

# Memo



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**To:** Selena Evilsizor Whitney, AICP, County of Santa Barbara

**From:** Brenda Hom and Poonam Boparai

**Subject:** Santa Barbara County Interim Greenhouse Gas Thresholds Justification

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## 1 INTRODUCTION

The County of Santa Barbara (County) is developing interim greenhouse gas (GHG) emissions thresholds to apply to new development projects while the County updates its Energy and Climate Action Plan (ECAP). The updated ECAP, now referred to as the 2030 Climate Action Plan (CAP), will identify reductions needed in both existing and new developments in the county to meet its 2030 GHG emissions reduction target. In July 2020, the County adopted a new target to reduce its emissions by 50 percent below 2007 levels by 2030 with direction from the Board of Supervisors (County of Santa Barbara 2020). The interim thresholds will help the County process discretionary projects under the California Environmental Quality Act (CEQA) and continue to achieve GHG emissions reductions from new development while it prepares the 2030 CAP.

The County Planning and Development Department is developing the interim GHG emissions thresholds to assist project applicants to comply with the requirements of CEQA regarding potentially adverse impacts to climate change. The determination on whether or not a project may have a significant effect on the environment shall be based in part on the thresholds of significance. The proposed interim thresholds for GHG emissions are quantitative measures of environmental change. Thresholds of significance supplement provisions in the Guidelines for Implementation of the California Environmental Quality Act (CEQA Guidelines) for the determination of significant environmental effects, including Sections 15064, 15065, 15382 and Appendix G incorporated herein. The primary purpose of the interim GHG emissions thresholds is to provide a means to identify proposed local plans and development projects that may have a significant adverse effect related to GHGs. Subsequent sections of this memorandum present the justifications for the recommended interim GHG emissions thresholds.

The CEQA Guidelines address GHG emissions as a cumulative impact due to the global nature of climate change (CEQA Guidelines, § 15064.4.(b)). As the California Supreme Court explained, “because of the global scale of climate change, any one project’s contribution is unlikely to be significant by itself” (*Cleveland National Forest Foundation v. San Diego Assn. of Governments* (2017) 3 Cal.5th 497, 512.). A project’s significant GHG impacts must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact (CEQA Guidelines, §§ 15064.4.(b) and 15183.5). Therefore, the impacts analysis of GHG emissions is global in nature and should be considered in a broader context. A project’s incremental

contribution may be cumulatively considerable even if it appears relatively small compared to statewide, national or global emissions (CEQA Guidelines, § 15064.4.(b)). The interim GHG emissions thresholds are set at a level of impact that identifies either (1) a cumulatively considerable contribution to an existing adverse condition, or (2) a cumulatively significant impact in combination with other projects causing related impacts.

## 2 JUSTIFICATION FOR UPDATING THRESHOLDS

To determine the level of significance of an impact, CEQA analyses include an assessment of the nature and extent of each project-generated impact. CEQA gives lead agencies discretion on how to determine the significance of an environmental impact. Ultimately, formulation of a standard of significance requires the lead agency to make a policy judgment about where the lead agency draws the line of significance when distinguishing adverse impacts it considers to be significant and unavoidable, from those it considers to be either significant but mitigable, insignificant, have no impact, or have a beneficial impact. This policy judgment must be based on scientific information and other factual data to the extent possible (CEQA Guidelines, § 15064(b)).

The point at which a lead agency considers an environmental impact significant is fluid over time due to advances in science providing new or refined factual data, advances in technology, and the gradual improvement or degradation of an environmental resource. Other influential factors include new or revised regulations and standards, case law updates, and emerging new areas of concern.

Since the County adopted its ECAP in 2015, several changes occurred that affect the regulatory framework related to GHGs. In the past decade, estimates of global atmospheric temperature and GHG concentration limits needed to stabilize climate change have been adjusted downward (i.e., made more stringent). Simultaneously, the increasingly adverse anticipated impacts of climate change have already been realized. Previous scientific assessments assumed that stabilizing carbon dioxide (CO<sub>2</sub>) concentrations in the range of 450 to 550 parts per million (ppm) would limit average global temperature rise to 2 to 3 degrees Celsius (°C) above pre-industrial levels, which would be sufficient to minimize catastrophic climate change effects. Now, scientific study indicates that a rise of only 2 °C would be substantial enough to disrupt the global climate and result in a variety of catastrophic impacts on a global and local scale. To avoid such impacts, scientists recommend that concentrations of CO<sub>2</sub> should be kept below 350 ppm, a sizeable reduction from the current level of 410 ppm (Hansen et al., 2013).

Furthermore, the State has codified progressive GHG emissions reduction goals considering the evolving scientific data surrounding climate change. To further the goals of Executive Order S-3-05, Executive Order B-30-15, and Assembly Bill (AB) 32, the California legislature adopted Senate Bill (SB) 32 in 2016 to establish a statewide goal of reducing GHG emissions to 40 percent below 1990 inventory levels by 2030. SB 32 serves as an extension of the State's original climate change goal to reduce statewide GHG emissions to 1990 levels by 2020, as mandated by AB 32. Further, SB 32 may be perceived as a benchmark reduction goal for the State's pathway to 80 percent below 1990 levels of GHG emissions by 2050, as directed by Executive Order S-3-05. Agencies and project proponents must do their fair share to reduce local GHG emissions, which may be evaluated during the environmental review process, to meet these goals. In addition, on December 14, 2017, the California Air Resources Board (CARB) adopted California's 2017 Climate Change Scoping Plan (2017 Scoping Plan), the strategy for achieving California's 2030 GHG target (CARB 2017).

The County does not currently have an adopted threshold, qualified GHG emissions reduction plan, or other means to determine the significance of GHG emissions from proposed projects other than industrial stationary source projects. The County's current ECAP does not provide a framework for GHG emissions reductions through 2030. The County is currently in the process of developing the 2030 CAP that will address 2030 GHG reductions in the county. Once the County adopts its 2030 CAP, the County will provide updated thresholds of significance related to new, non-industrial stationary source projects.

Until the approval of the 2030 CAP and for all the reasons discussed above, the County is developing interim GHG emission thresholds to apply to new project applications submitted prior to the adoption of the 2030 CAP. The overall goal of this effort is to develop CEQA significance criteria that ensure new development includes all appropriate and feasible GHG emission reduction measures to mitigate significant climate change impacts.

### 3 THRESHOLD APPLICABILITY AND FRAMEWORK

This memorandum recommends interim thresholds that apply to land use development projects, which include both project level residential and non-residential development and plans (e.g., specific plans and community plans). These thresholds would not apply to GHG-emitting power plants, oil and gas facilities, or other industrial stationary sources as the County has an adopted bright line threshold of 1,000 metric tons of carbon dioxide equivalent (MTCO<sub>2e</sub>) per year for industrial stationary sources.

Ascent proposes a two-step approach to assessing GHG emissions associated with projects. The interim thresholds will only apply to non-exempt discretionary projects under CEQA. Under Step 1, applicants first compare non-exempt project applications against a screening threshold. Applicants can either qualitatively compare the project size to project screening criteria, or, if the screening criteria are not applicable, quantitatively calculate project-specific emissions (see Table 3). Examples of projects that may not be able to use project screening criteria include (1) project types not included in Table 3, or (2) projects that include emissions sources not accounted for in the modeled assumptions for the proposed land use type shown in Table 3 (See step 2 under Section 4.1). Ascent recommends that the screening threshold be no greater than 300 MTCO<sub>2e</sub> per year, based on the estimated effectiveness of mitigation measures for new development. This threshold would result in approximately 15 percent of all applicable future projects and 87 percent of all applicable future land use emissions being subject to the efficiency threshold under Step 2.

Under Step 2, any project with 2030 estimated emissions exceeding the screening threshold will be subject to an efficiency GHG emissions threshold based on the project's estimated service population. For projects exceeding the screening threshold, Ascent recommends application of an efficiency threshold of 3.8 MTCO<sub>2e</sub>/year per service population (SP) in 2030. Ascent also recommends that projects subject to the efficiency threshold amortize any construction emissions over the lifetime of the project (e.g., 30 years). The efficiency threshold would apply to the sum of the amortized construction emissions and the estimated annual operational emissions.

These thresholds are consistent with CARB's recommendation for setting project-level thresholds. In the 2017 Scoping Plan, CARB states that "[l]ead agencies have the discretion to develop evidence-based numeric thresholds (mass emissions, per capita, or per service population) consistent with this Scoping Plan, the State's long-term GHG goals" (CARB 2017:102). Ascent developed both the recommended mass-emissions screening threshold and efficiency-based threshold based on service population using evidence from historical project data and GHG targets for the county consistent with State targets.

Ascent recommends that the County make determinations for threshold use based on project attributes as certain projects may not fit within the definitions used in the development of the thresholds and may require a project-specific analysis. Examples include where a project would have a low service population due to limited employment but would have other users that are not included in the definition of service population. See Section 5 for additional information.

Figure 1 outlines the decision process for applying the interim thresholds.

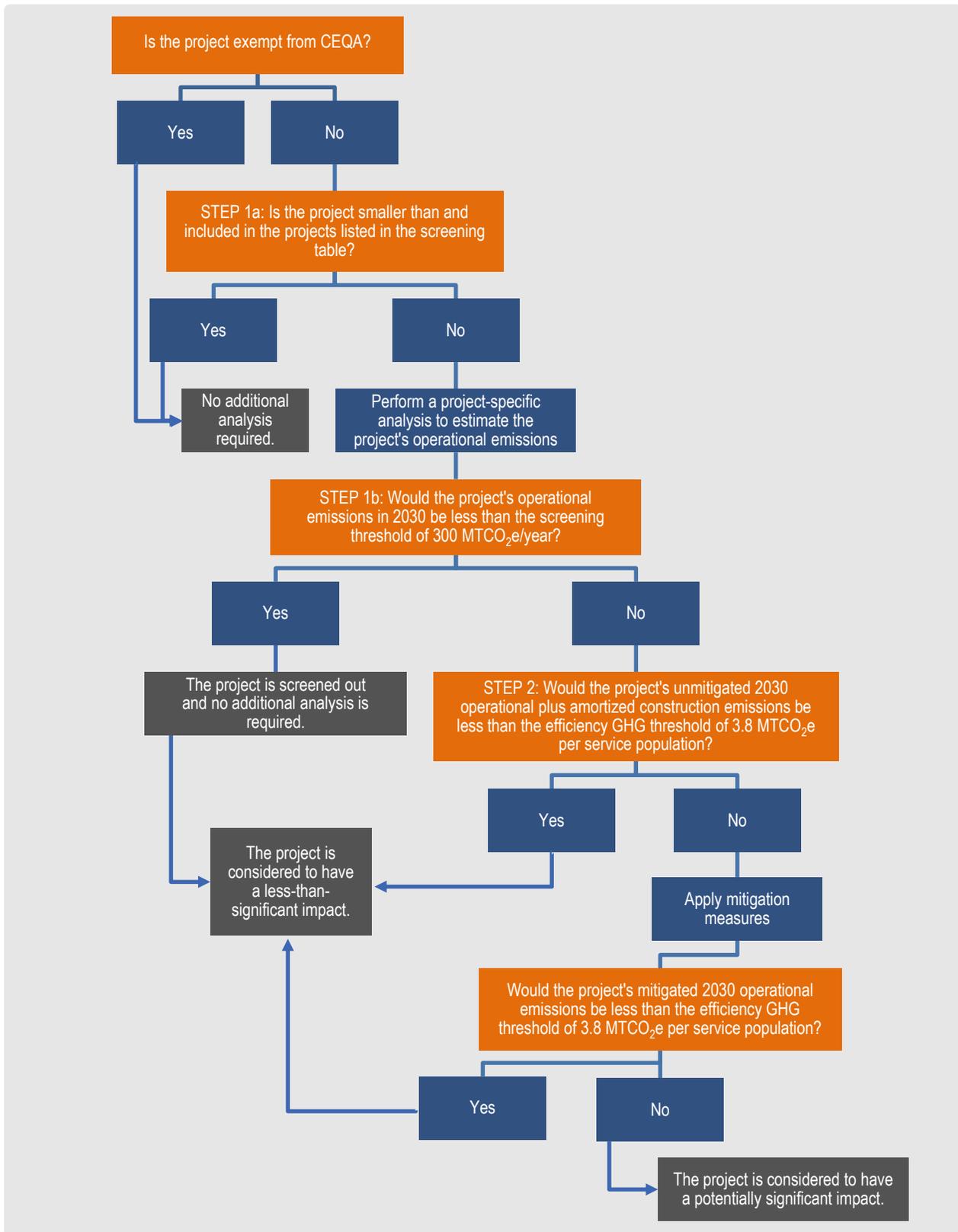


Figure 1 Interim GHG Emissions Threshold Decision Tree for Project Analyses

## 4 SCREENING THRESHOLD (STEP 1)

This section describes the methodology that Ascent used to develop the screening threshold, which considers past land use projects reviewed and approved by the County and anticipated growth projections based on historical permit trends. The steps used to develop the screening threshold are outlined below.

- 1) Ascent estimated past, or historical, GHG emissions from projects that the County approved in the unincorporated county in the past ten years (2010-2019). Project data obtained included project name, land use or project type (e.g., residential, commercial), project size metrics (e.g., square feet, acres), and annual unmitigated GHG emissions (if available from the project environmental document). As part of this exercise, Ascent evaluated over 7,000 permits, which are associated with nearly 4,000 unique project locations including both exempt and non-exempt CEQA projects.
- 2) For the approved projects that do not have estimated GHG emissions, Ascent estimated annual operational GHG emissions using the California Emissions Estimator Model (CalEEMod) based on the land use or project type for each project. To organize the data set, Ascent matched projects to one of eight different project types in CalEEMod (e.g., single family home, office park). Ascent approximated wineries as the "Refrigerated Warehouse-No Rail" land use type in CalEEMod. For two other types of projects not characterized in CalEEMod (i.e., cellular towers and cannabis grows), Ascent used more specific emissions estimates based on additional research on these types of projects and their emissions characteristics and profiles. Just over 65 percent of the applicable projects were estimated to emit less than 100 MTCO<sub>2</sub>e/year, including all cellular tower and cannabis projects.
- 3) Ascent evaluated the resulting list of historical projects and their estimated emissions to develop an estimate of the average annual number of projects approved by the County and the average annual operational emissions associated with those projects. Based on the results from 2), excluding oil and gas projects, the County approved an average of 22 CEQA projects per year, emitting an average of 85 MTCO<sub>2</sub>e/year per project. This average includes emissions from all applicable CEQA projects including renewable energy projects. Ascent used these averages to represent business-as-usual emissions from new development, as it relates to the county's 2016 GHG emissions inventory (i.e., new development constructed from 2017 through 2030). Although the threshold would only apply to current new development as of 2020, Ascent used this definition of "new development" as part of developing the maximum allowable emissions from new development under the County's 2030 GHG emissions target, as discussed in 4), and because the County does not currently have a 2020 GHG emissions inventory.
- 4) To assign a target level of emissions against which the screening threshold would be aligned, Ascent calculated the maximum allowable emissions attributable to new development per the County's 2030 target to reduce emissions to 50 percent below 2007 levels. According to the adjusted business-as-usual (ABAU) 2030 emissions forecast for the unincorporated County, four percent of emissions in 2030 would be associated with new development (Ascent Environmental 2020). Under the County's 2030 target, emissions from the unincorporated county are not to exceed 675,865 MTCO<sub>2</sub>e, which is 37 percent lower than the level of emissions anticipated in 2030 under the ABAU scenario. The 2030 CAP will provide the analysis for the proportion of the 2030 emissions limit that will come from new development. To determine the proportion of the 2030 emissions limit associated with new development for this interim thresholds analysis, Ascent multiplied the 675,865 MTCO<sub>2</sub>e by four percent (i.e., the estimated proportion of 2030 emissions from new development). This resulted in a maximum emissions limit from new development in 2030 of approximately 24,680 MTCO<sub>2</sub>e, meaning that all new development constructed between 2017 and 2030 should collectively emit no more than 24,680 MTCO<sub>2</sub>e in 2030 in order to be consistent with the County's 2030 target. This

approach assumes that both existing and new development are responsible for reducing emissions by 37 percent from the ABAU scenario. In reality, the rate at which the 2030 CAP and other County measures will reduce emissions from new development and existing development may differ. Therefore, Ascent recommends that the County revise the proportion of GHG emissions reductions from new development to meet the County's 2030 target once the County finalizes the portfolio of 2030 CAP measures. Table 1 shows these calculations.

- 5) Ascent estimated a mitigation measure effectiveness level to determine the level of reduction future mitigation measures would have on projects captured by (i.e., exceeding) the screening threshold. Typically, a CAP would determine the level of reduction from GHG reduction measures applicable to new development. However, the County is in the process of developing the 2030 CAP. As a proxy for reductions anticipated from new development under the CAP, Ascent used applicable legislations (e.g., improved energy efficiency standards for new buildings under Title 24) to determine targeted reductions from new development by 2030. Based on the distribution of historical project land use types and sizes, Ascent estimated that the applicable reductions will have at least a 12 percent reduction effectiveness from ABAU emission rates for new projects, representative of projects approved within the last ten years. Ascent considers a 12 percent reduction to be conservative in light of potential emissions reductions from new development under the 2030 CAP, which may require additional reductions from new development to maximize effectiveness from the County's land use permitting authority. As discussed in 5), the County targets a 37 percent reduction from the ABAU scenario, which is higher than the estimated 12 percent mitigation measure effectiveness. Actual reductions will likely be higher than 12 percent and may be closer to or higher than 37 percent considering the County's permitting authority over new development and ability to achieve higher reductions from proposed projects.
- 6) By starting with a placeholder screening threshold, Ascent estimated emissions captured by the screening threshold based on the emissions profile of evaluated projects with emissions greater than zero. This capture rate should be relatively high, greater than 80 percent. Ascent calculated the threshold by dividing the annual emissions from projects with emissions exceeding the screening threshold (i.e., emissions captured by the threshold) by the total annual emissions from the list of applicable projects. Applying the mitigation effectiveness from 5) to the anticipated emissions from new development (assuming 85 MTCO<sub>2e</sub> per project per year per project and an average of 22 projects per year from 2017 through 2030) captured by the screening threshold results in the mitigated emissions from new development.
- 7) To determine an effective screening threshold, the sum of unmitigated emissions from CEQA projects not captured by the screening threshold and mitigated emissions from CEQA projects captured by the screening threshold in 6) should be no greater than the target emissions from new development in 2030 (approximately 24,680 MTCO<sub>2e</sub> from 4). For each iteration of the assigned capture rate, Ascent compared the sum of unmitigated emissions and mitigated emissions from 6) to the 2030 target from 4).
- 8) Through an iterative process, Ascent derived a screening threshold of 300 MTCO<sub>2e</sub> which resulted in the sum of unmitigated and mitigated emissions from new development, in 7), to be approximately 23,471 MTCO<sub>2e</sub>, which is less than the estimated emissions from new development attributed to the 2030 emissions target calculated in 4). In this exercise, the initial screening thresholds to begin the iterative process ranged between 50 to 500 MTCO<sub>2e</sub>/year.

Based on the above methodology, the mass emissions level that achieves the goals outlined in 8) is 300 MTCO<sub>2e</sub> per year. This level would capture 87 percent of operational emissions from new CEQA projects and would achieve adequate reductions from captured emissions to meet the County's 2030 emissions reduction target. In other words,

87 percent of emissions from new CEQA projects would be subject to mitigation and would achieve reductions consistent with the County's GHG emissions reduction target for 2030. Projects that fall below this level would be considered less than significant and would not interfere with the County's ability to meet its 2030 GHG emissions reduction target. From the standpoint of CEQA, GHG impacts relative to global climate change are inherently cumulative. A screening threshold of 300 MTCO<sub>2</sub> would capture an adequate amount of emissions from new development so as to not interfere with the County's 2030 GHG emissions reduction target as described above. Projects exceeding the screening threshold would be required to further analyze and mitigate their emissions, as applicable, to achieve reductions consistent with the County's goals. Thus, the screening threshold would ensure that emissions from new development projects consistent with the threshold would not result in a significant cumulative impact related to GHG emissions.

Ascent based the review of historical permit data on all discretionary applications processed by the County between 2009 and 2019. This included projects that the County determined to be categorically or statutorily exempt under CEQA. Typically, notices of exemption (NOEs) accompany actions that directly result in either minimal or no new operational emissions, such as small non-roadway infrastructure projects, rezones, conditional use permits, and residential remodels and additions. Further, many exempt development projects are, at some point, largely captured under CEQA, such as through an Environmental Impact Report (EIR) prepared for a proposed subdivision. Projects that are exempt are typically small or would otherwise meet a category that exempts the projects (plus lead agencies cannot, under CEQA, categorically exempt projects that considerably contribute to cumulative impacts or may have potentially significant impacts). Therefore, Ascent assumed the quantity of emissions from potential development that is exempt is not considerable. Ascent concluded that NOEs represent a less-than-substantial portion of total projected development in the unincorporated county and the development of the screening level focused on capturing non-exempt projects.

Although capture rates higher than 87 percent would mean that more emissions from projects could be captured and reduced, such a rate is not required to meet the County's 2030 emissions reduction target. Indeed, with more projects potentially reducing their emissions to meet the threshold, the overall reduction in emissions from new development would help to achieve the County's GHG emissions reduction target. However, the County's GHG emissions reduction target is based on a set value for the entire unincorporated county's emissions and are not wholly dependent on new development. This means meeting the County's 2030 GHG emissions target requires reductions from both new and existing development. To allow effective processing of project applications, Ascent set the capture rate at a level that allows achievement of new development's fair share of reductions while capturing a meaningful level of emissions that would be reduced in compliance with the efficiency threshold. Tables 1 and 2 list the assumptions and calculations shown in 4) through 8) for the maximum screening threshold level needed to achieve the targeted reductions from new development.

**Table 1 Emissions Target Assumptions for New Development (4)**

Assumptions	Value	Source/Notes
ABAU Emissions in 2030 from new sources (MTCO <sub>2e</sub> )	38,898	Updated 2030 Forecast
ABAU Emissions in 2030 from new and existing sources (MTCO <sub>2e</sub> )	1,065,245	Updated 2030 Forecast
Percent of emissions in 2030 attributed to new development	4%	Calculated from ABAU forecasts
County Emissions in 2007 (MTCO <sub>2e</sub> )	1,351,730	County ECAP inventory
Targeted County Emissions in 2030 from all sources (MTCO <sub>2e</sub> )	675,865	Reflects target of 50% below 2007 levels by 2030
Targeted County Emissions in 2030 from new development (MTCO <sub>2e</sub> )	24,680	Assumes that emissions from new development will be reduced at the same rate as existing development in order for the county's emissions to meet the 2030 target. Emissions from new development should not exceed this amount.

Notes: ABAU = Legislative adjusted business-as-usual forecast; ECAP = Energy and Climate Action Plan; MTCO<sub>2e</sub> = metric tons of carbon dioxide equivalent

Source: Analysis conducted by Ascent Environmental in 2020

**Table 2 Screening Threshold Justification (5 through 8)<sup>1</sup>**

Assumptions	Value	Source/Notes
Average annual number of new projects	22	Average annual number of non-exempt CEQA project applications between 2010 and 2019
Average annual emissions per project (MTCO <sub>2e</sub> /year)	85	Estimated average annual operational emissions per applicable project
2030 Emissions from new development (MTCO <sub>2e</sub> )	26,194	Calculated from annual project data. Assumes new development starts from 2017.
Maximum Screening Threshold (MTCO <sub>2e</sub> /year)	300	Rounded final screening threshold developed that would achieve 2030 reduction targets
Project Capture Rate	15%	Proportion of annual projects that would exceed the screening threshold
Screening Threshold Emissions Capture Rate	87%	Proportion of emissions captured projects that would be subject to mitigation.
2030 Emissions from new development captured by screening threshold (MTCO <sub>2e</sub> )	22,697	Calculated from screening threshold capture rate
Assumed mitigation measure effectiveness on non-exempt CEQA projects <sup>2</sup>	12%	12% is consistent with minimum reductions focused on building energy use only, such as applying a 2019 Title 24 Building Energy Efficiency Standards over 2013 standards, while also accounting for the contribution of non-building energy-related emissions.
Mitigated 2030 emissions from new development captured by screening threshold (MTCO <sub>2e</sub> ) <sup>3</sup>	19,973	Calculated from the mitigation measure effectiveness
Unmitigated 2030 emissions from projects not captured by the screening threshold (MTCO <sub>2e</sub> ) <sup>3</sup>	3,498	Calculated from screening threshold capture rate

Assumptions	Value	Source/Notes
2030 Emissions from new development after mitigation (MTCO <sub>2</sub> e/year)	23,471	Must be equal to or less than maximum allowable 2030 emissions from new development (24,680 MTCO <sub>2</sub> e/year).

Notes: ABAU = Legislative adjusted business-as-usual forecast; MTCO<sub>2</sub>e = metric tons of carbon dioxide equivalent

<sup>1</sup> This table shows the final iteration of the screening threshold needed to achieve the maximum allowable emissions from new development.

<sup>2</sup> Percent reduction from new development under ABAU.

<sup>3</sup> Refers to non-exempt CEQA projects.

Source: Analysis conducted by Ascent Environmental in 2020

## 4.1 PROJECT SIZE-BASED SCREENING CRITERIA

Ascent established a GHG screening threshold (Step 1) of 300 MTCO<sub>2</sub>e/year for new development projects in order to determine if a project would require analysis against the efficiency GHG emissions threshold (Step 2). Projects projected to emit fewer than 300 MTCO<sub>2</sub>e annually require no further analysis and would have an insignificant impact on climate change. As shown in Figure 1, projects projected to emit more than 300 MTCO<sub>2</sub>e of GHGs annually would need to analyze their estimated GHG efficiency against an efficiency GHG emissions threshold and apply mitigation measures, as appropriate.

Table 3 lists types and sizes of projects that correspond to the 300 MTCO<sub>2</sub>e GHG screening threshold. Applicants for project types not listed in this table will need to estimate the proposed project’s GHG emissions using CalEEMod or a similar GHG emissions estimator model.

**Table 3 Size-Based Project Screening Criteria**

Project/Plan Type <sup>1</sup>	Screening Criteria <sup>2</sup>
Single-Family Housing <sup>3</sup>	62 ksf <sup>6</sup>
Multi-Family Housing <sup>4</sup>	55 ksf <sup>6</sup>
Commercial Space <sup>5</sup>	26 ksf
Regional Shopping Center	12 ksf
General Office Building	28 ksf

Notes: ksf = thousand square feet; MTCO<sub>2</sub>e = metric tons of carbon dioxide equivalent

<sup>1</sup> For project types not listed in this table, the need for GHG analysis will be made on a project-specific basis, considering the 300 MTCO<sub>2</sub>e per year screening level. In addition, projects that may match the categories listed in this table but have additional emissions sources that are not typical of the listed project type nor are included in the emissions included in CalEEMod for the project type (e.g., warehouse with boilers) should also be evaluated on a project-specific basis.

<sup>2</sup> The screening criteria represent the maximum project size at which a project is estimated to emit less than 300 MTCO<sub>2</sub>e per year without the application of additional GHG reducing measures. Projects proposing greater unit or square footage amounts than the above screening thresholds would be required to analyze their emissions with respect to the efficiency GHG emissions threshold.

<sup>3</sup> Single-Family Housing developments are defined as single-family homes on individual lots.

<sup>4</sup> Multi-Family Housing developments are defined as low-rise multi-family housing complexes, modeled as “Apartments-Low Rise” in CalEEMod.

<sup>5</sup> Commercial space is modeled as “Office Park” in CalEEMod.

<sup>6</sup> Measure residential square footage as the “gross floor area” as defined in the Land Use and Development Code (LUDC)/ Montecito Land Use and Development Code (MLUDC). Do not count accessory structures (as defined in the LUDC/MLUDC) toward the residential square footage. Include the square footage of proposed accessory dwelling units (ADUs). If the proposed ADU size is unknown, estimate that each ADU is 800 sf in size. For subdivisions, estimate that 20% of the proposed residential lots will contain an ADU, unless more precise information is provided in the project application.

Source: Analysis conducted by Ascent Environmental in 2020

Ascent recommends that project applicants apply the 300 MTCO<sub>2</sub>e level as a screening threshold and not as a threshold of significance. In other words, projects that exceed this emissions level may not propose mitigation measures to reduce emissions below 300 MTCO<sub>2</sub>e. As noted, Ascent recommends that the County require projects with GHG emissions exceeding the screening level to analyze their project emissions against the efficiency GHG emissions threshold under Step 2.

## 5 EFFICIENCY GREENHOUSE GAS THRESHOLD (STEP 2)

Projects that exceed the screening threshold under Step 1 would apply the recommended efficiency GHG emissions threshold of 3.8 MTCO<sub>2</sub>e per service population per year under Step 2. According to the Bay Area Air Quality Management District (BAAQMD), service population is the sum of number of residents and jobs anticipated to be generated by the project (BAAQMD 2017). Ascent calculated this efficiency threshold by dividing the targeted emissions from new development in 2030 [24,680 MTCO<sub>2</sub>e in 4) above] by the new forecasted employment and population added to the county from 2017 through 2030, based on updated demographics forecasts from the Santa Barbara County Association of Governments (SBCAG) (SBCAG 2019). Use of an efficiency GHG emissions threshold is consistent with CARB's recommendation for local communities setting GHG reduction targets (CARB 2017:102). In the 2017 Scoping Plan, CARB states that "[l]ead agencies have the discretion to develop evidence-based numeric thresholds (mass emissions, per capita, or per service population) consistent with this Scoping Plan, the State's long-term GHG goals" (CARB 2017). Using the service population metric is an accepted approach to developing an efficiency GHG emissions threshold that achieves GHG emission reduction targets at the county-level and may underestimate the number of "users" for certain land uses such as schools, hotels, and community centers.

The County should interpret this definition of service population as the sum of full-time employees and full-time residents of a project. Therefore, projects or plans, regardless of type, should also use this definition in quantifying their GHG emissions efficiency. For example, a hotel project should divide the total annual emissions anticipated to occur in its first year of full operation by the total number of full-time employees and full-time residents (if any) to calculate their GHG emissions efficiency. Visitors and guests should not be counted toward this project's service population, because they are residents of other locations. Similarly, an elementary school project, while it serves many students, would account for the full-time equivalent staff, but would not include students in its service population, unless they are living on campus.

For projects that do not serve the typical service population, as defined by population and jobs, as previously mentioned, Ascent recommends that the County make determinations on whether projects that may not fit within the definitions used in the development of the thresholds should apply the efficiency threshold or perform an more in-depth project-specific analysis.

The efficiency GHG emissions threshold approach requires applicants to quantify their GHG emissions in 2030 and estimate any reductions necessary to achieve the efficiency GHG emissions threshold. The type, character, and level of mitigation would depend on the project type, size, location, context, and other factors. The availability of mitigation measures can change over time as well, with new technologies, building materials, building design practices, and other changes. Therefore, in developing project-specific reduction measures, Ascent recommends that a project applicant refer to the County's list of feasible GHG mitigation measures, along with current guidance from the California Air Pollution Control Officers Association, the California Air Resources Board, the Governor's Office of Planning and Research, the California Attorney General, Santa Barbara County Air Pollution Control District, and SBCAG to determine applicable mitigation measures and estimate their effectiveness.

Table 4 shows the quantification of the efficiency GHG emissions threshold.

**Table 4 Efficiency GHG Emissions Threshold Calculation**

	2030
<b>Targets</b>	
County ABAU Emissions Forecast (MTCO <sub>2e</sub> )	1,065,245
Target Percent Reduction from 2007 <sup>1</sup>	50%
Target Emissions (MTCO <sub>2e</sub> )	675,865
<b>Emissions from New Development</b>	
Emissions from Existing Development as of 2016 (MTCO <sub>2e</sub> )	1,026,346
Emissions from New Development as of 2016 (MTCO <sub>2e</sub> )	38,898
Percent of emissions from new development	4%
Maximum allowable emissions from new development under Target (MTCO <sub>2e</sub> )	24,680
<b>Forecasted Service Population (Growth between 2017 and 2030)</b>	
New population	233
New Jobs	6,283
Service Population (SP)	6,516
<b>Efficiency GHG emissions threshold</b>	
Target emissions from new development (MTCO <sub>2e</sub> )	24,680
Efficiency threshold (MTCO <sub>2e</sub> /SP)	3.8

Notes: ABAU = Legislative adjusted business-as-usual forecast; MTCO<sub>2e</sub> = metric tons of carbon dioxide equivalent

<sup>1</sup> Based on 2007 emissions inventory of 1,351,730 MTCO<sub>2e</sub>

Source: Analysis conducted by Ascent Environmental in 2020

## 6 REFERENCES

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