportation-related GHG emissions that local governments can mitigate through land use entitlement authority, the overall community land use strategy and the overall transportation network are the most fruitful areas of focus. The reduction capacity of project-specific mitigation measures is greatly limited if supportive land use and transportation policies are lacking at the community planning level. The regional economic context, of course, provides an important backdrop for land use and transportation policy to address GHG emissions. Within this context, the general plan is the readily available tool for local governments to establish such land use and transportation strategies. This policy language would likely be found in the Land Use and Circulation Elements.

- Shipping Mode Shift. Locate shipping-intensive land uses in areas with rail access. Some modes of shipping are more GHG-intensive than others. Rail, for example, requires only about 15 to 25 percent of the energy used by trucks to ship freight equivalent distances and involves reduced transportation-related GHG emissions. Cities and counties have little direct control over the method of shipment that any business may choose. Nevertheless, as a part of the general planning process, cities and counties can address constraints on the use of rail for transporting goods. This policy language would likely be found in the Land Use and Circulation Elements.

2. Provide a "toolbox" of strategies after the project site has been selected. In addition to the examples of design principles that are built into the community planning process, communities can offer project applicants a range of tools to reduce GHG emissions. Mitigation strategies are elaborated in detail in Chapter 9.

3. Defer to General Plan implementation measure. Develop and implement a GHG Emissions Reduction Plan. Another option for local governments would be development of an implementation measure as a part of the general plan that outlines an enforceable GHG reduction program. Perhaps the most well known example of this approach is the result of California's Attorney General settlement of the lawsuit brought against San

Bernardino County. The County has agreed to create a 1990 GHG inventory and develop measures to reduce such emissions according to the state's overall goals. Other communities have pursued similar programs (i.e., the City of San Diego, Marin County). Along with the inventories, targets, and example reduction measures, these programs would include quantitative standards for new development; targets for reductions from retrofitting existing development; targets for government operations; fee and spending program for GHG reduction programs; monitoring and reporting; and other elements. The local government itself should serve as a model for GHG reduction plan implementation, by inventorying emissions from government operations and achieving emission reductions in accordance with the plan's standards. An optional climate change element could be added to contain goals, policies, and this implementation strategy, or this could belong in an optional air quality element.

Other Project Types

Air District Rules, Regulations and Air Quality Plans

Air district air quality plans, rules and regulations could have the potential to increase or decrease GHG emissions within their respective jurisdiction. In general, air district air quality plans, rules and regulations act to reduce ozone precursors, criteria air pollutant and toxic air contaminant emissions, which would almost always act to reduce GHG emissions simultaneously. However, this may not always be the case.

Air Quality Plans

Air districts will have to include GHG emissions analysis as part of their criteria air pollutant and toxic air contaminant air pollutant analysis when considering the adoption of air quality plans and their subsequent rules and regulations needed to implement the plans. Multiple models and methodologies will be needed to accomplish this analysis.

Regional Transportation Plans

Regional transportation plans would also need to be evaluated on a case-by-case basis to determine if a net increase or decrease in GHG emissions would occur. Complex interactions between the roadway network, operating conditions, alternative transportation availability (such as public transit, bicycle pathways, and pedestrian infrastructure), and many other independent parameters specific to a region should be considered. Regional transportation models exist to estimate vehicular emissions associated with regional transportation plans, which includes the ability to estimate GHG emissions.

Normalization/Service Population Metric

The above methodology would provide an estimate of the mass GHG emissions generated by a proposed project, which could be compared to a mass emission threshold. EDAW developed a methodology that would measure a project's overall GHG efficiency

in order to determine if a project is more efficient than the existing statewide average for per capita GHG emissions. The following steps could be employed to estimate the GHG-"efficiency," which may be more directly correlated to the project's ability to help obtain objectives outlined in AB 32, although it relies on establishment of an efficiency-based significance threshold. The subcommittee believes this methodology may eventually be appropriate to evaluate the long-term GHG emissions from a project in the context of meeting AB 32 goals. However, this methodology will need substantially more work and is not considered viable for the interim guidance presented in this white paper.

- Divide the total operational GHG emissions by the Service Population (SP) supported by the project (where SP is defined as the sum of the number of residents and the number of jobs supported by the project). This value should be compared to that of the projected statewide GHG emissions inventory from the applicable end-use sectors (electricity generation, residential, commercial/institutional, and mobile-source) in 1990 divided by the projected statewide SP for the year 2020 (i.e., AB 32 requirements), to determine if the project would conflict with legislative goals.

    - If the project's operational GHG/SP falls below AB 32 requirements, then the project's GHG emissions are less than cumulatively considerable.

    - If the project's operational GHG/SP exceed AB 32 requirements (a substantial contribution), then the project's GHG emissions would conflict with legislative requirements, and the impact would be cumulatively considerable and mitigation would be required where feasible.

- New stationary and area sources/facilities: calculate GHG emissions using the CCAR GRP. All GHG emissions associated with new stationary or area sources should be treated as a net increase in emissions, and if deemed significant, should be mitigated where feasible.

- Road or levee construction projects or other construction-only projects: calculate GHG emissions using the RoadMod, which will be updated to contain GHG emission factors from EMFAC and OFFROAD. All construction-generated GHG emissions should be treated as a net increase, and if deemed significant, should be mitigated to the extent feasible.

- Air District rulemaking or air quality management plan-type projects should be evaluated on a case-by-case basis for secondary impacts of increased GHG emissions generation. In most cases, the types of projects that act to reduce regional air pollution simultaneously act to reduce GHG emissions, and would be beneficial, but should be evaluated for secondary effects from GHG emissions.

- Regional transportation plans should also be evaluated on a case-by-case basis for potential to either reduce or increase GHG emissions from the transportation sector. EMFAC can be utilized to determine the net change in GHG emissions

associated with projected vehicle VMT and from operating speed changes associated with additional or alleviated congestion.

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 planning efforts 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.

Thus, if a statewide context for GHG emissions were pursued, any net increase in GHG emissions within state boundaries would be considered "new" emissions. For example, a land development project, such as a specific plan, does not necessarily create "new" emitters of GHG, but would theoretically accommodate a greater number of residents in the state. Some of the residents that move to the project could already be California residents, while some may be from out of state (or would 'take the place' of in-state residents who 'vacate' their current residences to move to the new project). Some may also be associated with new births over deaths (net population growth) in the state. The out-of-state residents would be contributing new emissions in a statewide context, but would not necessarily be generating new emissions in a global context. Given the California context established by AB 32, the project would need to accommodate an increase in population in a manner that would not inhibit the state's ability to achieve the goals of lower total mass of emissions.

The average net influx of new residents to California is approximately 1.4 percent per year (this value represents the net increase in population, including the net contribution from births and deaths). With population growth, California also anticipates economic growth. Average statewide employment has grown by approximately 1.1 percent over the last 15 years. The average percentage of population employed over the last 15 years is 46 percent. Population is expected to continue growing at a projected rate of approximately 1.5 percent per year through 2050. Long-range employment projection data is not available from the California Department of Finance (DOF) and can be extrapolated in different ways (e.g., linear extrapolation by percentage rate of change, percentage of population employed, mathematical series expansion, more complex extrapolation based on further research of demographic projections such as age distribution). Further study would be needed to refine accurate employment projections from the present to 2050. For developing this framework, employment is assumed to have a constant proportionate relationship with the state's population. The projected number of jobs is assumed to be roughly 46 percent of the projected population.

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In light of the statewide context established by California law, consistency is most important for evaluating GHG emissions from projects. Thus, URBEMIS and the CCAR GRP are the recommended tools for quantification of GHG emissions from most project types in the short term. Over the long term, more sophisticated models that integrate the relationship between GHG emissions and land use, transportation, energy, water, waste, and other resources, and have similar application statewide would have better application to the problem, but may not currently be as accessible or as easily operable. I-PLACE^{3}S and CTG Energetics' Sustainable Communities Model (SCM) are two examples of such models that contain emission factors for GHGs, which could be refined to have applicability statewide and made available to CEQA practitioners. Other models are likely to be developed, given the importance of this issue.

Short-Term and Long-Term Methodologies

The following tools can be used to quantify a project's GHG emissions until tools that are more comprehensive become available statewide:

1. Land development projects: URBEMIS 2007 v. 9.2 and the CCAR GRP v. 2.2 (short-term); further development of I-PLACE^{3}S or CTG's Sustainable Communities Model (long-term).
2. New stationary and area sources/facilities: AP-42 Chapter 4.3, LandGem v. 3.02, and/or CCAR GRP v. 2.2.
3. Road or levee construction projects or other construction-only projects: RoadMod/OFFROAD 2007.

Ideally, I-PLACE^{3}S or CTG's Sustainable Communities Model would be expanded to apply to all regions of the state. These types of models use an integrated approach, which is the best approach for reasonably approximating the emissions that result from interaction between land uses, but neither is available to the public and would create consistency problems in reporting emissions from projects across the state if these were used today. However, a similar model with statewide applicability will likely be developed due to the importance of the issue.Table 10 Summary of Modeling Tools for Estimating GHG Emissions and Project Applicability

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Table 10: Summary of Modeling Tools for GHG Emissions

Method/Tool Description	Availability	Applicability	Scope	Ease of Use	Data Input (Requirements and Guidance)	Data Output	Recommendation Comments	Advantages/ Disadvantages
URBEMIS 2007	*Public domain -Download (www.urbemis.com) free of charge*	*Land development and construction projects (construction, mobile- and area-source emissions)*	*Local*	*Fairly Easy*	*Land use information, construction and operational data and assumptions (e.g., jurisdiction, acres of land use type, year of operation, etc.)*	*Mobile-source Construction & Operational CO_2 (lb/day or tons/year)*	*-Recommended for land use development and construction projects -Also recommended for net change in land use (zoning changes)*	*-Does not quantify indirect emissions from energy consumption or other GHGs (except methane from mobile-sources) -Free, available to public, and applicable statewide -Widely used for assessment of other air quality impacts*
California Climate Action Registry General Reporting Protocol v. 2.2	*Public guidance document*	*Indirect emissions from land development projects, stationary- and area-source facilities regulated under AB 32*	*State*	*Easy*	*Energy consumption*	*CO_2e (Metric tons/year)*	*-Recommended for indirect emissions from energy consumption for land use development projects, and for new stationary- or area- sources to be regulated*	*-Contains emission factors for CH_4 and N_2O in addition to CO_2 -Does not contain emission factors broken down by utility provider (statewide average grid only)*
Clean Air and Climate Projection (CACP) Software	*Public agencies (members of ICLEI, NACAA, or similar)*	*Local governments used for emissions inventories*	*Local*	*N/A*	*Energy usage, waste generation/disposal transportation*	*CO_2e (tons/year)*	*-Recommended for inventories of local government entities activities (must be a member of affiliated agency or group)*	*-Not available to public*
CTG Sustainable Communities Model	*Custom model*	*Land development*	*Regional, scalable*	*N/A*	*Land use information, operational (mobile, energy, economic, infrastructure) assumptions*	*CO_2e (tons/year)*	*-An integrated and comprehensive modeling tool, but cannot obtain*	*-Not available to public*

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Method/Tool Description	Availability	Applicability	Scope	Ease of Use	Data Input (Requirements and Guidance)	Data Output	Recommendation Comments	Advantages/ Disadvantages
I-PLACE^{3}S	*Access fee through local COG* *Only available for eight California counties*	*Land use change*	*Regional, scalable*	*Fairly Easy*	*Parcel information*	*CO_2 (lb/day or tons/year)*	*-Recommended for land use development projects and land use changes* *-Especially good for general plans*	*-Not freely available to public* *-Not applicable statewide* *-Actually provides insight into land use interaction* *-Can include very specific project attributes* *-Trip rates are from behavioral survey data, instead of ITE*
EMFAC 2007	*Public domain*	*On-road mobile-sources*	*Statewide, regional*	*Fairly Easy*	*Vehicle fleet information*	*CO_2 (grams/mile)*	*-Not recommended for most projects (URBEMIS preferred)* *-Could be used for certain Air District Rulemaking applications*	*-Can compare emissions based on speed-distribution* *-Emission factors contained in URBEMIS* *-Not a stand-alone model*
OFFROAD 2007	*Public domain*	*Off-road mobile sources (construction equipment)*	*Statewide, regional*	*Fairly Easy*	*Construction fleet information*	*CO_2 (lb/day)*	*-Not recommended (URBEMIS preferred)* *-could be used for certain Air District Rulemaking applications (re: construction equipment)*	*-Emission factors contained in URBEMIS*
RoadMod (to be updated to include CO_2)	*Public domain*	*Off-road and on-road mobile sources (construction equipment and material haul trucks)*	*Statewide*	*Easy*	*Construction information*	*CO_2 (lb/day or tons/project)*	*-Recommended for construction-only projects (linear in nature; i.e., levees, roads, pipelines)*	*-To be updated to support emissions factors from OFFROAD 2007*

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Method/Tool Description	Availability	Applicability	Scope	Ease of Use	Data Input (Requirements and Guidance)	Data Output	Recommendation Comments	Advantages/ Disadvantages
DTIM	*Public domain*	*On-road mobile-sources*	*Statewide, regional*	*Difficult (consists of a series of three programs and requires input files from traffic and emissions modeling)*	*-EMFAC files -Traffic model output files (e.g., link, interzonal, and trip end data) -User options file -Optional files*	*CO_2 (tons/year)*	*-Not recommended*	*-Not updated to support EMFAC 2007 emission factors -Input files include output files from regional transportation models which more accurately reflect VMT*
Southeast Climate Change Partnership Spreadsheet Model (UK)	*Public domain http://www.climatesoutheast.org.uk/*	*UK Local government/ agencies/ organizations used for emissions inventories*	*Local, county, regional*	*Fairly easy*	*Energy usage, waste generation/disposal , transportation*	*CO_2 (tonnes/year)*	*-Not recommended for use in California, but could be a valuable source for building an applicable spreadsheet model*	*-Applicability for UK, but could be updated with CA-specific emission factors*
EPA AP-42; Evaporation Loss Sources Chapter 4.3.5	*Public reference document*	*GHG emissions from waste water treatment facilities*	*Facility level*	*Easy equation; substantial research needed to use*	*Biochemical oxygen demand (BOD) loading, Fraction anaerobically digested*	*CH4 (lb/year)*	*-Recommended for Publicly owned treatment works (POTW) projects*	*-Substantial research needed to determine the "fraction anaerobically digested" parameter, which is dependent on the type of treatment plant/process*
LandGem v. 3.02	*Public domain http://www.epa.gov/ttn/catc/dir1/landgem-v302.xls*	*GHG emissions from anaerobic decomposition associated with landfills*	*Facility Level*	*Moderate*	*Solid waste processing, year of analysis, lifetime of waste in place*	*CO_2, CH_4 (Mega grams/year)*	*-Recommended for landfill emissions*	*-Emission rates change dependent on years of decomposition, waste in place rates of change. -Complex decomposition rate equation, but good first approximation*

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Method/Tool Description	Availability	Applicability	Scope	Ease of Use	Data Input (Requirements and Guidance)	Data Output	Recommendation Comments	Advantages/ Disadvantages
CARROT	*Registry members*	*Stationary source emissions, vehicle fleet mobile sources*	*Facility level*	*Moderate*	*Facility-specific information*	*All GHGs*	*-Recommended for reporting facilities under AB 32 and for indirect emissions from energy consumption (CCAR Protocol)*	*-Estimates all GHGs and normalizes to CO_2e -Not publicly available*

Notes:
GHG = greenhouse gas; AB = assembly bill; CO_2e = carbon dioxide equivalent; CH_4 = methane; N_2O = nitrous oxide; COG = council of governments ; ITE = Institute of Transportation Engineers; CCAR = California Climate Action Registry
Source: Data compiled by EDAW and the California Air Pollution Control Officers Association in 2007

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Introduction

This chapter (and Appendix B) identifies existing and potential mitigation measures that could be applied to projects during the CEQA process to reduce a project's GHG emissions that would be identified using the analytical methodologies included in this white paper. The Subcommittee retained the services of EDAW to assist with this effort. EDAW performed a global search of mitigation measures currently in practice and under study that would reduce GHG emissions.

Table 16 (Appendix B) provides a brief description of each measure along with an assessment of their feasibility (from a standpoint of economical, technological, and logistical feasibility, and emission reduction effectiveness), and identifies their potential for secondary impacts to air quality. During the global search performed, EDAW also took note of GHG reduction strategies being implemented as rules and regulation (e.g., early action items under AB 32), which are summarized in Table 18 (Appendix C). It is important to note that though compliance with such would be required by regulation for some sources, such strategies may be applicable to other project and source types.

The recurring theme that echoes throughout a majority of these measures is the shift toward New Urbanism, and research has consistently shown that implementation of Neotraditional Development techniques reduces VMT and associated emissions. The material reviewed assessed reductions from transportation-related measures (e.g., bicycle, pedestrian, transit, and parking) as a single comprehensive approach to land use. This comprehensive approach focuses on development design criteria conducive to enhancing alternate modes of transportation, including transit, walking, and bicycling. Transportation Demand Management (TDM) programs are viewed as a mechanism to implement specific measures. TDM responsibilities may include offering incentives to potential users of alternative modes of transportation and monitoring and reporting mode split changes.

The comprehensive approach makes it more difficult to assess reductions attributable to each measure. Nevertheless, there is a strong interrelationship between many of the measures, which justifies a combined approach. Consider the relationship between bike parking nonresidential, bike parking residential, endtrip facilities, and proximity to bike path/bike lane measures. In reality, these measures combined act as incentives for one individual to bike to work, while implementation of a single measure without the others reduces effectiveness.

The global nature of GHG emissions is an important feature that enables unique mitigation: abatement. When designing a project subject to CEQA, the preferred practice is first to avoid, then to minimize, and finally to compensate for impacts. Where the impact cannot be mitigated on-site, off-site mitigation is often and effectively implemented in several resource areas, either in the form of offsetting the same impact or preserving the resource elsewhere in the region. Frequently, mitigation fee programs or funds are established, where the proponent pays into the program and fees collected

throughout the region or state are used to implement projects that, in turn, proportionately offset the impacts of the projects to the given resource. It may be more cost-effective to reduce as much GHG on-site as feasible (economically and technologically). Then the proponent would pay into a "GHG retrofit fund" to reduce equivalent GHG emissions off-site. In contrast to regional air pollutant offset programs such as the Carl Moyer Program, it matters greatly where reductions of ozone precursors occur, as ozone affects regional air quality. The GHG retrofit fund could be used to provide incentives to upgrade older buildings and make them more energy efficient. This would reduce demand on the energy sector and reduce stationary source emissions associated with utilities. This program has been successfully implemented in the United Kingdom where developments advertise "carbon neutrality." Of course, some GHG emissions occur associated with operation of the development, but the development would offset the remainder of emissions through off-site retrofit. Avoiding emissions that would otherwise continue to occur at existing development would be a unique opportunity for mitigation of GHG emissions. Reduction of GHG emissions also may have important side benefits including reduction of other forms of pollution.

Depending on the significance threshold concept adopted, projects subject to the CEQA process would either qualitatively or quantitatively identify the amount of GHG emissions associated with their project using the analytical methodologies identified in the previous chapter. The analysis would then apply the appropriate number of mitigation measures listed in Appendix B to their project to reduce their GHG emissions below the significance level. Calculating the amount of GHG emission reductions attributable to a given mitigation measure would require additional research. The examples below illustrate how a project would be mitigated using this approach.

Residential Project Example

Project Attributes:

- 68 detached dwelling units
- 15.9 acres
- Located in unincorporated Placer County PCAPCD jurisdiction)
- Assume URBEMIS defaults for a rural project in Placer County, in absence of a traffic study (This is contrary to the recommendations contained under Task 1; a traffic study is necessary to asses project-specific GHG emissions).
- Analysis year 2009

Table 11: Residential Project Example GHG Emissions Estimates with Mitigation

URBEMIS Output (Unmitigated)	Metric Tons/Year CO_2e	URBEMIS Output (Mitigated)	Metric Tons/Year CO_2e	Percent Reduction
Area-source emissions	252	Area-source emissions	215	14.6
Mobile-source emissions	1,047	Mobile-source emissions	916	12.5
Total direct operational emissions (area + mobile)	1,299	Total operational emissions (area + mobile)	1,131	12.9

Notes:
CO_2e = carbon dioxide equivalent

Sources: Data compiled by EDAW in 2007

Using URBEMIS 2007 and assuming the project would implement the mitigation measures listed below, yearly project-generated emissions of CO_2e would be reduced by approximately 13 percent. Implementation of the following mitigation measures is assumed:

- 100 housing units within one-half-mile radius of project's center, including this project's 68 residential units;
- provision of 80 jobs in the study area;
- retail uses present with one-half-mile radius of project's center;
- 10 intersections per square mile;
- 100% of streets with sidewalks on one side;
- 50% of streets with sidewalks on both sides;
- 30% of collectors and arterials with bike lanes, or where suitable, direct parallel routes exist;
- 15% of housing units deed restricted below market rate;
- 20% energy efficiency increase beyond Title 24; and
- 100% of landscape maintenance equipment electrically powered and electrical outlets in front and rear of units.

Example Project Methodology and Mitigation

Table 12 –Residential Projects Example Methodology and Mitigation

Source	Methodology	Mitigation
Direct Emissions		
Construction	URBEMIS (OFFROAD emission factors)	MM C-1→MM C-4
Mobile Sources	URBEMIS (EMFAC emission factors)	MM T-3→MM T-8, MM T-10→ MM T-14, MM T-16, MM T-19→ MM T-21 MM D-2→MM D-8, MM D-10→ MM D-15, MM D-17 MM S-1→MM S-2 MM M-1→MM M-2
Area Sources	URBEMIS	MM D-13→MM D-15, MM D-17 MM E-1→MM E-8, MM E-10, MM E-12→MM E-23 MM S-1→MM S-2 MM M-1→MM M-2
Indirect Emissions		
Energy Consumption	CCAR GRP & CEC	

Table 13 –Commercial Projects Example Methodology and Mitigation

Source	Methodology	Mitigation
Direct Emissions		
Construction	URBEMIS (OFFROAD emission factors)	MM C-1→MM C-4
Mobile Sources	URBEMIS (EMFAC emission factors)	MM T-1→MM T-2, MM T-4→ MM T-15, MM T-17→MM T-21 MM D-1→MM D-3, MM D-5→ MM D-6, MM D-10, MM D-12, MM D-14→MM D-17 MM E-24 MM S-1→MM S-2 MM M-1→MM M-2
Area Sources	URBEMIS	MM D-14→MM D-17 MM E-1, MM E-4→MM E-13, MM E-16→MM E-24 MM S-1→MM S-2 MM M-1→MM M-2
Indirect Emissions		
Energy Consumption	CCAR GRP & CEC	

Table 14 –Specific Plans Example Methodology and Mitigation

Source	Methodology	Mitigation
Direct Emissions		
Construction	URBEMIS (OFFROAD emission factors)	MM C-1→MM C-4
Mobile Sources	Short-term: URBEMIS (EMFAC emission factors). Long-term: I-PLACE^{3}S/CTG SCM	MM T-1→MM T-21 MM D-1→MM D-12, MM D-18→ MM D-19 MM E-24 MM S-1→MM S-2 MM M-1→MM M-2
Area Sources	Short-term: URBEMIS (EMFAC emission factors). Long-term: I-PLACE^{3}S/CTG SCM	MM D-13→MM D-19 MM E-1→MM E-24 MM S-1→MM S-2 MM M-1→MM M-2
Indirect Emissions		
Energy Consumption	Short-term: CCAR GRP & CEC. Long-term: I-PLACE^{3}S/CTG SCM	

General Plans

- Include a general plan policy to reduce emissions within planning area to a level consistent with legislative requirements.
- Implementation strategies include preparation of a GHG reduction plan.
- Projects consistent with a general plan could be responsible for complying with such a policy.

Table 15 –General Plans Example Methodology and Mitigation

Source	Methodology	Mitigation
Direct Emissions		
Construction	URBEMIS (OFFROAD emission factors).	MS G-1 MM G-15
Mobile Sources	Short-term: URBEMIS (EMFAC emission factors). Long-term: I-PLACE^{3}S/CTG SCM	MS G-1 MS G-2→MS C-7, MS G-9, MS G-12, MS-13→MS-14, MS-16→MS-23
Area Sources	Short-term: URBEMIS (EMFAC emission factors). Long-term: I-PLACE^{3}S/CTG SCM	MS G-1 MS G-8→MS C-11, MS G-134, MS G-12, MS-15, MS-17, MS-22
Indirect Emissions		
Energy Consumption	Short-term: CCAR GRP & CEC. Long-term: I-PLACE^{3}S/CTG SCM	

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Other Project Types

Air District Rules and Regulations

Air district rules and regulations could have the potential to increase or decrease GHG emissions within the respective jurisdiction. In general, air district rules and regulations act to decrease criteria air pollutant or toxic air contaminant emissions, which would usually act to reduce GHG emissions simultaneously. However, this may not always be the case and air district rules and regulations could address emissions from a large variety of different source types. Reductions of GHG emissions associated with implementation of applicable mitigation, which could also vary greatly, would need to be evaluated on a case-by-case basis. However, once applicable mitigation measures are identified, percent reductions based on the best available research to date, such as those specified in Table 15, could be applied to determine mitigated emissions.

Air Quality Plans

Similarly to air district rules and regulations, air quality plans could have the potential to increase or decrease GHG emissions because of criteria air pollutant reduction strategies. In general, strategies implemented by air districts to reduce criteria air pollutants also act to reduce GHG emissions. However, this may not always be the case. Reductions of GHG emissions associated with implementation of applicable mitigation would need to be evaluated on a case-by-case basis. The methodology identified above for determining whether the strategies contained within the GHG reduction plan would adhere to the level specified in general plan policy could also be used to determine the reductions associated with CAP strategies.

Regional Transportation Plans

Regional transportation plans and reductions of GHG emissions associated with implementation of applicable mitigation would also need to be evaluated on a case-by-case basis to determine if a net increase or decrease in GHG emissions would occur. Complex interactions between the roadway network, operating conditions, alternative transportation availability (such as public transit, bicycle pathways, and pedestrian infrastructure), and many other independent parameters specific to a region should be considered. EMFAC 2007 can be used with VMT from the RTP to create an inventory of GHG emissions. Reductions associated with implementation of applicable measures contained in Table 16 could be accomplished by accounting for VMT reductions in the traffic model.

Many states, counties, and cities have developed policies and regulations concerning greenhouse gas emissions that seek to require or promote reductions in GHG emissions through standards for vehicle emissions, fuels, electricity production/renewables, building efficiency, and other means. However, we could only identify three public agencies in the United States that are considering formally requiring the analysis of greenhouse gas emissions and climate change for development projects during their associated environmental processes. There may be others, but they were not identified during research conducted during preparation of this paper.

The following is a summary of those three efforts.

Commonwealth of Massachusetts - MEPA Greenhouse Gas Emissions Policy and Protocol

The Massachusetts Executive Office of Energy and Environmental Affairs (EEA) has determined that the phrase "damage to the environment" as used in the Massachusetts Environmental Policy Act (MEPA) includes the emission of greenhouse gases caused by projects subjects to MEPA Review. EEA has published a Greenhouse Gas Emissions Policy (GGEP) to fulfill the statutory obligation to take all feasible measurers to avoid, minimize or mitigate damage to the environment.

The GGEP concerns the following projects only:

- The Commonwealth or a state agency is the proponent;
- The Commonwealth or a state agency is providing financial assistance;
- The project is privately funded, but requires an Air Quality Permit from the department of Environmental Protection;
- The project is privately funded, but will generate:
    - 3,000 or more new vehicle trips per day for office projects;
    - 6,000 or more new vehicle trips per day for mixed use projects that are 25% or more office space; or
    - 10,000 or more new vehicle trips per day for other projects.

As a comparison, the trip generation amounts correspond as follows:

- 3,000 vehicle trips per day = approximately 250,000 square foot office development;
- 6,000 or more new vehicle trips per day for mixed use projects that are 25% or more office space = if 25% office space, then equivalent to approximately 130,000 square feet of office and either 100,000 square feet of retail or 450 single-family residential units or some combination thereof.
- 10,000 or more new vehicle trips per day = approximately 1,000 single family residential units or 250,000 square feet retail.

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The draft policy states it is not intended to create a numerical GHG emission limit or a numerical GHG emissions reduction target, but rather to ensure that project proponents and reviewers have considered the GHG emissions impacts of their projects and taken all feasible means and measure to reduce those impacts.

The draft policy notes that some projects within these categories will have little or no greenhouse gas emission and the policy will not apply to such projects. EEA intends to identify in the scoping certificate whether a project falls within this *de minimis* exception.

The GGEP requires qualifying projects to do the following:

- to quantify their GHG emissions;
- identify measures to minimize or mitigate such emissions;
- quantify the reduction in emissions and energy savings from mitigation.

Emissions inventories are intended to focus on carbon dioxide, but analysis of other GHGs may be required for certain projects. EEA will require analysis of direct GGH emissions and indirect (electricity and transportation) emissions. The GGEP references the protocols prepared by the World Resource Institute as guidance for inventory preparation.

The policy is still in draft form, but the comment period closed on August 10, 2007.

King County, Washington - Executive Order on the Evaluation of Climate Change Impacts through the State Environmental Policy Act (SEPA)

On June 27, 2007, the King County Executive Ron Sims directed all King County Departments, as follows:

> *"...effective September 1, 2007 to require that climate impacts, including, but not limited to those pertaining to greenhouse gases, be appropriately identified and evaluated when such Departments are acting as the lead agency in reviewing the environmental impacts of private or public proposals pursuant to the State Environmental Policy Act".*

The Executive Order does not define what a "climate impact" is. Based on statements of the County Deputy Chief of Staff*

- County agencies will ask project proponents to supply information on transportation, energy usage and other impacts of proposed projects using the County's existing SEPA checklist.

* Marten Law Group: Environmental News, August 1, 2007, "King County (WA) First in Nation to Require Climate Change Impacts to be Considered During Environmental Review of New Projects".

- There is no current plan to require project proponents to take action to mitigate the impacts identifies.
- Development of emissions thresholds and mitigation requirements will be undertaken in connection with the County's upcoming 2008 update of its Comprehensive Plan.

Sacramento Metropolitan Air Quality Management District

The Sacramento Metropolitan Air Quality Management District released an interim guidance on addressing climate change in CEQA documents on September 6, 2007. While very general in nature, the District recommends that CEQA environmental documents include a discussion of anticipated GHG emissions during both the construction and operation phases of the project. This includes assessing the GHG emissions from projects (using readily available models) to determine whether a project may have a significant impact. If so, then the District recommends addressing all of the District's GHG mitigation measures (drawn from comments made by the California Attorney General) – with explanations on how the mitigation will be implemented or providing rationale for why a measure would be considered infeasible. The District provides assistance to agencies in their analysis of GHG emissions and the applicability of specific mitigation measures. The District's guidance can be found at: http://64.143.64.21/climatechange/ClimateChangeCEQAguidance.pdf

Mendocino Air Quality Management District – CEQA Guidelines

The Mendocino AQMD updated its "Guidelines for Use During Preparation of Air Quality Impacts in EIRs or Mitigated Negative Declarations" in May 2007. The guidelines call for preparing estimates of the increased emissions of air contaminations (including GHG) for projects.

The guidelines state that GHG emissions should be presumed to have a significant impact if CO emissions from District-approved modeling exceed either of the following:

- 80% of the level defined as significant for stationary sources in Regulation1, Rule 130 (s2) of the District (which is 550 lbs/day for CO, meaning a threshold of 440 lbs/day for CO for stationary sources); or
- levels established in District Regulation 1 Rule 130 (i2) for indirect sources (which is 690 lbs/day for CO for indirect sources).

If an average passenger vehicle emits 22 grams of CO/mile and 0.8 lb/mile of CO_2, then the 690-lb/day threshold for CO corresponds to approximately 11,400 lb/day CO_2 threshold for passenger vehicle-related emissions. If one assumes that the average passenger vehicle goes 12,500 miles/year (about 35 miles/day), then this is a threshold equivalent to about 420 vehicles. Using an average in California of about 1.77 vehicles/household, this would correspond to about 250 households/dwelling units.

Appendix A

Relevant Citations

Citations from the Public Resources Code (Division 13, §21000 et seq.) as amended through January 1, 2005.

Public Resources Code – Section 21004, MITIGATING OR AVOIDING A SIGNIFICANT EFFECT; POWERS OF PUBLIC AGENCY:

"In mitigating or avoiding a significant effect of a project on the environment, a public agency may exercise only those express or implied powers provided by law other than this division. However, a public agency may use discretionary powers provided by such other law for the purpose of mitigating or avoiding a significant effect on the environment subject to the express or implied constraints or limitations that may be provided by law."

Public Resources Code – Section 21082.2, SIGNIFICANT EFFECT ON ENVIRONMENT; DETERMINATION; ENVIRONMENTAL IMPACT REPORT PREPARATION:

(a) The lead agency shall determine whether a project may have a significant effect on the environment based on substantial evidence in light of the whole record.

(b) The existence of public controversy over the environmental effects of a project shall not require preparation of an environmental impact report if there is no substantial evidence in light of the whole record before the lead agency that the project may have a significant effect on the environment.

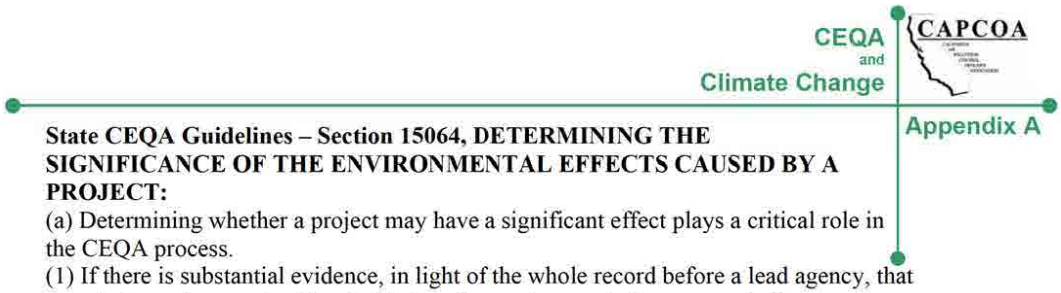
(c) Argument, speculation, unsubstantiated opinion or narrative, evidence which is clearly inaccurate or erroneous, or evidence of social or economic impacts which do not contribute to, or are not caused by, physical impacts on the environment, is not substantial evidence. Substantial evidence shall include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts.

(d) If there is substantial evidence, in light of the whole record before the lead agency, that a project may have a significant effect on the environment, an environmental impact report shall be prepared.

(e) Statements in an environmental impact report and comments with respect to an environmental impact report shall not be deemed determinative of whether the project may have a significant effect on the environment.

Citations from the Guidelines for California Environmental Quality Act, CCR, Title 14, Division 6 (§15000 et seq.) as amended through July 27, 2007.

AG=Attorney General; ARB=California Air Resources Board; ASTM=American Society for Testing and Material; BAAQMD=Bay Area Air Quality Management District; BEES= Building for Environmental and Economic Sustainability; CA=California; Caltrans=California Department of Transportation; CAPs=Criteria Air Pollutants; CCAP=Center for Clean Air Policy; CF=Connectivity Factor; CIWMB=California Integrated Waste Management Board; CO= Carbon Monoxide; CO_2=Carbon Dioxide; DGS=Department of General Services; DOE=U.S. Department of Energy; DPF=Diesel particulate Filter; E85=85% Ethanol; EERE=Energy Efficiency and Renewable Energy; EOE=Encyclopedia of Earth; EPA=U.S. Environmental Protection Agency; ETC=Edmonton Trolley Coalition; EVs/CNG=Electric Vehicles/Compressed Natural Gas; FAR=Floor Area Ratio; GHG=Greenhouse Gas; ITE=Institute of Transportation Engineers; kg/m^2=kilogram per square meter; km=Kilometer; lb=pound; LEED=Leadership in Energy and Environmental Design; M=Million; NA=Not Available; NEV=Neighborhood Electric Vehicle; NIST=National Institute of Standards and Technology; NO_X=Oxides of Nitrogen; NREL=National Renewable Energy Laboratory; N/S=North/South; PG&E=Pacific Gas and Electric; PM=Particulate Matter; SJVAPCD=San Joaquin Valley Air Pollution Control District; SMAQMD=Sacramento Metropolitan Air Quality Management District; SMUD=Sacramento Municipal Utilities District; SO_X=Sulfur Oxides; SRI=Solar Reflectance Index; TACs=Toxic Air Contaminants; TDM=Transportation Demand Management; TMA=Transportation Management Association; THC=Total Hydrocarbon; ULEV=Ultra Low Emission Vehicle; USGBC=U.S. Green Building Council; and VTPI=Victoria Transit Policy.



State CEQA Guidelines – Section 15064, DETERMINING THE SIGNIFICANCE OF THE ENVIRONMENTAL EFFECTS CAUSED BY A PROJECT:

(a) Determining whether a project may have a significant effect plays a critical role in the CEQA process.

(1) If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, the agency shall prepare a draft EIR.

(2) When a final EIR identifies one or more significant effects, the Lead Agency and each Responsible Agency shall make a finding under Section 15091 for each significant effect and may need to make a statement of overriding considerations under Section 15093 for the project.

(b) The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data. An ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting. For example, an activity which may not be significant in an urban area may be significant in a rural area.

(c) In determining whether an effect will be adverse or beneficial, the Lead Agency shall consider the views held by members of the public in all areas affected as expressed in the whole record before the lead agency. Before requiring the preparation of an EIR, the Lead Agency must still determine whether environmental change itself might be substantial.

(d) In evaluating the significance of the environmental effect of a project, the Lead Agency shall consider direct physical changes in the environment which may be caused by the project and reasonably foreseeable indirect physical changes in the environment which may be caused by the project.

(1) A direct physical change in the environment is a physical change in the environment which is caused by and immediately related to the project. Examples of direct physical changes in the environment are the dust, noise, and traffic of heavy equipment that would result from construction of a sewage treatment plant and possible odors from operation of the plant.

(2) An indirect physical change in the environment is a physical change in the environment which is not immediately related to the project, but which is caused indirectly by the project. If a direct physical change in the environment in turn causes another change in the environment, then the other change is an indirect physical change in the environment. For example, the construction of a new sewage treatment plant may facilitate population growth in the service area due to the increase in sewage treatment capacity and may lead to an increase in air pollution.

(3) An indirect physical change is to be considered only if that change is a reasonably foreseeable impact which may be caused by the project. A change which is speculative or unlikely to occur is not reasonably foreseeable.

(e) Economic and social changes resulting from a project shall not be treated as significant effects on the environment. Economic or social changes may be used, however, to determine that a physical change shall be regarded as a significant effect on the environment. Where a physical change is caused by economic or social effects of a

project, the physical change may be regarded as a significant effect in the same manner as any other physical change resulting from the project. Alternatively, economic and social effects of a physical change may be used to determine that the physical change is a significant effect on the environment. If the physical change causes adverse economic or social effects on people, those adverse effects may be used as a factor in determining whether the physical change is significant. For example, if a project would cause overcrowding of a public facility and the overcrowding causes an adverse effect on people, the overcrowding would be regarded as a significant effect.

(f) The decision as to whether a project may have one or more significant effects shall be based on substantial evidence in the record of the lead agency.

(1) If the lead agency determines there is substantial evidence in the record that the project may have a significant effect on the environment, the lead agency shall prepare an EIR (Friends of B Street v. City of Hayward (1980) 106 Cal.App.3d 988). Said another way, if a lead agency is presented with a fair argument that a project may have a significant effect on the environment, the lead agency shall prepare an EIR even though it may also be presented with other substantial evidence that the project will not have a significant effect (No Oil, Inc. v. City of Los Angeles (1974) 13 Cal.3d 68).

(2) If the lead agency determines there is substantial evidence in the record that the project may have a significant effect on the environment but the lead agency determines that revisions in the project plans or proposals made by, or agreed to by, the applicant would avoid the effects or mitigate the effects to a point where clearly no significant effect on the environment would occur and there is no substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment then a mitigated negative declaration shall be prepared.

(3) If the lead agency determines there is no substantial evidence that the project may have a significant effect on the environment, the lead agency shall prepare a negative declaration (Friends of B Street v. City of Hayward (1980) 106 Cal.App. 3d 988).

(4) The existence of public controversy over the environmental effects of a project will not require preparation of an EIR if there is no substantial evidence before the agency that the project may have a significant effect on the environment.

(5) Argument, speculation, unsubstantiated opinion or narrative, or evidence that is clearly inaccurate or erroneous, or evidence that is not credible, shall not constitute substantial evidence. Substantial evidence shall include facts, reasonable assumptions predicated upon facts, and expert opinion support by facts.

(6) Evidence of economic and social impacts that do not contribute to or are not caused by physical changes in the environment is not substantial evidence that the project may have a significant effect on the environment.

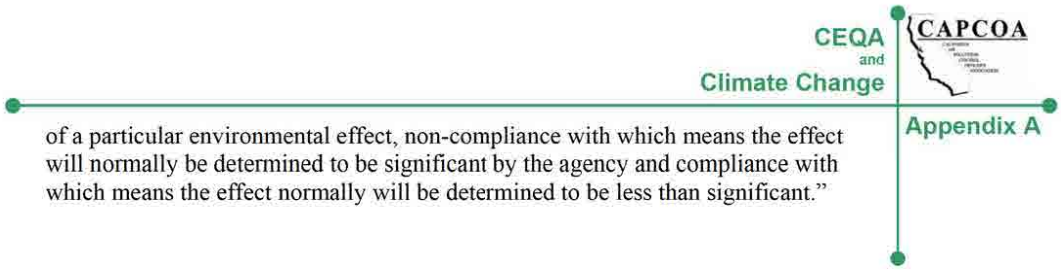
(7) The provisions of sections 15162, 15163, and 15164 apply when the project being analyzed is a change to, or further approval for, a project for which an EIR or negative declaration was previously certified or adopted (e.g. a tentative subdivision, conditional use permit). Under case law, the fair argument standard does not apply to determinations of significance pursuant to sections 15162, 15163, and 15164.

(g) After application of the principles set forth above in Section 15064(f)(g), and in marginal cases where it is not clear whether there is substantial evidence that a project may have a significant effect on the environment, the lead agency shall be guided by the following principle: If there is disagreement among expert opinion supported by facts

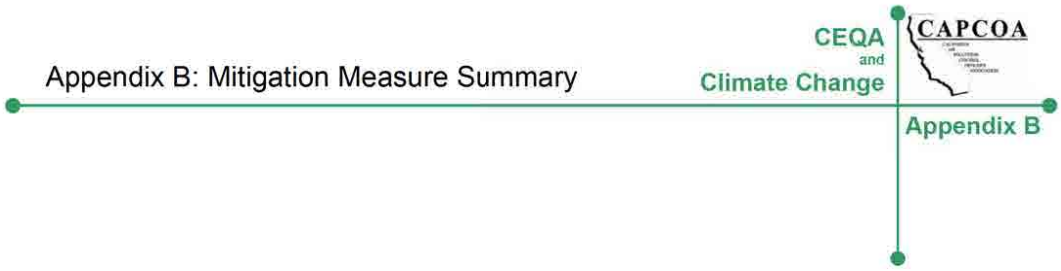
over the significance of an effect on the environment, the Lead Agency shall treat the effect as significant and shall prepare an EIR.
(h)(1) When assessing whether a cumulative effect requires an EIR, the lead agency shall consider whether the cumulative impact is significant and whether the effects of the project are cumulatively considerable. An EIR must be prepared if the cumulative impact may be significant and the project's incremental effect, though individually limited, is cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.
(2) A lead agency may determine in an initial study that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant. When a project might contribute to a significant cumulative impact, but the contribution will be rendered less than cumulatively considerable through mitigation measures set forth in a mitigated negative declaration, the initial study shall briefly indicate and explain how the contribution has been rendered less than cumulatively considerable.
(3) A lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program which provides specific requirements that will avoid or substantially lessen the cumulative problem (e.g., water quality control plan, air quality plan, integrated waste management plan) within the geographic area in which the project is located. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding that the project complies with the specified plan or mitigation program addressing the cumulative problem, an EIR must be prepared for the project.
(4) The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable.

State CEQA Guidelines – Section 15130, DISCUSSION OF CUMULATIVE IMPACTS:
(a)(3). "An EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable and thus is not significant. A project's contribution is less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact. The lead agency shall identify facts and analysis supporting its conclusion that the contribution will be rendered less than cumulatively considerable.

State CEQA Guidelines – Section 15064.7, THRESHOLDS OF SIGNIFICANCE:
"Each public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects. A threshold of significance is an identifiable quantitative, qualitative or performance level



of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant."



Appendix B

Mitigation Measure Summary

Table 16
Mitigation Measure Summary

Mitigation Measure	Applicable Project/Source Type[1]	Effective	Feasible (Yes/No)			Secondary Effects (Yes/No)	Agency/Organization/Other[6]	Description/Comments
		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]			
Transportation								
Bicycle/Pedestrian/Transit Measures								
MM T-1: Bike Parking	LD (C, M), I, SP, TP, AQP, RR, P/Mobile	1%-5%/High: CCAP presents combined % reductions for a range of mitigation measures (Dierkers et al. 2007). SMAQMD allocates combined reductions among individual measures (e.g., 2.5% reduction for all bicycle-related measures and one-quarter of 2.5% for each individual measure) (TIAX 2005, EDAW 2006, SMAQMD 2007). VTPI presents % reductions for showers and combined measures in the TDM encyclopedia (VTPI	Yes: Lockers ($1,200-$2,950, $700/bike on average), Racks ($70-$2,000, $70/bike on average).	Yes (Caltrans 2005, Dierkers et al. 2007, VTPI 2007)	Yes (Caltrans 2005, Dierkers et al. 2007, VTPI 2007)	Adverse: No Beneficial: CAPs, TACs	Caltrans, Portland Bicycle Master Plan (City of Portland 1998), CCAP Transportation Emissions Guidebook (Dierkers et al. 2007), SMAQMD Recommended Guidance for Land Use Emission Reductions (SMAQMD 2007), VTPI, CA air quality management and control districts, and cities/counties.	Nonresidential projects provide plentiful short- and long-term bicycle parking facilities to meet peak season maximum demand (e.g., one bike rack space per 20 vehicle/employee parking spaces.
MM T-2: End of Trip Facilities	LD (C, M), I, SP, TP, AQP, RR, P/Mobile		Yes	Yes (Caltrans 2005, Dierkers et al. 2007, VTPI 2007)	Yes (Caltrans 2005, Dierkers et al. 2007, VTPI 2007)	Adverse: No Beneficial: CAPs, TACs		Nonresidential projects provide "end-of-trip" facilities including showers, lockers, and changing space (e.g., four clothes lockers and one shower provided for every 80 employee parking spaces, separate facilities for each gender for projects with 160 or more employee parking spaces).
MM T-3: Bike-Parking at Multi-	LD (R, M), SP, AQP, RR,		Yes: Lockers ($1,200-	Yes (Caltrans 2005,	Yes (Caltrans	Adverse: No Beneficial:		Long-term bicycle parking is provided at apartment

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Mitigation Measure Summary

Mitigation Measure	Applicable Project/Source Type[1]	Effective	Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other[6]	Description/Comments
		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]		
Unit Residential	P/Mobile	2007). JSA bases estimates on CCAP information (JSA 2004).	$2,950, $700/bike on average), Racks ($70-$2,000, $70/bike on average).	Dierkers et al. 2007, VTPI 2007)	2005, Dierkers et al. 2007, VTPI 2007)	CAPs, TACs		complexes or condominiums without garages (e.g., one long-term bicycle parking space for each unit without a garage). Long-term facilities shall consist of one of the following: a bicycle locker, a locked room with standard racks and access limited to bicyclists only, or a standard rack in a location that is staffed and/or monitored by video surveillance 24 hours per day.
MM T-4: Proximity to Bike Path/Bike Lanes	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile		Yes	Yes (Caltrans 2005, Dierkers et al. 2007, VTPI 2007)	Yes (Caltrans 2005, Dierkers et al. 2007, VTPI 2007)	Adverse: No Beneficial: CAPs, TACs		Entire project is located within one-half mile of an existing/planned Class I or Class II bike lane and project design includes a comparable network that connects the project uses to the existing offsite facility. Project design includes a designated bicycle route connecting all units, on-site bicycle parking facilities, offsite bicycle facilities, site entrances, and primary building entrances to existing Class I or Class II bike lane(s) within one-half mile. Bicycle route connects to all streets contiguous with project site. Bicycle route has minimum conflicts with automobile parking and circulation

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Table 16
Mitigation Measure Summary

Mitigation Measure	Applicable Project/Source Type[1]	Effective		Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other[6]	Description/Comments
		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]			
								facilities. All streets internal to the project wider than 75 feet have Class II bicycle lanes on both sides.

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Table 16
Mitigation Measure Summary

Mitigation Measure	Applicable Project/Source Type[1]	Effective	Feasible (Yes/No)			Secondary Effects (Yes/No)	Agency/Organization/Other[6]	Description/Comments
		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]			
MM T-5: Pedestrian Network	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	1%-10%/High: CCAP presents combined % reductions for a range of mitigation measures (Dierkers et al. 2007). SMAQMD allocates 1% for each individual measure (TIAX 2005, EDAW 2006, SMAQMD 2007).	Yes	Yes (Dierkers et al. 2007, VTPI 2007)	Yes (Dierkers et al. 2007, VTPI 2007)	Adverse: No Beneficial: CAPs, TACs	CCAP Transportation Emissions Guidebook (Dierkers et al. 2007), SMAQMD Recommended Guidance for Land Use Emission Reductions (SMAQMD 2007), VTPI, CA air quality management and control districts, and cities/counties.	The project provides a pedestrian access network that internally links all uses and connects to all existing/planned external streets and pedestrian facilities contiguous with the project site. Project design includes a designated pedestrian route interconnecting all internal uses, site entrances, primary building entrances, public facilities, and adjacent uses to existing external pedestrian facilities and streets. Route has minimal conflict with parking and automobile circulation facilities. Streets (with the exception of alleys) within the project have sidewalks on both sides. All sidewalks internal and adjacent to project site are minimum of five feet wide. All sidewalks feature vertical curbs. Pedestrian facilities and improvements such as grade separation, wider sidewalks, and traffic calming are implemented wherever feasible to minimize pedestrian barriers. All site entrances provide pedestrian access.
MM T-6: Pedestrian	LD (R, C, M), I, SP, TP,		Yes	Yes (Dierkers et al. 2007,	Yes (Dierkers et	Adverse: No Beneficial:		Site design and building placement minimize barriers to

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Table 16
Mitigation Measure Summary

Mitigation Measure	Applicable Project/Source Type[1]	Effective		Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other[6]	Description/Comments
		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]			
Barriers Minimized	AQP, RR, P/Mobile			VTPI 2007)	al. 2007, VTPI 2007)	CAPs, TACs		pedestrian access and interconnectivity. Physical barriers such as walls, berms, landscaping, and slopes between residential and nonresidential uses that impede bicycle or pedestrian circulation are eliminated.
MM T-7: Bus Shelter for Existing/Planned Transit Service	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	1%-2%/High: CCAP presents these % reductions (Dierkers et al., 2007). SMAQMD assigns from .25%-1%, depending on headway frequency (ITAX 2005, EDAW 2006, SMAQMD 2007).	Yes: $15,000-$70,000.	Yes (Dierkers et al. 2007, VTPI 2007)	Yes (Dierkers et al. 2007, VTPI 2007)	Adverse: No Beneficial: CAPs, TACs	CCAP Transportation Emissions Guidebook (Dierkers et al. 2007), SMAQMD Recommended Guidance for Land Use Emission Reductions (SMAQMD 2007), VTPI, City of Calgary (City of Calgary 2004), CA air quality management and control districts, and cities/counties.	Bus or streetcar service provides headways of one hour or less for stops within one-quarter mile; project provides safe and convenient bicycle/pedestrian access to transit stop(s) and provides essential transit stop improvements (i.e., shelters, route information, benches, and lighting).

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Mitigation Measure Summary

Mitigation Measure	Applicable Project/Source Type[1]	Effective	Feasible (Yes/No)			Secondary Effects (Yes/No)	Agency/Organization/Other[6]	Description/Comments
		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]			
MM T-8: Traffic Calming	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	1%-10%/High: CCAP presents combined % reductions for a range of mitigation measures (Dierkers et al. 2007). SMAQMD allocates .25%-1.0% for each individual measure depending on percent of intersections and streets with improvements (TIAX 2005, EDAW 2006, SMAQMD 2007).	Yes	Yes (Dierkers et al. 2007, VTPI 2007)	Yes (Dierkers et al. 2007, VTPI 2007)	Adverse: No Beneficial: CAPs, TACs	CCAP Transportation Emissions Guidebook (Dierkers et al. 2007), SMAQMD Recommended Guidance for Land Use Emission Reductions (SMAQMD 2007), VTPI, CA air quality management and control districts, and cities/counties.	Project design includes pedestrian/bicycle safety and traffic calming measures in excess of jurisdiction requirements. Roadways are designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips by featuring traffic calming features. All sidewalks internal and adjacent to project site are minimum of five feet wide. All sidewalks feature vertical curbs. Roadways that converge internally within the project are routed in such a way as to avoid "skewed intersections;" which are intersections that meet at acute, rather than right, angles. Intersections internal and adjacent to the project feature one or more of the following pedestrian safety/traffic calming design techniques: marked crosswalks, count-down signal timers, curb extensions, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, and roundabouts or mini-circles. Streets internal and adjacent to the project feature pedestrian safety/traffic calming measures such as on-street parking, planter strips with street trees,

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Table 16
Mitigation Measure Summary

Mitigation Measure	Applicable Project/Source Type[1]	Effective	Feasible (Yes/No)			Secondary Effects (Yes/No)	Agency/Organization/Other[6]	Description/Comments
		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]			
								and chicanes/chokers (variations in road width to discourage high-speed travel).
Parking Measures								
MM T-9: Paid Parking (Parking Cash Out)	LD (C, M), I, SP, TP, AQP, RR, P/Mobile	1%-30%/High: CCAP presents a range of 15%-30% reduction for parking programs (Dierkers et al. 2007). SMAQMD presents a range of 1.0%-7.2%, depending on cost/day and distance to transit (TIAX 2005, EDAW 2006, SMAQMD 2007). Shoupe presents a 21% reduction [$5/day for commuters to downtown LA, with elasticity of -0.18 (e.g., if price increases 10%, then solo driving goes down by 1.8% more)] (Shoupe 2005). Urban Transit Institute	Yes: Vary by location and project size.	Yes (Dierkers et al. 2007, VTPI 2007)	Yes (Dierkers et al. 2007, VTPI 2007)	Adverse: No Beneficial: CAPs, TACs	CCAP Transportation Emissions Guidebook (Dierkers et al. 2007), SMAQMD Recommended Guidance for Land Use Emission Reductions (SMAQMD 2007), VTPI, CA air quality management and control districts, and cities/counties.	Project provides employee and/or customer paid parking system. Project must have a permanent and enforceable method of maintaining user fees for all parking facilities. The facility may not provide customer or employee validations. Daily charge for parking must be equal to or greater than the cost of a transit day/monthly pass plus 20%.

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Mitigation Measure	Applicable Project/Source Type[1]	Effective		Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other[6]	Description/Comments
		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]			
		presents a range of 1%-10% reduction in trips to central city sites, and 2%-4% in suburban sites (VTPI 2007).						
MM T-10: Minimum Parking	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	1%-30%/High: CCAP presents a range of 15%-30% reduction for parking programs (Dierkers et al. 2007). SMAQMD presents a maximum of 6% (Nelson/Nygaard Consulting Associates, 2005, TIAX 2005, EDAW 2006).	Yes	Yes (Dierkers et al. 2007, VTPI 2007)	Yes (Dierkers et al. 2007, VTPI 2007), Note that in certain areas of the state, the minimum parking required by code is greater than the peak period parking demand for most land uses. Simply meeting minimum code requirements in these areas would not result in an emissions reduction.	Adverse: No Beneficial: CAPs, TACs	CCAP Transportation Emissions Guidebook (Dierkers et al. 2007), SMAQMD Recommended Guidance for Land Use Emission Reductions (SMAQMD 2007), VTPI, Governor's Office of Smart Growth (Annapolis, Maryland) (Zimbler), CA air quality management and control districts, and cities/counties.	Provide minimum amount of parking required. Once land uses are determined, the trip reduction factor associated with this measure can be determined by utilizing the ITE parking generation publication. The reduction in trips can be computed as shown below by the ratio of the difference of minimum parking required by code and ITE peak parking demand to ITE peak parking demand for the land uses multiplied by 50%. Percent Trip Reduction = 50 * [(min parking required by code – ITE peak parking demand)/ (ITE peak parking demand)]

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Table 16
Mitigation Measure Summary

Mitigation Measure	Applicable Project/Source Type[1]	Effective	Feasible (Yes/No)			Secondary Effects (Yes/No)	Agency/Organization/Other[6]	Description/Comments
		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]			
MM T-11: Parking Reduction Beyond Code/Shared Parking	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	1%-30%/High: CCAP presents a range of 15%-30% reduction for parking programs (Dierkers et al. 2007). SMAQMD presents a maximum of 12% (Nelson/Nygaard, 2005, TIAX 2005, EDAW 2006).	Yes	Yes (Dierkers et al. 2007, VTPI 2007)	Yes (Dierkers et al. 2007, VTPI 2007)	Adverse: No Beneficial: CAPs, TACs		Provide parking reduction less than code. This measure can be readily implemented through a shared parking strategy, wherein parking is utilized jointly among different land uses, buildings, and facilities in an area that experience peak parking needs at different times of day and day of the week.
MM T-12: Pedestrian Pathway Through Parking	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	1%-4%/Moderate: CCAP presents combined % reductions for a range of mitigation measures (Dierkers et al. 2007). SMAQMD allocates 0.5% reduction for this measure (TIAX 2005, EDAW 2006, SMAQMD 2007).	Yes	Yes (Dierkers et al. 2007, VTPI 2007)	Yes (Dierkers et al. 2007, VTPI 2007)	Adverse: No Beneficial: CAPs, TACs		Provide a parking lot design that includes clearly marked and shaded pedestrian pathways between transit facilities and building entrances.

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Table 16
Mitigation Measure Summary

Mitigation Measure	Applicable Project/Source Type[1]	Effective		Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other[6]	Description/Comments
		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]			
MM T-13: Off - Street Parking	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	1%-4%/Moderate: CCAP presents combined % reductions for a range of mitigation measures (Dierkers et al. 2007). SMAQMD allocates a range of 0.1%-1.5% for this measure (TIAX 2005, EDAW 2006, SMAQMD 2007).	Yes	Yes (Dierkers et al. 2007, VTPI 2007)	Yes (Dierkers et al. 2007, VTPI 2007)	Adverse: No Beneficial: CAPs, TACs		Parking facilities are not adjacent to street frontage.
MM T-14: Parking Area Tree Cover	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	Annual net CO_2 reduction of 3.1 kg/m^2 canopy cover/Moderate (McPherson 2001).	Yes: $19 per new tree for CA, cost varies for maintenance, removal and replacement (McPherson 2001).	Yes	Yes	Adverse: VOCs Beneficial: CAPs, TACs	AG, State of CA Department of Justice (Goldberg 2007) and cities/counties (e.g., parking lot ordinances in Sacramento, Davis, and Los Angeles, CA).	Provide parking lot areas with 50% tree cover within 10 years of construction, in particular low emitting, low maintenance, native drought resistant trees. Reduces urban heat island effect and requirement for air conditioning, effective when combined with other measures (e.g., electrical maintenance equipment and reflective paving material).
MM T-15: Valet Bicycle Parking	LD (C, M), SP, AQP, TP, RR, P/Mobile	NA/Low	Yes	Yes	Yes: Raley Field (Sacramento, CA)	Adverse: No Beneficial: CAPs, TACs	Raley Field (Sacramento, CA).	Provide spaces for the operation of valet bicycle parking at community event "centers" such as amphitheaters, theaters, and stadiums.
MM T-16: Garage Bicycle Storage	LD (R, M), SP, AQP, TP, RR, P/Mobile	NA/Low	Yes: Less than $200/multiple bike rack.	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	City of Fairview, OR	Provide storage space in one-car garages for bicycles and bicycle trailers.

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		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]			
MM T-17: Preferential Parking for EVs/CNG Vehicles	LD (C, M), I, SP, TP, AQP, RR, P/Mobile	NA/Low	Yes	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	USGBC, CA air quality management and control districts and cities/counties (e.g., BAAQMD).	Provide preferential parking space locations for EVs/CNG vehicles.
MM T-18: Reduced/No Parking Fee for EVs/CNG Vehicles	LD (C, M), I, SP, TP, AQP, RR, P/Mobile	NA/Low	Yes	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	Hotels (e.g., Argonaut in San Francisco, CA)	Provide a reduced/no parking fee for EVs/CNG vehicles.

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Mitigation Measure	Applicable Project/Source Type[1]	Effective	Feasible (Yes/No)			Secondary Effects (Yes/No)	Agency/Organization/Other[6]	Description/Comments
		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]			
Miscellaneous Measure								
MM T-19: TMA Membership	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	1%-28%/High: CCAP presents a range of 3%-25% for TDMs with complementary transit and land use measures (Dierkers et al. 2007). VTPI presents a range of 6%-7% in the TDM encyclopedia (VTPI 2007). URBEMIS offers a 2%-10% range in reductions for a TDM that has 5 elements that are pedestrian and transit friendly and 1%-5% for 3 elements. SMAQMD presents a reduction of 5% (TIAX 2005, EDAW 2006, SMAQMD 2007).	Yes	Yes (Dierkers et al. 2007, VTPI 2007)	Yes (Dierkers et al. 2007, VTPI 2007)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Include permanent TMA membership and funding requirement. Funding to be provided by Community Facilities District or County Service Area or other nonrevocable funding mechanism. TDMs have been shown to reduce employee vehicle trips up to 28% with the largest reductions achieved through parking pricing and transit passes. The impact depends on the travel alternatives.
MM T-20: ULEV	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	NA/Low	Yes: Higher than corresponding gasoline models.	Yes	Yes: Fueling stations might not be readily available depending on location. More than 900 E85 fueling	Adverse: No Beneficial: CAPs, TACs	DGS, CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Use of and/or provide ULEV that are 50% cleaner than average new model cars (e.g., natural gas, ethanol, electric).

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		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]			
					stations in the U.S., 5 in CA. Vehicles available in select regions only			
MM T-21: Flex Fuel Vehicles	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	5466.97 lb GHG/year/Low (DOE Fuel Economy)	Yes: E85 costs less than gasoline per gallon, but results in lower fuel economy.	Yes	Yes: More than 900 E85 fueling stations in the U.S., 5 in CA. Vehicles available in select regions only	Adverse: Yes Issues with the energy intensive ethanol production process (e.g., wastewater treatment requirements). Beneficial: CAPs, TACs	DGS, CA air quality management and control districts and cities/counties (e.g., SJVAPCD).	Use of and/or provide vehicles that utilize gasoline/ethanol blends (e.g., E85).
Design								
Commercial & Residential Building Design Measures								
MM D-1: Office/Mixed Use Density	LD (C, M), SP, TP, AQP, RR, P/Mobile	0.05%-2%/Moderate: This range is from SMAQMD, depending	Yes	Yes (VTPI 2007)	Yes (VTPI 2007)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties	Project provides high density office or mixed-use proximate to transit. Project must provide

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Mitigation Measure	Applicable Project/Source Type[1]	Effective	Feasible (Yes/No)			Secondary Effects (Yes/No)	Agency/Organization/Other[6]	Description/Comments
		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]			
		on FAR and headway frequencies (Nelson/Nygaard Consulting Associates 2005, EDAW 2006, SMAQMD 2007).					(e.g., SMAQMD).	safe and convenient pedestrian and bicycle access to all transit stops within one-quarter mile.
MM D-2: Orientation to Existing/Planned Transit, Bikeway, or Pedestrian Corridor	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	0.4%-1%/Moderate: CCAP attributes a 0.5% reduction per 1% improvement in transit frequency (Dierkers et al. 2007). SMAQMD presents a range of 0.25%-5% (JSA 2005, EDAW 2006, SMAQMD 2007).	Yes	Yes (Dierkers et al. 2007)	Yes (Dierkers et al. 2007)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Project is oriented towards existing transit, bicycle, or pedestrian corridor. Setback distance between project and existing or planned adjacent uses is minimized or nonexistent. Setback distance between different buildings on project site is minimized. Setbacks between project buildings and planned or existing sidewalks are minimized. Buildings are oriented towards existing or planned street frontage. Primary entrances to buildings are located along planned or existing public street frontage. Project provides bicycle access to any planned bicycle corridor(s). Project provides pedestrian access to any planned pedestrian corridor(s).
MM D-3: Services Operational	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	0.5%-5%/Moderate	Yes	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Project provides on-site shops and services for employees.

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		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]			
MM D-4: Residential Density (Employ Sufficient Density for New Residential Development to Support the Use of Public Transit)	LD (R, M), SP, TP, AQP, RR, P/Mobile	1%-40%/High: #7, EPA presents a range of 32%-40% (EPA 2006). SMAQMD presents a range of 1%-12% depending on density and headway frequencies (Nelson/Nygaard Consulting Associates 2005, JSA 2005, EDAW 2006, SMAQMD 2007). Nelson/Nygaard presents a trip reduction formula: Trip Reduction = 0.6*(1-(19749*((4.814+ households per residential acre)/(4.814+7.14))^-06.39)/25914).	Yes	Yes (VTPI 2007, Holtzclaw 2007)	Yes (VTPI 2007, Holtzclaw 2007)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Project provides high-density residential development. Transit facilities must be within one-quarter mile of project border. Project provides safe and convenient bicycle/pedestrian access to all transit stop(s) within one-quarter mile of project border.
MM D-5: Street Grid	LD (R, C, M), I, SP, TP, AQP, RR,	1%/Moderate: SMAQMD presents this % reduction (JSA	Yes	Yes (Dierkers et al. 2007, VTPI 2007)	Yes (Dierkers et al. 2007,	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties	Multiple and direct street routing (grid style). This measure only applies to projects

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Mitigation Measure	Applicable Project/Source Type[1]	Effective	Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other[6]	Description/Comments
		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]		
	P/Mobile	2005, EDAW 2006, SMAQMD 2007).			VTPI 2007)	(e.g., SMAQMD).	with an internal CF >/= 0.80, and average of one-quarter mile or less between external connections along perimeter of project. [CF= # of intersections / (# of cul-de-sacs + intersections)]. Cul-de-sacs with bicycle/pedestrian through access may be considered "complete intersections" when calculating the project's internal connectivity factor. External connections are bike/pedestrian pathways and access points, or streets with safe and convenient bicycle and pedestrian access that connect the project to adjacent streets, sidewalks, and uses. If project site is adjacent to undeveloped land; streets, pathways, access points, and right-of-ways that provide for future access to adjacent uses may count for up to 50% of the external connections. Block perimeter (the sum of the measurement of the length of all block sides) is limited to no more than 1,350 feet. Streets internal to the project should connect to streets external to the project whenever possible.

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Mitigation Measure Summary

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		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]		
MM D-6: NEV Access	LD (R, C, M), SP, TP, AQP, RR, P/Mobile	0.5%-1.5%/Low: SMAQMD presents this % reduction (EDAW 2006, SMAQMD 2007).	Yes	Yes (Litman 1999, Sperling 1994)	Yes (Litman 1999, Sperling 1994)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Make physical development consistent with requirements for neighborhood electric vehicles. Current studies show that for most trips, NEVs do not replace gas-fueled vehicles as the primary vehicle.
MM D-7: Affordable Housing Component	LD (R, M), SP, TP, AQP, RR, P/Mobile	0.4%-6%/Moderate: SMAQMD presents this % reduction (Nelson/Nygaard Consulting Associates 2005, EDAW 2006, SMAQMD 2007).	Yes	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Residential development projects of five or more dwelling units provide a deed-restricted low-income housing component on-site (or as defined in the code). Developers who pay into In-Lieu Fee Programs are not considered eligible to receive credit for this measure. The award of emission reduction credit shall be based only on the proportion of affordable housing developed on-site because in-lieu programs simply induce a net increase in development. Percentage reduction shall be calculated according to the following formula:

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		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]			
								% reduction = % units deed-restricted below market rate housing * 0.04
MM D-8: Recharging Area	LD (R, M), SP, TP, AQP, RR, P/Mobile	NA/Low	Yes	Yes	Yes	Adverse: No Beneficial: CAPs, TACs		Provide residential buildings with a "utility" room or space for recharging batteries, whether for use in a car, electric lawnmower, other electric landscaping equipment, or even batteries for small items such as flashlights.
Mixed-Use Development Measures								
MM D-9: Urban Mixed-Use	LD (M), SP, TP, AQP, RR, P/Mobile	3%-9%/Moderate: SMAQMD presents this % reduction (TIAX 2005, EDAW 2006, SMAQMD 2007).	Yes	Yes (EPA 2006)	Yes (EPA 2006)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Development of projects predominantly characterized by properties on which various uses, such as office, commercial, institutional, and residential, are combined in a single building or on a single site in an integrated development project with functional interrelationships and a coherent physical design.
MM D-10: Suburban Mixed-Use	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	3%/Moderate: SMAQMD presents this % reduction (TIAX 2005, EDAW 2006, SMAQMD 2007).	Yes	Yes (EPA 2006)	Yes (EPA 2006)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Have at least three of the following on site and/or offsite within one-quarter mile: Residential Development, Retail Development, Park, Open Space, or Office.
MM D-11: Other Mixed-Use	LD (R, M), SP, TP, AQP, RR, P/Mobile	1%/Moderate: SMAQMD presents this % reduction (TIAX 2005, EDAW	Yes	Yes (EPA 2006)	Yes (EPA 2006)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	All residential units are within one-quarter mile of parks, schools or other civic uses.

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		2006, SMAQMD 2007).						
MM D-12: Infill Development	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	3%-30%/High: Infill development reduces vehicle trips and VMT by 3% and 20%, respectively (Fehr & Peers 2007). CCAP identifies a site level VMT reduction range of 20%-30% (Dierkers et al. 2007).	Yes	Yes (Dierkers et al. 2007)	Yes (Dierkers et al. 2007)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Project site is on a vacant infill site, redevelopment area, or brownfield or greyfield lot that is highly accessible to regional destinations, where the destinations rating of the development site (measured as the weighted average travel time to all other regional destinations) is improved by 100% when compared to an alternate greenfield site.
Miscellaneous Measures								
MM D-13: Electric Lawnmower	LD (R, M), SP, AQP, RR, P/Area	1%/Low: SMAQMD presents this % reduction (EDAW 2006, SMAQMD 2007).	Yes	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Provide a complimentary electric lawnmower to each residential buyer.

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		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]			
MM D-14: Enhanced Recycling/Waste Reduction, Reuse, Composting	LD (R, C, M), I, SP, AQP, RR, P/Stationary & Area	NA/Low	Yes	Yes	Yes: Association with social awareness.	Adverse: No Beneficial: CAPs, TACs	CIWMB	Provide infrastructure/education that promotes the avoidance of products with excessive packaging, recycle, buying of refills, separating of food and yard waste for composting, and using rechargeable batteries.
MM D-15: LEED Certification	LD (R, C, M), I, SP, AQP, RR, P/Stationary & Area	NA/Moderate	Yes: Receive tax rebates, incentives (e.g., EDAW San Diego office interior remodel cost $1,700,000 for 32,500 square feet) (USGBC 2007)	Yes	Yes: More than 700 buildings of different certifications in CA (USGBC 2007).	Adverse: No Beneficial: CAPs, TACs	USGBC, CA air quality management and control districts and cities/counties (e.g., BAAQMD).	LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality.
MM D-16: Retro-Commissioning	LD (C, M), I, SP, AQP, RR, P/Stationary & Area	8%-10% reduction in energy usage/Moderate: (Mills et al. 2004)	Yes: Average $0.28/square feet, varies with building size (Haasl and Sharp 1999).	Yes	Yes: 27 projects underway in CA, 21 more to be completed in 2007, mostly state buildings owned by DGS (DGS 2007).	Adverse: No Beneficial: CAPs, TACs	DGS, CA air quality management and control districts and cities/counties (e.g., BAAQMD).	The process ensures that all building systems perform interactively according to the contract documents, the design intent and the owner's operational needs to optimize energy performance.
MM D-17 Landscaping	LD (R, C, M), I, SP, AQP, RR,	NA/Low	Yes	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	Alliance for the Chesapeake Bay, EPA Green Landscaping	Project shall use drought resistant native trees, trees with low emissions and high carbon

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		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]			
	P/Stationary & Area						Resources	sequestration potential. Evergreen trees on the north and west sides afford the best protection from the setting summer sun and cold winter winds. Additional considerations include the use of deciduous trees on the south side of the house that will admit summer sun; evergreen plantings on the north side will slow cold winter winds; constructing a natural planted channel to funnel summer cooling breezes into the house. Neighborhood CCR's not requiring that front and side yards of single family homes be planted with turf grass. Vegetable gardens, bunch grass, and low-water landscaping shall also be permitted, or even encouraged.
MM D-18: Local Farmers' Market	LD (M), SP/Mobile, Stationary, &	NA/Low	Yes	Yes	Yes: Associated with social	Adverse: No Beneficial: CAPs, TACs	Cities/counties (e.g., Davis, Sacramento)	Project shall dedicate space in a centralized, accessible location for a weekly farmers' market.

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		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]			
	Area				choice and public awareness.			
MM D-19: Community Gardens	LD (M), SP/Mobile, Stationary, & Area	NA/Low	Yes	Yes	Yes: Associated with social choice and public awareness.	Adverse: No Beneficial: CAPs, TACs	Cities/counties (e.g., Davis)	Project shall dedicate space for community gardens.
Energy Efficiency/Building Component								
MM E-1: High-Efficiency Pumps	LD (R, C, M), SP, AQP, RR, P/Stationary & Area	NA/Low	Yes	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., BAAQMD).	Project shall use high-efficiency pumps.
MM E-2: Wood Burning Fireplaces/Stoves	LD (R, M), SP, AQP, RR, P/Stationary & Area	NA/Low: EDAW 2006	Yes	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Project does not feature fireplaces or wood burning stoves.
MM E-3: Natural Gas Stove	LD (R, M), SP, AQP, RR, P/Stationary & Area	NA/Low: EDAW 2006	Yes: Cost of stove—$350 (gas) and $360 (electric) same brand, total yearly cost of $42.17 as opposed to $56.65 for electric (Saving Electricity 2006).	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Project features only natural gas or electric stoves in residences.

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		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]			
MM E-4: Energy Star Roof	LD (R, C, M), I, SP, AQP, RR, P/Stationary & Area	0.5%-1%/Low: SMAQMD presents this % reduction (EDAW 2006, SMAQMD 2007).	Yes	Yes	Yes: 866 Energy Star labeled buildings in California (Energy Star 2007)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Project installs Energy Star labeled roof materials.
MM E-5: On-site Renewable Energy System	LD (R, C, M), I, SP, AQP, RR, P/Stationary & Area	1%-3%/Moderate: SMAQMD presents this % reduction (USGBC 2002 and 2005, EDAW 2006, SMAQMD 2007).	Yes	Yes (USGBC 2002 and 2005)	Yes (USGBC 2002 and 2005)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Project provides onsite renewable energy system(s). Nonpolluting and renewable energy potential includes solar, wind, geothermal, low-impact hydro, biomass and bio-gas strategies. When applying these strategies, projects may take advantage of net metering with the local utility.

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Mitigation Measure	Applicable Project/Source Type[1]	Effective		Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other[6]	Description/Comments
		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]			
MM E-6: Exceed Title 24	LD (R, C, M), I, GSP, AQP, RR, P/Stationary & Area	1%/Moderate: SMAQMD presents this % reduction (EDAW 2006, SMAQMD 2007).	Yes	Yes (PG&E 2002, SMUD 2006)	Yes (PG&E 2002, SMUD 2006)	Adverse: No Beneficial: CAPs, TACs	PG&E, SMUD, CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Project exceeds title 24 requirements by 20%.
MM E-7: Solar Orientation	LD (R, C, M), I, SP, AQP, RR, P/Stationary & Area	0.5%/Low: SMAQMD presents this % reduction (EDAW 2006, SMAQMD 2007).	Yes	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Project orients 75% or more of homes and/or buildings to face either north or south (within 30° of N/S). Building design includes roof overhangs that are sufficient to block the high summer sun, but not the lower winter sun, from penetrating south facing windows. Trees, other landscaping features and other buildings are sited in such a way as to maximize shade in the summer and maximize solar access to walls and windows in the winter.
MM E-8: Nonroof Surfaces	LD (R, C, M), I, GSP, AQP, RR, P/Stationary & Area	1.0%/Low: SMAQMD presents this % reduction (EDAW 2006, SMAQMD 2007).	Yes	Yes (USGBC 2002 and 2005)	Yes (USGBC 2002 and 2005)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Provide shade (within 5 years) and/or use light-colored/high-albedo materials (reflectance of at least 0.3) and/or open grid pavement for at least 30% of the site's nonroof impervious surfaces, including parking lots, walkways, plazas, etc.; OR place a minimum of 50% of parking spaces underground or covered by structured parking; OR use an open-grid pavement system (less than 50% impervious) for a minimum of

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		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]			
								50% of the parking lot area. The mitigation measure reduces heat islands (thermal gradient differences between developed and undeveloped areas to minimize impact on microclimate and human and wildlife habitats. This measure requires the use of patented or copyright protected methodologies created by the ASTM. The SRI is a measure of the constructed surface's ability to reflect solar heat, as shown by a small rise in temperature. It is defined so that a standard black (reflectance 0.05, emittance 0.90) is "0" and a standard white (reflectance 0.80, emittance 0.90) is 100. To calculate SRI for a given material, obtain the reflectance value and emittance value for the material. SRI is calculated according to ASTM E 1980-01. Reflectance is measured

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		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]			
								according to ASTM E 903, ASTM E 1918, or ASTM C 1549. Emittance is measured according to ASTM E 408 or ASTM C 1371. Default values for some materials will be available in the LEED-NC v2.2 Reference Guide.
MM E-9: Low-Energy Cooling	LD (C, M), I, SP, AQP, RR, P/Stationary & Area	1%-10%/Low: EDAW presents this percent reduction range (EDAW 2006).	Yes	Yes (USGBC 2002 and 2005)	Yes (USGBC 2002 and 2005)	Adverse: No Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Project optimizes building's thermal distribution by separating ventilation and thermal conditioning systems.
MM E-10: Green Roof	LD (R, C, M), I, SP, AQP, RR, P/Stationary & Area	1.0%/Moderate: SMAQMD presents this % reduction (EDAW 2006, SMAQMD 2007).	Yes	Yes (USGBC 2002 and 2005)	Yes (USGBC 2002 and 2005)	Adverse: Increased Water Consumption Beneficial: CAPs, TACs	CA air quality management and control districts and cities/counties (e.g., SMAQMD).	Install a vegetated roof that covers at least 50% of roof area. The reduction assumes that a vegetated roof is installed on a least 50% of the roof area or that a combination high albedo and vegetated roof surface is installed that meets the following standard: (Area of SRI Roof/0.75)+(Area of vegetated roof/0.5) >= Total Roof Area. Water consumption reduction measures shall be considered in the design of the green roof.
MM E-11: EV Charging Facilities	LD (C, M), SP, AQP, RR, P/Stationary & Area	NA/Low	Yes: $500-$5000/ vehicle site (PG&E 1999)	Yes	Yes: 381 facilities in CA (Clean Air Maps 2007).	Adverse: No Beneficial: CAPs, TACs	DOE, EERE, CA air quality management and control districts and cities/counties (e.g., BAAQMD).	Project installs EV charging facilities.
MM E-12:	LD (R, C, M),	NA/Low: Increasing	Yes: Light	Yes	Yes: Apply	Adverse: No		Project provides light-colored

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Light-Colored Paving	I, SP, AQP, RR, P/Stationary & Area	the albedo of 1,250 km of pavement by 0.25 would save cooling energy worth $15M per year.	colored aggregates and white cement are more expensive than gray cement. Certain blended cements are very light in color and may reflect similarly to white cement at an equivalent cost to normal gray cement.		natural sand or gravel colored single surface treatments to asphalt (EOE 2007).	Beneficial: CAPs, TACs		paving (e.g., increased albedo pavement).
MM E-13: Cool Roofs	LD (R, C, M), I, SP, AQP, RR, P/Stationary & Area	NA/Low	Yes: 0.75–1.5/square feet coating (EPA 2007a)	Yes	Yes: Over 90% of the roofs in the United States are dark colored	Adverse: No Beneficial: CAPs, TACs	CEC	Project provides cool roofs. Highly reflective, highly emissive roofing materials that stay 50-60°F cooler than a normal roof under a hot summer sun. CA's Cool Savings

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					(EPA 2007a).			Program provided rebates to building owners for installing roofing materials with high solar reflectance and thermal emittance. The highest rebate went to roofs on air conditioned buildings, while buildings with rooftop ducts and other nonresidential buildings were eligible for slightly less. The program aimed to reduce peak summer electricity demand and was administered by the CEC.
MM E-14: Solar Water Heaters	LD (R, M), SP, AQP, RR, P/Stationary & Area	20%–70% reduction in cooling energy needs/Moderate	Yes: $1675/20 square feet, requires a 50 gallon tank, annual operating cost of $176 (DOE 2007).	Yes	Yes: Based on solar orientation, building codes, zoning ordinances.	Adverse: No Beneficial: CAPs, TACs	Europe	Project provides solar water heaters.
MM E-15: Electric Yard Equipment Compatibility	LD (R, M), SP, AQP, RR, P/Stationary & Area	NA/Low	Yes: $75–$250/outlet from existing circuit (Cost Helper 2007).	Yes	Yes	Adverse: No Beneficial: CAPs, TACs		Project provides electrical outlets at building exterior areas.
MM E-16: Energy Efficient Appliance Standards	LD (R, C, M), SP, AQP, RR, P/Stationary & Area	NA/Low	Yes: Varies for each appliance—higher capital costs, lower operating costs (Energy	Yes	Yes: Major retail stores.	Adverse: No Beneficial: CAPs, TACs		Project uses energy efficient appliances (e.g., Energy Star).

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			Star 2007).					
MM E-17: Green Building Materials	LD (R, C, M), SP, AQP, RR, P/Stationary & Area	NA/Low: 25-30% more efficient on average.	Yes	Yes: BEES software allows users to balance the environmental and economic performance of building products; developed by NIST (NIST 2007).	Yes	Adverse: No Beneficial: CAPs, TACs		Project uses materials which are resource efficient, recycled, with long life cycles and manufactured in an environmentally friendly way.
MM E-18: Shading Mechanisms	LD (R, C, M), I, SP, AQP, RR, P/Stationary, & Area	NA/Low: Up to $450 annual energy savings (Energy Star 2007).	Yes: Higher capital costs, lower operating and maintenance costs (Energy Star 2007).	Yes	Yes: Major retail stores.	Adverse: No Beneficial: CAPs, TACs		Install energy-reducing shading mechanisms for windows, porch, patio and walkway overhangs.

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MM E-19: Ceiling/Whole-House Fans	LD (R, C, M), I, SP, AQP, RR, P/Stationary, & Area	NA/Low: 50% more efficient than conventional fans (Energy Star 2007).	Yes: $45-$200/fan, installation extra (Lowe's 2007).	Yes	Yes: Major retail stores.	Adverse: No Beneficial: CAPs, TACs		Install energy-reducing ceiling/whole-house fans.
MM E-20: Programmable Thermostats	LD (R, C, M), I, SP, AQP, RR, P/Stationary, & Area	NA/Low: $100 annual savings in energy costs (Energy Star 2007).	Yes: $60/LCD display and 4 settings for typical residential use (Lowe's 2007).	Yes	Yes: Major retail stores.	Adverse: Yes, Mercury Beneficial: CAPs, TACs		Install energy-reducing programmable thermostats that automatically adjust temperature settings.
MM E-21: Passive IIeating and Cooling Systems	LD (R, C, M), I, SP, AQP, RR, P/Stationary, & Area	NA/Low	Yes: $800 (wall heaters) to $4,000+ (central systems)	Yes	Yes	Adverse: No Beneficial: CAPs, TACs		Install energy-reducing passive heating and cooling systems (e.g., insulation and ventilation).
MM E-22: Day Lighting Systems	LD (R, C, M), I, SP, AQP, RR, P/Stationary, & Area	NA/Low	Yes: $1,300 to $1,500 depending upon the kind of roof (Barrier 1995), installation extra.	Yes	Yes: Work well only for space near the roof of the building, little benefit in multi-floor buildings.	Adverse: No Beneficial: CAPs, TACs		Install energy-reducing day lighting systems (e.g., skylights, light shelves and interior transom windows).
MM E-23: Low-Water Use Appliances	LD (R, C, M), I, SP, AQP, RR, P/Stationary, & Area	NA/Low: Avoided water agency cost for using water-efficient kitchen pre-rinse spray valves of $65.18 per acre-foot.	Yes: Can return their cost through reduction in water consumption,	Yes	Yes	Adverse: No Beneficial: CAPs, TACs		Require the installation of low-water use appliances.

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			pumping, and treatment.					
MM E-24: Goods Transport by Rail	LD (C, M), I, SP, AQP, RR, P/Mobile	NA/Moderate	Yes	Yes	Yes	Adverse: No Beneficial: CAPs, TACs	ARB Goods Movement Plan (ARB 2007)	Provide a spur at nonresidential projects to use nearby rail for goods movement.
Social Awareness/Education								
MM S-1: GHG Emissions Reductions Education	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile, Stationary, & Mobile	NA/Low	Yes	Yes	Yes: Similar programs currently exist in CA.	Adverse: No Beneficial: CAPs, TACs		Provide local governments, businesses, and residents with guidance/protocols/information on how to reduce GHG emissions (e.g., energy saving, food miles).
MM S-2: School Curriculum	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile, Stationary, & Mobile	NA/Low	Yes	Yes	Yes: Similar programs currently exist in CA.	Adverse: No Beneficial: CAPs, TACs		Include how to reduce GHG emissions (e.g., energy saving, food miles) in the school curriculum.
Construction								
MM C-1: ARB-Certified Diesel Construction Equipment	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	NA/Low	Yes: Oxidation Catalysts, $1,000-	Yes	Yes	Adverse: Yes, NO_x Beneficial: CAPs, TACs	AG, EPA, ARB, and CA air quality management and pollution control districts.	Use ARB-certified diesel construction equipment. Increases CO_2 emissions when trapped CO and carbon particles

AG=Attorney General; ARB=California Air Resources Board; ASTM=American Society for Testing and Material; BAAQMD=Bay Area Air Quality Management District; BEES= Building for Environmental and Economic Sustainability; CA=California; Caltrans=California Department of Transportation; CAPs=Criteria Air Pollutants; CCAP=Center for Clean Air Policy; CF=Connectivity Factor; CIWMB=California Integrated Waste Management Board; CO= Carbon Monoxide; CO_2=Carbon Dioxide; DGS=Department of General Services; DOE=U.S. Department of Energy; DPF=Diesel particulate Filter; E85=85% Ethanol; EERE=Energy Efficiency and Renewable Energy; EOE=Encyclopedia of Earth; EPA=U.S. Environmental Protection Agency; ETC=Edmonton Trolley Coalition; EVs/CNG=Electric Vehicles/Compressed Natural Gas; FAR=Floor Area Ratio; GHG=Greenhouse Gas; ITE=Institute of Transportation Engineers; kg/m^2=kilogram per square meter; km=Kilometer; lb=pound; LEED=Leadership in Energy and Environmental Design; M=Million; NA=Not Available; NEV=Neighborhood Electric Vehicle; NIST=National Institute of Standards and Technology; NO_X=Oxides of Nitrogen; NREL=National Renewable Energy Laboratory; N/S=North/South; PG&E=Pacific Gas and Electric; PM=Particulate Matter; SJVAPCD=San Joaquin Valley Air Pollution Control District; SMAQMD=Sacramento Metropolitan Air Quality Management District; SMUD=Sacramento Municipal Utilities District; SO_x=Sulfur Oxides; SRI=Solar Reflectance Index; TACs=Toxic Air Contaminants; TDM=Transportation Demand Management; TMA=Transportation Management Association; THC=Total Hydrocarbon; ULEV=Ultra Low Emission Vehicle; USGBC=U.S. Green Building Council; and VTPI=Victoria Transit Policy.

Table 16
Mitigation Measure Summary

Mitigation Measure	Applicable Project/Source Type[1]	Effective		Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other[6]	Description/Comments
		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]			
			$2,000. DPF, $5000-$10,000; installation extra (EPA 2007b).					are oxidized (Catalyst Products 2007, ETC 2007).
MM C-2: Alternative Fuel Construction Equipment	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	NA/Low	Yes	Yes	Yes	Adverse: Yes, THC, NO_x Beneficial: CO, PM, SO_x	AG, EPA, ARB, and CA air quality management and pollution control districts.	Use alternative fuel types for construction equipment. At the tailpipe biodiesel emits 10% more CO_2 than petroleum diesel. Overall lifecycle emissions of CO_2 from 100% biodiesel are 78% lower than those of petroleum diesel (NREL 1998, EPA 2007b).
MM C-3: Local Building Materials	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	NA/Low	Yes	Yes	Yes: Depends on location of building material manufacture sites.	Adverse: No Beneficial: CAPs, TACs		Use locally made building materials for construction of the project and associated infrastructure.
MM C-4: Recycle Demolished Construction Material	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile	NA/Low	Yes	Yes	Yes	Adverse: No Beneficial: CAPs, TACs		Recycle/Reuse demolished construction material. Use locally made building materials for construction of the project and associated infrastructure.

Table 16
Mitigation Measure Summary

Mitigation Measure	Applicable Project/Source Type[1]	Effective		Feasible (Yes/No)		Secondary Effects (Yes/No)	Agency/Organization/Other[6]	Description/Comments
		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]			
Miscellaneous								
MM M-1: Off-Site Mitigation Fee Program	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile & Area	NA/Moderate-High: Though there is currently no program in place, the potential for real and quantifiable reductions of GHG emissions could be high if a defensible fee program were designed.	Yes	Yes	No: Program does not exist in CA, but similar programs currently exist (e.g., Carl Moyer Program, SJVAPCD Rule 9510, SMAQMD Off-Site Construction Mitigation Fee Program).	Adverse: No Beneficial: CAPs, TACs		Provide/Pay into an off-site mitigation fee program, which focuses primarily on reducing emissions from existing development and buildings through retro-fit (e.g., increased insulation).
MM M-2: Offset Purchase	LD (R, C, M), I, SP, TP, AQP, RR, P/Mobile, Stationary, & Area	NA/Low	Yes	Yes	No: ARB has not adopted official program, but similar programs	No		Provide/purchase offsets for additional emissions by acquiring carbon credits or engaging in other market "cap and trade" systems.

AG=Attorney General; ARB=California Air Resources Board; ASTM=American Society for Testing and Material; BAAQMD=Bay Area Air Quality Management District; BEES= Building for Environmental and Economic Sustainability; CA=California; Caltrans=California Department of Transportation; CAPs=Criteria Air Pollutants; CCAP=Center for Clean Air Policy; CF=Connectivity Factor; CIWMB=California Integrated Waste Management Board; CO= Carbon Monoxide; CO_2=Carbon Dioxide; DGS=Department of General Services; DOE=U.S. Department of Energy; DPF=Diesel particulate Filter; E85=85% Ethanol; EERE=Energy Efficiency and Renewable Energy; EOE=Encyclopedia of Earth; EPA=U.S. Environmental Protection Agency; ETC=Edmonton Trolley Coalition; EVs/CNG=Electric Vehicles/Compressed Natural Gas; FAR=Floor Area Ratio; GHG=Greenhouse Gas; ITE=Institute of Transportation Engineers; kg/m^2=kilogram per square meter; km=Kilometer; lb=pound; LEED=Leadership in Energy and Environmental Design; M=Million; NA=Not Available; NEV=Neighborhood Electric Vehicle; NIST=National Institute of Standards and Technology; NO_X=Oxides of Nitrogen; NREL=National Renewable Energy Laboratory; N/S=North/South; PG&E=Pacific Gas and Electric; PM=Particulate Matter; SJVAPCD=San Joaquin Valley Air Pollution Control District; SMAQMD=Sacramento Metropolitan Air Quality Management District; SMUD=Sacramento Municipal Utilities District; SO_x=Sulfur Oxides; SRI=Solar Reflectance Index; TACs=Toxic Air Contaminants; TDM=Transportation Demand Management; TMA=Transportation Management Association; THC=Total Hydrocarbon; ULEV=Ultra Low Emission Vehicle; USGBC=U.S. Green Building Council; and VTPI=Victoria Transit Policy.

Table 16
Mitigation Measure Summary

Mitigation Measure	Applicable Project/Source Type[1]	Effective	Feasible (Yes/No)			Secondary Effects (Yes/No)	Agency/Organization/Other[6]	Description/Comments
		Emissions Reduction/Score[2]	Cost (Yes/No)[3]	Technical[4]	Logistical[5]			
					currently exist.			
Regional Transportation Plan Measures								
MM RTP-1: Dedicate High Occupancy Vehicle (HOV) lanes prior to adding capacity to existing highways.	RTP		Yes	Yes	Yes	Adverse: possible local CO Beneficial: regional CAPs, TACs	Caltrans, local government	Evaluate the trip reduction (and GHG reduction) potential of adding HOV lanes prior to adding standard lanes.
MM RTP-2: Implement toll/user fee programs prior to adding capacity to existing highways.	RTP		Yes	Yes	Yes	Adverse: possible local CO. Beneficial: regional CAPs, TACs	Caltrans	Evaluate price elasticity and associated trip reduction (and GHG reduction) potential with adding or increasing tolls prior to adding capacity to existing highways.

Note:
[1] Where LD (R, C, M) =Land Development (Residential, Commercial, Mixed-Use), I=Industrial, GP=General Plan, SP=Specific Plan, TP=Transportation Plans, AQP=Air Quality Plans, RR=Rules/Regulations, and P=Policy. It is important to note that listed project types may not be directly specific to the mitigation measure (e.g., TP, AQP, RR, and P) as such could apply to a variety of source types, especially RR and P.
[2] This score system entails ratings of high, moderate, and low that refer to the level of the measure to provide a substantive, reasonably certain (e.g., documented emission reductions with proven technologies), and long-term reduction of GHG emissions.
[3] Refers to whether the measure would provide a cost-effective reduction of GHG emissions based on available documentation.
[4] Refers to whether the measure is based on currently, readily available technology based on available documentation.
[5] Refers to whether the measure could be implemented without extraordinary effort based on available documentation.
[6] List is not meant to be all inclusive.
Source: Data complied by EDAW in 2007

Table 17
General Planning Level Mitigation Strategies Summary

Strategy	Source Type[1]	Agency/Organization[2]	Description/Comments
MS G-1: Adopt a GHG reduction plan	GP/ Mobile, Stationary, & Area	City of San Bernardino	- Adopt GHG reduction targets for the planning area, based on the current legislation providing direction for state-wide targets, and update the plan as necessary. -The local government agency should serve as a model by inventorying its GHG emissions from agency operations, and implementing those reduction goals.
Circulation			
MS G-2: Provide for convenient and safe local travel	GP/ Mobile	Cities/Counties (e.g., Aliso Viejo, Claremont)	- Create a gridded street pattern with small block sizes. This promotes walkability through direct routing and ease of navigation. -Maintain a high level of connectivity of the roadway network. Minimize cul-de-sacs and incomplete roadway segments. -Plan and maintain an integrated, hierarchical and multi-modal system of roadways, pedestrian walks, and bicycle paths throughout the area. -Apply creative traffic management approaches to address congestion in areas with unique problems, particularly on roadways and intersections in the vicinity of schools in the morning and afternoon peak hours, and near churches, parks and community centers. -Work with adjacent jurisdictions to address the impacts of regional development patterns (e.g. residential development in surrounding communities, regional universities, employment centers, and commercial developments) on the circulation system. -Actively promote walking as a safe mode of local travel, particularly for children attending local schools. -Employ traffic calming methods such as median landscaping and provision of bike or transit lanes to slow traffic, improve roadway capacity, and address safety issues.
MS G-3: Enhance the regional transportation network and maintain effectiveness	GP/ Mobile	Cities/Counties (e.g., Aliso Viejo, Claremont)	-Encourage the transportation authority to reduce fees for short distance trips. -Ensure that improvements to the traffic corridors do not negatively impact the operation of local roadways and land uses.

Table 17
General Planning Level Mitigation Strategies Summary

Strategy	Source Type[1]	Agency/Organization[2]	Description/Comments
			-Cooperate with adjacent jurisdictions to maintain adequate service levels at shared intersections and to provide adequate capacity on regional routes for through traffic. -Support initiatives to provide better public transportation. Work actively to ensure that public transportation is part of every regional transportation corridor. - Coordinate the different modes of travel to enable users to transfer easily from one mode to another. -Work to provide a strong paratransit system that promotes the mobility of all residents and educate residents about local mobility choices. - Promote transit-oriented development to facilitate the use of the community's transit services.
MS G-4: Promote and support an efficient public transportation network connecting activity centers in the area to each other and the region.	GP/ Mobile	Cities/Counties (e.g., Aliso Viejo, Claremont)	-Promote increased use of public transportation and support efforts to increase bus service range and frequency within the area as appropriate. -Enhance and encourage provision of attractive and appropriate transit amenities, including shaded bus stops, to encourage use of public transportation. -Encourage the school districts, private schools and other operators to coordinate local bussing and to expand ride-sharing programs. All bussing options should be fully considered before substantial roadway improvements are made in the vicinity of schools to ease congestion.
MS G-5: Establish and maintain a comprehensive system, which is safe and convenient, of pedestrian ways and bicycle routes that provide viable options to travel by automobile.	GP/ Mobile	Cities/Counties (e.g., Aliso Viejo, Claremont)	-Improve area sidewalks and rights-of-way to make them efficient and appealing for walking and bicycling safely. Coordinate with adjacent jurisdictions and regional agencies to improve pedestrian and bicycle trails, facilities, signage, and amenities. -Provide safe and convenient pedestrian and bicycle connections to and from town centers, other commercial districts, office complexes, neighborhoods, schools, other major activity centers, and surrounding communities. -Work with neighboring jurisdictions to provide well-designed pedestrian and bicycle crossings of major roadways. -Promote walking throughout the community. Install sidewalks where missing and make improvements

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Table 17
General Planning Level Mitigation Strategies Summary

Strategy	Source Type[1]	Agency/Organization[2]	Description/Comments
			to existing sidewalks for accessibility purposes. Particular attention should be given to needed sidewalk improvement near schools and activity centers. -Encourage businesses or residents to sponsor street furniture and landscaped areas. - Strive to provide pedestrian pathways that are well shaded and pleasantly landscaped to encourage use. - Attract bicyclists from neighboring communities to ride their bicycles or to bring their bicycles on the train to enjoy bicycling around the community and to support local businesses. - Meet guidelines to become nationally recognized as a Bicycle-Friendly community. - Provide for an education program and stepped up code enforcement to address and minimize vegetation that degrades access along public rights-of-way. -Engage in discussions with transit providers to increase the number of bicycles that can be accommodated on buses
MS G-6: Achieve optimum use of regional rail transit.	GP/ Mobile	Cities/Counties (e.g., Aliso Viejo, Claremont)	-Support regional rail and work with rail authority to expand services. - Achieve better integration of all transit options. -Work with regional transportation planning agencies to finance and provide incentives for multimodal transportation systems. - Promote activity centers and transit-oriented development projects around the transit station.
MS G-7: Expand and optimize use of local and regional bus and transit systems.	GP/ Mobile	Cities/Counties (e.g., Aliso Viejo, Claremont)	-Encourage convenient public transit service between area and airports. -Support the establishment of a local shuttle to serve commercial centers. -Promote convenient, clean, efficient, and accessible public transit that serves transit-dependent riders and attracts discretionary riders as an alternative to reliance on single-occupant automobiles.

Table 17
General Planning Level Mitigation Strategies Summary

Strategy	Source Type[1]	Agency/Organization[2]	Description/Comments
			- Empower seniors and those with physical disabilities who desire maximum personal freedom and independence of lifestyle with unimpeded access to public transportation. -Integrate transit service and amenities with surrounding land uses and buildings.
Conservation, Open Space			
MS G-8: Emphasize the importance of water conservation and maximizing the use of native, low-water landscaping.	GP/Stationary & Area	Cities/Counties (e.g., Aliso Viejo, Claremont)	-Reduce the amount of water used for landscaping and increase use of native and low water plants. Maximize use of native, low-water plants for landscaping of areas adjacent to sidewalks or other impermeable surfaces. -Encourage the production, distribution and use of recycled and reclaimed water for landscaping projects throughout the community, while maintaining urban runoff water quality objectives. -Promote water conservation measures, reduce urban runoff, and prevent groundwater pollution within development projects, property maintenance, area operations and all activities requiring approval. -Educate the public about the importance of water conservation and avoiding wasteful water habits. -Work with water provider in exploring water conservation programs, and encourage the water provider to offer incentives for water conservation.
MS G-9: Improve air quality within the region.	GP/ Mobile, Stationary, & Area	Cities/Counties (e.g., Aliso Viejo, Claremont)	-Integrate air quality planning with area land use, economic development and transportation planning efforts. -Support programs that reduce air quality emissions related to vehicular travel. -Support alternative transportation modes and technologies, and develop bike- and pedestrian-friendly neighborhoods to reduce emissions associated with automobile use. -Encourage the use of clean fuel vehicles. -Promote the use of fuel-efficient heating and cooling equipment and other appliances, such as water

Table 17
General Planning Level Mitigation Strategies Summary

Strategy	Source Type[1]	Agency/Organization[2]	Description/Comments
			heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces, and boiler units. - Promote the use of clean air technologies such as fuel cell technologies, renewable energy sources. UV coatings, and alternative, non-fossil fuels. -Require the planting of street trees along streets and inclusion of trees and landscaping for all development projects to help improve airshed and minimize urban heat island effects. - Encourage small businesses to utilize clean, innovative technologies to reduce air pollution. - Implement principles of green building. - Support jobs/housing balance within the community so more people can both live and work within the community. To reduce vehicle trips, encourage people to telecommute or work out of home or in local satellite offices.
MS G-10: Encourage and maximize energy conservation and identification of alternative energy sources.	GP/ Stationary & Area	Cities/Counties (e.g., Aliso Viejo, Claremont)	-Encourage green building designs for new construction and renovation projects within the area. -Coordinate with regional and local energy suppliers to ensure adequate supplies of energy to meet community needs, implement energy conservation and public education programs, and identify alternative energy sources where appropriate. -Encourage building orientations and landscaping that enhance natural lighting and sun exposure. -Encourage expansion of neighborhood-level products and services and public transit opportunities throughout the area to reduce automobile use. - Incorporate the use of energy conservation strategies in area projects. - Promote energy-efficient design features, including appropriate site orientation, use of light color roofing and building materials, and use of evergreen trees and wind-break trees to reduce fuel consumption for heating and cooling.

Table 17
General Planning Level Mitigation Strategies Summary

Strategy	Source Type[1]	Agency/Organization[2]	Description/Comments
			-Explore and consider the cost/benefits of alternative fuel vehicles including hybrid, natural gas, and hydrogen powered vehicles when purchasing new vehicles. -Continue to promote the use of solar power and other energy conservation measures. - Encourage residents to consider the cost/benefits of alternative fuel vehicles. - Promote the use of different technologies that reduce use of non-renewable energy resources. -Facilitate the use of green building standards and LEED in both private and public projects. -Promote sustainable building practices that go beyond the requirements of Title 24 of the California Administrative Code, and encourage energy-efficient design elements, as appropriate. -Support sustainable building practices that integrate building materials and methods that promote environmental quality, economic vitality, and social benefit through the design, construction, and operation of the built environment. - Investigate the feasibility of using solar (photovoltaic) street lights instead of conventional street lights that are powered by electricity in an effort to conserve energy. - Encourage cooperation between neighboring development to facilitate on-site renewable energy supplies or combined heat and power co-generation facilities that can serve the energy demand of contiguous development.

Table 17
General Planning Level Mitigation Strategies Summary

Strategy	Source Type[1]	Agency/Organization[2]	Description/Comments
MS G-11: Preserve unique community forests, and provide for sustainable increase and maintenance of this valuable resource.	GP/Stationary & Area	Cities/Counties (e.g., Aliso Viejo, Claremont)	- Develop a tree planting policy that strives to accomplish specific % shading of constructed paved and concrete surfaces within five years of construction. -Provide adequate funding to manage and maintain the existing forest, including sufficient funds for tree planting, pest control, scheduled pruning, and removal and replacement of dead trees. -Coordinate with local and regional plant experts in selecting tree species that respect the natural region in which Claremont is located, to help create a healthier, more sustainable urban forest. - Continue to plant new trees (in particular native tree species where appropriate), and work to preserve mature native trees. -Increase the awareness of the benefits of street trees and the community forest through a area wide education effort. -Encourage residents to properly care for and preserve large and beautiful trees on their own private property.
Housing			
MS G-12: Provide affordability levels to meet the needs of community residents.	GP/ Mobile	Cities/Counties (e.g., Aliso Viejo, Claremont)	-Encourage development of affordable housing opportunities throughout the community, as well as development of housing for elderly and low and moderate income households near public transportation services. -Ensure a portion of future residential development is affordable to low and very low income households.
Land Use			
MS G-13: Promote a visually-cohesive urban form and establish connections between the urban core and outlying portions of the	GP/ Mobile, Stationary, & Area	Cities/Counties (e.g., Aliso Viejo, Claremont)	-Preserve the current pattern of development that encourages more intense and higher density development at the core of the community and less intense uses radiating from the central core. -Create and enhance landscaped greenway, trail and sidewalk connections between neighborhoods and to commercial areas, town centers, and parks.

Table 17
General Planning Level Mitigation Strategies Summary

Strategy	Source Type[1]	Agency/Organization[2]	Description/Comments
community.			-Identify ways to visually identify and physically connect all portions of the community, focusing on enhanced gateways and unifying isolated and/or outlying areas with the rest of the area. -Study and create a diverse plant identity with emphasis on drought-resistant native species.
MS G-14: Provide a diverse mix of land uses to meet the future needs of all residents and the business community.	GP/ Mobile	Cities/Counties (e.g., Aliso Viejo, Claremont)	-Attract a broad range of additional retail, medical, and office uses providing employment at all income levels. -Support efforts to provide beneficial civic, religious, recreational, cultural and educational opportunities and public services to the entire community. -Coordinate with public and private organizations to maximize the availability and use of parks and recreational facilities in the community. -Support development of hotel and recreational commercial land uses to provide these amenities to local residents and businesses.
MS G-15: Collaborate with providers of solid waste collection, disposal and recycling services to ensure a level of service that promotes a clean community and environment.	GP/ Stationary, & Area	Cities/Counties (e.g., Aliso Viejo, Claremont)	-Require recycling, composting, source reduction and education efforts throughout the community, including residential, businesses, industries, and institutions, within the construction industry, and in all sponsored activities.
MS G-16: Promote construction, maintenance and active use of publicly- and privately-operated parks, recreation programs, and a community center.	GP/ Mobile	Cities/Counties (e.g., Aliso Viejo, Claremont)	-Work to expand and improve community recreation amenities including parks, pedestrian trails and connections to regional trail facilities. -As a condition upon new development, require payment of park fees and/or dedication and provision of parkland, recreation facilities and/or multi-use trails that improve the public and private recreation system. -Research options or opportunities to provide necessary or desired community facilities.

Table 17
General Planning Level Mitigation Strategies Summary

Strategy	Source Type[1]	Agency/Organization[2]	Description/Comments
MS G-17: Promote the application of sustainable development practices.	GP/ Mobile, Stationary, & Area	Cities/Counties (e.g., Aliso Viejo, Claremont)	- Encourage sustainable development that incorporates green building best practices and involves the reuse of previously developed property and/or vacant sites within a built-up area. - Encourage the conservation, maintenance, and rehabilitation of the existing housing stock. -Encourage development that incorporates green building practices to conserve natural resources as part of sustainable development practices. -Avoid development of isolated residential areas in the hillsides or other areas where such development would require significant infrastructure investment, adversely impact biotic resources. - Provide land area zoned for commercial and industrial uses to support a mix of retail, office, professional, service, and manufacturing businesses.
MS G-18: Create activity nodes as important destination areas, with an emphasis on public life within the community.	GP/ Mobile	Cities/Counties (e.g., Aliso Viejo, Claremont)	-Provide pedestrian amenities, traffic-calming features, plazas and public areas, attractive streetscapes, shade trees, lighting, and retail stores at activity nodes. -Provide for a mixture of complementary retail uses to be located together to create activity nodes to serve adjacent neighborhoods and to draw visitors from other neighborhoods and from outside the area.
MS G-19: Make roads comfortable, safe, accessible, and attractive for use day and night.	GP/ Mobile	Cities/Counties (e.g., Aliso Viejo, Claremont)	-Provide crosswalks and sidewalks along streets that are accessible for people with disabilities and people who are physically challenged. -Provide lighting for walking and nighttime activities, where appropriate. -Provide transit shelters that are comfortable, attractive, and accommodate transit riders.
MS G-20: Maintain and expand where possible the system of neighborhood connections that attach neighborhoods to larger roadways.	GP/ Mobile	Cities/Counties (e.g., Aliso Viejo, Claremont)	- Provide sidewalks where they are missing, and provide wide sidewalks where appropriate with buffers and shade so that people can walk comfortably. -Make walking comfortable at intersections through traffic-calming, landscaping, and designated crosswalks.

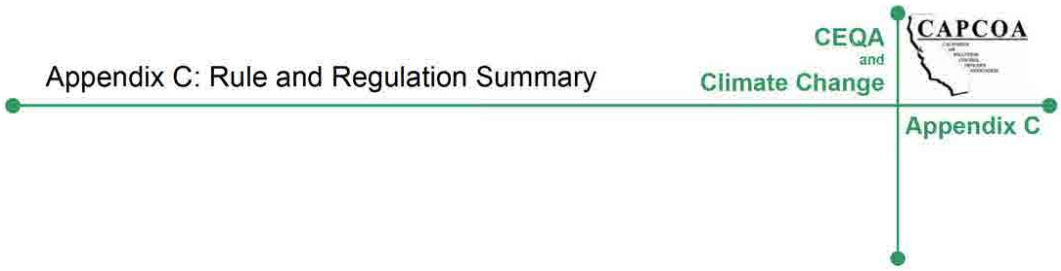
Table 17
General Planning Level Mitigation Strategies Summary

Strategy	Source Type[1]	Agency/Organization[2]	Description/Comments
			-Look for opportunities for connections along easements & other areas where vehicles not permitted.
MS G-21: Create distinctive places throughout the area.	GP/ Mobile	Cities/Counties (e.g., Aliso Viejo, Claremont)	-Provide benches, streetlights, public art, and other amenities in public areas to attract pedestrian activities. -Encourage new developments to incorporate drought tolerant and native landscaping that is pedestrian friendly, attractive, and consistent with the landscaped character of area. -Encourage all new development to preserve existing mature trees. -Encourage streetscape design programs for commercial frontages that create vibrant places which support walking, bicycling, transit, and sustainable economic development. -Encourage the design and placement of buildings on lots to provide opportunities for natural systems such as solar heating and passive cooling. - Ensure that all new industrial development projects are positive additions to the community setting, provide amenities for the comfort of the employees such as outdoor seating area for breaks or lunch, and have adequate landscape buffers.
MS G-22: Reinvest in existing neighborhoods and promote infill development as a preference over new, greenfield development	GP/ Mobile, Stationary, & Area	Cities/Counties (e.g., Aliso Viejo, Claremont)	- Identify all underused properties in the plan area and focus development in these opportunity sites prior to designating new growth areas for development. - Implement programs to retro-fit existing structures to make them more energy-efficient. -Encourage compact development, by placing the desired activity areas in smaller spaces.

Table 17
General Planning Level Mitigation Strategies Summary

Strategy	Source Type[1]	Agency/Organization[2]	Description/Comments
Public Safety			
MS G-23: Promote a safe community in which residents can live, work, shop, and play.	GP/ Mobile	Cities/Counties (e.g., Aliso Viejo, Claremont)	- Foster an environment of trust by ensuring non-biased policing, and by adopting policies and encouraging collaboration that creates transparency. - Facilitate traffic safety for motorists and pedestrians through proper street design and traffic monitoring.

Note:
[1] Where GP=General Plan.
[2] List is not meant to be all inclusive.
Source: Data complied by EDAW in 2007



Appendix C

Rule and Regulation Summary

Table 18
Rule and Regulation Summary

Rule/Regulation	Reduction	Implementation Date	Agency	Description	Comments
Low Carbon Fuel Standard	10-20 MMT CO_2e by 2020	January 1, 2010	ARB	This rule/regulation will require fuel providers (e.g., producers, importers, refiners and blenders) to ensure that the mix of fuels they sell in CA meets the statewide goal to reduce the carbon intensity of CA's transportation fuels by at least 10% by the 2020 target.	ARB Early Action Measure
Reduction of HFC-134a Emissions from Nonprofessional Servicing of Motor Vehicle Air Conditioning Systems	1-2 MMT CO_2e by 2020	January 1, 2010	ARB	This rule/regulation will restrict the use of high GWP refrigerants for nonprofessional recharging of leaky automotive air conditioning systems.	ARB Early Action Measure
Landfill Gas Recovery	2-4 MMT CO_2e by 2020	January 1, 2010	IWMB, ARB	This rule/regulation will require landfill gas recovery systems on small to medium landfills that do not have them and upgrade the requirements at landfills with existing systems to represent best capture and destruction efficiencies.	ARB Early Action Measure
Vehicle Climate Change Standards (AB 1493 Pavley, Chapter 200, Statutes of 2002)	30 MMT CO_2e by 2020	2009	ARB	This rule/regulation will require ARB to achieve the maximum feasible and cost effective reduction of GHG emissions from passenger vehicles and light-duty trucks.	ARB Early Action Measure
Reduction of PFCs from the Semiconductor Industry	0.5 MMT CO_2e by 2020	2007–2009	ARB	This rule/regulation will reduce GHG emissions by process improvements/source reduction, alternative chemicals capture and beneficial reuse, and destruction technologies	Underway or to be initiated by CAT members in 2007-2009 period

AB=Assembly Bill; ARB=California Air Resources Board; Calfire=California Fire; CA=California; Caltrans=California Department of Transportation; CAT=California Action Team; CEC=California Energy Commission; CDFA=California Department of Food and Agriculture; CH_4=Methane; CO_2=Carbon Dioxide; CPUC=California Public Utilities Commission; CUFR=California Urban Forestry; DGS=Department of General Services; DWR=Department of Water Resources; GHG=Greenhouse Gas; GWP=Global Warming Potential; IGCC= Integrated Gasification Combined Cycle; IOU= Investor-Owned Utility; IT=Information Technology; IWCB= Integrated Waste Management Board; LNG= Liquefied Natural Gas; MMT CO_2e=Million Metric Tons Carbon Dioxide Equivalent; MW=Megawatts; NA=Not Available; N_2O=Nitrous Oxide; PFC= Perfluorocompound; POU= Publicly Owned Utility; RPS= Renewable Portfolio Standards; RTP=Regional Transportation Plan SB=Senate Bill; SWP=State Water Project; TBD=To Be Determined; UC/CSU=University of California/California State University; ULEV=Ultra Low Emission Vehicle.

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Table 18
Rule and Regulation Summary

Rule/Regulation	Reduction	Implementation Date	Agency	Description	Comments
Restrictions on High GWP Refrigerants	9 MMT CO_2e by 2020	2010	ARB	This rule/regulation will expand and enforce the national ban on release of high GWP refrigerants during appliance lifetime.	ARB Early Action Measure
Cement Manufacture	<1 MMT CO_2e per year (based on 2004 production levels)	2010	Caltrans	This rule/regulation will allow 2.5% interground limestone concrete mix in cement use.	CAT Early Action Measure
Hydrogen Fuel Standards (SB 76 of 2005)	TBD	By 2008	CDFA	This rule/regulation will develop hydrogen fuel standards for use in combustion systems and fuel cells.	CAT Early Action Measure
Regulation of GHG from Load Serving Entities (SB 1368)	15 MMT CO_2e by 2020	May 23, 2007	CEC, CPUC	This rule/regulation will establish a GHG emission performance standard for baseload generation of local publicly owned electric utilities that is no higher than the rate of emissions of GHG for combined-cycle natural gas baseload generation.	CAT Early Action Measure
Energy Efficient Building Standards	TBD	In 2008	CEC	This rule/regulation will update of Title 24 standards.	CAT Early Action Measure
Energy Efficient Appliance Standards	TBD	January 1, 2010	CEC	This rule/regulation will regulate light bulb efficiency	CAT Early Action Measure
Tire Efficiency (Chapter 8.7 Division 15 of the Public Resources Code)	<1 MMT CO_2e by 2020	January 1, 2010	CEC & IWMB	This rule/regulation will ensure that replacement tires sold in CA are at least as energy efficient, on average, as tires sold in the state as original equipment on these vehicles.	CAT Early Action Measure
New Solar Homes Partnership	TBD	January 2007	CEC	Under this rule/regulation, approved solar systems will receive incentive funds based on system performance above building standards.	CAT Early Action Measure

C-2

Table 18
Rule and Regulation Summary

Rule/Regulation	Reduction	Implementation Date	Agency	Description	Comments
Water Use Efficiency	1 MMT CO_2e by 2020	2010	DWR	This rule/regulation will adopt standards for projects and programs funded through water bonds that would require consideration of water use efficiency in construction and operation.	CAT Early Action Measure
State Water Project	TBD	2010	DWR	This rule/regulation will include feasible and cost effective renewable energy in the SWP's portfolio.	CAT Early Action Measure
Cleaner Energy for Water Supply	TBD	2010	DWR	Under this rule/regulation, energy supply contracts with conventional coal power plants will not be renewed.	CAT Early Action Measure
IOU Energy Efficiency Programs	4 MMT CO_2e by 2020	2010	CPUC	This rule/regulation will provide a risk/reward incentive mechanism for utilities to encourage additional investment in energy efficiency; evaluate new technologies and new measures like encouraging compact fluorescent lighting in residential and commercial buildings	CAT Early Action Measure
Solar Generation	TBD	2007–2009	DGS	3 MW of clean solar power generation implemented in CA last year, with another 1 MW coming up. The second round is anticipated to total additional 10 MW and may include UC/CSU campuses and state fairgrounds.	Underway or to be initiated by CAT members in 2007-2009 period

AB=Assembly Bill; ARB=California Air Resources Board; Calfire=California Fire; CA=California; Caltrans=California Department of Transportation; CAT=California Action Team; CEC=California Energy Commission; CDFA=California Department of Food and Agriculture; CH_4=Methane; CO_2=Carbon Dioxide; CPUC=California Public Utilities Commission; CUFR=California Urban Forestry; DGS=Department of General Services; DWR=Department of Water Resources; GHG=Greenhouse Gas; GWP=Global Warming Potential; IGCC= Integrated Gasification Combined Cycle; IOU= Investor-Owned Utility; IT=Information Technology; IWCB= Integrated Waste Management Board; LNG= Liquefied Natural Gas; MMT CO_2e=Million Metric Tons Carbon Dioxide Equivalent; MW=Megawatts; NA=Not Available; N_2O=Nitrous Oxide; PFC= Perfluorocompound; POU= Publicly Owned Utility; RPS= Renewable Portfolio Standards; RTP=Regional Transportation Plan SB=Senate Bill; SWP=State Water Project; TBD=To Be Determined; UC/CSU=University of California/California State University; ULEV=Ultra Low Emission Vehicle.

C-3

Table 18
Rule and Regulation Summary

Rule/Regulation	Reduction	Implementation Date	Agency	Description	Comments
Transportation Efficiency	9 MMT CO_2e by 2020	2007–2009	Caltrans	This rule/regulation will reduce congestion, improve travel time in congested corridors, and promote coordinated, integrated land use.	Underway or to be initiated by CAT members in 2007-2009 period
Smart Land Use and Intelligent Transportation	10 MMT CO_2e by 2020	2007–2009	Caltrans	This rule/regulation will integrate consideration of GHG reduction measures and energy efficiency factors into RTPs, project development etc.	Underway or to be initiated by CAT members in 2007-2009 period
Cool Automobile Paints	1.2 to 2.0 MMT CO_2e by 2020	2009	ARB	Cool paints would reduce the solar heat gain in a vehicle and reduce air conditioning needs.	ARB Early Action Measure
Tire Inflation Program	TBD	2009	ARB	This rule/regulation will require tires to be checked and inflated at regular intervals to improve fuel economy.	ARB Early Action Measure
Electrification of Stationary Agricultural Engines	0.1 MMT CO_2e by 2020	2010	ARB	This rule/regulation will provide incentive funding opportunities for replacing diesel engines with electric motors.	ARB Early Action Measure
Desktop Power Management	Reduce energy use by 50%	2007–2009	DGS, ARB	This rule/regulation will provide software to reduce electricity use by desktop computers by up to 40%.	Currently deployed in DGS
Reducing CH_4 Venting/Leaking from Oil and Gas Systems (EJAC-3/ARB 2-12)	1 MMT CO_2e by 2020	2010	ARB	This rule/regulation will reduce fugitive CH_4 emissions from production, processing, transmission, and distribution of natural gas and oil.	ARB Early Action Measure
Replacement of High GWP Gases Used in Fire Protection Systems with Alternate Chemical (ARB 2-10)	0.1 MMT CO_2e by 2020	2011	ARB	This rule/regulation will require the use of lower GWP substances in fire protection systems.	ARB Early Action Measure
Contracting for Environmentally Preferable Products	NA	2007–2009	DGS	New state contracts have been or are being created for more energy and resource efficient IT goods, copiers, low mercury fluorescent lamps, the CA Gold Carpet Standard and office furniture.	Underway or to be initiated by CAT members in 2007-2009 period
Hydrogen Fuel Cells	NA	2007–2009	DGS	This rule/regulation will incorporate clean hydrogen fuel cells in stationary applications	Underway or to be initiated by CAT members in 2007-2009

C-4

Table 18
Rule and Regulation Summary

Rule/Regulation	Reduction	Implementation Date	Agency	Description	Comments
				at State facilities and as back-up generation for emergency radio services.	period
High Performance Schools	NA	2007–2009	DGS	New guidelines adopted for energy and resource efficient schools; up to $100 million in bond money for construction of sustainable, high performance schools.	Underway or to be initiated by CAT members in 2007-2009 period
Urban Forestry	1 MMT CO_2e by 2020	2007–2009	Calfire, CUFR	This rule/regulation will provide five million additional trees in urban areas by 2020.	Underway or to be initiated by CAT members in 2007-2009 period
Fuels Management/Biomass	3 MMT CO_2e by 2020	2007–2009	Calfire	This rule/regulation will provide biomass from forest fuel treatments to existing biomass utilization facilities.	Underway or to be initiated by CAT members in 2007-2009 period
Forest Conservation and Forest Management	10 MMT CO_2e by 2020	2007–2009	Calfire, WCB	This rule/regulation will provide opportunities for carbon sequestration in Proposition 84 forest land conservation program to conserve an additional 75,000 acres of forest landscape by 2010.	Underway or to be initiated by CAT members in 2007-2009 period
Afforestation/Reforestation	2 MMT CO_2e by 2020	2007–2009	Calfire	This rule/regulation will subsidize tree planting.	Underway or to be initiated by CAT members in 2007-2009 period
Dairy Digesters	TBD	January 1, 2010	CDFA	This rule/regulation will develop a dairy digester protocol to document GHG emission reductions from these facilities.	ARB Early Action Measure

AB=Assembly Bill; ARB=California Air Resources Board; Calfire=California Fire; CA=California; Caltrans=California Department of Transportation; CAT=California Action Team; CEC=California Energy Commission; CDFA=California Department of Food and Agriculture; CH_4=Methane; CO_2=Carbon Dioxide; CPUC=California Public Utilities Commission; CUFR=California Urban Forestry; DGS=Department of General Services; DWR=Department of Water Resources; GHG=Greenhouse Gas; GWP=Global Warming Potential; IGCC= Integrated Gasification Combined Cycle; IOU= Investor-Owned Utility; IT=Information Technology; IWCB= Integrated Waste Management Board; LNG= Liquefied Natural Gas; MMT CO_2e=Million Metric Tons Carbon Dioxide Equivalent; MW=Megawatts; NA=Not Available; N_2O=Nitrous Oxide; PFC= Perfluorocompound; POU= Publicly Owned Utility; RPS= Renewable Portfolio Standards; RTP=Regional Transportation Plan SB=Senate Bill; SWP=State Water Project; TBD=To Be Determined; UC/CSU=University of California/California State University; ULEV=Ultra Low Emission Vehicle.

C-5

Table 18
Rule and Regulation Summary

Rule/Regulation	Reduction	Implementation Date	Agency	Description	Comments
Conservation Tillage and Enteric Fermentation	1 MMT CO_2e by 2020	2007–2009	CDFA	This rule/regulation will develop and implement actions to quantify and reduce enteric fermentation emissions from livestock and sequester soil carbon using cover crops and conservation tillage.	Underway or to be initiated by CAT members in 2007-2009 period
ULEV	TBD	2007–2009	DGS	A new long term commercial rental contract was released in March 2007 requiring a minimum ULEV standard for gasoline vehicles and requires alternative fuel and hybrid-electric vehicles.	Underway or to be initiated by CAT members in 2007-2009 period
Flex Fuel Vehicles	370 metric tons CO_2, 0.85 metric tons of CH_4, and 1.14 metric tons of N_2O	2007–2009	DGS	Under this rule/regulation, DGS is replacing 800 vehicles with new, more efficient vehicles.	Underway or to be initiated by CAT members in 2007-2009 period
Climate Registry	TBD	2007–2009	DGS	Benchmarking and reduction of GHG emissions for state owned buildings, leased buildings and light duty vehicles.	Underway or to be initiated by CAT members in 2007-2009 period
Municipal Utilities Electricity Sector Carbon Policy	Included in SB 1368 reductions	2007–2009	CEC, CPUC, ARB	Under this rule/regulation, GHG emissions cap policy guidelines for CA's electricity sector (IOUs and POUs).	Underway or to be initiated by CAT members in 2007-2009 period
Alternative Fuels: Nonpetroleum Fuels	TBD	2007–2009	CEC	State plan to increase the use of alternative fuels for transportation; full fuel cycle assessment.	Underway or to be initiated by CAT members in 2007-2009 period
Zero Waste/High Recycling Strategy	5 MMT CO_2e by 2020	2007–2009	IWMB	This rule/regulation will identify materials to focus on to achieve GHG reduction at the lowest possible cost; Builds on the success of 50% Statewide Recycling Goal.	Underway or to be initiated by CAT members in 2007-2009 period
Organic Materials Management	TBD	2007–2009	IWMB	This rule/regulation will develop a market incentive program to increase organics diversion to the agricultural industry.	Underway or to be initiated by CAT members in 2007-2009 period
Landfill Gas Energy	TBD	2007–2009	IWMB	Landfill Gas to Energy & LNG/biofuels	Underway or to be initiated by CAT members in 2007-2009 period

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Table 18
Rule and Regulation Summary

Rule/Regulation	Reduction	Implementation Date	Agency	Description	Comments
Target Recycling	TBD	2007–2009	IWMB	This rule/regulation will focus on industry/public sectors with high GHG components to implement targeted commodity recycling programs.	Underway or to be initiated by CAT members in 2007-2009 period
Accelerated Renewable Portfolio Standard	Included in SB 1368 reductions	2007–2009	CPUC	This rule/regulation will examine RPS long term planning and address the use of tradable renewable energy credits for RPS compliance.	Underway or to be initiated by CAT members in 2007-2009 period
CA Solar Initiative	1 MMT CO_2e by 2020	2007–2009	CPUC	Initiative to deliver 2000 MWs of clean, emissions free energy to the CA grid by 2016.	Underway or to be initiated by CAT members in 2007-2009 period
Carbon Capture and Sequestration	TBD	2007–2009	CPUC	Proposals for power plants with IGCC and/or carbon capture in the next 18 months.	Underway or to be initiated by CAT members in 2007-2009

Source: Data complied by EDAW in 2007

AB=Assembly Bill; ARB=California Air Resources Board; Calfire=California Fire; CA=California; Caltrans=California Department of Transportation; CAT=California Action Team; CEC=California Energy Commission; CDFA=California Department of Food and Agriculture; CH_4=Methane; CO_2=Carbon Dioxide; CPUC=California Public Utilities Commission; CUFR=California Urban Forestry; DGS=Department of General Services; DWR=Department of Water Resources; GHG=Greenhouse Gas; GWP=Global Warming Potential; IGCC= Integrated Gasification Combined Cycle; IOU= Investor-Owned Utility; IT=Information Technology; IWCB= Integrated Waste Management Board; LNG= Liquefied Natural Gas; MMT CO_2e=Million Metric Tons Carbon Dioxide Equivalent; MW=Megawatts; NA=Not Available; N_2O=Nitrous Oxide; PFC= Perfluorocompound; POU= Publicly Owned Utility; RPS= Renewable Portfolio Standards; RTP=Regional Transportation Plan SB=Senate Bill; SWP=State Water Project; TBD=To Be Determined; UC/CSU=University of California/California State University; ULEV=Ultra Low Emission Vehicle.

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EXHIBIT F

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Attorney General

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December 21, 2009

Dave Warner
Director of Permit Services
San Joaquin Valley Air Pollution Control District
1990 East Gettysburg Ave.
Fresno, CA 93726-0244

Re: District Policy And Guidance Document For Addressing GHG Emission Impacts under CEQA; Governing Board Meeting on Dec 17, 2009

Dear Mr. Warner:

I am writing concerning the Governing Board's meeting on December 17, 2009 at which the Board approved the District's Policy and Guidance documents for addressing Greenhouse Gas Impacts under the California Environmental Quality Act. We observed during the webcast of the Governing Board's meeting that certain representations were made by the District about our office's position on the policy, including our position in light of additions made to the policy by the District subsequent to the Board's November 5, 2009 meeting. I am writing to make clear that the Attorney General's position on the District's policy and guidance document is reflected in our November 4, 2009 letter (copy attached), and that our position has not changed since then.

Sincerely,

/s/

CLIFFORD L. RECHTSCHAFFEN
Special Assistant Attorney General

For EDMUND G. BROWN JR.
Attorney General

Attachment

Cc: Seyed Sadredin, Executive Director (w/o attachment)

EDMUND G. BROWN JR.
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November 4, 2009

VIA E-MAIL & U.S. MAIL

Dave Warner
Director of Permit Services
San Joaquin Valley Air Pollution Control District
1990 East Gettysburg Ave.
Fresno, CA 93726-0244

RE: Final Draft Staff Report on Greenhouse Gas Emissions Under CEQA

Dear Mr. Warner:

We have reviewed the San Joaquin Valley Air Pollution Control District's September 17, 2009, Final Draft Staff Report on "Addressing Greenhouse Gas Emissions Under the California Environmental Quality Act."[1] We appreciate the Air District's extensive efforts and leadership in this area.[2] We are concerned, however, that the approaches suggested in the Staff Report will not withstand legal scrutiny and may result in significant lost opportunities for the Air District and local governments to require mitigation of greenhouse gas (GHG) emissions.

The Staff Report sets out a proposed threshold of significance for GHG emissions for stationary source projects under the Air District's permitting authority. A threshold of significance is, in effect, a working definition of significance to be applied on a project-by-project basis that can help a lead agency determine which projects normally will be determined to be less than significant, and which normally will be determined to be significant.[3] In the context of GHG emissions, the relevant question is whether the project's emissions, when considered in conjunction with the emissions of past, current, and probable future projects, are

[1] The Attorney General submits these comments pursuant to his independent power and duty to protect the natural resources of the State. (See Cal. Const., art. V., § 13; Cal. Gov. Code, §§ 12511, 12600-12612; *D'Amico v. Board of Medical Examiners* (1974) 11 Cal.3d 1, 14-15.)

[2] The Staff Report states that "[n]o state agency has provided substantial and helpful guidance on how to adequately address GHG emissions under CEQA, nor has there been guidance on how to determine if such impacts are significant." (Report at p. 2.) In fact, there are numerous sources of guidance, including information on the Attorney General's website (http://ag.ca.gov/globalwarming/ceqa.php), a Technical Advisory issued by the Governor's Office of Planning and Research (http://opr.ca.gov/ceqa/pdfs/june08-ceqa.pdf); and the Resources Agency's proposed CEQA Guidelines amendments (http://ceres.ca.gov/ceqa/guidelines/), which is accompanied by a detailed, 78-page Initial Statement of Reasons (http://ceres.ca.gov/ceqa/docs/Initial_Statement_of_Reasons.pdf).

[3] Cal. Code Regs., tit. 14, § 15064.7, subd. (a).

cumulatively considerable.[4] Thresholds can be a useful interim tool until cities and counties have in place programmatic approaches, e.g., Climate Action Plans, which allow local government to consider a wide variety of mitigation opportunities and can substantially streamline the CEQA process for individual projects.[5] Staff's proposed stationary source GHG threshold relies on implementation of GHG emission control technologies. Under this proposal, projects that implement currently unspecified GHG Best Performance Standards ("BPS") would be deemed to not have significant impacts, regardless of the total amount of GHGs emitted.

The Staff Report also recommends a threshold of significance for cities and counties to use in determining whether a development or transportation project's GHG emissions are significant under CEQA. Like the stationary source threshold, this threshold would also rely on performance measures that are not currently identified. BPS for these projects would be any combination of identified GHG reduction measures that reduce project-specific GHG emission by at least 29 percent as compared to "business as usual," as calculated based on a point system to be developed in the future by the Air District.

The Staff Report contains a useful analysis of possible GHG mitigation measures for a variety of stationary sources and for development and transportation projects. This discussion will certainly assist lead agencies and project proponents in considering what mitigation measures currently are available and should be considered. It is not clear to us, however, how much additional analysis the Air District plans to do to support the proposed CEQA thresholds of significance recommended in the Staff Report. A public agency proposing to adopt a CEQA threshold of significance should be able to answer at least the following questions about its proposed approach:

What defined, relevant environmental objective is the threshold designed to meet, and what evidence supports selection of that objective?

The Staff Report does not discuss a particular environmental objective that would be achieved by implementing the proposed thresholds, such as meeting a GHG emissions reduction trajectory consistent with that set forth in AB 32 and Executive Order S-03-05 within the Air District's jurisdiction.[6] It appears that the Air District has not yet determined what amount of

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[4] Cal. Code Regs., tit. 14, § 15064, subd. (h)(1); see also Initial Statement of Reasons at p. 17 ("Due to the global nature of GHG emissions and their potential effects, GHG emissions will typically be addressed in a cumulative impacts analysis.")

[5] See Proposed Cal. Code Regs., tit. 14, § 15183.5, subd. (b) (describing tiering and streamlining available under "Plans for the Reduction of Greenhouse Gas Emissions"), available at http://ceres.ca.gov/ceqa/docs/FINAL_Text_of_Proposed_Amendemts.pdf; Draft Initial Statement of Reasons (discussing proposed § 15183.5) , available at http://ceres.ca.gov/ceqa/docs/Initial_Statement_of_Reasons.pdf#page=56; see also See Attorney General's General Plan/CEQA Frequently Asked Questions, available at http://ag.ca.gov/globalwarming/pdf/CEQA_GP_FAQs.pdf.

[6] Pursuant to these mandates, California is committed to reducing GHG emissions to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. These objectives are consistent with the underlying environmental objective of stabilizing atmospheric concentrations of greenhouse gases at a level that will substantially reduce the risk of dangerous climate change. (See AB 32 Scoping Plan at p. 4 ["The 2020 goal was established to be an aggressive,

GHG reduction it is aiming to achieve. Setting a relevant environmental objective is an essential step in establishing any legally defensible threshold of significance; without it, there is nothing against which to gauge the success of the threshold in operation.

What is the evidence that adopting the threshold will meet this objective?

Because the BPS discussed in the Staff Report are described as "illustrative" only, it is not possible at this time to determine whether the BPS ultimately adopted will reduce GHG emissions in the San Joaquin Valley and, if so, by how much. There is no stated commitment to tie BPS proposed in the future to regional GHG reduction objectives.

How does the threshold take into account the presumptive need for new development to be more GHG-efficient than existing development?

The Staff Report seems to assume that if new development projects reduce emissions by 29 percent compared to "business as usual," the 2020 statewide target of 29 percent below "business as usual" will also be achieved, but it does not supply evidence of this. Indeed, it seems that new development must be more GHG-efficient than this average, given that past and current sources of emissions, which are substantially less efficient than this average, will continue to exist and emit.[7]

Will the threshold routinely require new projects to consider mitigation beyond what is already required by law?

Because "business as usual" for a development project is defined by the Staff Report as what was typically done in similar projects in the 2002-2004 timeframe, and requirements affecting GHG emissions have advanced substantially since that date, it appears that the Air District's proposal would award emission reduction "points" for undertaking mitigation measures that are already required by local or state law.[8]

Similarly, we are concerned that project proponents could "game" the system. Under the current proposal, each project will be considered against a hypothetical project that could have been built on the site in the 2002-2004 time period. It is not clear why the project should be compared against a hypothetical project if that hypothetical project could not legally be built

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but achievable, mid-term target, and the 2050 greenhouse gas emissions reduction goal represents the level scientists believe is necessary to reach levels that will stabilize climate."])

[7] We note that CAPCOA expressly found that an approach that would rely on 28 to 33 percent reductions from BAU would have a "low" GHG emissions reduction effectiveness. CAPCOA, CEQA and Climate Change (Jan. 2008) at p. 56, available at http://www.capcoa.org/CEQA/CAPCOA%20White%20Paper.pdf.

[8] To take one important example, Title 24 has undergone two updates since 2002-2004 – in 2005 and 2008. The 2008 Title 24 standards are approximately 15 percent more stringent that the 2005 version. In addition, a significant number of local governments have adopted green building ordinances that go beyond Title 24 in just the past few years, and many more are considering adopting such ordinances as part of their Climate Action Plans. See http://ag.ca.gov/globalwarming/pdf/green_building.pdf.

today,[9] and the approach would appear to offer an incentive to project proponents to artificially inflate the hypothetical project to show that the proposed project is, by comparison, GHG-efficient.[10]

Will operation of the threshold allow projects with large total GHG emissions to avoid environmental review? What evidence supports such a result?

It appears that any project employing certain, as of yet unidentified, mitigation measures would be considered to not be significant, regardless of the project's total GHG emissions, which could be very large. For instance, under the Air District's proposal, it would appear that even a new development on the scale of a small city would be considered to not have a significant GHG impact and would not have to undertake further mitigation, provided it employs the specified energy efficiency and transportation measures. This would be true even if the new development emitted hundreds of thousands of tons of GHG each year, and even though other feasible measures might exist to reduce those impacts.[11] The Staff Report has not supplied scientific or quantitative support for the conclusion that such a large-emitting project, even if it earned 29 "points," would not have a significant effect on the environment.

Will the threshold benefit lead agencies in their determinations of significance?

For the reasons set forth above, we fear that the recommended approach in its current form may unnecessarily subject lead agencies that follow them to CEQA litigation. This would be detrimental not only to the lead agencies, but to the many project proponents who may face unnecessary delay and legal uncertainty.[12]

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[9] The appropriate baseline under CEQA is not a hypothetical future project, but rather existing physical conditions. (Cal. Code Regs., tit. 14, § 15126.2, subd. (a).)

[10] A detailed analysis of the proposed amendments to Rule 2301 (emissions reduction credit banking) is beyond the scope of this letter. It is important, however, that any such plan comply with CEQA's requirements for additionality. As the most recent draft of the proposed CEQA Guidelines notes, only "[r]eductions in emissions that are not otherwise required may constitute mitigation pursuant to this subdivision." Proposed Cal. Code Regs., tit. 14, § 15126.4, subd. (c), available at http://ceres.ca.gov/ceqa/docs/Text_of_Proposed_Changes.pdf.

[11] In the advance of a programmatic approach to addressing GHG emissions, lead agencies must examine even GHG-efficient projects with some scrutiny where total emissions are large. Once a programmatic approach is in place, the lead agency will be able to determine whether even a larger-emitting project is, or is not, consistent with the lead agency's overall strategy for reducing GHG emissions. If it is, the lead agency may be able to determine that its incremental contribution to climate change is not cumulatively considerable.

[12] The Staff Report states that "[l]ocal land-use agencies are facing increasing difficulties in addressing GHG emissions in their efforts to comply with CEQA." (Report at p. 2.) We strongly believe that this experience is not universal. In fact, many cities and counties are actively taking up their role as "essential partners" in addressing climate change (see AB 32 Scoping Plan at p. 26) by making commitments to develop local Climate Action Plans.

We support staff's continued work in this area. However, before formally endorsing or adopting any particular threshold, we recommend that the Air District consider the issues that we have raised in this letter; if warranted, evaluate the approaches currently under consideration by other districts; and, if possible, work with those districts to devise approaches that are complementary and serve CEQA's objectives.

Sincerely,

/ s /

TIMOTHY E. SULLIVAN
Deputy Attorney General

For EDMUND G. BROWN JR.
Attorney General

EXHIBIT G

4.8 GREENHOUSE GAS EMISSIONS

This section evaluates the greenhouse gas emissions (GHG) impacts of the proposed Plan. The information presented was compiled from multiple sources, including the Energy Policy Initiatives Center (EPIC) at the University of San Diego School of Law. A related topic, the impacts of increasing GHG emissions on global climate change, is discussed in Appendix F of the EIR.

4.8.1 EXISTING CONDITIONS

California law defines GHGs as any of the following compounds: CO_2, CH_4, N_2O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) (H&SC Section 38505(g)). CO_2, followed by CH_4 and N_2O, is the most common GHG. Atmospheric concentrations of GHGs have been increasing since measurements began in the 1970s. As of 2014, globally averaged annual mean concentration of atmospheric CO_2 is approximately 397 parts per million (ppm), CH_4 is approximately 1840 parts per billion (ppb), and N_2O is approximately 327 ppb (NOAA 2015).

Global warming potential (GWP) is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas; the GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO_2, the most abundant GHG. GHGs with lower emissions rates than CO_2 may still contribute to climate change because they are more effective at absorbing outgoing infrared radiation than CO_2. When accounting for GHGs, emissions are expressed in terms of CO_2 equivalents (CO_2e). The concept of CO_2e is used to account for the different GWP of GHGs to absorb infrared radiation. The reference gas for GWP is CO_2; therefore, CO_2 has a GWP of 1. The other main GHGs that have been attributed to human activity include CH_4, which has a GWP of 21, and N_2O, which has a GWP of 310.

Sources of CO_2 include combustion of fossil fuels (coal, oil, natural gas, gasoline, and wood). CH_4 is the main component of natural gas and also arises naturally from anaerobic decay of organic matter. Sources of N_2O include combustion of fossil fuels and industrial processes such as nylon production and production of nitric acid. Other GHGs are present in trace amounts in the atmosphere and are generated from various industrial or other uses.

4.8.1.1 EXISTING GHG EMISSIONS

Global GHG Emissions

The World Resources Institute (WRI 2014) estimated that worldwide emissions in 2011 were 43.8 billion metric tons (MT) CO_2e, of which the United States contributed the greatest percentage after China. Table 4.8-1 shows the top 10 emitters by country, which contribute 63 percent of global emissions. When accounting for GHGs, emissions are typically quantified in MT or millions of metric tons (MMT) and are shown as MMT CO_2e.

Table 4.8-1
Top 10 GHG-Emitting Countries, 2011

Country or Area	MMT CO_2e in 2011[1]	Percent
China	10,552	24
United States	6,550	15
India	2,486	6
Russia	2,374	5
Japan	1,307	3
Brazil	1,131	3
Germany	883	2
Indonesia	835	2
Canada	716	2
Iran	716	2

Source: WRI 2014

California GHG Emissions

In 2012, California accounted for approximately seven percent of U.S. emissions. The State of California GHG Inventory, prepared by ARB, identified and quantified statewide GHG emissions. The inventory includes estimates for CO_2, CH_4, N_2O, SF_6, HFCs, and PFCs, and is summarized in Table 4.8-2 (ARB 2014a). The inventory is divided into eight broad categories of emissions: Agriculture, Commercial, Electricity Generation, Industrial, Residential, Transportation, Recycling and Waste, and High GWP Gases. Transportation was the sector with the largest percentage of GHG emissions (36 percent), followed by electricity generation (21 percent), and industrial sources (19 percent). The remaining sectors each accounted for less than 10 percent of overall emissions.

Table 4.8-2
State of California Greenhouse Gas Emissions by Sector - 2012

Sector	Total 2012 Emissions ($MMTCO_2e$)	Percent of Total 2012 Emissions
Agriculture and Forestry	37.86	8%
Commercial	14.20	3%
Electricity Generation	95.09	21%
Industrial	89.16	19%
Residential	28.09	6%
Transportation	167.38	36%
Recycling and Waste	8.49	2%
High GWP Gases	18.41	4%
Total	**458.68**	**100%**

Source: ARB 2014a

San Diego Region GHG Emissions

Regional GHG emissions for existing conditions (2012) are calculated based on the current GHG inventory. The inventory is based on existing sources and activity within the region. GHG emissions are divided into 16 categories. Calculations and assumptions are described in Appendix G-1 to the EIR. Total GHG emissions in the San Diego region as of 2012 are ~~over~~ about 35 MMT CO_2e as shown in Table 4.8-3.

Table 4.8-3
Total Greenhouse Gas Emissions in the San Diego Region, 2012

Sector	Annual Emissions ($MMTCO_2e$)	Percentage of Annual Emissions
~~On-Road Transportation~~ Passenger Cars & Light Duty Vehicles	~~15.76~~13.14	~~43.7~~37.2%
Electricity	7.97	22.6~~1~~%
Natural Gas	2.84	~~7.9~~8.0%
Heavy Duty Trucks & Vehicles	1.89	5.4%
Solid Waste	1.75	4.~~8~~9%
Other Fuels	1.64	4.6%
Industrial	1.43	4.1~~0~~%
Aviation	1.37	3.9~~8~~%
Off-Road Equipment and Vehicles	0.92	2.6%
Wildfire	0.81	2.3~~2~~%
Other – Thermal Cogeneration	0.64	1.8%
Water Supply and Conveyance	0.52	1.5~~4~~%
Wastewater	0.16	0.5~~4~~%
Rail	0.11	0.3%
Agriculture	0.08	0.2%
Marine Vessels (excluding pleasure craft)	0.05	0.1%
Development + Sequestration	-0.65	n/a
Total	**~~35.4~~34.7**	**100%**

Source: Appendix G-1 to the EIR.
Note:
The revised numbers in this table reflect the minor modifications to the project description and the new version of EMFAC2014 (v1.0.7) released by ARB in May 2015. On-road GHG emissions in the Draft EIR were calculated using EMFAC2014 (v1.0.1).

4.8.1.2 CLIMATE CHANGE

A related topic, the impacts of increasing GHG emissions on climate change, is discussed in Appendix F to the EIR. As discussed in Appendix F, during the timeframe of the proposed Plan, climate change effects likely to exacerbate the proposed Plan's impacts on selected resource areas include, but are not limited to:

- Higher annual average temperature
- More days of extreme high temperatures
- Longer and more humid heat waves
- More intense and frequent drought
- Increased evaporation from soil, surface waters
- More frequent, severe wildfires
- Sea level rise
- Less frequent, more intense rainstorms, more frequent watershed flood events
- More frequent and severe coastal flooding
- Spreading of pests and vector-borne diseases

In general, the effects listed above would increase between 2020 and 2050.

4.8.2 REGULATORY SETTING

4.8.2.1 FEDERAL LAWS, REGULATIONS, PLANS, AND POLICIES

Energy Policy and Conservation Action of 1975 and Corporate Average Fuel Standards

The Energy Policy and Conservation Act of 1975 (42 USC Section 6201 [1975]) establishes fuel economy standards for on-road motor vehicles sold in the United States.

Compliance with federal fuel economy standards is determined through the Corporate Average Fuel Economy (CAFE) program on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States.

On April 1, 2010, USDOT and USEPA established new federal rules that set the first-ever national GHG emissions standards and significantly increased the fuel economy of all new passenger cars and light trucks sold in the United States. The standards set a requirement to meet an average fuel economy of 34.1 miles per gallon by 2016. In August 2012, the federal government adopted the second rule that increases fuel economy for the fleet of passenger cars, light-duty trucks, and medium-duty passenger vehicles for model years 2017 to 2025 to average fuel economy of 54.5 miles per gallon by 2025. Because NHTSA cannot set standards beyond model year 2021 due to statutory obligations and the rules' long timeframe, a mid-term evaluation is included in the rule. Standards for model years 2022 through 2025 have not been formally adopted by NHTSA. In August 2011, NHTSA and USEPA released medium- and heavy-duty vehicle standards for model years 2014 to 2018. Tighter standards for these vehicles for model years after 2018 are expected to be developed and issued by March 2016.

Energy Policy Act of 1992

The Energy Policy Act of 1992 (40 USC Section 13201 [1992]) (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain government and private fleets to purchase light-duty AFVs. Federal tax deductions were created for businesses and individuals to cover the incremental cost of AFVs. EPAct also established the Clean Cities Program. The primary goal of the Program is to cut petroleum use in the United States by 2.5 billion gallons per year by 2020 with the following three strategies:

- Replace petroleum with alternative and renewable fuels,
- Reduce petroleum consumption through smarter driving practices and fuel economy improvements, and
- Eliminate petroleum use through idle reduction and other fuel-saving technologies and practices.

As part of the federal Clean Cities Program, the San Diego Regional Clean Cities Coalition works with vehicle fleets, fuel providers, community leaders, and other stakeholders to reduce petroleum use in transportation in the San Diego region (San Diego Regional Clean Cities Coalition 2014).

Energy Policy Act of 2005

The EPAct of 2005 (42 USC Section 15801 [2005]) includes several requirements that support the use of alternatively fueled vehicles, including requirements for federal fleets and expansion of compliance options under EPAct 1992 by allowing fleets to choose a petroleum reduction path that achieves petroleum reductions equivalent to AFVs running on alternative fuels 100 percent of the time. The EPAct of 2005 funds research programs for AFVs and provides tax incentives for purchase of AFVs. It also provides for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for a clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 (EISA) (42 USC Section 17381 [2007]) includes provisions to increase the supply of renewable alternative fuel sources by setting a mandatory Renewable Fuel Standard, which requires transportation fuel sold in the United States to contain a minimum of 36 billion gallons of renewable fuels annually by 2022. EISA includes grant programs to encourage the development of cellulosic biofuels, plug-in hybrid electric vehicles, and other emerging electric vehicle technologies. EISA codifies into law the energy reduction goals for federal agencies put forth in Executive Order 13423 (USEPA 2007), and creates new requirements related to Corporate Average Fuel Economy Standards, the Renewable Fuel Standard, and efficiency standards for lighting and appliances. The law is projected to reduce GHG emissions by 9 percent from 2005 levels by 2030 (DOE 2014).

Clean Air Act

USEPA began regulating GHGs under the Clean Air Act (CAA) (42 USC Section 7401 et seq. [1970]) in 2011. USEPA's GHG regulations include regulations governing transportation and mobile sources, renewable fuels, carbon pollution standards for existing power plants, the GHG tailoring rule governing new and existing industrial facilities, and GHG reporting requirements. Standards for mobile sources have been established pursuant to Section 202 of the CAA, and GHGs from stationary sources are currently controlled under the authority of Part C of Title I of the act.

In 2013, USEPA issued proposed regulations to cut carbon pollution from new power plants. In 2014, USEPA proposed a plan to cut carbon pollution from existing or modified power plants. The proposed rule includes state-specific rate-based goals for CO_2 emissions from the power sector, as well as guidelines for states to follow in developing plans to achieve state-specific carbon reduction goals. Nationwide, by 2030, this rule would achieve CO_2 emission reductions from the power sector of approximately 30 percent from CO_2 emission levels in 2005 (USEPA 2014a). USEPA anticipates issuing a final rule on existing power plants and carbon pollution standards for new, modified, and reconstructed power plants by the summer of 2015 (USEPA 2015).

Federal Highway Administration/Federal Transit Administration

The Federal Transit Administration (FTA) works with public transportation providers and other key stakeholders to implement strategies that reduce GHG emissions from the transportation sector. FTA provides funding to support public transportation projects and provides technical assistance, research, and policy development on alternative fuels, high fuel efficiency vehicles, climate change mitigation and adaptation in the transportation sector. In cooperation with the FTA, the USEPA has developed information regarding clean passenger vehicles (USEPA 2014b).

The Federal Highway Administration (FHWA) has conducted climate change adaptation and resilience case studies and pilot projects throughout the country to test a climate change vulnerability assessment model. The FHWA conceptual model guided transportation agencies through the process of collecting and integrating climate and asset data in order to identify critical vulnerabilities. FHWA used the pilot projects to adopt its Climate Change & Extreme Weather Vulnerability Assessment Framework (FHWA 2015a). FHWA has also conducted a number of case studies to assess various climate adaptation strategies, including the Flood Levee System Improvements study in Washington, DC (FHWA 2015b); the Surfers Point Managed Shoreline Retreat Project in Ventura, California (FHWA 2015c); and Climate Change Adaptation Strategies for the New York State Department of Transportation (Columbia University Earth Institute 2011).

Executive Order 13514

On October 5, 2009, the President signed Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance (3 CFR 13514). The Executive Order set sustainability goals for federal agencies and focuses on making improvements in their environmental, energy, and economic performance. The Executive Order required federal agencies to submit a 2020 GHG pollution reduction target within 90 days, and to increase energy efficiency, reduce fleet petroleum consumption, conserve water, reduce waste, support sustainable communities, and leverage federal purchasing power to promote environmentally responsible products and technologies.

The Executive Order requires agencies to measure, manage, and reduce GHG emissions toward agency-defined targets. It describes a process by which agency goals will be set and reported to the President by the Chair of Council on Environmental Quality (CEQ). The Executive Order requires agencies to meet a number of energy, water, and waste reduction targets, including:

- 30 percent reduction in vehicle fleet petroleum use by 2020;
- 26 percent improvement in water efficiency by 2020;
- 50 percent recycling and waste diversion by 2015;
- 95 percent of all applicable contracts will meet sustainability requirements;
- Implementation of the 2030 net-zero-energy building requirement;
- Implementation of the stormwater provisions of the Energy Independence and Security Act of 2007, section 438; and
- Development of guidance for sustainable federal building locations in alignment with the Livability Principles put forward by the Department of Housing and Urban Development, DOT, and USEPA.

Executive Order 13693

On March 19, 2015, the President signed Executive Order 13693, Planning for Federal Sustainability in the Next Decade. The Executive Order sets a goal of reducing Federal agency GHG emissions by 40 percent over the next decade. The Executive Order sets agency GHG reduction targets and sustainability goals, including:

- Percentage reduction targets must be proposed by each Federal agency, including FHWA, FTA, and FRA, for agency-wide GHG emissions reductions by the end of fiscal year 2025 relative to a fiscal year 2008 baseline.
- Sustainability goals for each Federal agency, including:
    - Promoting building energy conservation, efficiency, and management;
    - Requiring the use of renewable and alternative energy for electric and thermal energy in Federal buildings by up to 25 percent by fiscal year 2025;
    - Requiring the use of renewable and alternative energy for total building energy consumption in Federal buildings by up to 30 percent by fiscal year 2025;
    - Improving Federal agency water efficiency and management to reduce water consumption by 36 percent by fiscal year 2025;
    - Improving Federal agency vehicle fleet efficiency and management to reduce GHG emissions by 30 percent by fiscal year 2025;
    - Promoting sustainable acquisition and procurement practices; and
    - Advancing waste prevention and pollution prevention by diverting at least 50 percent of non-hazardous solid waste.

Off-road Vehicle and Equipment Regulations

Federal regulations that govern off-road vehicles such as locomotives, heavy equipment, etc. are discussed in Section 4.3, Air Quality. These regulations would also result in reductions in GHG emissions, and are summarized below.

Locomotive Engine Emission Standards: USEPA has adopted locomotive engine exhaust emission standards (40 CFR Part 1033 et seq.) that apply to line haul and switching locomotives with total rated horsepower of 750 kilowatts (1006 horsepower [hp]) or greater. These emission standards apply to hydrocarbons, NO_x, particulate matter, and CO, and would also reduce emissions of GHG through requiring more efficient locomotive engines.

Non-Road Compression-Ignition Engine Emission Standards: USEPA has also adopted emission standards for compression-ignition engines that apply to engines with a total rated horsepower of 11 hp to engines with a rating greater than 1207 hp (40 CFR Part 89.112; Part 1039.101; Part 1039.102). These emission standards apply to hydrocarbons, NO_x, particulate matter, and CO, and would also reduce emissions of GHG through requiring more efficient non-road engines.

4.8.2.2 STATE LAWS, REGULATIONS, PLANS, AND POLICIES

Executive Order S-3-05

Executive Order S-3-05, among other things, established the following GHG emission reduction goals for California: reduction to 2000 levels by 2010; to 1990 levels by 2020; and to 80 percent below 1990 levels by 2050.

Executive Order B-16-12

Executive Order B-16-12 orders State entities under the direction of the Governor including ARB, the Energy Commission, and Public Utilities Commission to support the rapid commercialization of zero emission vehicles. It directs these entities to achieve various benchmarks related to zero emission vehicles, including:

- Infrastructure to support up to one million zero emission vehicles by 2020,
- Widespread use of zero emission vehicles for public transportation and freight transport by 2020,
- Over 1.5 million zero emission vehicles on California roads by 2025,
- Annual displacement of at least 1.5 billion gallons of petroleum fuels by 2025, and

It also sets a state GHG emissions reduction target for the transportation sector of 80 percent below 1990 levels by 2050.

Executive Order B-30-15

Executive Order B-30-15, among other things, establishes a new interim statewide greenhouse gas emission reduction target to reduce greenhouse gas emissions to 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050.

It further orders that all state agencies with jurisdiction over sources of greenhouse gas emissions to implement measures, pursuant to statutory authority, to achieve reductions of greenhouse gas emissions to meet the 2030 and 2050 greenhouse gas emissions reductions targets. It also directs ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent (MMTCO2e). Finally, it requires the Natural Resources Agency to update the state's climate adaptation strategy, Safeguarding California, every three years, and to ensure that its provisions are fully implemented.

California Global Warming Solutions Act and Climate Change Scoping Plan

The California Global Warming Solutions Act of 2006, widely known as AB 32 (Assembly Bill 32, Chapter 488, Statutes of 2006), requires ARB to develop and enforce regulations for reporting, verifying, and reducing statewide GHG emissions. The heart of the legislation is the requirement that statewide GHG emissions be reduced to 1990 levels by 2020. The Legislature also intended that that the statewide GHG emissions limit continue in existence and be used to maintain and continue reductions in emissions of greenhouse gases beyond 2020 (Health and Safety Code Section 38551(b)). The law requires ARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

AB 32 requires that ARB develop a Climate Change Scoping Plan (Scoping Plan) consisting of the main strategies California will implement to reduce statewide GHG emissions to 1990 levels by 2020. It must be updated every five years. ARB approved the initial Scoping Plan in 2008 (ARB 2008). The Scoping Plan functions as a roadmap for ARB's plans to achieve GHG reductions in California.

ARB approved the first update to the Scoping Plan in 2014 (ARB 2014b). The update defines ARB's climate change priorities for the next five years. The update describes progress made to meet the near-term objectives of AB 32 and defines California's climate change priorities and activities for the next several years. The update concludes that California is on track to meet the 2020 GHG limit and is well positioned to maintain and continue reductions beyond 2020. A support document for the update includes ARB's estimates for the statewide GHG reductions to be achieved by a number of measures in order reach the AB 32 emissions level by 2020, as summarized in Table 4.8-4. Of the over 55 MMTCO2e in reductions needed to meet the statewide 2020 emissions target, ARB estimates that 3.0 MMTCO2e (5.5 percent) of the reductions will come from statewide implementation of the SB 375 targets (the initial Scoping Plan estimated a 5 MMTCO2e reduction.)

Table 4.8-4
ARB Scoping Plan Update: Meeting the Statewide 2020 Emissions Target

Category	2020 (MMTCO2e)
AB 32 Baseline 2020 Forecast Emissions (2020 BAU)	509
Expected Reductions from Sector-Based Measures	**55.2**
Transportation	***22.9***
Advanced Clean Cars	3.1
Low Carbon Fuel Standard	15.2
Regional Targets (SB 375)	3.0
Tire Pressure Program	0.6
Ship Electrification	0.2
Heavy Duty Aerodynamics	0.9
Electricity and Natural Gas	***25.0***
Energy Efficiency and Conservation	12.2
Solar Hot Water	0.1
Renewable Electricity Standard (20%-33%)	11.5
Million Solar Roofs	1.1
High Global Warming Potential (GWP) Gases	***5.4***
Waste	***1.8***
Cap-and-Trade Reductions	**23.0**
2020 Limit	431

Source: ARB 2014b

The update identifies eight key focus areas comprising the major areas of California's economy and recommendations for developing additional requirements to meet the 2050 goals expressed in Executive Order S-3-05. The update frames activities and issues facing the State as it develops an integrated framework for achieving both air quality and climate goals in California beyond 2020. While the update discusses setting a mid-term target between 2020 and 2050, it does not recommend any numeric post-2020 targets, nor does it recommend a specific plan or specific actions showing how the state would meet the 2050 Executive Order goal.

Cap-and-Trade Program

ARB adopted its Cap-and-Trade Regulation (17 CCR 95802 et seq.) in 2012 as one of the strategies to achieve the 2020 target established by AB 32. Under cap-and-trade, an overall limit on GHG emissions from capped sectors has been established and facilities subject to the cap are able to trade permits (allowances) to emit GHGs. The cap will decline approximately 3 percent each year beginning in 2013. The first auction of allowances occurred in 2013. ARB estimates reductions from the Cap-and-Trade regulation will amount to 23 MMT CO_2e in 2020 (ARB 2014b).

REGIONAL TRANSPORTATION PLANNING

Senate Bill 375 (Chapter 728, Statutes of 2008)

SB 375 provides for a planning process to coordinate land use planning and RTPs to help California meet the GHG reductions established in AB 32. SB 375 requires RTPs prepared by MPOs, including SANDAG, to incorporate an SCS in their RTPs that demonstrates how the region would achieve GHG emission reduction targets set by ARB.

SB 375 has three major components: (1) using the regional transportation planning process to achieve reductions in GHG emissions from passenger vehicles consistent with AB 32's goals; (2) offering incentives under CEQA to encourage projects that are consistent with a regional plan that achieves GHG emission reductions; and (3) coordinating the regional housing need allocation process with the regional transportation planning process while maintaining local authority over land use decisions.

On September 23, 2010, ARB adopted regional targets for major MPOs. SANDAG's current targets are per capita CO_2 emission reductions from passenger vehicles of 7 percent by 2020 and 13 percent by 2035 relative to 2005 levels. SANDAG adopted the 2050 RTP/SCS to comply with SB 375 in 2011. ARB reviewed the adopted RTP/SCS and determined that, if implemented, it would achieve the reduction targets for the San Diego region in compliance with the law. ARB is required to update the SB 375 GHG emissions reduction targets at least every 8 years and is currently working on updates to the targets. As of October 2014, ARB is planning to update the 2035 targets for specified agencies including SANDAG in late 2015, but make these targets effective for their SCSs starting in 2019 (ARB 2014h).

2010 California Transportation Commission RTP Guidelines

The California Transportation Commission is authorized under statute (California Government Code Section 14522) to prescribe areas for analysis and evaluation by regional transportation agencies and guidelines for the preparation of RTPs. The Commission, in consultation with Caltrans and ARB, is also required to maintain guidelines for travel demand models used in the development of RTPs by MPOs.

On April 7, 2010, the Commission adopted revisions to the RTP Guidelines (California Transportation Commission 2010). The 2010 update to the guidelines reflects revisions to address the planning requirements of SB 375 and other planning practices. In addition to addressing SB 375, the guidelines set forth a uniform transportation planning framework throughout the state that identifies state and federal requirements for the development of RTPs. The updated guidelines recognize that the reduction of GHG emissions is a key priority in the transportation planning process.

Caltrans Climate Action Program

In December 2006, the California Department of Transportation Business, Transportation, and Housing Agency issued a Climate Action Program (Caltrans 2010). The goal of the Climate Action Program is to promote clean and energy-efficient transportation, and provide guidance for mainstreaming energy and climate change issues into business operations. The Climate Action Program seeks to reduce GHG emissions from transportation through system improvements, lowered congestion, and utilization of intelligent transportation systems; and also seeks to reduce GHG emissions from land use sources by increasing efficiency of facilities, fleets, and equipment through reduction measures and technology. Caltrans has issued a report summarizing its activities to address climate change in 2013 (Caltrans 2013).

VEHICLE EFFICIENCY AND TRANSPORTATION FUELS

Executive Order S-01-07 (Low Carbon Fuel Standard)

Executive Order S-01-07 (17 CCR 95480 et seq.) requires the state to achieve a 10 percent or greater reduction by 2020 in the average fuel carbon intensity for transportation fuels in California regulated by ARB. ARB identified the Low Carbon Fuel Standard (LCFS) as a discrete early action item under AB 32, and the final ARB resolution (No. 09-31) adopting the LCFS was issued on April 23, 2009. ARB is currently considering amendments to the LCFS and plans to consider re-adoption of the LCFS in 2015.

California Advanced Clean Cars/Zero Emission Vehicle Program

Assembly Bill (AB) 1493 (Chapter 200, Statutes of 2002), also known as the Pavley regulations, required ARB to adopt regulations by January 1, 2005, that would result in the achievement of the "maximum feasible" reduction in GHG emissions from vehicles used in the state primarily for noncommercial, personal transportation.

In January 2012, ARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards called Advanced Clean Cars (13 CCR 1962.1 and 1962.2). The Advanced Clean Cars requirements include new GHG standards for model year 2017 to 2025 vehicles. ARB anticipates that the new standards will reduce motor vehicle GHG emissions by 34 percent in 2025 (ARB 2014c).

The Advanced Clean Cars Program also includes the LEV III amendments to the LEV regulations (13 CCR 1900 et seq.), Zero Emission Vehicle Program and the Clean Fuels Outlet Regulation. The Zero Emission Vehicle Program is designed to achieve California's long-term emission reduction goals by requiring manufacturers to offer for sale specific numbers of the very cleanest cars available. These zero-emission vehicles, which include battery electric, fuel cell, and plug-in hybrid electric vehicles, are just beginning to enter the marketplace. They are expected to be fully commercial by 2020. Most vehicle manufacturers agree that providing a selection of these technologies will be necessary to meet climate goals by 2050 (ARB 2014d). The Clean Fuels Outlet regulation ensures that fuels such as electricity and hydrogen are available to meet the fueling needs of the new advanced technology vehicles as they come to market.

Heavy-Duty Vehicle Greenhouse Gas Emission Reduction Regulation

The Heavy-Duty Vehicle Greenhouse Gas Emission Reduction Regulation (17 CCR Sections 95300 et seq.) reduces GHG emissions by improving the fuel efficiency of heavy-duty tractors that pull 53-foot or longer box-type trailers. Fuel efficiency is improved through improvements in tractor and trailer aerodynamics and the use of low rolling resistance tires. ARB expects the regulation to reduce statewide GHG emissions by approximately 0.7 million metric tons CO2e by 2020. The tractors and trailers subject to this regulation must use U.S. Environmental Protection Agency SmartWay^{SM} certified tractors and trailers, or retrofit their existing fleet with SmartWay verified technologies

Tire Pressure Regulation

On September 1, 2010, the Tire Pressure Regulation (17 CCR Section 95550) took effect. The purpose of this regulation is to reduce GHG emissions from vehicles operating with under inflated tires by inflating them to the recommended tire pressure rating. The regulation applies to vehicles with a gross vehicle weight rating (GVWR) of 10,000 pounds or less.

ENERGY USE AND GENERATION

Renewable Portfolio Standard

California law (SB X1-2, Statutes of 2011) requires retail suppliers of electricity to procure at least 33 percent of annual retail sales from eligible renewable energy sources by 2020.

Title 24 Energy Standards

Energy Conservation Standards for new residential and nonresidential buildings were first adopted by the CEC in June 1977 and were most recently revised in 2013 (Title 24, Part 6 of the California Code of Regulations [Title 24]). Title 24 governs energy consumed by commercial and residential buildings in California. This includes the heating, ventilation, and air conditioning (HVAC) system; water heating; and some fixed lighting. Nonbuilding energy use, or "plug-in" energy use, is not covered by Title 24. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. California's Building Energy Efficiency Standards are updated on an approximate 3-year cycle. The most recent update was in 2013. The 2013 Title 24 standards went into effect July 1, 2014, and improve on the 2008 Title 24 standards. The CEC estimates that the 2013 Standards are 25 percent more energy-efficient than the previous standards for residential construction and 30 percent more efficient for nonresidential construction (CEC 2014a, 2014b).

Appliance Efficiency Regulations

California's 2009 Appliance Efficiency Regulations (20 CCR 1601–1608) were adopted by the CEC on December 3, 2008, and approved by the California Office of Administrative Law on July 10, 2009. The regulations include standards for both federally regulated appliances and nonfederally regulated appliances.

Green Building Standards

The 2013 California Green Building Standards Code (24 CCR Part 11 [CALGREEN]) took effect January 1, 2014. These comprehensive regulations will achieve major reductions in GHG emissions, energy consumption, and water use. CALGREEN will require that every new building constructed in California reduce water consumption by 20 percent, divert 50 percent of construction waste from landfills, and install low-pollutant-emitting materials. They also require separate water meters for nonresidential buildings' indoor and outdoor water use, with a requirement for moisture-sensing irrigation systems for larger landscape projects and mandatory inspections of energy systems (e.g., heat furnace, air conditioner, and mechanical equipment) for nonresidential buildings larger than 10,000 square feet to ensure that all are working at their maximum capacity and according to their design efficiencies. ARB estimates that the mandatory provisions will reduce GHG emissions from buildings by approximately 3 MMT CO_2e in 2020 in comparison with GHG emissions without implementation of the Green Building Standards (ARB 2014e).

Energy Efficiency in Existing Buildings

Assembly Bill 758 (Chapter 470, Statutes of 2009) requires the CEC to develop and implement a comprehensive energy efficiency plan for all of California's existing buildings. In 2015, the CEC released the Draft Existing Buildings Energy Efficiency Action Plan, which provides a ten-year blueprint for reducing energy consumption in all existing buildings in the single-family, multi-family, commercial and public buildings sectors. The goal of the plan is to double energy savings in California's buildings, which is equivalent to a 17 percent reduction in statewide building energy use in 2030 compared to projected levels of usage. AB 758 complements the existing energy efficiency programs implemented by California's investor-owned utilities (IOUs) that target both residential and non-residential sectors.

Performance Standard for Baseload Power Generation

SB 1368 (Chapter 598, Statutes of 2006) required the California Public Utilities Commission (PUC) to establish a GHG emissions performance standard for "baseload" generation from investor-owned utilities of 1,100 lbs CO_2/MWh. The CEC established a similar standard for local publicly owned utilities. All electricity provided to California, including imported electricity, must be generated from plants that meet or exceed this standard.

Senate Bill 1 (Chapter 132, Statutes of 2006)

The California Solar Initiative (Senate Bill 1, Chapter 132, Statutes of 2006), also known as the "Million Solar Roofs" legislation, set a goal of installing 3,000 megawatts of new solar capacity by 2017.

Off-road Vehicle and Equipment Regulations

State regulations that govern off-road vehicles such as locomotives and heavy equipment are discussed in Section 4.3, Air Quality. These regulations also result in reductions in GHG emissions, and include the following standards.

Small Offroad Engine Exhaust Emission Standards: The ARB has adopted regulations (13 CCR Sections 2400 et seq.) to control emissions from small off-road engines such as lawn, garden and other maintenance utility equipment (ARB 2015b). The rules affect engines less than 25 horsepower and regulate emissions of hydrocarbons, NOx, and CO. The emission standards also reduce GHGs by requiring more efficient engines.

Offroad Compression-Ignition Diesel Engine Exhaust Emission Standards: The ARB has adopted regulations (13 CCR Sections 2400 et seq.) to control emissions from off-road compression-ignition diesel engines found in a wide variety of off-road applications such as farming, construction, and industrial. The regulations require off-road engines to meet emission standards for hydrocarbons, NOx, CO and PM in "Tiers", which require engines to meet increasingly stringent emission levels. The regulations also reduce GHG emissions by requiring more efficient engines.

SOLID WASTE AND WATER

Solid Waste Diversion

AB 341 (Chapter 476, Statutes of 2011) set a goal that 75 percent of the solid waste generated be reduced, recycled or composted by 2020.

Landfill Methane Control Measure

The Landfill Methane Control Measure (17 CCR Sections 95460 et seq.) reduces emissions of methane from municipal solid waste (MSW) landfills. The regulation became effective June 17, 2010 and requires owners and operators of uncontrolled MSW landfills to install gas collection and control systems, and requires existing and newly installed gas and control systems to operate in an optimal manner.

Water Conservation

State water conservation legislation and regulations are reviewed in Section 4.16 Water Supply.

HIGH GLOBAL WARMING POTENTIAL GASES

Refrigerant Management Program

ARB's Refrigerant Management Program (17 CCR Sections 95380 et seq.) works to reduce the release of currently use high-global warming potential (GWP) gases. The Program requires facilities with refrigeration systems to inspect and repair leaks, maintain service records, and in some cases report refrigerant use.

Motor Vehicle Air-Conditioning

In January 2009, ARB approved the mobile air conditioning regulation (17 CCR Sections 95360 et seq.) to reduce emissions associated with the use of small container of automotive refrigerant. The regulation applies to the sale, use, and disposal of small container with a GWP greater than 150.

Consumer Products Regulation

Limiting the use of high GWP compounds in consumer products is part of ARB's larger Consumer Products Program. In 2009, ARB approved amendments to the Consumer Products Regulation to prohibit the use of compounds with GWP values greater than 150. (ARB Resolution 09-51.)

Sulfur Hexafluoride Leak Reduction and Recycling

Sulfur hexafluoride (SF_6) is a potent greenhouse gas, with a global warming potential (GWP) of 23,900, the highest identified by the Intergovernmental Panel on Climate Change. ARB approved sulfur hexafluoride reductions from non-electric and non-semiconductor applications as an early action measure. Accordingly, ARB approved the Regulation for Reducing Sulfur Hexafluoride Emissions (17 CCR Sections 95340 et eq.) in February 2009 to reduce sulfur hexafluoride emissions from other uses including magnesium die-casting, fume vent hood testing, tracer gas use, and other niche uses.

Public Resources Code Section 30253

Public Resources Code Section 30253, part 4, establishes a policy that development within the Coastal Zone shall minimize energy consumption and vehicle miles traveled.

4.8.2.3 REGIONAL AND LOCAL LAWS, REGULATIONS, PLANS, AND POLICIES

SANDAG Climate Action Strategy

In 2010, SANDAG published a Climate Action Strategy (Strategy) that was prepared under a partnership with the CEC (SANDAG 2010). The Strategy is a guidance document and not a binding plan. The Strategy serves as a guide to help policymakers address climate change as they make decisions to meet the needs of our growing population, maintain and enhance our quality of life, and promote economic stability. As stated in the Strategy introduction, the policy measures contained in the Strategy are intended to be a list of potential options (tools in the toolbox) for consideration as SANDAG and local governments update their various plans. The policy measures are not requirements for SANDAG, local governments, or any other entity.

The Strategy identifies goals, objectives, and policy measures in the areas of transportation, land use, buildings, and energy use. Also addressed are measures and resources to help local governments reduce emissions from their operations and in their communities. The policy measures contained in this document are intended to be a list of potential options to reduce GHG emissions. Because local governments have greater control over some categories of GHG emission sources, the Strategy emphasizes those areas where the greatest impact can be made at the local and regional level. These areas include land use patterns, transportation infrastructure, and related public investment; building construction and energy use; and local government operations.

Within the three areas, goals, objectives, and policy measures are included in the Strategy to further describe how GHG emissions reductions could be achieved. The goals identified in the Strategy include the following:

Transportation Sector

- Reduce total miles of vehicle travel
- Minimize GHG emissions when vehicles are used
- Support increased use of low carbon alternative fuels
- Protect transportation infrastructure from climate change impacts

Clean Energy and Efficient Buildings

- Reduce energy use in residential and commercial buildings
- Increase use of renewable energy
- Reduce water-related energy use and GHGs
- Protect energy infrastructure from climate change impacts

SANDAG and Local Government Operations

- SANDAG and local governments lead by example

SANDAG Regional Energy Strategy

SANDAG has adopted a Regional Energy Strategy (RES), which serves as the energy policy blueprint for the region through 2050 (SANDAG 2009b). The RES addresses some of the goals identified in the 2014 Scoping Plan Update. It establishes long-term goals in 11 topic areas including energy efficiency, renewable energy, distributed generation, transportation fuels, land use and transportation planning, border energy issues, and the green economy. In 2014, a technical update of the RES was completed to inform development of the proposed Plan (SANDAG 2014a). This technical update demonstrates progress toward attaining the RES goals, updates existing conditions and future projections data, and recommends priorities for the region. The RES goals include the following:

- Energy Efficiency and Conservation – Reduce per capita electricity consumption by 20 percent by 2030 in order to keep total electricity consumption flat.
- Renewable Energy – Support the development of renewable energy resources to meet a 33 percent renewable portfolio standard (RPS) by 2020 and exceed 33 percent beyond 2020.
- Distributed Generation – Increase the total amount of clean distributed generation (renewable and nonrenewable) to reduce peak demand and diversify electricity resources in the region.
- Energy and Water – Reduce water-related energy use.
- Peak Demand – Implement cost-effective steps and incentives to utilize demand response and energy efficiency measures to reduce peak demand.
- Smart Energy – Modernize the electricity grid with smart meters, smart end-use devices, and interactive communication technologies.
- Natural Gas Power Plants – Increase overall efficiency of electricity production and support replacement of inefficient power plants consistent with California's preferred loading order.
- Transportation Fuels – Substantially increase the deployment of alternative transportation fuels and vehicles.

- Land Use and Transportation Planning – Reduce the energy demand of the built environment through changes in land use and transportation planning.
- Energy and Borders – Integrate energy considerations into existing and future collaborative border initiatives.
- Clean Energy Economy – Collaborate with workforce entities, employers, technical and vocational schools, and labor unions to identify and expand local job placement mechanisms in the Clean Energy Sector.

Regional Alternative Fuel Planning

On-road transportation represents approximately 44.5 percent of the region's GHG emissions and, as such, the proposed Plan and RES both call for SANDAG to undertake coordinated planning for electric vehicle charging and alternative fueling infrastructure in the region.

Infrastructure needs were identified in a 2009 assessment of how to accelerate deployment of alternative fuel vehicles in and around San Diego entitled the Regional Alternative Fuels, Vehicles and Infrastructure Report (SANDAG 2009a). The report recommended public–private partnerships and collaborative approaches to infrastructure planning and increasing alternative fuels in fleets. Its findings were incorporated into the regional energy and climate strategies.

San Diego Regional Plug-In Electric Vehicle Readiness Plan

In 2012, SANDAG established the San Diego Regional Electric Vehicle Infrastructure Working Group (REVI) as part of a CEC grant to perform regional Plug-In Electric Vehicle (PEV) readiness planning. The REVI completed the San Diego Regional Plug-in Electric Vehicle Readiness Plan, which was accepted by the SANDAG Board in January 2014. As part of another CEC grant, SANDAG will build on the success of the REVI and undertake regional readiness planning for all alternative fuels in partnership with the San Diego Regional Clean Cities Coalition. A regional alternative fuels coordinating council will be established to advise on regional alternative fuel infrastructure needs, barriers, and solutions.

SANDAG Energy Roadmap Program for Local Governments

The Energy Roadmap Program is a collaboration between SANDAG and San Diego Gas & Electric (SDG&E). It is funded primarily by California utility customers under the auspices of the PUC. Transportation components of the program are funded by SANDAG. The roadmap program was developed with the help of the Energy Working Group and three pioneering cities: Carlsbad, Poway, and Solana Beach. These cities served as early pilots in energy management planning, which became the roadmap program in 2010. All cities within the San Diego region are now participating in the program.

The SANDAG Energy Roadmap Program provides free energy assessments and energy management plans, or "energy roadmaps," to SANDAG member agencies. Each energy roadmap provides a framework for a local government to reduce energy use in municipal operations and in the community, and can result in economic savings and environmental benefits. Within the energy roadmap are eight general categories:

1. Saving Energy in City Buildings and Facilities
2. Demonstrating Emerging Energy Technologies

3. Greening the City Vehicle Fleet
4. Developing Employee Knowledge of Energy Efficiency
5. Promoting Commuter Benefits to City Employees
6. Leveraging Planning and Development Authority
7. Marketing Energy Programs to Local Residents and Businesses
8. Supporting Green Jobs and Workforce Training

Upon receiving their energy roadmap, SANDAG assists municipalities in developing projects and/or programs presented in the eight general categories.

Local Greenhouse Gas Inventories and Climate Action Plans

In the San Diego region, all 19 jurisdictions (18 cities and County of San Diego) have completed a GHG inventory covering both government operations and the community as a whole, many prepared as part of the San Diego Foundation's Climate Initiative (City of Carlsbad 2011, City of Chula Vista 2006, City of Chula Vista 2013a, City of Del Mar 2011, City of El Cajon 2011, City of Encinitas 2011b, City of Escondido 2011, City of Imperial Beach 2011, City of La Mesa 2011, City of National City 2009, City of Oceanside 2011, City of Poway 2011, City of San Marcos 2013b, City of Santee 2011, City of Solana Beach 2011, County of San Diego 2011). In addition, the Border Environment Cooperation Commission (BECC) has worked with the Center for Climate Strategies to complete GHG inventories for all six Mexican border states. Each inventory identifies emissions sources, and sets a baseline for evaluating reductions.

More than half of the local jurisdictions in the San Diego region, representing over 75 percent of the region's population, are developing or have adopted a climate action plan (CAP) (City of Carlsbad 2015; City of Chula Vista 2000, 2008, 2013b; City of Encinitas 2011a; City of Escondido 2013; City of National City 2011; City of San Diego 2005; City of San Marcos 2013a; County of San Diego 2012[1]; City of Vista 2012). A CAP typically includes specific measures or actions to reduce GHG emissions toward an identified target, and offers streamlining opportunities for future development projects under CEQA. Table 4.8-5 summarizes each jurisdiction's climate planning efforts. In addition to the efforts of the 18 cities and the County of San Diego, the Port of San Diego and the San Diego County Water Authority have developed GHG inventories and CAPs.

Table 4.8-5
Status of Climate Action Planning

Jurisdiction	% of 2012 Regional Population	Completed GHG Inventory	Climate Action Plan	
			Adoption year	Developing
Chula Vista	7.9	√	2008	√
Encinitas	1.9	√	2011	n/a
Escondido	4.6	√	2013	n/a
National City	1.9	√	2011	n/a
San Diego	42.0	√	2005	√
County of San Diego (unincorporated)	15.8	√	n/a[1]	√
Vista	3.0	√	2012	n/a
San Marcos	2.7	√	2013	n/a
Carlsbad	3.4	√	~~n/a~~2015[2]	√

[1] The County of San Diego rescinded its Climate Action Plan in April 2015 and is currently preparing a new plan.
[2] The City of Carlsbad adopted a Climate Action Plan on September 22, 2015.

Del Mar	0.1	√	n/a	√
La Mesa	1.9	√	n/a	√
Santee	1.7	√	n/a	√
Solana Beach	0.4	√	n/a	√
Coronado	0.7	√	n/a	n/a
El Cajon	3.2	√	n/a	n/a
Imperial Beach	0.8	√	n/a	n/a
Lemon Grove	0.8	√	n/a	n/a
Oceanside	5.4	√	n/a	n/a
Poway	1.5	√	n/a	n/a

Source: ARB 2014b

4.8.3 SIGNIFICANCE CRITERIA

Appendix G of the CEQA Guidelines and Guidelines Section 15064.4 provide criteria for evaluating the significance of a project's environmental impacts on GHGs. Unless otherwise noted, the significance criteria specifically developed for this EIR are based on the checklist questions in Appendix G and Guidelines Section 15064.4. In some cases, SANDAG has combined checklist questions, edited their wording, or changed their location in the document in an effort to develop significance criteria that reflect the programmatic level of analysis in this EIR and the unique nature of the proposed Plan.

Appendix G addresses GHGs under Greenhouse Gases (VII. (a) and (b)). The criteria below build on the Appendix G questions and Guidelines Section 15064.4 to analyze the impact of the proposed Plan in relation to the GHG targets established by AB 32, Executive Order B-30-15, Executive Order S-3-05, SB 375, and local climate action plans. For the purposes of this EIR, implementation of the proposed Plan would have a significant GHG impact if it would:

GHG-1 Directly or indirectly result in an increase in GHG emissions compared to existing conditions (2012).

GHG-2 Conflict with AB 32, SANDAG Climate Action Strategy, or Local Climate Action Plans.

GHG-3 Conflict with SB 375 GHG emission reduction targets.

GHG-4 Be inconsistent with the State's ability to achieve the Executive Order B-30-15 and S-3-05 goals of reducing California's GHG emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050.

When setting the above thresholds, SANDAG also considered the following factors listed in CEQA Guidelines Section 15064.4:

- Whether the project may increase or decrease GHG emissions compared to the existing environmental setting (Impacts GHG-1 and GHG-4)
- Whether GHG emissions exceed a threshold of significance that the lead agency determines applies to the project (Impacts GHG-1 through GHG-4)
- The extent to which the project complies with requirements adopted to implement certain specified plans for the reduction of GHG emissions (Impacts GHG-2 and GHG-3)

4.8.4 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

GHG-1 DIRECTLY OR INDIRECTLY RESULT IN AN INCREASE IN GHG EMISSIONS COMPARED TO EXISTING CONDITIONS (2012).

ANALYSIS METHODOLOGY

GHG emission projections are based on the proposed Plan, including forecasted regional growth and land use change and planned transportation network improvements and programs. The inventory also accounts for the Renewable Portfolio Standard that requires retail suppliers of electricity to increase renewable energy resources to 33 percent by 2020. The inventory also includes implementation programs such as Title 24 building standards, water conservation programs, solid waste diversion programs, and other regulatory requirements and programs designed to reduce GHG emissions. The GHG emissions inventory and supporting assumptions are included as EIR Appendix G-1.

It should be noted that the current GHG inventory shows lower projected GHG emissions than the inventory presented in the 2050 RTP/SCS Environmental Impact Report (SANDAG 2011) for several reasons. The original inventory was prepared in 2011 and took into account information on the regulatory environment and technology that was available at the time. The original inventory was based on "business as usual" conditions as of 2010. The current inventory is not based on business as usual emissions, but takes into account implementation of currently adopted regulations, programs, and policies that will lead to reductions in GHG emissions. As stated above, the current inventory is based on the Series 13 Regional Growth Forecast, which has slightly lower population projections than the 2050 RTP/SCS. The inventory accounts for additional certainty regarding the regulatory environment, including future projections for renewable energy, building energy efficiency, water conservation programs, and solid waste diversion. The current inventory for on-road vehicles is also based on the ARB's EMFAC2014 model, which is the most recent update to the state's mobile source emissions inventory tool. The model accounts for programs that will lead to further reductions from on-road vehicles, including the ARB's Advanced Clean Cars Program.

In the Final EIR, revised numbers for on-road transportation GHG emissions reflect the minor modifications to the project description and the new version of EMFAC2014 (v1.0.7) released by ARB in May 2015. In the Final EIR, the updated version of EMFAC2014 also was used to update the estimate of 2012 on-road GHG emissions. These numbers were slightly different from those in the Draft EIR because on-road GHG emissions in the Draft EIR were calculated using EMFAC2014 (v1.0.1). On-road emissions in the Final EIR were also broken down to reflect two categories of on-road GHG emissions: (1) passenger cars and light duty vehicles and (2) heavy duty trucks and vehicles.

It should also be noted that, while the current inventory takes into account regulations, programs, and policies that are in place at this time, there is substantial uncertainty in projecting emissions for future horizon years, especially for 2050; in general, the uncertainty in future emissions increases from 2020 to 2050. The inventory projects emissions based on reasonable assumptions regarding future conditions; however, it does not account for future regulatory initiatives, technologies, or market drivers that may affect GHG emissions in the future over the next 35 years. For example, even though further reductions may be achieved through future legislation or regulations, the Renewable Portfolio Standard for renewable electricity generation does not set targets beyond 2020, and the ARB Advanced Clear Cars Program does not address passenger vehicles beyond the 2025 model year. The following analysis is therefore considered conservative and may overstate actual GHG emission trends in future years.

For the purpose of evaluating impacts under Impact GHG-1, because regional growth and land use change and the transportation network together impact overall GHG emissions, the impact assessment includes both regional growth and land use change and the transportation network improvements. Emission calculations are provided in Appendix G-1 to the EIR.

Regional Greenhouse Gas Emissions Methodology

GHG emissions from the proposed Plan are calculated based on standard approaches for estimating GHG emissions that are documented in Appendix G-1 to the EIR. To the extent possible, the inventory followed the ICLEI U.S. Community Protocol[2] methods for the following emissions categories:

- On-road transportation, including:
  - Passenger cars and light duty vehicles
  - Heavy duty trucks and vehicles
- Electricity and natural gas
- Water consumption
- Solid waste
- Wastewater
- Civil Aviation

The remaining categories were calculated based on California Air Resources Board methods and methods based on San Diego region data:

- Other Fuels
- Cogeneration
- Industrial
- Off-Road
- Land Use and Wildfires
- Rail
- Agriculture
- Marine Vessels

Construction emissions include emissions from off-road equipment that are part of the emission inventory under the off-road category, and vehicles that are part of the on-road transportation category. In addition, indirect GHG emissions from operation of the Trolley are included under electricity use. GHG emission reductions are also projected for development and sequestration.

GHG emissions associated with operation of planned transportation network improvements and programs are calculated using estimated total VMT under the proposed Plan, using ARB's EMFAC2014 model, which represents ARB's current understanding of motor vehicle travel activities and their associated emission levels. It represents ARB's current understanding of how vehicles travel and how much they pollute. Emissions are estimated for 2012 (baseline), 2020, 2035, and 2050. EMFAC2014 includes the latest data on California's car and truck fleets and accounts for emissions reductions due to implementation of statewide vehicular regulations, including on-road diesel fleet rules, Advanced Clean Car Standards, zero emission vehicle regulations, and the Smartway/Phase I Heavy Duty Vehicle Greenhouse Gas Regulation. The model also includes updates to truck emission factors based on the latest surveillance data (ARB 2014f).

[2] U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions (2013) available at http://www.icleiusa.org/tools/ghg-protocol/community-protocol.

During the timeframe of the proposed Plan, climate change effects that are likely to exacerbate the proposed Plan's greenhouse gas emissions impacts include but are not limited to increases in temperatures and frequency, duration, and intensity of heatwaves, and increased frequency and intensity of wildfires. In general, these climate change effects would increase between 2020 and 2050. Climate change effects are discussed in more detail in Appendix F to the EIR.

2020

Regional Growth and Land Use Change and Transportation Network Improvements and Programs

From 2012 to 2020, the region is forecasted to increase by 292,292 people; 83,874 housing units; and 118,535 jobs. Under implementation of the proposed Plan, total GHG emissions in the San Diego region are projected to be approximately 28.1~~8~~ MMT CO_2e in 2020, or about 19 percent lower than GHG emissions in 2012 (Table 4.8-6).

While population and development in the region is increasing in 2020 relative to 2012, GHG emissions are projected to decrease due to regulations and programs implemented on the state and regional levels to reduce emissions of GHGs. These programs include implementation of the RPS, Advanced Clean Cars regulations, the Low Carbon Fuel Standard, Cap-and-Trade program, energy efficiency standards for buildings, continued growth in solar photovoltaic installations, water conservation measures, solid waste diversion, refrigerant programs, and emission standards for off-road equipment. In addition, the SCS land use pattern and transportation network improvements and programs play an important role by decreasing per capita vehicle miles traveled. The decrease in per capita VMT is attributable to a number of factors considered in the proposed Plan's transportation modeling: proposed Plan investments in transit and managed lanes; TDM programs such as carpooling, vanpooling, mobility hubs, and teleworking; and demographic (e.g., aging population) and economic e.g., fuel prices factors.

Table 4.8-6
Total Greenhouse Gas Emissions in the San Diego Region, 2012 to 2020

GHG Emissions Category	2012 (Annual MMTCO2e)	2020 (Annual MMTCO2e)
~~On-Road Transportation~~Passenger Cars & Light Duty Vehicles	~~15.76~~13.14	~~13.72~~11.18
Electricity	7.97	6.41
Natural Gas	2.84	2.79
Heavy Duty Trucks & Vehicles	1.89	1.89
Solid Waste	1.75	0.84
Other Fuels	1.64	1.64
Industrial	1.43	1.45
Aviation	1.37	1.52
Off-Road Equipment and Vehicles	0.92	0.95
Wildfire	0.81	0.81
Other - Thermal Cogeneration	0.64	0.65
Water Supply and Conveyance	0.52	0.57
Wastewater	0.16	0.12
Rail	0.11	0.15
Agriculture	0.08	0.06
Marine Vessels (excluding pleasure craft)	0.05	0.05
Development + Sequestration	-0.65	-0.62
Low Carbon Fuel Standard	n/a	-1.39
Cap-and-Trade	n/a	-0.50
High GWP Gases	n/a	-0.43
Total	**~~35.4~~34.7**	**~~28.8~~28.1**
% Increase (Decrease) from 2012 to 2020	**(18.~~8~~6%)**	

Source: Appendix G-1 to the EIR

Note:
The revised numbers in this table reflect the minor modifications to the project description and the new version of EMFAC2014 (v1.0.7) released by ARB in May 2015. On-road GHG emissions in the Draft EIR were calculated using EMFAC2014 (v1.0.1).

2020 Conclusion

As shown in Table 4.8-6, implementation of the proposed Plan would result in a less than significant impact because the proposed Plan would not directly or indirectly result in an increase in GHG emissions compared to existing conditions. Therefore, this impact (GHG-1) in the year 2020 is less than significant.

2035

Regional Growth and Land Use Change and Transportation Network Improvements and Programs

From 2012 to 2035, the region is forecasted to increase by 710,269 people, 230,220 housing units, and 319,025 jobs. Under the proposed Plan, total GHG emissions for the region in 2035 are projected to be approximately 25.5 MMT CO_2e, or ~~28~~ 26.5 percent lower than GHG emissions in 2012 (Table 4.8-7).

While population in the region is increasing in 2035 relative to 2012, GHG emissions are projected to decrease due to regulations and programs implemented on the state and regional levels to reduce emissions of GHGs. These programs include implementation of the RPS, Advanced Clean Cars regulations, the Low Carbon Fuel Standard, Cap-and-Trade program, energy efficiency standards for buildings, continued growth in solar photovoltaic installations, water conservation measures, solid waste diversion, refrigerant programs, and emission standards for off-road equipment. In addition, the

SCS land use pattern and transportation network improvements and programs play an important role by decreasing per capita vehicle miles traveled. The decrease in per capita VMT is attributable to a number of factors considered in the proposed Plan's transportation modeling: proposed Plan investments in transit and managed lanes; TDM programs such as carpooling, vanpooling, mobility hubs, and teleworking; and demographic (e.g., aging population) and economic e.g., fuel prices factors.

Table 4.8-7
Total Greenhouse Gas Emissions in the San Diego Region, 2012 to 2035

Category	2012 (Annual MMTCO$_2$e)	2035 (Annual MMTCO$_2$e)
~~On-Road Transportation~~Passenger Cars & Light Duty Vehicles	~~15.76~~13.14	~~9.68~~7.69
Electricity	7.97	6.05
Natural Gas	2.84	2.73
Heavy Duty Trucks & Vehicles	1.89	2.03
Solid Waste	1.75	0.93
Other Fuels	1.64	1.66
Industrial	1.43	1.49
Aviation	1.37	1.72
Off-Road	0.92	1.47
Wildfire	0.81	0.81
Other - Thermal Cogen	0.64	0.71
Water	0.52	0.63
Wastewater	0.16	0.15
Rail	0.11	0.23
Agriculture	0.08	0.03
Marine Vessels (excluding pleasure craft)	0.05	0.05
Development + Sequestration	-0.65	-0.56
Low Carbon Fuel Standard	n/a	-1.39
Cap-and-Trade	n/a	-0.50
High GWP Gases	n/a	-0.43
Total	**~~35.4~~34.7**	**25.5**
% Increase (Decrease) from 2012 to 2035	**(26.5~~8.0~~%)**	

Source: Appendix G-1 to the EIR

Note:
The revised numbers in this table reflect the minor modifications to the project description and the new version of EMFAC2014 (v1.0.7) released by ARB in May 2015. On-road GHG emissions in the Draft EIR were calculated using EMFAC2014 (v1.0.1).

2035 Conclusion

Table 4.8-7 shows the total GHG emissions in 2035 versus existing conditions. As shown in Table 4.8-7, implementation of the proposed Plan would result in a less than significant impact because the proposed Plan would not directly or indirectly result in an increase in GHG emissions compared to existing conditions. Therefore, this impact (GHG-1) in the year 2035 is less than significant.

2050

Regional Growth and Land Use Change and Transportation Network Improvements and Programs

From 2012 to 2050, the region is forecasted to increase by 925,330 people, 327,921 housing units, and 460,492 jobs. Total GHG emissions in 2050 are projected to be ~~25.9~~26 MMT CO$_2$e, or ~~26.8~~25.9 percent lower than GHG emissions in 2012 (Table 4.8-8).

Table 4.8-8
Total Greenhouse Gas Emissions in the San Diego Region, 2012 to 2050

Category	2012 (Annual $MMTCO_2e$)	2050 (Annual $MMTCO_2e$)
~~On-Road Transportation~~Passenger Cars & Light Duty Vehicles	~~15.76~~13.14	~~9.64~~7.46
Electricity	7.97	5.76
Natural Gas	2.84	2.69
Heavy Duty Trucks & Vehicles	1.89	2.33
Solid Waste	1.75	0.98
Other Fuels	1.64	1.66
Industrial	1.43	1.60
Aviation	1.37	1.82
Off-Road	0.92	1.79
Wildfire	0.81	0.81
Other - Thermal Cogen	0.64	0.77
Water	0.52	0.67
Wastewater	0.16	0.15
Rail	0.11	0.30
Agriculture	0.08	0.02
Marine Vessels (excluding pleasure craft)	0.05	0.05
Development + Sequestration	-0.65	-0.51
Low Carbon Fuel Standard	n/a	-1.39
Cap-and-Trade	n/a	-0.50
High GWP Gases	n/a	-0.43
Total	**~~35.4~~34.7**	**~~25.9~~26.0**
% Increase (Decrease) from 2012 to 2050	**(~~26.8~~24.9%)**	

Source: Appendix G-1 to the EIR

Note:
The revised numbers in this table reflect the minor modifications to the project description and the new version of EMFAC2014 (v1.0.7) released by ARB in May 2015. On-road GHG emissions in the Draft EIR were calculated using EMFAC2014 (v1.0.1).

While population in the region is increasing in 2050 relative to 2012, GHG emissions are projected to decrease due to regulations and programs implemented on the state and regional levels to reduce emissions of GHGs. These programs include implementation of the RPS, Advanced Clean Cars regulations, the Low Carbon Fuel Standard, Cap-and-Trade program, energy efficiency standards for buildings, continued growth in solar photovoltaic installations, water conservation measures, solid waste diversion, refrigerant programs, and emission standards for off-road equipment.

In addition, the SCS land use pattern and transportation network improvements and programs play an important role by decreasing per capita vehicle miles traveled. The decrease in per capita VMT is attributable to a number of factors considered in the proposed Plan's transportation modeling: proposed Plan investments in transit and managed lanes; TDM programs such as carpooling, vanpooling, mobility hubs, and teleworking; and demographic (e.g., aging population) and economic e.g., fuel prices factors.

2050 Conclusion

As shown in Table 4.8-8, implementation of the proposed Plan would result in a less than significant impact because the proposed Plan would not directly or indirectly result in an increase in GHG emissions compared to existing conditions. Therefore, this impact (GHG-1) in the year 2050 is less than significant.

GHG-2 CONFLICT WITH AB 32, SANDAG CLIMATE ACTION STRATEGY, OR LOCAL CLIMATE ACTION PLANS.

ANALYSIS METHODOLOGY

The analysis evaluates any conflicts of the proposed Plan with AB 32, SANDAG's Climate Action Strategy, and adopted local Climate Action Plans.

The AB 32 analysis evaluates whether the proposed Plan would conflict with the State's ability to achieve the AB 32 target of reducing statewide GHG emissions to the 1990 levels by 2020. In addition to establishing a statewide emissions limit to be achieved by 2020, AB 32 also includes a provision stating the intent of the Legislature that the statewide GHG emissions limit continue in existence and be used to maintain and continue reductions in GHG emissions beyond 2020 (HSC Section 38551[b]). Statewide goals for GHG emissions reductions beyond 2020 have since been expressed in Governor's Executive Orders, including goals of 40 percent below 1990 levels by 2030 (EO-B-30-15) and goals of 80 percent below 1990 levels by 2050 (EO-S-3-05), which are evaluated in Impact GHG-4. Therefore, the AB 32 analysis in Impact GHG-2 analysis focuses on whether the region would achieve a regional reference point based on the 2020 target.

The 1990 GHG emissions in the San Diego region was 29 MMT CO_2e (see Appendix G-1 to the EIR).[3] The analysis compares 2020 GHG emissions under the proposed Plan to the region's 1990 levels. Note that there is no requirement that the SANDAG region's emissions be reduced by the same percentage ("equal share") as the statewide percentage in order for the State to achieve the AB 32 target. The impacts of the proposed Plan are nevertheless considered significant if the region's total emissions in 2020 exceed the 1990 reference point of 29 MMT CO_2e.

For purposes of evaluating impacts under Impact GHG-2, because the AB 32 target includes both regional growth and land use change and the transportation network, the analysis has not been separated into two categories. The impact assessment includes both regional growth and land use change and planned transportation network improvements and programs.

Emissions calculations are provided in Appendix G-1 to the EIR. The AB 32 analysis also evaluates the proposed Plan for any conflicts with applicable recommendations for achieving GHG reductions in the ARB's Scoping Plan Update "transportation focus area".

The other components of Impact GHG-2 evaluate the proposed Plan for any conflicts with SANDAG's Climate Action Strategy (Strategy) goals, objectives, and policy measures for GHG reductions, and local climate action plan policies for GHG reductions. The analysis of the Strategy and local climate actions plans is provided for 2020, 2035, and 2050. For the purpose of evaluating impacts under Impact GHG-2, because the Climate Action Strategy and local climate action plans establish goals, objectives, and policy measures for both regional growth and land use change and the transportation network improvements, the analysis of conflicts with SANDAG's Climate Action Strategy and local climate action plans has not been separated into the two categories. The impact assessment includes both regional growth and land use change and the transportation network improvements.

[3] The 1990 GHG emissions estimate of 25 MMT CO_2e in the 2050 RTP/SCS FEIR was estimated as 15 percent below 2005 levels and based on EMFAC2011 emissions data for vehicles for the region. The 1990 GHG emissions estimate has been updated to align with ARB updates to the statewide 1990 emissions inventory and to utilize the best available data for 1990~~the EMFAC2014 model, as well as other updated information~~.

During the timeframe of the proposed Plan, climate change effects that are likely to exacerbate the proposed Plan's greenhouse gas emissions impacts include but are not limited to increases in temperatures and frequency, duration, and intensity of heatwaves (which could lead to increases in GHG emissions from local fossil fuel-fired power plants to meet electricity demands); and wildfires (which release GHG emissions). In general, these climate change effects would increase between 2020 and 2050. Climate change effects are discussed in more detail in Appendix F.

2020

Regional Growth and Land Use Change and Transportation Network Improvements and Programs

As discussed under Impact GHG-1, under implementation of the proposed Plan, total GHG emissions for the San Diego region in 2020 are projected to be approximately 28.1~~8~~ MMT CO_2e. To be in line with its "equal share" of the state emissions reduction target set forth in AB 32, regional GHG emissions would need to decrease to 29 MMT CO_2e by 2020. Therefore, the proposed Plan would not conflict with the AB 32 target of reducing statewide emissions to 1990 levels by 2020.

In addition, the proposed Plan would not conflict with applicable recommendations in the ARB's Scoping Plan Update for the Transportation focus area. The 2014 Scoping Plan Update identified several recommended actions within the Transportation sector to achieve future GHG reductions, with the recommendations primarily focused on achieving major technological and regulatory changes in order to reduce GHG emissions from all types of vehicles and transportation fuels, including more efficient vehicles, low-carbon fuels like electricity and hydrogen, and supporting infrastructure. The Update also identified the following applicable recommendations for transportation:

- Caltrans and regional transportation agencies will increase investment in expanded transit and rail services, active transportation, and other VMT-reduction strategies in their next regional transportation plans.
- ARB, Caltrans, the Strategic Growth Council, and the Department of Housing and Community Development, along with other State, local and regional agencies, will coordinate planning and support to ensure that the expected GHG emission reductions from approved SCS are achieved or exceeded.

The proposed Plan would not conflict with the recommendation to increase investment in expanded transit and rail services, active transportation, and other VMT-reduction strategies in their regional transportation plans. From 2012 to 2020, the proposed Plan includes increased investment in transit and rail services, active transportation, and other VMT-reduction strategies including double-tracking along the LOSSAN rail corridor, increases in COASTER frequencies, completion of the Mid-Coast Trolley Extension from Old Town to University City, the South Bay Rapid Bus from the Otay Mesa ITC to Downtown San Diego, Rapid Bus Route 905 from Iris to the Otay Mesa POE, increases in local bus service frequencies, express bus routes to SDIA and Tijuana International Airport, a San Marcos shuttle, and construction of two transit-only lanes on SR 15 between I-805 and I-8. By 2020, the proposed Plan also includes investments in approximately 24 regional active transportation projects. Additional major transportation network improvements would include new Managed Lanes along I-5 from Manchester Avenue to SR 78 and I-805 from Carroll Canyon Road to SR 52, new toll lanes on SR 11 to the Otay Mesa POE, new general purpose lanes along a portion of SR 76, and a new freeway connector at SR 11 and SR 905. By 2020, these improvements would decrease average daily VMT per capita from 25.2 in 2012 to 24.7 in 2020. Also, the proposed Plan's SCS exceeds the regional SB 375 GHG reduction targets, as shown in Impact GHG-3.

Based on the above analysis, the proposed plan would not conflict with the AB 32 target of reducing statewide emissions to 1990 levels by 2020 or with the recommendations of the Scoping Plan Update. This impact is less than significant.

SANDAG Climate Action Strategy

The Climate Action Strategy is a guide for SANDAG on climate change policy (SANDAG 2010). The Climate Action Strategy identifies a range of potential policy measures for consideration in long-term planning documents such as the proposed Plan. The Strategy helps SANDAG identify land use, transportation, and related policy measures and investments that reduce GHG emissions from transportation and land use.

The Climate Action Strategy includes nine goals designed to address the impacts of GHG emissions and climate change in the region. The Strategy's goals include five specific goals relating to regional growth and land use change: Goals 5, 6, 7, 8, and 9. These goals have informed the development of the proposed Plan's policies relative to regional growth and land use change. Accordingly, the proposed Plan would not conflict with the Climate Action Strategy. The proposed Plan's programs and strategies are designed to be consistent with Climate Action Strategy goals and objectives, and would support their implementation. The proposed Plan therefore contributes to achieving the goals of the Strategy.

Table 4.8-9 presents the Climate Action Strategy goals and objectives that cover regional growth and land use change and transportation network improvements and programs, and an analysis of whether proposed Plan features would conflict with any of the goals and objectives.

Table 4.8-9
Evaluation of Proposed Plan for Conflicts with the SANDAG Climate Action Strategy

Climate Action Strategy Goals and Objectives	Conflict?
GOAL 1. REDUCE TOTAL MILES OF VEHICLE TRAVEL	
Objective 1a. Build Smart Growth Neighborhoods and Communities in which Basic Daily Needs and Public Transit Service are Safely Accessible on Foot or by Bicycle	From 2012 to 2050, the proposed Plan would increasingly locate population and employment within close proximity to public transit and bike facilities; total time engaged in transportation-related physical activity would increase; the percentage of peak period work trips via transit, walking and biking would increase. The proposed Plan land use pattern would accommodate 79 percent of all housing and 86 percent of all jobs within the Urban Area Transit Strategy (UATS). See proposed Plan Appendix N for measures documenting the proposed Plan's support for smart growth neighborhoods and communities.
Objective 1b. Expand and Develop New Systems for Low Carbon Modes of Transportation	The proposed Plan makes major investments in low carbon modes of transportation, including completion of double-tracking on the LOSSAN and SPRINTER rail corridors, five major expansions of the Trolley system, substantial investments in *Rapid* transit, major improvements in local bus service, and full build-out of the Regional Bike Network. More than half of proposed Plan revenues are for transit operations, transit capital projects, and active transportation.
Objective 1c. Reduce Demand for Single Occupancy Vehicle Travel	From 2012 to 2050, the proposed Plan would increase the percentage of peak period work trips completed by transit, walking and biking, and carpools; the percentage of drive alone trips would decrease over the same period.

GOAL 2. MINIMIZE GREENHOUSE GASES WHEN VEHICLES ARE USED	
Objective 2a. Reduce Traffic Congestion	The proposed Plan's investments in transit, active transportation, managed lanes and general purpose lanes would reduce traffic congestion that would otherwise occur. Average travel times to work would generally remain flat over the life of the proposed Plan, and daily vehicle delay per capita would be one minute lower by 2050 relative to 2012.
Objective 2b. Promote Efficient Driving Practices	The proposed Plan would not conflict with efforts to promote efficient driving practices.
GOAL 3. PROMOTE USE OF LOW CARBON ALTERNATIVE FUELS	
n/a	The proposed Plan identifies continuing actions including building a network of electric vehicle charging stations and developing a regional alternative fuels plan, promoting the use of both zero-emission vehicles and alternative fuels.
GOAL 4. PROTECT TRANSPORTATION INFRASTRUCTURE FROM CLIMATE CHANGE IMPACTS	
Objective 4a. Protect Transportation Infrastructure from Damage Due to Extreme Heat	The proposed Plan identifies continuing actions including developing strategies to enhance the region's ability to adapt to the consequences of climate change, including planning and design strategies to help communities cope with hazardous events such as storms, heat waves, wildfires, and ongoing drought.
Objective 4b. Protect Transportation Infrastructure from Sea Level Rise and Higher Storm Surges	
Objective 4c. Protect Transportation Infrastructure from Wildfire-Associated Mudslides	
GOAL 5. REDUCE ENERGY USE IN RESIDENTIAL AND COMMERCIAL BUILDINGS	
Objective 5a. Retrofit Existing Buildings to Reduce Energy Use	The proposed Plan identifies continuing actions including support for the efforts of local jurisdictions to implement their Energy Roadmap Programs to save energy in their own operations and in their communities.
Objective 5b. Maximize Efficiency in New Residential and Commercial Construction	The proposed Plan identifies continuing actions including support for the efforts of local jurisdictions to implement their Energy Roadmap Programs to save energy in their own operations and in their communities.
GOAL 6. INCREASE USE OF RENEWABLE ENERGY	
Objective 6a. Promote Installation of Clean, On-site Energy Systems	The proposed Plan identifies continuing actions including support for the efforts of local jurisdictions to implement their Energy Roadmap Programs to save energy in their own operations and in their communities.
Objective 6b. Promote Large-Scale Renewable Energy Projects	The proposed Plan would not conflict with development of large-scale renewable energy projects
GOAL 7. REDUCE WATER-RELATED ENERGY USE AND GREENHOUSE GASES	
Objective 7a. Integrate Measures that Save Water and Energy into Building Retrofit Programs	The proposed Plan would not conflict with programs to promote water conservation in existing buildings
Objective 7b. Use Reclaimed Water to Decrease the Amount of Greenhouse Gases Attributed to Meeting Water Needs	The proposed Plan would not conflict with the use of reclaimed water
GOAL 8. PROTECT ENERGY INFRASTRUCTURE FROM CLIMATE CHANGE IMPACTS	
Objective 8a. Support Modernization of the Electricity Grid	The proposed Plan would not conflict with modernization of the electricity grid
Objective 8b. Utilize Demand Response and Energy Efficiency Measures to Reduce Greenhouse Gases during Peak Periods	The proposed Plan would not conflict with demand response and energy efficiency measures during peak periods
Objective 8c. Study the Range of Impacts on Energy Infrastructure	The proposed Plan would not conflict with study of the range of impacts on energy infrastructure

GOAL 9. SANDAG AND LOCAL GOVERNMENTS LEAD BY EXAMPLE	
Objective 9a. Local Governments Prepare and Adopt Climate Action Plans	See below in Impact GHG-2 for analysis of the proposed Plan for conflicts with local climate action plans.
Objective 9b. Assess the Energy Use of SANDAG Operations	The proposed Plan would not conflict with programs to assess energy use of SANDAG operations
Objective 9c. Local Governments Use Cleaner Energy Supplies and Reduce Energy Use	The proposed Plan identifies continuing actions including support for the efforts of local jurisdictions to implement their Energy Roadmap Programs to save energy in their own operations and in their communities.

The Strategy's goals include four specific goals relating to transportation: Goals 1, 2, 3, and 4. These goals have informed the development of the proposed Plan's policies relative to the transportation network improvements and programs. Accordingly, the proposed Plan's transportation network improvements and programs would not conflict with the Climate Action Strategy. The proposed Plan's transportation network improvements and programs are designed to adopt Climate Action Strategy policies and would support their implementation. The proposed Plan therefore contributes to achieving the goals of the Strategy, and would not conflict with SANDAG's adopted Climate Action Strategy, and would support implementation of the Strategy.

Local Climate Action Plans

To date, there are ~~seven~~ eight cities within the region with adopted Climate Action Plans. An analysis of whether the proposed Plan would conflict with the measures and policies in adopted local Climate Action Plans is provided in Appendix G-2. As shown in Appendix G-2, the proposed Plan would not conflict with adopted local Climate Action Plans.

2020 Conclusion

Implementation of regional growth and land use change and transportation network improvements and programs under the proposed Plan would not conflict with AB 32, the SANDAG Climate Action Strategy, or adopted local Climate Action Plans. Therefore, this impact (GHG-2) in the year 2020 is less than significant.

2035

Regional Growth and Land Use Change and Transportation Network Improvements and Programs

SANDAG Climate Action Strategy

As shown in Table 4.8-9, the proposed Plan would not conflict with SANDAG's Climate Action Strategy goals and objectives related to land use or transportation. By 2035, the proposed Plan would continue to be consistent with the Climate Action Strategy.

Local Climate Action Plans

As shown in Appendix G-2, the proposed Plan would not conflict with adopted local Climate Action Plans. By 2035 the proposed Plan would continue to support the measures and policies within adopted local Climate Action Plans.

2035 Conclusion

Implementation of regional growth and land use change and transportation network improvements and programs under the proposed Plan would not conflict with AB 32, the SANDAG Climate Action Strategy, or adopted local Climate Action Plans. Therefore, this impact (GHG-2) in the year 2035 is less than significant.

2050

Regional Growth and Land Use Change and Transportation Network Improvements and Programs

SANDAG Climate Action Strategy

As shown in Table 4.8-9, the proposed Plan would not conflict with SANDAG's Climate Action Strategy goals and objectives related to land use and transportation. By 2050, the proposed Plan would continue to be consistent with the Climate Action Strategy.

Local Climate Action Plans

As shown in Appendix G-2, the proposed Plan would not conflict with adopted local Climate Action Plans. While most local adopted Climate Action Plans do not set specific policies that extend to 2050, because the proposed Plan is consistent with the current plans and policies to reduce GHG emissions, the proposed Plan would continue to support the goals of local Climate Action Plans in 2050.

2050 Conclusion

Implementation of regional growth and land use change and transportation network improvements and programs under the proposed Plan would not conflict with AB 32, the SANDAG Climate Action Strategy, or adopted local Climate Action Plans. Therefore, this impact (GHG-2) in the year 2050 is less than significant.

GHG-3 CONFLICT WITH SB 375 EMISSION REDUCTION TARGETS

ANALYSIS METHODOLOGY

The analysis evaluates whether the proposed Plan would conflict with SB 375 GHG emission reduction targets. SB 375 required ARB to develop regional GHG emission reduction targets compared to 2005 emissions, for passenger vehicles for 2020 and 2035. The targets established for SANDAG by ARB are to reduce per capita CO_2 emissions 7 percent below 2005 levels by 2020 and 13 percent below 2005 levels by 2035 (ARB 2011). ARB has not developed any post-2035 targets (ARB 2014h). The SB 375 technical methodology for estimating GHG emissions is included in Appendix G-3 to the EIR. Because SB 375 does not require 2050 GHG emissions reduction targets, the EIR does not present a 2050 analysis of conflicts with SB 375.

For the purpose of evaluating impacts under Impact GHG-3, because the SB 375 targets include both regional growth and land use change and the transportation network improvements, the analysis of conflicts with SB 375 emission reduction targets has not been separated into the two categories. The impact assessment includes both regional growth and land use change and the transportation network improvements.

2020

Regional Growth and Land Use Change and Transportation Network Improvements and Programs

ARB requires SANDAG to reduce per capita CO_2 emissions from passenger cars and light-duty trucks 7 percent below 2005 levels by 2020. Per capita emissions from passenger cars and light-duty trucks were 26.0 lbs CO_2/person/day in 2005. Under implementation of the proposed Plan, GHG emissions would be reduced to 22.5~~21.4~~ lbs CO_2/person/day in 2020, ~~a~~n 15~~18~~ percent reduction from 2005 levels. The GHG emissions reductions under the proposed Plan would exceed the ARB target of a 7 percent reduction by 2020 (Table 4.8-10). Therefore, implementation of regional growth and land use change and transportation network improvements and programs would not conflict with SB 375 GHG emission reduction targets. This impact is less than significant impact.

Table 4.8-10
SB 375 GHG Reduction Targets and GHG Emissions under the Proposed Plan, 2020

	lbs CO_2 per person per day, 2020
Per Capita Emissions under the proposed Plan	22.5~~21.4~~
Percent Reductions under the proposed Plan	-15%~~-18%~~
ARB Target	-7%

Source: Appendix G-3 to the EIR
Note: Average weekday per capita CO2 reductions for passenger cars and light-duty trucks from 2005 level of 26.0 pounds per person per day.
The revised emissions and percentages in this table have been decreased by 2% per ARB requirement that EMFAC2014 model results be revised with 2% percent adjustment factor.

2020 Conclusion

Implementation of the proposed Plan would not conflict with SB 375 emission reduction targets for 2020. Therefore, this impact (GHG-3) in the year 2020 is less than significant.

2035

Regional Growth and Land Use Change and Transportation Network Improvements and Programs

ARB requires SANDAG to reduce per capita CO_2 emissions from passenger cars and light-duty trucks 13 percent below 2005 levels by 2035. Under implementation of the proposed Plan, GHG emissions would be reduced to 20.3~~19.8~~ lbs CO_2/person/day, a 18~~24~~ percent reduction from 2005 levels. The GHG emissions reductions under the proposed Plan would exceed the ARB target of a 13 percent reduction by 2035 (Table 4.8-11). Therefore, implementation of the regional growth and land use change and transportation network improvements and programs would not conflict with SB 375 GHG emission reduction targets. This impact is less than significant impact.

Table 4.8-11
SB 375 GHG Reduction Targets and GHG Emissions under the Proposed Plan, 2035

	lbs CO_2 per person per day, 2035
Per Capita Emissions under the proposed Plan	20.3~~19.8~~
Percent Reductions under the proposed Plan	-21%~~-24~~%
ARB Target	-13%

Source: Appendix G-3 to the EIR
Note: Average weekday per capita CO2 reductions for passenger cars and light-duty trucks from 2005 level of 26.0 pounds per person per day.
The revised emissions and percentages in this table have been decreased by 2% per ARB requirement that EMFAC2014 model results be revised with 2% percent adjustment factor.

2035 Conclusion

Implementation of the proposed Plan would not conflict with SB 375 emission reduction targets for 2035. Therefore, this impact (GHG-3) in the year 2035 is less than significant.

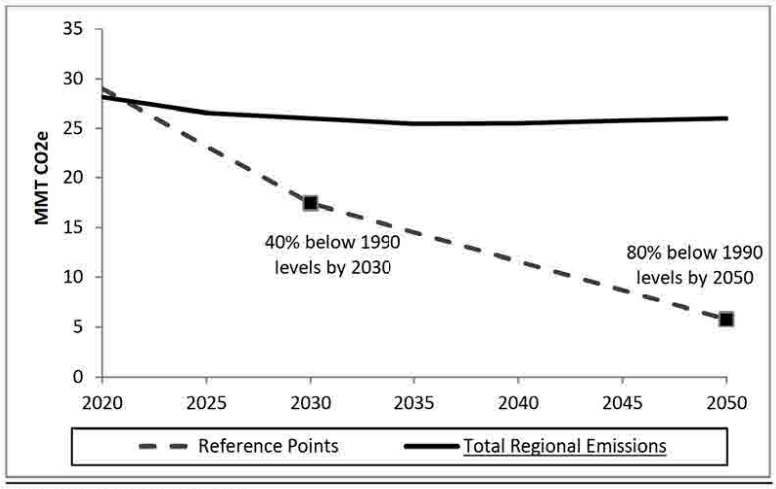
GHG-4 BE INCONSISTENT WITH THE STATE'S ABILITY TO ACHIEVE THE EXECUTIVE ORDER B-30-15 AND S-3-05 GOALS OF REDUCING CALIFORNIA'S GHG EMISSIONS TO 40 PERCENT BELOW 1990 LEVELS BY 2030 AND 80 PERCENT BELOW 1990 LEVELS BY 2050

ANALYSIS METHODOLOGY

The analysis evaluates whether the proposed Plan is inconsistent with the State's ability to achieve the Executive Order S-3-05 goal of reducing California's GHG emissions to 80 percent below 1990 levels by 2050. The analysis also evaluates whether the proposed Plan is inconsistent with the State's ability to achieve the Executive Order B-30-15 goal of reducing California's GHG emissions to 40 percent below 1990 levels by 2030.

The Executive Order S-3-05 goal of reducing California's GHG emissions to 1990 levels by 2020 was adopted in AB 32, and is evaluated in Impact GHG-2. Therefore, this analysis focuses on whether the region would achieve the 2050 goal. 2035 is also addressed in Impact GHG-4 as an interim year using the Executive Order B-30-15 goal of reducing California's GHG emissions to 40 percent below 1990 levels by 2030.

To perform this analysis, SANDAG identified estimated 2035 and 2050 emissions reduction reference points for the region. Note that there is no requirement that the SANDAG region's emissions be reduced by the same percentage ("equal share") as the statewide percentage in order for the State to achieve the Executive Order's goal. The proposed Plan's impacts nevertheless are considered significant if total emissions in the San Diego region exceed the estimated 2035 or 2050 GHG reduction reference points. A graph comparing regional emissions projected in the proposed Plan versus the Executive Order-based reference points is provided as Figure 4.8-1.



Source: Appendix G-1 to the EIR.

Note: the solid black line has been relabeled from "proposed Plan emissions" to "total regional emissions" and reflects the revised GHG emissions based on the minor modifications to the project description and the new version of EMFAC2014 (v1.0.7) released by ARB in May 2015. On-road GHG emissions in the Draft EIR were calculated using EMFAC2014 (v1.0.1).

Figure 4.8-1. Regional GHG Reductions Required to Meet Executive Order Reference Points for 2035 and 2050 vs. ~~Proposed Plan~~Total Regional Emissions

SANDAG identified the 2050 reference point by applying an 80 percent reduction to the San Diego region's 1990 emissions level. The 40 percent reduction was applied to the region's 1990 emissions level to identify a 2030 reference point, which was then used to develop a 2035 reference point by using a straight line trajectory from the 2030 goal to the 2050 goal.

As described in Impact GHG-2, the San Diego region's 1990 GHG emissions totaled 29 MMT CO_2e (see Appendix G-1 to the EIR). By applying the methodology described above, the 2035 reference point was identified as 14.5 MMT CO_2e, and the 2050 reference point was identified as 5.8 MMT CO_2e.

For the purpose of evaluating impacts under Impact GHG-4, because the Executive Order goals include both regional growth and land use change and the transportation network, the analysis has not been separated into the two categories. The impact assessment includes both regional growth and land use change and the transportation network. Emission calculations are provided in Appendix G-1.

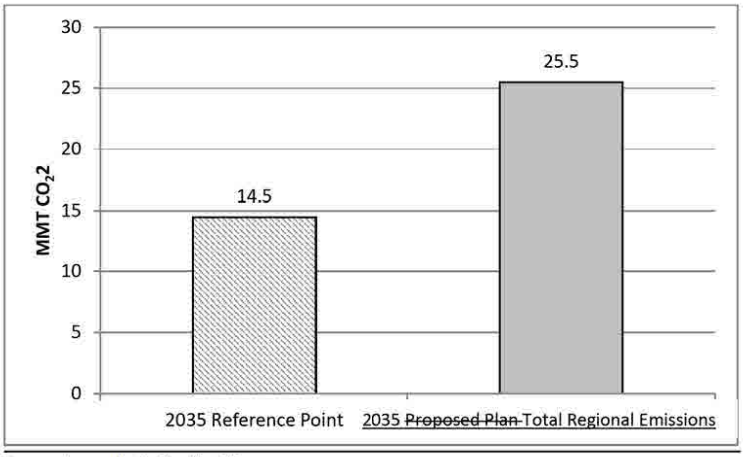
During the timeframe of the proposed Plan, climate change effects that are likely to exacerbate the proposed Plan's greenhouse gas emissions impacts include but are not limited to increases in temperatures and frequency, duration, and intensity of heatwaves (which could lead to increases in GHG emissions from local fossil fuel-fired power plants to meet electricity demands); and wildfires (which release GHG emissions of criteria pollutants. In general, these climate change effects would increase between 2020 and 2050. Climate change effects are discussed in more detail in Appendix F.

2035

Regional Growth and Land Use Change and Transportation Network Improvements and Programs

As discussed under Impact GHG-1, under implementation of the proposed Plan, total GHG emissions for the San Diego region in 2035 are projected to be approximately 25.5 MMT CO_2e, or 28 percent lower than GHG emissions in 2012 (Table 4.8-7). To be in line with its "equal share" of the state emissions reduction goals set forth in Executive Orders S-3-05 and B-30-15, regional GHG emissions would need to decrease to 14.5 MMT CO_2e by 2035.

Figure 4.8-1 shows a projection of "equal share" reductions for the San Diego region, compared to estimated proposed Plan emissions. In addition, Figure 4.8-2 compares the Executive Order-based 2035 reference point for the region with projected GHG emission under the proposed Plan. This is a significant impact.



Source: Appendix G-1 to the EIR

Figure 4.8-2. 2035 GHG Emissions Reference Point vs. ~~Proposed Plan~~Total Regional Emissions

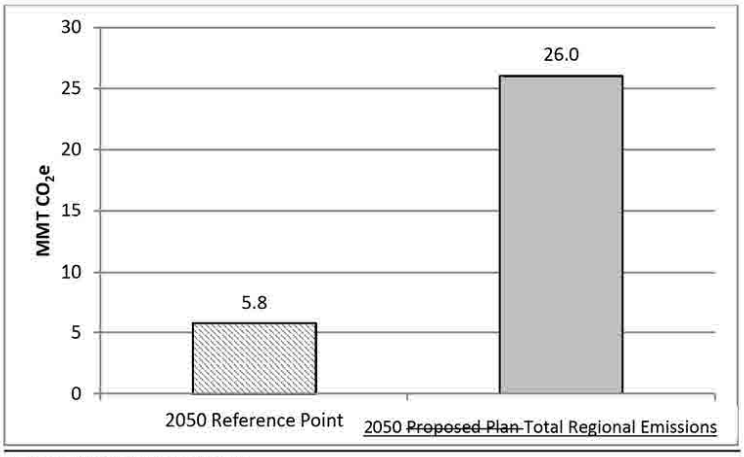
2035 Conclusion

Because the total emissions in the San Diego region of 25.5 MMT CO_2e in 2035 would exceed the regional 2035 GHG reduction reference point of 14.5 MMT CO_2e (which is based on EO-B-30-15 and EO-S-3-05), the proposed Plan's 2035 GHG emissions would be inconsistent with state's ability to achieve the Executive Orders' GHG reduction goals. Therefore, this impact (GHG-4) in the year 2035 is significant.

2050

Regional Growth and Land Use Change and Transportation Network Improvements and Programs

As discussed under Impact GHG-1, under implementation of the proposed Plan, total GHG emissions for the San Diego region in 2050 are projected to be ~~25.9~~ 26.0 MMT CO_2e, or ~~26.8~~ 24.9 percent lower than GHG emissions in 2012 (Table 4.8-8). To be in line with its "equal share" of the state 2050 emissions reduction goal set forth in Executive Order S-3-05, regional GHG emissions would need to decrease to 5.8 MMT CO_2e in 2050. Figure 4.8-1 shows a projection of "equal share" reductions for the San Diego region, compared to estimated proposed Plan emissions. In addition, Figure 4.8-3 compares the Executive Order based reference point for the region for 2050 with projected GHG emission under the proposed Plan. This is a significant impact



Source: Appendix G-1 to the EIR

Figure 4.8-3. 2050 GHG Emissions Reference Point vs. ~~Proposed Plan~~Total Regional Emissions

2050 Conclusion

Because the total emissions in the San Diego region of ~~25.9~~26 MMT CO_2e in 2035 would exceed the regional 2035 GHG reduction reference point of 5.8 MMT CO_2e (which is based on EO-S-3-05), the proposed Plan's 2050 GHG emissions would be inconsistent with state's ability to achieve the Executive Order's GHG reduction goals. Therefore, this impact (GHG-4) in the year 2050 is significant.

MITIGATION MEASURES

GHG-4 Inconsistency with State Agency 2030 and 2050 GHG Reduction Goals

2035 and 2050

Basis for Selection of GHG Mitigation Measures

Overview. Many features currently included in the proposed Plan (e.g., the SCS, increased transit and active transportation investments) have the effect of reducing GHG emissions that might otherwise occur. Mitigation measures presented in this section are additional feasible GHG reduction measures not included in the proposed Plan that SANDAG would or other agencies could implement. Presented below are three types of feasible GHG reduction mitigation measures:

- Plan- and policy-level mitigation measures SANDAG has committed to implement;
- Mitigation measures for transportation network improvements and programs, which SANDAG has committed to implement for its projects and which other transportation project sponsors can and should implement for their projects and
- Mitigation measures for development projects implementing regional growth and land use changes, which local jurisdictions can and should implement.

While SANDAG has the authority to implement the mitigation measures it has committed to, it has no legal authority to require other transportation project sponsors or local jurisdictions to implement mitigation measures for specific projects for which they have responsibility and jurisdiction. As explained in Section 4.0, mitigation can include measures that are within the responsibility and jurisdiction of another public agency. SANDAG in its CEQA findings may find that those measures assigned to other agencies can and should be adopted by those other agencies (CEQA Guidelines Section 15091(a)(2)).

Other potential mitigation measures to reduce GHG emissions are included as components of the project alternatives in Chapter 6.0, rather than as individual mitigation measures in this section.[4] These include still more compact land use patterns, accelerated and increased transit investments, reduced or no highway investments, and policies to reduce transit fares, increase parking prices, and establish road user fees.

Achieving the EO-S-3-05 GHG Reduction Goal. The state currently has no plan (e.g., analogous to the AB 32 Scoping Plan) for achieving the EO-B-30-15 and EO-S-3-05 GHG reduction goals. However, recent studies have shown that achieving these goals, whether statewide or within the San Diego region, would require major changes in clean technologies utilization, markets, and state and federal regulations.

For example, a recent study (Greenblatt 2015) presented an aggressive set of 49 policies intended to achieve the statewide 2050 goal, though implementing all these policies still fell short of the goal. These policies included major increases in energy efficiency, reduced GHG intensities of both fuel and electricity, and a shift away from direct fuel combustion and toward electricity, particularly in transportation. For example, the most aggressive scenario, Scenario 3, included policies such as increasing the average fleet gasoline efficiency to 54 MPG, doubled high-speed rail deployment, replacing all natural gas use in buildings with electric heat pumps by 2050, 50% residential zero net energy retrofits by 2030, adding 2.2 GW nuclear power capacity by 2050, and building 8 carbon capture and sequestration (CCS) facilities at power plants.

[4] Alternatives and mitigation measures are two alternative means for avoiding or reducing a project's significant environmental impacts. See CEQA Guidelines Section 15002(h).

Similarly, Greenblatt and Long (2012) in an older study found that achieving the 2050 EO goal would likely require maximizing efficiency in all economic sectors, electrification of much of the transportation sector and many stationary uses of heat, a doubling of electricity production with nearly zero emissions, and development of low-carbon fuels. They concluded that achieving the EO goal would require a combination of strategies; although some are available now, they conclude others would require substantial research and development to realize. These include electricity load balancing, substantially increasing biomass fuel supply, and making CCS 100% effective and economical to implement on a large scale.

Achieving the EO B-30-15 GHG Reduction Goal. A recent study commissioned by state agencies focused on scenarios for deep reductions in GHG emissions in 2030. (Energy+Environmental Economics 2015).The study found that up to 38% reductions in GHG emissions (close to the EO B-30-15 goal of 40%) by 2030 could be achieved with "significant progress" in energy efficiency, switching to low carbon fuel sources, producing lower carbon electricity and fuels, and reducing non-energy GHGs. "Significant progress" included measures such as doubled energy efficiency in buildings by 2030, 50%-60% of electricity sales from renewable energy by 2030, and rapid penetration of near-zero and zero-emissions vehicles.

The study noted that scenarios implementing these measures would rely on existing technologies, and were consistent with a continuation of current lifestyles and economic growth. The pace of emissions reductions would, however, require that key low-carbon technologies be commercialized, produced at scale, and achieve broad market adoption in the next 10-15 years.

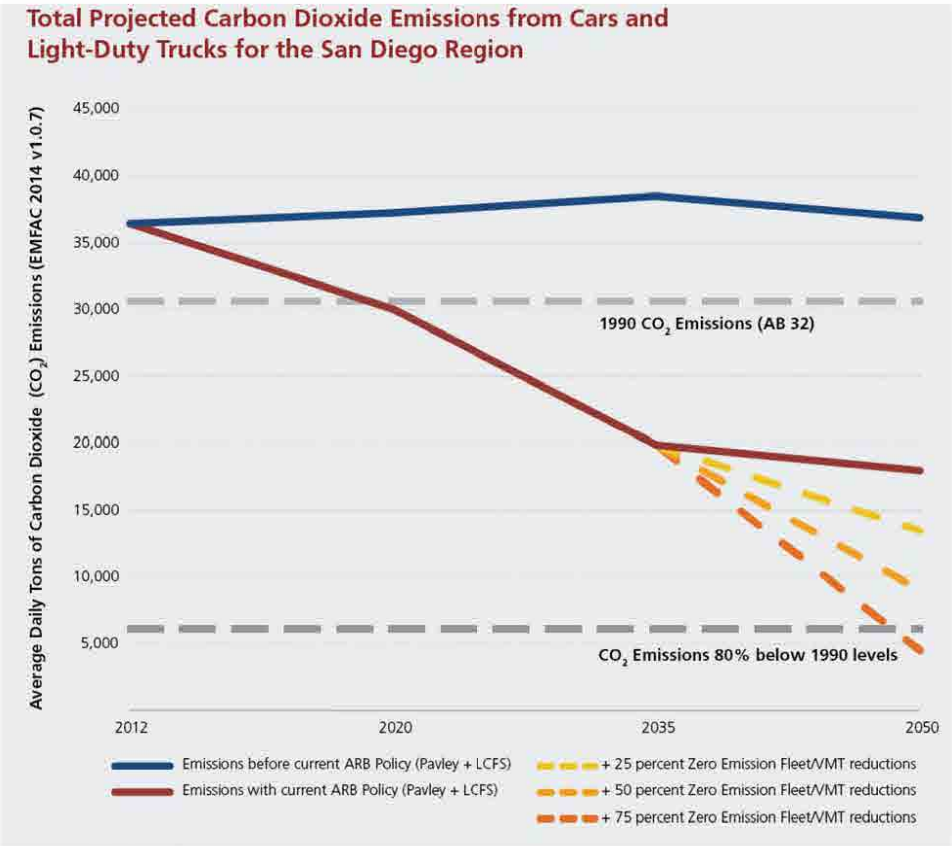
Regional Scenarios. The GHG inventory prepared for the proposed Plan (Appendix G-1) analysis is based on implementation of current regulations, policies, and programs. An alternative scenario ("Scenario 3") for the San Diego region is presented in Appendix G-4. It assumes major changes in the technologies, markets, and state and federal regulations. For example, strategies included a move toward 100 percent renewable electricity, 100 percent zero emission vehicle passenger fleet, and 90 percent landfill waste diversion. With implementation of these measures, regional emissions would be reduced to 77% below 1990 emissions, but would still fall short of the 80% below 1990 emissions reference point based on EO-S-3-05. In this scenario, electricity and passenger vehicles contribute zero emissions; emissions remain primarily from industrial sources, natural gas, aviation, and off-road fuel use.

Focusing on the transportation sector, Chapter 2 of the proposed Plan includes scenarios for how statewide GHG emissions specifically from the transportation sector could be reduced by 80% below 1990 levels.[5] Scenarios developed under the ARB Vision Program and the Draft California Transportation Plan (CTP) envision how this goal might be achieved statewide given an aggressive set of strategies requiring major VMT reduction, as well as improvements in vehicle and fuel technologies. For example, the Draft CTP's VMT reduction strategies include a 75% increase in auto operating costs, and doubling of all transit services and speeds.

Using the ARB Vision and Draft CTP frameworks, Chapter 2 of the proposed Plan discusses scenarios for the SANDAG region showing how an 80% reduction in mass GHG emissions from passenger vehicles might be met by highly aggressive implementation of ZEV penetration and VMT reduction measures.

[5] Looking Past 2035—Possible Pathways for Additional Greenhouse Gas Emissions Reductions. This section and associated appendix information are hereby incorporated by reference into the EIR.

See Figure 4.8-4. Achieving these additional emission reductions would require major changes in clean technologies utilization, markets, and state and federal policies and regulations. The proposed Plan does set forth ambitious but currently feasible TSM, electric vehicle, and other programs that can be implemented now and in the future aligned with the 2050 GHG reduction scenarios in the various studies discussed above.



Source: SANDAG 2015

Note: This figure has been updated to reflect the revised GHG emissions based on the new version of EMFAC2014 (v1.0.7) released by ARB in May 2015. On-road GHG emissions in the Draft EIR were calculated using EMFAC2014 (v1.0.1).

Figure 4.8-4. Total Projected Carbon Dioxide Emissions from Cars and Light Duty Trucks for the San Diego Region.

Conclusion. Full implementation of many of the measures that could result in a 40% reduction of GHG emissions by 2030 and an 80% reduction of GHG emissions by 2050 in the San Diego region would require major changes in clean technologies utilization, markets, and state and federal policies and regulations. The following mitigation measures would help reduce regional GHG emissions through reducing VMT, increasing use of alternative fuels, and other measures; they would reduce inconsistency of the propose Plan's GHG emissions with the state's ability to achieve the EO B -30-15 and EO-S-3-05 GHG reduction goals. However, full implementation of changes required to achieve the Executive Orders' goals is beyond SANDAG's or local agencies' current ability to implement.

GHG-4A Allocate Competitive Grant Funding to Projects that Reduce GHG Emissions (SANDAG)

Mitigation Measure Text. SANDAG shall revise the *TransNet* Smart Growth Incentive and Active Transportation Grant Programs in the following ways to achieve GHG reductions:

- Adopt new or revised grant criteria to give greater weight to a project's ability to directly reduce GHG emissions. Criteria include, but are not limited to, awarding points to projects that directly implement local climate action plans that reduce GHG emissions, or that directly implement parking strategies that reduce GHG emissions.
- Require locally adopted CAPs and complete streets policies as prerequisites to be eligible for grant funding. The locally adopted CAPs shall include measures to reduce GHG emissions to 1990 levels by 2020, and achieve further reductions beyond 2020 consistent with adopted regional or local GHG reduction targets.
- If a local jurisdiction does not have an adopted CAP or complete streets policy, SANDAG shall make available competitive funding through the grant programs for preparation of a CAP and/or complete streets policy.
- In addition to grant funding, SANDAG shall provide technical assistance to local jurisdictions for the preparation of CAPs as described in GHG-4E.
- These changes shall be adopted and effective for the fourth cycle of funding for both programs, which is expected to be released in December 2016.

Mitigation Measure Effectiveness. It is not possible to precisely quantify the effectiveness of this mitigation measure because SANDAG does not know the specific details of grant applications that local jurisdictions will submit in future funding cycles. However, this measure would result in GHG reductions as explained below. It requires that jurisdictions have locally adopted climate action plans in order to be eligible for grant funding. As shown below, locally adopted climate action plans in the San Diego region routinely require that GHG emissions be reduced to 1990 levels by 2020 (also expressed as 15 percent below 2005 levels) and continued reductions after 2020. Quantified estimates of metric tons of GHG reduction estimated to result from local actions in adopted climate action plans in the San Diego region also are presented below.

In the most recent cycle of funding awarded in July 2015, SANDAG awarded $15 million to 29 projects in 14 local jurisdictions including both capital and non-capital smart growth and active transportation projects.[6] This mitigation measure will result in GHG reductions by aligning future funding allocations under SANDAG's smart growth incentive and active transportation grant programs with smart growth and active transportation projects that result in GHG emissions reductions within local jurisdictions that are implementing adopted climate action plans.

[6] http://www.sandag.org/uploads/meetingid/meetingid_4082_19498.pdf

- The City of San Diego's adopted Climate Action and Protection Plan (CPAP)[7] establishes a 15 percent reduction goal below 1990 levels, and its July 2015 Draft Climate Action Plan establishes the following targets: 25 percent below 2010 levels by 2020, 41 percent below 2010 levels by 2030, and 50 percent below 2010 levels by 2035. The local actions identified in the City of San Diego's draft climate action plan (Table 3.1) would achieve about 3.5 million metric tons of GHG reduction annually by 2035.[8]
- The City of Chula Vista's adopted year 2000 climate action plan establishes a reduction goal of 20 percent below 1990 levels by 2010. In 2014, Chula Vista identified additional actions that would result in up to 166,000 metric tons of additional GHG reduction annually by 2020.[9]
- The City of Encinitas' adopted climate action plan establishes a target to reduce city-wide GHG emissions 12 percent below 2005 levels by 2020, with local actions resulting in about 51,000 metric tons of GHG reduction annually by 2020.[10]
- The City of Escondido's adopted climate action plan sets a goal to reduce emissions to 1990 levels by 2020, and continued reductions after 2020, with local actions resulting in about 36,000 metric tons of GHG reduction annually by 2020.[11]
- The City of National City's adopted climate action plan adopts a reduction target of 15 percent below 2005 levels by 2020, with additional reductions by 2030. Local actions would result in about 137,137 metric tons of GHG reduction annually by 2020, and 156,127 metric tons annually by 2030.[12]
- The City of Vista's adopted climate action plan establishes a target of reducing emissions to 15 percent below 2005 levels by 2020, with local actions resulting in about 32,000 metric tons of GHG reduction annually by 2020.[13]
- The City of San Marcos' adopted climate action plan establishes GHG reduction targets of 15 percent below 2005 levels by 2020 and 28 percent below 2005 levels by 2030. Local actions would result in about 800 metric tons of GHG reduction annually by 2020, and 1,300 metric tons annually by 2030.[14]
- The City of Carlsbad's adopted climate action plan sets targets of 15 percent below 2005 levels by 2020 and 49 percent below 2005 levels by 2035. Local general plan policies and actions would result in about 9,250 metric tons of GHG reduction annually by 2020, and about 8,300 metric tons annually by 2035. Additional local CAP measures would achieve an additional 13,336 metric tons of CO2e reduction by 2035.[15]
- The City of La Mesa's May 2015 draft climate action plan is based on the target of reducing emissions to 15 percent below 2005 levels by 2020 (or 16 percent below 2010 levels by 2020), which was adopted as the City's target as part of its General Plan Update EIR. Local actions would result in about 15,400 metric tons of GHG reduction annually by 2020.[16]

[7] http://www.sandiego.gov/environmental-services/sustainable/pdf/action_plan_07_05.pdf
[8] http://www.sandiego.gov/planning/genplan/cap/pdf/draft_cap_july_2015.pdf
[9] http://38.106.5.202/home/showdocument?id=7058
[10] http://www.encinitasca.gov/modules/showdocument.aspx?documentid=1938
[11] http://www.escondido.org/Data/Sites/1/media/PDFs/Planning/ClimateActionPlan/AdoptedClimateActionPlan.pdf
[12] http://www.ci.national-city.ca.us/index.aspx?page=548
[13] http://www.cityofvista.com/home/showdocument?id=84
[14] http://www.ci.san-marcos.ca.us/modules/showdocument.aspx?documentid=9922
[15] http://www.carlsbadca.gov/civicax/filebank/blobdload.aspx?BlobID=23294
[16] http://cityoflamesa.com/DocumentCenter/View/7097

GHG-4B Adopt a Detailed Regional Mobility Hub ~~Strategy~~ Implementation Plan to Reduce GHG Emissions (SANDAG)

Mitigation Measure Text. Mobility hubs are places of connectivity, where different modes of transportation—walking, biking, ridesharing, and transit—come together to connect people to their jobs, school, shopping, errands, recreation, and back home; they reduce GHG emissions through reducing VMT and increasing transit use and alternative transportation. To implement the general "Regional Mobility Hub Implementation Strategy" listed as a proposed Plan near-term action, once this general strategy is developed, ~~mobility hub concepts outlined in the proposed Plan,~~ SANDAG shall develop and adopt a detailed Mobility Hub ~~Strategy~~ implementation plan no later than 2017 that includes:

1. Identification of mobility hub features and infrastructure requirements
2. Selection of 20 mobility hub locations that align with the smart growth place types identified in the Smart Growth Concept Map. Three mobility hubs will be implemented by 2020, and 17 more will be implemented by 2035.
3. Establishment of first mile/last mile transportation networks for each candidate mobility hub site based on travel patterns, access catchment areas, and adjacent land uses
4. Development of design guidelines for each candidate mobility hub site
5. Recommendation of specific mobility hub improvements and preparation of conceptual designs and capital cost estimates for each candidate mobility hub site
6. ~~Strategies for implementation, including the potential for public-private partnerships and a phasing strategy~~Site-specific implementation strategies

Mitigation Measure Effectiveness. While it is not possible to precisely quantify future GHG reductions from implementation of this mitigation measure, this measure would reduce GHG emissions because the implementation of mobility hubs would promote increased trips by walking, biking, transit, and carpooling, which reduce VMT, and in turn reduce GHG emissions. For example, research shows that increasing access to transit can reduce VMT anywhere from 0.5 to 24.5 percent.[17]

GHG-4C Fund Electric Vehicle Charging Infrastructure (SANDAG)

Mitigation Measure Text. To implement the proposed Plan action calling for building a network of electric vehicle chargers to promote the use of electric vehicles, SANDAG shall set aside approximately $30 million of Congestion Management and Air Quality (CMAQ) Improvement Program funds expected between 2020 and 2050 (approximately $1 million annually) to fund the installation of publicly available electric vehicle charging infrastructure. Increasing the number of publicly available electric vehicle charging points would reduce GHG emissions by extending the electric range of plug-in hybrid electric vehicles that would replace gasoline-powered internal combustion engines. The funding that would be provided is an incentive for installation of Level 1 and Level 2 electric vehicle chargers in publicly accessible locations throughout the region. Level 1 charging (similar to a standard wall outlet) adds about 2 to 5 miles of range to an electric vehicle per hour of charging time while Level 2 (240 V circuit) adds about 10 to 20 miles of range per hour of charging time. A detailed program will be developed and presented to the SANDAG Board of Directors before the adoption of the next Plan update with funding becoming available by 2020. Available funding will be leveraged to install up to 36,000 EV chargers by 2035 and an additional 44,000 chargers by 2050.

[17] http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

Mitigation Measure Effectiveness. This expanded charging network would reduce on-road emissions by an estimated 390,000 lbs CO_2 (177 metric tons) by 2035 and 455,000 lbs CO_2 (206 metric tons) by 2050 through the extended range of plug-in hybrid electric vehicles (See Regional Plan Appendix C).

GHG-4D Adopt a Plan for Transportation Fuels that Reduce GHG Emissions (SANDAG)

Mitigation Measure Text. SANDAG shall adopt a regional readiness plan for the deployment of infrastructure for all alternative fuels by 2016. The plan will identify barriers to developing alternative fuel infrastructure, and include recommendations and resources for stakeholders to overcome these barriers. The plan will build on the regional readiness plan for plug-in electric vehicles accepted by the Board in 2014. This plan will contribute to reductions in GHGs through developing recommendations for facilitating access to alternative fuels, which will reduce emissions from vehicles.

Also, SANDAG has received a notice of proposed award from CEC for additional funding to implement the PEV Readiness Plan over 2 years. SANDAG shall provide technical assistance to local government staff, contractors, and property managers on permitting, inspection, and installation for EV charging and general PEV awareness activities. This funding is included in the Fiscal Year 16 budget.

Mitigation Measure Effectiveness. While the precise GHG reductions associated with GHG-4D cannot be quantified because SANDAG does not know the timing and future penetration rates of alternative fuels, the readiness plan and resources will build upon the efforts to date of the San Diego Regional Clean Cities Coalition. The Coalition estimates that GHG reductions from the use of alternative fuels (excluding electricity) by fleets in the San Diego region amounted to 20,051 $MTCO_2$ in 2013 (DOE 2013). See Mitigation Measure GHG-4C for quantification of GHG reductions from installation of charging infrastructure for electric vehicles.

GHG-4E Assist in the Preparation of Climate Action Plans and Other Measures to Reduce GHG Emissions (SANDAG)

Mitigation Measure Text. SANDAG shall assist local governments in the preparation of CAPs, and other policies/measures to reduce GHG emissions. SANDAG shall assist local governments in identifying all feasible measures to reduce GHG emission to 1990 levels by 2020, and achieve further reductions beyond 2020 consistent with adopted regional or local GHG reduction targets. Specific forms of SANDAG assistance include, but are not limited to:

- Assisting its member agencies in obtaining funding for, directly funding, updating and implementing CAPs and other climate strategies through continued implementation of the SANDAG Energy Roadmap Program.
- Providing funding and energy planning assistance to local governments to implement projects that save energy and reduce energy-related GHG emissions.
- As described in GHG-4A, for local jurisdictions that do not have an adopted CAP, SANDAG shall make available competitive funding through the grant programs for preparation of a CAP.

Mitigation Measure Effectiveness

- Implementing CAPs: The Energy Roadmap Program has assisted the following cities in obtaining funding for CAP related activities. These activities increase the GHG reduction benefits described for GHG-4A, and would continue to advance GHG reductions with continued program implementation.

- Assisted the cities of National City and Vista in obtaining funding for CAP implementation activities.
- Assisted cities of Del Mar, Encinitas, La Mesa, Santee, and Solana Beach in obtaining funding for CAP development; and
- Assisted cities of El Cajon, Lemon Grove, and Oceanside in obtaining funding for updated GHG emission inventories.

- Energy Plans and Projects: Providing funding and energy planning assistance to local governments to implement projects that save energy and reduce energy-related GHG emissions. To date, SDG&E estimates that SANDAG's energy roadmap program has resulted in up to about 3.4 million kWh of annual energy savings and about 1,200 MTCO2e of annual GHG reduction (SDG&E 2015). Implementation of the Energy Roadmap Program has helped the following cities realize energy savings (and related GHG reductions) at their municipal facilities as reported below. These benefits would continue and increase with continued program implementation:
  - City of Carlsbad: about 49,000 kilowatt hours (kWh) and 14,000 therms of annual energy savings and about 95 $MTCO_2e$ of annual GHG reduction
  - City of Coronado: about 130,000 kWh and 4,100 therms of annual energy savings and about 70 $MTCO_2e$ of annual GHG reduction
  - City of El Cajon: about 406,000 kWh of annual energy savings and about 142 $MTCO_2e$ of annual GHG reduction
  - City of Encinitas: about 70,000 kWh of annual energy savings and 24 MTCO2e of annual GHG reduction
  - City of Escondido: about 270,000 kWh and 25,000 therms of annual energy savings and about 246 $MTCO_2e$ of annual GHG reduction
  - City of Imperial Beach: about 2,600 kWh of annual energy savings and about 1 $MTCO_2e$ of annual GHG reduction
  - City of National City: about 140,000 kWh of annual energy savings and 50 $MTCO_2e$ of annual GHG reduction
  - City of Oceanside: about 317,000 kWh of annual energy savings and 112 $MTCO_2e$ of annual GHG reduction
  - City of Poway: about 207,000 kilowatt hours (kWh) of annual energy savings and about 73 $MTCO_2e$ of annual GHG reduction
  - City of San Marcos: about 900,000 kWh and 2,200 therms of annual energy savings and 330 $MTCO_2e$ of annual GHG reduction
  - City of Santee: about 580,000 kilowatt hours (kWh) of annual energy savings and about 206 $MTCO_2e$ of annual GHG reduction
  - City of Solana Beach: about 110,000 kWh of annual energy savings and 40 $MTCO_2e$ of annual GHG reduction
  - City of Vista: about 190,000 kilowatt hours (kWh) annual energy savings and about 66 $MTCO_2e$ of annual GHG reduction
- CAP Preparation. See Mitigation Measure GHG-4A for discussion of GHG reductions associated with local jurisdictions CAPs.

GHG-4F Implement Measures to Reduce GHG Emissions from Transportation Projects (SANDAG)

During the planning, design, project-level CEQA review, construction, and operation of transportation network improvements, SANDAG shall implement measures to reduce GHG emissions, including but not limited to, applicable transportation project measures on the Attorney General's list of project specific measures (California Attorney General's Office 2010), as well as the CAPCOA reference, Quantifying Greenhouse Gas Mitigation Measures (CAPCOA 2010). These include, but are not limited to, the following:

- Implement construction measures through construction bid specifications, including the following topics:
  - Use energy and fuel efficient vehicles and equipment;
  - Use alternative fuel vehicles and equipment;
  - Use lighting systems that are energy efficient, including LED technology;
  - Use lighter-colored pavement, binding agents that are less GHG-intensive than Portland cement, and less-GHG intensive asphalt pavements; and
  - Recycle construction debris.
- Install efficient lighting (including LEDs) for traffic, street, and other outdoor lighting.
- Incorporate infrastructure electrification into project design (e.g., electric vehicle charging; charging for electric bikes).
- Incorporate electric vehicle supply equipment (EVSE) into projects that include commuter parking areas.
- Design measures to reduce GHG emissions from solid waste management through encouraging solid waste recycling and reuse.
- Design measures to reduce energy consumption and increase use of renewable energy, such as solar-powered toll booths and other facilities, including those listed in Mitigation Measures ~~EN-2A and~~ EN-3B~~C~~.
- Design measures to reduce water consumption, such as drought-resistant landscaping, smart irrigation systems, and other measures including those listed in Mitigation Measure WS-1A.
- Construct buildings to Leadership in Energy and Environmental Design (LEED) certified standards or equivalent standards.

Funding for those measures that SANDAG selects would be included in individual project budgets.

GHG-4G Implement Measures to Reduce GHG Emissions from Transportation Projects (Other Transportation Project Sponsors)

During the planning, design, project-level CEQA review, construction, and operation of transportation network improvements, other transportation project sponsors can and should implement measures to reduce GHG emissions, including, but not limited to, those described in Mitigation Measure GHG-4F.

GHG-4H Implement Measures to Reduce GHG Emissions from Development Projects (Local Governments)

During the planning, design, project-level CEQA review, construction, and operation of development projects, the County of San Diego and cities can and should implement measures to reduce GHG emissions, including but not limited to, applicable land use measures on the Attorney General's list of project specific measures (California Attorney General's Office 2010), as well as the CAPCOA reference, Quantifying Greenhouse Gas Mitigation Measures (CAPCOA 2010). These measures include, but are not limited to, the following:

- Construction measures, including those listed in Mitigation Measure GHG-4F.
- Measures that reduce VMT by increasing transit use, carpooling, bike-share and car-share programs, and active transportation, including:
    - Building or funding a major transit stop within or near development, in coordination with transit agencies;
    - Developing car-sharing and bike-sharing programs;
    - Providing transit incentives, including transit passes for MTS/NCTD buses and trolleys;
    - Consistent with the Regional Bicycle Plan, incorporating bicycle and pedestrian facilities into project designs, maintaining these facilities, and providing amenities incentivizing their use; and planning for and building local bicycle projects that connect with the regional network;
    - Implementing complete streets consistent with the SANDAG Regional Complete Streets Policy, including adopting local complete streets policies;
    - Implementing mobility hubs consistent with the Regional Mobility Hub Strategy;
    - Improving transit access to bus and trolley routes by incentives for construction of transit facilities within developments, and/or providing dedicated shuttle service to trolley and transit stations; and
    - Implementing employer trip reduction measures to reduce employee trips and VMT such as vanpool and carpool programs, providing end-of-trip facilities, and telecommuting programs.
- Measures that reduce VMT through parking strategies based on the SANDAG Regional Parking Management Toolbox, including:
    - Parking pricing strategies consistent with the Toolbox;
    - Reduced minimum parking requirements;
    - Residential parking permit programs;
    - Designate a percentage of parking spaces for ride-sharing vehicles or high-occupancy vehicles, and provide adequate passenger loading and unloading for those vehicles;
    - Provide adequate bicycle parking;
    - Other strategies in the SANDAG Regional Parking Management Toolbox

- Measures that reduce VMT through Transportation Systems Management (TSM), including measures included in proposed Plan Appendix E.
- Land use siting and design measures that reduce GHG emissions, including:
  - Developing on infill and brownfields sites;
  - Building high density and mixed use developments near transit; and
  - Retaining on-site mature trees and vegetation and planting new trees.
- Measures that increase vehicle efficiency or reduce the carbon content of fuels, including constructing electric vehicle charging stations or neighborhood electric vehicle networks or charging for electric bicycles consistent with SANDAG's regional readiness planning for alternative fuels.
- Measures to reduce GHG emissions from solid waste management through encouraging solid waste recycling and reuse.
- Measures to reduce energy consumption and increase use of renewable energy, including those listed in Mitigation Measures EN-~~2~~3A and EN-3B~~C~~.
- Measures to reduce water consumption, including those listed in Mitigation Measure WS-1A~~XX~~.

Mitigation Measures AQ-4A, AQ-4B, and AQ-4C would also reduce emissions of GHGs by reducing overall pollutant emissions from equipment and vehicles. These measures include:

- Mitigation Measure AQ-4A. Reduce Exposure to Localized Particulate and/or TAC Emissions.
- Mitigation Measure AQ-4B. Reduce diesel emissions during construction from off-road equipment.
- Mitigation Measure AQ-4C. Reduce diesel emissions during construction from on-road vehicles.

Mitigation Measures EN-3B would also reduce emissions of GHGs by reducing conventional energy use and therefore reducing emissions associated with combustion of fossil fuels used in conventional power plants.

Mitigation Measure WS-1A would increase water conservation, and thereby reduce GHG emissions associated with water supply conveyance, storage, treatment, and distribution.

SIGNIFICANCE AFTER MITIGATION

2035 and 2050

Implementation of Mitigation Measures GHG-4A through GHG-4H, as well as Mitigation Measures AQ-4A, AQ-4B, AQ-4C, EN-3B and WS-1A, would reduce GHG emissions. The effectiveness of a number of the project-specific measures in reducing GHG emissions has been quantified by CAPCOA (2010). Based on the studies cited in the introduction to the mitigation section, however, even full implementation of all identified mitigation measures would not be sufficient to reduce the proposed Plan's GHG emissions below the regional 2030 and 2050 GHG reduction reference points based on EO B- 30-15 and EO-S-3-05. Because the proposed Plan's 2035 GHG emissions would remain inconsistent with state's current ability to achieve the Executive Orders' GHG reduction goals, this impact (Impact GHG-4) remains significant and unavoidable.

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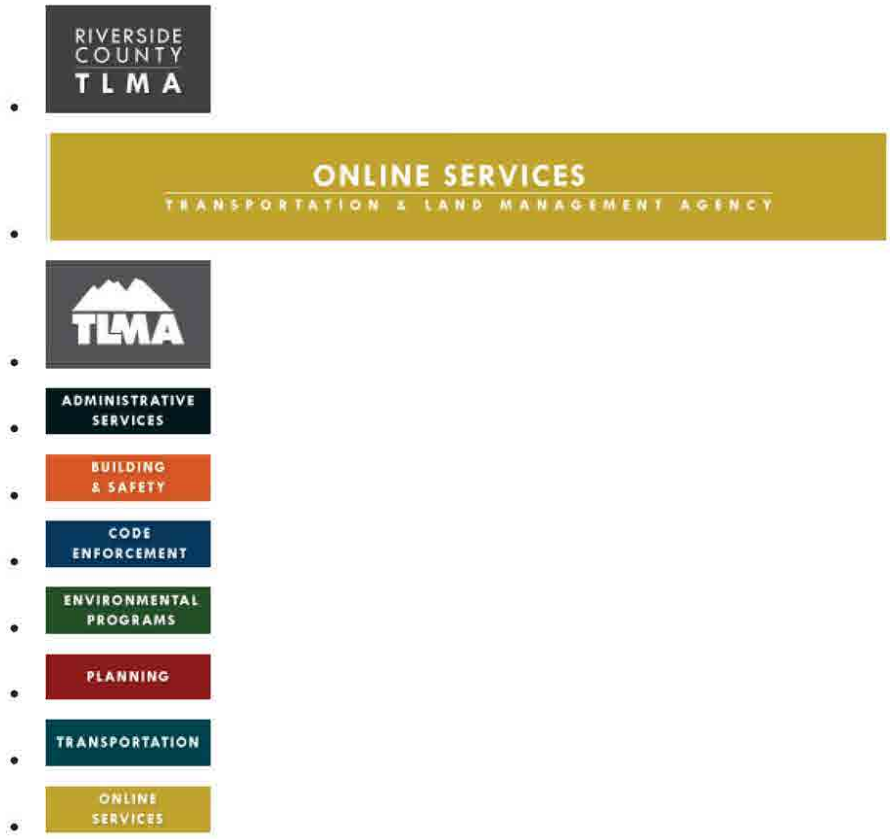
EXHIBIT H



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pavements. (See Consumer Energy Center, Cool Roofs at http://www.consumerenergycenter .org/coolroof/)"

30.PLANNING 113 SP - MITIG MEASURE 6.24-5 Status: INEFFECT Conditions: Outstanding

PRIOR TO ANY PROJECT APPROVAL

Prior to the approval of any implementing project within the SPECIFIC PLAN (i.e.: tract map, parcel map, use permit, plot plan, etc.), the following condition shall be placed on the implementing project:

"PRIOR TO THE ISSUANCE OF BUIDLING PERMIT, the following language shall be added to the implementing project:

Mitigation Measure 6.24-5 from EIR514 requires:

Prior to the issuance of each building permit, the applicant shall provide evidence to the appropriate Planning Department of the use of automatic covers, efficient pumps and motors, and solar heating for pools and spas. (See http://www.consumerenergycenter.org/home /outside/pools_spas.html)."

30.PLANNING 114 SP - MITIG MEASURE 6.24-6 Status: INEFFECT Conditions: Outstanding

PRIOR TO ANY PROJECT APPROVAL

Prior to the approval of any implementing project within the SPECIFIC PLAN (i.e.: tract map, parcel map, use permit, plot plan, etc.), the following condition shall be placed on the implementing project:

"PRIOR TO THE ISSUANCE OF BUIDLING PERMIT, the following language shall be added to the implementing project:

Mitigation Measure 6.24-6 from EIR514 requires:

Prior to the issuance of each building permit, the applicant shall provide evidence that the building is consistent with and/or does not conflict with the following Specific Plan-wide renewable energy targets:

-80 percent of residential units shall meet 60 percent of their baseline demand power energy needs with renewable energy; and

-80 percent of commercial building square footage shall meet 40 percent of their baseline demand power energy needs with renewable energy.

Should the individual structure not be able to demonstrate that power provided by the Imperial Irrigation District (IID) does not comply with this standard, then the individual structure shall comply by providing renewable energy power from a source within the limits of the Specific Plan. "

30.PLANNING 115 SP - MITIG MEASURE 6.24-7 Status: Conditions:

91

EXHIBIT I

Recommended Guidance for Land Use Emission Reductions Version 3.2

(for Operational Emissions)

April 1, 2015

Table of Contents

Introduction

The Sacramento Metropolitan Air Quality Management District (SMAQMD or the District) utilizes the most recent version of the California Emissions Estimator Model (CalEEMod) to determine the operational emissions of a project. Projects that generate a significant impact for ozone precursors should create an Operational Air Quality Mitigation Plan (AQMP) to minimize impacts, while projects that generate a significant impact for greenhouse gases (GHG) should create a Greenhouse Gas Reduction Plan (GHGRP). Both plans consist of feasible measures that reduce operational emissions associated with the project and are incorporated as mitigation into the project's environmental document and the implementation is enforced by the local jurisdiction. The AQMP or GHGRP can be a standalone document or incorporated into a project's environmental document. This guidance document instructs proponents of projects within the District how to quantify, apply, and comply with various mitigation measures.

There are two types of measures: those that are included in CalEEMod (known as on-model measures) and those not included in CalEEMod but accepted by the SMAQMD (called off-model measures). Regardless of the type of measure, each requires a narrative demonstrating that the measure is being met, as well as an enforceable mechanism to ensure it is implemented for the life of the project.

As measures may have different reduction values in different circumstances, the point values herein are for illustrative purposes only and actual reduction credit assigned to the project for a specific measure will vary across projects, pollutants, and places and can be calculated using CalEEMod. Reduction value ranges for on-model measures were reported in the California Air Pollution Control Officers Association Quantifying Greenhouse Gas Mitigation Measures document (CAPCOA Measures) and based on the research conducted to develop those measures.

Measures are numbered by their category and source. The alpha-numeric measures can be found in the CAPCOA Measures, with the letters representing the category of the measure. For example, measure LUT-9 can be found as the ninth measure in the Land Use / Location category in the CAPCOA Measures document. The alpha-alpha measures are not found in the CAPCOA Measures document, with the first letters representing the category of the measure. For example, measure T-a is the first measure in the Transportation Category for off-model measures. NOTE: PS is a special pre-requisite that must be implemented for any project utilizing CAPCOA Measures in the Transportation Category, while TS contains instructions on how to integrate a traffic study into CalEEMod.

It is recommended that proponents consult this guide's companion documents, SMAQMD's CEQA Guide to Air Quality Assessment and SMAQMD's Tips for Using CalEEMod to create a successful AQMP or GHGRP. Any questions about this guide should be directed to SMAQMD Land Use and Transportation Staff.

Protocol for Ozone Precursors

Projects that are anticipated to emit 65 pounds or more of NO_x or 65 pounds or more of ROG per day are considered operationally significant for CEQA purposes and should apply feasible mitigation. For projects that are included in the current State Implementation Plan (SIP), the District recommends a 15 percent reduction of mobile source emissions. For projects not considered in the SIP, the District recommends a 35 percent reduction. These reductions are considered feasible mitigation, and should be included in an AQMP. If a project is partially included in the SIP, proponents should contact District staff to discuss the appropriate mitigation percent reduction to apply to the project. Additional discussion of the different reduction levels is available in Section 4.4 of Chapter 4 of the District's CEQA Guide to Air Quality Assessment. Lead agencies and proponents should work with the District and SACOG to determine if the project is included in the SIP.

Determining if a project requires an Air Quality Mitigation Plan

To determine if a project exceeds SMAQMD ozone precursor thresholds (65 lbs/day of NO_x or ROG) and thus, requires an AQMP, enter all project land uses into CalEEMod and run the project with default settings. Check the estimated total daily emissions for Summer NO_x, Summer ROG, Winter NO_x, and Winter ROG in the full build-out year[1]. If any of these values are 65 lbs/day or higher, the project is considered operationally significant and should prepare an AQMP as described below.

Setting a reduction target

To determine the amount of emissions a project must mitigate, the first step is to determine the total mass emissions of ozone precursors released by the project's mobile sector.

On a ton for ton basis, NO_x reductions provide greater ozone benefits than VOC/ROG reductions.[2] As such, the District recommends normalizing ozone precursors based on their ozone creation potential in units of Equivalent Oxides of Nitrogen ($NO_x e$). The conversion rate recommended by the Land Use and Transportation staff is as follows:

Ozone Precursor	Equivalent Oxides of Nitrogen
1 NO_x	1 $NO_x e$
1 VOC or ROG	$\frac{1}{3}$ $NO_x e$

Using the CalEEMod run from the previous step, determine which season (Winter or Summer) has higher total emissions. Utilizing the higher season, review the detailed output and convert the NO_x and ROG from the mobile sector into $NO_x e$. Divide the mobile ROG by three and add the resulting quotient

[1] Chapter 4 of the CEQA Guide to Air Quality Assessment discusses analysis expectations in more detail.
[2] Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan, SMAQMD, March 26, 2009. Page 14-3 & 14-4.

to the mobile NO_x. This is a project's mobile NO_xe in lbs/day. Your reduction target will be a fixed percentage of this number (usually 15% or 35%, depending on the project's consideration in the SIP). Multiply the project's mobile NO_xe by your target percent to establish the pounds per day the project must mitigate. This is your reduction target. For example, a land development project considered in the SIP has unmitigated mobile sector emissions of 76 lbs/day of NO_x and 72 lbs/day of ROG. The ozone creation potential of the unmitigated project's mobile sector would be 100 lbs/day of NO_xe. As such, the project's mitigation target would be 15 lbs/day of NO_xe.

Meeting the reduction target

The proponent should now apply the project mitigation and recalculate the daily summer or winter emissions (whichever was highest) and, using the methodology above, report the mitigated project's mass ozone precursors in NO_xe. Please note that while the reduction target is based on mobile sector emissions, the project may utilize mitigation from *any* sector to meet the target. As such, subtract the project's total mitigated NO_xe from the project's total unmitigated NO_xe. The District *strongly* recommends that projects with traffic studies use prerequisite TS, but may also use all other available measures as needed.

A plan is considered to meet the target if the following equation is true:

$$Reduction\ Target \leq Unmitigated\ Project\ NO_xe - Mitigated\ Project\ NO_xe$$

For example, if the reduction target is 15 lbs/day of NO_xe, the unmitigated project's total ozone precursor emissions are 120 lbs/day of NO_xe, and the mitigated project's total ozone precursor emissions are 100 lbs/day of NO_xe, the calculations would be as follows:

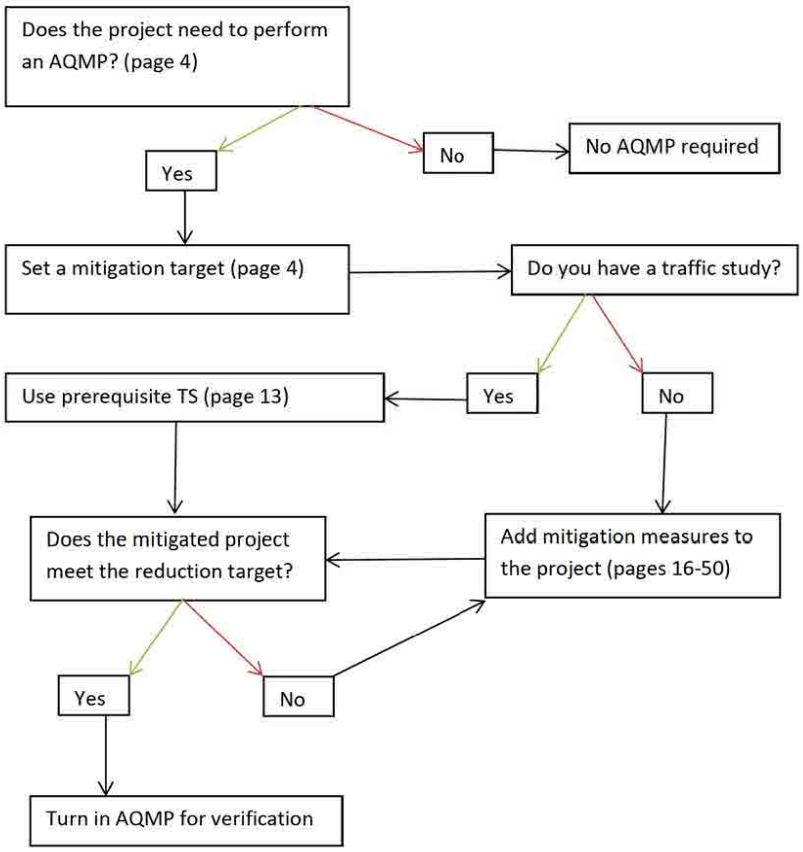
$$15\frac{lbs}{day}NO_xe \leq 120\frac{lbs}{day}NO_xe - 100\frac{lbs}{day}NO_xe$$

$$15\frac{lbs}{day}NO_xe \leq 20\frac{lbs}{day}NO_xe$$

The above statement is true; the mitigated project meets the reduction target.

NOTE: A project must still disclose ALL ozone precursors for the unmitigated and mitigated project, and base the initial significance determination on all sectors, not just the mobile sector.

Quick Reference Flow-Chart



Protocol for Greenhouse Gases

The analysis of project level GHG is specifically covered in Chapter 6 of the District's CEQA Guide to Air Quality Assessment, while Chapter 9 provides information on larger plan areas such as specific, community, and general plans.

Jurisdictions with Existing GHG Strategies

Each jurisdiction determines GHG significance for proposed development projects independently. There are a few strategies in use to address GHG emissions within the boundaries of the District. Proponents with projects in these jurisdictions should utilize the following strategies when analyzing GHG emissions and determining significance.

- City of Citrus Heights – Climate Action Plan with reduction targets and measures.[3]
- City of Elk Grove – Climate Action Plan with reduction targets and measures[4].
- City of Sacramento - Climate Action Plan with reduction targets and measures[5].
- County of Sacramento - GHG thresholds for transportation and energy usage adopted in the General Plan Update Environmental Impact Report[6].

If a jurisdiction has a numerical threshold, the mitigated project GHG emissions should be reviewed to determine if the project emissions have met the established threshold. If a jurisdiction has an adopted Climate Action Plan, the project environmental document must describe all the reduction measures in the Climate Action Plan that apply to the project and demonstrate how the project will incorporate those reduction measures to show consistency with the Climate Action Plan. If a project cannot tier from or is not consistent with an applicable Climate Action Plan, consult with the jurisdiction to determine if the District's GHG thresholds would be an appropriate alternative to evaluate project significance.

Air District GHG Thresholds of Significance

To assist with projects in jurisdictions without GHG thresholds and/or Climate Action Plans, the District's Board of Directors adopted the following recommended GHG thresholds[7].

- Operational phase of land development projects – 1,100 metric tons CO_2e per year.
- Construction phase of a project – 1,100 metric tons CO_2e per year.
- Stationary source project – 10,000 metric tons CO_2e per year direct emissions.

[3] Adopted by the City of Citrus Heights on August 11, 2011. Accessible here.
[4] Adopted by the City of Elk Grove on March 27, 2013. Accessible here.
[5] Adopted by the City of Sacramento on February 14, 2012. Accessible here.
[6] Adopted by the County of Sacramento November 9, 2011. Accessible here. The Climate Change section of the EIR is accessible here.
[7] Adopted on October 23, 2014. SMAQMD's Board Resolution highlighting the rationale for adoption of the thresholds. Accessible here.

The following guidance only applies to operational emissions and the development of a GHGRP, not construction and stationary source emissions.

Analysis Expectations

For land use jurisdictions without GHG analysis guidance, the District recommends disclosing the project's total annual GHG emissions per the recommendations contained in Chapter 6 of the District's CEQA Guide to Air Quality Assessment. Chapter 6 recommends reporting the GHG emissions of both the unmitigated project and the mitigated project in metric tons of CO_2e during the full build-out year of the project. GHG emissions can then be compared to the operational significance threshold to determine if a GHGRP should be developed.

For projects with operational GHG emissions exceeding 1,100 metric tons CO_2e per year, a GHGRP should be prepared. The District recommends the analysis compare project GHG emissions for two scenarios and determine if the project meets a 21.7% reduction. The two scenarios include the following:

1. Proposed project in 2020 with project specific mitigation measures including state GHG reduction measures for transportation and energy.
2. No Action Taken project in 2020 without project specific mitigation measures and without state GHG reduction measures for transportation and energy.

The basis for the recommended 21.7% reduction is described in the District's Justification for Greenhouse Gas Emissions Thresholds of Significant document. The District provides quantification guidance for transportation and non-transportation GHG emissions for the project and no action taken scenarios. A description of the measures used to demonstrate the 21.7% reduction should be documented in the GHGRP.

Projects building after 2020 should disclose emissions in the build out year and consider demonstrating a continued downward trajectory of emissions supportive of California's climate change goals[8].

Reviewing Larger Plan Areas

General plans, community plans and specific plans cover large areas of land with development occurring over a longer period of time (i.e., 20 years) than a single development project. Sometimes the information available for a large plan doesn't exist in enough detail for the plan to utilize the mitigation measures described in this guidance document directly. Chapter 9 of the District's CEQA Guide to Air Quality Assessment provides a discussion on how to handle large plan areas and include all feasible mitigation measures into those planning documents. A Climate Action Plan is often the preferred mechanism for a General Plan to identify and mitigate GHG emissions.

[8] Executive Order S-3-05 sets forth the ultimate climate change goal of reducing emissions by 80% below 1990 levels by 2050. State law does not yet require reductions beyond the AB32 2020 target.

Table of Prerequisites and Measures

The following table summarizes the mitigation measures available to reduce ozone precursor and GHG emissions from a project, as well as the supporting information CalEEMod needs to calculate the reductions associated with these measures. Complete all prerequisites *before* selecting mitigation measures.

Prerequisites: The proponent must provide the following information to CalEEMod and the SMAQMD. (Designated by name)			Page
PS	Project Setting (Required)	Determination of project category	13
TS	Traffic Study (If Available)	Incorporating results of a traffic study into CalEEMod	14

A note is provided in the Ozone Precursors and GHG columns to identify if the measure applies to the pollutant (Yes), does not apply to the pollutant (No), the District does not recommend use of the measure to reduce the pollutant (N/A), or project specific information needs to be provided to demonstrate a reduction in the pollutant (Maybe).

On-Model Measures: CalEEMod's mitigation measures are based on the CAPCOA Measures. Further clarification on these measures can be found in CalEEMod's User Guide and the CAPCOA Measures document.					
CalEEMod Traffic Tab: Land Use & Site Enhancement Measures (Designated by associated CAPCOA measure)			Ozone Precursors	GHG	Page
LUT-1	Increase Density	Project more dense than typical developments	Yes	Yes	16
LUT-3	Increase Diversity	Different types of land uses are near each other	Yes	Yes	17
LUT-9	Improve Walkability Design	Walkable street network	Yes	Yes	18
LUT-4	Improve Destination Accessibility	Project close to regional employment or destination center	Yes	Yes	19
LUT-5	Increase Transit Accessibility	Project near high-quality transit	Yes	Yes	19
LUT-6	Integrate Below Market Rate Housing	Incorporates affordable housing	Yes	Yes	20
CalEEMod Traffic Tab: Neighborhood Enhancement Measures (Designated by associated CAPCOA measure)			Ozone Precursors	GHG	Page
SDT-1	Improve Pedestrian Network	On-site pedestrian access network links all of project internally and externally	Yes	Yes	21
SDT-2	Provide Traffic Calming Measures	Projects streets and intersections feature traffic calming features	Yes	Yes	22
SDT-3	Implement NEV Network	Project provides a viable NEV network	Yes	Yes	23

CalEEMod Traffic Tab: Parking Policy/Pricing Measures (Designated by associated CAPCOA measure)			Ozone Precursors	GHG	Page
PDT-1	Limit Parking Supply	Parking supply below ITE rates	Yes	Yes	24
PDT-2	Unbundle Parking Costs	Parking cost separate from property costs	Yes	Yes	25
PDT-3[9]	On-Street Parking Market Pricing	On-street parking utilizes market-rate pricing (such as meters)	N/A	N/A	25
CalEEMod Traffic Tab: Transit Improvement Measures (Designated by associated CAPCOA measure)			Ozone Precursors	GHG	Page
TST-1	Provide BRT System	Establish a Bus Rapid Transit line with permanent operational funding stream	Yes	Yes	26
TST-3	Expand Transit Network	Establishes or enhances bus line with permanent operational funding stream	Yes	Yes	27
TST-4	Increase Transit Frequency	Reduces headways of existing transit	Yes	Yes	27
CalEEMod Traffic Tab: Commute Trip Measures (Designated by associated CAPCOA measure)			Ozone Precursors	GHG	Page
TRT-1&2	Implement Trip Reduction Program	TMA membership or other comprehensive services	Yes	Yes	28
TRT-4[10]	Transit Subsidy	Proponent subsidizes sustainable modes of transportation	N/A	N/A	29
TRT-15	Implement Employee Parking "Cash-Out"	Employer provides cash-value of a parking space to employees who do not use one	N/A	N/A	29
TRT-14	Workplace Parking Charge	Charge employees for their parking	N/A	N/A	29
TRT-6	Encourage Telecommuting and Alternative Work Schedules	Allow/require 9/80s, 4/10, and telecommuting	N/A	N/A	29
TRT-7	Market Commute Trip Reduction Option	Market sustainable travel options	N/A	N/A	29
TRT-11	Employee Vanpool/Shuttle	Provide employer-sponsored vanpool or shuttle program	N/A	N/A	29
TRT-3	Provide Ride Sharing Program	Establish a carpooling program with associated infrastructure	N/A	N/A	30
CalEEMod Traffic Tab: School Trip Measures (Designated by associated CAPCOA measure)			Ozone Precursors	GHG	Page
TRT-13	Implement School Bus Program	Restore or expand school bus program or provide safe routes to school	N/A	N/A	30
CalEEMod Area Tab: Hearth Measures (No associated CAPCOA measure, designated sequentially)			Ozone Precursors	GHG	Page
H-a	Only Natural Gas Hearth	Project restricts hearths to Natural Gas Only	N/A	N/A	31
H-b	No Hearth	Project contains no hearths	N/A	N/A	31

[9] PDT-3: The District does not recommend utilizing this measure in the model, use T-c instead.
[10] TRT-4: The District does not recommend utilizing this measure in the model, use M-z instead.

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CalEEMod Area Tab: Consumer Products (No associated CAPCOA measure, designated sequentially)			Ozone Precursors	GHG	Page
V-a	Use Low VOC Cleaning Supplies	Project utilizes only low VOC Cleaning supplies in perpetuity	N/A	N/A	32
CalEEMod Area Tab: Architectural Coatings (No associated CAPCOA measure, designated sequentially)			**Ozone Precursors**	**GHG**	**Page**
V-b	Use low VOC Paint	Project utilizes only low VOC Paint in perpetuity	N/A	N/A	33
CalEEMod Area Tab: Landscape Equipment Measures (Designated by associated CAPCOA measure)			**Ozone Precursors**	**GHG**	**Page**
A-1,2&3	% Electric Lawnmower	Landscaping equipment and outdoor electrical plugs provided to project users	N/A	N/A	34
	% Electric Leaf blower		N/A	N/A	34
	% Electric Chainsaw		N/A	N/A	34
CalEEMod Energy Tab: Building Energy Measures (Designated by associated CAPCOA measure)			**Ozone Precursors**	**GHG**	**Page**
BE-1	Exceed Title 24	Use less energy than allowed by Title 24	Yes	Yes	35
LE-1	Install High Efficiency Lighting	Make use of high-efficient outdoor and public lighting	No	Yes	36
BE-4	Energy Efficient Appliances	Use appliances more energy efficient than standard models	No	Yes	37
CalEEMod Energy Tab: Alternative Energy Measures (Designated by associated CAPCOA measure)			**Ozone Precursors**	**GHG**	**Page**
AE-1	On-site Renewable Energy	Establish on-site renewable energy. (No Ozone Precursor reductions if NO_x intensity is higher than electric utility.)	Maybe	Yes	38
CalEEMod Water Tab: Water Conservation Strategy (No CAPCOA measure, designated sequentially)			**Ozone Precursors**	**GHG**	**Page**
WUW-2	Apply Water Conservation Strategy	Reduce indoor and outdoor water use	No	Yes	39
CalEEMod Water Tab: Water Supply (Designated by associated CAPCOA measure)			**Ozone Precursors**	**GHG**	**Page**
WSW-1	Use Reclaimed Water	Project utilizes non-potable water	No	Yes	41
WSW-2	Use Grey Water	Project reuses onsite water	No	Yes	41
CalEEMod Water Tab: Indoor Water Use (Designated by associated CAPCOA measure)			**Ozone Precursors**	**GHG**	**Page**
WUW-1	Install Low-Flow Bathroom Faucet	Reduce Indoor water use with low-flow fixtures	No	Yes	43
	Install Low-Flow Kitchen Faucet		No	Yes	43
	Install Low-flow Toilet		No	Yes	43
	Install Low-flow Shower		No	Yes	43

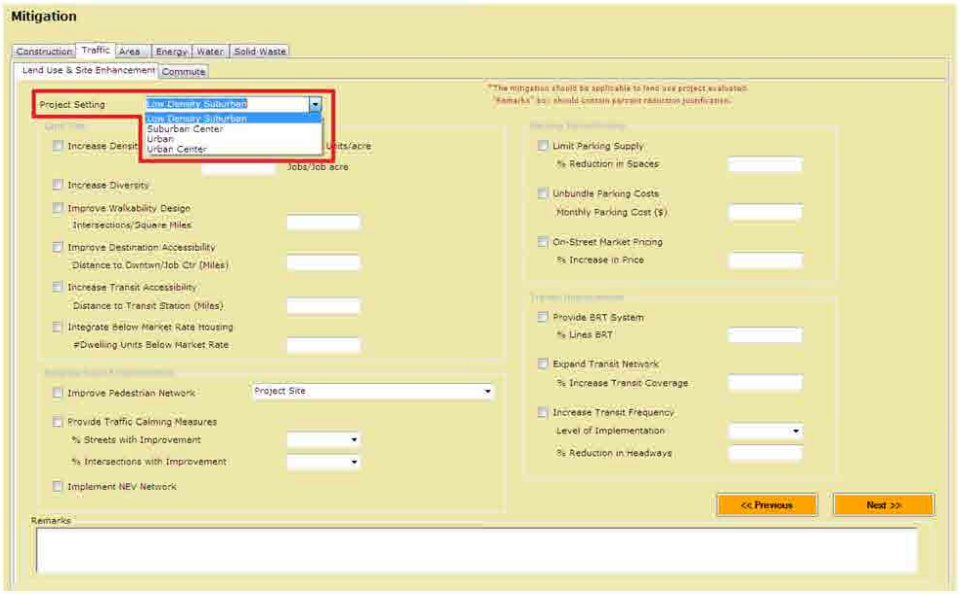
CalEEMod Water Tab: Outdoor Water Use (Designated by associated CAPCOA measure)			Ozone Precursors	GHG	Page
WUW-5	Reduce Turf in Landscapes and Lawns	Use less turf than normal projects	No	Yes	44
WUW-4	Use Water-Efficient Irrigation Systems	Install a smart irrigation control system	No	Yes	45
WUW-3	Water Efficient Landscape	Plant native or drought-resistant trees and Vegetation	No	Yes	45
CalEEMod Solid Waste Tab (Designated by associated CAPCOA measure)			Ozone Precursors	GHG	Page
SW-1	Institute Recycling and Composting Services	Project Recycles, Reduces, and Reuses	No	Yes	47

Off-Model Measures: These measures are available to proponents but not incorporated into CalEEMod. If a project has multiple land use types, measures must be scaled, so that if measures are limited in application to one type of land use it will only be counted as mitigation for the emissions associated with that land use type.					
CAPCOA Measures not included in CalEEMod (Designated by CAPCOA measure)			Ozone Precursors	GHG	Page
#	Non-CalEEMod CAPCOA Measures	Use any CAPCOA measure not included in the CalEEMod Model	Maybe	Yes	47
Transportation Measures (No CAPCOA measure, designated by name)			Ozone Precursors	GHG	Page
T-a	Anti-Idling/Congestion Strategies	Installation of roundabouts, removal of four-way stop signs, diverging diamond intersections, permissive-protective left-turns, etc.	Yes	Yes	48
T-c	Cruising Reductions	Reduce cruising for parking	Yes	Yes	49
Miscellaneous Measures (No CAPCOA measure, designated by name)			Ozone Precursors	GHG	Page
M-n	NO_x reduction technology	Technologies that reduce ambient NO_x available for Ozone creation	Yes	No	50
M-z	Other	Other proposed strategies, in consultation with project lead agency and SMAQMD	Maybe	Maybe	50

Prerequisites

These protocols are needed for CalEEMod to accurately estimate the anticipated emission reductions associated with the various mitigation measures. While all projects must complete PS: Project Setting, only projects with a traffic study required of them by the Lead Agency need to complete TS: Traffic Study.

PS: Project Setting (Required)



Protocol: All projects have a project setting, which helps predict the efficacy of traffic tab measures. While the CAPCOA Measures document provides definitions of the location setting on pages 59 and 60, the CalEEMod labels for project setting do not match the CAPCOA definitions for location setting. Use the following table to match the CalEEMod project setting with the CAPCOA location setting:

CalEEMod Project Setting	CAPCOA Location Setting
Low Density Suburban	Suburban
Suburban Center	Suburban Center
Urban	Urban
Urban Center	Compact Infill

Within the narrative of this measure, the proponent must provide evidence that their project meets the location setting requirements as put forth by the CAPCOA guidance.

Applicability: All projects utilizing traffic tab measures must complete this measure.

Example: A four-story mixed-use development adjacent to a light-rail station within the River District of Sacramento would qualify for the "Compact Infill" definition in the CAPCOA Measures document. The proponent would select the "Urban Center" setting in the drop-down menu marked "Project Setting."

Reference: See the location setting definitions as shown on pages 59 and 60 of the CAPCOA guidance.

TS: Traffic Study (If Available)

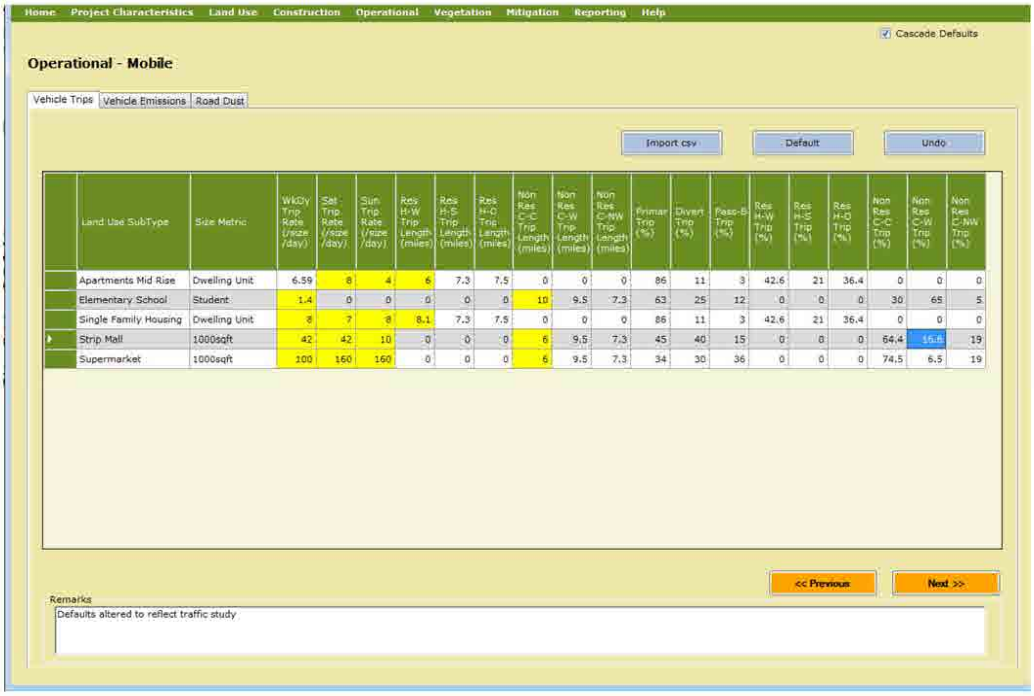
Protocol: Recognizing that site-specific information is better than information generated from a statewide model, proponents that prepare a traffic study should use the results of that traffic study instead of the model defaults. Traffic studies typically include calculations of internal trip capture, mix of uses, distance to job centers, and sometimes walking and cycling information. In lieu of using CalEEMod to estimate the impact of these features on a project, the proponent will use the results of the traffic study. As incorporating a traffic study into CalEEMod involves changing defaults and multiple model runs, special instructions must be followed to use this measure.

1) Disclose what air quality elements are included in the traffic study: Traffic studies may include some measures (such as diversity of uses and density) but not include others (such as Transportation Management Association (TMA) membership or cycling). The proponent must disclose and describe the emissive reducing elements of the project that are incorporated into the assumptions of the traffic model, and the guarantees they will be implemented (such as inclusion as a condition of approval or mitigation monitoring and reporting plan).

2) Establish the unmitigated project baseline: The proponent will run CalEEMod using the proposed land uses in default mode to establish the unmitigated project baseline, per this document's Protocol for Ozone Precursors

3) Create mitigated project: The proponent will then have to create a second CalEEMod run, altering the defaults and adding mitigation not included in the traffic study. The mitigated project's emissions can be estimated using the following protocol:

a. Alter CalEEMod defaults with Traffic Study Information: On the Vehicle Trips tab, change the CalEEMod defaults to reflect the results of the traffic study. Check that VMT and total trips match the results of your study.



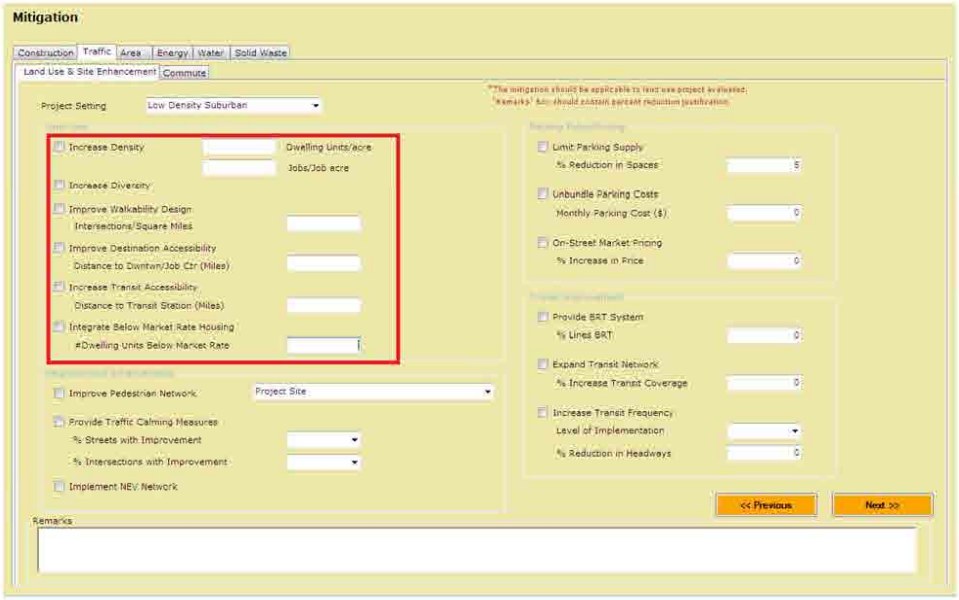
b. Add non-traffic-study measures: After changing the default, the proponents may now select any and all applicable measures that were not included in the traffic study. However, to avoid double-counting, any measure considered in the traffic study may not be selected again. In addition, CalEEMod includes sectorial and global caps on transportation measures (see page 55 of the CAPCOA guidance). The proponent must demonstrate that the measure is in addition to the traffic study measures and would not violate sectorial and global caps on emission reductions.

4) Compare unmitigated project to mitigated project: Establish the effectiveness of the AQMP and GHGRP using the Protocol for Ozone Precursors and Protocol for Greenhouse Gases located in this document.

On-Model Measures

On-Model Measures: The CalEEMod mitigation measures are based on CAPCOA Measures. The model applies the sectorial and global maximum reduction values (or caps) based on the project setting and combination of mitigation measures selected for the project, therefore the usual reductions listed for each measure cannot simply be summed to determine total project emission reductions. Further clarification on these measures and reduction caps can be found in CalEEMod's User Guide and the CAPCOA Measures document.

CalEEMod Land Use & Site Enhancement Tab: Land Use Measures



LUT -1 Increase Density (usual reduction 0.8 – 30.0% VMT)

Measure: The project is designed in a way that increases density without increasing the amount of land utilized. The reductions in emissions are quantified based on reduced VMT associated with communities that feature higher densities, which normally would also include a mixed use component (on or off-site) and access or proximity to alternate modes of transportation. The proponent calculates density by

stating the dwelling units per net acre and/or jobs per net acre. If the user utilizes a non-standard method of calculating density (for example, excluding a particular land use type from the calculation) this deviation shall be noted in the remarks section at the bottom of the screen.

Applicability: This is applicable to all land uses in urban and suburban contexts (proponent must complete project setting measure). It is not applicable in rural contexts. It is appropriate for residential, retail, office, industrial and mixed-use projects. The project must be a minimum of 8 dwelling units per acre to qualify for this measure, and an error will return if the proponent inputs less than 8 dwelling units per acre. This measure is only applicable to projects within SACOG transit priority areas unless approved by SMAQMD.

Example: A subdivision has an average density of 10 dwelling units per acre. The proponent will select the box marked "Increase Density" and type "10" into the field marked "Dwelling Units/acre"

Reference: See measure LUT-1 on page 155 of the CAPCOA guidance.

LUT-3 Increase Diversity (Usual reduction: 9-30% VMT)

Measure: The project is designed or located in an area with variety of land use types in close proximity (mixed use). SMAQMD recognizes that having different types of land uses near one another can decrease VMT since trips between land use types are shorter and may be accommodated by non-auto modes of transport. The mixed-use development should encourage walking and other non-auto modes of transport from residential to office/commercial locations (and vice versa). The project should minimize the need for external trips by including services/facilities for day care, banking/ATM, restaurants, vehicle refueling, and shopping.

Applicability: This is applicable to all land uses in urban and suburban contexts (proponent must complete project setting measure). It is not applicable in rural contexts. It is appropriate for mixed-use projects.

> To apply this measure in urban areas the project must be predominantly characterized by properties on which various uses, such as office, commercial, institutional, and residential, are combined in a single building or on a single site in an integrated development project with functional interrelationships and a coherent physical design. The residential units should be within ¼-mile of parks, schools, or other civic uses. The project should minimize the need for external trips by including services/facilities for day care, banking/ATM, restaurants, vehicle refueling, and shopping.
>
> To apply this measure in suburban areas the project must have at least three of the following on site and/or offsite within ¼-mile: Residential Development, Retail Development, Park/Open Space, or Office.

Example: In an urban area, a multi-floor residential condominium tower includes retail space on the ground floor with retail units designed to accommodate an eatery, an ATM, and general retail or

commercial uses. A user may gain credit for this measure by clicking on the box adjacent to the words "increase diversity" in the Land Use and Site Enhancement mitigation screen.

Reference: See measure LUT-3 on page 162 of the CAPCOA guidance.

LUT-9 Improve Walkability Design (Usual reduction: 3.0 – 21.3% VMT)

Measure: The project will include improved design elements to enhance walkability and connectivity. Improved street network characteristics within a neighborhood include street accessibility, measured in terms of number of intersections per square mile.

Cul-de-sacs with bicycle/pedestrian through access to another roadway or bicycle/pedestrian facility may be considered a "complete intersection" when calculating the project's internal connectivity factor.

Streets internal to the project should connect to streets external to the project whenever possible. External connections of the project must occur, on average, a minimum of every quarter-mile along the project perimeter.

For projects with large amounts of undisturbed open space non-accessible to the public (such as wetland preserves), the land set-aside for such areas may be excluded from the denominator of intersections per square mile. However, each developable "island" would be considered its own project and must meet the external connectivity requirements.

The project must also implement LUT-9's associated group measures when applicable and feasible. These measures are SDT-5: Incorporate Bike Lane Street Design (on-site), SDT-6: Provide Bike Parking in Non-Residential Projects, SDT-7: Provide Bike Parking in Multi-Unit Residential Projects and SDT-9: Dedicate Land for Bike Trails. Bicycle parking must be consistent with the most recent edition of the Bicycle Parking Guidelines as issued by the Association of Pedestrian and Bicycle Professionals. A project must demonstrate compliance with these measures or state why compliance is not applicable or feasible.

Applicability: This is applicable to all land uses in urban and suburban contexts (proponent must complete project setting measure). This measure is appropriate for residential, retail, office, industrial and mixed-use projects and must have a minimum of 36 intersections per square mile to qualify for this measure. This measure is unavailable in rural settings without SMAQMD consent.

Example: A new subdivision includes a street network built in a traditional grid pattern with small blocks. The project includes connections to all roadways, bicycle paths, and pedestrian facilities touching the projects boundaries. User calculates the average number of intersections per mile for the developable area of the entire project. A user may gain credit for this measure by clicking on the box to the left of the words "Improve Walkability" and entering in the number of intersections per square mile into the field marked "Intersections/Square Miles."

Since the example project does not contain multifamily or non-residential uses, SDT-6 and SDT-7 are not applicable.

Reference: See measure LUT-9 (3.1.9 Improve Design of Development) on page 181 of the CAPCOA guidance.

LUT-4 Improve Destination Accessibility (Usual reduction: 6.7 – 20% VMT)

Measure: The project will be located in an area with high accessibility to destinations. Destination accessibility is measured in terms of the number of jobs or other attractions reachable within a given travel time, which tends to be highest at regional centers and lowest at peripheral locations. The location of the project also increases the potential for pedestrians to walk and bike to these destinations and therefore reduces the VMT.

Destination accessibility is measured by the distance, in miles, from the project site to the regional center, as calculated using the street and highway network. For the purposes of this measure, SMAQMD considers the intersection of 10th Street and K Street in Sacramento to be the regional center.

Applicability: This is applicable to all land uses in urban and suburban contexts (proponent must complete project setting measure). This measure may not be utilized in a rural context without SMAQMD consent. This measure is appropriate for residential, retail, office, industrial and mixed-use projects.

Example: A new multi-family residential project at Howe Avenue and Hurley Way in Arden-Arcade. Using mapping software, the user calculates the distance between the geographic center of the project site and the Sacramento Regional Center. The project is 6 miles by car from 10th and K Streets. The proponent would then click on the box to the left of the words "Improve Destination Accessibility" and type "6" in the field marked "Distance to Dwntwn/Job Ctr (Miles)."

Reference: See measure LUT-4 on page 167 of the CAPCOA guidance.

LUT-5 Increase Transit Accessibility (Usual reduction: 0.5 – 24.6% VMT)

Measure: Locating a project with high density near transit will facilitate the use of transit by people traveling to or from the project site. The use of transit results in a mode shift and therefore reduced VMT. A project with a residential/commercial center designed around a rail or bus station is called a transit-oriented development (TOD). The project description should include, at a minimum, the following design features:

- A transit station/stop with high-quality, high-frequency bus service located within a 5-10 minute walk (or roughly ¼ mile from majority of development), and/or
- A rail station located within a 20 minute walk (or roughly ½ mile from station majority of development)

- Fast, frequent, and reliable transit service connecting to a high percentage of regional destinations
- Neighborhood designed for walking and cycling with a safe and convenient path of travel to the transit or rail stop/station

Applicability: This is applicable to all land uses in urban and suburban contexts (proponent must complete project setting measure). This measure is only applicable to projects within a SACOG designated transit priority areas unless approved by SMAQMD. This measure may be appropriate in a rural context if development site is adjacent to a commuter rail station with convenient rail service to a major employment center. This measure is appropriate for residential, retail, office, industrial and mixed-use projects.

Auto-oriented uses (such as a drive-thru coffee-kiosk) are not allowed to utilize this measure without SMAQMD consent.

Example: A new project is built within a transit priority area. A user may gain credit for this measure by clicking on the box to the left of the words "Increase Transit Accessibility" and entering the distance between the geographic center of the nearest transit station and the edge of the project site into the box to right of these words in the Land Use and Site Enhancement mitigation screen. The user is encouraged to include references to maps or graphics from project's environmental document that demonstrate the accuracy of the calculation of the distance between the transit station and the project site.

Reference: See measure LUT-5 on page 171 of the CAPCOA guidance.

LUT-6 Increase Below Market Rate Housing (Usual reduction: 6.7 – 20% VMT)

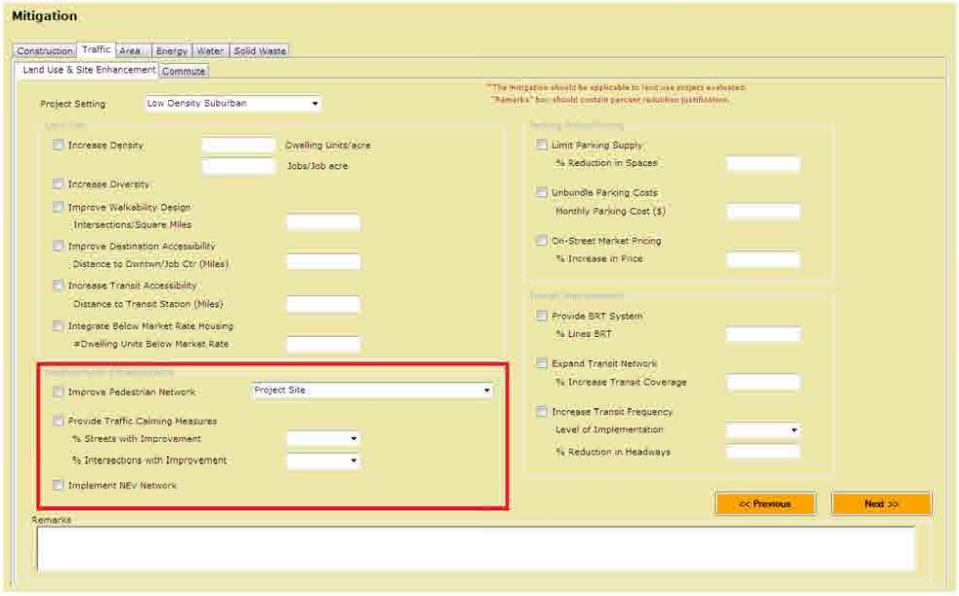
Measure: Residential development projects of five or more dwelling units will provide a deed restricted low-income housing (below market rate – BMR) component on-site. Income has a statistically significant effect on the probability that a commuter will take transit or walk to work. BMR housing provides greater opportunity for lower income families to live closer to jobs centers and achieve jobs/housing match near transit.

Applicability: This is applicable to land uses in urban and suburban contexts (proponent must complete project setting measure). This measure is only applicable to projects within SACOG transit priority areas unless approved by SMAQMD. It is not applicable in rural contexts. It is appropriate for mixed-use projects. Proponents who pay into In-Lieu Fee programs are not eligible for this measure.

Example: A residential project includes BMR housing on site. A user may gain credit for this measure by clicking on the box to the left of the words "Increase Below Market Rate Housing" and entering the number BMR housing units into the box to right of these words in the Land Use and Site Enhancement mitigation screen.

Reference: See measure LUT-6 on page 176 of the CAPCOA guidance.

CalEEMod Land Use & Site Enhancement Tab: Neighborhood Enhancement Measures



SDT-1 Improve Pedestrian Network (Usual reduction 0 - 2% VMT)

Measure: The project will provide a pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the project site. Emission reductions are awarded based on the project location, which are selected from the drop-down menu in CalEEMod.

- To qualify for the "project" setting the project must minimize barriers to pedestrian access and interconnectivity. Physical barriers such as walls, landscaping, and slopes that impede pedestrian circulation are eliminated. Project design includes a designated pedestrian route interconnecting all site entrances, primary building entrances, public facilities, and adjacent uses to existing external pedestrian facilities and streets. Route has minimal conflict with parking and automobile circulation facilities. Streets (with the exception of alleys) within the project have sidewalks. All sidewalks internal and adjacent to project site are minimum of five feet wide. All sidewalks feature vertical curbs or planting strip separating the sidewalk from the parking or

travel lane. Pedestrian facilities and improvements such as grade separation, wider sidewalks, and traffic calming are implemented wherever feasible to minimize pedestrian barriers.

- To qualify for the "project and off site" setting the project must qualify for all the requirements of the "project" setting and implement improvements to off-site pedestrian network, or connect with a substantial and existing off-site pedestrian connections similar to those described as the "project" setting.

- If the project is located in a rural location, check the rural setting.

Applicability: This is applicable to all land uses in urban, suburban, and rural contexts (proponent must complete project setting measure). It is appropriate for residential, retail, office, industrial and mixed-use projects. Reduction benefits are provided if the project has both pedestrian network improvements on site and connections to the larger off-site network, and a lesser benefit if the project has only network improvements on site.

Example: A user may gain credit for this measure by clicking on the box to the left of the words "Improve Pedestrian Network" and selecting one of the 3 following settings from the drop down menu to the right: project, project & connecting off site, and rural.

Reference: See measure SDT-1 on page 187 of the CAPCOA guidance.

SDT-2 Provide traffic calming measures (Usual reduction: 0.25 – 1.00% VMT)

Measure: The project provides traffic calming measures to encourage people to walk or bike instead of using a vehicle. Project design includes pedestrian/bicycle safety and traffic calming measures in excess of jurisdiction requirements. Roadways are designed to reduce motor vehicle speeds and encourage pedestrian and bicycle trips with traffic calming features. Street traffic calming features may include: on street parking, planter strips with street trees, chicanes, horizontal shifts (lane centerline that curves or shifts), bollards, rumble strips, woonerfs, and others. Intersection traffic calming measures may include: marked crosswalks, count-down signal timers, curb extensions, channelization islands, speed tables, raised crosswalks, raised intersections, median islands, tight corner radii, traffic circles or mini-circles, and others.

Applicability: This is applicable to all land uses in urban, suburban, and rural contexts (proponent must complete project setting measure). It is appropriate for residential, retail, office, industrial and mixed-use projects.

Example: A new project utilizes traffic circles at key intersections with chicanes and on-street parking to narrow the roadway. A user may gain credit for this measure by clicking on the box to the left of the words "Provide traffic calming measures" and entering the percentages of streets and intersections that have traffic calming improvements in the boxes to the right. The percentage of streets with improvements shall be calculated by dividing the number of streets with improvements by the total

number of streets in the project. The percentage of intersections with improvements shall be calculated by dividing the number of improved intersections by the total number of intersections.

Reference: See measure SDT-2 on page 190 of the CAPCOA guidance.

SDT-3 Implement NEV Network (Usual reduction: 0.5-12.7% VMT)

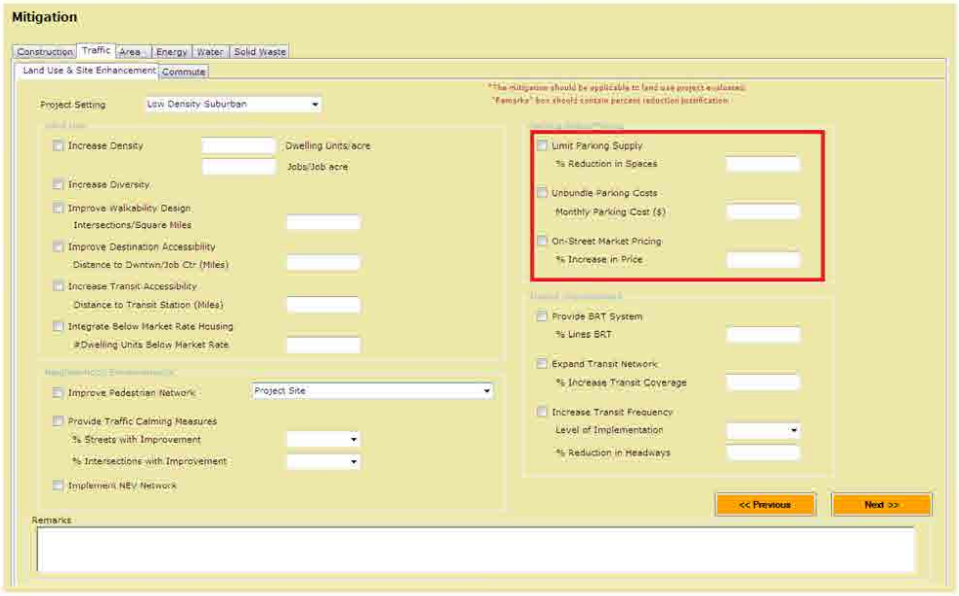
Measure: The project will create local "light" vehicle networks, such as neighborhood electric vehicle (NEV) networks. To create a NEV network, the project will implement the necessary infrastructure, including NEV parking, charging facilities, striping, signage, and educational tools. NEV routes will be implemented throughout the project. The proponent must also implement measure SDT-8: Provide EV Parking.

Applicability: This is applicable to all land uses in urban, suburban, and rural contexts (proponent must complete project setting measure). It is appropriate for residential, retail, office, industrial and mixed-use projects. This measure is limited to programmatic level plans or communities with existing NEV infrastructure unless approved by the SMAQMD. CalEEMod assumes a low-level penetration rate in the project for NEVs, for more information on penetration rate see the CAPCOA guidance.

Example: A new master planned community of residential housing, retail, and a regional university includes extensive NEV infrastructure linking all major internal uses. A user may gain credit for this measure by clicking on the box adjacent to the words "Implement NEV Network" in the Land Use and Site Enhancement mitigation screen. The user is encouraged to include references to map's, graphics, and narratives depicting the NEV infrastructure from relevant planning and environmental documents in the remarks box at the bottom of the screen.

Reference: See measure SDT-3 on page 194 of the CAPCOA guidance.

CalEEMod Land Use & Site Enhancement Tab: Parking Policy/Pricing Measures



PDT-1 Limit Parking Supply (Usual reduction: 5 – 12.5% VMT)

Measure: The project must demonstrate that provided parking is below the average generation rate as estimated by the most recent edition of the Institute of Transportation Engineers *Parking Generation* handbook. Trip reduction will be credited only if measures are implemented to control for spillover parking in and around the project, such as residential parking permits, metered parking, or time-limited parking. Parking provided off-site, such as through long-term leases, counts toward a project's provided parking supply.

Applicability: This is applicable to all land uses in urban and suburban settings (proponent must complete project setting measure). This measure is unavailable in rural settings without SMAQMD consent.

Example: If the ITE parking generation rate for a project is 100 spaces and the project provides 95 spaces, the a user may gain credit for this measure by selecting the "Limit Parking Supply" checkbox and typing "5" in the field titled "% reduction in Spaces."

Reference: See measure PDT-1 on page 207 of the CAPCOA guidance.

PDT-2 Unbundle Parking Costs (usual reduction: 2.6 – 13% VMT)

Measure: The project demonstrates that the cost of parking is separate from the property costs. For multi-family projects, each parking space is leased/sold separately from the unit and the tenant/owner has the option of not purchasing/owning a space. For office and industrial uses, employees are charged for parking. For retail uses, credit is given for charging employees; additional credit is given if retail customers are charged for parking. Trip reduction will be credited only if measures are implemented to control for spillover parking in and around the project, such as residential parking permits, metered parking, or time-limited parking.

Applicability: This is applicable to multi-family residential, retail, office, industrial and mixed-use projects in urban and suburban settings (proponent must complete project setting measure). This measure is unavailable in rural settings without SMAQMD consent.

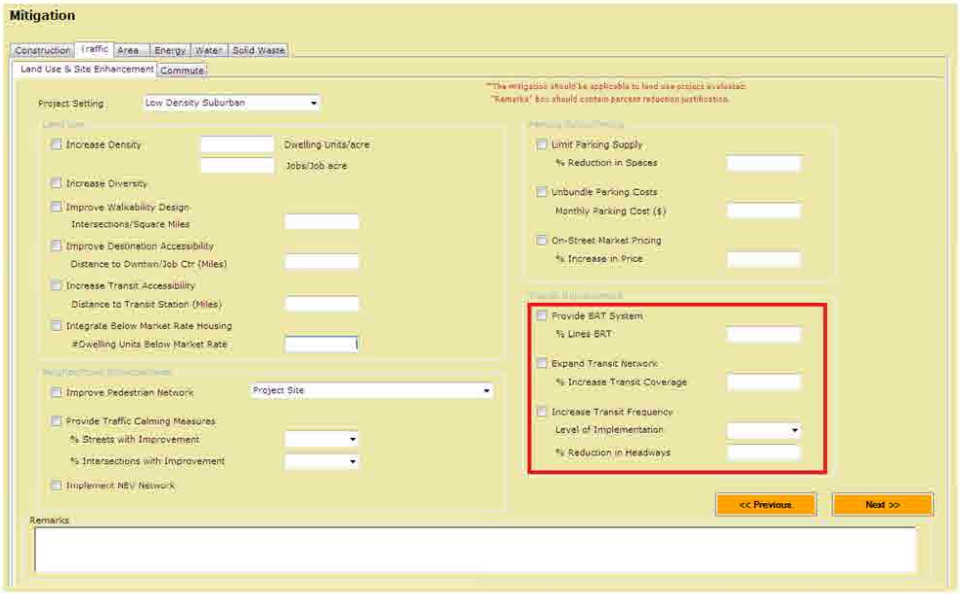
Example: A multifamily condominium project is selling parking spaces at $20,000 per space. Prospective condo buyers may purchase as many or as few spaces as they would like. Homeowner Association (HOA) dues for maintenance of the spaces are anticipated to be $25 per month per space. If a thirty-year fixed-rate mortgage with good credit can be obtained at 5% at the time of AQMP submittal and property taxes are anticipated to be 1.25%, payments for the parking space would be $124.03 per month for 30 years. Proponent would add the HOA fee to the monthly cost of the space over a 30-year fixed-term loan and type "149.03" into the field marked "Monthly Parking Cost ($)," along with selecting the box marked "Unbundle Parking Costs."

Reference: See measure PDT-2 on page 210 of the CAPCOA guidance.

PDT-3: On-Street Parking Market Pricing (N/A)

This measure is not utilized by SMAQMD as an on-model measure. Innovative parking strategies and systems may apply for credit as a T-c measure.

CalEEMod Land Use & Site Enhancement Tab: Transit Improvement Measures



TST-1 Provide BRT System (Usual reduction: 0.02 – 3.2% VMT)

Measure: The project will provide a Bus Rapid Transit (BRT) system with design features for high quality and cost-effective transit service. These include:

- Grade-separated right-of-way, including bus only lanes (for buses, emergency vehicles, and sometimes taxis), and other transit priority measures.
- Frequent, high-capacity service
- High-quality vehicles that are easy to board, quiet, clean, and comfortable to ride.
- Pre-paid fare collection to minimize boarding delays.
- Integrated fare systems, allowing free or discounted transfers between routes and modes.
- Convenient user information and marketing programs.
- High quality bus stations with Transit Oriented Development in nearby areas.
- Modal integration, with BRT service coordinated with walking and cycling facilities, taxi services, intercity bus, rail transit, and other transportation services.

Applicability: This measure only applies to programmatic level documents such as a municipal General Plan or specific plan (proponent must complete project setting measure).

Example: A component of a municipality's General Plan update is to upgrade 5 of its 20 bus lines to BRT. A user may gain credit for this measure by clicking on the checkbox to the left of the words "Provide BRT System" and entering the percentages of the system that is converting to BRT in the box to right. This figure shall be calculated by dividing the number of bus lines with BRT improvements by the total number of bus lines in the jurisdiction.

Reference: See measure TST-1 on page 270 of the CAPCOA guidance.

TST-3 Expand Transit Network (Usual reduction: 0.1 – 8.2% VMT)

Measure: The project will expand the local transit network by adding or modifying existing transit service to enhance the service near the project site. This will encourage the use of transit and therefore reduce VMT.

Applicability: This is applicable to multi-family residential, retail, office, industrial and mixed-use projects in urban and suburban settings (proponent must complete project setting measure). This measure is unavailable in rural settings without SMAQMD consent.

Example: A new mixed use subdivision includes a mello-roos assessment to fund the expansion of public transportation services to the project site. The funding is sufficient to add 2 additional bus lines. The area already has 2 existing bus lines, so the new bus service will increase transit coverage by 100%. A user may gain credit for this measure by clicking on the checkbox to the left of the words "Expand Transit Network" and entering the percentage increase in the box to right.

Reference: See measure TST-3 on page 276 of the CAPCOA guidance.

TST-4 Increase Transit Frequency (Usual reductions: 0.02 – 2.5% VMT)

Measure: This project will reduce transit-passenger travel time through more reduced headways and increased speed and reliability. This makes transit service more attractive and may result in a mode shift from auto to transit which reduces VMT.

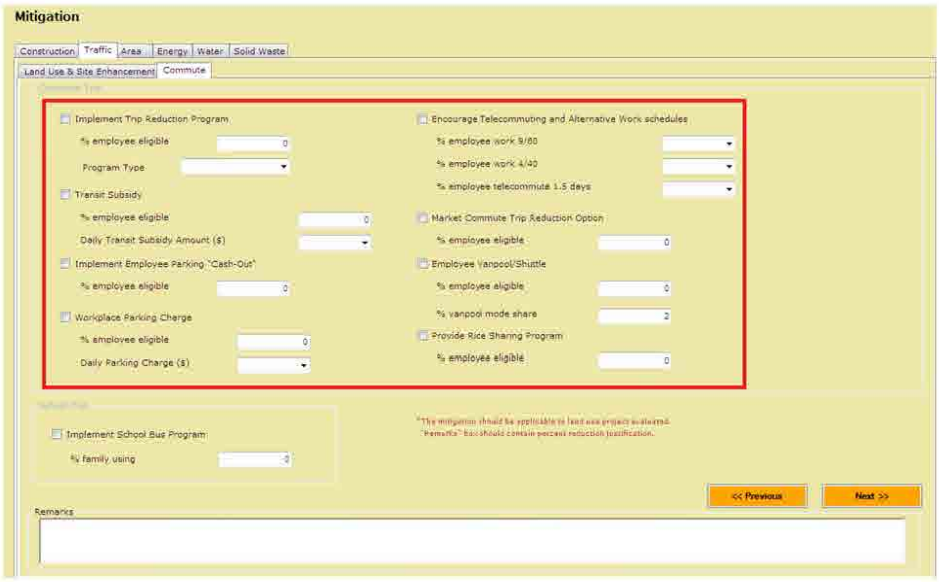
Applicability: This is applicable to multi-family residential, retail, office, industrial and mixed-use projects in urban and suburban settings (proponent must complete project setting measure). This measure is unavailable in rural settings without SMAQMD consent.

Example: A new residential subdivision includes a mello-roos assessment to fund the expansion of public transportation services to the project site. There are 3 bus lines with hourly headways serving the project site. The funding is sufficient to double the headways on 2 of the lines. A user may gain credit for this measure by clicking on the checkbox to the left of the words "Increase Transit Frequency" and entering the percentage increase in the box to right (since the headways doubled, the speed increase is 50%). The box below allows you to select between two levels of implementation; less than or greater

than 50%. Since the funding increased headways on 2 of the 3 bus lines connecting, in this example you would select ">=50%".

Reference: See measure TST-4 on page 280 of the CAPCOA guidance.

CalEEMod Traffic Tab: Commute Trip Measures



TRT-1&2: Implement Trip Reduction Program (usual reduction: VMT 5%)

Measure: Research and SMAQMD experience suggest that providing commute trip reduction programs increases sustainable mode share for the commute and results in about a five percent decrease in vehicle miles traveled. SMAQMD determines compliance if a project permanently joins a TMA to be funded through a Community Facilities District, County Service Area, or other non-revocable funding mechanism.

Applicability: This is applicable to all land uses in urban and suburban settings (proponent must complete project setting measure). This measure is unavailable in rural settings without SMAQMD consent.

Example: A master-planned community joins their local TMA and funds membership through joining a County Service Area paid by every household and commercial property owner. A user may gain credit for this measure by clicking the checkbox titled "Implement Trip Reduction Program," provide the percentage of employees eligible for the program by typing 100 in the "% employee eligible" box and select "voluntary" from the drop down list of "program type."

Reference: See measure TRT-1 and TRT-2 on pages 218 and 223 of the CAPCOA guidance.

TRT-4: Transit Subsidy (usual reduction: Commute VMT 1 – 20%)

As compliance into perpetuity cannot be guaranteed by proponent, this measure is not utilized by SMAQMD.

TRT-15: Implement Employee Parking "Cash-Out" (usual reduction: Commute VMT 0.6 – 7.7%)

As compliance into perpetuity cannot be guaranteed by proponent, this measure is not utilized by SMAQMD.

TRT-14: Workplace Parking Charge (usual reduction: Commute VMT 0.1 – 20%)

As compliance into perpetuity cannot be guaranteed by proponent, this measure is not utilized by SMAQMD.

TRT-6: Encourage Telecommuting and Alternate Work Schedules

As compliance into perpetuity cannot be guaranteed by proponent, this measure is not utilized by SMAQMD.

TRT-7: Market Commute Trip Reduction Option

As compliance into perpetuity cannot be guaranteed by proponent, this measure is not utilized by SMAQMD.

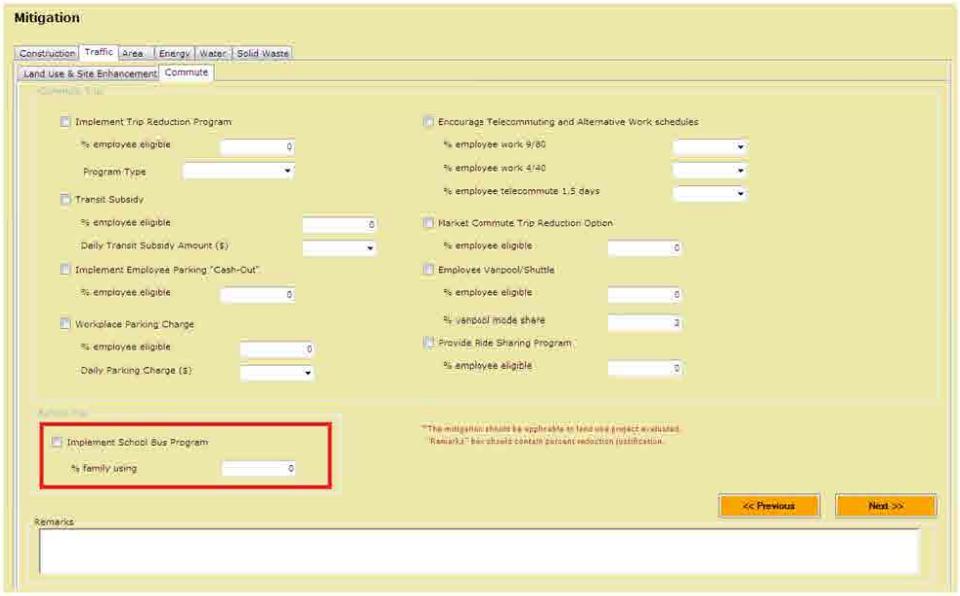
TRT-11: Employee Vanpool/Shuttle (usual reduction: Commute VMT 2 – 20%)

As compliance into perpetuity cannot be guaranteed by proponent, this measure is not utilized by SMAQMD.

TRT-3: Promote Ride Sharing Program (usual reduction: Commute VMT 1 – 15%)

As compliance into perpetuity cannot be guaranteed by proponent, this measure is not utilized by SMAQMD.

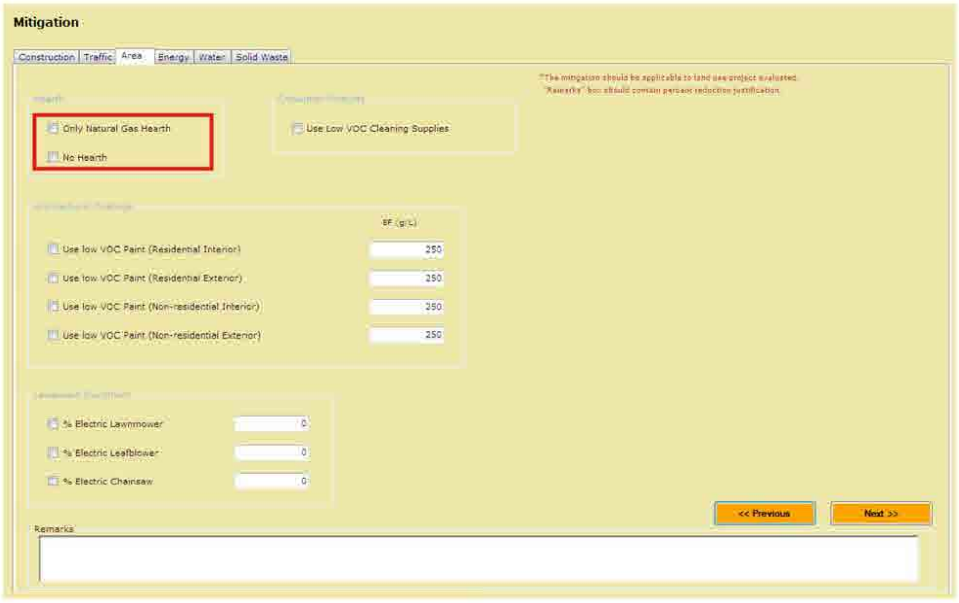
CalEEMod Traffic Tab: School Trip Measures



TRT-13: Implement School Bus Program (usual reduction: School VMT 38 – 63%)

As compliance into perpetuity cannot be guaranteed by proponent, this measure is not utilized by SMAQMD.

CalEEMod Area Tab: Hearth Measures



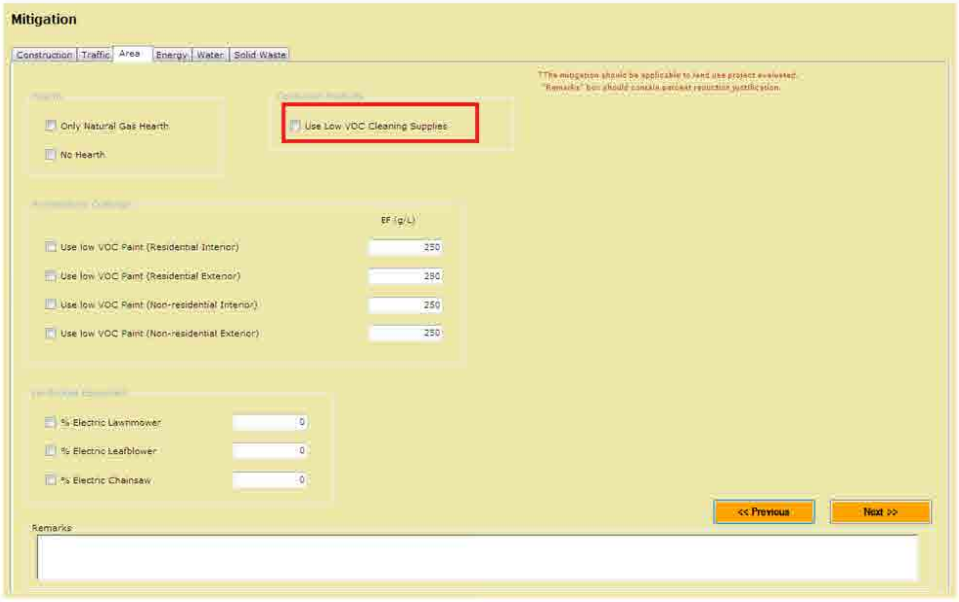
H-a: Only Natural Gas Hearth

This measure is not utilized by SMAQMD since it is assumed all projects have no hearths. Projects including hearths must incorporate them using the methodology in SMAQMD's Tips for Using CalEEMod.

H-b: No Hearth

This measure is not utilized by SMAQMD since it is assumed all projects have no hearths. Projects including hearths must incorporate them using the methodology in SMAQMD's Tips for Using CalEEMod.

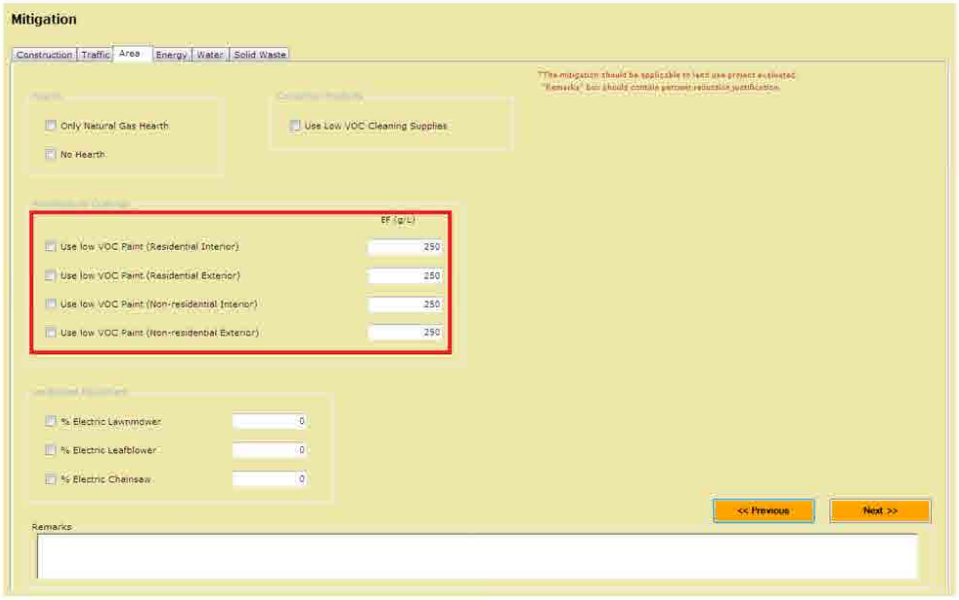
CalEEMod Area Tab: Consumer Products Measures



V-a: Use Low VOC Cleaning Supplies

As compliance into perpetuity cannot be guaranteed by proponent, this measure is not utilized by SMAQMD.

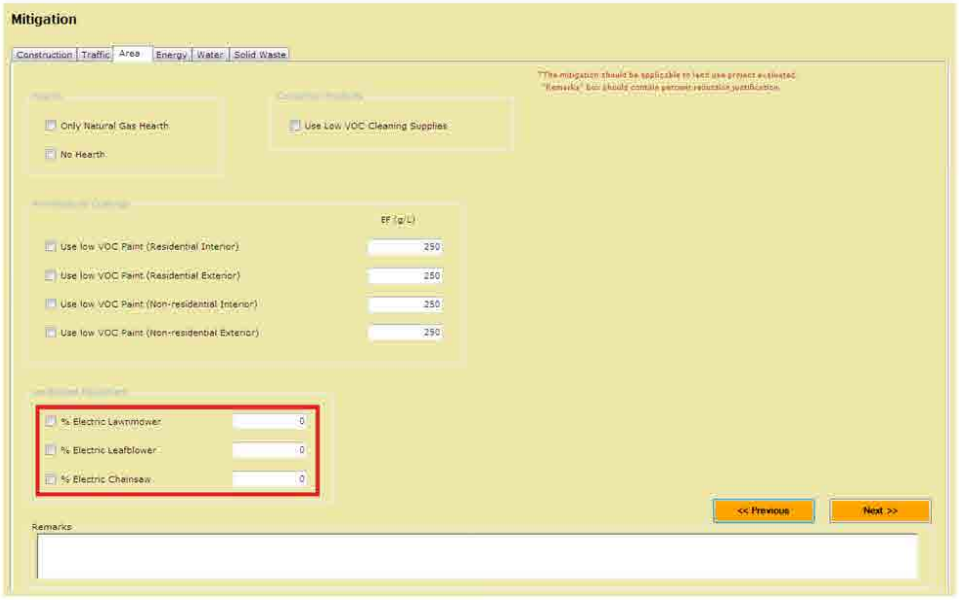
CalEEMod Area Tab: Architectural Coatings Measures



V-b: Use Low VOC Paint

As compliance into perpetuity cannot be guaranteed by proponent, this measure is not utilized by SMAQMD.

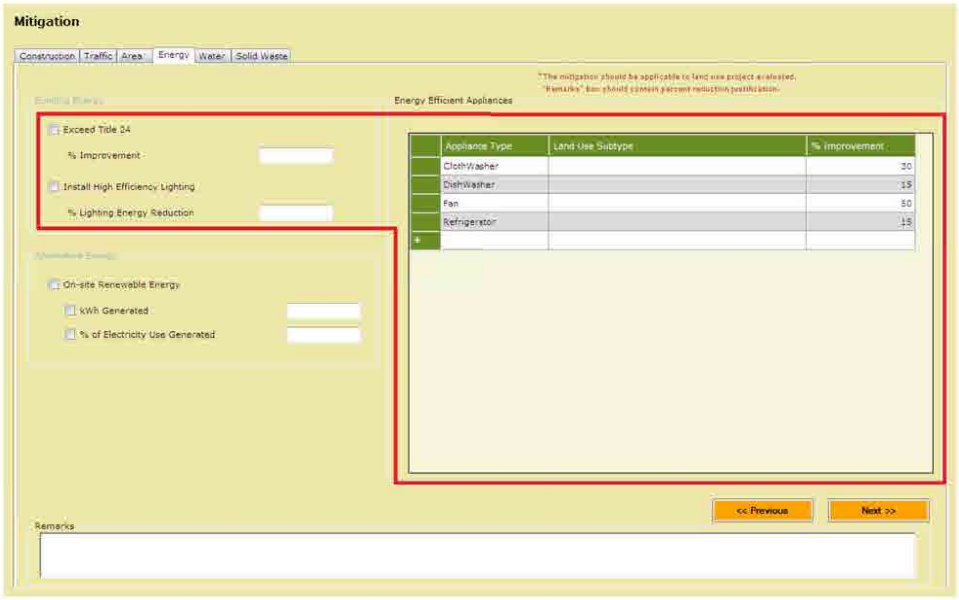
CalEEMod Area Tab: Landscape Equipment Measures



A-1, 2&3: Landscape Equipment Measures

As compliance into perpetuity cannot be guaranteed by proponent, this measure is not utilized by SMAQMD.

CalEEMod Energy Tab: Building Energy Measures



BE-1: Exceed Title 24 (usual reduction: 5% electricity use, 10% natural gas use)

Measure: The project will reduce building envelope energy efficiency standards beyond California's Title 24. This reduces building electricity use and building natural gas use and associated emissions. To qualify for this measure, the proponent must agree to exceed the Title 24 standard at the time of project approval by a certain percentage. CalEEMod calculates the carbon intensity of electricity use as well as natural gas use, but only calculates the NO_x intensity of natural gas. [11]

Applicability for Ozone Precursors: Any project that utilizes natural gas.

Applicability for GHG: Any project that utilizes electricity or natural gas.

[11] To achieve credit from the NOx reductions associated with electricity, proponents must show off-model calculations, as described on page xxx.

Example: A proponent of office building project commits to exceeding the 2013 Title 24 Standards by 10 percent. Since CalEEMod version 2013.2.2 includes only 2008 Title 24 Standards, the proponent must account for both the percent improvements from 2008 to 2013 and the additional 10 percent commitment. The 2013 Title 24 Standards are estimated to be 25 percent more efficient than the 2008 Title 24 Standards[12]. The proponent may select the "Exceed Title 24" box and enter "35" into the field labeled "% Improvement." This accounts for the 25 percent improvement in the efficiency of Title 24 Standards from 2008 to 2013 and the additional 10 percent commitment.

Reference: See measure BE-1 on page 85 of the CAPCOA guidance.

LE-1: Install High Efficiency Lighting (usual reduction: 16 – 40% of outdoor lighting)

Measure: The proponent installs higher efficiency lighting in public areas, such as street lights, outdoor stairwells, pedestrian pathways, parks, parking lots, other exterior lighting and around public buildings. Scaled by lumens, proponent may take the following credit for efficiency:

16% for metal halide post top lights
35% for metal halide cobrahead or cutoff lights
40% for high pressure sodium cutoff lights

Other lighting, such as light emitting diodes (LED), also qualifies for this measure. Use mercury cobrahead lights as baseline when determining percent improvement.

Applicability for Ozone Precursors: This measure does not qualify for Ozone Precursor emissions.

Applicability for GHG: Any project that utilizes outdoor lighting.

Example: A suburban grocery store will utilize metal halide post top lights for its parking lot and pedestrian area illumination while utilizing metal halide cobrahead for its loading dock area illumination. The loading dock represents one-tenth of the total lumens of the project, while the other areas provide nine-tenths of the total lumens. 35*0.1 + 16*0.9 = 3.5 + 14.4 = 17.9 percent. The proponent may then select the box "Install High Efficiency Lighting" and enter "17.9" into the field labeled "% Lighting Energy Reduction."

Reference: See measure LE-1 on page 115 of the CAPCOA guidance.

[12] CA Energy Commission, 2013 Building Energy Efficiency Standards FAQ, http://www.energy.ca.gov/title24/2013standards/rulemaking/documents/2013_Building_Energy_Efficiency_Standards_FAQ.pdf

BE-4: Energy Efficient Appliances (usual reduction: 2 – 22% of electricity use)

Measure: The project installs appliances that are more efficient than current efficiency standards. Typical Energy Star appliances would rate as follows: Cloth Washer – 30%, Dish Washer – 15%, Fan – 50%, Refrigerator – 15%. Land uses with more intensive use of appliances (such as grocery stores) would have a higher overall reduction than less intensive uses (residential). CalEEMod calculates the carbon intensity of the energy used.

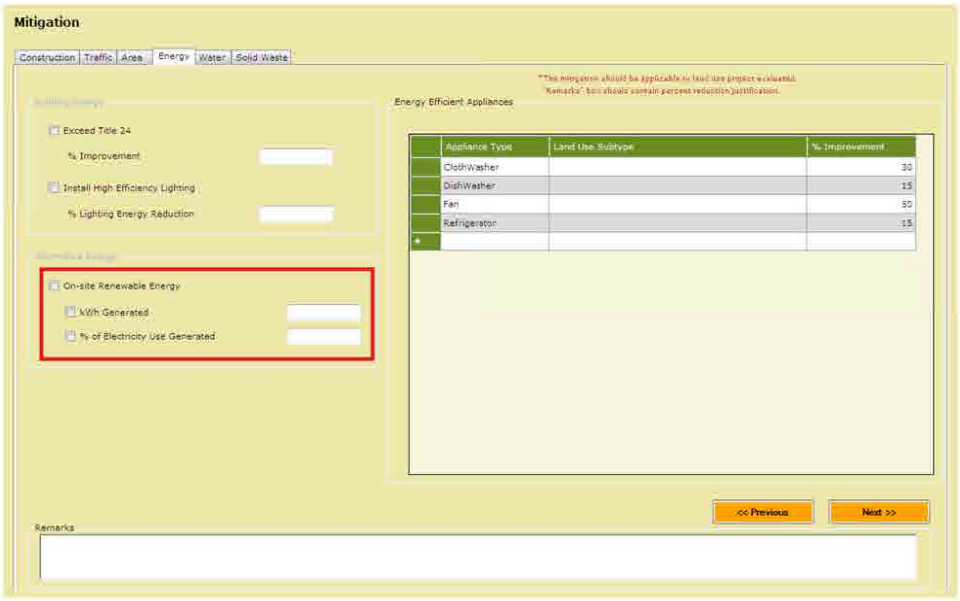
Applicability for Ozone Precursors: This measure does not qualify for ozone precursor emissions.

Applicability for GHG: Any project that utilizes natural gas or electrical appliances.

Example: A high-rise project will install high efficiency clothes washers in their units that are 30 percent more efficient than standard clothes washers. Proponent would then select the land use Condo/Townhouse High Rise and note the 30 percent improvement in clothes washers.

Reference: See measure BE-4 on page 103 of the CAPCOA guidance.

CalEEMod Energy Tab: Alternative Energy Measures



AE-1: On-site Renewable Energy (usual reduction: 0 – 100% electricity use)

Measure: The project will generate electricity on-site using renewable or carbon-neutral power systems which displaces electricity demand normally supplied by the local utility. The project could alternatively enter into a contract with the electric service provider for the supply of renewable energy (such as SMUD's Greenergy or Solar shares). Life of an on-site project is assumed to be 20 years, while purchasing off-site credits may be done either through a 20 year contract or an up-front payment with greenhouse gas reductions amortized over 20 years.

Applicability for Ozone Precursors: This measure does not give ozone precursor emission credits. Renewable energy measures that involve the creation of NO_x (such as biomass) which are more NO_x intense than SMUD have a negative effect on ozone precursor pollutants and the project would be assigned negative credit for this measure.

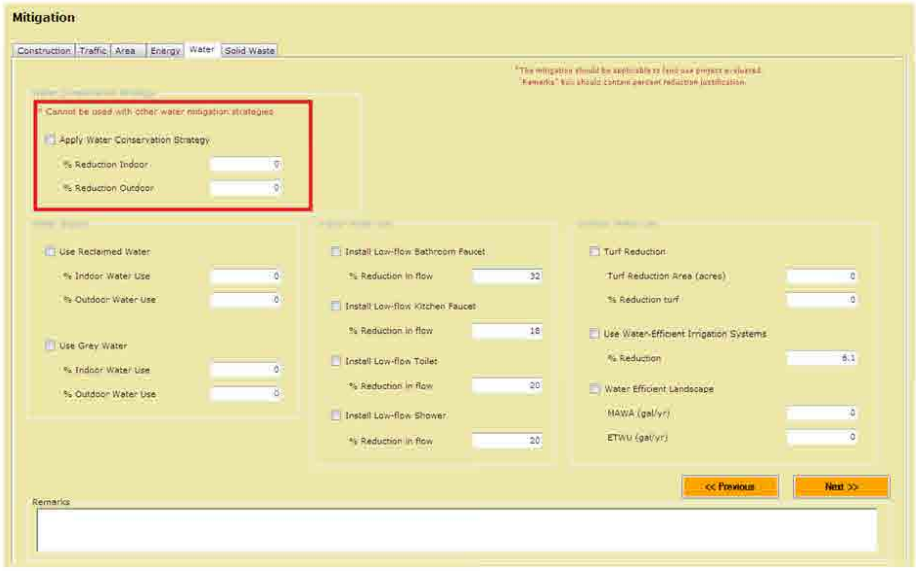
Applicability for GHG: The proponent must control the greenhouse gas credits associated with the project; they may not be sold or surrendered to a third party.

Example: A warehouse project is proposing to enter into a contract to purchase Greenergy. The warehouse which will use the equivalent of 10,000 kWh per year is proposing to offset 10% of their usage for 20 years (that is 10% of estimated usage x 10,000 kwh x 20 years =20,000 kwh). The project would select the box "on-site renewable energy" as well as the box "kWh generated and type "20,000" into the associated field.

Example: A master-planned community has proposed to generate 20% of its electricity needs through an undetermined mix of renewable energy on-site. The proponent would select the box "On-site renewable energy" as well as "% of Electricity Use Generated" and type "20" into the associated field.

Reference: See measure AE-1 on page 125 of the CAPCOA guidance.

CalEEMod Water Tab: Water Conservation Strategy Measures



WUW-2: Apply Water Conservation Strategy – (usual reduction: 0-100% of GHG from water use)

Measure: The project must justify the percent reduction of water usage being claimed through implementation of a water conservation program. The proponent will provide evidence of strategies that will be implemented by the project, the effectiveness of each strategy in reducing water usage, and overall water usage reduction. Indoor and outdoor water usage and strategies must be documented for use of this measure in CalEEMod. Project water demand (indoor and outdoor) calculated for the project in CalEEMod's Operational Water and Wastewater tab should be compared to project proponent calculations for water demand. CalEEMod may be modified to reflect project specific water demand calculations rather than using the default calculations. Water demand should be calculated prior to calculating water supply mitigation.

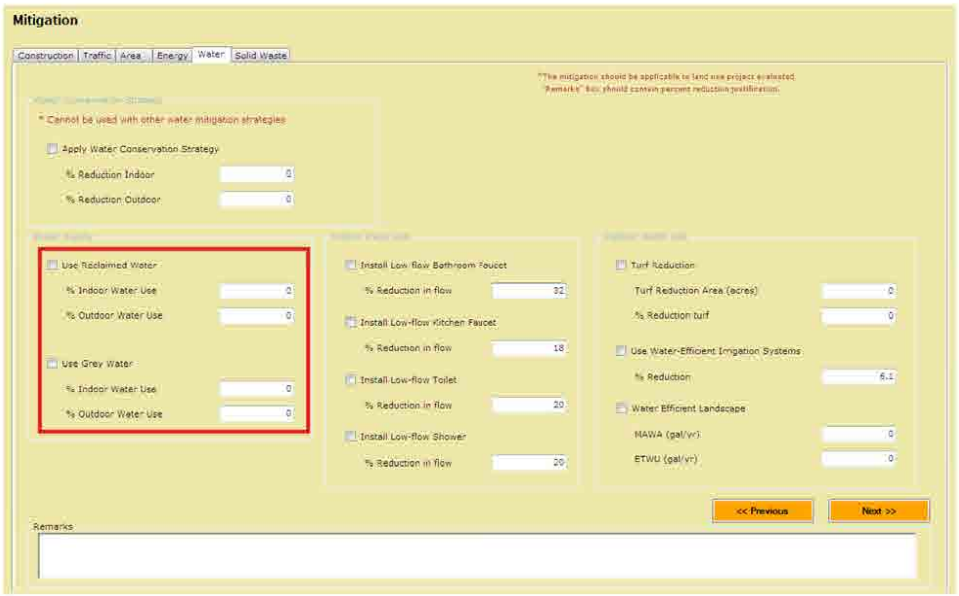
Applicability for Ozone Precursors: This measure does not qualify for ozone precursor reductions.

Applicability for GHG: This measure is applicable to all land use types across all project settings (urban, suburban, rural, etc.). NOTE: If this measure is selected in CalEEMod all other mitigation measures for water supply and water use cannot be used.

Example: If the project will reduce overall water usage by 25%, 15% from indoor strategies and 10% from outdoor strategies, the proponent may select the "Apply Water Conservation Strategy" checkbox and may type "15" in the field titled "% Reduction Indoor" and may type "10" in the field titled "% Reduction Outdoor".

Reference: See measure WUW-2 on page 362 of the CAPCOA guidance.

CalEEMod Water Tab: Water Supply Measures



WSW-1: Use Reclaimed Water – (usual reduction: 0-40% of GHG from outdoor or non-potable water uses)

Measure: The project must calculate the amount of reclaimed water used instead of new potable water supplies for outdoor water uses or other non-potable water uses. Less energy is needed to collect, treat, and redistribute reclaimed water compared to new potable water supplies. The proponent must commit to using a percentage of reclaimed water and provide the total amount of reclaimed and non-potable water to be used by the project. If indoor reclaimed water uses are anticipated, indoor and outdoor usage for the project must be documented separately for use of this measure in CalEEMod. Water demand should be calculated prior to calculating water supply mitigation. Project water demand (indoor and outdoor) calculated for the project in CalEEMod's Operational Water and Wastewater tab should be compared to project proponent calculations for water demand. CalEEMod may be modified to reflect project specific water demand calculations rather than using the default calculations.

Applicability for Ozone Precursors: This measure does not qualify for ozone precursor reductions.

Applicability for GHG: This measure is applicable to all land use types across all project settings (urban, suburban, rural, etc.). Outdoor water use mainly is expected to benefit from this measure. If the project is considering replacing indoor water use with reclaimed water, consult with SMAQMD prior to utilizing the "% Indoor Water Use" field in CalEEMod. This measure could overlap with WSW-2, so the project should not "double count" reductions of new potable water from this measure and WSW-2.

Example: If the project will use 50 million gallons of water a year for outdoor use and commits to using 25 million gallons of reclaimed water for outdoor use as mitigation, the proponent may select the "Use Reclaimed Water" checkbox and may type "50" in the field titled "% Outdoor Water Use."

Reference: See measure WSW-1 on page 332 of the CAPCOA guidance.

WSW-2: Use Grey Water – (usual reduction: 0-100% of GHG from outdoor water use)

Measure: The project must calculate the amount of grey water used instead of new potable water supplies for landscape irrigation and other outdoor water uses. Negligible energy is needed to collect and distribute grey water compared to new potable water supplies. The proponent must commit to using a percentage of grey water and provide the total amount of grey water and outdoor water to be used by the project. Water demand should be calculated prior to calculating water supply mitigation. Project water demand (indoor and outdoor) calculated for the project in CalEEMod's Operational Water and Wastewater tab should be compared to project proponent calculations for water demand. CalEEMod may be modified to reflect project specific water demand calculations rather than using the default calculations.

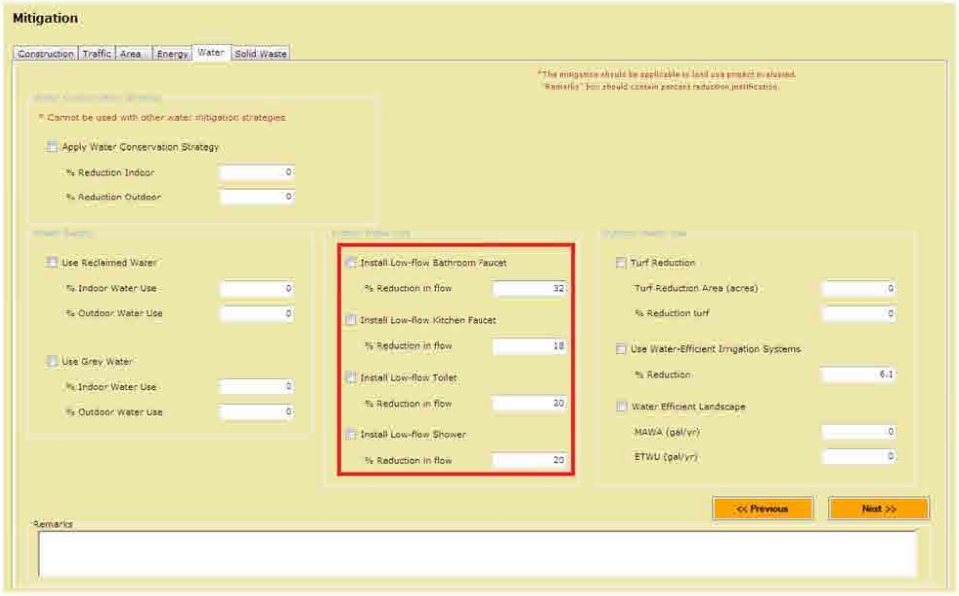
Applicability for Ozone Precursors: This measure does not qualify for ozone precursor reductions.

Applicability for GHG: This measure is applicable to all land use types across all project settings (urban, suburban, rural, etc.). The amount of grey water generated by a project may be larger than the amount of grey water needed for outdoor water use. Credit is only allowed for the amount of grey water that can be used by the project. If the project is considering replacing indoor water use with grey water, consult with SMAQMD prior to utilizing the "% Indoor Water Use" field in CalEEMod. This measure could overlap with WSW-1, so the project should not "double count" reductions of new potable water from this measure and WSW-1.

Example: The project will use 50 million gallons of water a year for landscape irrigation and other outdoor uses and commits to providing a system that will supply 5 million gallons of grey water per year for mitigation, the proponent may select the "Use Grey Water" checkbox and may type "10" in the field titled "% Outdoor Water Use."

Reference: See measure WSW-2 on page 336 of the CAPCOA guidance.

CalEEMod Water Tab: Indoor Water Use Measures



WUW-1: Install Low-Flow Bathroom Faucet, Low-Flow Kitchen Faucet, Low-Flow Toilet and Low-Flow Shower – (usual reduction: 0-20% of GHG from indoor residential water use; 17-31% of GHG from indoor non-residential water use)

Measure: The project must calculate the total expected indoor water demand before and after installation of low-flow or high-efficiency water fixtures. The project proponent must commit to the installation of low-flow fixtures. Installing low-flow or high-efficiency water fixtures reduces water demand and therefore energy demand and GHG emissions. Since CalEEMod focuses on reductions of flow from four fixtures: bathroom faucet, kitchen faucet, toilet and shower, information regarding reduced flow from each must be provided. Project water demand (indoor and outdoor) calculated for the project in CalEEMod's Operational Water and Wastewater tab should be compared to project proponent calculations for water demand. CalEEMod may be modified to reflect project specific water demand calculations rather than using the default calculations. Water demand should be calculated prior to calculating water supply mitigation.

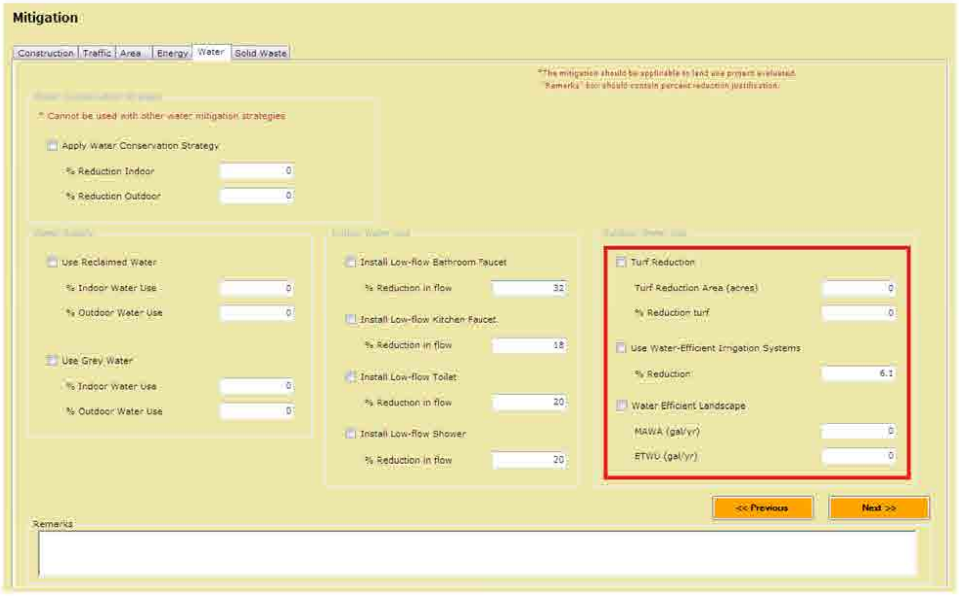
Applicability for Ozone Precursors: This measure does not qualify for ozone precursor reductions.

Applicability for GHG: This measure is applicable to all land use types across all project settings (urban, suburban, rural, etc.). CalEEMod doesn't take into account dishwashers and clothes washers which are included in CAPCOA Measure WUW-1, therefore if reductions from these appliances are expected, the project should consider using WUW-2 rather than this measure to mitigate water use reductions.

Example: The project will use 30 million gallons of water per year for indoor water use. The proponent commits to using low flow toilets that have a rate of 1.12 gallons/flush compared to the 2010 CA Green Building Standards Code requirement of 1.28 gallons/flush. The difference in flow is a 12.5% reduction. The proponent may select the "Install Low-flow Toilet" checkbox and may type "12.5" in the field titled "% Reduction in flow." If toilets account for 33% of indoor water use, 9.9 million gallons of water would be used by the project toilets. The low-flow toilet mitigation would reduce water use by 1.2375 million gallons, a 4% reduction overall.

Reference: See measure WUW-1 on page 347 of the CAPCOA guidance.

CalEEMod Water Tab: Outdoor Water Use Measures



WUW-5: Reduce Turf in Landscapes and Lawns – (usual reduction: 0-100% of outdoor water use)

Measure: The project must calculate the total area of turf (lawn) for a standard project (if square feet convert to acres) and provide a commitment to reduce the amount of turf being used on the project (use square feet or acres to determine a percentage). Reducing the amount of turf reduces water demand and therefore energy demand and GHG emissions. Project water demand (indoor and outdoor) calculated for the project in CalEEMod's Operational Water and Wastewater tab should be compared to project proponent calculations for water demand. CalEEMod may be modified to reflect project specific water demand calculations rather than using the default calculations. Water demand should be calculated prior to calculating water supply mitigation.

Applicability for Ozone Precursors: This measure does not qualify for ozone precursor reductions.

Applicability for GHG: This measure is applicable to all land use types across all project settings (urban, suburban, rural, etc.).

Example: The project proponent estimates 10 acres of turf for the project and commits to reducing turf by 25%, which is a reduction of 2.5 acres. The proponent may select the "Turf Reduction" checkbox, enter "2.5" in the "Turf Reduction Area (acres)" field, and enter "2.5" in the "% Reduction turf" field.

Reference: See measure WUW-5 on page 376 of the CAPCOA guidance.

WUW-4: Use Water-Efficient Irrigation Systems – (usual reduction: 6.1% of GHG from outdoor water use)

Measure: The project must calculate the percent reduction of water use from the installation of a water-efficient irrigation system, by providing outdoor water use before installation and water use after system installation. Installing a water-efficient irrigation system reduces water demand and therefore energy demand and GHG emissions. The default reduction from systems surveyed is 6.1%. At this time, reductions greater than 6.1% are not being accepted. Project water demand (indoor and outdoor) calculated for the project in CalEEMod's Operational Water and Wastewater tab should be compared to project proponent calculations for water demand. CalEEMod may be modified to reflect project specific water demand calculations rather than using the default calculations. Water demand should be calculated prior to calculating water supply mitigation.

Applicability for Ozone Precursors: This measure does not qualify for ozone precursor reductions.

Applicability for GHG: This measure is applicable to all land use types across all project settings (urban, suburban, rural, etc.).

Example: The project estimates using 25 million gallons of water for irrigation. A water-efficient irrigation system will be installed to mitigate water usage. The proponent uses the default value of 6.1% reduction in water and GHG emissions. The proponent may select the "Use Water-Efficient Irrigation Systems" checkbox and may enter "6.1" in the "% Reduction" field.

Reference: See measure WUW-4 on page 372 of the CAPCOA guidance.

WUW-3: Water Efficient Landscape – (usual reduction: 0-70% of GHG from outdoor water use)

Measure: The project must provide the baseline outdoor water usage in gallons per year (the Maximum Applied Water Allowance (MAWA)) and mitigated outdoor water use in gallons per year (the Estimated Total Water Use (ETWU)) using calculations consistent with a locally adopted or state Model Water Efficient Landscape Ordinance to show decreased water usage demand in residential and commercial landscape plantings compared to standard California landscape plantings. Reduced water usage for landscape plantings reduces water demand and therefore energy demand and GHG emissions. Project water demand (indoor and outdoor) calculated for the project in CalEEMod's Operational Water and Wastewater tab should be compared to project proponent calculations for water demand. CalEEMod

may be modified to reflect project specific water demand calculations rather than using the default calculations. Water demand should be calculated prior to calculating water supply mitigation.

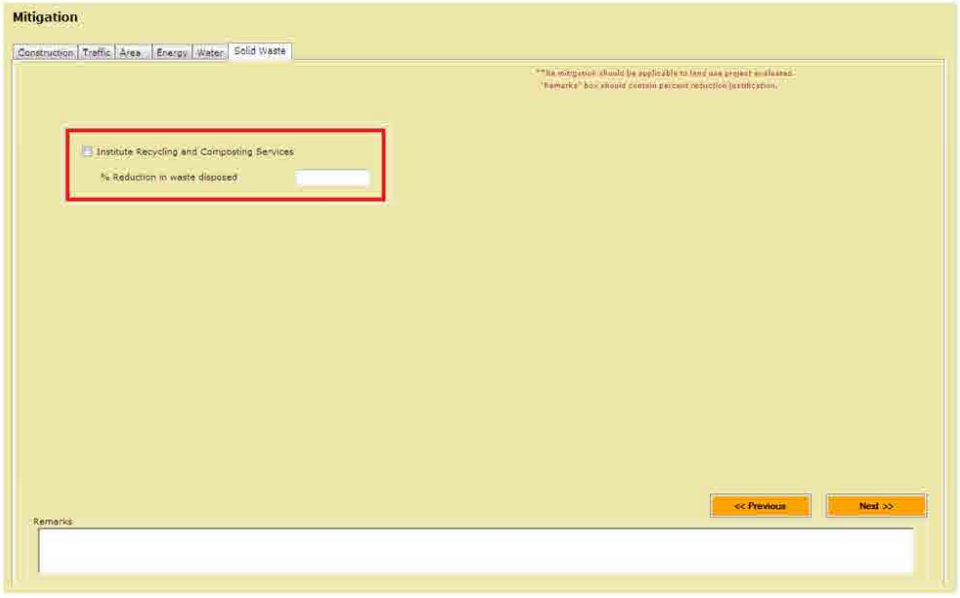
Applicability for Ozone Precursors: This measure does not qualify for ozone precursor emissions reductions.

Applicability for GHG: This measure is applicable to all land use types across all project settings (urban, suburban, rural, etc.).

Example: The project estimates 10 million gallons of water a year (MAWA) unmitigated for landscape plantings and provides a plan for landscape plantings that will reduce the water usage to 6 million gallons a year (ETWU) as mitigation. The proponent may select the "Water Efficient Landscape" checkbox and may type "10,000,000" in the field titled "MAWA (gal/yr)" and may type "6,000,000" in the field titled "ETWU (gal/yr)."

Reference: See measure WUW-3 on page 365 of the CAPCOA guidance.

CalEEMod Solid Waste Tab



SW-1: Institute Recycling and Composting Services (usual reduction: Emissions from waste 0-50%)

Measure: The project reduces the amount of waste landfilled by the project through reducing the amount of waste generated, composting waste, or recycling waste. CalEEMod only calculates indirect GHG from landfill gases, so GHG credit is only possible.

Applicability for Ozone Precursors: This measure does not give ozone precursor emissions credit. An M-z measure for criteria pollutants is possible if the proponent's efforts would reduce hauling emissions from garbage/recycling/green waste trucks.

Applicability for GHG: This is applicable to all projects that generate solid waste.

Example: A local university builds a zero-waste football stadium. All items sold in the stadium are compostable or recyclable, and bins are placed around the stadium for staff and spectator usage. No "landfill" trash cans are present there. The proponent may select the box "Institute Recycling and Composting Services" and type "100" in the field labeled "% Reduction in waste disposed."

Reference: See measure SW-1 on page 401 of the CAPCOA guidance.

Off-Model Measures

These measures are available to proponents but not incorporated into CalEEMod. If a project has multiple land use types, measures must be scaled, so that if measures are limited in application to one type of land use it will only be counted as mitigation for the emissions associated with that land use type.

CAPCOA Measures not included in CalEEMod

BE-1: Exceed Title 24 (Ozone Precursor's from reduction in electricity use)

Measure: The project will reduce building envelope energy efficiency standards beyond California's Title 24. This reduces building electricity use and associated emissions. To qualify for this measure, the proponent must agree to exceed the Title 24 standard at the time of project approval by a certain percentage. CalEEMod calculates the carbon intensity of electricity use as well as natural gas use, but only calculates the NO_x intensity of natural gas. To achieve credit from the NO_x reductions from reduced electricity use, proponents must show off-model calculations.

The SMAQMD is currently working with SMUD to develop a NO_x intensity factor for electricity. Please contact SMAQMD staff if you wish to take NO_x credit for electricity reductions.

Applicability for Ozone Precursors: Any project that utilizes electricity.

Applicability for GHG: N/A (calculated with on-model measure BE-1)

Reference: See measure BE-1 on page 85 of the CAPCOA guidance.

#: Non-CalEEMod CAPCOA Measures

Measure: CalEEMod does not contain all measures listed in the CAPCOA guidance document, and the proponent may, with the consent of the SMAQMD, utilize a quantified measure listed in the CAPCOA guidance document. If the measure comes from a category with a total reduction cap (such as transportation) the proponent must demonstrate that measures already taken have not reached the cap.

Applicability for Ozone Precursors and GHG: Any measure available in the CAPCOA guidance that has quantifiable emission reductions. The measures utilized may not claim credit for exceeded categorical caps.

Example: A proposed subdivision would require the installation of four traffic signals. The proponent elects to pursue measure LE-3 and install only LED traffic lights in the proposed subdivision. In the AQMP, the proponent would indicate that they were pursuing LE-3, estimate energy reductions from using LED traffic lights, and calculate reduced GHG. As the measure does not have quantifiable ozone precursor benefits, the proponent would only receive GHG credit.

Reference: Entire CAPCOA guidance document.

Transportation Measures

T-a: Anti-Idling/Congestion Strategies for roadways (usual reduction – Mobile NO_x and CO_2 ~1%)

Measure: The project reduces vehicle idling by implementing strategies that reduce or remove impediments to the free flow of motor vehicles. The idling reductions are quantified by determining the emissions reduction associated with the reduction in idling time compared to a base case scenario where the strategy was not implemented. The reduced/eliminated emissions are then compared to the total emissions associated with the project to determine the percentage of emissions reduced. The reduction may be determined by utilizing traffic model runs comparing the project with and without the emission reduction strategy. If this data is unavailable the user may propose to estimate the emission reductions based on assumptions of the likely reductions associated with measure, as derived from

national averages or existing research and literature; all approaches are subject to review by SMAQMD staff.

Applicability for Ozone Precursor and GHG: This measure is applicable to all land uses in urban, suburban, and rural contexts that include roadways or intersections within the project scope. It is appropriate for roadway and intersection projects, and may be appropriate for residential, retail, office, industrial and mixed-use projects that include roadways and intersections.

Example: A specific plan for a new residential, commercial and mixed use community features round-abouts and modern traffic circles in place of four-way stop signs at key intersections. Using data from a traffic model or traffic study, the user determines the emission benefit of utilizing of reduced idling and divides it by the total transportation emissions associated with the project to determine the percentage reduction.

Reference: For more information on existing studies of the Air Quality impacts of modern roundabouts please see:

Impact of Modern Roundabouts on Vehicular Emissions:
http://www.ctre.iastate.edu/pubs/midcon2003/MandavilliRoundabouts.pdf

Modern Roundabouts, Global Warming, and Emissions Reductions: Status of Research and Opportunities:
http://www.nh.gov/oep/resourcelibrary/referencelibrary/r/roundabouts/documents/vermontctrfpaper.pdf

T-c: Cruising Reductions through Parking Management (usual reduction – Mobile NO_x and CO_2 ~2%)

Measure: The project reduces cruising for parking, associated congestion, and byproduct emissions by implementing measures that aid motorists in quickly locating and occupying vacant parking spaces. The cruising reductions are quantified by determining the emissions reduction associated with the reduction in cruising time compared to a base case scenario where the strategy was not implemented. The reduced/eliminated emissions are than compared to the total emissions associated with the project to determine the percentage of emissions reduced. The reduction may be determined by utilizing traffic model runs comparing the project with and without the emission reduction strategy. If this data is unavailable the user may propose to estimate the emission reductions based on assumptions of the likely reductions associated with measure, as derived from national averages or existing research and literature; all approaches are subject to review by SMAQMD staff.

Applicability for Ozone Precursor and GHG: This measure is applicable to all land uses in urban and suburban contexts where cruising for parking could be anticipated. It is appropriate for roadway and intersection projects with on-street parking as well as large campus projects which have convenient and inconvenient parking spaces.

Example: A project implements performance-based prices for on-street parking and incorporates wayfinding signage to off-street lots that indicate the number of spaces available. Using data from a traffic model or traffic study, the user determines the emission benefit of utilizing the measures and divides it by the total transportation emissions associated with the project to determine the percentage reduction.

Reference: For more information on existing studies of the Air Quality impacts of parking management please see:

Donald Shoup, The High Cost of Free Parking. APA Planners Press, 2005

Miscellaneous Measures

M-n: NO_x reduction technology

Measure: The project improves air quality by employing technologies that reduce existing Nitrous Oxide pollution.

Applicability: This measure is applicable to all land uses in urban, suburban, and rural contexts. It is appropriate for residential, retail, office, industrial and mixed-use projects.

Example: A new residential project commits to use certified roofing materials containing a photo-catalytic material, such as titanium dioxide, that will remove NO_x from the air. Using a certified rate of removal based on the level of implementation (adapted to the Sacramento Climate) a user can compare the total emission reduction associated with implementing the measure against the total emissions associated with the project to determine the percent emission benefit of implementing the measure.

Reference: The proponent provides all necessary references.

M-z: Other

Measure: Applicant proposes a mitigation reduction measure not covered elsewhere in the document. Applicant must provide methodology for quantification of credit and plan for implementation of the measure.

Applicability: This measure is unavailable without SMAQMD consent.

Glossary

Bus Rapid	A public transportation system using buses to provide faster, more efficient service than an ordinary bus line by implementing specialized infrastructure

Transit	and operations such as exclusive right of way, off-bus fare collection, etc.
BMR Housing	Below Market Rate Housing are dwelling units with deed-restrictions limiting their use to moderate-, low-, or very-low-income households. It is also known as affordable housing.
Capital Improvements	Addition or structure that enhances the value of a property, or a replacement or upgrade that extends the useful life of an asset.
CEQA	The California Environmental Quality Act is a statute that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible.
Energy Star	A joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy which sets national standards for energy efficient consumer products. ENERGY STAR certified products are guaranteed to meet the efficiency standards specified by the program.
GHG	Greenhouse Gases. GHG are the six gases identified in the Kyoto Protocol and referenced in the Global Warming Solutions Act (AB32): carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6). Although additional GHG exist, these six are the most commonly analyzed for development projects.
Grey Water	Untreated wastewater generated from bathtubs, showers, bathroom wash basins, and clothes washing machines which is collected and redistributed onsite for irrigation.
Headway	The amount of time in minutes that elapses between two public transit vehicles on a given route and given line.
Intensity (as in NO_x or GHG intensity)	The average emission rate of a given pollutant from a given source relative to the intensity of a specific activity; for example, grams of carbon dioxide released per megajoule of energy produced, or the ratio of greenhouse gas emissions produced to Gross Domestic Product.
Intersection	A road junction where two or more roads either meet or cross at grade.

ITE	The Institute of Transportation Engineers is an international educational and scientific association of transportation professionals that publish a variety of technical documents containing data used by CALEEMOD and CAPCOA mitigation measures. Specific documents include the Trip Generation and Parking Generation Manuals, which are collections of survey data on the average trip and parking generation rates associated with various land use types.
Mello-Roos	A special property tax on real estate, in addition to the normal property tax, which is imposed on those property owners within a Community Facilities District.
Mini Circle	Raised circular islands constructed in the center of residential or local street intersections for traffic calming that employ yield control. They may also be used at uncontrolled junctions.
NEV	Neighborhood Electric Vehicles: Battery electric vehicles that are legally limited to roads with posted speed limits 35 miles per hour or less. NEV lanes may be installed on faster roads to allow NEV access.
NO_x	Highly reactive gases known as "oxides of nitrogen," or "nitrogen oxides (NO_x)." Forms from emissions from cars, trucks and buses, power plants, and off-road equipment and contributes to the formation of ground-level ozone and fine particle pollution.
Ozone Precursor	The precursor components of Ground Level Ozone for which National Ambient Air Quality Standards (NAAQS) or California Ambient Air Quality Standards (CAAQS) have been established. For the purpose of this guidance, Ozone Precursors are Nitrous Oxides (NO_X) and Reactive Organic Gasses/Volatile Organic Compounds (ROG/VOC).
Reclaimed Water	Reclaimed water or recycled water is former wastewater (sewage) that is treated to remove solids and certain impurities, and used in sustainable landscaping irrigation, non-potable uses in double-piped buildings, and other uses.
Renewable Energy	Energy sources such as solar energy, hydropower, and wind, and carbon-neutral technologies such as biomass.
ROG	Reactive Organic Gases (or ROG) is emitted during fuel combustion (e.g., gasoline, natural gas, wood, oil); and by emissions of solvents; petroleum processing and storage; and pesticides. Mixes with NO_x to create ground level ozone. Does not include methane. For the purposes of this document, ROG is interchangeable with VOC.
Roundabout	A road junction in which traffic moves in one direction around a central island. Entering traffic must always yield to traffic already in the circle, whereas in a traffic circle, entering traffic is controlled by stop signs, or is not formally controlled.

State Implementation Plan	A Plan that demonstrates how existing and new control strategies will provide the necessary future emission reductions to meet the federal Clean Air Act requirements for reasonable further progress and attainment of the 1997 8-hour ozone NAAQS for the Sacramento region. The plan assumes the land uses projected in the 2035 MTP as adopted in March 2008.
Title 24	Title 24 Part 6 is also known as the California Building Energy Efficiency Standard, which regulates building energy efficiency standards. Regulated energy uses include space heating and cooling, ventilation, domestic hot water heating, and some hard-wired lighting.
TOD	A Transportation Oriented Development (TOD) is a development located near and specifically designed around a rail or bus station. Proximity alone does not characterize a development as transit-oriented. The development and surrounding neighborhood should be designed for walking and bicycling and parking management strategies should be implemented. The development should be located within a short walking distance to a high-quality, high frequency, and reliable bus or rail service.
Transit Priority Area (TPA)	A Transit Priority Area is an area within a ½-mile of a rail stop or a bus corridor that provides or will provide at least 15-minute frequency service during peak hours by the year 2035. Transit Priority Areas are defined in California's Senate Bill 375 (SB 375) aligning regional transportation, land use, housing and greenhouse gas emissions planning through a new element to our region's Metropolitan Transportation Plan or MTP.
Traffic Circle	A type of circular intersection in which traffic must travel in one direction around a central island, usually on arterial streets. Entering traffic is controlled by stop signs, or is not formally controlled.
Unbundled Parking	Parking spaces are rented or sold separately from building space, instead of included in the cost/rent of the building, as a disincentive for driving.
VOC	Volatile organic compounds (VOC) are emitted as gases from a variety of chemicals, some of which may have short- and long-term adverse health effects. Sources include paints and lacquers, paint strippers, cleaning supplies, pesticides, building materials and furnishings, etc. For the purposes of this document, VOC and ROG are interchangeable.
Woonerf	A low speed street where pedestrians, motorists, and cyclists share the same right of way.

Summary of Changes to Guidance

Changes made from Version 3.1 to Version 3.2 include the following items:

- Clarification was made to set the reduction target from the mobile sector emission.
- AE-1 amended to allow for participation in renewable energy programs.
- BE-1 added as off-model measure.
- Added Prerequisites, removed meta-measures.
- The District's GHG Thresholds and the City of Citrus Height's Climate Action Plan were added.

Changes made from Version 3.0 to Version 3.1 include the following items:

- Revised the Protocol for Greenhouse Gases section to reflect the most current thresholds available and adopted climate action plans in the District.
- Altered off-model measure numbering.
- Added TS - Traffic Study meta-measure.
- Updated title page, table of contents and footers to reflect the new version and date.
- Created the Summary of Changes section to document changes made in the Guidance from one version to the next.

RTC ATTACHMENT 2

PADRE DAM MUNICIPAL WATER DISTRICT WATER AVAILABILITY FORM (ISSUED AUGUST 17, 2015)

County of San Diego, Planning & Development Services

PROJECT FACILITY AVAILABILITY - WATER

ZONING DIVISION

Please type or use pen

SOUTH COAST DEVELOPMENT LLC — 858-7206675
Owner's Name — Phone

PO BOX 1053
Owner's Mailing Address — Street

SOLANA BEACH — CA — 92075
City — State — Zip

ORG_____
ACCT_____
ACT_____
TASK_____
DATE_____
AMT $_____

W

DISTRICT CASHIER'S USE ONLY

SECTION 1. PROJECT DESCRIPTION — TO BE COMPLETED BY APPLICANT

A.
- [x] Major Subdivision (TM)
- [ ] Minor Subdivision (TPM)
- [ ] Boundary Adjustment
- [x] Rezone (Reclassification) from RU 15 to C 36 zone.
- [ ] Major Use Permit (MUP), purpose:
- [ ] Time Extension...Case No.
- [ ] Expired Map...Case No.
- [x] Other GPA (VR-15 TO GC 13) AND SITE PLAN
- [ ] Specific Plan or Specific Plan Amendment
- [ ] Certificate of Compliance:

B.
- [ ] Residential . . . . . Total number of dwelling units
- [x] Commercial. . . . . Gross floor area 76,100SF
- [ ] Industrial . . . . . Gross floor area
- [ ] Other . . . . . Gross floor area

C. [x] Total Project acreage 13.1 Total number of lots 8

D. Is the project proposing the use of groundwater? [ ] Yes [x] No
Is the project proposing the use of reclaimed water? [ ] Yes [x] No

Assessor's Parcel Number(s)
(Add extra if necessary)

398-110/09/10	398-110-75
395-250-08/09	395-250-15/22

Thomas Guide Page 1232 Grid F-5

OLD HWY 80 AND LAKE JENNING PARK RD
Project address — Street

LAKESIDE
Community Planning Area/Subregion — Zip

Owner/Applicant agrees to pay all necessary construction costs, dedicate all district required easements to extend service to the project and COMPLETE ALL CONDITIONS REQUIRED BY THE DISTRICT.

Applicant's Signature: Keith Gregory Date: 5/14/15

Address: PO BOX 1053 SOLANA BEACH, CA 92075 Phone: 858-720-6675

(On completion of above, present to the district that provides water protection to complete Section 2 below.)

SECTION 2: FACILITY AVAILABILITY — TO BE COMPLETED BY DISTRICT

District Name: PADRE DAM MWD ***Letter expires 8/17/2016*** Service area ESA BLOSSOM VALLEY

A.
- [x] Project is in the district.
- [ ] Project is not in the district but is within its Sphere of Influence boundary, owner must apply for annexation.
- [ ] Project is not in the district and is not within its Sphere of Influence boundary.
- [ ] The project is not located entirely within the district and a potential boundary issue exists with the _____ District.

B. [x] Facilities to serve the project [x] ARE [ ] ARE NOT reasonably expected to be available within the next 5 years based on the capital facility plans of the district. Explain in space below or on attached_____. (Number of sheets)

- [ ] Project will not be served for the following reason(s):

C.
- [x] **District conditions are attached. Number of sheets attached:** 1
- [ ] **District has specific water reclamation conditions which are attached. Number of sheets attached:**
- [ ] **District will submit conditions at a later date.**

D. [ ] **How far will the pipeline(s) have to be extended to serve the project?**

This Project Facility Availability Form is valid until final discretionary action is taken pursuant to the application for the proposed project or until it is withdrawn, unless a shorter expiration date is otherwise noted.

Authorized Signature: Cheryl Brugman Print Name Cheryl Brugman

Print Title Engineering Technician Phone 619-258-2635 Date 8/17/2015

NOTE: THIS DOCUMENT IS NOT A COMMITMENT OF SERVICE OR FACILITIES BY THE DISTRICT
On completion of Section 2 and 3 by the District, applicant is to submit this form with application to:
Planning & Development Services – Zoning Counter, 5510 Overland Ave, Suite 110, San Diego, CA 92123

PDS-399W (Rev. 09/21/2012)

PADRE DAM
Municipal Water District

9300 Fanita Parkway, Santee
619-258-4635

WATER AVAILABILITY ATTACHMENT
CONDITIONS OF APPROVAL

PROJECT NAME South Coast Development LLC FOR Commercial Subdivision MAP NUMBER

A.P.N.(s) 398-110-09 &10, 398-110-75, 395-250-08 &09, 395-250-15 &22

FACILITIES

Domestic/Irrigation service and fire hydrant requirements may determine if the proposed project will require a water main extension. If a water main extension is necessary, the following will be requirements to proceed with the project. The Developer / Property Owner shall:

[X] Prepare plans for a Potable Water system according to Padre Dam's Requirements.

[X] Provide the agreement and securities required by the County / City and/or Padre Dam to install the public water system required for the project.

[X] Install a Potable Water System per the Padre Dam Rules and Regulations and Standard Specifications.

[X] Pay for all installation and capacity fees for each meter connection, each lot, or each building. (As determined by project need prior to District providing service or an unconditional commitment letter)

[X] Install private/public potable water, reclaimed water and sewer lines with the required separation as determined by the Health Department and Padre Dam.

Padre Dam does not require that all lots be connected to the public water system. Alternate sources of water are under the jurisdiction of the County of San Diego, or the City of Santee.

EASEMENTS

[X] Developer shall dedicate to Padre Dam all necessary easements for that portion of the water system which is to be public.

[X] Easements may be required by Padre Dam to allow for future main extensions to serve property beyond the boundaries of the map/project.

FACILITY COMMITMENT

[X] Adequate water facility commitment shall be committed prior to final project approval/map recordation and shall be available concurrent with project need. Unconditional Facility Commitment form will be signed upon payment of capacity and meter fees.

SPECIAL CONDITIONS

[X] The onsite 8 inch ACP water main is to be relocated to the west and connected to the 16 inch PVC in Olde Highway 80.

[X] The existing 16 inch PVC water main in Pecan Park Lane is to be relocated to the north in Olde Highway 80.

[X] The existing 6 inch ACP and 16 Inch PVC water mains in Pecan Park Lane will need to be abandoned and removed.

[X] A private onsite water system is required.

[X] A separate irrigation meter will be needed if over 2,500 square feet of landscaping is required.

[X] Submit grading, landscape, street improvement and onsite improvement plans for Padre Dam MWD review and approval.

[X] The annexation of the northwest corner of the project into Padre Dam MWD has been completed.

[X] Water Quality maintenance throughout this project will be a consideration that must be part of the water system design for this project. Onsite/offsite water line looping may be required.

Approved by: Cheryl Brugman
E-33 R- 8-/08

Date: 8/17/2015

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RTC ATTACHMENT 3 –

PADRE DAM MUNICIPAL WATER DISTRICT WATER AVAILABILITY FORM (ISSUED APRIL 6, 2017)

County of San Diego, Planning & Development Services
PROJECT FACILITY AVAILABILITY - WATER
ZONING DIVISION

Please type or use pen

SOUTH COAST DEVELOPMENT LLC 858-720-6675
Owner's Name Phone

PO BOX 1053
Owner's Mailing Address Street

SOLANA BEACH CA 92075
City State Zip

ORG_____ **W**
ACCT_____
ACT_____
TASK_____
DATE_____ AMT $_____
DISTRICT CASHIER'S USE ONLY

SECTION 1. PROJECT DESCRIPTION **TO BE COMPLETED BY APPLICANT**

A. ☒ Major Subdivision (TM) ☐ Specific Plan or Specific Plan Amendment
☐ Minor Subdivision (TPM) ☐ Certificate of Compliance:_____
☐ Boundary Adjustment
☒ Rezone (Reclassification) from RU 15 to C 36 zone.
☐ Major Use Permit (MUP), purpose:_____
☐ Time Extension...Case No._____
☐ Expired Map...Case No._____
☒ Other GPA (VR-15 TO GC 13) AND SITE PLAN

B. ☐ Residential . . . . . Total number of dwelling units_____
☒ Commercial. . . . . Gross floor area 76,100 SF
☐ Industrial . . . . . Gross floor area_____
☐ Other . . . . . Gross floor area_____

C. ☒ Total Project acreage 13.1 Total number of lots 8

D. Is the project proposing the use of groundwater? ☐ Yes ☒ No
Is the project proposing the use of reclaimed water? ☐ Yes ☒ No

Assessor's Parcel Number(s)
(Add extra if necessary)

398-110/09/10	398-110-75
395-250-08/09	395-250-15/22

Thomas Guide Page 1232 Grid F-5
OLD HWY 80 AND LAKE JENNINGS PARK RD.
Project address Street
LAKESIDE 92021
Community Planning Area/Subregion Zip

Owner/Applicant agrees to pay all necessary construction costs, dedicate all district required easements to extend service to the project and COMPLETE ALL CONDITIONS REQUIRED BY THE DISTRICT.

Applicant's Signature: Keith Gregory Date: 9/22/16
Address: PO BOX 1053 SOLANA BEACH, CA 92075 Phone: 858-720-6675

(On completion of above, present to the district that provides water protection to complete Section 2 below.)

SECTION 2: FACILITY AVAILABILITY **TO BE COMPLETED BY DISTRICT**

District Name: Padre Dam MWD Expires 4-6-18 Service area ESA

A. ☒ Project is in the district.
☐ Project is not in the district but is within its Sphere of Influence boundary, owner must apply for annexation.
☐ Project is not in the district and is not within its Sphere of Influence boundary.
☐ The project is not located entirely within the district and a potential boundary issue exists with the _____ District.

B. ☒ Facilities to serve the project ☒ ARE ☐ ARE NOT reasonably expected to be available within the next 5 years based on the capital facility plans of the district. Explain in space below or on attached_____. (Number of sheets)
☐ Project will not be served for the following reason(s):_____

C. ☒ **District conditions are attached. Number of sheets attached:** 1
☐ **District has specific water reclamation conditions which are attached. Number of sheets attached:**_____
☐ **District will submit conditions at a later date.**

D. ☐ **How far will the pipeline(s) have to be extended to serve the project?**_____

This Project Facility Availability Form is valid until final discretionary action is taken pursuant to the application for the proposed project or until it is withdrawn, unless a shorter expiration date is otherwise noted.

Authorized Signature: _____ Print Name Courtney Mael
Print Title Eng. Mgr Phone (619) 258-4635 Date 4/6/17

NOTE: THIS DOCUMENT IS NOT A COMMITMENT OF SERVICE OR FACILITIES BY THE DISTRICT
On completion of Section 2 and 3 by the District, applicant is to submit this form with application to:
Planning & Development Services – Zoning Counter, 5510 Overland Ave, Suite 110, San Diego, CA 92123

PDS-399W (Rev. 09/21/2012)

PADRE DAM
Municipal Water District

9300 Fanita Parkway, Santee
619-258-4635

WATER AVAILABILITY ATTACHMENT
CONDITIONS OF APPROVAL

PROJECT NAME South Coast Development LLC FOR Commercial Subdivision MAP NUMBER_____

A.P.N.(s) 398-110-09 &10, 398-110-75, 395-250-08 &09, 395-250-15 &22

FACILITIES

Domestic/Irrigation service and fire hydrant requirements may determine if the proposed project will require a water main extension. If a water main extension is necessary, the following will be requirements to proceed with the project. The Developer / Property Owner shall:

[X] Prepare plans for a Potable Water system according to Padre Dam's Requirements.

[X] Provide the agreement and securities required by the County / City and/or Padre Dam to install the public water system required for the project.

[X] Install a Potable Water System per the Padre Dam Rules and Regulations and Standard Specifications.

[X] Pay for all installation and capacity fees for each meter connection, each lot, or each building. (As determined by project need prior to District providing service or an unconditional commitment letter)

[X] Install private/public potable water, reclaimed water and sewer lines with the required separation as determined by the Health Department and Padre Dam.

Padre Dam does not require that all lots be connected to the public water system. Alternate sources of water are under the jurisdiction of the County of San Diego, or the City of Santee.

EASEMENTS

[X] Developer shall dedicate to Padre Dam all necessary easements for that portion of the water system which is to be public.

[X] Easements may be required by Padre Dam to allow for future main extensions to serve property beyond the boundaries of the map/project.

FACILITY COMMITMENT

[X] Adequate water facility commitment shall be committed prior to final project approval/map recordation and shall be available concurrent with project need. Unconditional Facility Commitment form will be signed upon payment of capacity and meter fees.

SPECIAL CONDITIONS

[X] The onsite 8 inch ACP water main is to be relocated to the west and connected to the 16 inch PVC in Olde Highway 80.

[X] The existing 16 inch PVC water main in Pecan Park Lane is to be relocated to the north in Olde Highway 80.

[X] The existing 6 inch ACP and 16 Inch PVC water mains in Pecan Park Lane will need to be abandoned and removed.

[X] A private onsite water system is required.

[X] A separate irrigation meter will be needed if over 2,500 square feet of landscaping is required.

[X] Submit grading, landscape, street improvement and onsite improvement plans for Padre Dam MWD review and approval.

[X] The annexation of the northwest corner of the project into Padre Dam MWD has been completed.

[X] Water Quality maintenance throughout this project will be a consideration that must be part of the water system design for this project. Onsite/offsite water line looping may be required.

Approved by: Courtney Mael CM
E-33 R- 8-/08

Date: 4/6/2017

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