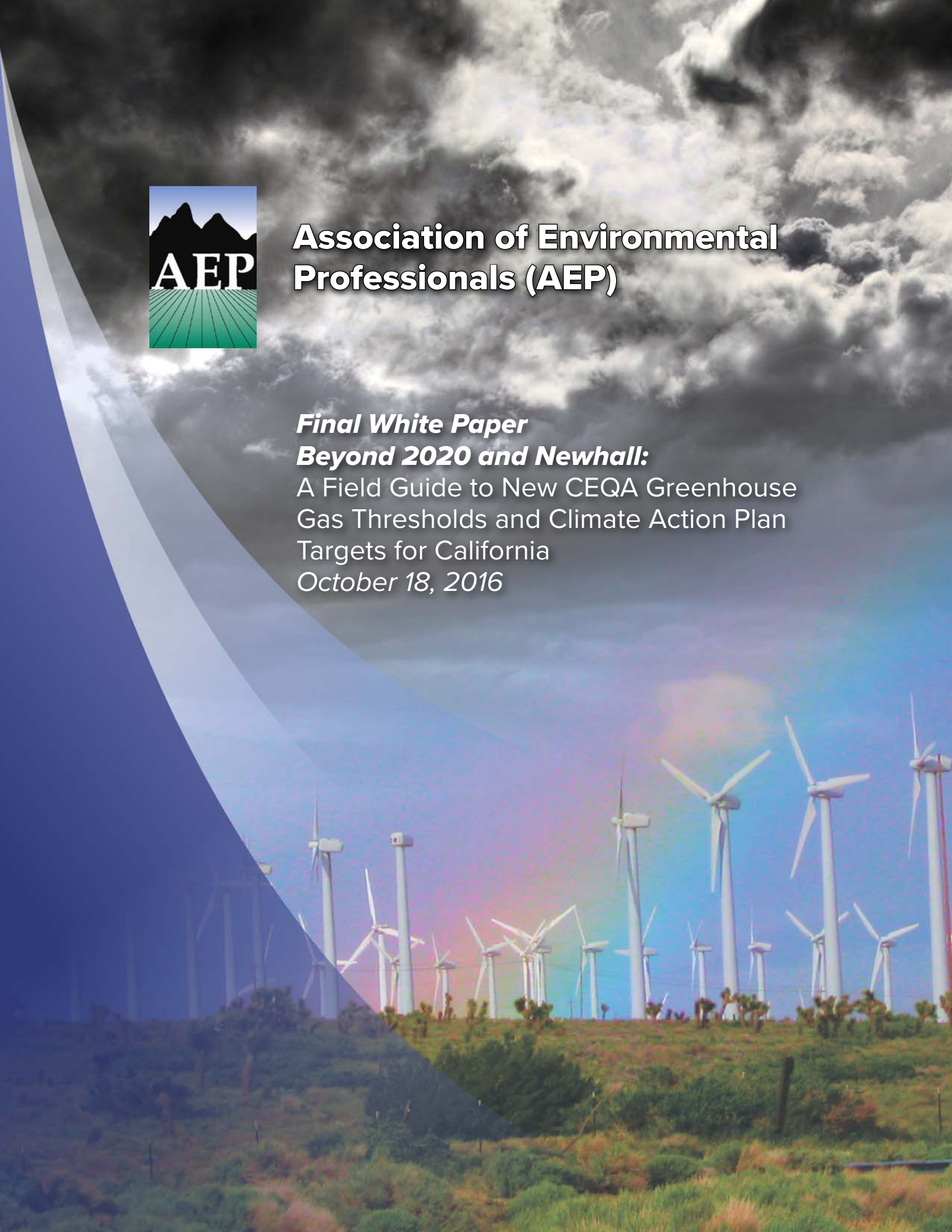

Association of Environmental Professionals (AEP)

Final White Paper
Beyond 2020 and Newhall:
A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California
October 18, 2016

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AEP White Paper

Beyond Newhall and 2020: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California

Prepared by members of the AEP Climate Change Committee. The AEP Climate Change Committee consists of leaders of climate action planning practices from consulting firms and agencies that have lead many of the local greenhouse gas reduction planning efforts across California. The Committee focuses on advancing the professional practice of local climate action planning through periodic publication of white papers and conference presentations, as well as interaction with state, regional and local agencies.

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The views expressed in this paper are the personal opinions of the authors and do not represent the opinions or judgment of their respective firms, agencies, or of AEP. Furthermore, the views expressed in this paper do not constitute legal advice. CEQA lead agencies are advised to consult with their counsel before making any decisions as to thresholds or significance determinations concerning greenhouse gas emissions in their CEQA documents.

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Executive Summary

Rich Walter, ICF

The focus of greenhouse gas (GHG) analysis under the California Environmental Quality Act (CEQA) and climate action planning in California since 2006 has focused on achieving the 2020 GHG reduction target established by Assembly Bill (AB) 32. In March 2015, the Association of Environmental Professionals (AEP) Climate Change Committee (Committee) released a white paper, *Beyond 2020: The Challenge of Greenhouse Gas Reduction Planning by Local Governments in California* (*Beyond 2020*), which identified the need to consider more ambitious post-2020 reduction targets in adopted California Executive Orders and targets under consideration in the California legislature. In September 2016, California established a GHG emissions target of 40 percent below 1990 levels by 2030 when Gov. Brown signed Senate Bill (SB) 32 into law. The November 2015 California Supreme Court ruling in the *Center for Biological Diversity vs. California Department of Fish and Wildlife* (commonly referred to as Newhall Ranch) case also raised new questions about what type of substantial evidence is needed to support the use of GHG thresholds in CEQA evaluations.

The purpose of this white paper is to suggest defensible GHG thresholds for use in CEQA analyses and GHG reduction targets (respectively) in climate action plans (CAPs), in light of the change in focus on the 2030 reduction target and in the questions raised in the Newhall Ranch holding. Sections I through V below address CEQA thresholds for GHG emissions. Section VI addresses CAP targets.

Background

Since 2006, local GHG reduction planning by California's cities and counties has been focused on adopting local measures supporting the state in reaching the GHG emissions reduction target established in The Global Warming Solutions Act of 2006 (AB 32), which calls for reducing statewide emissions to 1990 levels by the year 2020. The California Air Resources Board's (ARB's) AB 32 Scoping Plan (2008) and First Update (2014) identify the state programs necessary to meet the 2020 target. Similarly, GHG analysis and mitigation for discretionary projects reviewed under CEQA has been conducted under the rubric of thresholds that are consistent with the 2020 AB 32 reduction target. AB 32's 2020 reduction target is only a start for GHG reduction planning, given that the long-term global imperative to limit the more extreme effects of global warming on climate change will require much more substantial reductions than those required by AB 32.

California adopted a 2030 reduction target of 40 percent below 1990 levels through SB 32. SB 350 requires electrical utilities to increase their renewables portfolio to 50 percent of their energy by 2030 and reduction in building energy use by 50 percent. SB 1383, also adopted in September 2016, has established target of reducing methane by 40 percent, hydrofluorocarbon gases (HFCs) by 40 percent and anthropogenic black carbon by 50 percent below 2013 levels by 2030.

Some state and national governments have identified a long-term goal to reduce their 2050 emissions by 80 percent below 1990 levels. For example, in California, this goal is reflected in Governor Schwarzenegger's Executive Order (EO) S-03-05 (2005). However, no legislation has yet been enacted to establish 2050 targets in California. The California Supreme Court is expected to render its decision in *Cleveland National Forest Foundation v. San Diego Association of Governments* shortly on the question of the extent to which CEQA review must conform, if at all, to the 2050 goal established EO S-03-05. There are no GHG reduction plans anywhere that have adopted enforceable measures to meet ambitious 2050 targets.

Cities and counties in California intending to prepare CAPs or conduct CEQA analysis of projects with emissions that go beyond 2020 will face substantial challenges regarding long-term emissions forecasting, regulatory uncertainty, reduction target determination, fair-share mitigation identification, and feasibility in reducing GHG emissions to match the post-2020 targets.

Achieving the deep reductions needed by 2050 will require systemic changes in California electricity production, transportation fuels, and industrial processes, which are often outside the jurisdiction of individual cities and counties. In nearly all the deep reduction scenarios analyzed by private and government entities, the rate of transition—such as deployment of better vehicles or increasing the use of renewable electricity—far exceeds the historical rate of change in California. This intensifies the challenges for local jurisdictions seeking to identify their role in GHG reductions within a context of shifting technologies, energy/technology prices, and regulations; and these uncertainties increase as one proceeds from 2020 out to 2050.

A further challenge to CEQA analysis of GHG emissions is the California Supreme Court's holding in the Newhall Ranch case. The court ruled that, while the use of the state reduction target set out in the AB 32 Scoping Plan is an acceptable CEQA threshold, lead agencies using the so-called "percent below Business as Usual" (percent below BAU) approach must provide substantial evidence as to how the amount of reduction of GHG emissions at a project level relates to the achievement of statewide reduction targets in the Scoping Plan. This ruling has opened several challenging questions as to what constitutes valid local thresholds under CEQA and how such thresholds are used for project-level evaluation.

Foundational Principles

There are many different opinions on how best to complete CEQA evaluations of GHG emissions. This White Paper provides the Committee's recommendations on approaches that we think are appropriate. There are alternative approaches that others may propose. Lead agencies are advised to consider the range of views on the topic.

The CEQA Guidelines offer two paths to evaluating GHG emissions impacts in CEQA documents:

- Projects can tier off a "qualified" GHG Reduction Plan ("qualified" as defined in CEQA Guidelines Section 15183.5).[1]
- Projects can determine significance by calculating GHG emissions and assess their significance (CEQA Guidelines Section 15064.4).

In the *Beyond 2020* white paper, the Committee made the following recommendations concerning CEQA and GHG analyses:

- **Allow CEQA Tiering from GHG Reduction Plans that make "Substantial Progress" in Reducing GHG Emissions.** The appellate Court ruling in *Sierra Club v. County of San Diego* (2014) 231 Cal.App.4th 1152 [EIR for the San Diego County Climate Action Plan (CAP)[2] must

[1] Tiering allows project-level evaluation of GHG emissions to utilize a comparison of the project's consistency with a qualified GHG reduction plan instead of evaluating the project in isolation. This approach can avoid the need for project-level emissions quantification (as is done in the City of San Francisco), a more streamlined evaluation of consistency, and an evidence-based method to make significance conclusions in a broader context. This approach is the most defensible approach presently under CEQA to determining the significance of a project's GHG emissions.

[2] "Climate Action Plan" or "CAP" is a term of art commonly used to refer to a local greenhouse gas reduction plan. Some CAPs also include a plan for adaptation to expected climate change. Some jurisdictions use "Greenhouse Gas Reduction Plan" instead. In this white paper the terms are used interchangeable in relation to greenhouse gas reductions.

address how the CAP is to meet the EO-3-05 reduction target] has the potential to deter local jurisdictions from preparing and implementing GHG reduction plans because the ruling effectively removed the "carrot" for CEQA streamlining, and created much uncertainty. To promote CEQA streamlining and encourage local agencies to prepare GHG reduction plans for communitywide GHG emissions, legislation should require that CEQA Guidelines Section 15183.5 be amended to allow for tiering off GHG Reduction Plans that make "substantial progress" toward reducing GHG emissions on a path toward long-term reduction targets, without requiring such plans to meet a 2050 reduction target. This concept is not new, and is similar to the language referring to tiering off infill developments using development standards that "substantially mitigate" impacts added to the CEQA Guidelines under SB 226 (2011).

- **Establish "Substantial Progress" as the CEQA significance criteria.** All the prior thresholds used in CEQA documents in California, and nearly all qualified GHG reduction plans used for CEQA tiering, are based on meeting or exceeding the AB 32 target requiring that statewide GHG emissions be reduced to 1990 levels by 2020. There are no local GHG reduction plans with an actual plan to meet a 2050 target of 80 percent below 1990 levels. In the *Beyond 2020* white paper, the Committee recommended that Appendix G of the CEQA Guidelines be amended to provide the following new CEQA significance threshold for GHG emissions:
  - "*Does the project impede substantial progress in local, regional, and State GHG emissions reductions over time toward long-term GHG reduction targets adopted by the State Legislature?*"
- **Limit CEQA GHG Analysis to the State GHG Planning Horizon based on a State Legislatively Mandated Target.** The *Beyond 2020* paper presents substantial evidence for the infeasibility of a local jurisdiction to meet the 80 percent below 1990 levels by 2050 in the near-to-medium term absent a post-2020 State plan of action. Thus, requiring compliance with the 2050 goal in EO S-03-05 as a *de facto* significance threshold in CEQA documents is impractical. Nothing is served by establishing an impossible threshold or analyzing impacts so far in the future that they require substantial speculation. Instead, the limit of GHG analysis for CEQA documents should be the current State GHG planning horizon. At present, the only true State reduction plan is the AB 32 Scoping Plan, which has a verified and quantified reduction plan out to only 2020. Once the State has a defined a plan for 2030 (which is expected in 2017), then CEQA analysis and thresholds should shift from the current 2020 horizon to the 2030 horizon. Once a post-2030 plan is in effect, the horizon should shift again.

This white paper builds on the progress of the *Beyond 2020* paper to identify the following foundational principles for GHG threshold identification and application:

- *Use a Threshold for All GHG Emissions*: CEQA quantitative analysis should be focused on evaluating the combined long-term effect of GHG emissions using a single threshold that is related to statewide long-term emissions reduction targets adopted by the legislature. Qualitative analysis of consistency with state emissions reduction strategies for short-lived climate pollutants should also be provided.
- *Include the Appropriate Project GHG Emissions in the Comparison to a Threshold:* CEQA analysis of GHG emissions should include all major project emissions sources, including construction emissions (such as off-road equipment, haul trucks, and stationary fuel combustion) and operational emissions (such as on-road transportation, electricity and natural gas use, area sources, water use, wastewater generation, solid waste disposal, and land use cover change, as applicable).
- *Count State and Federal Actions:* CEQA analysis should take into account GHG reductions due to state- and federally-adopted regulations that directly apply to the project and are certain to

occur. Depending on the type of threshold concept utilized, emissions may need to be estimated both before and after application of state and federal measures.

- *Identify the Project Horizon Year:* The horizon year should be defined as the year in which the project is fully built or realized. GHG emissions impacts should be identified for the project horizon year and lead agencies should consider the project horizon year when applying a threshold of significance.
- *Use a Threshold that Applies to Your Project:* Thresholds used for project evaluation should apply to the type of project being evaluated. Residential and commercial projects should use thresholds designed for residential and commercial projects. Transportation projects should use threshold designed for transportation projects. Industrial projects should use thresholds designed for use by industrial projects.
- *Identify the Next Statewide Milestone Target Relevant to the Project's Horizon*: The threshold should be based on the state-adopted target for the next milestone (i.e., 2020, 2030, or 2050) for which the state has completed adequate GHG reduction planning (such as a fully realized Scoping Plan Update for that milestone). Specifically, the target should be for a milestone that follows the project's horizon. For example, a project that will be fully built out in 2019 should use the 2020 milestone (for which the state already has a full plan [in the form of the AB 32 Scoping Plan] to achieve the 2020 AB 32 target). A more conservative approach would be to use a threshold based on the most aggressive state legislated target (which is the 2030 target in SB 32) regardless of project horizon.
- *Use the Substantial Progress Paradigm to Identify the Threshold:* The best measure of whether an individual project is providing its fair share of GHG reductions or efficiency levels is whether that project is supporting "substantial progress" toward the statewide reduction targets over time, not whether the project is meeting a milestone target many years in the future, such as for 2050. When the state has comprehensive planning to achieve a reduction target (as exists now for 2020 and will exist for 2030 soon) and a project will be fully built before that milestone year, then the milestone year should be used as a threshold basis. When a project's horizon is beyond the milestone for which the state has comprehensive planning, a "substantial progress" threshold can be identified that is linearly interpolated between the current milestone target for which an effective statewide plan exists (such as for 2020), and the next milestone target for which an effective statewide plan does not exist (such as for 2050). For example, since the state does not yet have an adequate GHG reduction plan for 2050, a current project that will be fully built out in 2035 could use a 2035 threshold that was interpolated between the SB 32 2030 target and the E-03-05 target for 2050.[3]
- *Show Your Work (Provide Substantial Evidence):* The key lesson from the Newhall Ranch ruling, it is that CEQA lead agencies should provide substantial evidence to support their significance determinations concerning their findings on GHG emissions in their CEQA documents. Substantial evidence in this case should consist of a logical explanation of how a given project's compliance with a particular threshold would—in combination with application of the threshold jurisdiction wide, regionwide, or statewide—result in GHG emissions consistent with statewide GHG reduction targets over time. The rationale provided

[3] A commenter on the April 2016 Draft of this White Paper objected to the substantial progress paradigm as insufficiently stringent. Instead, this commenter recommended that projects should implement all currently feasible GHG emissions reduction measures (which is referred to in this White Paper as the "Best Available Mitigation" or BAM) in order to be determined to be less than significant. The commenter suggested that this more stringent mitigation standard is warranted given the long-term challenge in reducing GHG emissions, which will ultimately require more GHG emissions reductions than those called for in AB 32 and SB 32.

in many of the current air district thresholds (such as those from BAAQMD or SLOAPCD) gives an example of the type of evidence that can support CEQA determinations.

GHG Thresholds Concepts

The following GHG threshold concepts are in use presently, or have been proposed.

- *Construction Emissions*: These GHG emissions are evaluated by examining whether Best Management Practices (BMPs) are applied, or by amortizing[4] construction emissions over the project lifetime and combining with operational emissions to allow a single comparison of project emissions to an annual emissions threshold.
- *Operational Emissions (Land Use Development Projects)*
  - Consistency with a Qualified GHG Reduction Plan: This approach consists of evaluating a project's consistency with a "qualified" GHG reduction plan that meets the requirements in CEQA Guidelines 15183.5, and includes a reduction target consistent with statewide GHG reduction plan.
  - Bright Line Thresholds: This approach consists of identifying, through various means explained in this white paper, emissions levels below which a project would not have significant GHG emissions, and above which a project would require further evaluation using other thresholds. .
  - Efficiency Thresholds: This approach consists of identifying a GHG efficiency level needed for new development that would support statewide reduction planning for future milestones.
  - Best Management Practices/Best Available Mitigation: This is a new concept that would include the creation of an approved list of quantified BMPs or identification of the current best available feasible mitigation (by an air district or land use jurisdiction, or other public entity) that address all the significant sources of project emissions.
  - Compliance with Regulations: This approach consists of reviewing a project's consistency with existing adopted GHG reduction regulations.
  - Percent below "Business as Usual" [5](BAU): This approach consists of comparing a project's BAU emissions to a specified percent reduction level, commonly defined to date as the statewide reduction level needed to meet AB 32 targets in 2020.

CEQA GHG Thresholds for the Post-Newhall and Post-2020 Era

The 2020 reduction target embodied in AB 32 is the most common thread among the significance thresholds developed by expert agencies to date. AB 32 and the California Air Resources Board's (ARB) AB 32 Scoping Plan provide a path for achieving the statewide GHG emissions target for 2020.

[4] Amortizing means dividing the construction emissions over the project lifetime in years to derive an annual average of construction emissions per year. This method allows combining the construction emissions with the operational emissions in order to compare with a single threshold for annual emissions.

[5] "Business as Usual" or BAU emissions are defined as the GHG emissions that would occur in the future without any project, local, state, or federal efforts to control the emissions. BAU emissions are defined using a specified past or current base year and then forecasting future emission to a fixed milestone year without applying any efforts to control GHG emissions after the base year.

For projects with a horizon beyond 2020, the project-level CEQA significance threshold utilized by lead agencies will now need to be updated to address the adopted 2030 target in SB 32 (once a Scoping Plan Update for 2030 is adopted). In the future, thresholds will need to be updated to 2050 (once a legislated target for 2050 is adopted and a Scoping Plan Update for 2050 is adopted).

The Committee provides the following specific recommendations concerning GHG thresholds for the post-Newhall Ranch and the post-2020 era:

- *Construction Emissions:* The Committee recommends that CEQA lead agencies include construction emissions in their CEQA documents, and evaluate their significance using one of the following two methods:
  - *Use Best Management Practices:* Review the construction emissions and require the application of all feasible BMPs for construction.
  - *Amortize Construction Emissions Over the Operational Lifetime:* Identify the total construction emissions for all years of construction, divide them by the total number of years for the operational lifetime, and then combine with the operational annual emissions to make a single significance determination.
- *Operational Emissions (Land Use Development Projects):* The following thresholds are reviewed in this paper for use in the evaluation of land use projects.
  - Consistency with Qualified GHG Reduction Plan*:* This threshold approach was endorsed by the California State Supreme Court in the Newhall Ranch ruling as an appropriate method to determine significance of GHG emissions; it can be used in the future, provided the qualified GHG reduction plan uses a GHG reduction target consistent with the state reduction planning to at least the project horizon year. Current GHG reduction plans typically employ a 2020 target that meets or exceeds the AB 32 target for 2020; these plans will need to be updated when statewide reduction planning is completed for 2030, to allow for continued tiering. The Committee recommends that documentation, in the form of a line-by-line review of the project's consistency with the plan measures and requirements, be provided within the CEQA document or as an attachment. The Committee recommends that projects with a horizon past 2020 should only tier from a qualified GHG reduction plan that provides substantial progress toward meeting the next milestone statewide planning reduction target for the jurisdiction in which the project is located
  - Bright Line Thresholds*:* The California State Supreme Court noted in the Newhall Ranch ruling that numeric threshold approaches may be appropriate for determining significance of GHG emissions. Accordingly, this threshold approach can continue to be used. Beyond the 2020 period, bright line thresholds will need to be based on market capture calculations for 2030, to take into account expected development and the amount of market capture necessary to support GHG reduction efforts through further project-level evaluation and mitigation.
  - Efficiency Thresholds*:* These thresholds will need to be revised for use beyond 2020 to take into account a more stringent 2030 reduction target, and to account for changes in service population over time. The Newhall Supreme Court noted that numeric threshold approaches may be appropriate for determining significance of GHG emissions, and emphasized the consideration of GHG efficiency.[6] The Committee recommends using the most current state

[6] Since SB375 provides relief for certain residential/mixed-use residential from analyzing car/light-duty truck GHG emissions if they are consistent with an approved SB 375 Regional Transportation Plan/Sustainability Communities Strategy (RTP/SCS), the non-transportation GHG emissions could be analyzed using a non-transportation GHG efficiency threshold as explained later in this white paper.

forecasts for population and employment when identifying an efficiency threshold, as well as documenting clearly any adjustments in the land use sector emissions inventory. An alternative approach would be to calculate efficiency thresholds based on jurisdictional emissions and population and employment instead of statewide data.

- Hybrid Threshold Concept: Separate Transportation and non–Transportation Thresholds*:* A new threshold concept would need to separate evaluation criteria for transportation GHG emissions from non-transportation GHG emissions. One concept would be to determine that GHG emissions for residential/mixed-use residential projects that qualify for relief from analysis of GHG emissions from car/light-duty trucks (per SB 375), have less than significant transportation GHG emissions. This would be followed by then evaluating the non-transportation GHG emissions using a revised GHG efficiency threshold that excludes emissions from car/light-duty trucks. A second concept would be to evaluate the transportation GHG emissions for consistency with an appropriate SB 743-based VMT threshold (such as 15 percent lower VMT than a regional and city average), and then use a revised GHG efficiency threshold that excludes on-road GHG emissions.
- Best Management Practices (BMPs) or Best Available Mitigation (BAM)*:* This is a new concept that would require development of an approved list of quantified BMPs or BAM that if implemented for new projects would result in emissions consistent with statewide reduction targets. The BMP or BAM list would need to be updated periodically.[7]
- Compliance with Regulations*:* The Newhall Ranch ruling described that compliance with regulations may be used as a method of determining significance, but need to be sufficiently comprehensive to address the substantial emissions of a project. This approach may work for some land use development projects—particularly those consistent with a SB 375 RTP/SCS out to the 2020 milestone—but will not work for the post-2020 era until the state has developed its regulatory framework to meet 2030 reduction targets.
- Percent below "Business as Usual" (BAU)*:* The Newhall Ranch ruling poses certain challenges to using this threshold approach, and CEQA lead agencies are advised to exercise caution and to consult with CEQA counsel in choosing this approach. That said, this white paper presents options to 1) argue that there is already substantial evidence supporting the use of the current percent below BAU concept as-is, or 2) construct an alternative percent below BAU concept that can address concerns raised in the ruling about existing vs. new development, project location, and project density.

Table 1 below presents a review of the potential GHG thresholds for evaluating typical land use projects (residential, commercial, and mixed-use), as well as for general plans, industrial projects, and transportation projects.

[7] As noted above, one commenter suggested that the Best Available Mitigation approach should require new projects to implement of all feasible mitigation for reduction of GHG emissions in order to limit emissions to the minimum in light of the long term reduction challenge.

Table 1: CEQA Project Significance Threshold Concepts in Light of the Newhall Ranch Ruling and Post-2020 Concerns

Evaluation Criteria	Consistency with Qualified GHG Reduction Plan	Bright Line Threshold	Efficiency Threshold	Best Management Practices/Best Available Mitigation	Consistency with Regulations	Percent Reduction Below BAU	Consistency with SB 375
Description of the Concept in Practice Today	Consistency with jurisdictional CAP meeting CEQA Guidelines Sections 15183.5 requirements.	Projects below a certain level are LTS. Level determined by gap analysis/90% capture for regional inventory.	Projects consistent with average efficiency in sector or overall efficiency needed in 2020 to meet AB32.	Projects consistent with specified BMPs (or BAM) for GHGs would be LTS. Updated BMP (or BAM) list adopted every few years.	Project consistent with applicable regulations and policies would be LTS.	Reduction of project BAU emissions by same amount as statewide 2020 reductions.	SB 375: Certain residential/ mixed-use residential projects consistent with a RTP/SCS do not need to analyze GHG emissions for car/light-duty trucks.
In Use?	Yes, widespread.	Certain air districts (BAAQMD, SLOAPCD, and SMAQMD) adopted and others (SCAQMD) have widely used drafts for land use sector and stationary sources.	Certain air districts (BAAQMD, SLOAPCD) adopted and others (SCAQMD) have widely used drafts for land use sector only.	Not in use. SJVUAPCD has BMPs but they are combined with percent below BAU concept.	Not in wide use. Not adopted by any air districts.	Previously widespread. SJVAPCD articulated most clearly. Many agencies used before Newhall Ranch ruling.	Not in wide use.
Feasibility: *Land Use Projects?*	Yes	Yes	Yes	Yes	Yes	Yes	Yes
General Plans?	Yes	No. Difficult to sustain argument that there is a less than significant level for an entire jurisdiction.	Yes	No. Likely impossible to identify comprehensive suite of BMPs.	Yes	Yes	Yes
Industrial Projects?	Not likely as sources often excluded from CAPs,	Yes	None to date under CEQA, but could be developed using GHG per output/throughput metric.	None to date under CEQA, but could be developed.	Yes	Yes	No
Transportation Projects?	Yes (at the transportation entity level).	OPR SB 743 Technical Advisory presents method to identify bright line for VMT that could be converted to GHG.	No	None to date, but could be developed.	Yes	Possible in concept. OPR SB 743 Technical Advisory suggested reduction of VMT by 15% below "current levels" (functionally 15% GHG reduction).	SB 375 relief limited to certain residential projects; logic could apply the same concept to RTP/SCS consistent transportation projects.
Newhall Ranch Ruling Issue?	None	None, provided there is substantial evidence behind bright line determination.	None for ruling. However, ruling dicta includes questions about setting threshold using state average for all development (existing + new).	Would require substantial evidence as to why implementation of BMPs (or BAM) for all new projects (in region or state) would result in reductions consistent with statewide targets.	Regulations must address all meaningful project emissions. Need evidence why implementation would result in reductions consistent with statewide targets.	Substantial issues (see discussion in text).	No. Ruling specifically mentions consistency with SB 375. But applicability beyond land use project would be uncertain.
Need for Modifications in Light of Newhall Ranch Ruling?	No	No.	None unless concerned about new vs. existing issue, in which case modify to derive from new land use development sector only.	Need evidence showing BMPs (or BAM) combined with current regulations will get the state to AB 32 levels by 2020.	Need evidence showing consistency will get the state to AB 32 without additional need for project-level reductions.	Yes. Evidence showing why percent reduction used is appropriate for use in relation to the project.	No
Adjustments to Use for Post-2020 Period?	Underlying CAPs need to address post-2020 period, including either compliance with 2030 target or "substantial progress" trend.	The 90% capture could apply (or extended to 95%). Gap analysis extended for the next time period (2020 – 2030).	Concept extendable to 2030 by taking 1990 Land Use Inventory and dividing by 2030 Service population forecasts. (Same process for 2050, but forecasts more uncertain.)	Need evidence showing that consistency with BMPs (or BAM) combined with current regulations will get the state to 2030 target.	No. Existing regulations insufficient to meet 2030 target.	Need to adjust to next milestone (such as 2030).	No. Relief from GHG analysis is in statute.
Advantages	Newhall Ruling supports. CEQA guideline supports. Does not overburden new development because addresses both existing and new emissions.	Newhall ruling supports. If doing gap analysis, evidence to cite for record. Allows for exclusion of small projects from mitigation requirements.	In concept, applicable to any type of new land use development anywhere in state.	Precedent of BACT for air pollution control. Could apply to any sector with developed BMPs (or BAM). Adjustable every few years.	Newhall Ranch ruling supports in concept.	In concept, applicable to any type of new development anywhere in state.	Allows RTP/SCS consistent projects to focus their analysis on GHG emissions other than cars/light-duty trucks.
Limitations	Requires CAP (and CEQA on CAP). CAP must be real, not aspirational.	Only applies to sector with gap analysis (land use and stationary for now).	Only applies to land use sector. Does not work as well for rural areas.	Requires effort to update every few years. Requires math proof first at regional or state level.	Untested. Tough to use for post-2020 until state regulations developed more.	Newhall Ruling uncertainty. Applies to small projects.	Statute only mentions certain land use projects, not other types of projects.

- *General Plans*
  - Consistency with Qualified GHG Reduction Plan*:* As noted above, this threshold approach was endorsed by the Newhall Ranch ruling as an appropriate method to determine significance of GHG emissions. This is the best threshold approach for determining significance of GHG emissions for a general plan.
  - Bright Line Thresholds: There are no bright line thresholds for general plans. The Committee does not recommend development or use of a bright line threshold for general plans because the other threshold concepts provide better frameworks for evaluating significance of jurisdiction-level GHG emissions relative to statewide GHG reduction targets.
  - Efficiency Thresholds*:* Use of an efficiency threshold for a general plan would require accounting for all sources of emissions within a jurisdiction (not just the land use sector). The 2020-based thresholds would need to be revised for use beyond 2020 to take into account the more stringent 2030 reduction target and the changes in service population over time.
  - Best Management Practices/Best Available Mitigation*:* In concept, a jurisdiction could evaluate the new development and associated emissions allowed by a general plan, then identify BMPs or BAM to be implemented for new development, and make a quantitative assessment of how the reduced emissions are or are not consistent with statewide reduction targets. In effect, this would be the same as a CAP, but limited to only new development emissions.
  - Consistency with Regulations*:* Given that most general plans have horizons that are decades in the future, this approach is likely not viable if the planning horizon exceeds the horizon of current comprehensive GHG regulations.
  - Percent below BAU Threshold*:* Caution is advised in using this threshold approach. However, provided the concerns raised in the Newhall Ranch ruling can be resolved, the percent below BAU threshold concept could be applied to the evaluation of GHG emissions associated with a general plan.
- *Operational Emissions (Industrial Projects)*: The following threshold concepts are reviewed in this paper relevant to industrial projects.
  - Consistency with a Qualified GHG Reduction Plan*:* If an industrial project is included in the emissions inventory and forecasts are addressed in a qualified GHG reduction plan, then the project could tier off the plan.
  - Bright Line Thresholds*:* Several air districts have adopted mass emissions thresholds for stationary source emissions that could be used for projects with such emissions in specific air districts.
  - Efficiency Thresholds*:* There are no adopted or recommended GHG efficiency thresholds for industrial projects. However, such a threshold could be developed for a specific industrial sector if one were to benchmark GHG emissions by a meaningful industrial output unit, such as Twenty-Foot Equivalents (TEUs) for ports and goods movement projects, or tons of concrete for a concrete plant.
  - Best Management Practices*:* While there are many BMPs developed and used by various industries, and identified by industry trade groups, no California air districts or land use agencies have developed specifically-recommended GHG BMPs for industrial projects as the basis for a significance threshold determination. Lists of such BMPs could be developed,

along with a rationale as to why consistency with the BMP list would reduce GHG emissions consistent with statewide reduction planning.

- Consistency with Regulations: Through 2020, source-specific requirements and the Cap and Trade system can be argued to have established an effective means of controlling industrial source emissions to meet AB 32. However, this would not yet be sufficient to address post-2020 reduction targets.
- Percent below BAU Threshold: Caution is advised in using this threshold approach. However, provided the concerns raised in the Newhall Ranch ruling can be resolved, the percent below BAU threshold concept could be applied to the evaluation of GHG emissions associated with industrial projects.

- *Transportation Projects*

Transportation projects pose very different issues than do development or industrial projects, and therefore require different, transportation-specific, threshold and analysis concepts, several of which are discussed below.

- Transportation Projects that Reduce GHG Emissions*:* Projects that can be shown to reduce GHG emissions compared to an appropriate CEQA baseline should be able to be determined to have a less than significant impact on GHG emissions[8].
- Transportation Projects Not Likely to Result in Increased VMT*:* There is a set of transportation projects that have been identified in the Draft 2016 OPR Technical Advisory for SB 743 as not likely to result in increased VMT, such as maintenance and repair, signal optimization, safety improvements, and other projects that do not increase through capacity. These projects are also not likely to increase GHG emissions significantly, but project-level evaluation would need to consider all sources of emissions (not just VMT) in order to substantiate this conclusion. Some of these projects (such as signal coordination) can actually be GHG reduction or mitigation measures for other projects.
- Roadway Capacity Increasing Projects:
  - Compliance with Regulations: Through 2020, there is an argument that the state already has sufficient regulations in place (such as Pavley I, Advanced Clean Cars, Low Carbon Fuel Standard, SB 375 and Cap and Trade) to meet AB 32 targets; thus an argument could be made that roadway projects, including capacity-increasing projects, would not result in GHG emissions inconsistent with the AB 32 2020 reduction target. This finding would hold only if the project is supporting growth anticipated in current statewide GHG reduction planning. However, the regulatory framework for the post-2020 era is insufficiently developed to demonstrate that transportation emissions will meet 2030 milestone targets (or later ones), and thus transportation analysis for projects with a post-2020 horizon may not be able to use this approach until a new framework is developed.
  - Consistency with SB 375: Roadway projects included in a SB 375-compliant RTP/SCS could be determined to have a less than significant impact related to car/light-duty truck GHG emissions, similar to the relief allowed for certain land use projects that are consistent with SB 375. While this is a logical inference, SB 375 did not include specific language supporting this argument. Furthermore, the Draft CEQA Guidelines and

[8] It should be noted that studies have shown that vehicle technology efforts can often have transportation GHG emissions effects than transportation infrastructure improvements.

Technical Advisory prepared by OPR concerning SB 743 could complicate the use of such a SB 375 consistency approach.[9]

- SB 743 and "Induced Travel": The January 2016 Discussion Draft CEQA Guidelines for SB 743, concerning the evaluation of significance of transportation impacts proposed by OPR, seek to replace traffic congestion metrics (such as Level of Service [LOS]) in favor of vehicle miles traveled (VMT)-based metrics, designed in part to reduce GHG emissions. The draft guidelines include recommended language stating that additional lane miles may induce automobile travel and VMT. In its Technical Advisory accompanying the proposed guidelines, OPR argues that additional roadway capacity, while relieving congestion in the short-run, would in the long-run induce additional VMT by facilitating longer distance trips. As a result, OPR recommends that an increase in VMT should be the significance threshold for roadway capacity-increasing projects. This logic could also be applied to GHG emissions of new roadway capacity-increasing projects.

New CAP Targets

The local target setting process for 2020 CAPs has provided important lessons that can be applied to setting targets in coming years. Most CAPs have included targets for 2020, and some discuss reductions to achieve a trajectory for 2050; but 2020 has been the primary focus in identifying reduction measures.

The 2014 AB 32 First Scoping Plan Update states the following:

> "*Local government reduction targets should chart a reduction trajectory that is consistent with, or exceeds, the trajectory created by statewide goals. Improved accounting and centralized reporting of local efforts, including emissions inventories, policy programs, and achieved emission reductions, would allow California to further incorporate, and better recognize, local efforts in its climate planning and policies.*"

Achieving a reduction trajectory that is consistent with or exceeds a statewide trajectory is not a straightforward process. The circumstances in each community can vary tremendously due to differing growth rates, climate, existing built environment, economic health, and local community and political preferences.

Currently, it is challenging for a local government to achieve a post-2020 target in the absence of a statewide plan. While there are GHG reduction plans that do include a post-2020 target, those emissions reductions are subject to uncertainty and speculation regarding the amount of reductions that can be attributed to state and federal actions beyond 2020. However, with the Scoping Plan Update currently in development, it is expected that a state framework of action for 2030 will be completed in 2017. For 2050, such a framework is likely many years in the future.

[9] The Draft CEQA Guidelines and Technical Advisory present a framework for analysis of roadway capacity increasing projects in the context of evaluating induced travel and associated VMT increases which may be significant if larger than an per project amount estimated based on the need to reduce emissions to meet the SB 32 target for 2030. While the Technical Advisory notes that a RTP/SCS that meets SB 375 targets may not have a significant transportation impact under CEQA, but the advisory is silent on roadway projects consistent with the RTP/SCS having the same conclusion.

Foundational Principles

- *Identify the CAP Horizon Year:* The CAP horizon year should match the local planning horizon in the General Plan wherever feasible, but must be at least out to the horizon of statewide GHG detailed planning (presently 2020, but will be 2030 when ARB completes the next update to the Scoping Plan).
- *Align with Statewide Targets*: CAP targets should be based on the state-adopted target for overall long-term effects of GHG emissions for the next milestone after the CAP planning horizon, whether that is 2020, 2030, or 2050. In addition, CAPs should also evaluate consistency with statewide planning for short-lived climate pollutants.
- *Use the Substantial Progress Paradigm[10] to Identify the CAP Target:* The best measure of whether an individual jurisdiction is providing its fair share of GHG reductions is whether that project is supporting "substantial progress" toward the statewide reduction targets over time—not whether the project is meeting a milestone target many years in the future, such as for 2050. A "substantial progress" CAP target can be identified for a project horizon year that is interpolated between the current milestone target for which an effective statewide plan exists (such as for 2020), and the next milestone target for which an effective statewide plan does not yet exist (such as for 2030).
- *Show Your Work (Provide Substantial Evidence):* CAP lead agencies should provide substantial evidence to support their CAP target identification in order to support future CEQA tiering of consistent projects. Substantial evidence in this case should consist of a logical explanation of how a given project's consistency with the CAP—in combination with application to other new development, CAP measures for existing measures, and state measures—would result in GHG emissions for the subject jurisdiction consistent with meeting statewide GHG reduction targets over time.

Recommended Local CAP Targets

- *Reduction Relative to 1990*: This target approach provides the best consistency with state reduction targets, which are benchmarked to 1990. However, in many jurisdictions that have not already developed a 1990 inventory, there can be substantial impediments to estimating 1990 emissions accurately if there are large data gaps. The use of 1990 as a benchmark for 2030 or 2050 CAP targets will remain the best approach given the continued link to statewide reduction targets. The Newhall Ranch ruling raised no concerns about this approach.
- *Reduction Relative to "Current" Base Year:* Reductions relative to a "current" level that is considered consistent with the AB 32 target could be used as a proxy for reductions below 1990 levels, when a 1990 inventory is not available. For example, a CAP target of 40 percent below 2020 AB 32-compliant emissions level could be considered equivalent to the SB 32 target of 40 percent below 1990 levels. The Newhall Ranch ruling raised no concerns about this approach.
- *Reduction Relative to BAU:* Although the Newhall Ranch ruling has raised concern about percent below BAU CEQA thresholds, the use of a percent below BAU approach for CAP targets remains valid precisely because a CAP evaluates all emissions within a jurisdiction (both existing and new), and thus places GHG emissions for new development in the proper context of overall GHG emission reduction planning. Reductions relative to a future BAU level (such as 2030 BAU) could remain an option for CAP targets. Despite the validity of this approach, due

[10] As noted above, one commenter on the White Paper objected to the substantial progress paradigm in favor of a best available mitigation approach.

to potential challenges that might be raised in the wake of the Newhall Ranch ruling, lead agencies are recommended to use alternative CAP target approaches, such as a 1990 or "current" base year approach, instead of the reduction below BAU approach, if possible, to minimize the potential for challenge.

- *Other CAP Target Options*
  - Efficiency Targets: CAPs could use an efficiency target (GHG emissions per Service Population) that is keyed to the overall efficiency needed to meet statewide targets, but there will remain concerns that an efficiency target may not result in net GHG reductions within a jurisdiction.
  - Sectoral Targets: Sector-by-sector targets could be established by examining the statewide planning for reductions sector-by-sector, but there would remain challenges in assessing what the fair share of reductions should be for each individual sector.[11]
  - Other Metrics: Several other non-target metrics, such as energy consumption/household, VMT/capita, or other benchmarks could be used as supplemental CAP goals, but would not replace the need for a GHG emissions-based CAP target overall.

Other Recommendations

In considering climate action planning during this transitional period for CEQA, and as GHG reduction plans face new challenges, the AEP Climate Change Committee offers the following additional recommendations:

- *Use a Plan Approach instead of a Project Approach:* CEQA is not the best or even a particularly effective place to address cumulative impacts, such as GHG emissions. It is more effective to address GHG emissions comprehensively in a forum that can address all sources of GHG emissions, including emissions from existing and new development, and regardless of whether or not they are subject to CEQA review.
- *Coordinate effort among ARB, Air Districts, CAPCOA, and CEQA Lead Agencies:* If ARB continues to focus on statewide GHG planning and does not identify project-level GHG thresholds for post-2020 emissions, regional air districts are best suited to develop and recommend new thresholds, with support and guidance from CAPCOA.
- *Keep your Eyes on the Ball in a Time of Rapid Change:* We should resolve current impediments and vulnerabilities resulting in disincentives, wasted time and effort, and CEQA lawsuits, so that we can focus more time identifying the ways to support positive action on the ground in local communities across California.

[11] For example, should a reduction target be based on some statewide average reduction overall, a statewide average reduction for the general economic sector including the industry in statewide reduction planning, the statewide average reduction for the specific industry in statewide reduction planning (if it can be identified), or other considerations)?

I. Background

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Regulatory Setting

Executive Order S-03-05 (2005)

In 2005, Governor Arnold Schwarzenegger signed Executive Order (EO) S-03-05, and established the following greenhouse gas (GHG) emissions reductions targets for California state agencies:

- Reduce GHG emissions to 2000 levels by 2010.
- Reduce GHG emissions to 1990 levels by 2020.[12]
- Reduce GHG emissions to 80 percent below 1990 levels by 2050.

As a result of EO S-3-05, the Secretary of the California Environmental Protection Agency (CalEPA) must report every two years to the Governor and the State Legislature every on the impacts of global warming on California, progress towards meeting the GHG emissions reductions targets established by S-03-5, mitigation strategies, and adaptation plans.

Because executive orders have jurisdiction only over State agencies, they are not legally enforceable on local governments or the private sector. Nevertheless, local compliance with EO S-3-05 has recently become a potential matter of concern due to the *Sierra Club v. County of San Diego* Appellate Court ruling, and the pending decision of the California Supreme Court on this issue in *Cleveland National Forest Foundation v. San Diego Association of Governments*. The court in *Sierra Club v. County of San Diego* opined that the executive order applied to the County's CAP. The California Supreme Court will decide whether that's correct in the pending *Cleveland National Forest Foundation* case.

AB 32-California Global Warming Solutions Act (2006)

In 2006, AB 32-California Global Warming Solutions Act was implemented to address climate change through a comprehensive statewide program to reduce GHG emissions. AB 32 identified the ARB as the main agency responsible for ensuring that California's GHG emissions are reduced to 1990 levels by 2020.[13] AB 32 requires the use of the maximum technologically feasible and cost effective means to achieve reductions across seven GHG emissions. Although the intent of AB 32 is to maintain and continue reductions in GHG emissions beyond 2020, the Act does not provide a post-2020 GHG emissions reduction target.

A Scoping Plan was adopted by ARB in 2008 to develop and implement specific measures to achieve the GHG emissions reductions targets set forth by AB 32. ARB is required to update the AB 32 Scoping Plan every five years, with the most recent update occurring in 2014. In addition to discussing California's progress thus far in achieving the 2020 GHG reduction target set forth by AB 32, the 2014 First Update also opens the door to discussion of post-2020 emission reductions

[12] 1990 levels are roughly equivalent to a 12 percent reduction in GHG compared to 2008 emissions levels and a 6 percent reduction compared to 2013 levels.

[13] At the time of the initial AB 32 Scoping Plan in 2008, it was estimated that meeting AB 32 would require reducing 2020 business as usual (BAU) emissions (at the time estimated as 596 million metric tons of carbon dioxide equivalent ($MMTCO_2$) by 28% in order to reach the 1990 emissions of 427 $MMTCO_2$.

strategies, such as setting an interim target for 2030 that would measure progress towards a longer-term 80 percent reduction below 1990 GHG emissions levels by 2050. Although AB 32 requires ARB to recommend post-2020 GHG emissions targets to the Governor and Legislature, only the Legislature can set legally binding statewide post-2020 GHG emissions targets.

SB 375 (Sustainable Communities and Climate Protection Act of 2008)

Enacted in 2008, SB 375 charges the ARB with setting regional targets for reducing GHG emissions by reducing vehicle miles traveled and encouraging more compact, complete, and efficient communities in the future. SB 375 was implemented due to the share of transportation-related GHG emissions from California's overall GHG emission profile, and is intended to utilize the regional transportation planning process to achieve GHG emissions targets that align with AB 32's 2020 reduction target. SB 375 is intended to allow substantial involvement on behalf of cities and counties involved in regional planning. With SB 375, ARB set regional targets for GHG emissions reductions from automobile and light truck use for the years 2020 and 2035. Under SB 375, each MPO must prepare a Sustainable Communities Strategy (SCS) in conjunction with its Regional Transportation Plan (RTP), which would allow for the successful realization of the region's GHG emissions targets. SB 375 provides incentives to developers through CEQA streamlining to encourage projects that are consistent with applicable regional plans, and which achieve GHG emissions reduction targets. Under SB 375, regional governments must plan for balanced housing and jobs availability, including housing for residents of all income levels, as documented in each jurisdiction's' Regional Housing Needs Allocation (RHNA).

California Energy Code (CCR Title 24 Part 6) (2013)

The CEC California Energy Code sets standards for energy efficiency and conservation for all buildings, both residential and non-residential, throughout the state. The California Energy Code is updated every three years, with the most recent iteration (2013) effective as of July 1, 2014, and the next version planned for 2016.

The CEC's long-term vision is that future updates to the California Energy Code will require achieving zero-net energy (ZNE) for all new residential buildings by 2020 and for new nonresidential buildings by 2030. The 2013 standards require 25 percent and 30 percent improved energy efficiency, respectively, compared to the 2008 California Energy Code for residential uses and nonresidential uses. This limits energy demand from future buildings and thereby reduces the amount of GHG emissions that would have otherwise resulted from energy production.

SB 743 (Steinberg 2013)

Changes in the analysis of transportation under CEQA are on the horizon with the release of the California Office of Planning and Research's (OPR's) *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA: Implementing Senate Bill 743* (SB 743) on January 20, 2016. These guidelines, if implemented, would shift CEQA transportation analysis from a focus on traffic congestion to that of vehicle miles traveled (VMT). The guidelines likely will take effect sometime in 2017, with a two-year optional phase-in window for agencies that choose to delay implementation.

Based on the January 2016 draft, the following key changes to current CEQA practice would apply statewide:

- VMT will become the primary metric of transportation impact. A project's effect on automobile delay (such as measured by level of service [LOS]) would no longer constitute a significant impact.

- Land use development near transit or in VMT-efficient areas would be presumed to cause a less than significant transportation impact.

- Transportation projects that induce additional VMT (such as roadway capacity-increasing projects) likely would be considered to result in significant transportation impacts; transportation projects that reduce VMT, do not add roadway capacity, or otherwise induce additional VMT, would not.

OPR's draft technical advisory accompanying the proposed CEQA Guidelines update describes potential thresholds that could be used to evaluate VMT impacts. The new thresholds suggested in the technical advisory are closely aligned with California's long-term GHG reduction targets. For example, in the technical advisory, OPR suggests that residential and commercial projects should be evaluated using a threshold for VMT of 15 percent below existing citywide and regional VMT averages; the 15 percent below existing metric is explicitly based in part on the 2008 ARB AB 32 Scoping Plan call for reductions in local GHG emissions. The transportation metric proposed for VMT is based on analysis of the amount of VMT/transportation project allowable to support meeting the 2030 GHG reduction target identified in SB 32.

Executive Order B-30-15 (2015)

Governor Jerry Brown issued EO B-30-15 in April of 2015 as a precursor to the United Nations Conference on Climate Change, held in Paris in late 2015, to demonstrate California's continued commitment to reducing its GHG emissions and curbing the effects of climate change. EO B-30-15 sets a statewide GHG emission reduction target of 40 percent below 1990 levels by 2030. EO B-30-15 requires that ARB update the Climate Change Scoping Plan to include the interim 2030 target. As stated above, executive orders have jurisdiction over only State agencies.

ARB is currently in the process of drafting a second update to the Scoping Plan to reflect the 2030 target established in EO B-30-15. A draft version of the updated Scoping Plan is expected to be released with adoption of the final version anticipated for 2017. The Second Update will continue to rely on the initiatives used for achieving 2020 targets (Senate Bill [SB] 375, cap and trade, program, low carbon fuel standards, etc.), as well as on additional strategies to increase engagement with state agencies and the legislature, and with committees on economics, technology, and environmental justice. These strategies include, but are not limited to, focus areas from the Governor's Office (Pillars Framework), sector-specific measures, and collaboration across agencies through workshops and engagement. With the passage of SB 32 (see discussion below), the ARB will have legal authority to implement reduction actions statewide.

SB 350 (Clean Energy and Pollution Reduction Act of 2015)

SB 350 has recently reaffirmed California's commitment to reducing its GHG emissions and addressing climate change through several key areas, including an increase in the renewables portfolio standard (RPS), higher energy efficiency requirements for buildings, initial strategies towards a regional electricity grid, and improved infrastructure for electric vehicle charging stations. Originally, the law also contained a provision that required a 50 percent reduction in the use of petroleum statewide, which was removed from the Bill due to opposition and concern that it would prevent the Bill's passage. Specifically, SB 350 requires the following to reduce statewide GHG emissions:

- Increase the amount of electricity procured from renewable energy sources from 33 percent to 50 percent by 2030, with interim targets of 40 percent by 2024, and 25 percent by 2027.

- Double the energy efficiency in existing buildings by 2030. This target will be achieved through the California Public Utility Commission (CPUC), the California Energy Commission (CEC), and local publicly owned utilities.
- Reorganize the Independent System Operator (ISO) to develop more regional electrify transmission markets and to improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States.

Clean Power Plan (Clean Air Act) (2015)

The Clean Power Plan was enacted on August 3, 2015 by the U.S. EPA under President Obama's Climate Action Plan. The purpose of this plan is to reduce CO_2 emissions from power plants by 32 percent below 2005 levels by 2030, through a target emissions rate for each state. The target emissions reduction rate for California has been set at 14 percent.

States must submit final carbon-cutting plans or initial plans with two-year extension requests by September 2016, and have flexibility in choosing how to comply with the Clean Power Plan.

The Clean Power Plan Relies on the provisions of the Clean Air Act (Section 111[d]) that require the "best system of emissions reduction" to determine what power producers are "reasonably" able to do to cut CO2 emission. The Plan involves making power plants more efficient; shifting generation from existing fossil-fuel steam plants to existing natural gas combined cycle plants (NGCC), up to a maximum utilization of 75 percent; and using more zero-emission renewable power, including onshore wind, utility-scale solar photovoltaic (PV), and concentrated solar power (CSP), geothermal and hydropower.

The Plan will ultimately encourage other states to act more like California in reducing their reliance on fossil fuel power plants. California is ahead of schedule in reaching its target emissions reduction rate, in part due to legislation such as AB 32. California has almost eliminated coal from its energy portfolio. The target emissions reduction rate for California is less stringent than California's existing carbon reduction targets set by AB 32, SB 32 and EO S-3-05.

The Clean Power Plan has been challenged by a number of states and other parties. In February 2016, the U.S. Supreme Court issued a stay on the implementation of the plan until resolution of the court challenges.

Senate Bill 32 (Pavley) (2016)

The Governor's signing of SB 32 (Pavley - Chapter 249, Stats. of 2016) now gives ARB the statutory responsibility to include the 2030 target in the Scoping Plan's next update. SB 32 specifically states that: "In adopting rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions authorized by this division, the state [air resources] board shall ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below the statewide greenhouse gas emissions limit no later than December 31, 2030."

Assembly Bill 197 (Garcia) (2016)

AB 197 addresses the concerns of certain legislators that ARB lacks sufficient legislative oversight. Accordingly, AB 197 establishes the Joint Legislative Committee on Climate Change Policies and requires the chair of the ARB to provide the committee with an annual report on GHG emissions and the Scoping Plan's progress toward meeting the emissions reduction target. AB 197 also requires ARB to post on its website current information about GHG and air pollutant emissions. Another concern of some legislators is that the state's disadvantaged communities are not being served by current GHG emissions reduction policy. In response, AB 197 requires the ARB when adopting GHG

emissions reduction rules to protect the state's "most impacted and disadvantaged communities" and consider the social costs of GHG emissions by prioritizing both of the following: (1) direct reductions of GHG emissions for large stationary sources and mobile sources; and (2) direct emissions reduction rules from other sources.

Senate Bill 1383 (Lara) (2016)

SB 1383 requires the ARB, by January 1, 2018, to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants (SLCP) to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases (HFCs) by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. The legislation also established specified targets for reducing organic waste in landfills by 50 percent from 2014 levels by 2030 and 75 percent from the 2014 level by 2025. The legislation also adopted regulations to reduce methane emissions from livestock manure management operations and dairy management operations that would take effect in 2024.

A prior bill (SB 605, Lara, 2014) directed ARB to develop a comprehensive reduction strategy for SLCPs. A draft strategy (the SLCP Strategy) was released in April 2016. The goals in the draft SLCP Strategy are the same as the targets in SB 1383. The final SLCP Strategy is planned to be presented for approval by the ARB by the end of 2016.

CEQA Guidelines on Greenhouse Gas Emissions

In 2007, SB 97 directed the Governor's Office of Planning and Research (OPR) to draft amendments to the CEQA Guidelines that would provide for the mitigation of GHG emissions. In 2010, the CEQA Guidelines were amended to provide guidance on how to analyze a given project's contribution to GHG emission levels, and two questions were added to the CEQA Guidelines Appendix G Initial Study Checklist. According to the revised CEQA Guidelines, lead agencies must:

- Analyze the GHG emissions of a project and reach a conclusion regarding the significance of those emissions.
- For significant project-related GHG emissions, consider mitigation measures to reduce potential emissions.
- Analyze potentially significant impacts associated with placing projects in hazardous locations potentially affected by climate change.[14]
- Analyze a project's potential energy use, sources of energy supply, and ways to reduce energy demand.
- Additionally, the revisions to the CEQA Guidelines regarding climate change also allowed lead agencies to streamline the GHG emissions environmental review process for a given project by adoption and implementation of a program-level CAP.

Two questions were added to Appendix G of the CEQA Guidelines to address GHG emissions and climate change:

[14] It should be noted that this specific guideline only concerns the impacts of a project on the environment due to its hazardous location. The California Supreme Court ruling in the *California Building Industry Association vs. Bay Area Air Quality Management District* (CBIA vs. BAAQMD) case in late 2015 determined, in general, that CEQA only applies to the impacts of a project on the environment and does not apply to the impacts of the environment on a project (so-called "reverse CEQA") unless specific circumstances apply or the legislature has mandated such analyses. SB 97 was focused on mitigation of GHG emissions, not the impact of climate change on a project. As such, CEQA does not require the analysis of impacts of climate change on a project.

- *Would the Project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?*
- *Would the Project conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG?*

The amendments to the CEQA Guidelines did not provide uniform, statewide significance criteria for analyzing GHG emissions in response to these two questions. Instead, according to CEQA Guidelines Section 15064.8, "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." Thereby, lead agencies and air districts were provided flexibility for establishing significance criteria for GHG emissions. At the same time, the flexibility afforded to lead agencies through the lack of a statewide standard left many projects open to legal challenges, in the absence of a standard to which all projects could be compared and legally justified.

CEQA Case Law

The following court rulings are relevant to CEQA and GHG emissions. The year noted for each case refers to when an Appellate or Supreme Court ruling was issued.

Communities for a Better Environment v. City of Richmond/Chevron (2010)

This was the first Appellate Court decision on CEQA's requirements for considering GHG emissions, and addresses the requirements for mitigating GHG emissions under CEQA. In 2008, Chevron was granted permission to expand its refinery, located in the City of Richmond, in order to increase gasoline production and ship hydrogen to other oil refineries in the surrounding area. The City of Richmond certified an Environmental Impact Report (EIR) for the project in July of 2008. The First District Court of Appeals set aside the EIR because it failed to sufficiently describe and substantiate the GHG emissions mitigation measures proposed for the project. In addition, the Draft EIR did not initially determine the significance of the GHG emissions as a result of the project. Due to comments received on the Draft EIR, in the Final EIR the City of Richmond determined that the GHG emissions resulting from the project were indeed significant, and therefore, GHG emission mitigation measures were required. The City of Richmond adopted a measure requiring the implementation of a GHG emission inventory/reduction plan to mitigate the effects of project-related GHG emissions. The Court determined that this mitigation measure improperly deferred mitigation, and that the GHG emission inventory/reduction plan lacked a means of assurance or method of measuring the outcome of the mitigation. This case set the precedent requiring GHG mitigation measures for significant GHG emissions, which must be identified and well-defined, prior to project approval.

Citizens for Responsible Equitable Environmental Development v. City of Chula Vista (2011)

This case addressed the legality of a lead agency's significance thresholds for GHG emissions under CEQA. Citizens for Responsible Equitable Environmental Development (CREED) called into question the City of Chula Vista's use of the GHG emissions reductions targets set forth in AB 32 as the threshold for determining the significance of project-related GHG emissions pursuant to CEQA.

As the lead agency for a project that involved demolishing several retail stores and a smog check facility, and replacing them with a larger retail store, the City of Chula Vista certified a Mitigated Negative Declaration (MND) to approve the project under CEQA. CREED held that this project would result in a significant environmental impact for a variety of environmental issue areas, including GHG emissions, and claimed that an EIR was the appropriate level of document to adequately disclose the impacts of the proposed project under the legal requirements set forth by CEQA. While

the Court of Appeals found that under the fair argument standard, CREED did not have a fair argument in asserting that the project would result in significant environmental impacts related to GHG emissions, the Court still determined that an EIR was required for other topics that the MND did not adequately address.

The Court upheld the EIR's GHG emissions analysis, and determined that the City of Chula Vista had adequately analyzed the project's consistency with the GHG emissions reductions target set forth by AB 32. The City used the BAU threshold for determining the significance of GHG emissions associated with the project, and the Court held that there was sufficient evidence to determine that the proposed project's GHG emissions were less than significant, per the findings of the MND.

This case set the precedent that lead agencies have discretion in setting appropriate significance thresholds for GHG emissions and climate change, as stated in the 2010 updates to the CEQA Guidelines related to GHG emissions; and further, that AB 32 and the BAU methodology are an appropriate means of determining the cumulative significance of project-related GHG emissions under CEQA.

This decision strengthened the 2010 CEQA Guidelines stating that lead agencies must "make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of GHG emissions resulting from a project" (14 Cal. Code of Regulations. 15064.4(a)).

Friends of Oroville v. City of Oroville (2013)

The Third District Court of Appeals ruled that an EIR prepared for a Walmart expansion in the City of Oroville was insufficient due to a lack of substantial evidence in support of the lead agency's conclusion that the project would result in less than significant GHG emissions after mitigation.

The Court ruled that the City failed to calculate the baseline GHG emissions for the project site in order to accurately estimate the effect of the proposed project's GHG emissions mitigation measures' impact on GHG emissions, compared to existing conditions. Without an estimate of the baseline GHG emissions, or an estimate of the proposed GHG emissions reductions as a result of mitigation, the Court found that a reasonable determination regarding the project's GHG emissions level of significance could not be made.

Despite the City of Oroville's discretion as a lead agency to set appropriate significance thresholds for GHG emissions pursuant to CEQA Guidelines Section 15064.5, the Court rejected the City's comparison of GHG emissions from this individual project against statewide greenhouse emissions to determine whether or not the project would interfere with California's ability to meet AB 32's GHG reduction target. The Court found that GHG emissions from a single store or project are "meaningless," and would logically appear insignificant in comparison to California's total emissions. Therefore, this type of analysis of the significance of project-related GHG emissions was determined to be flawed, and should have relied on a BAU type of comparison.

Finally, the Court found that a project's consistency with the AB 32 Scoping Plan does not constitute substantial evidence to conclude that a project's GHG emissions would be less than significant, and rejected the EIR's finding that project-related GHG emissions were less than significant. The Court determined that emissions and mitigation measures from a single project are not comparable to AB 32 because this legislation is statewide in scope and is not project-specific. Therefore, relying on only AB 32 did not provide adequate project-specific evidence in the form of the amount of GHG emissions and the effects of project-related GHG mitigation measures.

This case highlights the importance of providing a meaningful quantitative assessment of GHG emissions when using statewide emissions reductions targets, such as AB 32, in determining the significance of GHG emissions for a project.

Sierra Club v. County of San Diego (2014)

San Diego County adopted a new General Plan in 2011. Mitigation Measure CC-1.2 in the General Plan's EIR committed the County to preparing a climate action plan (CAP). On the basis of that mitigation measure and its prospective compliance with reduction target of Assembly Bill (AB) 32 and the "Executive Order [EO] S-3-05 trajectory," the EIR concluded that the General Plan's impact would be less than significant. The CAP was to include detailed GHG reduction targets, deadlines for achievement, and "comprehensive and enforceable GHG emissions reductions measures" that would provide a 17% reduction in GHG emissions from County operations, and a 9% reduction in community GHG emissions by 2020.

The County adopted the CAP in 2012 on the basis of an addendum to the General Plan EIR. The CAP included thresholds for determining the significance of an individual project's GHG emissions. The Sierra Club challenged the adequacy of the CAP and thresholds for meeting the requirements of Mitigation Measure CC-1.2, and also challenged the adoption of an addendum rather than a more intensive CEQA analysis. The Court of Appeal decided in favor of the Sierra Club that adoption of a CAP that did not meet the requirements of Mitigation Measure CC-1.2.

The Court found that the CAP does not include enforceable GHG emissions reduction measures, as required by Mitigation Measure CC-1.2. As a result, the CAP would not assure that the mitigation could effectively reduce GHG emissions to a less than significant impact, as found in the 2011 EIR. Court further reasoned that EO S-3-05's 2050 reduction goal set a trajectory for emissions reductions beyond AB 32's 2020 timeframe. Failure of the CAP to implement Mitigation Measure CC-1.2 would mean that neither AB 32's 2020 target, nor S-3-05's more ambitious 2050 goal, could be met. Although the County argued that there were state and federal requirements that would reduce GHG emissions, the record showed that local measures such as those in the CAP would be needed in order for the County to meet the requirements of AB 32 and EO S-3-05.

The Court noted that many of the measures effectively were recommended strategies, rather than requirements, and that the funding needed to implement the measures was lacking. It observed that "… many of the mitigation measures set forth in the MMRP are not likely to achieve GHG emissions reductions by 2020 as promised by Mitigation Measure CC-1.2 because they are not currently funded." Based on the California Supreme Court's *Marina* decision, the Court rejected the County's argument that it did not request funds from SANDAG for transportation measures because the County does not control the allocation of regional transportation funding. The lack of funding made the emissions reductions required by Mitigation Measure CC-1.2 infeasible to achieve.

Cleveland National Forest Foundation et al. v. SANDAG (2014)

In October 2011, SANDAG adopted the 2050 Regional Transportation Plan and Sustainable Communities Plan (RTP/SCS). The RTP/SCS was the first Regional Transportation Plan that included a Sustainable Communities Strategy, and the first to include the regional per capita VMT-related GHG reduction targets for the passenger and light-duty vehicle sector required under Senate Bill 375 for 2020 and 2035. Subsequently, Cleveland National Forest and the Center for Biological Diversity filed a petition claiming that the SANDAG EIR certifying the RTP/SCS was inadequate.

The petitioners claimed that SANDAG failed to properly analyze (among other issues) GHG impacts. The EIR analyzed GHG emissions and concluded that the RTP/SCS would meet the per capita reduction targets identified by the SB 375 mandate. The EIR concluded that the RTP/SCS would result in a net reduction in VMT-related GHG emissions for 2020, and would not conflict with AB 32. The RTP/SCS included projects beyond 2020 and the EIR disclosed an increase in GHG emissions post- 2020. However, the EIR claimed that there were no adopted targets or plans beyond those in AB 32 and SB 375, and therefore concluded that the RTP/SCS did not conflict with any plans to reduce GHG emissions. In 2012, the trial court ruled that the EIR was "impermissibly dismissive of

Executive Order S-03-05" in failing to analyze how the RTPs/SCS 2050 GHG emissions related to the 2050 goal of the Executive Order, and in failing to adequately consider transportation mitigation measures.

SANDAG appealed the lower court decision and in November 2014, a three-judge panel from the Fourth Appellate District issued a 2-to-1 finding upholding the lower court decision, concluding that the EIR violated CEQA. The majority opinion held that the EIR failed to analyze the impact of the RTP/SCS GHG emissions over time (including its increase over baseline emissions by 2050) on the ability of the State to meet the 2050 GHG reduction target in EO S-3-05. Of particular interest, the majority opinion stated that it did not intend to suggest that the RTP/SCS must achieve the EO's 2050 goal, or any other specific numeric goal, but rather that the EIR should have analyzed consistency with the 2050 goal, including consideration of mitigation. The minority opinion asserted that the EO S-3-05 does not, as argued by SANDAG, constitute a mandate or threshold of significance, as it was not passed by the Legislature. The minority opinion asserted that EO S-3-05 does not have an "identifiable foundation in the constitutional power of the Governor or in statutory law." The minority opinion also described the substantial difficulties in determining a regional fair-share of GHG emissions in the absence of a legislative GHG reduction target for 2050, or without a State plan to achieve any such target.

In December 2014, SANDAG voted to appeal the decision to the California Supreme Court, which decided in March 2015 that it would hear the appeal. The case has been briefed (as of June 2016 2016) but no decision has been issued (as of late September 2016).

Center for Biological Diversity v. California Department of Fish and Wildlife ("Newhall Ranch", 2015)

The California Supreme Court rejected the EIR for the 12,000 acre Newhall Land and Farming Co. development project, which would have housed 58,000 people along the Santa Clara River in the foothills of north Los Angeles in more than 20,000 new homes. The EIR for the project was prepared by the California Department of Fish and Wildlife (CDFW) and was then sued by the Center for Biological Diversity. This case also sets landmark precedence in the appropriateness of using BAU when assessing project-related GHG emissions.

The Supreme Court upheld and rejected different parts of the EIR GHG emissions analysis. The Court upheld the general validity of using a BAU methodology for determining the significance of GHG emissions as a result of the project. However, it determined that this EIR did not provide adequate support for its conclusion that cumulative project-related GHG emissions would be less than significant because they were less than the statewide reductions compared to statewide 2020 BAU emissions. The Court ruled that consistency with AB 32 GHG emission reduction target is a valid significance criterion, and the use of percent below BAU as a significance threshold is an acceptable approach under CEQA. However, the EIR lacked substantial evidence to demonstrate that the project's reduction of 31 percent below BAU is consistent with the EIR's referenced California's statewide GHG emission reduction target of 29 percent below statewide BAU[15]. The Court stated that:

[15] Many agencies have been using a metric of 29 percent below BAU based on data referenced to the AB 32 Scoping Plan (2008), which corresponds to the amount of reductions in the 2008 AB 32 Scoping Plan (174 MMTCO2e) compared to the 2020 BAU forecast at the time (596 MMT CO2e), however this amount of reduction is more than is necessary to meet the AB 32 target at the time (427 MMT CO2e). Based on the amount of reductions needed to meet the AB 32 target (based on data available at the time of the 2008 Scoping Plan, the actual reduction amount would be 28 percent below BAU (see tables in the Technical Appendix).

> *At bottom, the EIR's deficiency stems from taking a quantitative comparison method developed by the Scoping Plan as a measure of the GHG 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.*

The comparison used in the project's EIR/EIS would suggest that a statewide GHG reduction target and a specific project's reduction targets require the same "level of effort," which the Supreme Court determined could not be presumed.[16]

The court suggested several potential means for providing substantial evidence to support a significance determination, including a mathematical determination of what level or reduction below BAU would comply with the statewide target based on 1) the Scoping Plan's BAU scenario, 2) consistency with a Climate Action Plan, 3) compliance with regulatory programs (SB 375 RTP/SCS for transportation, building efficiency standards, etc.) and 4) numerical thresholds.

Currently, the use of 2020 as a target year for GHG emissions reductions per AB 32 as a significance criteria is considered valid by the court. However, the Court warned, in a footnote, that "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 targets" than those of the AB 32 2020 target.

This case suggests that lead agencies may use the BAU methodology for determining the significance of GHG emissions as a result of a project provided they do the following 1) substantiate a project's "fair share" contribution of GHG emissions reductions in achieving statewide targets; and 2) explain, using substantial evidence why the project's percent reductions in emissions fits into the state's overall reductions to meet AB 32, SB 32, or future legislated targets.

Implications of Court Rulings

After revision of the CEQA guidelines in 2010 to require lead agencies to identify and evaluate GHG emissions, various legal challenges and court cases regarding analysis of GHG emissions have resulted. The cases discussed above have established legal requirements for adequate analysis of GHG emissions under CEQA, including setting thresholds for GHG emissions within a lead agency's discretion, properly defining the level of significance, and identifying mitigation measures. Overall, the Courts have held that lead agencies have discretion in setting appropriate thresholds for determining the level of significance of GHG emissions as a result of a project under CEQA, provided they are based on substantial evidence.

[16] The plaintiffs had asserted that the percent reduction required at the state level differs from that of the project level, arguing that a greater degree of reduction may be needed from new land use projects than from the economy overall, because new energy–efficient buildings that use renewable energy may be more easily achieved than retrofitting existing buildings. However, the ruling did not explicitly endorse this argument, but rather was limited to a finding that the lead agency had not substantiated the appropriateness of the direct comparison of project emissions to the statewide reduction level without any adjustment.

II. Current CEQA GHG Thresholds

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This section discusses GHG CEQA thresholds in use today (October 2016). With the passage of SB 32, and the likely completion of an updated Scoping Plan for 2030 in 2017, it is expected that CEQA thresholds for GHG emissions will likely be changing in the near future.

A statewide quantitative statewide GHG emission threshold for determining the significance of project-related GHG emissions under CEQA (in absence of tiering from a qualified GHG reduction plan) has not yet been adopted.

Several air districts, as well as other lead agencies, have adopted guidance and recommendations for determining significance for GHG emissions. GHG quantitative thresholds recommended for use when a qualified GHG reduction plan is not available have been developed for land use and stationary source projects. Air districts have permitting authority as the lead agency for stationary sources, and can therefore enforce stationary source GHG emissions thresholds; but they do not have jurisdiction as the lead agency for other types of land use projects. Therefore, although land use projects may use GHG emissions thresholds recommended by an air district, use of their thresholds are only recommended by the air districts and/or are non-binding for other agencies.

In the absence of a statewide threshold, GHG emissions thresholds and approaches to determining significance of GHG emissions are typically used by air districts and lead agencies, either separately or in conjunction with one another, to determine the significance of project-related GHG emissions. Most locally adopted GHG emissions thresholds are based on reductions specified by AB 32, and do not address GHG reductions targets between 2020 and 2050 set out by SB 32 or by EO S-3-05.

Each of these GHG significance thresholds has advantages and disadvantages in terms of legal defensibility and practical application, and each may be appropriate for different types of projects. The Supreme Court's Newhall Ranch decision indicates that the key to ensuring legal defensibility is having substantial evidence for why a threshold is appropriate for a given project to evaluate the GHG emissions of that project. Caution is advised in the use of the percent below BAU threshold concept at present, due to issues raised in the Newhall Ranch case.

Table 2 summarizes the thresholds that have been proposed or adopted by various entities across California. Note that some of the thresholds identified in Table 2 have been withdrawn by the air district and therefore are no longer recommended for use by the air districts for other agency project-level CEQA documents. Thresholds are commonly described on the basis of metric tons of carbon dioxide equivalent ($MTCO_2e$).

1 **Table 2: Proposed or Adopted Greenhouse Gas CEQA Significance Thresholds in California**

Agency	Significance Thresholds (MTCO2e/year for operations, unless otherwise noted)
BAAQMD(1)	Thresholds Adopted but Withdrawn: Projects/Plans: Compliance with GHG reduction strategy; Projects: 1,100 $MTCO_2e$ or 4.6 $MTCO_2e$ /service population (SP)/year; Plans: 6.6 $MTCO_2e$ /SP/year; Stationary: 10,000 $MTCO_2e$
EKAPCD	Thresholds Adopted: Stationary: 25,000 $MTCO_2e$ /year; compliance with state or federal regulation; reduction of GHG emissions by 20% or more.
MBUAPCD	Thresholds Considered, but not Adopted: Stationary: 10,000 $MTCO_2e$ /year; Projects/Plans: compliance with qualified GHG reduction plan; Projects; 4.6 $MTCO_2e$ /SP; Plans 6.6 $MTCO_2e$ /SP
MDAQMD	Threshold Adopted: 100,000 $MTCO_2e$ /year and 548,000 pounds/day for construction and/or operational emissions
SBCAPCD	Thresholds Adopted: "AB 32 Consistency" threshold for stationary sources: 1) screening level of 10,000 MTCO2e, or 2) compliance with an approved GHG reduction program (e.g. Cap-and-Trade}, or 3) consistency with the AB 32 Scoping Plan by reducing emissions 15.3% below BAU.
San Diego County (2)	Thresholds Adopted but Withdrawn: Tier 1: Categorical Exemption Tier 2: Screening Criteria (Construction or Operation): 2,500 $MTCO_2e$ (projects must apply at least one relevant Climate Action Plan measure) Tier 3: Thresholds: Project/Plan: 4.32 $MTCO_2e$ /SP; Project: 2,500 $MTCO_2e$; or 16% reduction relative to BAU conditions (excluding RPS, Pavley reductions) Stationary: 10,000 $MTCO_2e$
SLOAPCD	Thresholds Adopted: Compliance with GHG reduction strategy; Projects: 1,150 $MTCO_2e$; Plans: 4.9 $MTCO_2e$ /SP; Stationary Sources: 10,000 $MTCO_2e$
SCAQMD	Draft Framework for Land Use Projects (never Adopted): Tier 1: Categorical Exemptions Tier 2: Consistent with GHG Reduction Plan Tier 3: Res./Comm. Projects: 3,000 MTCO2e/year; Res.: 3,500 MTCO2e/year; Comm.: 1,400 MTCO2e/year; Mixed-Use: 3,000 MTCO2e/year Tier 4: Performance Standards: Projects required to reduce emissions by a specific amount, implement specified measures or meet efficiency target Tier 5: Mitigation Offsets: Obtain offsets that would allow them to meet the Tier 4 performance standards. SCAQMD adopted a stationary threshold of 10,000 $MTCO_2e$ /year for projects that SCAQMD is the lead agency.
SMAQMD	Thresholds Adopted: Construction: 1,100 $MTCO_2e$ /year; Operational 1,100 $MTCO_2e$ /year (land use projects) or 21.7% reduction below the No Action Taken (NAT) scenario (the NAT threshold has been withdrawn), 10,000 $MTCO_2e$ /year (stationary sources only)
SJVAPCD	Thresholds Adopted: Projects/Plans: Compliance with GHG reduction strategy; Projects: Implementation of best performance standards; Projects: 29% reduction in GHG emissions relative to BAU conditions

Acronyms: Bay Area Air Quality Management District (BAAQMD); East Kern Air Pollution Control District (EKAPCD); MBUAPCD (Monterey Bay Unified Air Pollution Control District); MDAQMD (Mojave Desert Air Quality Management District), SBCAPCD (Santa Barbara County Air Pollution Control District); SLOAPCD (San Luis Obispo Air Pollution Control District); SCAQMD (South Coast Air Quality Management District); SMAQMD (Sacramento Metropolitan Air Quality Management District); SJVAPCD (San Joaquin Valley Air Pollution Control District); MT (metric ton); MTCO2e: Metric tons of carbon dioxide equivalent; SP (Service Population = residents + employees); NAT (No Action Taken); BAU (Business as Usual); RPS (Renewable Portfolio Standard).

Sources: BAAQMD, 2011; EKAPCD, 2012; MBUAPCD, 2011; MDAQMD 2011; San Diego County, 2012; SLOAPCD, 2012; SJVAPCD, 2009; SBCAPCD, 2015; SCAQMD, 2010; SCAQMD, 2008; SMAQMD 2014.

Notes:

(1) Thresholds originally proposed as part of 2010/2011 CEQA Guidelines but currently not recommended for use as indicated on BAAQMD website.

(2) Thresholds withdrawn after Appellate court ruling in Sierra Club vs. San Diego County lawsuit.

Consistency with a Qualified GHG Reduction Plan

Establishing consistency with a qualified GHG reduction plan (per CEQA Guidelines Section 15183.5) is a common approach to determining significance for individual projects, and is used in certain jurisdictions (such as San Francisco, Mountain View, and San Bernardino County and other jurisdictions with adopted CAPs). CEQA Guidelines Section 15183.5 allows lead agencies to analyze and mitigate the significant effects of GHG emissions at a programmatic level, such as in a general plan, in a long range development plan, or in a separate plan (such as a CAP) to reduce GHG emissions, so that later project-specific environmental documents may tier from the prior analysis to determine significance. Most jurisdictions using this approach to CEQA have developed consistency checklists by which to review the consistency of individual projects with the jurisdiction's GHG reduction plan. Some jurisdictions, such as San Francisco, do not require quantification of GHG emissions for the CEQA documentation.

Construction Emissions

Construction emissions have been addressed by some, but not all, air districts, and approaches for addressing construction-related GHG emissions can vary.

Some lead agencies use a "best management practice" (BMP) approach to evaluating construction emissions, in which feasible BMPs are required for construction, and if a project implements them, the construction emissions are determined to be less than significant. The BAAQMD recommended this approach in their CEQA guidelines.

Some lead agencies are amortizing construction emissions over the lifetime of a project and then comparing the annualized emissions to one of the quantitative thresholds. Other agencies are adding annualized construction emission to operational emissions and then comparing the combined emissions to one of the quantitative thresholds.

Operational "Bright-Line" Thresholds

The bright line significance threshold is a numeric mass emissions threshold. In general, the bright line threshold identifies the point at which additional analysis (and mitigation) of project-related GHG emissions impacts is deemed necessary. Projects below the established bright line significance criteria have a less than considerable contribution to cumulative global emissions and thus would have less than significant impacts. The bright line threshold is typically based on a pre-determined "capture" rate, or a gap analysis tied to AB 32 reduction targets. There are several methods for establishing a bright line threshold for land use development projects, as described below.

- **90 Percent Market Capture.** This approach captures a substantial fraction of the emissions of future residential and nonresidential development constructed to accommodate future population and job growth[17], but excludes small development projects that would contribute a relatively small fraction of the cumulative statewide GHG emissions. A capture rate of 90 percent of future emissions from discretionary development has commonly been used. Example bright line thresholds developed using a 90 percent capture market include:
  - 900 $MTCO_2e$: California Air Pollution Control Offices Association (CAPCOA)[18]

[17] The current bright line thresholds were developed using regional development forecasts.

[18] The CAPCOA analysis was only an example calculation using limited data from certain select cities in Northern and Southern California and was never intended to be used as an actual threshold. The calculation included emissions from projects that may be categorically or statutorily exempt from CEQA.

- 1,100 $MTCO_2e$: Sacramento Metropolitan Air Quality Management District.
- 3,000 $MTCO_2e$: South Coast Air Quality Management District for all project types.

- **Gap Based Threshold Approach.** Some air districts have based their recommended threshold of the shortfall, or "gap," between the anticipated 2020 land use sector emissions, taking into account the reductions from adopted Scoping Plan regulations and the necessary land use sector emissions needed in 2020 to meet 1990 levels. This gap represents additional GHG emission reductions needed from the land use sectors, and it can be used to derive a threshold to identify those projects for which mitigation is necessary to meet statewide GHG emission reduction targets for the land use sector. Example bright line thresholds developed using a gap based analysis include:
  - 1,100 $MTCO_2e$: Bay Area Air Quality Management District.[19]
  - 1,150 $MTCO_2e$: San Luis Obispo County Air Pollution Control District.[20]
  - 2,500 $MTCo_2e$: County of San Diego (threshold withdrawn).
- **Federal Permitting Threshold**. The EPA, under the Title V GHG Tailoring rule, established a GHG emissions permitting threshold for new facilities of 100,000 tons per year of CO_2e. The permitting threshold for existing facilities with emissions of 100,000 tons per year of CO_2e for Prevention of Significant Deterioration (PSD) modifications is 75,000 tons per year of CO_2e. The Mojave Desert Air Quality Management District adopted a CEQA threshold of 100,000 $MTCO_2e$ based on the federal permit triggers.

As noted above, there is considerable variation in the bright line significance threshold throughout the state. Air districts consider emissions from the type and number of local projects implemented in their district when setting the mass emissions threshold. The Committee does not recommend one methodology over another, but instead provides options for lead agencies to consider when setting the bright line significance threshold.

Exceeding the bright line significance criteria does not necessarily indicate that the project generates a significant unavoidable impact. Otherwise, all large projects, by the very fact of their size, would inherently result in a significant impact regardless of how GHG-efficient the project may be. Therefore, the air districts identified above have all recommended and/or identified that projects exceeding the bright line significance criteria should evaluate emissions using the efficiency and/or percent below BAU-based approach (described below); and only if GHG emissions are above those secondary thresholds would a given project be considered to have a significant impact.

Percent below Business as Usual

Percent below business as usual thresholds are quantitative thresholds based on a specific percent reduction from a BAU projection of project emissions. Because the BAU scenario is based on a "future" condition, the significance conclusion is not derived from the increase in GHG emissions from existing conditions, but is rather based on the project's reduction in emissions from an unmitigated condition. The precise percent reduction varies depending on the base year used and the specific future year forecasting. Most lead agencies employing this threshold have used a 29

[19] Equivalent to a capture rate of 92 percent of GHG emissions and 59 percent of projects.

[20] Equivalent to a capture rate of 81 percent of GHG emissions and 95 percent of projects.

percent below BAU value.[21] In order to apply the percent below BAU level threshold, the project's BAU emissions must first be estimated using the same efficiencies used in the AB 32 Scoping Plan inventory as of 2008, without including any project or state GHG reduction measures.[22] Then the project's emissions must be calculated using project features and state GHG reduction measures, and compared to the target percent below BAU level to determine if the GHG emissions are significant.

The following air districts have identified percent below BAU thresholds:

- San Joaquin Valley Air Pollution Control District—29 percent reduction below BAU using Best Performance Standards (BPS). The 29 percent reduction below BAU is based on the forecast included in the 2008 Scoping Plan.
- Sacramento Metropolitan Air Quality Management District—21.7 percent reduction below BAU (threshold withdrawn).[23] The 21.7 percent reduction below BAU is based on an updated emissions forecast conducted by the California Air Resources Board in light of the economic recession.
- County of San Diego—16 percent reduction below BAU (threshold withdrawn). The 16 percent reduction below BAU is based on the county-specific emissions forecast conducted for the Draft Climate Action Plan.

As discussed above, the Newhall Ranch decision establishes that lead agencies must provide substantial evidence as to why a project's emissions reduction below an unmitigated condition relates to the statewide reductions needed to meet the AB 32 target. A mere quantitative comparison to the same level of statewide reduction needed to meet AB 32 is insufficient. Lead agencies should evaluate the relationship between the state's GHG emissions inventory and a development project percent below BAU reductions.

Efficiency Thresholds

Efficiency thresholds are quantitative thresholds that are based on a measurement of GHG efficiency for a given project, regardless of the amount of mass emissions. Projects that attain the efficiency target, with or without mitigation, would result in less than significant GHG emissions. The efficiency metric commonly used is GHG emissions divided by the "service population" (SP), which is the sum of people who live (residents) and work (employees) in the project site.[24] The efficiency metric considers the GHG reduction measures integrated into a project's design and operation (or through mitigation), and is based on the net increase in emissions; however, the significance conclusion is not based on the magnitude of the increase in mass emissions.

[21] As noted above, while many agencies have been using a metric of 29 percent below BAU based, the actual data in the Scoping Plan (as shown in the Technical Appendix to this document) would support a metric of 28 percent below BAU.

[22] One can develop percent below BAU thresholds using different base years and forecasts. For example, based on the CARB 2014 forecasted 2020 statewide California BAU emissions (CARB estimated 2020 BAU emissions of 509 MMTC02e including 30 MMTC02e reductions from Pavley/LCFS and thus the "true" BAU would be 539 MMTCO2e) would need to be reduced by approximately 20 percent from 2020 BAU emissions. As noted above, a project's evaluation of GHG emissions would need to use the same GHG efficiencies as the base year used to calculate the 2020 BAU emissions and the percent reduction level.

[23] The Sacramento Metropolitan Air Quality Management District's threshold was based on the state's updated GHG emissions inventory available prior to the 2014 Update to the Scoping Plan.

[24] Although one could develop per capita based efficiency thresholds, to date this is not in common use in California, in part out of the desire to have a single threshold that could address residential, commercial and mixed-use projects instead of separate thresholds.

The current efficiency-based significance thresholds in use are based on the 1990 land use sector emissions, divided by the forecasted employment and population for 2020. The expectation is that emissions per SP or per person in 2020 generated by the land use sector need to match emissions generated per SP or per person by the land use sector in 1990 in order to meet the AB 32 target, which is 1990 emissions levels by 2020. Since employment and population will be higher in 2020 than in 1990, the land use sector as a whole must therefore be more efficient in 2020 (e.g., fewer emissions per SP or per person).

The following efficiency thresholds are in use today and are based on the statewide 1990 emissions inventory for the state:

- 4.6 $MTCO_2e$/SP Project-Level and 6.6 $MTCO_2e$ Plan-Level: Bay Area Air Quality Management District;[25]
- 4.8 $MTCO_2e$/SP Project-Level and 6.6 $MTCO_2e$ Plan-Level: South Coast Air Quality Management District;[26]
- 4.9 $MTCO_2e$/SP Project-Level: San Luis Obispo County Air Pollution Control District;[27] and
- 4.32 $MTCO_2e$/SP Project-Level: County of San Diego (threshold withdrawn).[28]

[25] BAAQMD took the 1990 land use sector GHG emissions (295. 5 $MMTCO_2e$/yr.) and divided it by the total 2020 statewide SP using population plus total employment (44.1 million + 20.2 million = total SP of 64.3 million). The Plan-Level threshold is based on the entire 1990 state inventory for all sectors and the total service population.

[26] SCAQMD used a forecasted 2020 statewide employment for the land use sector only (17.1 million) instead of total 2020 statewide employment for all sectors as BAAQMD did, combined with the same forecasted 2020 population (44.1 million) as BAAQMD, resulting in a total SP of 61.2 million. The Plan-Level threshold is calculated the same way as BAAQMD.

[27] SLOAPCD used an estimated Land Use Sector GHG Emissions inventory of 308.3 MMTCO2e, which included some inventory categories not included by BAAQMD and SCAQMD, including wineries, construction and mining equipment. SLOAPCD used a forecasted 2020 population of 44.1 million and a forecasted 2020 employment of 18.2 million for a total SP of 62.3 million.

[28] San Diego County used an adjusted 1990 GHG Emissions Inventory of 264.1 MMT CO2e which excluded industrial electricity consumption, aviation, non-specified transportation, rail, water-borne transportation, industrial solid waste, industrial wastewater treatment emissions and national security emissions. The documentation provided by San Diego County did not identify the actual 2020 forecasted population or employment for the state, but back calculating from the 4.32 MTC02e/SP metric, the forecasted 2020 Service Population used was approximately 61.1 million.

III. Foundational Principles for Developing and Using CEQA GHG Thresholds

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This section describes the Committee's recommended foundational principles for developing GHG thresholds, and comparing project GHG emissions to thresholds supporting a CEQA lead agency's determination whether a project's incremental contribution to GHG emissions impacts would or would not be cumulatively considerable for plan-level and project-level analyses.

The Committee respects that there are many different views on the appropriate approach to CEQA evaluation and the approach presented herein is only one view. Lead agencies are advised to consider all perspectives when choosing their approach.

Use a Threshold that Applies to All GHG Emissions

The SB 97 Guidelines require that CEQA evaluations consider GHG emissions in their entirety. CEQA Guidelines Section 15364.5 defines GHGs as including, but not limited to: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The focus of past and present Scoping Plans for AB 32 (and now SB 32) have been on reducing overall GHG emissions. SB 1383 (2016) established specific reduction targets for methane, HFCs, and anthropogenic black carbon. CEQA Guidelines Section 15364.5 already included methane and HFCs in the definition of GHG emissions but did not specifically name anthropogenic black carbon, although it makes clear that the GHG emission definition is not limited to the named gases.

SB 1383 raises two key questions for CEQA compliance:

1. Should anthropogenic black carbon be included in CEQA GHG evaluations?
2. In addition to thresholds for GHG emissions overall, should CEQA evaluations also separately consider methane, HFCs, and anthropogenic black carbon thresholds?

Regarding the first question, the state's GHG inventory does not include anthropogenic black carbon, although the Draft SLCP Strategy (April 2016) provides a 2013 estimate and forecasts for this pollutant. Given the state's new focus on SLCPs, including anthropogenic black carbon, the Committee recommends including this pollutant in CEQA GHG inventories. As CEQA evaluations usually quantify particulate matter already, this should not be an additional burden on the effort for lead agencies. However, unless and until the state integrates black carbon into the state GHG inventory, project level evaluations should consider black carbon separately from other GHG emissions if using a threshold based on the state's GHG inventory.

Regarding the second question, there is a risk of double-counting impacts under CEQA if evaluating methane, HFCs, and black carbon once under the rubric of overall GHG emissions and then a second time using gas-specific thresholds for the SLCPs also out of a concern for impacts on climate change. Furthermore, black carbon is already routinely being evaluated as a regional criteria pollutant as particulate matter (PM_{10} and $PM_{2.5}$) and as a localized toxic air contaminant (sometimes as Diesel Particulate Matter for diesel emissions and separately for $PM_{2.5}$). The concern about SLCPs being addressed by SB 1383 is the short-term (as in decadal) effect on climate, which is distinct from concerns about regional or local air quality.

It would be more elegant and efficient to analyze all GHG emissions using a single threshold rather than separating out the analysis into a gas by gas analysis. Thus, the Committee recommends a hybrid approach to dealing with both long-term and short-term climate pollutants as follows:

- Evaluate all GHGs (including methane, HFCs, and black carbon) quantitatively using 100 year GWPs utilizing a threshold derived directly or indirectly from state overall targets for reducing GHGs.
- In addition, evaluate project SLCP emissions qualitatively for consistency with the Final SLCP strategy in terms of how the project's emissions will or won't be controlled consistent with the statewide strategy.

Include the Appropriate Project GHG Emissions in the Comparison to a Threshold

The CEQA Guidelines Section 15064.4 requires that lead agencies make a good faith effort to describe, calculate, or estimate GHG emissions for a project. CEQA documents should include a reasonably foreseeable emissions estimate of GHG emissions over which the project has direct and/or indirect control. [29,30]

For most land use projects, the following long-term GHG emissions should be included in the project inventory:

- **On-Road Transportation**: Indirect emissions from trip generation and VMT from passenger vehicles and trucks generated by a project (production-based emissions due to fuel combustion in vehicles).
- **Electricity and Natural Gas Use**: Consumption-based emissions[31] from an increase in electricity use and natural gas use.
- **Area Sources**: Production-based emissions from area sources (e.g., other direct fuel use for heating, and off-road vehicle use).
- **Stationary Sources:** Direct emissions from stationary source fuel combustion (e.g., diesel emergency generators).
- **Water Use/Wastewater Generation**: Consumption-based emissions[15] from an increase in water use and wastewater generation associated the project (the embodied energy in water demand as well as GHG emissions related to the treatment of wastewater generated).
- **Solid Waste Disposal**: Consumption-based emissions[15] from solid waste disposal generated during the inventory year (methane emissions from landfills).
- **Construction**: One-time GHG emissions generated during construction of a project.

[29] Quantification of GHG emissions and emissions factors should be based on the latest scientific information and current modeling tools recommended by the local air districts.

[30] Biogenic GHG emissions need not be considered part of the project's indirect and direct GHG emissions if it can be demonstrated that they are part of the natural biological/physical carbon cycle and do not result in a net increase of GHG emission.

[31] For the purpose of CEQA evaluation, indirect emissions associated with electricity, water/wastewater, and solid waste "used" onsite occur elsewhere offsite but should still be included in the project evaluation as they are a direct result of the project and can be readily estimated without speculation.

- **Land Cover Change:** Changes in carbon stock and sequestration, including one-time emissions (loss of carbon stock), as well as ongoing net changes in emissions (loss or change in annual carbon sequestration).

Although these are the primary sectors that should be considered, nothing precludes a jurisdiction from considering other sources of GHG emissions that the project would have direct or indirect control over. For example, projects that include regulated sources of emissions requiring a permit from the local air quality management district may also need to evaluate GHG emissions from these sources if details are known at the time of the development application. However, if stationary sources of GHG are included in the project inventory, then a threshold should be used that was developed with the inclusion of stationary source emissions.

Based on current CEQA practice, "lifecycle" emissions associated with the production, use, and disposal of products and services are not commonly included in project inventories, since identifying those lifecycle emissions are typically remote and speculative for most land use projects.

Count State and Federal Actions

The project's emissions should take into account emissions reductions achieved by state and federal regulations that were adopted at the time of the environmental evaluation. Where the adopted regulations establish a definitive schedule of actions for the future, the effect of the regulations can be included in the project's evaluation of future emissions. For example, adopted state and federal regulations (Pavley I, Advanced Clean Cars, and the federal CAFÉ standards for 2017–2025) will improve passenger vehicle efficiency substantially through 2025, with new vehicles in 2025 having an average efficiency equivalent to 54 miles per gallon; modelling can take into account the improved vehicle efficiency over time, as those new vehicles are incorporated into existing fleets. Other regulations, such as the current and future RPS requirements included in SB 350 (2015), where they apply to an electricity supply to be used by the project, can also be included.

Caution should be taken to include only those reductions that are definitively going to occur, and which directly apply to the project's emissions inventory. If there is any uncertainty in the applicability or GHG reduction potential of state and federal actions, then the project's emissions inventory should not take into account reductions from these uncertain or undefined measures.

Depending on the type of threshold concept utilized, emissions may need to be estimated both before and after application of state and federal measures. For bright line and efficiency thresholds, there is no need to estimate emissions with and without state and federal measures; but if a percent below BAU metric is utilized, then the project's emissions may need to be estimated only using the measures that are included in the referenced BAU forecast.

Use a Threshold that Applies to Your Project

Thresholds used for project evaluation should apply to the type of project being evaluated. A threshold based on evaluation of the land use sector and derived from land use sector inventories should not be used for projects with substantial emission sources that are not included in the land use sector inventory. For example, industrial projects, which clearly are not anticipated in a land use sector-derived threshold, should not be evaluated using a land use threshold. Similarly, a threshold designed for a stationary pollution source—such as the 10,000 MTCO2e threshold adopted by BAAQMD or the 100,000 MTCO2e threshold adopted by MDAQMD—should not be used for a land use project.

Identify the Project Horizon Year

Unlike other environmental topics covered in the CEQA Guidelines, GHG emission impacts are long-term, cumulative impacts whose effects are not immediate, but occur over time. The State has established a declining cap on statewide GHG emissions. As a result, GHG emissions thresholds are dependent on the reference point-in-time in order to demonstrate that the project is consistent with statewide targets at the time the project develops. The horizon year should be defined by the year in which the project is fully realized.

The Committee recommends that GHG emissions impacts should be identified for the project horizon year and lead agencies should consider the project horizon year when applying a threshold of significance.

The applied threshold should be based on the state-adopted target for the next milestone.

Several examples help illustrate this point:

- *A 1,000 unit residential project that will be constructed and occupied in 2016:* Horizon = 2016.
- *A 500,000 square foot sports and entertainment complex that will be completed in 2019 with first operations in 2020:* Horizon = 2020.
- *A 7 million square foot mixed-use project with 7 phases that will be fully built in 2025:* Horizon = 2025.
- *A General Plan with build-out in 2040:* Horizon = 2040

Identify the Next Statewide Milestone Target Relevant to the Project

The agency thresholds described earlier are all based in various ways on the GHG emissions objectives of AB 32 for 2020. As previously noted, AB 32 requires the state to achieve 1990 levels by 2020, SB 32 requires the state to achieve 40 percent below 1990 levels by 2030, and Executive Order S-03-05 sets a goal of 80 percent below 1990 levels by 2050.

The Committee recommends that thresholds used for project evaluation should be based on the next statewide milestone target after the project horizon for which statewide planning has been completed (e.g. adoption of a Scoping Plan). For current (2016) projects with a horizon of 2020 or earlier, a threshold based on meeting AB 32 targets should be used since the AB 32 Scoping Plan has been fully realized. For projects with a horizon between 2021 and 2030, a threshold based on meeting or making substantial progress toward the 2030 target in SB 32 should be used. For projects with a horizon between 2031 and 2050, a threshold based on meeting or making substantial progress toward the 2050 target in EO S-03-05 should be used.

Using the examples from above:

- *A 1,000 unit residential project that will be completed in 2017*: A threshold based on AB 32 targets for 2020 should be used.
- *A 500,000 square foot sports and entertainment complex that will be completed in 2019 with first operations in 2020*: A threshold based on AB 32 targets for 2020 should be used.
- *A 7 million square foot mixed-use project with 7 phases that will be fully built in 2025:* A threshold based on the 2030 target in SB 32 should be used.
- *A General Plan with build-out in 2040:* A threshold based on the 2050 target in S-03-05 should be used.

Use the "Substantial Progress" Paradigm to Identify the Threshold[32]

Since GHG planning has a long horizon, out to 2050 (and beyond), reduction progress will not be a one-step process, but rather a phased set of reductions over time. Thus the best measure of whether an individual project is providing its fair share of GHG reductions, or its fair share efficiency level, is whether that project supports "substantial progress" toward the statewide reduction targets over time; not whether the project is meeting a milestone target many years in the future, such as for 2050.

The "substantial progress" threshold could be judged in quantitative terms in regards to whether the project achieves reductions or a level of efficiency interpolated between the current milestone target for which an effective statewide plan exists (such as for 2020), and the next milestone target for which an effective statewide plan does not exist (such as for 2030).

The Committee recommends that for projects with a horizon of 2020 or earlier, a threshold based on meeting AB 32 targets should be used. Since AB 32 is already being fully implemented, projects should be evaluated using the full AB 32 target for 2020. A more conservative approach would be to use a 2030 threshold based on SB 32 even if the project horizon is 2020 or earlier.

The Committee recommends that for projects with a horizon between 2021 and 2030—since there is no current plan on how to achieve the 2030 targets—a threshold based on substantial progress toward meeting the SB 32 target should be used. For example, until the state has an effective plan for 2030, if a project has a horizon of 2025, then a threshold based on the progress needed by 2025 could be used. The threshold for 2025 would be interpolated linearly between the AB 32 2020 target and the SB 32 2030 target. Once the state has a full plan for 2030 (which is expected in 2017), and then a project with a horizon between 2021 and 2030 should be evaluated based on a threshold using the 2030 target. A more conservative approach would be to apply a 2030 threshold based on SB 32 for any project with a horizon between 2021 and 2030 regardless of the status of the Scoping Plan Update. For projects with a horizon between 2031 and 2050 (similar to the discussion above for 2030, since there is no current plan on how to achieve the 2050 targets and adopted statewide regulations are insufficient to meet the 2050 target), a threshold based on substantial progress toward meeting the E-03-05 2050 goal should be used. For example, until the state has an effective plan for 2050, if a project has a horizon of 2035, then a threshold based on the progress needed by 2035 could be used (using interpolation between the 2030 target and the 2050 goal). Once the state has a legislated target and statewide implementation plan for 2050, then a project should be evaluated based on a threshold using the adopted 2050 target.

Using the examples from above:

- *A 1,000 unit residential project that will be completed in 2017*: A threshold based on AB 32 target for 2020 should be used (unless a project is within a location wherein a lead agency or air district is recommending a 2030 SB 32 based target should be used).
- *A 500,000 square foot sports and entertainment complex that will be completed in 2019 with first operations in 2020*: A threshold based on AB 32 target for 2020 should be used (unless a

[32] As noted above, one commenter on the Draft version of this White Paper objected to the substantial progress paradigm and recommend a more stringent Best Available Mitigation approach in which projects would be required to implement all currently feasible mitigation in order to be determined less than significant. They recommended this approach given the long term ambitious goals to reduce GHG emissions that will ultimately require more than that required to meet AB 32 and SB 32.

project is within a location wherein a lead agency or air district is recommending a 2030 SB 32 based target should be used).

- *A 7 million square foot mixed-use project with 7 phases that will be fully built in 2025:* A threshold based on substantial progress toward meeting the 2030 target in SB 32 should be used until such time that the state has a comprehensive plan to reach the 2030 target (expected in 2017). In this example, that would be the amount of reductions or efficiency needed by 2025. Interpolating between the 2020 target (1990 emissions) and the 2030 target (40% below 1990 emissions), the 2025 threshold would be based on a target of 20% below 1990 emissions. Once the Scoping Plan Update for 2030 has been adopted, then a threshold should be based on the SB 32 target of 40% below 1990 emissions.
- *A General Plan with build-out in 2040:* A threshold based on substantial progress toward meeting the 2050 target in S-03-05 should be used until such time that the state has a comprehensive plan to reach the 2050 target. In this example, that could be the amount of reductions or efficiency needed by 2040. Interpolating between the 2030 target (40% below 1990 emissions) and the 2050 target (80% below 1990 emissions), the 2040 threshold would be based on a target of 60% below 1990 emissions.

Show Your Work (Provide Substantial Evidence)

If there is one lesson to heed from the Newhall Ranch ruling it is that CEQA lead agencies should provide substantial evidence in their CEQA documents to support their significance determination regarding GHG emissions. Mere citation of a threshold is not sufficient. Case law long before the Newhall Ranch ruling demonstrated that nothing is taken as self-evident, obvious or "common sense" in CEQA. One must show one's work in order to get credit for it.

The Committee recommends that CEQA lead agencies document and explain their rationale as to why a specific threshold is appropriate for evaluation of the subject project. Where appropriate, a CEQA lead agency can cite and incorporate by reference the rationale provided by an air district or other party as to why a particular threshold concept may be appropriate, but CEQA lead agencies are advised to provide a summary of that rational in the CEQA document itself so that it is clear to the reader (and especially to any potential court) that the lead agency has substantial evidence for the threshold selected, as well as for the method used to determine significance.

IV. New CEQA Thresholds for the Post-Newhall and Post-2020 Era

Rich Walter, ICF

Based on the background of California regulatory action, CEQA court rulings, current CEQA and CAP practice, and the foundational principles for threshold development for the future, this section discusses potential CEQA thresholds for consideration by lead agencies in light of both the post-2020 and post-Newhall Ranch ruling issues.

Due to the unique challenges associated with the percent below BAU threshold approach in light of the Newhall Ranch ruling, the Committee makes no recommendations concerning its use as a CEQA threshold at this time and recommends lead agencies consult legal counsel before considering its use. The BAU threshold approach is discussed separately in Section V below.

Construction Emissions

Construction emissions, as a one-time emissions source, are not the primary focus of most of GHG reduction planning, and constitute only a small part of the state's overall inventory. However, given that CEQA abhors a vacuum, and given that a project's construction emissions may represent a significant portion of total construction and operational emissions combined, the Committee recommends that CEQA lead agencies include construction emissions in their CEQA documents and evaluate their significance using one of the following two methods[33]:

- *Use Best Management Practices:* Review the construction emissions and require the application of all feasible BMPs for construction including 1) alternatively fueled vehicles, including electrification as well as alternative fuels where reasonably available and certified for use in construction equipment and vehicles (B5, B20, B100, renewable diesel, etc.), 2) reduction of worker trips, where appropriate, and 3) sourcing of construction materials from local sources when possible without substantial cost implications.
- *Amortize Construction Emissions Over the Operational Lifetime*: Identify the total construction emissions for all years of construction, divide them by the total number of years representative of the operational lifetime, and then combine with the operational annual emissions to make a single significance determination. For example, if construction of the project occurs over 3 years and the operational lifetime is 30 years, sum up all 3 years of construction emissions, divide by 30, and add the resulting emissions to the annual operational emissions associated with the project.

The challenges of post-2020 GHG reductions would not result in a substantial change in the types of thresholds used for evaluating of construction emissions, but the scrutiny to address all project sources may increase; thus the Committee recommends that CEQA lead agencies be comprehensive

[33] A third method is recommended by SMAQMD which is to use the operational threshold to evaluate construction GHG emissions. SMAQMD recommends this approach to provide a single standard for both construction and operations. Operational thresholds are usually developed using a methodology that focuses on operational emissions, not construction emissions. While this may be an acceptable approach in the SMAQMD area if a lead agency finds the rationale provided by SMAQMD in their justification document to be sufficient as substantial evidence, the Committee does not recommend its use in other areas unless a specific rational is developed to describe why the use of the same threshold for both construction and operation is appropriate and would result in GHG emissions consistent with statewide reduction targets.

when using the BMP approach, and that they ensure use of an appropriate post-2020 based threshold if the project includes a horizon beyond 2020.

The Newhall Ranch ruling did not particularly address construction emissions, but it alluded to the need to include all aspects of the project in the GHG analysis. Therefore, the Committee recommends that an explanation of the reasoning behind the significance determination for construction emissions be provided in the document per the ruling's emphasis on substantial evidence.

Operational Emissions from Land Use Development Projects

Potential thresholds for the evaluation of operational emissions from residential, commercial, and mixed-use projects are discussed below. A discussion of post-2020 and Newhall Ranch ruling considerations is provided for each threshold concept. The percent below BAU threshold approach is discussed separately in Section V below.

Please note that the definition for "commercial" projects used herein focuses on office and retail projects, and does not include industrial projects with unique emissions sources not included in the land use sector inventory, such as industrial processes or stationary sources, or heavy off-road vehicle or equipment operations (such as mining). The land use sector thresholds described below are not considered appropriate for evaluating the following types of projects:

- heavy industry or manufacturing projects with substantial process or stationary source emissions;
- oil and gas exploration, production, refining, and transportation;
- agricultural harvesting or processing;
- mining;
- timber harvesting;
- port cargo handling and marine emissions; and
- any other projects with emissions that are substantially different from residential and commercial office and retail projects.[34]

The definition of "commercial" used herein also excludes transportation projects or plans, whether public or private.

Consistency with Qualified GHG Reduction Plan

Current (2020 Milestone) Considerations

As noted above, CEQA Guidelines Section 15183.5 defines the requirements for a qualified GHG reduction plan. Under this threshold concept, a project that is consistent with a qualified GHG reduction plan would be found to have a less than considerable (i.e., less than significant) contribution to cumulative emissions. The project must be anticipated by the qualified plan, and the project must be fully consistent with the plan (and/or provide the equivalent reductions to that which would be expected under the plan for that project). The Committee recommends that

[34] Some ports have commercial operations, such as hotels or convention centers that operate the same as hotels or convention centers outside of Port districts. Such projects would be suitable for evaluation using a land use threshold given the commonality of emissions inventories.

documentation, in the form of a line-by-line review of the project's consistency with the plan measures and requirements, be provided in the CEQA document or as an attachment to the CEQA document.

Post-2020 Considerations

Projects with a horizon year (e.g. the year in which the project is fully realized) beyond 2020 should not tier from a GHG reduction plan that may be qualified up to 2020 but is not yet qualified for a post-2020 period. Analysis of consistency with a 2020 plan should be provided in the CEQA document, but would not be sufficient to demonstrate a less than significant impact for project with a post-2020 horizon.

The Committee recommends that projects with a horizon past 2020 should only tier from a qualified GHG reduction plan that provides substantial progress toward meeting the next milestone statewide planning reduction target for the jurisdiction in which the project is located. In the immediate future, the next reduction milestone would be 2030, per SB 32, and eventually will be 2050, per S-03-05. A GHG reduction plan could have a horizon between the 2020 and 2030 milestone targets until a statewide plan for 2030 exists, and similarly between 2030 and 2050 in the future until a statewide plan for 2050 exists.

Responding to Newhall Ranch

The Newhall Ranch ruling specifically endorsed as an acceptable approach a significance determination based on consistency with a GHG reduction plan that anticipates a project's emissions. Because qualified GHG reduction plans are comprehensive analyses of both existing and new development emissions within a jurisdiction, and include a reduction target consistent with statewide reduction planning, this approach to CEQA compliance is currently the most defendable of all the threshold approaches discussed in this white paper.

Bright Line Thresholds

Current (2020 Milestone) Considerations

Bright line thresholds can come in two varieties: 1) Stand-alone threshold in which projects with emissions above the threshold are considered significant; and 2) a screening threshold in which projects with emissions above the threshold are evaluated suing a second tier threshold using an efficiency threshold or other threshold concept) to determine if the emissions are actually significant or not.

There is a common misperception about bright line thresholds, which holds that any project with emissions greater than the bright line is by definition significant. This is only true if the threshold is an absolute limit above which there is a substantial evidence based argument that a greater amount of emissions is significant.

Most bright line thresholds identified for land use projects are actually screening thresholds intend to be combined with a second-tier threshold. While it's true that the bright line concept is based on an argument positing that projects with emissions less than the bright line are less than significant, the opposite is not true for the bright-line screening thresholds. Projects with emissions greater than the bright line screening threshold may require further evaluation of their emissions and consideration of mitigation and may or may not ultimately be determined to be significant depending on that additional evaluation.

Post-2020 Considerations

The bright line thresholds in use around the state to evaluate land use projects were primarily derived in one of two ways[35]: 1) by estimating a level that would capture 90 percent of the land use sector emissions that would arise from new development out to the milestone year for a region, or 2) by conducting a regional gap analysis, assuming an approximate amount of reductions feasible due to state measures and project-level measures, and by identifying a level that would result in the application of project mitigation sufficient to close the identified gap.

For the post-2020 world, the first approach is still conceptually sound, in that meaningful emissions reductions will come from larger projects and one may not desire to apply additional mitigation requirements (other than state mandates) to smaller projects. Some may argue that the level should be increased to capture as much as 95% of all new development emissions on the hypothesis that post-2020 efforts need to be more comprehensive than pre-2020 efforts. In order to derive a post-2020 threshold, the analysis must take into account the type and amount of land use projects and their expected emissions out to the next milestone year (2030).

The second approach is also sound for the post-2020 world, but for evaluating projects with a post-2020 horizon, the threshold will need to be revised based on a new gap analysis that would examine development and reduction potentials out to the next GHG reduction milestone (2030 or 2050). Unfortunately, this new gap analysis would likely require completion of the next update of the scoping plan in order to identify the state's overall strategy to reach the 2030 or 2050 reduction target.

Responding to Newhall Ranch

The Newhall Ranch ruling specifically mentioned consistency with a numeric threshold (the ruling cited the BAAQMD's bright line threshold) as an acceptable approach to determining significance. CEQA documents using a bright line threshold should provide an explanation of the reasoning behind the significance determination, per the ruling's emphasis on substantial evidence including citation or incorporation by reference of an air district's or other third party's justification rationale supporting its use, as applicable.

Efficiency Thresholds

Current (2020 Milestone) Considerations

Efficiency thresholds have been developed for land use sector projects based on AB 32 targets and are in common use by certain CEQA lead agencies.

Post-2020 Considerations

The current efficiency thresholds are based on the concept of meeting the necessary land use sector GHG efficiency in 2020 to reach 1990 emissions levels. This threshold concept is one of the more readily adaptable thresholds to a post-2020 world. The 1990 land use inventory is a known quantity that does not change. What does change over time is amount of overall emissions allowable to meet the state's milestone reduction targets, as well as the increasing number of residents and employees

[35] The Committee does not recommend the use of the federal stationary source permit trigger level (100,000 MTCO2e) as a land use sector GHG project threshold because it is not related to the land use sector. Although MDAQMD has recommended such a threshold, since it was derived from stationary source permitting, at the most, it should only apply to stationary sources. However it should be noted that BAAQMD, SCAQMD, and SMAQMD all recommend a stationary source threshold of 10,000 MTCO2e.

in the state, which increases the service population. Thus, the numerator of the equation (allowable emissions) is decreasing over time while the denominator of the equation (service population) is increasing over time. As a result, the efficiency metric is decreasing at a faster rate than is the emissions reduction, reflecting the reality that new land use development efficiency must be greater than past efficiency in order to achieve more aggressive reduction targets, while also accommodating more residents and more employment (from economic growth).

The Technical Appendix below presents data and calculations for an adjusted statewide 1990 land use sector emissions inventory, and estimates of a 2020 efficiency metric as well as a new metric for 2030, as follows:

- *2020 Efficiency Metric Calculation*
  - 1990 Land Use Sector Inventory: 267.2 Million $MTCO_2e$ (= AB 32 Target)
  - Forecasted 2020 Service Population = 56.453 million
  - **2020 Land Use Efficiency Threshold: = 4.7 $MTCO_2e$/SP**
- *2030 Efficiency Metric Calculation*
  - 40 percent below 1990 Land Use Sector Inventory: 160.3 Million $MTCO_2e$ (= SB 32 Target)
  - Forecasted 2030 Service Population = 61.527 million
  - **2030 Land Use Efficiency Threshold: = 2.6 $MTCO_2e$/SP**

It should be noted that the specific efficiency threshold estimate will vary depending on the emissions included in the statewide land use sector emissions inventory. As noted above, some air districts or jurisdictions make varied choices about what to include. In addition, forecasts of future population and employment necessarily change over time, meaning the efficiency threshold will also change over time. This is especially true for very long-term forecasts, such as for 2050. The Committee recommends using the most current state forecasts for population and employment when identifying an efficiency threshold, as well as documenting clearly any adjustments in the land use sector emissions inventory.

The Committee recommends that analysis go out only as far as the project's full-build horizon. Lead agencies may decide to apply a "substantial progress" paradigm to their threshold evaluation, utilizing a threshold interpolated between the current GHG reduction milestone for which the state has a plan for reductions and the next GHG reduction milestone for which the state does not yet have a comprehensive plan for reductions. Thus, efficiency thresholds may be interpolated between a 2020 and a 2030 metric, or between a 2030 and 2050 metric.

Another approach to establishing efficiency thresholds would be to use a local jurisdictional (or regional) 1990 GHG inventory and forecasted service population as the basis for calculating and efficiency threshold instead of the statewide 1990 inventory and forecasted service population.

Responding to Newhall Ranch

The Newhall Ranch ruling specifically noted that a significance determination based on numeric threshold may be an acceptable approach to determining significance, and it also emphasized that measuring GHG efficiency is an appropriate paradigm. Thus, the validity of efficiency thresholds would appear to be unaffected by the ruling.

The Newhall Ranch ruling was focused on evaluating the appropriateness of using a percent below BAU threshold in the EIR for the subject project, and as such, the legal findings that are precedential are directly related to the facts in that case. Opinions of a court that do not embody the resolution or determination of the specific case before the court are commonly referred to as "dicta." Expressions

in a court's opinion that go beyond the facts presented in a particular case can be argued to be the individual views of the author(s) of the opinion, and thus not binding as legal precedent in subsequent cases.

In the context of evaluating the Newhall Ranch EIR's analysis of GHG emissions, the Newhall Ranch ruling includes discussions of whether a new development project can be properly evaluated by comparison to an average reduction for all development (including both existing and new development), and whether CEQA evaluation should also take into account potential adjustments that may reflect a project's specific location. The fundamental ruling was that the EIR lacked substantial evidence to support the lead agency's claim that the threshold used appropriately evaluated the project's GHG emissions, compared to state reduction targets. The ruling did not examine exactly how or whether other considerations of location or existing development vs. new development may or may not be relevant to an appropriate threshold. Thus, these discussions may be considered to be dicta by some parties, and not precedential.

However, if the court's concerns about existing vs. new development reductions or project location were to be considered precedential, or otherwise legally relevant, there could be potential legal concerns for other thresholds. In concept, a revised efficiency threshold could be developed for new development only or based on a regional or jurisdictional land use inventory instead of the state land use inventory. Since such concerns have not been raised in any legal challenge to date regarding the efficiency threshold, and since the Newhall Ranch ruling is bound by the facts in that case (which concern the percent below BAU threshold concept), such alternative efficiency threshold concepts are not explored in this white paper.

CEQA documents using an efficiency threshold should provide an explanation of the reasoning behind the significance determination per the ruling's emphasis on substantial evidence including citation or incorporation by reference of an air district's or other third party's justification rationale supporting its use, as applicable.

A New Hybrid Threshold Approach

A new hybrid threshold concept that evaluates transportation GHG emissions separately from non-transportation GHG emissions is discussed below.

Current (2020 Milestone) Considerations

There are two key laws in existence that address transportation GHG emissions and CEQA: SB 375 and SB 743. The requirements in these two statutes could be used to provide a separate evaluation of transportation GHG emissions, as distinct from non-transportation GHG emissions.

Hybrid SB 375 Threshold Concept

SB 375 relieves certain residential and mixed-use projects that are consistent with an approved RTP/SCS, from the requirement to consider the project's GHG impacts from cars and light-duty truck trips on climate change or regional transportation networks. Such consistent projects, by statute, do not have significant impacts related to GHG emissions for passenger car and light-duty truck on-road emissions.

Specifically, SB 375 establishes streamlining provisions as follows:

- A residential or mixed-use residential project must either:
    - have at least 75 percent of the total building square footage of the project consist of residential use; or

- be a transit priority project as defined in Public Resources Code Section 21155.

- If it qualifies, then the project must meet the following streamlining criteria:
  - The project must be consistent with the use designation, density, building intensity, and applicable policies specified for the project area in either a SCS or APS; and
  - CARB must have concurred that SCS or the APS meets the region's GHG reduction targets; and
  - the project must incorporate any mitigation measures required by an applicable prior environmental document.
- If the above criteria are met, the following CEQA streamlining are permitted:
  - the CEQA document does not need to discuss growth inducing impacts; and
  - the CEQA document does not need to discuss impacts from cars and light-duty truck trips on global warming or the regional transportation network; and
  - if an EIR is prepared, the EIR is not required to analyze reduced residential density alternatives to address the effects of car and light-duty truck trips generated by the project.

The relief under SB 375 could be combined with an efficiency threshold for the project's non-transportation emissions to provide coverage of all of the GHG emissions. The revised efficiency threshold could be derived in the same way as the efficiency threshold described above, but the onroad passenger car/light-duty truck transportation emissions would be excluded from the calculation if using the SB 375 hybrid concept.

As explained in calculations in the Technical Appendix, the threshold for all emissions other than passenger/light-duty truck emissions for 2020 in this case would be 2.8 $MTCO_2e/SP$.

Under this concept, which has not been previously used (to the authors' knowledge), a project would first evaluate whether it qualified for the SB 375 CEQA streamlining noted above. If a project did qualify, the CEQA document would need to 1) demonstrate that the project is consistent with the RTP/ SCS, 2) demonstrate that it qualifies for the CEQA streamlining, 3) state that Public Resources Code 21158 relieves the requirement to analyze the car/light duty truck GHG emissions and 4) then explain the remaining evaluation using the modified efficiency threshold.

Hybrid SB 743 Threshold Concept

As described above, SB 743 (2013) calls for the replacement of traffic level of service (a measurement of traffic congestion and delay) as a CEQA threshold for the evaluation of transportation impacts, with thresholds based on vehicle miles travelled (VMT). In January 2016, OPR released its proposed CEQA guidelines and a Technical Advisory. The technical advisory included several recommended VMT thresholds that are based to a large extent on GHG reduction needs and targets (such as VMT 15 percent below existing city and regional averages), as follows:

- *Screening Thresholds for Small Projects:* Absent other evidence, "[p]rojects that generate fewer trips than the threshold for studying consistency with a congestion management program, or 100 vehicle trips per day, generally may be assumed to cause a less than significant transportation impact."
- *Residential Projects*: "A project exceeding both existing city household VMT per capita minus 15 percent and existing regional household VMT per capita minus 15 percent may indicate a significant transportation impact."

- *Office Projects*: "A project exceeding a level of 15 percent below existing regional VMT per employee may indicate a significant transportation impact."
- *Retail Projects*: "A net increase in total VMT may indicate a significant transportation impact."
- *Mixed-Use Projects*: The advisory suggests that the thresholds for the different project types noted above could be used to evaluate the different project elements.

Since the VMT thresholds are being proposed based on GHG reduction needs overall, the VMT thresholds could be used to assess transportation GHG emissions, and then a revised GHG efficiency threshold could be used for the non-transportation emissions. The revised efficiency threshold could be derived in the same way as the efficiency threshold described above, but all onroad transportation emissions would be excluded from the calculation if using the SB 743 hybrid concept.

As explained in calculations in the Technical Appendix, the threshold for all emissions other than on-road emissions in this case for 2020 would be 2.3 $MTCO_2e$/SP.

Under this concept, which has not been used before (to the authors' knowledge), a project would first be evaluated for consistency with a SB 743 VMT threshold for on-road activities. Emissions not related to onroad vehicle trips could be compared to the GHG efficiency metric identified in the Technical Appendix. If the project exceeded either the SB 743 VMT threshold, or the revised emissions efficiency threshold that excludes onroad vehicle emissions, then GHG emissions would be determined to be significant.

Best Management Practice/Best Available Mitigation Approach

Current (2020 Milestone) Considerations

This is a new approach that is not currently in use (to the authors' knowledge), but has been discussed as a potential threshold approach by some air districts. This approach would be similar to the Best Available Control Technology (BACT) approach used by air pollution control agencies when reviewing new sources of pollution. Such new sources are required to incorporate BACT suitable for a specific project, and the air pollution control agency with jurisdiction reviews the project during the permit phase to ensure that BACT is properly identified and applied to the project.

For land use development project GHG emissions, this approach would require the development of a list of BMPs (or BAM), that projects would be required to implement based on the type of project proposed. In order to provide substantial evidence that would satisfy CEQA requirements, the BMPs (or BAM) would need to be supported by quantitative evidence of their effectiveness in reducing GHG emissions, and would need to be periodically updated based on costs, technology, and feasibility, roughly every 3 years. In addition, the agency recommending the list of BMPs (or BAM) would need to complete a quantitative evaluation of the overall effectiveness of the BMPs (or BAM) in promoting GHG reductions that would make substantial progress toward the state meeting the GHG milestone target applicable to the project horizon.

Under this concept, once a given project adopts the specified BMPs (or BAM) relevant to its project, its emissions would be considered less than significant. Alternatives to the BMPs (or BAM) could be proposed on a project-by-project basis provided evidence was also developed demonstrating that the alternative measures would result in the same or greater GHG reductions as the approved measures. This less than significant finding would rely on assurance that the measures provided by the local agency, if implemented, would assist with making substantial progress toward statewide reduction targets.

This threshold approach is not currently in use, so no recommended BMP (or BAM) list exists at present to meet AB 32 reduction targets. If such an approach were advanced in the immediate

future, the recommending entity would need to do a quantitative scenario analysis showing how application of the BMP (or BAM) list would help the future portfolio of projects (in a jurisdiction, in a region, or statewide) with a 2020 or earlier horizon to support the state meeting AB 32 2020 targets.

An alternative variant to this approach suggested by a commenter on the Draft White Paper would be to require new projects to implement all currently feasible mitigation (which this paper refers to as Best Available Mitigation) in order to be considered less than significant under CEQA. In the long run there will be a need for GHG emission reductions more aggressive than required to meet AB 32 and SB 32. This approach uses that fact to justify the imposition of all currently feasible mitigation. There are several challenges to implementing this variant approach: 1) identifying what is and isn't feasible or constitutes BAM could be a highly involved and contested process (like that for establishing BACT for stationary sources for air quality); 2) in absence of comparison to a quantitative threshold or a quantitative proof of effectiveness of BAM overall, some may argue that this approach does not necessarily provide substantial evidence that the impact is reduced to less than significant (e.g. sometimes implementation of all feasible mitigation does not necessarily reduce impacts to an insignificant level).

Post-2020 Considerations

For the post-2020 period, a quantitative scenario analysis would be needed of the portfolio of future projects out to the milestone being evaluated for substantial progress in meeting statewide reduction targets. The BMP or BAM list used for meeting a 2020 AB32 target would not be the same list used for meeting a 2030 SB 32 target. Although the measures may be similar, the level of reductions will need to be higher for progressively more aggressive targets, meaning the specific measures to meet future targets will be more stringent than earlier measures.

Since BMP or BAM lists should be updated relatively frequently to reflect changing technology and practice, in concept the quantitative analysis could be provided along with the periodic update. The rules about horizon years and applying statewide milestone targets (or substantial progress toward milestone targets) discussed above relative to the status of statewide comprehensive reduction planning would apply to this concept as well.

Responding to Newhall Ranch

The Newhall Ranch ruling did not mention a BMP or BAM approach. However, a BMP or BAM approach would not incur any concern about existing vs. new development reductions because it would be exclusive to new development. Depending on the character of the BMPs or BAM, they may or may not include nuances regarding a project's location or type that might provide a more direct application of mitigation than concepts of GHG reductions that generically apply to a project.

CEQA documents using a BMP or BAM threshold approach should provide an explanation of the reasoning behind the significance determination, per the ruling's emphasis on substantial evidence including citation or incorporation by reference of an air district's or other third party's justification rationale supporting its use, as applicable. As noted above, a quantitative scenario analysis would be one way to provide substantial evidence.

Compliance with Regulations

The Newhall Ranch ruling mentioned that an alternative evaluation of the significance of a new development project's GHG emissions might consist of evaluation of compliance and consistency with adopted regulations. The court notes that the utility of this approach would depend on whether there are sufficiently comprehensive regulations addressing the project's GHG emissions.

This approach is not in widespread use. In the immediate years following the development of the AB 32 Scoping Plan, some CEQA lead agencies used consistency with the Scoping Plan policies and measures as a means by which to make significance determinations under CEQA. With the adoption of the SB 97 amendments to the CEQA guidelines, evaluation of consistency in plans for reducing GHG emissions is one of the recommended Appendix G guideline questions. However, the AB 32 Scoping Plan was not created as a means by which to review consistency of a new development project, especially as most of the Scoping Plan measures apply to both existing and new development, and only a few are specifically targeted at new development. Furthermore, some of the measures aimed at new development are not defined in the Scoping Plan with sufficient clarity to define a project's individual implementation actions, which could be challenging in application during a CEQA review.

However, as described below, once the state's regulations are sufficiently robust to demonstrate that their implementation overall would result in meeting the state's next GHG milestone reduction target, in concept, a consistency with regulation approach may be viable.

Current (2020 Milestone) Considerations

CEQA allows lead agencies to consider whether regulatory programs are adequate to reduce a project's potentially significant environmental effects. Since an individual project's impact on climate change cannot be determined, many practitioners have settled upon the emission reduction target promulgated in AB 32 as the emission standard for the State. Under AB 32, the State's emission inventory must be reduced to 1990 levels by 2020. The CEQA Guidelines checklist question in this situation is whether a project conflicts with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. The ARB Scoping Plan and its implementing regulations provide the regulatory framework for the State to achieve its target and to track its progress.

An important underlying assumption with making a significance determination based on compliance with regulations is that the regulations are adequate to address the impact without resulting in significant impacts. When compliance with regulations is sufficient to mitigate the impact, there is no related significant impact that would require a project to prepare an EIR or provide additional mitigation to further reduce the impact. When regulations are only partially effective in solving the problem, or if the regulatory program is not fully implemented, there may be a gap between the amount that can be reasonably claimed from regulation and the amount needed to achieve the target. During the early years after adoption of the ARB Scoping Plan, only some of the regulations identified in the Scoping Plan as necessary to meet the AB 32 2020 target had been adopted, and mere compliance with adopted regulations was deemed to be an insufficient basis on which to conclude that a project's GHG emissions would not be cumulatively considerable.

In the First Update to the 2008 AB 32 Scoping Plan (2014), ARB identified that the State had now adopted sufficient laws and regulations to achieve the AB 32 target, including the following aspects that address nearly all primary sources of emissions for new development projects:

- *Building Energy Use*: Title 24, Renewable Portfolio Standard (33% by 2020), Cap and Trade.
- *Transportation*: Pavley I, Advanced Clean Cars, Low Carbon Fuel Standard, SB 375, Cap and Trade.
- *Solid Waste*: Landfill methane control and waste diversion requirements.
- *Water*: SB X7-7 water conservation requirements.
- *Large Stationary Sources*: Cap and Trade.

One concern for reliance on adopted laws and regulations for new development projects is SB 375, which is implemented in a very indirect manner. Projects that are consistent with the RTP/SCS adopted by their regional MPO under SB 375 would have less than significant car/light duty truck GHG emissions by statute. Given that there are comprehensive regulations in place to meet AB 32, a RTP/SCS-consistent project could be found to have less than significant GHG emissions based on a consistency with regulations approach. However, projects that are not consistent with the RTP/SCS may require further evaluation of their GHG emissions, perhaps using a different threshold approach. ARB is relying on only a limited amount of reductions from SB 375, only some of which come exclusively from new development. However, in the absence of a specific quantitative threshold, it may be challenging to assume that projects that are not consistent with the RTP/SCS necessarily have less than significant GHG emissions without further evidence, given the inconsistency with SB 375.

Therefore, projects that comply with regulations could be presumed to be consistent with the AB 32 target under certain conditions. A project's location would not necessarily matter, because the State projections already factor in diverse location in their 2020 projection, unless the project was inconsistent with the RTP/SCS, in which case project location may be relevant.

This option is viable for the next several years, until the state adopts a legislative target and a reduction plan for the next milestone beyond 2020 (which will be 2030).

The State has now successfully completed most of its regulatory program, and when combined with growth forecasts lower than initially expected in the 2008 AB 32 Scoping Plan, it is on track to achieving the 2020 target. Therefore, one can reasonably conclude that regulations currently in place are adequate to achieve the standard, and that projects that comply with GHG regulations are doing their part.

Post-2020 Considerations

There is no comprehensive statewide plan to meet a post-2020 GHG reduction target, and thus this approach is not viable for the post-2020 period, at present.

Responding to Newhall Ranch

The Newhall Ranch ruling specifically mentioned the possibility of a significance determination based on consistency with adopted regulations. As noted above, the adopted regulations should be sufficiently comprehensive to address most if not all of the project's GHG emissions; and the project would need to be consistent with the regional RTP/SCS to be determined to be less than significant for transportation emissions. If the project were to have a substantial portion of its emissions not addressed by adopted regulations, then this approach is not recommended by the Committee. This approach is also not recommended by the Committee for any project with a horizon beyond 2020.

CEQA documents using a consistency with regulations approach should provide an explanation of the reasoning behind the significance determination, per the ruling's emphasis on substantial evidence including citation or incorporation by reference of any third party justification rationale supporting its use, as applicable.

General Plans[36]

[36] The plan-level thresholds are not recommended by the Committee for smaller area land use plans such as Specific Plans or Station Area Plans because such plans will only have some of the emissions sources included in the overall statewide inventory and are likely better evaluated using one of the project threshold approaches.

General plans can utilize many of the thresholds described above for land use projects.

The following is a summary of considerations of different threshold concepts for general plans. Regarding post-2020 and post-Newhall concerns, please see the discussion of such issues under the specific threshold approach above, as the same issues would apply to use of a threshold approach for determining significance of GHG emissions for general plans.

- *Consistency with a Qualified GHG Reduction Plan:* This is the best approach for determining significance of GHG emissions for general plans. A CAP can be prepared prior to or as part of preparation of comprehensive general plan updates. A CAP could also be prepared following a general plan update, provided the EIR for the general plan included sufficient detail of the timing requirements for adoption of the CAP, the GHG reduction target, and enforceability and monitoring of the CAP. However, the CAP may have a horizon that is shorter than the buildout horizon in a general plan. While the EIR for the GP must analyze full buildout emissions, if that buildout will occur far ahead in the future, the CAP may have a more pragmatic horizon that is tied to statewide reduction planning. For example, if a general plan is being developed with a horizon of 2040, the EIR needs to analyze GHG emissions out to 2040, but it may be more pragmatic to develop a 2030 CAP that lines up with the Scoping Plan update currently in preparation.
- *Bright Line Thresholds*: There are no existing bright line thresholds for general plans, and the Committee does not recommend development or use of bright line thresholds for CEQA evaluations of general plan because development of a threshold applicable to all jurisdiction is likely fraught with peril; additionally, the other threshold approaches provide superior approaches to comparing a jurisdiction's emissions with statewide reduction target.
- *Efficiency Thresholds:* Certain air districts have recommended efficiency thresholds for general plans that are similar to project-level thresholds, but that are based on an estimate which includes the full state emissions inventory, not just the land use sector inventory, on the premise that comprehensive general plans include a broader set of emissions (such as industrial processes). The Technical Appendix shows estimates of GHG efficiency metrics for general plans.
- *Best Management Practices or Best Available Mitigation:* In concept, a jurisdiction could evaluate a new development and associated emissions allowed by a general plan, then identify BMPs or BAM to be implemented for new development, and make a quantitative assessment of how the reduced emissions are or are not consistent with statewide reduction targets. In effect, this would be the same as a CAP, but limited to only new development emissions.
- *Consistency with Regulations:* Given that most general plans have horizons that are decades in the future, this approach is likely not viable if the planning horizon exceeds the horizon of current comprehensive GHG regulations.

Operational Emissions from Industrial Projects

Industrial projects containing sources of GHG emissions that are substantially different than typical land use projects will not be able to use land use sector-derived thresholds. Apart from the stationary source thresholds adopted by several air districts (see below), there are no thresholds that have been developed specifically for use by industrial projects including emissions beyond stationary sources. If an industrial project were to include office space or retail space in additional to industrial sources, the project might be able to use sector-specific thresholds to evaluate different types of emissions.

The following is a summary of considerations of different threshold concepts for operational emissions generated by industrial projects. Regarding post-2020 and post-Newhall concerns, please

see the discussion of such issues under the specific threshold approach above, as the same issues would apply to use of a threshold approach for determining significance of GHG emissions for industrial projects.

- *Consistency with a Qualified GHG Reduction Plan:* If an industrial project is included in the emissions inventory and forecasts are addressed in a qualified GHG reduction plan, then the project could tier off the plan. However, the common practice when developing CAPs is to exclude industrial projects from being addressed in the CAP, due to the desire by many jurisdictions to avoid duplicating state and/or federal regulation of industrial emissions sources.[37]
- *Bright Line Thresholds:* Several air districts have adopted mass emissions thresholds for stationary source emissions that could be used for projects with such emissions in the specific air districts.
- *Efficiency Thresholds:* There are no adopted or recommended GHG efficiency thresholds for industrial projects, although such a threshold could be developed for a specific industrial sector that could benchmark GHG emissions by a meaningful industrial output unit. For example, in concept, a port's GHG efficiency could be benchmarked based on freight tonnage or twenty-foot unit (TEU) amount, or a concrete plant could be benchmarked based on concrete tons manufactured. Given the wide diversity of industrial activities, it would be difficult to come up with uniform efficiency metrics that would apply to multiple industrial sectors; the metrics would likely need to be industry-specific.[38]
- *Best Management Practices or Best Available Mitigation:* Although there are many GHG BMPs for industrial projects that have been developed by individual industries and trade associations, no specific BMPs or BAM have been identified for GHGs by California air districts or land use agencies for use as the basis for a BMP or BAM threshold approach under CEQA. Given the wide diversity of industrial activities, it could be difficult to come up with uniform BMPs or BAM that would apply to multiple industrial sectors; the BMPs or BAM would likely need to be industry-specific.
- *Consistency with Regulations:* There are many adopted regulations in California applicable to industrial sources addressing GHG emissions and other air pollutant emissions. Through 2020, source specific requirements and the Cap and Trade system can be argued to have established an effective means of controlling industrial source emissions to meet AB 32, but they would not be sufficient to address post-2020 reduction targets yet.

Operational Emissions from Transportation Projects

Transportation projects pose very different issues than do development or industrial projects, and the threshold concepts developed for such other projects are therefore not appropriate for transportation projects. Accordingly, slightly different analysis and threshold concepts are discussed below for transportation projects.

[37] Large stationary sources are regulated by ARB under the California Cap and Trade program and are proposed to be regulated under the Clean Power Plan by the U.S. EPA. While there is nothing to stop a local land use authority regulating GHG emissions of these sources, provided such regulation did not conflict with state regulations and did not usurp federal authority, most local land use authorities will choose to leave regulation of their GHG emissions to state and federal agencies.

[38] While a universal benchmark could be the GHG emission per $ value added, this would be highly discriminatory against GHG intensive industries that provide vital inputs (like concrete) to support the California economy, and such a universal benchmark is not recommended by the Committee for that reason.

Transportation Projects that Would Not Increase Roadway Capacity for General Use

Transportation Projects that Reduce GHG Emissions

The easiest transportation projects for which to determine significance of GHG emissions under CEQA are transit, bicycle, and pedestrian improvement projects, as well as transportation alternative fuel projects (such as electrification of existing fossil fuel transit) that would result in net GHG reductions. Provided the net reductions can be adequately quantified, such projects can be readily determined to have a less than significant impact due to GHG emissions.

Transportation Projects Not Likely to Result in Increased VMT or GHG Emissions

As listed in the January 2016 OPR Draft Guidelines for SB 743, the following projects are not likely to lead to substantial or measureable increases in VMT, and could be argued to not result in substantial or measureable increases in annual GHG emissions (after construction):

- rehabilitation, maintenance, replacement and repair projects designed to improve the condition of existing transportation assets that do not add additional motor vehicle lanes;
- roadway shoulder enhancements to provide "breakdown space," otherwise improve safety, or provide bicycle access;
- addition of an auxiliary lane of less than one mile's length designed to improve roadway safety;
- installation, removal, or reconfiguration of traffic lanes that are not for through traffic, such as left, right, and U-turn pockets, or emergency breakdown lanes that are not utilized as through lanes;
- addition of roadway capacity on local or collector streets, provided the project also substantially improves conditions for pedestrians, cyclists, and, if applicable, transit;
- conversion of existing general purpose lanes (including ramps) to managed lanes or transit lanes, or changing lane management in a manner that would not substantially decrease impedance to use;
- reduction in number of through lanes, e.g., a "road diet";
- grade separation to separate vehicles from rail, transit, pedestrians, or bicycles, or to replace a lane in order to separate preferential vehicles (e.g., HOV, HOT, or trucks) from general vehicles;
- installation, removal, or reconfiguration of traffic control devices, including Transit Signal Priority (TSP) features;
- traffic metering systems;
- timing of signals to optimize vehicle, bicycle, or pedestrian flow;
- installation of roundabouts;
- installation or reconfiguration of traffic calming devices;
- adoption of or increase in tolls;
- addition of tolled lanes, where tolls are sufficient to mitigate VMT increase (e.g., encourage carpooling, fund transit enhancements such as bus rapid transit or passenger rail in the tolled corridor);

- conversion of streets from one-way to two-way operation with no net increase in the number of traffic lanes;
- removal of off-street parking spaces;
- adoption or modification of on-street parking or loading restrictions (including meters, time limits, accessible spaces, and preferential/reserved parking permit programs); and
- addition of traffic wayfinding signage.

Transportation Projects that Increase Roadway Capacity

Roadway projects that increase capacity for general vehicular purposes are more challenging with respect to evaluating GHG impacts. There are three general threshold concepts applicable to roadway capacity increasing projects, detailed immediately below.

Consistency with Regulations Approach

Some lead agencies, such as Caltrans, argue that roadway projects, even those that increase capacity, are only responding to travel demand that is generated by residential, commercial, and industrial growth and hence do not generate "new" GHG emissions. In this line of thinking, economic growth and travel demand are exogenous variables that exist outside the transportation domain, and transportation projects influence a pre-set condition of travel demand. As such, it is argued that a roadway project will not increase travel demand in any way, but rather will influence only traffic conditions, such as congestion. Caltrans, in particular, uses a "consistency with plans and policy" approach to determining the significance of GHG emissions of roadway projects. Caltrans CEQA documents describe the different ways that the state is seeking to reduce transportation emissions, including Pavley I, Advanced Clean Cars, LCFS, SB 375, as well as Caltrans-specific sustainability initiatives. The argument boils down to evidence pointing to the ability of the state as a whole to meet AB 32 targets provided that Caltrans projects are consistent with all of the state regulations and initiatives.

Consistency with SB 375 RTP/SCS Approach

While Caltrans includes SB 375 in its review of state regulations relative to transportation GHG emissions, there remains the issue of potential use consistency with SB 375 more broadly for both state highway as well as local roadway projects. SB 375 established that land use projects that are consistent with an adopted RTP/SCS consistent with regional VMT reduction targets do not have a significant impact on GHG emissions related to passenger and light duty vehicle emissions. Since the RTP/SCSs inherently include the transportation network in the region to which they apply, there is a perception that roadway projects which are included in the transportation network included in the SB 375 compliant RTP/SCS to address general roadway travel demand needs could be determined to have a less than significant impact related to general vehicular emissions. It would be logically inconsistent to argue that a land use project does not have significant GHG emissions related to car/light duty trucks if it is consistent with a compliant RTP/SCS, but that a roadway project included in the same compliant RTP/SCS which is used by those same vehicles would somehow have a significant impact related to roadway traffic GHG emissions. Nonetheless, the state legislature only included specific language relative to land use projects, not to transportation projects, and thus one could argue that despite the inconsistency, the legislature did not intend to extend this partial exemption to roadway projects. A further complication may arise if the draft SB 743 guidelines (see discussion below) are adopted, including the current draft language concerning roadway projects and induced travel.

Areas without an adopted RTP/SCS would not be able to use this approach.

VMT Increase Threshold per SB 743

As explained above, the 2016 OPR draft guidelines and associated technical advisory propose VMT-based thresholds that support GHG emission reduction (as well as non-vehicular transportation effectiveness and efficiency) to replace current significance thresholds evaluating traffic delay. In the proposed guidelines, OPR recommends language stating that additional lane miles may induce automobile travel and VMT. In its draft Technical Advisory accompanying the proposed guidelines, OPR argues that additional roadway capacity, while relieving congestion in the short-run, would in the long-run "induce" additional VMT by facilitating longer distance trips. The Technical Advisory states the following:

> *"Projects that would likely lead to an increase in VMT, and therefore should undergo analysis"… include "addition of through lanes on existing or new highways, including general purpose lanes, HOV lanes, peak period lanes, auxiliary lanes, and lanes through grade-separated interchanges."*

The Technical Advisory includes a suggested VMT threshold for transportation projects based on calculations of the amount of VMT that would be consistent with meeting the SB 32 target to reduce GHG emissions to 40 percent below 1990 levels by 2030 (taking into account other improvements in vehicle efficiency and reduction in fuel GHG intensity). The estimated "fair share VMT" per transportation project is estimated as 2,075,220 VMT/year.

This line of thinking could equally be applied to GHG emissions. As noted above, such an approach could result in a determination that a roadway capacity-increasing project would have a significant impact on GHG emissions because it would increase VMT and associated transportation emissions by more than what is needed to support the SB 32 2030 target.

A counterargument to this approach would need to demonstrate, with substantial evidence, that overall transportation emissions will be going down due to the improvement in vehicle technology and changes in vehicle fuels, and that the VMT increase would not frustrate the achievement of overall GHG reduction targets.

Post-2020 Considerations for Transportation Project Thresholds

The approach of analyzing consistency with regulations to determine significance for transportation emissions is cogent when considering the relation of a project to meeting AB 32 2020 targets. However, there is no comprehensive plan for achieving post-2020 milestone targets at present, and thus there may be a period of uncertainty for projects with a post 2020 horizon until the statewide plans are further developed to meet a 2030 or other milestone year reduction target.

Consistency with the SB 375 approach could be applied to the post-2020 period as well as to 2020 because the RTP/SCSs are long-range plans which commonly include analysis out to at least 20 years or more into the future. The adopted RTP/SCSs include horizon years of 2035 or 2040, and thus extend well beyond the horizon of adopted statewide GHG reduction plans.

Responding to Newhall Ranch in Regard to Transportation Project Thresholds

None of the current approaches for evaluating GHG emissions for transportation projects relies on a percent below BAU threshold approach, and thus are not directly affected by the ruling, narrowly speaking. The concerns raised in the ruling about existing vs. new development, project location, and density are applicable only to land use development and thus do not raise any immediate concerns for transportation projects. CEQA documents for transportation projects should fully disclose the reasoning behind the significance determination, per the ruling's emphasis on

substantial evidence including citation or incorporation by reference of any third party justification rationale supporting its use, as applicable.

V. The Percent below BAU Threshold

Dave Mitchell, Mitchell Air Quality Consulting
Rich Walter, ICF

The Newhall Ranch ruling directly affects the percent below BAU threshold. This section provides discussion of several ways to address the concerns raised in that ruling. Since none of them have been tested in court to date, and the court itself acknowledged that it did not know what approaches would satisfy its concerns, CEQA lead agencies are advised to use caution and to consult with CEQA counsel if considering employing this threshold concept at this time.

Key Aspects of the Newhall Ranch Ruling

The Newhall Ranch opinion calls into question whether the percent reduction below BAU amount required by the State to achieve a statewide target overall is appropriate to use as a CEQA significance threshold for evaluation of an individual development project. The Supreme Court held in the Newhall Ranch circumstances that the administrative record lacked sufficient information to support the agency's reliance on this threshold to make a finding of less than significant impact. The concept of a percent below BAU threshold was upheld, but the Court found that its application to this project was not adequately supported by evidence in the record.

Relevant excerpts from the majority opinion are provided below:

> *Page 19. "We reach this conclusion because the administrative record discloses no substantial evidence that Newhall Ranch's project-level reduction of 31 percent in comparison to business as usual is consistent with achieving A.B. 32's statewide goal of a 29 percent reduction from business as usual…. "*

> *Page 22. "Nothing DFW or Newhall points to in the administrative record shows the* ***statewide density assumptions used in that model mirror conditions in the Santa Clarita Valley****. To the extent the Scoping Plan's business-as-usual scenario assumes population densities greater than the Santa Clarita Valley density assumed in the EIR's business-as-usual projection, the EIR's comparison of project reductions from business as usual to reductions demanded in the Scoping Plan will be misleading."*

> *Page 23. "We hold only that DFW erred in failing to substantiate its assumption that the Scoping Plan's statewide measure of emissions reduction can also serve as the criterion for an individual land use project."*

> *Page 25. "On an examination of the data behind the Scoping Plan's business-as-usual model, a lead agency might be able to determine what level of reduction from business as usual a new land use development* ***at the proposed location*** *must contribute in order to comply with statewide goals."*

Changing the Percent below BAU Threshold?

Rich Walter, ICF

Later in this section, a potential defense of the currently constructed percent below BAU threshold in light of the Newall Ranch ruling is provided. Alternatively, if a lead agency determines that the current percent below BAU approach is insufficient for its purposes, a lead agency may want to consider different versions of a percent below BAU threshold, including one of the following:

- *Revised Percent below BAU Threshold Based on New Development Emissions Only:* Under this concept, the percent reduction required for new development would be based only on the reductions assumed in the Scoping Plan for new development. The Scoping Plan BAU forecast

can be disaggregated to identify new development emissions after a particular base year, and then all of the relevant scoping plan measures could be applied to those emissions to determine the reduction compared to BAU emissions for new development only. While some of the measures could be readily applied (such as the RPS, Title 24, or Pavely 1 and the Advanced Clean Car Program), others, such as Cap and Trade, efficiency measures, and the Regional Transportation Plan target measure may be challenging to disaggregate to new development from overall emissions. This approach would address the Newhall Ranch ruling's concerns about existing vs. new development. Members of the Committee have examined the feasibility of using the current Scoping Plan (designed to achieve the 2020 target in AB 32) data to derive a new threshold for new development emissions only and have determined that there is insufficient documentation available from ARB to establish a definitive threshold for new development only because the reductions in the Scoping Plan for new development cannot be accurately segregated from the reductions in the Scoping Plan for existing development. The Committee has requested that ARB provide a greater amount of transparency in the data utilized for the current Scoping Plan Update for 2030 to allow the potential development of a new threshold for new development only in the future.

- *Revised Percent below BAU Threshold Based on Land Use Sector Emissions Only:* Under this concept, the percent reduction required for new development would be based only on the reductions assumed in the Scoping Plan for the land use sector. The Scoping Plan BAU forecast would be disaggregated to identify land use emissions, and then all of the relevant scoping plan measures could be applied to those emissions. The BAAQMD conducted this analysis when establishing their GHG thresholds (BAAQMD 2011), and found the reductions needed to reduce 2020 BAU land use sector emissions to 1990 levels in the Bay Area would be approximately 26.2%, and that existing regulations would provide approximately 23.9% of the needed reductions, leaving a gap of 2.3% that could be made up by new development. This approach would address the Newhall Ranch ruling's concerns about applying a statewide reduction amount for all types of development to a land use project.

- *Revised Percent below BAU Threshold Based on New Land Use Development Emissions Only:* Under this concept, the percent reduction required for new development would be based only on the reductions assumed in the Scoping Plan for new land use development. The Scoping Plan BAU forecast would be disaggregated to identify new land use development emissions after a particular base year, and then all of the relevant scoping plan measures could be applied to those emissions. As noted above, while some of the measures could be readily applied (such as the RPS, Title 24, or Pavley 1 and the Advanced Clean Car Program), others, such as Cap and Trade, efficiency measures and the Regional Transportation Plan target measure are highly challenging to disaggregate to new development from all development. This approach would address the Newhall Ranch majority's concerns about applying a statewide reduction amount for all types of existing and new development to new land use development. Similar to the discussion above, the Committee has determined that there is insufficient data in the current Scoping Plan to establish a definitive threshold for 2020 for new development only and has requested greater transparency by ARB in the Scoping Plan update for 2030.

- *Revised Percent below BAU Threshold Based on Local Jurisdiction Emissions Only*: Under this concept, the percent reduction required for new development would be based only on the reductions needed for a local jurisdiction to meet a statewide equivalent target. This is the type of analysis commonly conducted during preparation of a CAP. This approach would address the Newhall Ranch ruling's concerns about difference in location of new development. This approach would require local GHG inventories and forecasts.

- *Revised Percent below BAU Threshold Based on New Land Use Development Emissions in the Local Jurisdiction Only:* Under this concept, the percent reduction required for new

development would be based only on the reductions needed for a local jurisdiction to meet a statewide equivalent target. This is the type of analysis commonly conducted during preparation of a CAP. This approach would address the Newhall Ranch ruling's concerns about difference in location of new development, and differences in reductions for existing and new development. This approach would require the development of a local CAP in its entirety, in order to identify the role of local new development in reducing local jurisdiction emissions to be consistent with statewide reduction targets.

Keeping the Percent below BAU Threshold?

Dave Mitchell, Mitchell Air Quality Consulting

The following is a potential approach to demonstrate that a percent below BAU threshold selected for project analysis complies with the Newhall Ranch ruling. This approach is limited to the 2020 period and AB 32 targets only. See discussion below of post-2020 concerns.

The Committee makes no recommendation at this time in the use of a percent below BAU threshold due to the unresolved issues in the Supreme Court ruling. Lead agencies are advised to seek the advice of legal counsel in the identification of thresholds for use in CEQA evaluations.

For the sake of information, this White Paper presents a potential approach to provide substantial evidence for the percent below BAU threshold. This approach would require lead agencies to:

- Demonstrate that the regulations currently in place on project emission sources will allow the state to achieve the 2020 target while accommodating growth with or without GHG reductions under CEQA.
- Demonstrate that a 28 percent reduction[39] (or less) below BAU is sufficient for projects to demonstrate that they will not conflict with achieving the state's AB 32 targets.
- Describe how the AB 32 Scoping Plan and the percent below BAU threshold approach address different rates of growth in different parts of the state without the need for higher percentage reductions in certain areas.
- Describe how the AB 32 Scoping Plan and the percent below BAU threshold approach address issues of land development location.
- Describe how the AB 32 Scoping Plan and the percent below BAU threshold approach address different land use densities.

Can We Meet AB 32 with Current Regulations Only (e.g. without CEQA reductions)?

If regulations are sufficient to address a significant cumulative impact, no additional reductions are required of projects by CEQA. CEQA Guidelines 15130 (c) states that with some projects the only feasible mitigation for cumulative impacts may involve adoption of ordinances or regulations rather than imposition of conditions on a project by project basis. This appears to be the case for greenhouse gas impacts from projects constructed prior to 2020. Cumulative greenhouse gas impacts would be considered mitigated if the State has adopted regulations sufficient to achieve the AB 32 2020 target accounting for cumulative growth in California through 2020.

[39] As noted above, while many agencies have been using a metric of 29 percent below BAU, based on the actual data referenced to the AB 32 Scoping Plan (2008), the reduction to meet AB 32 would be 28 percent below BAU (as shown in tables in the Technical Appendix).

The First Update to the Scoping Plan (2014) describes the progress achieved in adopting the regulations implementing the Scoping Plan (2008), and indicates that the state is on track to meet the 2020 target accounting for the latest growth forecasts. This success has had substantial implications on projects using a percent below BAU threshold as a basis for significance determinations under CEQA. The question to be answered is how to show that a project's impact is consistent with the Scoping Plan's growth and control forecast and would not interfere with the State reaching its targets.

Role of New Development in Achieving the AB 32 Targets

Most of the state's measures apply to both existing and new development, including the RPS, Pavley standards, LCFS, landfill regulations, regulations and programs on high GWP gases, initiatives on water conservation (such as SB X7-7), and the indirect influence of the Cap and Trade system on electricity and transportation fuel prices. In some areas, the Scoping Plan actually places a priority on reductions from existing development. For example, the 2008 Scoping Plan states the following in relation to electricity and natural gas sectors:

> *"In fact, improving the efficiency of California's existing building stocks is the single most important activity to reduced GHG emissions within the electricity and natural gas sectors."*

There are very few strategies in the AB 32 Scoping Plan that specifically target emissions from only new development. Two of the key measures are new building standards (Title 24 of the California Building Code) and the Regional Transportation Target measure.

- Title 24 energy efficiency standards are updated every few years and aim at making new development more energy efficient. These standards will apply to all new development, regardless of whether or not they are subject to CEQA, and whether any project-level analysis will identify the need for GHG reductions. The current Title 24 standards will result in approximately 25 percent greater energy efficiency than the prior version.
- Reductions from regional targets are based on a combination of actions including density increases and locational priorities near transit for new development, improvements in traffic congestion that improve fuel efficiency, and increased use of transportation alternatives such as transit, cycling, and walking. The land use and transportation reductions from regional targets required by SB 375 are a small component of the transportation sector strategy, with reductions estimates of 3 $MMTCO_2e$ by 2020, out of the 114 $MMTCO_2e$ reductions required by 2020.

If a project is consistent with an adopted RTP/SCS, then its passenger car and light-duty truck on-road vehicle GHG emissions are considered less than significant under SB 375. Given that all new RTP/SCS-consistent development projects would be subject to Title 24, and would also benefit from all the other state programs that apply equally to new and existing development, it's hard to see how such projects would have a significant impact on GHG emissions, when considering only AB 32 and the 2020 target. It's possible that projects that are not consistent with a RTP/SCS would also have a less than significant impact, because the state's regulatory regime is sufficiently robust to meet AB 32 targets regardless of some inconsistencies by certain projects across the state, given the limited reductions assumed in the state's plan.

At least for projects consistent with a RTP/SCS (and possibly for all projects), this line of argument could address the Newhall Ranch Court's concern about demonstrating that individual projects would not restrict the ability of the state to achieve the AB 32 target. If the state achieves its target without needing any reductions from new development beyond regulations, then there is by definition no conflict.

Can a Percent Below BAU Threshold Be Shown to Support Meeting AB 32?

The Court ruling requires CEQA lead agencies wanting to use a BAU threshold to find a path that relates statewide BAU emission reductions to local project reductions below BAU. In other words: *What reduction below BAU would be required for a project to demonstrate that it would not conflict with the state achieving its target*?

Mathematically, this can be demonstrated based on adopted regulations and growth projections used to prepare the state's BAU projection. In fact, as discussed above, the state likely requires no reduction beyond compliance with regulation for existing and new development in order to achieve the AB 32 2020 target. Assigning a reduction amount that is the responsibility of new development alone in a City or a region is more challenging.

Using the Data behind the Scoping Plan BAU

The Court recommends examination of the data behind the Scoping Plan BAU estimates for information supporting a project BAU threshold. The state GHG inventory can be disaggregated, isolating land use development-related sources, such as transportation and energy from non-development related sources such as agriculture and industry. However, as described in an earlier section, the supporting data used in preparing the Scoping Plan is often not sufficiently fine grained to determine a definitive amount of reductions for new development in a specific region or City to achieve. On the other hand, CEQA does not require perfection in determining a project's fair share of reductions from statewide emission inventory. We know that in aggregate sufficient reductions are now in place to achieve the target. The aggregate is estimated using emission factors, activity data, growth rates and other variables that reflect regional differences to the extent possible. Therefore, project level emission inventories generated using these same factors and variables are consistent with the aggregate.

The BAU forecast is subject to change to reflect updates to population and economic estimates used to forecast emissions. The Scoping Plan originally estimated that a statewide reduction of 28 percent was required from the full statewide inventory. A more recent BAU forecast estimated that a 22 percent reduction from BAU would be required to reach the 2020 target.[40] Now a project threshold based on a 29 percent reduction from BAU, such as the San Joaquin Valley BAU threshold, requires project reductions 7 percent greater than the 22 percent average reduction from BAU required for the State to achieve the 2020 AB 32 target. A threshold of 29 percent would show that development related emission sectors are doing more than other non-development related sectors to reduce greenhouse gas emissions.

Relationship to Project BAU Analysis

Experience performing project BAU analyses shows the effect of regulations on project emissions. Recent analyses using CalEEMod, prepared for a variety of projects, indicate that reductions from regulations alone are approximately 28 percent to 32 percent compared to the BAU GHG emissions, depending on the mix of sources within each project. This means that most development projects would exceed the percentage reduction required by a 28 percent BAU threshold with regulations alone. Many projects will achieve additional transportation-related reductions due to their design and due to location that makes them more accessible by walking, bicycling, or transit. Some energy reductions beyond regulations may also be possible for certain projects. These additional

[40] More recent BAU forecasts reflecting slower statewide growth projections require lower percentage reductions relative to BAU using those later base years.

reductions, as quantified using the CalEEMod emission model mitigation component, have been widely accepted as providing reductions beyond business as usual.[41]

A closer look at the transportation sector may be helpful. Most emissions from development projects are from the transportation sector, the sector which is subject to the most robust regulatory program. Recent analyses using CalEEMod prepared for a variety of projects indicated that reductions below BAU for passenger vehicle emissions in 2020 can be approximately 34 percent, due to implementation of the LCFS, Pavley I, and Advanced Clean Cars. In other words, emissions from passenger car transportation sources in new and existing development will be 34 percent lower in 2020 than they were in the same development subject to regulation in place in 2005; a remarkable achievement.

The Gap Has Been Filled

It is important to recognize that the Scoping Plan was adopted in 2008, and many of the Air Districts were developing their GHG thresholds in 2008 and 2009. At that time, few regulations implementing the Scoping Plan had been implemented. The Scoping Plan provided estimates of reductions that were anticipated from the measures included in the plan, but for analysis purposes, many analysts used only adopted regulations to determine the reductions creditable for CAPs and for development projects. Analysts also often waited for modeling tools to be developed to incorporate the emission reductions prior to using them for a BAU analysis. This resulted in a gap between the reductions achieved by regulations and those reductions required to show consistency with the 2020 BAU percentage reduction. In the Newhall Ranch case, the project was required to determine reductions from its land use design and transportation measures to close the gap and exceed the identified 29 percent reduction below BAU threshold. If that project were analyzed today, the gap would be closed by regulations which have since been adopted to reduce GHG emissions from project sources, and possibly no reductions from land use design would be required to meet the 2020 target, at least for portions of the project built prior to 2020.[42]

After most Scoping Plan regulations have been adopted, the BAU analysis demonstrates that regulations are adequate to reduce project GHG impacts to less than significant because they allow the state to achieve the 2020 target while accommodating all growth projected for the State. For projects that are operational by 2020, no additional reductions are required to demonstrate consistency with state target. Those projects will continue to reduce emissions along with other existing sources due to regulations applicable to energy and transportation that are gradually implemented.

Addressing Different Rates of Growth

The Scoping Plan BAU inventory accounts for different growth rates across the state. The Scoping Plan's overall growth forecast is a compilation of local growth forecasts. The Scoping Plan does not apply more stringent regulations to fast growing areas than to slow growing areas, but it does account for differential effectiveness of the regulations by region. Fast growing areas will automatically do more (relative to BAU on a mass emissions basis) than slow growing areas because

[41] The most comprehensive documentation supporting the reduction is compiled in the CAPCOA document *Quantifying Greenhouse Gas Mitigation Measures* which was used as the basis of the CalEEMod mitigation component.

[42] As discussed earlier in this paper, the Committee recommends assessing projects with post-2020 buildouts against later targets. For current projects with a horizon of 2020 or earlier, an analysis showing that a project provides a reduction below BAU of 28 percent or greater provides additional substantial evidence that the project would not conflict with AB 32 targets.

more projects will be subject to building energy, vehicle, and water efficiency measures in those areas. The percentage reduction below BAU for projects can be the same regardless of location but will just apply to more projects. For example, fast growing area A has five projects and slow growing area B has one project. If projects in both areas achieve a 29 percent reduction below BAU, the average reduction is 29 percent. The state does not need fast growing areas to reduce emissions by a larger percentage in order for it to reach its target. This is because regulations that apply to new and existing emission sources in both slow growing and fast growing areas are sufficient to offset overall increases from development statewide. In other words, the state only needs to address its average growth rate which includes both slow and fast growing areas.

In addition, growth projected in the Scoping Plan for development-related sectors is lower than for non-development related sources. Therefore, if one is using a percent below BAU level based on the statewide average for all emission sectors, then the development-related sectors subject to the average reduction amount are required to do more than non-development-related sectors. This is borne out by looking at where the state Scoping Plan expects to achieve the reductions required to reach the target.

Addressing Different New Development Locations

In Newhall Ranch, the Court suggests that a project threshold must account for project location. Emissions per capita will vary by location due to geographic, economic, and climate factors. Can the same reduction below BAU be applied to all projects regardless of location? The short answer is yes. The state relies on the average reduction, which includes all parts of the state and factors in differences in location. Project emissions for similar land uses will vary by location, but the reduction below BAU can be the same if consistent with growth forecasts used in the Scoping Plan.

New development in an area with high per capita VMT will achieve more absolute reductions (relative to BAU) than new development in an area with low per capita VMT, due to the disproportionate effect of state measures requiring vehicle and fuel technology improvements for transportation emissions in higher VMT areas. Areas with large temperature extremes will use more energy for heating and cooling, but will also achieve more reductions from state-mandated energy efficiency regulations than will areas with more moderate temperatures. Areas with high per capita VMT due to long distance commuting may have low building energy use to due moderate climate. The potential variations are endless; the key is the commonalities.

Projects provide housing, jobs, and services, all resulting in increases in transportation and energy use. They all benefit from reductions that target fuels, vehicles, and power generation. They are often interrelated within a community. People with jobs require housing. People in housing require goods and services. From this aspect, none are worse than any others; they just fulfill a different need within the community. Since all of these projects require transportation and energy, a BAU threshold that applies uniformly can work. Some projects will have lower emissions than others but the significance of the impact on climate change is best measured as to whether the project is doing its fair share to support statewide overall reductions.

City or regional climate action plans can help address the location concern by providing emission estimates that more accurately reflect local sources and land use plans. If there is no city or regional plan that identifies local or regional targets, what threshold should a city use? The answer until now for many lead agencies has been a reduction below BAU based on the statewide reductions required to reach AB 32 targets. The statewide average is not the correct percentage reduction because development related sources are required by regulation to do more than average for the State to achieve its 2020 target. When regulations are adequate to achieve the target, the percentage reduction required by regulation for development related sources is the reduction from BAU. A percentage reduction from BAU of 28 percent or higher appears necessary to demonstrate consistency with AB 32 targets.

Could a city select its own BAU threshold based on its own analysis of growth? CEQA provides latitude for cities in CEQA Guidelines 15183.5, but it has to be supported by substantial evidence that it doesn't significantly impact climate change. Cities with detailed emission inventories based on local sources and conditions, and projections accounting for adopted regulations and growth forecasts, would seem to have the basic information needed to support the crafting of a local threshold supported by substantial evidence. However, a CAP process could provide a comprehensive approach that would have more community support.

Addressing Diverse Development Types and Densities

The next factor to consider when using compliance with regulations as the basis of a significance finding is whether there are project characteristics that render the regulations insufficient to reduce the project impacts, and which would interfere with achieving the state target. The Newhall Ranch Court showed concern with factors such as a project's location and development density, compared with what the state used to make its BAU growth projections. Could a project be so big, and result in such a change in the regional development pattern, that it invalidates the state's growth forecast? Additionally, to what extent is the state relying on changes in density and development patterns in the proposed location of the project, and is the project consistent with those assumptions?

Relationship to SB 375 Regional Targets

As described earlier, the state assumes only a 1.4 percent reduction in 2020 transportation emissions from changes in land use and transportation systems through the SB 375 regional targets process.[43] These reductions would be achieved through buildout of already planned development and transportation infrastructure. Perhaps a test for large projects such as Newhall Ranch would be to assess whether the proposed development supports or conflicts with the regional target land use assumptions? Typical-scale residential subdivisions and shopping center projects consistent with the local general plan are part of the planned development pattern and density, and therefore would not conflict with location and density assumptions used for regional targets.

Changes in Land Use Assumptions

General plans are not static and are periodically updated to reflect each community's vision for future development. General plan update EIRs should examine the effect of new development allowed by the plan on regional growth projections, and their effect on longer term emission reduction targets for the state. Designating new land for development does not necessarily result in an increase in the rate of growth in the region or the state. New designated land may serve pent-up demand in areas with shortages of housing or jobs, but may also sit vacant for many years. Addressing pent-up demand may be positive in that it allows people who have been commuting long distances to have a shorter commute. Population growth will occur and people will need to live and work somewhere. Limiting growth in a community does not reduce global GHG emissions. The development pattern has some effect on motor vehicle use and on the feasibility of alternative modes of transportation. However, there is no substantial evidence that continued development as allowed by general plans, zoning ordinances, and development standards would interfere with the state achieving its 2020 GHG reduction target. On the contrary, the state assumed that development would continue as planned in developing its strategy.

[43] The latest accounting of Scoping Plan Measures was completed by ARB in 2011 and estimates reductions of approximately 3.0 MMTCO2e out of 210 MMTCO2e BAU transportation emissions. See: http://www.arb.ca.gov/cc/scopingplan/status_of_scoping_plan_measures.pdf

Growth forecasts are also not static. The state is tasked with updating the Scoping Plan to ensure that growth is properly accounted for in its BAU projections. The state's Cap and Trade regulation provides a mechanism to respond to differences in predicted growth. The state uses VMT forecasts prepared by the Regional Transportation Planning Agencies that are based on the latest planning assumptions within each region. This provides a feedback mechanism to ensure that growth can be accommodated without conflicting with air quality plans or with GHG targets.

Accounting for Development Density

The Court's concern regarding development density in Newhall mirroring the densities used in developing the statewide BAU projection is easily addressed. Development densities affect trip generation and VMT. Higher density development generates fewer vehicle trips than lower density development, as seen in trip generation rates published by the Institute of Transportation Engineers (ITE). The ARB baseline and the BAU inventory use VMT estimates generated by the regional transportation planning agencies from their regional transportation models. The transportation models estimate trips by employing land use assumptions and travel survey data to generate VMT. The BAU forecast does not account for changes in land use patterns, but rather is based on growth projections. However, for future year projections prepared for regional transportation plans and for SCS to comply with SB 375, the planned land use pattern from local general plans is accounted for. This allows credit for increasing development densities in achieving SB 375 regional targets.

The project-level modeling tool used in California (CalEEMod) includes a mitigation component that quantifies the benefits of land use, as well as transportation measures based on the characteristics of an individual project and the surrounding community in which it will be constructed. The percentage reductions allowed by the model are based on the increased potential for people using the project to walk, bicycle, and use transit for their daily trips, and on the project's proximity to major employment or commercial centers that would reduce trip lengths.

The CalEEMod modeling tools provide a reasonable means of comparing the transportation impacts of development at different locations demanded by the Court. The reductions claimed are supported by empirical data described in the CAPCOA document *Quantifying Greenhouse Gas Mitigation Measures*.

Recommendations for Current Projects

Newhall Ranch provides a high bar for using a BAU threshold. However, as we approach the 2020 milestone year it appears that California will achieve the 2020 target with its adopted regulatory strategy. This provides substantial evidence that new development is not preventing the State from achieving the 2020 target. Projects with buildout dates post 2020 will need a new threshold based on the new SB 32 2030 target. Continued use of thresholds based on achieving the statewide average reduction from BAU is not recommended. Thresholds based on reductions required from development related emissions accounting for the statewide regulations seem defensible, but still have a potential for legal challenge until the questions raised throughout this paper are resolved.

Post-2020 Considerations

If the concerns raised above can be overcome, either through a revised threshold formulation and calculation or through a substantial evidence based argument that the current threshold formulation is valid, then this threshold concept could be extended to the post-2020 period. There will remain differences in the base year and in the socioeconomic projections used to project the future milestone BAU, but provided the details of the forecast are fully documented and disclosed, and all projects using the percent below BAU threshold are consistent with the BAU forecast construction, then the comparisons made should be valid. A BAU threshold for 2030 was estimated

by using 2013 base year data for the statewide inventory, and with forecasts for 2030 BAU emissions, and then determining the reductions needed to meet a 40 percent below 1990 levels. The result as presented in the Technical Appendix is 50% below 2030 BAU levels. There is a high degree of uncertainty about the BAU emissions for 2050; as a result a 2050 BAU threshold was not estimated.

VI. Climate Action Plan Targets

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This section discusses the current CAP practice concerning GHG reduction targets, foundational principles for developing CAP targets, and recommendations in light of the post-2020 challenge and the Newhall Ranch ruling.

Current CAP Practice and Targets

Local CAPs emerged in the 1990s with the formation of ICLEI–Local Governments for Sustainability (formerly the International Council for Local Environmental Initiatives) and with that organization's Cities for Climate Protection Campaign. The purpose of a CAP is to provide a long-range planning document to address GHG emissions as a result of various transportation, development, and infrastructure projects. CAPs recognize the importance of local governments in achieving California's GHG reduction target set forth by AB 32. The overall intent and tone of CAPs can range from broad overviews of potential future actions to tangible strategies with well-defined goals and deadlines.

The CEQA Guidelines envision CAPs as providing an institutional means of ensuring that development projects and local plans rely on publicly-vetted reduction thresholds, and that they employ adopted reduction methods. CEQA Guidelines Section 15183.5 sets out the minimum requirements for "plans for the reduction of greenhouse gas emissions," which include CAPs meeting those requirements. Once adopted, a CAP can streamline the CEQA review process: If a project is consistent with an adopted CAP for the jurisdiction, then the project may have less than significant GHG emissions, absent a fair argument otherwise (CEQA Guidelines Section 15064.4[b]).

CAPs in their early years often contained high-level, ambitious goals that sometimes lacked technical or quantitative backing. More recently, CAPs have trended towards more technically sound analyses with rigorous/mandatory policies. This shift towards more implementable, strategic CAPs is in part due to OPR's 2010 CEQA Guidelines amendments. Currently, although the range of CAPs is diverse, there are some similarities among them. Specifically, most CAPs contain a well-known, recognizable set of land use and transportation sector solutions for reducing GHG emissions (e.g., addition of bike lanes, encouraging mixed use development, improved transit options). Typically, CAPs rely on actions under the control of the local government, including municipal initiatives such as ensuring that all local government buildings meet a certain degree of energy efficiency (such as LEED certification), as well as community initiatives which are typically related to areas such as transportation, solid waste, land use, and recycling within the boundaries of the community being analyzed.

A CAP that is to be used as the basis for tiered GHG emissions analysis under CEQA must meet the requirements of CEQA Guidelines Section 15183.5, as summarized below. This authorizes significance for individual projects to be determined through evaluation of consistency with the enforceable GHG reduction measures in the CAP:

- Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area;
- Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable;

- Identify and analyze the GHG emissions resulting from specific actions or categories of actions anticipated within the geographic area;
- Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;
- Establish a mechanism to monitor the plan's progress toward achieving the emissions level, and to require amendment if the plan is not achieving specified levels;
- Be adopted in a public process following environmental review.

Most CAP targets are based on the AB 32 GHG emission reduction target for 2020 (1990 levels or 15% below 2008 levels), although some include post-2020 goals. Until statewide reduction planning is completed to achieve the SB 32 target, CAPs with 2020 horizons are still applicable and legally adequate. CAP targets commonly in use include the following:

- *Less than 1990 emissions by 2020 or before*: Some jurisdictions, such as the City of San Francisco, developed CAPs even prior to AB 32 (inspired by the Kyoto protocol), and thus adopted targets to reduce emissions to below 1990 levels by 2020 or sooner.
- *1990 emissions by 2020:* Some jurisdictions, which have prepared 1990 emissions inventories, have adopted this target to be directly consistent with AB 32.
- *15% less than "current" emissions by 2020:* Many jurisdictions have adopted a CAP target that is 15% less than the "current" emissions, based on the ARB's recommendation for local governments in the AB 32 Scoping Plan. The AB 32 Scoping Plan was benchmarked on estimated 2004 to 2008 levels, accordingly. The most recent (2015) inventories prepared by ARB show that 2004 to 2008 statewide emissions are approximately between 11 and 13 percent above 1990 emissions levels.[44] Statewide, there is some variability in the 15% less than "current" emissions target due to differences in forecasts and emissions levels.
- *Percent below 2020 BAU emissions by 2020*: Some jurisdictions have adopted a CAP target based on a reduction from forecasted BAU emissions that would match the statewide reductions from 2020 BAU. Most jurisdictions are using a CAP target in the range of 28 to 31 percent below 2020 BAU emissions, based on the statewide reductions below 2020 BAU estimated at the time of the AB 32 Scoping Plan in 2008 needed to meet the AB 32 target. Some jurisdictions have adopted targets based on more recent forecasts with later base years, and consequently have lower percent reductions (due to lower BAU forecasts with lower emissions and greater efficiencies in later years). See discussion of the Newhall Ranch ruling implications for this CAP target approach, below.

The climate action planning process includes inventorying current GHG emissions, forecasting future GHG emissions, adopting a GHG emissions target, developing a CAP to address this target, vetting the CAP and its strategies through a public environmental review process, implementing policies, monitoring and tracking progress, and recognizing progress when targets are achieved. To reduce GHG emissions, communities may use a variety of methods, including but not limited to reducing waste disposal, conserving energy, and promoting "green" building. ICLEI provided a framework for drafting CAPs, which consisted of a baseline GHG emission inventory, a BAU forecast, assessing GHG emissions reductions to meet the target, and determination of a GHG emissions reduction target as a percentage below the BAU target. Currently, the ICLEI framework continues to

[44] As noted previously, the specific target used will vary depending on the base year selected and the data set used to calculate the reduction needed to match the AB 32 target.

be used in CAPs. In addition, the Statewide Energy Efficiency Collaborative (SEEC) provides a CAP template to assist agencies with preparing CAPs.

CAPs are often drafted as part of general plan updates or as amendments to general plans in order to codify a GHG emission target and an associated reduction strategy. CAPs can streamline the CEQA review process; if a project is consistent with an adopted CAP for the jurisdiction, then the project could have less than significant GHG emissions. [45]

Many existing CAPs have reduction targets for both community-wide GHG emissions (including emission sources related to land uses in the jurisdiction where the local agency has direct or indirect jurisdictional control), in addition to targets for municipal government operations (including emission sources related to facilities owned and operated by, and activities performed by, the local government). The community-wide reduction target is an overall target for the jurisdiction, while the municipal reduction target is focused on government operations. Municipal CAPs are often used to set an example for the broader community served by the local government. Since this discussion of target setting is for comprehensive reductions of GHG emissions, its focus is on community-wide GHG reduction targets. However, the same foundational principles discussed below for community targets can also be used in setting municipal targets.

Foundational Principles for CAP Targets

Align with Statewide Targets

The first foundational principle is alignment with statewide targets.

The ARB considers local governments "essential partners in achieving California's goals to reduce GHGs." Local governments have broad influence and authority over activities that contribute to significant direct and indirect GHG emissions. Through their planning and permitting processes, local ordinances, outreach and education efforts, and municipal operations, many local governments have become leaders in reducing GHG emissions."[46] Clearly ARB and other state agencies regard local governments that have adopted and are implementing CAPs as vital partners in achieving the statewide reduction targets provided in AB 32 (for 2020), SB 32 (for 2030), and EO S-03-05 (for 2050). CAPs are also the logical way to deal cumulatively with GHG emission reductions. The CEQA Guidelines recognize this in allowing development projects to tier the project-level GHG impact analysis required in CEQA from qualified CAPs (CEQA Guidelines §15183.5). A critical aspect of having a CAP that fits the criteria within CEQA Guidelines §15183.5 is a reduction target that aligns with statewide targets.

Many adopted CAPs have reduction targets aligned with AB 32, which focuses on a 2020 reduction target. CAP targets should be based on the state-adopted target for the next milestone after the local planning horizon, whether that is 2020, 2030, or 2050. Thus, if the planning horizon is 2020 or earlier, the target should be based on statewide reductions needed by 2020. If the planning horizon is 2025, then the target should be based on the 2030 target. If the planning horizon is 2035, then the horizon target should be based on the 2050 targets. Currently, there is no state-adopted target beyond 2020.

[45] However, there is currently no streamlining or exemption for the CEQA documents for CAPs themselves. In the *Beyond 2020* white paper, the Committee recommended such an exemption.

[46] ARB: Local Government Actions for Climate Change (Sept. 12, 2014) http://www.arb.ca.gov/cc/localgovernment/localgovernment.htm

SB 1383 establishes statewide targets for methane, HFCs, and black carbon in 2030, but these targets are separate from the SB 32 target which applies to the long-term effects of GHG emissions overall. Moreover, the state's SLCP is designed to address the short-term climate effect of these pollutants, while SB 32 is designed to address the long-term climate effect of GHG emissions overall. It is recommended that CAPs include separate estimates of methane, HFCs, and black carbon in emission inventories and forecasts. The inventory and forecasts should use short-term GWPs (20 year) instead of the long-term GWPs (100 years) used for the overall GHG emissions inventory. The CAP should assess the consistency of jurisdictional SLCP emissions with statewide reduction planning for SLCP reductions.

Identify the Horizon Year

The second foundational principle in target setting is identification of the horizon year.

From a planning perspective, local governments need to have planning documents that are consistent with one another. As such, the horizon year of a CAP should normally be the same as the horizon year of the general plan for that jurisdiction. There are exceptions which can be explored, but first this simple planning concept should be examined further. By having the CAP's horizon year match the general plan's horizon year, the CAP will capture the growth and level of activities that will occur within the local jurisdiction. From a CEQA perspective this can be seen as engaging the "whole of the project" (the project in this case being the future development allowed by the general plan).

The horizon year for a CAP influences the rigor of the reduction targets within the CAP, which gets back to the first aspect of target setting. As a general rule, CAPs being presently prepared should at least have an AB 32-compliant reduction target for 2020. But there should also be a reduction target that matches the horizon year as well. For this reason, it is common for CAPs to have multiple reduction targets including one for year 2020, and one for the horizon year of the CAP. In setting the rigor of a reduction target for a post-2020 horizon year, the concept of substantial progress toward the 2030 interim milestone, or toward the ultimate 2050 goal, may need to be considered.

The current 2050 target (from S-03-05) is to reduce GHG emissions 80 percent below 1990 levels by 2050. A horizon year target could match the 2050 goal. That goal requires that GHG emissions are reduced by approximately 95 to 99 percent compared to the typical baseline inventories of GHG emissions for a CAP.[47] This is why the Kyoto Protocol, the first international effort to mitigate GHG emissions, set targets in a stair-step format toward the 2050 goal. The latest international effort, the 2015 Paris Accord, includes the following language:

> "Emphasizing with serious concern the urgent need to address the significant gap between the aggregate effect of Parties' mitigation pledges in terms of global annual emissions of greenhouse gases by 2020 and aggregate emission pathways consistent with holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, Also emphasizing that enhanced pre-2020 ambition can lay a solid foundation for enhanced post-2020 ambition, . . . decides to adopt the Paris Agreement under the United Nations Framework Convention on Climate Change (hereinafter referred to as "the Agreement") as contained in the annex. . ."[48]

[47] This assumption is based on baseline inventory years ranging from 2008 to 2015.

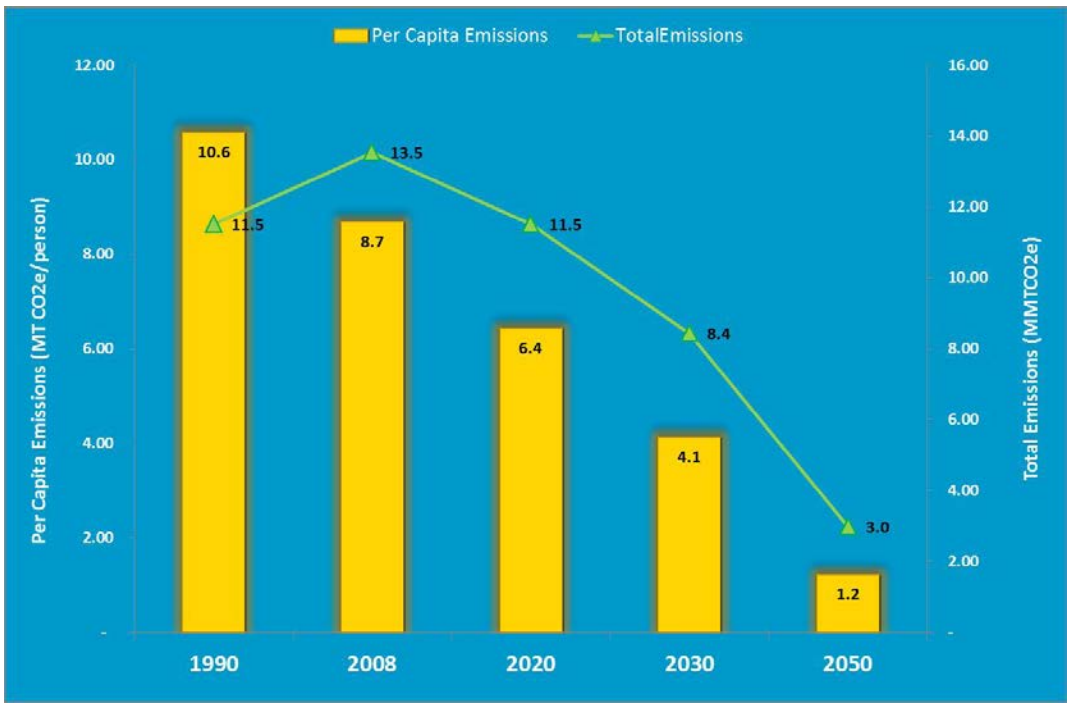
[48] United Nations Framework Convention on Climate Change, Conference of the Parties 21st session, Paris France, Adoption of the Paris Agreement. December 2015.

Use the Substantial Progress Paradigm to Identify the CAP Target

The third foundational principle in target setting is using "substantial progress" to address how the CAP will continue to achieve GHG emissions post-2020.

The best measure of whether an individual jurisdiction is providing its fair share of GHG reductions is whether that project supports "substantial progress" toward the statewide reduction targets over time, not whether the project is meeting a milestone target many years in the future, such as for 2050. The reason that international agreements and state targets do not simply go directly to the 2050 goal is because the goal cannot be met without substantial advances in cost-effective technological solutions related to GHG reductions. These advances require large-scale changes that are beyond the capability of any local agency to achieve by itself. The significant reductions needed in California to meet the 2050 goal can be seen in Figure 1 below:

Figure 1: Required GHG Reductions Needed to Meet the State's 2050 Target



A "substantial progress" CAP target can be identified for a project horizon year that is interpolated between the current milestone target for which an effective statewide plan exists (such as for 2020), and the next milestone target for which an effective statewide plan does not yet exist (such as for 2030). This is a more realistic approach than setting a 2050 target that the local agency will be incapable of meeting and whose implementation is dependent on future wide-scale advances that are unknown at this time.

The Paris Accord agreement requires the "Parties" to continue the efforts toward the 2020 target of reducing global GHG emissions down to 1990 levels and encourages post-2020 ambition toward keeping global average temperature well below 2°C. Ultimately, that requires substantial progress toward the 2050 goal.

In sum, thoughtful consideration needs to be made in target setting, so that the targets align with the state's efforts in GHG reductions, targets are included up to the horizon year of the CAP, and substantial progress is made toward the 2050 goal. With these aspects in mind, different types of targets are considered below.

Show Your Work (Provide Substantial Evidence)

A final key foundational principle is to "show your work." Transparent methodology and data ensure that the CAP can be reviewed for adequacy prior to adoption, that it can be updated as needed, and that, if litigated, the agency has substantial evidence to support the CAP.

CAP lead agencies should provide substantial evidence to support their CAP target identification in order to support future CEQA tiering of consistent projects.

Mass Emissions CAP Targets

Mass emissions targets are the most common within existing CAPs and aim to reduce total emissions within a jurisdictional area over a specified period of time. Since most CAPs used AB 32 in target setting, mass emissions targets typically focus on 2020.

Reduction Relative to 1990 by 2020

This type of target exactly mirrors the AB 32 statewide target of reducing emissions down to 1990 levels of emissions by 2020. The simplicity and direct correlation between the state target and this CAP target is its biggest advantage. The challenge in setting this type of mass emissions target is that it requires a 1990 inventory of GHG emissions. Because much has changed between current best practices in calculating transportation related GHG emissions and the traffic modeling, and record keeping in 1990, creating a 1990 emissions inventory may be a significant challenge and is ripe for error. Additional challenges in developing the 1990 inventory are data gaps related to energy use and other sectors. A target based on 1990 emissions would be robust only if the 1990 GHG inventory is accurate and represents best practices for emission calculations, and can be reasonably consistent with the statewide 1990 inventory. Otherwise the target will reflect the same errors present in the 1990 inventory. This approach is recommended if a reasonably representative 1990 emissions can be developed for the jurisdiction seeking to develop a CAP.

Reduction Relative to "Current Base Year" by 2020 to meet AB 32 Target

This is a very common reduction target within existing CAPs and often uses the recommendation within the 2008 AB 32 Scoping Plan of reducing "current" GHG emissions by 15 percent by year 2020. Note that the term "current" within the 2008 Scoping Plan recommendation is interpreted to mean a baseline year of 2004 to 2008. Some jurisdictions have applied the 15 percent reduction relative to baseline years as late as 2010 to 2012. Other jurisdictions have adjusted the percent reduction amount based on updated calculations of the reductions needed from a later base year to meet the AB 32 target. As emissions are reduced over time, due to the progressive effect of local and state regulations, the percent below the "current" base year emissions levels will in general be lower over time.[49]

Reduction Relative to 2020 BAU

CAPs typically forecast GHG emissions based upon local population growth, economic growth, and transportation-related growth anticipated within the general plan or by the Metropolitan Planning Organization (MPO) for the region. These forecasts in emissions use BAU to determine the future trajectory of GHG emissions absent any federal, statewide, regional or local GHG reductions. Often

[49] Based on the most recent state inventory data (2015, excluding carbon sinks), 2005 emissions would have to be reduced by 11% to get to 1990 levels, 2010 emissions would have to be reduced by 5% to get to 1990 levels and 2013 emissions would have to be reduced by 6% to get to 1990 levels.

targets are set based on the amount of BAU forecasted emissions that need to be reduced in order to achieve or exceed the reduction targets of the state. Common BAU reduction targets range from 25 to 31 percent below forecasted BAU emissions for the local jurisdiction by year 2020. These BAU-based reduction targets often directly or indirectly use the anticipated BAU reductions in the AB 32 Scoping Plan.

Post-2020 Mass Emission-Based CAP Targets

As noted above, California is at a point of transition between focus on the 2020 milestone and post-2020 reduction targets. Thus, new CAPs will need to address the post-2020 period. Using the foundational principles noted above, the post-2020 CAP targets will need to align with the statewide reduction targets for the next milestone and/or substantial progress toward the next statewide milestone.

Reduction Relative to 1990

Since statewide targets are articulated relative to 1990, a local CAP target benchmarked on 1990 will provide for the best consistency with statewide targets. For 2030, SB 32 includes a 40 percent below 1990 target. Substantial progress targets between 2020 and 2030 could interpolate between the AB 32 target and the SB 32 target. For example, a 2025 target of 20 percent below 1990 levels would be consistent with substantial progress toward the 2030 target. A similar logic could apply to interim years between 2030 and 2050.

Reduction Relative to 2020/AB 32

Many jurisdictions do not have a 1990 inventory and may find it difficult to accurately derive a 1990 inventory due to insufficient data. Thus, many existing CAP targets have been benchmarked to a base year between 2004 and 2008, and have adopted a reduction target of 15 percent below base year emissions, since the AB 32 Scoping Plan stated that this was a rough proxy value for 1990 emissions. Many CAPs have thus adopted this target for 2020.

Looking forward, if a local jurisdiction has adopted a target to meet AB 32 targets by 2020 using an equivalent percent below a base year, then post-2020 targets could be based on that AB 32-compliant 2020 target. For example, a 2030 target could be 40% below the 2020 AB 32 compliance target (on the presumption that the 2020 target is roughly the equivalent of 1990 levels).

Reduction Relative to Future BAU

CAP targets could also be based on some percentage reduction relative to a future BAU. In order to determine the percentage amount, the future milestone BAU emissions would need to be forecasted along with a determination of what the reduction from that BAU total would have to be in order to meet a post-2020 statewide target, or to make substantial progress toward that target.

As shown in the Technical Appendix, using 2013 data and roughly scaling up to 2030, statewide reductions from 2030 BAU to meet SB 32 could be approximately 48 percent. Thus, a potential target could be 48 percent below 2030 BAU. As noted above, the percent reduction amount is highly sensitive to the chosen base year used for the forecast, as well to as the assumptions about future growth. In addition, the level of uncertainty in forecasts increases with how far into the future the forecast is estimating growth and emissions.

Other CAP Target Concepts

CAP targets have usually consisted of some version of a mass emissions target, but there are a number of other concepts that could be used as the CAP target, or as a supplementary metric to a mass emissions-based CAP target. The following are some examples of alternative approaches.

Sectoral-Based Targets

Different sector-by-sector targets could be established instead of or in addition to an overall CAP target. The benchmarking for those targets could be based on an analysis of the reductions needed in each different sector statewide, based on the updated Scoping Plan in preparation for 2030. However, estimating the precise amount of sector-by-sector reduction without access to all the backing data in ARB's analysis supporting the Scoping Plan update would be challenging due to the overlap of many measures.

Per Capita or Per Service Population Targets

As described earlier, there are efficiency thresholds used for CEQA project evaluation, and in some cases for land use plan evaluations. Likewise, one could use a CAP target for efficiency instead of a mass emissions reduction target. The efficiency target would need to be based on the statewide profile of emissions, but with removal of emissions that are not related to the jurisdiction in question (e.g., if the jurisdiction has no port, then marine vessel emissions should be excluded from the efficiency target).

While an efficiency target can be readily calculated for post-2020 milestones, one criticism of this approach is that it would not necessarily result in net GHG reductions in particular jurisdictions, compared to current or past GHG emissions levels in that jurisdiction, particularly in high growth areas. If the statewide efficiency target anticipates that growth, this may not be an issue.

Unit-Based Targets

While not suitable for GHG reduction targets, a CAP could also propose and monitor any number of unit-based metrics to measure accomplishments in different sectors. For example, energy use per household, or VMT/capita, or VMT/SP, could be an additional metric that a lead agency may want to consider. Other metrics could be identified for waste generation and water use, or other key driving activity that results in a substantial amount of GHG emissions for that jurisdiction. However, if unit-based targets were used for CAPs intended to provide CEQA tiering, then substantial evidence would need to be provided to connect these targets to statewide GHG reduction targets.

CAP Preparation Considerations in Light of the *Sierra Club vs. San Diego County* Ruling

The *Sierra Club v. San Diego County* decision points out the potential pitfalls in CAP preparation. It is often challenging for a CAP to provide meaningful evidence that the GHG emissions targets proposed will be met, since that evidence often depends on the rigor of technical analyses prepared in support of the CAP, the number of voluntary and mandatory reduction measures, the implementation strategy including the enforceability of the measures, overall transparency, and the thoroughness of emission inventories. CAPs must focus on implementation and mitigation measures that are mandatory rather than voluntary to ensure that GHG emissions reductions targets are indeed achieved within a specified timeframe.

Opportunities for improving CAPs include developing more comprehensive tools for calculating and estimating baseline GHG emissions inventories, and projected emissions reductions from more sectors so that more specific and realistic GHG emissions reductions targets can be achieved. As more CAPs are developed and implemented over longer periods of time, the natural progression of knowledge in regards to best practices will begin to emerge. Finally, providing CEQA guidelines and thresholds of significance consistent with AB 32, SB 32, and future legislative GHG emissions targets will help to ensure that CAPs are aimed at achieving a common GHG emission target. The success of CAPs will depend on adoption of GHG emissions thresholds, associated mandatory mitigation measures, and meeting targets set forth by AB 32 for 2020, SB 32 for 2030 and beyond. CAPs should be an integral aspect of the CEQA review process because they provide a practical method for benchmarking GHG emissions through a method other than percent below BAU.

CAP Target Considerations in Light of the Newhall Ranch Ruling

As noted above, the Newhall Ranch ruling specifically referenced compliance with a GHG Reduction Plan as one appropriate approach for determining the significance of project GHG emissions under CEQA. Thus, the concern here is whether the ruling would affect the ability of lead agencies to use different CAP target approaches when developing CAPs that are intended to be used as the basis for tiering. It should be noted that a CAP deals with the entire emissions (both existing and future) for an entire jurisdiction, which is a very different evaluation than a for new development project (which was the specific subject of the Newhall Ranch case). Generally speaking, much of the Newhall Ranch ruling does not apply to CAPs. A CAP deals with a much broader set of emissions, including both existing and new development. CAPs address new development GHG emissions in the context of achieving an overall reduction in GHG emissions over time to support statewide targets.

The implications for different CAP target approaches are discussed below:

- *Reduction Relative to 1990 Levels:* The Newhall Ranch ruling would have no effect on the approach of benchmarking jurisdiction emissions using a 1990 base year. The state is using 1990 emissions as a base year for setting GHG reduction targets. A CAP that will reduce overall emissions (including both existing and new emissions) for a jurisdiction relative to 1990 levels in the same way as statewide GHG reduction targets will be an appropriate basis for project-level tiering, and that tiering will be an appropriate evaluation under CEQA based on substantial evidence.
- *Reduction Relative to "Current Base Year:"* While not as straightforward as the use of a 1990 base year, CAP targets that are keyed to a "current" base year should be unaffected by the Newhall Ranch ruling. As noted above, CAP targets using a base year other than 1990 should be at least as stringent as the reductions needed on a statewide level. Evidence should be provided in the CAP to clearly show how the reductions relative to the base year are the functional equivalent of the state reductions to (or below) 1990 emissions levels. The CAP should explain why a 1990 inventory was not prepared.
- *Reduction Relative to 2020 BAU:* Since the Newhall Ranch ruling, concerning the appropriateness of a percent below BAU CEQA threshold, some may be concerned that use of a percent below BAU CAP target may affect the ability of the CAP to be used in CEQA tiering. While this approach remains valid (as discussed below), the Committee recommends that new CAPs benchmark their targets using 1990 emissions (if possible), or a "current" base year instead of below future BAU emissions, to avoid potential challenges that might be raised to the CAP based on the Newhall Ranch ruling.

  A CAP is intended to deal with the totality of emissions related to an entire jurisdiction, not merely new development emissions. As such, provided there is evidence that the CAP target benchmarked to a future BAU condition is functionally equivalent to statewide reduction

targets, then the review of the consistency of a development project with the CAP should still be valid for CEQA review of GHG emissions. The Newhall Ranch ruling did not question the use of a statewide reduction target as a threshold, nor the percent below BAU methodology in general, only whether there was evidence to show why the statewide reduction level is appropriate to be used as the reduction level for new development projects. Consistency with a CAP in a percent below BAU target puts new development GHG emissions into the proper context and allows the lead agency to show how new development GHG emissions reductions fit in with the jurisdiction's overall approach to reduce all emissions consistent with statewide targets. Thus, the CAP can provide substantial evidence that can support the use of a consistency with CAP approach, even for a CAP using a percent below BAU reduction target. In addition, the CAP should explain why a 1990 inventory was not prepared.

- *Per Capita or Per Service Population Efficiency Targets*: The Newhall Ranch ruling would have no direct effect on the approach of benchmarking jurisdiction emissions using a per capita or a per service population target, provided there is evidence that the selected target is consistent with overall efficiency levels needed to meet statewide reduction targets. The Newhall Ranch ruling specifically described that CEQA thresholds for GHG emissions are aimed at promoting efficiency improvements over time, and thus this approach would be consistent with the ruling. However, one concern about an efficiency CAP target, unrelated to the Newhall Ranch ruling, is that in rapidly growing jurisdictions, the use of an efficiency target may not result in absolute reductions in GHG emissions. Since statewide emissions reduction targets are absolute reductions in GHG emissions, if using an efficiency CAP target would result in increase in GHG emissions over base years, then this approach may be subject to challenge. Lead agencies considering this approach would be advised to instead use a CAP target based on 1990 emissions or "current" year emissions to avoid this potential challenge. If this approach were to be used for a CAP, and the CAP would result in a net increase in emissions, then the lead agency should demonstrate why the use of the efficiency target would result in GHG emissions that would be consistent with statewide-GHG reduction targets overall.
- *Sector-Based or Unit-Based Targets*: While these approaches have not been used in CAPs to date, the Newhall Ranch ruling should have no effect on the approach of deriving individual sector-by-sector GHG reduction targets, or on unit-based targets, provided there is evidence that the CAP will reduce jurisdictional emissions overall consistent with statewide reduction targets.

VII. Additional Recommendations

Rich Walter, ICF

When considering climate action planning in this transitional period for CEQA, and as GHG reduction plans face new challenges, the AEP Climate Change Committee offers the following additional recommendations:

- *Use a Plan Approach instead of a Project Approach:* CEQA is not the best or even a particularly effective tool to address cumulative impacts, such as GHG emissions. It is more effective to address GHG emissions comprehensively in a forum that can address all sources of GHG emissions, including emissions from existing and new development, and regardless of whether or not they are subject to CEQA review. Thus, the development of comprehensive statewide reduction plans complemented by regional and local GHG reduction plans that are updated over time to address progressively more ambitious GHG reduction targets, will be more effective and efficient than spending the time and effort involved in project-by-project GHG reduction analysis under CEQA. SB 97 has established, and the Newhall Ranch ruling confirms, that tiering from a qualified GHG reduction plan is the superior approach to CEQA compliance, because it prioritizes approaching GHG reduction from an advanced planning perspective and not from a CEQA after-the-fact project perspective.
- *Coordinate efforts among ARB, Air Districts, CAPCOA, and CEQA Lead Agencies:* To date, ARB has focused on statewide GHG reduction planning, whereas regional air districts have taken up the challenge of developing CEQA guidelines and thresholds for use by CEQA lead agencies. CAPCOA has, in the past, produced highly useful guidance materials used to analyze GHG emissions. Many individual jurisdictions have developed GHG reduction plans, and some have developed methods of determining significance of GHG emissions. If ARB continues to focus on statewide GHG planning, and does not identify project-level GHG thresholds for post-2020 emissions, regional air districts are best suited to develop and recommend new thresholds, with support and guidance from CAPCOA.
- *Keep your Eyes on the Ball in a Time of Rapid Change:* Heraclitus of Ephesus (c. 500 BCE) famously said “everything flows”, which is often commonly referenced as “the only constant is change.” When AB 32 was adopted in 2006, it took a number of years and a lot of hard work by CEQA practitioners, lead agencies, CAPCOA, and air districts to develop the concepts presently used for GHG reduction plans and for CEQA GHG analysis. With the new challenges of the post-2020/post-Newhall Ranch ruling era, climate action planning will need to evolve again. We can expect that there will be new, unarticulated challenges in the future. However, despite the confusion and uncertainty that inevitably arises at times of rapid change, we should not lose sight of the real accomplishments being made across California to reduce GHG emissions. Moreover, we should seek to incentivize and support local jurisdictions, residents, businesses, and organizations with positive reinforcement when they make substantial progress to reduce GHG emissions under their control or influence. We should resolve current impediments and vulnerabilities resulting in disincentives, wasted time and effort, and CEQA lawsuits, so that we can focus more time identifying ways to support positive action on the ground in local communities across California.

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Technical Appendix: Tables

This appendix provides the data supporting the calculations of certain thresholds described in text above.

Table T-1: Adjusted Statewide 1990 Land Use Sector Emissions Inventory (MMT CO_2e/yr.)

Emissions Sector	Total Emissions	Excluded Emissions	Adjusted Land Use Sector Emissions	Notes/Adjustments
Electricity	110.5	36.5 (33%)	74.0	Applied CEC 1990 electricity consumption rates for industrial land uses to remove industrial electricity consumption (33% per CEC 2009).
Transportation	150.6	12.7 (8%)	137.9	Removed aviation, non-specified transportation, rail, and water borne transportation.
Landfills	7.5	0.9 (12%)	6.6	Removed industrial solid waste disposal (12% per CIWMB 1999)
Wastewater Treatment	3.6	0.4 (11%)	3.2	Removed industrial wastewater treatment emissions (i.e., fruits and vegetables, poultry, and red meat processing).
Commercial	14.4	0.6 (4%)	13.9	Removed national security emissions.
Residential	29.7	None	29.7	Land use sector includes all emissions.
Agriculture & Forestry	18.9	18.9 (100%)	0.0	Not included in land use sector
Industrial	94.3	93.6 (100%)	0.7	Separated landfills and wastewater treatment from sector. Only included construction in land use sector
Not Specified	1.3	0.0 (0%)	1.3	Included in land use sector
Total	430.7	163.5 (38%)	267.2	
Sources: GHG Emissions from ARB 2007, Adjustment for Industrial Electricity = CEC 2009, Adjustment for Industrial landfill = CIWMB 1999				

Table T-2: Example 2020, 2030 and 2050 GHG Efficiency Metrics for the Land Use Sector

	1990 (Actual)	2020 (per AB 32)	2030 (per SB 32)	2050 (per S-03-05)
Adjusted Land Use Sector Emissions (MTCO2e)	*267,249,666*	*267,249,666*	*160,349,800*	*53,449,933*
Population	29,758,213	40,619,346	44,085,600	49,779,362
Adjusted Employment	11,860,900	15,834,000	17,441,000	20,935,000
Service Population (SP)	*41,619,113*	*56,453,346*	*61,526,600*	*70,714,362*
GHG Efficiency MTCO2e/SP) = Land Use Sector Emissions/SP	6.3	**4.7**	**2.6**	**0.8**

Sources: Land Use sector emissions for 1990 from Table T-1, Population from Department of Finance 2014, Employment for 1990 from EDD. Employment for 2020 and 2030 from California Economic Forecast 2015. 2050 employment estimate extrapolated based on 2030 to 2040 trend.

Notes:

1. Emissions for 2020 assumed to be same as 1990 emissions to meet AB 32.
2. Emissions for 2030 assumed to be 40 percent below 1990 emissions to meet SB 32.
3. Emissions for 2050 assumed to be 80 percent below 1990 emissions to meet S-03-05.
4. Adjusted Employment excludes farm and manufacturing employment.
5. Includes construction emissions and employment. If using these thresholds, will need to amortize construction emissions over life of project and include in total project emissions.

Table T-3: Adjusted 1990 Statewide Land Use Sector Emissions Inventory, Excluding On-Road Passenger and Light Duty Transportation Emissions

Emissions Sector	Total Emissions	Excluded Emissions	Adjusted Land Use Sector Emissions	Notes/Adjustments
Electricity	110.5	36.5 (33%)	74.0	Same Adjustments as Table T-1.
Transportation	150.6	121.6 (81%)	29.0	Removed passenger/light-duty trucks, aviation, non-specified transportation, rail, and water borne transportation.
Landfills	7.5	0.9 (12%)	6.6	Same Adjustments as Table T-1.
Wastewater Treatment	3.6	0.4 (11%)	3.2	Same Adjustments as Table T-1.
Commercial	14.4	0.6 (4%)	13.9	Same Adjustments as Table T-1.
Residential	29.7	None	29.7	Same Adjustments as Table T-1.
Agriculture & Forestry	18.9	18.9 (100%)	0.0	Same Adjustments as Table T-1.
Industrial	94.3	93.6 (100%)	0.7	Same Adjustments as Table T-1.
Not Specified	1.3	0.0 (0%)	1.3	Same Adjustments as Table T-1.
Total	430.7	272.3 (63%)	158.4	
Sources: GHG Emissions from ARB 2007, Adjustment for Industrial Electricity = CEC 2009, Adjustment for Industrial landfill = CIWMB 1999				

Table T-4: Example 2020, 2030, 2050 Statewide GHG Efficiency Metrics for the Land Use Sector, Excluding Passenger/Light-Duty Truck GHG Emissions

	1990 (Actual)	2020 (per AB 32)	2030 (per SB 32)	2050 (per S-03-05)
Adjusted Land Use Sector Emissions (MTCO2e)	*158,375,500*	*158,375,500*	*95,025,300*	*31,675,100*
Population	29,758,213	40,619,346	44,085,600	49,779,362
Adjusted Employment	11,860,900	15,834,000	17,441,000	20,935,000
Service Population (SP)	*41,619,113*	*56,453,346*	*61,526,600*	*70,714,362*
GHG Efficiency MTCO2e/SP) = Land Use Sector Emissions/SP	3.6	**2.8**	**1.5**	**0.4**

Sources: Land Use sector emissions for 1990 from Table T-3, Population from Department of Finance 2014, Employment for 1990 from EDD. Employment for 2020 and 2030 from California Economic Forecast 2015. 2050 employment estimate extrapolated based on 2030 to 2040 trend.

Notes:

1. Emissions for 2020 assumed to be same as 1990 emissions to meet AB 32.
2. Emissions for 2030 assumed to be 40 percent below 1990 emissions to meet SB 32.
3. Emissions for 2050 assumed to be 80 percent below 1990 emissions to meet S-03-05.
4. Adjusted Employment excludes farm and manufacturing employment.
5. Includes construction emissions and employment. If using these thresholds, will need to amortize construction emissions over life of project and include in total project emissions.

Table T-5: Adjusted 1990 Statewide Land Use Sector Emissions Inventory, Excluding On-Transportation Emissions

Emissions Sector	Total Emissions	Excluded Emissions	Adjusted Land Use Sector Emissions	Notes/Adjustments
Electricity	110.5	36.5 (33%)	74.0	Same Adjustments as Table T-1.
Transportation	150.6	150.6 (100%)	0.0	Removed all transportation
Landfills	7.5	0.9 (12%)	6.6	Same Adjustments as Table T-1.
Wastewater Treatment	3.6	0.4 (11%)	3.2	Same Adjustments as Table T-1.
Commercial	14.4	0.6 (4%)	13.9	Same Adjustments as Table T-1.
Residential	29.7	None	29.7	Same Adjustments as Table T-1.
Agriculture & Forestry	18.9	18.9 (100%)	0.0	Same Adjustments as Table T-1.
Industrial	94.3	93.6 (100%)	0.7	Same Adjustments as Table T-1.
Not Specified	1.3	0.0 (0%)	1.3	Same Adjustments as Table T-1.
Total	430.7	301.4 (70%)	129.3	

Sources: GHG Emissions from ARB 2007, Adjustment for Industrial Electricity = CEC 2009, Adjustment for Industrial landfill = CIWMB 1999

Table T-6: Example 2020, 2030, and 2050 Statewide GHG Efficiency Metrics for the Land Use Sector, Excluding On-Road GHG Emissions

	1990 (Actual)	2020 (per AB 32)	2030 (per SB 32)	2050 (per S-03-05)
Adjusted Land Use Sector Emissions (MTCO2e)	*129,332,462*	*129,332,462*	*77,599,477*	*25,866,492*
Population	29,758,213	40,619,346	44,085,600	49,779,362
Adjusted Employment	11,860,900	15,834,000	17,441,000	20,935,000
Service Population (SP)	*41,619,113*	*56,453,346*	*61,526,600*	*70,714,362*
GHG Efficiency MTCO2e/SP) = Land Use Sector Emissions/SP	3.0	**2.3**	**1.3**	**0.4**

Sources: Land Use sector emissions for 1990 from Table T-5, Population from Department of Finance 2014, Employment for 1990 from EDD. Employment for 2020 and 2030 from California Economic Forecast 2015. 2050 employment estimate extrapolated based on 2030 to 2040 trend.

Notes:

1. Emissions for 2020 assumed to be same as 1990 emissions to meet AB 32.
2. Emissions for 2030 assumed to be 40 percent below 1990 emissions to meet SB 32.
3. Emissions for 2050 assumed to be 80 percent below 1990 emissions to meet S-03-05.
4. Adjusted Employment excludes farm and manufacturing employment.
5. Includes construction emissions and employment. If using these thresholds, will need to amortize construction emissions over life of project and include in total project emissions.

Table T-7: Example 2020, 2030, 2050 GHG Efficiency Metrics for General Plans

	1990 (Actual)	2020 (per AB 32)	2030 (per SB 32)	2050 (per S-03-05)
Statewide GHG Emissions (MMTCO2e)	430,724,004	430,724,004	258,434,402	86,144,801
Population	29,758,213	40,619,346	44,085,600	49,779,362
Employment	14,099,000	17,588,000	19,235,000	22,557,000
Service Population (SP)	43,857,213	58,207,346	63,320,600	72,336,362
GHG Efficiency (MMTCO2e/SP)	9.8	**7.4**	**4.1**	**1.2**

Sources:
1. GHG Emissions for 1990 from CARB 2007.
2. Population from Department of Finance. 2014
3. Employment from EDD for 1990 and California Economic Forecast 2015 for 2020 and 2030. 2050 employment estimate extrapolated based on 2030 to 2040 trend in California Economic Forecast for 2015.

Notes:
1. Emissions for 2020 assumed to be same as 1990 emissions to meet AB 32.
2. Emissions for 2030 assumed to be 40 percent below 1990 emissions to meet SB 32.
3. Emissions for 2050 assumed to be 90 percent below 1990 emissions to meet S-03-05.

Table T-8: Percent below BAU Emissions Needed to Meet AB 32 and SB 32 Targets

Metric	MMTCO2e	Notes
Calculation of Percent below 2020 BAU Target Using 2008 AB 32 Scoping Plan Data		
1990 emissions	426.6	Statewide emissions estimate, including sinks
2020 BAU emissions	596.2	2020 forecast from AB 32 Scoping Plan, including sinks
2020 target	426.6	1990 emissions
Percent Below 2020 BAU	28%	Calculation
Calculation of Percent below 2020 BAU Target Using Current Data		
1990 emissions	430.7	Statewide emissions, excluding sinks (ARB 2007)
2013 emissions	459.3	Actual emissions, excluding sinks
2020 BAU emissions	539.0	2014 forecast, excluding Pavley I/LCFS/Advanced Clean Cars
2020 target	430.7	1990 emissions (ARB 2007)
Percent Below 2013	6%	Calculation
Percent Below 2020 BAU	20%	Calculation
Calculation of Percent below 2030 BAU Target		
2030 BAU emissions	511.9	CA Pathways Forecast (E3, 2014), but adjusted to exclude current policy effects. CA Pathways Forecast for 2030 is 409.06 MMTC02e. Current policy effect calculated by comparing 2020 BAU from above to 2020 target as current policies expected to meet AB 32 target. Calculated policy effect is 20.09%.
2030 target	258.4	40% below 1990 emissions levels
Percent Below 2013	44%	Calculation
Percent Below 2030 BAU	50%	Calculation