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City of Davis 2020-2040 Climate Action and
Adaptation Plan

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Memo

Subject: Greenhouse Gas Emissions Thresholds Options

This memorandum provides a summary of options for thresholds of significance to use in evaluating a project's greenhouse gas (GHG) emissions under the California Environmental Quality Act (CEQA). The memorandum first explains the differences between how the City might evaluate projects using the 2020-2040 Climate Action and Adaptation Plan (CAAP) compared to the use of independent GHG thresholds of significance. It then describes key principles in establishing GHG thresholds based upon CEQA statutes and case law. Finally, it presents several threshold options and a summary of the approach to establishing GHG thresholds for CEQA review adopted by the local air district and several surrounding air districts.

The information provided in this memorandum does not, and is not intended to, constitute legal advice. The legal landscape framing CEQA review is ever changing. Our evaluation is grounded in our understanding of the legislative framework and legal environment related to GHG analysis under CEQA, but the City is advised to seek counsel to obtain advice with respect to any particular legal matter.

Introduction and Purpose

The Draft 2020-2040 CAAP affirms the City's commitment to reduce GHG emissions and protect public safety consistent with State goals and guidance concerning climate change. The CAAP identifies GHG mitigation and climate adaptation strategies that align with the City's goals and priorities. The CAAP establishes the City GHG reduction targets of 40 percent below 2016 levels and 5.2 metric tons (MT) carbon dioxide equivalents (CO₂e) per capita per year by the year 2030, and the aspirational goal of carbon neutrality by the year 2040. The CAAP provides strategies to address climate risk consistent with State recommendations and regulatory requirements, including 14 CCR § 15183.5 and Government Code § 65302.

CEQA requires discretionary plans and projects to evaluate the plan- or project-related GHG emissions as part of the environmental review process. Pursuant to CEQA Guidelines Sections 15064(g)(3), 15130(d), and 15183(b), a project's incremental contribution to a cumulative GHG emissions effect may be determined not to be cumulatively considerable if it complies with the requirements of a local jurisdiction's GHG reduction plan.

While CEQA lead agencies often use a climate action plan consistency analysis for environmental review, a climate action plan establishes communitywide targets and goals for GHG reductions that are applicable to all existing *and* future development. Therefore, if a subject project is to use separate thresholds, and not rely on a

climate action plan for GHG impact evaluation, such thresholds should be set to reflect the emissions reductions needed to be achieved purely by *new* development to align with the State’s legislative mandates for GHG emissions reduction. It is generally presumed that new development should be more GHG efficient compared to on-the-ground, existing development.

In order to support a consistent approach to evaluate GHG emissions from projects subject to CEQA and identify projects in alignment with the CAAP GHG emissions reduction targets, this memo outlines the current framework for establishing GHG thresholds of significance for use in evaluating projects under CEQA and details a subset of available threshold types potentially applicable to development in the city.

Principles for Significance Determinations

A significance threshold defines the level of impact above which the impact would normally be considered significant, and below which normally the impact would be considered less than significant. Thresholds can be quantitative or qualitative and can be developed on a project-by-project basis or adopted and applied universally.

For evaluating GHG emissions under CEQA, there are some core principles to consider when setting significance thresholds:

- **Timeframe:** Develop an appropriate timeframe
- **State legislative framework:** Describe how the threshold supports the State regulatory framework (Assembly Bill [AB] 32, Senate Bill [SB] 32, etc.).
- **Fair Share:** Identify a fair share of emissions reduction for the subject project relative to the State’s legislative GHG emissions reduction mandates.
- **Project Type and Location:** Explain how the threshold is appropriate for use for the subject project in consideration of the specific project type and location.
- **New Development:** Show that the selected threshold is appropriate for use in evaluating new development, in contrast to existing development.
- **Relevant Emissions Sources:** Develop a threshold that considers the same sources of emissions as the projects that would use the threshold.¹

Lead agencies may apply thresholds developed by other agencies or experts, so long as the use of such thresholds is supported by substantial evidence (CEQA Guidelines Section 15064.7). According to CEQA Guidelines Section 15064.4, for *“the significance of a project’s greenhouse gas emissions, the lead agency should focus its analysis on the reasonably foreseeable incremental contribution of the project’s emissions to the effects of climate change. A project’s incremental contribution may be cumulatively considerable even if it appears relatively small compared to statewide, national, or global emissions.* CEQA Guidelines Section 15064.4 further recommends that the GHG emission analysis should use an appropriate timeframe, and should reflect evolving scientific knowledge and the State regulatory framework. This section of the CEQA Guidelines further enforces the connection between GHG emissions thresholds and the State legislative mandates for GHG emissions reduction – suggesting that lead agencies *“consider a project’s consistency with the State’s long-term climate goals or strategies, provided that substantial evidence supports the agency’s analysis of how those goals or strategies address the project’s incremental contribution to climate change and its conclusion that the project’s incremental contribution is not cumulatively considerable.”*

¹ For most land use projects, the following long-term GHG emissions are typically included: on-road transportation, off-road operational equipment, electricity and natural gas use, area sources, applicable stationary sources (e.g., generators), water use and wastewater treatment, and solid waste disposal. Most land use projects also involve a short-term source of GHG emissions associated with construction activities.

Additional principles for GHG emissions significance thresholds have been established through court rulings. In *Golden Door Properties, LLC v. County of San Diego* (2018) (Golden Door 2018), the Fourth District Court of Appeal upheld the trial court’s ruling that the San Diego County’s “2016 Climate Change Analysis Guidance Recommended Content and Format for Climate Change Analysis Reports in Support of CEQA Document” included an inappropriate threshold of significance. The court found that the threshold of significance was not supported by substantial evidence showing how the threshold, which is built to demonstrate consistency with the statewide legislative framework for reducing GHG emissions, would represent the county’s fair share of emission reductions, and that the 2016 GHG Guidance did not explain why the efficiency threshold was appropriate for different project types. The court references concerns expressed in a 2015 Supreme Court decision (*Center for Biological Diversity v. California Department of Fish and Wildlife* [Newhall Ranch]) about a threshold that does not account for the variations between different types of development, and that does not explain why the per-person limit would be appropriately evenly applied despite project differences.

The court in Golden Door 2018 also brings into the ruling a concept from Newhall Ranch related to new versus existing development. While the EIR evaluated in the Newhall Ranch case used a different threshold concept (percent below business as usual), the Supreme Court could not identify support for the use of a threshold derived from State legislative mandates is appropriate for new development, positing that greater emissions reductions may be required from new development.

These court rulings do not necessarily mean that using a particular type of threshold is improper, only that it is important to explain and provide evidence that the threshold selected is appropriate for the project location and type.

Threshold Options

The following provides an overview of each threshold type²; applicability of each threshold (i.e., the range of project types); and the key benefits and challenges associated with each respective threshold concept.

Not all possible threshold options are evaluated below; just those that would seem to have potential for the City. In addition, not all threshold options are applicable to all project and land use types. It may not be possible to address all potential project types with a single threshold, and some projects may still require independent review and consideration of GHG emission impacts beyond the use of the following threshold options. Similarly, different emissions sources may also be appropriate to approach differently; for example, for certain projects, the passenger vehicle emissions may be appropriate to separate out from total project emissions, and evaluate those using a VMT threshold and then evaluate the non-passenger vehicle and other emissions using a GHG threshold that allows the project to demonstrate that it is supportive of the statewide legislative framework.

Table 1 summarizes an assessment of Threshold options according to their potential defensibility, flexibility, and practicality, with our overall recommendations.

It may be that the City uses a “tiered” approach that, for example, would have projects first consider use of the CAAP for evaluating GHG emissions impacts under CEQA, then consider use of an efficiency threshold.

² A GHG reduction plan, once adopted, can be used in the cumulative analysis of GHG impacts of later projects (CEQA Guidelines Section 15183.5[b][2]) and support streamlining of CEQA review of GHG impacts. Thresholds provided in this memo apply to those discretionary projects that would not otherwise tier from the 2020-2040 CAAP CEQA document, and require further analysis of impacts related to GHG emissions for the purposes of CEQA.

TABLE 1: THRESHOLD OPTIONS ASSESSMENT

THRESHOLD OPTION	Potential Defensibility – How strongly does the Option hue to the State legislative framework?	Flexibility – How flexible is the Option for use among different project types and sizes?	Practicality – How difficult is the Option to use, technically	Recommendation	Important Notes
BRIGHT-LINE THRESHOLDS	Strong	Highly Flexible	Relatively Easy	Recommended for potential screening use	Many air districts have derived a bright line threshold, set at a relatively low level of emissions. This is helpful for facilitating review of small projects, and focusing on mitigating instead the impacts of larger projects. One possible issue is that a jurisdiction could have a large number of small, inefficient projects that collectively create a GHG reduction problem.
PERCENT BELOW BUSINESS AS USUAL	Weak	Moderately Flexible	Relatively Difficult	Not recommended	
EFFICIENCY-BASED THRESHOLDS	Strong	Highly Flexible	Moderate Difficulty	Recommended	As noted in the “Flexibility” column, the efficiency threshold approach is highly flexible, meaning, it can be applied to many different project types. In particular, it is effective with “typical” land use projects that include residential, office, and commercial uses – particular commercial uses that involve a mix of employment and visitor travel. It can be a little more challenging to use with projects that are highly emissive but have really low employment densities and do not have a lot of patrons.
GHG REDUCTION OR NET-ZERO THRESHOLD	Strong	Highly Flexible	Relatively Easy	Not recommended due to feasibility constraints	The entry in the “Recommendations” column about feasibility recognizes that for many projects, it is not feasible within the project design to achieve net zero GHG emissions. And, that the cost for verified reduction credits could increase in the future, and could represent a substantial project cost required to achieve net zero GHG emissions.
BEST MANAGEMENT PRACTICES	Moderate	Not Flexible	Relatively Easy	Not recommended due to feasibility constraints	Please note that the Sacramento Metropolitan Air Quality District and the Bay Area Air Quality Management District both use a best management approach rather than a cumulative significance threshold. Here, the entry in the “Recommendations” column about feasibility recognizes that some projects may not be able to eliminate natural gas at this time, or may not be able to achieve a 15 percent VMT reduction. Some projects may require flexibility in how emissions reductions are achieved.
PROXY THRESHOLDS	Weak	Moderately Flexible	Relatively Difficult	Not recommended	

Bright-Line Thresholds

Approach Overview

A bright-line threshold, is a numeric threshold, also often referred to as a mass emission threshold, which is typically presented as a total mass (metric tons) of GHG emissions per year from a given project. If project-generated emissions are estimated to be less than the bright-line threshold, impacts would be determined to be less than cumulatively considerable. In such cases, no additional analysis or implementation of mitigation would be required. If a project's GHG emissions would exceed the bright-line threshold, all feasible mitigation would be required to reduce emissions to a level below the threshold, or GHG offsets/credits³ purchased if feasible mitigation could not reduce emissions to the level required.

Bright-line thresholds are intended to capture and mitigate the majority of GHG emissions from new development. This was a common threshold adopted by several air districts throughout the state when initially working to establish GHG thresholds of significance for consistency with the state's 2020 GHG reduction target. Most were determined based upon a gap or capture rate analysis, such that some percentage (e.g., 90 percent) of emissions from new development would be subject to mitigation review and potentially reduced, while the remaining 10 percent were small projects that would be identified as less than cumulatively considerable if they would not result in emissions in exceedance of the established bright-line threshold.

Pros:

- A clear metric against which quantified project-level emissions can be easily compared.
- Can support small projects in ease of review and analysis under CEQA for the purposes of GHG emissions.
- Can be used for a wide range of land use development projects.

Cons:

- Lends itself to smaller projects that result in a low level of emissions.
- May not apply those projects that are generally an improvement in efficiency due to siting or increases in density that may increase total emissions but may reduce emissions on a per-capita or per-employee basis.
- Can limit the size of projects or result on onerous mitigation on otherwise beneficial projects due to the intent to reduce total emissions below a certain level.
- Requires additional substantiation to defensibly demonstrate why a capture rate of 90 percent (or whatever other percentage may be selected) is appropriate at the local level for a jurisdiction to contribute its fair share of emissions reductions toward state targets.

Applicability:

Any land use or project type, including public infrastructure projects.

Percent Below Business as Usual

Approach Overview

This approach identifies a percent reduction level a project or plan would need to achieve below the business-as-usual (BAU) emissions level for a particular horizon time. BAU emissions are the GHG emissions that would occur at a particular horizon time without the project, local, state, or federal actions to reduce GHG emissions.

³ A mitigation measure requiring the purchase of GHG offsets/credits would need to be designed to meet best practices as directed by CEQA Guidelines and CEQA case law, including details with substantial evidence to demonstrate that the offsets would be real, additional, verifiable, enforceable, and permanent.

BAU emissions are defined using a specified past or current base year and then forecasting future emissions to a fixed milestone year without efforts to control GHG emissions after the base year.

Pros:

- Applicable to projects of all sizes, as the threshold is a percentage reduction rather than a defined emissions level.

Cons:

- Since BAU changes as new regulations become effective or are updated (CalGreen Code for example), the BAU threshold target itself would require periodic maintenance.
- Requires additional substantiation of how the percentage reduction of emissions from BAU is appropriate for the particular locality and project type to align with the state reduction targets from BAU.⁴
- Need to consider if and to what extent new development may need to carry a greater rate of reduction than average local reductions due to the contribution of emissions from existing sources, which are more limited in actions available to reduce emissions.⁵

Applicability:

Any land use or project type.

Efficiency-Based Thresholds

Approach Overview

An efficiency-based threshold is a measure of a project's GHG emissions intensity, or emissions per service population or per capita. Under this approach, emissions are evaluated with reference to the population that would be served by a particular project. The efficiency metric threshold represents the intensity of a project's emissions normalized against its population or "service population;" a service population is typically defined as the sum of residents plus employees.

Pros

- A clear metric that is simple to calculate and compare to at a project level.
- Does not penalize larger projects simply due to scale; rather, provides a rate that applies to projects irrespective of size.
- Accounts for projects that reduce the emissions rate, even if total emissions increase due to project size; for example, infill housing or local employment opportunities, which are sited to reduce vehicle miles traveled per resident or employee, among other GHG emissions and climate-related benefits.
- Does not require an additional percentage reduction of emissions through mitigation for already efficient projects.
- Ties directly to the State legislative mandate; can be automatically updated by describing how the threshold should be applied when new data becomes available; provides a clear basis for mitigation,

⁴ The need to demonstrate how a threshold is applicable to a particular location within California or a particular project type is not unique to the BAU approach. However, this substantiation may be somewhat more involved with this threshold approach. This is because the applicable set of requirements that represent BAU are different for different project types and project locations.

⁵ Similar to Footnote 3, the need to explain how a threshold is appropriate for proposed new development, as opposed to on-the-ground, existing development, is not necessarily unique to the BAU approach. However, since new regulations are adopted and updated over time, and since these regulations could apply differently to new versus existing development, the process of demonstrating that the BAU approach is appropriate for new development could be somewhat more complex. As noted under the first bullet, that approach would also need to be maintained over time as new regulations are promulgated.

performance standards, and offsets; can easily be set for different buildout years or project lifetimes; Newhall Ranch case emphasizes efficiency

Cons

- Challenging to isolate the emissions inventory for new versus existing development that would inform this threshold, and explain how this threshold is appropriate for new versus existing development, for the city in particular, and for each project type.
- Need to explain that, since an efficiency threshold is built using only those emissions and service population from sectors relevant to land use development projects, it is appropriate for application to land use development projects (residential, retail, service, office projects).
- Difficulty in applying this approach to projects that do not have a clear “service population;” for example, projects that may produce a widely used service or product by an end user, but does not directly support a substantial number of employees or residents.

Applicability

Typically, residential, retail, service, office, and some commercial land use projects.

GHG Reduction or Net-Zero Threshold

Approach Overview

The basis of this approach is that a project’s total net emissions would be a net reduction or no change from baseline conditions. A project would either directly reduce GHG emissions or offset all of the project-related emissions that cannot be otherwise mitigated.

Pros

- Clear to communicate.
- Straightforward to defend with regard to impact determinations under CEQA.

Cons

- Most land use development or infrastructure project are not independently resulting in zero GHG emissions or a reduction of GHG emissions from baseline.
- Achieving this threshold typically requires a robust and potentially expensive mitigation strategy, inclusive of GHG emissions offsets.
- Does not account for future regulatory and technological advances at the state and regional level that will be required for the State to achieve carbon neutrality by 2045.

Applicability

This approach is not specific to a particular land use or project type, but would typically be relevant to redevelopment of a site where proposed development would be less intensive or more efficient with regard to GHG emitting sources than the existing land use.

Best Management Practices

Approach Overview

Under this approach, a list of best management practices (BMPs), typically in the form of design standards, would be required of projects. These BMPs should address all substantial sources of emissions and should be

based upon local emissions reductions required to align with the State Scoping Plan and related reduction targets.

Pros

- Eliminates the need for a quantitative analysis for those projects that implement the required BMPs.
- Can be developed to account for emissions reductions that will need to be achieved through regulatory and technological advances beyond the control of the project, such as increased zero-emissions vehicle deployment as part of the overall fleet mix and reduced GHG intensity of electricity.

Cons

- These can be inflexible, as they are prescriptive design features and not quantitative thresholds that account for all emissions sources.
- Unless developed to incorporate alternative mechanism of compliance, these do not offer an option for those project types for which the BMPs are infeasible.
- No basis for offsetting emissions or moving to carbon neutrality until the fleet converts and energy consumption is GHG-free.
- Needs to be updated periodically based on cost, technology, feasibility, and that the BMPs continue to demonstrate substantial progress toward statewide reduction targets locally.

Applicability

This approach is not specific to a particular land use or project type, but can be limiting in applicability to projects for which the BMPs are irrelevant or infeasible.

Proxy Thresholds

What is this approach?

This approach uses consideration of other impacts, such as VMT or energy efficiency, which are related to, but not a direct evaluation of, GHG emissions. A quantitative evaluation of GHG emissions is not required to support this threshold. Rather, an impact determination for the proxy threshold, such as energy efficiency, would serve as the determining fact of whether or not a project would also result in impacts associated with GHG emissions. This approach does not explicitly identify what level of emissions is a cumulatively considerable contribution, but uses other impact evaluations to support a finding for GHG emissions effects.

Pros

- Does not require quantification of a project's GHG emissions.

Cons

- Does not directly evaluate GHG emissions and, therefore, the select proxies require clear substantiation to inform parallel GHG impact determination.

Applicability

This approach is not specific to any one or set of land uses or project types.

Current Approach to Thresholds by Various Air Districts

Yolo-Solano Air Quality Management District

The Yolo-Solano Air Quality Management District's (YSAQMD) most recent CEQA guidelines were adopted in 2007. Based upon these guidelines, the YSAQMD, in their Handbook for Assessing and Mitigating Air Quality Impacts, acknowledges that new emissions generated by development projects could potentially conflict with existing GHG emissions reductions targets, and thus, a need for development of GHG emissions thresholds exists. However, the YSAQMD has not yet established or adopted any such thresholds.

Sacramento Metropolitan Air Quality Management District

The Sacramento Metropolitan Air Quality Management District adopted BMPs, along with a bright-line threshold, in 2020. The intent of the approach was to identify actions that would minimize future GHG emissions associated with long-term operations and with consideration of future GHG reduction goals of carbon neutrality, while also establishing metrics that would identify those projects that would result in a less than cumulatively considerable contribution to GHG emissions in the near-term.

The BMPs were established based upon the region's fair share of emissions reductions required to align with the State GHG reduction targets, identification of emissions sectors that were geographically specific, a consideration of regulatory actions that would be required to achieve state and local reductions, and the reductions necessary of new versus existing development. The bright-line threshold was established based upon the evaluation of historical CEQA documents and identified as the de minimis level that would capture 98 percent of total GHG emissions from new projects.

Bay Area Air Quality Management District

In April 2022, the Bay Area Air Quality Management District (BAAQMD) adopted updated GHG thresholds of significance for evaluating the significance of projects and plans under CEQA. The thresholds were intended to represent a project's 'fair share' of what would be required to achieve the State's long-term climate goals, specifically the long-term climate goal of carbon neutrality at the state level by 2045. The thresholds were specifically developed based on what were considered typical residential and commercial land use projects and long-term communitywide plans, such as general plans; they are not necessarily applicable to other project or plan types.

For projects that are not otherwise able to tier from a local GHG reduction strategy, the adopted thresholds include specific design elements of proposed buildings and electric vehicle infrastructure, and a performance standard for vehicle miles traveled generated by a project. Based upon the BAAQMD's justification report for the recently adopted thresholds, a project that does not incorporate the design elements and meet the performance standard would be considered to hinder the State's efforts to address climate change and result in a significant climate impact.

The approach does not offer opportunity for a project to substitute or design alternative mitigation with design features or performance standards in lieu of the specific design elements.

Placer County Air Pollution Control District

In 2016, the Placer County Air Pollution Control District (PCAPCD) adopted GHG emissions thresholds in the form of both bright-line thresholds and efficiency thresholds that vary between residential and non-residential projects and projects in urban versus rural settings. PCAPCD uses both a de minimis level, below which projects would be less than cumulatively considerable, as well as a maximum bright-line threshold, above which

projects would be cumulatively considerable irrespective of the project's efficiency. The efficiency thresholds apply to projects for which emissions fall between the two bright-line thresholds. The thresholds were designed to analyze a project's compliance with applicable State laws including AB 32 and SB 32. As discussed in the PCAPCD's Justification Report for the thresholds, the PCAPD relied on a review of historical CEQA projects within the County during the 13-year period from 2003 to 2015, similar to one component of the approach used by SMAQMD to establish its de minimis level bright-line threshold.