City of San Luis Obispo California Environmental Quality Act (CEQA) Greenhouse Gas (GHG) Emissions Thresholds and Guidance

Final

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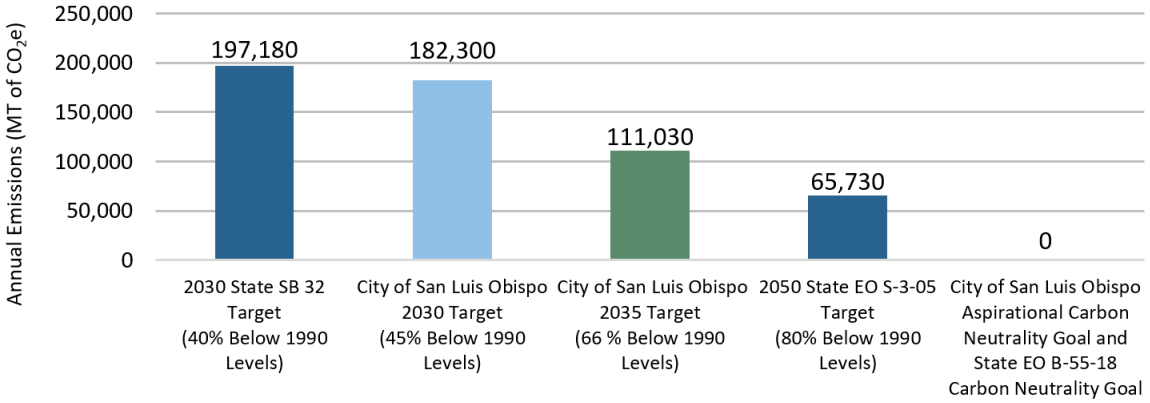
1 Introduction

The California Environmental Quality Act (CEQA) requires discretionary plans and projects to undergo an environmental review process, which includes an evaluation of plan- or project-related greenhouse gas (GHG) emissions.[1] This GHG thresholds and guidance document is intended to provide methodological guidance and quantitative thresholds of significance for use by City planners, applicants, consultants, agencies, and members of the public in the preparation of GHG emissions analyses under CEQA for plans and projects located within the City of San Luis Obispo.

The City of San Luis Obispo (City) prepared a Draft Climate Action Plan (CAP) dated June 17, 2020 with the aspirational goal of carbon neutrality by 2035.[2] While the City Council, City staff, and community will continue to develop an approach to the long-term aspirational goal of carbon neutrality, the CAP includes specific actions to achieve the short-term communitywide emissions reduction targets of 45 percent below 1990 levels by 2030 and 66 percent below 1990 levels by 2035, which is consistent with California's goal of reducing GHG emissions to 40 percent below 1990 levels (Senate Bill 32) by 2030. See Figure 1 for a representation of City and State GHG emissions reduction targets.

Figure 1 City of San Luis Obispo GHG Emissions Reduction Targets



The City's 2030 target was developed to provide substantial progress towards the City's long-term aspirational carbon neutrality target and contribute substantial progress toward meeting the State's long-term GHG reduction goals identified in SB 32 and Executive Order (EO) B-55-18. Consistent with this process, the City's CAP includes procedures to evaluate the City's emissions in light of the trajectory of the CAP's targets to assess its "substantial progress" toward achieving long-term reduction targets identified in the CAP and State legislation or EOs. The CAP also includes commitments and mechanisms to adopt additional policies to achieve further GHG emissions reductions necessary to avoid interference with, and make substantial progress toward, the long-

[1] Refer to Appendix A for an overview of GHG emissions and climate change.

[2] Carbon neutrality is defined as net zero carbon emissions, which is achieved either by balancing carbon emissions with carbon removal or by completely eliminating carbon emissions.

term CAP and State targets. This is important because these targets have been set at levels that achieve California's fair share of international emissions reduction targets that will stabilize global climate change effects and avoid the adverse environmental consequences of climate change.

To support progress toward the City's long-term aspirational carbon neutrality goal, plans and projects within the City that undergo CEQA review will need to demonstrate consistency with targets in the CAP, which will be a Qualified GHG Emissions Reduction Plan, consistent with CEQA Guidelines Section 15183.5, upon adoption of its CEQA review document, specifically the CAP Initial Study-Negative Declaration (IS-ND), and approval of the CAP by City Council. Chapter 2, *Climate Action Plan Summary*, provides an overview of this plan and the associated GHG emissions inventories, reduction measures, and forecasts included therein. In addition, Chapter 3, *Regulatory and Legal Setting*, offers an overview of relevant regulations and case law pertaining to the analysis of GHG emissions consistent with CEQA and the CEQA Guidelines.

Plans and projects that are consistent with the CAP's demographic (i.e., residents and employees) projections and land use assumptions, which are based on the Land Use and Circulation Elements of the 2014 City General Plan, will be able to tier from the adopted CAP IS-ND pursuant to CEQA Guidelines Section 15183.5. To streamline this CEQA GHG emissions analysis process, the City has prepared a CEQA GHG Emissions Analysis Compliance Checklist that can be utilized in plan- and project-level CEQA review documents to ensure that such proposed plans and projects are consistent with the CAP GHG emissions reduction strategy. Chapter 4, *Determining Consistency with the City's C*, includes guidance on how to navigate this consistency determination process.

For plans or projects that are not consistent with the CAP's demographic projections and land use assumptions, a different methodology and assessment utilizing quantitative thresholds of significance would be necessary to evaluate GHG emissions impacts. Chapter 5, *Utilizing Quantitative CEQA GHG Thresholds*, includes guidance on how to utilize the specific quantitative thresholds that were developed for purposes of evaluating the level of significance of GHG emissions impacts.[3] Furthermore, Chapter 6, *Quantifying GHG Emissions*, provides direction regarding how to quantify a plan or project's GHG emissions for comparison to the applicable threshold of significance.

The City's CAP acknowledges that additional actions beyond those identified in the plan will be required to achieve its long-term aspirational goal of carbon neutrality by 2035. As a result, the plan provides a mechanism for updating and adopting a new CAP every other financial plan cycle (i.e., in conjunction with the 2023-2025, 2027-2029, and 2031-2033 cycles) in order to incorporate new measures and technologies that will further move the City toward meeting its long-term aspirational carbon neutrality goal.[4] Chapter 7, *Moving into the Future*, offers further explanation of how CEQA review of plans and projects could be affected by future updates and/or iterations of the CAP.

[3] In compliance with CEQA Guidelines Section 15064.7(b), this guidance document and the quantitative thresholds contained herein will be presented to the City Council for formal adoption via resolution through a public review process, which will include an opportunity for public input.

[4] San Luis Obispo, City of. 2019. *Carbon Neutrality Vision and Three-Year Strategic Plan Technical Report*. November 2019.

2 Climate Action Plan Summary

The following sections provide an overview of the City's CAP, including the 2005 and 2016 communitywide GHG emissions inventories, proposed GHG emission reduction strategy, and the communitywide GHG emissions forecast for years 2020, 2030, and 2035.

2.1 Communitywide GHG Emissions Inventories

The City has completed communitywide GHG emissions inventories for years 2005 and 2016, which are summarized in Table 1. Table 1 also provides estimated 1990 emissions levels for informational purposes. As shown therein, communitywide GHG emissions declined by approximately 12 percent between 2005 and 2016, which indicates substantial progress toward meeting or exceeding the City's target of reducing emissions by approximately 15 percent below 2005 levels by 2020 and the State's target of reducing emissions to 1990 levels (i.e., an approximately 15 percent reduction below 2005 levels) by 2020. The most significant changes occurred in the energy and solid waste sectors due to increasing decarbonization of the electricity grid, investments in energy efficiency, and a decrease in the amount of solid waste generated.[5]

Table 1 City of San Luis Obispo 1990, 2005, and 2016 Communitywide GHG Emissions Levels

Sector	1990 (MT of CO_2e)[1]	2005 (MT of CO_2e)	2016 (MT of CO_2e)	Percent Change from 2005 to 2016
Transportation	191,580	225,390	212,980	-6%
Non-residential Energy	49,340	58,050	44,270	-24%
Residential Energy	47,130	55,450	39,410	-29%
Solid Waste	40,580	47,740	42,630	-11%
Total	**328,630**	**386,630**	**339,290**	**-12%**

MT = metric tons; CO_2e = carbon dioxide equivalents

Note: Numbers are rounded to the nearest ten.

[1] AB 32 sets a target of reducing GHG emissions to 1990 levels by 2020, which is considered equivalent to a 15 percent reduction in baseline 2005 levels according to the CARB (2008) Climate Change Scoping Plan. Therefore, to estimate 1990 emissions levels, inventoried 2005 emissions from each sector were reduced by 15 percent.

Source: San Luis Obispo, City of. 2019. *Community Greenhouse Gas Emissions Inventory and Forecast*.

2.2 GHG Emission Reduction Strategy

To achieve the City's long-term aspirational goal of carbon neutrality by 2035, the City's CAP includes a series of pillars, measures, and foundational actions that are intended to reduce communitywide GHG emissions by approximately 66 percent below 1990 levels by 2035, which provides substantial progress toward meeting the City's long-term aspirational carbon neutrality goal while exceeding the State's goals. The CAP acknowledges that additional actions beyond those identified in the plan will be necessary to achieve the long-term aspirational goal of carbon neutrality and therefore provides a mechanism for updating and adopting a new climate action plan

[5] San Luis Obispo, City of. 2019. *Community Greenhouse Gas Emissions Inventory and Forecast*.

every other financial plan cycle in order to incorporate new measures and technologies that will further the City toward meeting its long-term aspirational goal of carbon neutrality.[6]

The City's CAP proposes the following six pillars, each of which include a long-term goal, measures, and foundational actions:[7]

- **Pillar 1: Lead by Example.** Create a Municipal Action Plan by 2020 and achieve carbon-neutral government operations by 2030.
- **Pillar 2: Clean Energy Systems.** Achieve 100 percent carbon-free electricity by 2020.
- **Pillar 3: Green Buildings.** Generate no net new building emissions from on-site energy use by 2020 and achieve a 50 percent reduction in existing building on-site emissions (after accounting for Monterey Bay Community Power) by 2030.
- **Pillar 4: Connected Community.** Achieve the General Plan mode split objective by 2030 and have 40 percent of vehicle miles travelled by electric vehicles by 2030.
- **Pillar 5: Circular Economy.** Achieve 75 percent diversion of landfilled organic waste by 2025 and 90 percent by 2035.
- **Pillar 6: Natural Solutions.** Increase carbon sequestration on the San Luis Obispo Greenbelt and Urban Forest through compost application-based carbon farming activities and tree planting to be ongoing through 2035.

Table 2 summarizes the GHG emissions reductions included in the the CAP that are anticipated to be achieved by each of these pillars, in addition to State laws and programs, by 2035. As shown therein, implementation of State laws and programs as well as these pillars would reduce communitywide emissions by approximately 286,680 MT of CO_2e per year, or approximately 66 percent, below 1990 levels to approximately 111,030 MT of CO_2e per year. These emission reductions would equate to a approximately 72 percent reduction below business-as-usual GHG emissions forecast for year 2035.

[6] San Luis Obispo, City of. 2019. *Carbon Neutrality Vision and Three-Year Strategic Plan Technical Report*. November 2019.

[7] Ibid.

Table 2 City of San Luis Obispo Communitywide GHG Emissions Reductions by 2035

Source	Annual Emissions (MT of CO_2e)
1990 Baseline Emissions[1]	328,630
Business-as-Usual 2035 Emissions[2]	397,710
State Laws/Programs[3]	(102,410)
Pillar 2: Clean Energy Systems	(39,010)
Pillar 3: Green Buildings	(26,740)
Pillar 4: Connected Community	(64,170)
Pillar 5: Circular Economy	(47,300)
Pillar 6: Natural Solutions	(7,050)
Total Emissions Reductions	**(286,680)**
Remaining 2035 Emissions	**111,030**
Percent Reduction below 1990 Levels	**(66%)**
Percent Reduction below Business-as-Usual 2035 Levels	**(72%)**

MT = metric tons; CO_2e = carbon dioxide equivalents; ( ) denotes a negative number

Notes: GHG emissions reductions achieved by Pillar 1: Lead by Example are not included because implementation of the foundational actions associated with this pillar would serve only to reduce municipal, rather than communitywide, emissions. Numbers are rounded to the nearest ten.

[1] See Table 2.

[2] See Table 3.

[3] Includes implementation of State vehicle fuel efficiency standards and triennial updates of Title 24. The Renewable Portfolio Standards program is not included because Pillar 2 already accounts for 100 percent carbon-free electricity by 2020.

Sources: San Luis Obispo, City of. 2019. *Community Greenhouse Gas Emissions Inventory and Forecast.*

San Luis Obispo, City of. 2019. *Carbon Neutrality Vision and Three-Year Strategic Plan Technical Report*. November 2019.

2.3 GHG Emissions Forecast

Figure 2 and Table 3 summarize the communitywide GHG emissions forecast under three scenarios: 1) business-as-usual, 2) implementation of State laws and programs, and 3) implementation of State laws and programs and the CAP. As shown therein, under the business-as-usual scenario, communitywide GHG emissions are forecasted to increase by approximately 21 percent between 1990 and 2035 based on economic and population growth. However, with implementation of State laws and programs, communitywide GHG emissions would decline by approximately 22 percent between 1990 and 2035. Furthermore, full implementation of the CAP alongside State laws and programs would reduce communitywide GHG emissions by approximately 66 percent below 1990 levels by 2035.

Figure 2 City of San Luis Obispo GHG Emissions Forecast, 2005 to 2035

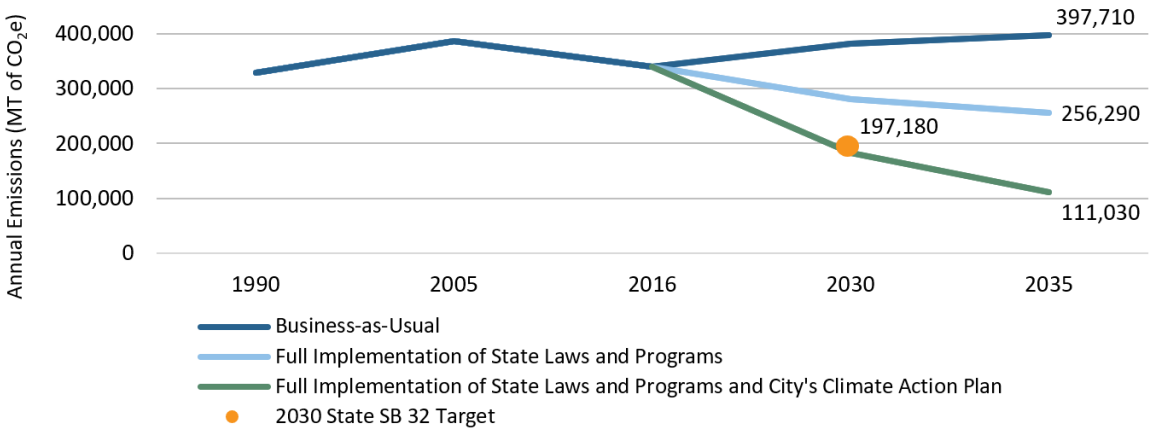


Table 3 City of San Luis Obispo GHG Emissions Forecast Through 2035

Sector	1990 (MT of CO_2e)	2005 (MT of CO_2e)	2016 (MT of CO_2e)	2030 (MT of CO_2e)	2035 (MT of CO_2e)	Percent Change (1990-2035)
Business-as-Usual						
Transportation	191,580	225,390	212,980	234,570	242,280	26%
Non-residential Energy	49,340	58,050	44,270	51,860	54,880	11%
Residential Energy	47,130	55,450	39,410	45,660	47,990	2%
Solid Waste	40,580	47,740	42,630	49,880	52,560	30%
Total	**328,630**	**386,630**	**339,290**	**381,970**	**397,710**	**21%**
Implementation of State Laws and Programs[1]						
Transportation	191,580	225,390	212,980	161,290	142,830	(25%)
Non-residential Energy	49,340	58,050	44,270	33,690	27,720	(44%)
Residential Energy	47,130	55,450	39,410	35,660	33,180	(30%)
Solid Waste	40,580	47,740	42,630	49,880	52,560	30%
Total	**328,630**	**386,630**	**339,290**	**280,520**	**256,290**	**(22%)**
Implementation of State Laws and Programs and City's Climate Action Plan						
Transportation[2]	191,580	225,390	212,980	116,050	78,660	(59%)
Non-residential Energy[3]	49,340	58,050	44,270	29,710	21,000	(57%)
Residential Energy[3]	47,130	55,450	39,410	27,680	13,160	(72%)
Solid Waste[4]	40,580	47,740	42,630	12,470	5,260	(87%)
Carbon Sequestration[5]	0	0	0	(3,610)	(7,050)	n/a
Total	**328,630**	**386,630**	**339,290**	**182,300**	**111,030**	**(66%)**

MT = metric tons; CO_2e = carbon dioxide equivalents; ( ) denotes a negative number

Note: Numbers are rounded to the nearest ten.

[1] State laws and programs include State vehicle fuel efficiency standards, the Renewable Portfolio Standard, and triennial updates of Title 24.

[2] Includes implementation of Pillar 4: Connected Community.

[3] Includes implementation of Pillar 2: Clean Energy Systems and Pillar 3: Green Buildings.

[4] Includes implementation of Pillar 5: Circular Economy.

[5] Includes implementation of Pillar 6: Natural Solutions.

Sources: Appendix C; San Luis Obispo, City of. 2019. Community Greenhouse Gas Emissions Inventory and Forecast.

At this time, the State has codified a target of reducing emissions to 40 percent below 1990 emissions levels by 2030 (Senate Bill [SB] 32) and has developed the 2017 Climate Change Scoping Plan to demonstrate how the State will achieve the 2030 target and make substantial progress toward the 2050 goal of an 80 percent reduction in 1990 GHG emission levels set by Executive Order

(EO) S-3-05. The recently signed EO B-55-18 identifies a new goal of carbon neutrality by 2045 and supersedes the goal established by EO S-3-05.

While State and regional regulations related to energy and transportation systems, along with the State's Cap and Trade program, are designed to be set at limits to achieve most of the GHG emissions reductions needed to achieve the State's long-term targets, local governments can do their fair share toward meeting the State's targets by siting and approving projects that accommodate planned population growth and projects that are GHG-efficient. The Association of Environmental Professional (AEP) Climate Change Committee recommends that CEQA GHG analyses evaluate project emissions in light of the trajectory of State climate change legislation and assess their "substantial progress" toward achieving long-term reduction targets identified in available plans, legislation, or EOs.

The City has adopted a long-term aspirational goal of achieving carbon neutrality by 2035 and has proposed the CAP as a pathway to make progress toward this goal. As shown in Table 3, implementation of the CAP would achieve an approximately 45 percent reduction in communitywide GHG emissions below 1990 levels by 2030[8] and an approximately 66 percent reduction in communitywide GHG emissions below 1990 levels by 2035. Therefore, the City's long-term aspirational goal of carbon neutrality and the associated CAP establish a trajectory that provides GHG emissions reductions greater than those required by SB 32 for 2030. Because SB 32 is considered an interim target toward meeting the 2045 State goal of carbon neutrality, implementation of the CAP would make substantial progress toward meeting the State's long-term 2045 goal. Avoiding interference with, and making substantial progress toward, these long-term State targets is important because these targets have been set at levels that achieve California's fair share of international emissions reduction targets that will stabilize global climate change effects and avoid the adverse environmental consequences described in Appendix A (Executive Order B-55-18).

2.4 Qualified GHG Emissions Reduction Plan

According to CEQA Guidelines Section 15183.5, project-specific environmental documents can tier from, or incorporate by reference, the existing programmatic review in a qualified GHG emissions reduction plan, which allows for project-level evaluation of GHG emissions through the comparison of the project's consistency with the GHG emissions reduction strategy included in the qualified GHG emissions reduction plan. To meet the requirements of CEQA Guidelines Section 15183.5, a qualified GHG emissions reduction plan must include the following:

1. Quantify existing and projected GHG emissions within the plan area;
2. 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;
3. Identify and analyze sector specific GHG emissions within the plan's geographic area;
4. Specify measures or a group of measures, including performance standards, that if implemented, would collectively achieve the specified emissions level;
5. Establish a tool or mechanism to monitor progress and to require amendment if the plan is not achieving specified levels; and
6. Be adopted in a public process following environmental review.

[8] (328,630 MT of CO_2e – 182,300 MT of CO_2e) / 328,630 MT of CO_2e = 45% reduction

Development projects can demonstrate consistency with a qualified GHG emissions reduction plan if they are consistent with the plan's assumptions regarding future growth projections and consistent with the plan's GHG emissions reduction measures.[9] Projects consistent with the qualified GHG reduction plan, including conformance with performance measures applicable to the project, would not require additional GHG emissions analysis or mitigation under CEQA Guidelines Sections 15064(h) and 1513.5(b)(2). The City of San Luis Obispo has developed the CEQA GHG Emissions Analysis Compliance Checklist to assist with determining project consistency with the CAP. The checklist is intended to provide individual projects the opportunity to demonstrate that they are minimizing GHG emissions while ensuring that new development achieves its proportion of emissions reductions consistent with the assumptions of the CAP. Project consistency with a GHG emissions reduction plan can also be demonstrated through quantitative analysis that demostrates the project will not impede (or will facilitate) the City's ability to meet its GHG emissions reduction targets or by incorporating the reduction measures included in the GHG emissions reduction plan.

Table 4 summarizes the consistency of the CAP with these requirements for year 2030 (the next State milestone target year for GHG emission reductions). As shown in Table 4, upon adoption of the IS-ND and approval of the plan by City Council, the City's CAP will meet the requirements of a qualified GHG emission reduction plan per CEQA Guidelines Section 15183.5(1) for projects with buildout years through 2030.

[9] CAPs typically utilize growth projections from the local jurisdiction's General Plan or applicable Metropolitan Planning Organization's regional demographic forecast.

Table 4 CAP Consistency with CEQA Guidelines Section 15183.5(1) for Year 2030

CEQA Guidelines Section 15183.5(1) Requirement[1]	Climate Action Plan Consistency
Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area.	**Consistent.** The CAP includes communitywide GHG emissions inventories for years 2005 and 2016 and forecasts GHG emissions for years 2020, 2030, and 2035.
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.	**Consistent**. A key aspect of a qualified GHG emissions reduction plan is substantial evidence that the identified GHG emissions reduction target establishes a threshold where GHG emissions are not cumulatively considerable. The Association of Environmental Professionals (2016) Beyond Newhall and 2020 white paper identifies this threshold as being a local target that aligns with the State legislative targets. The CAP establishes a long-term aspirational goal of carbon neutrality by 2035, and as discussed in Section 2.3, *GHG Emissions Forecast*, implementation of the plan will achieve a 45 percent reduction in 1990 emissions levels by 2030. Therefore, this local target is more stringent than the State targets of a 40 percent emission reduction in 1990 levels by 2030.
Identify and analyze the GHG emissions resulting from specific actions or categories of actions anticipated within the geographic area.	**Consistent.** The CAP breaks down its inventories into four sectors (transportation, residential energy, non-residential energy, and solid waste). The plan also identifies six pillars of GHG emission reductions and quantifies the emission reductions that would be achieved by implementation of each pillar.
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.	**Consistent.** The CAP specifies pillars, measures, and foundational actions that the City will enact and implement between 2020 and 2035 to further its long-term aspirational goal of carbon neutrality. As discussed in Section 2.3, *GHG Emissions Forecast*, implementation of the plan will achieve a 45 percent reduction in 1990 emissions levels by 2030, which is more stringent than the State target of a 40 percent emission reduction in 1990 levels by 2030 and demonstrates substantial progress by 2030 toward achieving the City's long-term aspirational goal of carbon neutrality by 2035.
Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels.	**Consistent.** The CAP includes a process to update and adopt a new CAP every other financial plan cycle in order to incorporate new measures and technologies that will further the City toward meeting its long-term aspirational goal of carbon neutrality.
Be adopted in a public process following environmental review.	**Consistent.** The City has prepared an IS-ND for the CAP that will be circulated for public review and comment and adopted prior to approval of the CAP and CEQA GHG Emissions Thresholds and Guidance by City Council.

[1] Source: 2019 CEQA Guidelines

3 Regulatory and Legal Setting

The following regulations, executive orders, and case law pertain to the analysis of GHG emissions consistent with CEQA and the CEQA Guidelines.

3.1 Relevant CEQA Guidelines Sections

Pursuant to the requirements of SB 97, the California Natural Resources Agency has adopted amendments to the CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. The adopted CEQA Guidelines, which were last updated in December 2018, provide general regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHG emissions and climate change impacts.

Based on Appendix G of the CEQA Guidelines, impacts related to GHG emissions generated by a proposed plan/project would be significant if the plan/project would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; and/or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

The vast majority of individual projects do not generate sufficient GHG emissions to directly influence climate change. However, physical changes caused by a plan/project can contribute incrementally to cumulative effects that are significant, even if individual changes resulting from a plan/project are limited. As discussed in Appendix A, the adverse environmental impacts of cumulative GHG emissions, including sea level rise, increased average temperatures, more drought years, and more large forest fires, are already occurring. As a result, cumulative impacts related to GHG emissions and climate change are significant. Therefore, per CEQA Guidelines Section 15064.4(b), the analysis of GHG emissions under CEQA typically involves an analysis of whether a plan or project's contribution towards an impact would be cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines Section 15064[h][1]).

The following sections of the CEQA Guidelines (last updated on December 28, 2018) pertain to the creation of significance thresholds and the analysis of a plan/project's GHG emissions.

CEQA Guidelines Section 15064(b)

(1) The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data. An ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting. For example, an activity which may not be significant in an urban area may be significant in a rural area.

(2) Thresholds of significance, as defined in Section 15064.7(a), may assist lead agencies in determining whether a project may cause a significant impact. When using a threshold, the

lead agency should briefly explain how compliance with the threshold means that the project's impacts are less than significant. Compliance with the threshold does not relieve a lead agency of the obligation to consider substantial evidence indicating that the project's environmental effects may still be significant.[10]

CEQA Guidelines Section 15064.4

(a) The determination of the significance of GHG emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency shall 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. A lead agency shall have discretion to determine, in the context of a particular project, whether to

(1) Quantify GHG emissions resulting from a project; and/or

(2) Rely on a qualitative analysis or performance-based standards.

(b) In determining the significance of a project's GHG 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. The agency's analysis should consider a timeframe that is appropriate for the project. The agency's analysis also must reasonably reflect evolving scientific knowledge and State regulatory schemes. A lead agency should consider the following factors, among others, when determining the significance of impacts from GHG emissions on the environment:

(1) The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting.

(2) Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

(3) The extent to which the project complies with regulations or requirements adopted to implement a Statewide, regional, or local plan for the reduction or mitigation of GHG emissions (see, e.g., section 15183.5[b]). Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project. In determining the significance of impacts, the lead agency may 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.

(c) A lead agency may use a model or methodology to estimate GHG emissions resulting from a project. The lead agency has discretion to select the model or methodology it considers most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change. The lead agency must support its selection of a

[10] 2019 CEQA Guidelines.

model or methodology with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use.[11]

CEQA Guidelines Section 15064.7

(a) A threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant by the agency and compliance with which means the effect normally will be determined to be less than significant.

(b) 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. Thresholds of significance to be adopted for general use as part of the lead agency's environmental review process must be adopted by ordinance, resolution, rule, or regulation, and developed through a public review process and be supported by substantial evidence. Lead agencies may also use thresholds on a case-by-case basis as provided in Section 15064(b)(2).

(c) When adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence.

(d) Using environmental standards as thresholds of significance promotes consistency in significance determinations and integrates environmental review with other environmental program planning and regulation. Any public agency may adopt or use an environmental standard as a threshold of significance. In adopting or using an environmental standard as a threshold of significance, a public agency shall explain how the particular requirements of that environmental standard reduce project impacts, including cumulative impacts, to a level that is less than significant, and why the environmental standard is relevant to the analysis of the project under consideration. For the purposes of this subdivision, an "environmental standard" is a rule of general application that is adopted by a public agency through a public review process and that is all the following:

(1) a quantitative, qualitative or performance requirement found in an ordinance, resolution, rule, regulation, order, plan or other environmental requirement;

(2) adopted for the purpose of environmental protection;

(3) addresses the environmental effect caused by the project; and,

(4) applies to the project under review.[12]

CEQA Guidelines Section 15183.5

(a) Lead agencies may analyze and mitigate the significant effects of GHG emissions at a programmatic level, such as in a general plan, a long-range development plan, or a separate plan to reduce GHG emissions. Later project-specific environmental documents may tier from and/or incorporate by reference that existing programmatic review. Project-specific environmental documents may rely on an EIR containing a programmatic analysis of GHG emissions as provided in section 15152 (tiering), 15167 (staged EIRs) 15168 (program EIRs),

[11] Ibid.

[12] Ibid.

15175–15179.5 (Master EIRs), 15182 (EIRs Prepared for Specific Plans), and 15183 (EIRs Prepared for General Plans, Community Plans, or Zoning).

(b) Plans for the Reduction of GHG Emissions. Public agencies may choose to analyze and mitigate significant GHG emissions in a plan for the reduction of GHG emissions or similar document. A plan to reduce GHG emissions may be used in a cumulative impacts analysis as set forth below. Pursuant to sections 15064(h)(3) and 15130(d), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project complies with the requirements in a previously adopted plan or mitigation program under specified circumstances.

(1) Plan Elements. A plan for the reduction of GHG emissions should:

(A) Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area;

(B) 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;

(C) Identify and analyze the GHG emissions resulting from specific actions or categories of actions anticipated within the geographic area;

(D) 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;

(E) Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels;

(F) Be adopted in a public process following environmental review.

(2) Use with Later Activities. A plan for the reduction of GHG emissions, once adopted following certification of an EIR or adoption of an environmental document, may be used in the cumulative impacts analysis of later projects. An environmental document that relies on a GHG reduction plan for a cumulative impacts analysis must identify those requirements specified in the plan that apply to the project, and, if those requirements are not otherwise binding and enforceable, incorporate those requirements as mitigation measures applicable to the project. If there is substantial evidence that the effects of a particular project may be cumulatively considerable, notwithstanding the project's compliance with the specified requirements in the plan for the reduction of GHG emissions, an EIR must be prepared for the project.

(c) Special Situations. As provided in Public Resources Code sections 21155.2 and 21159.28, environmental documents for certain residential and mixed use projects, and transit priority projects, as defined in section 21155, that are consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in an applicable sustainable communities strategy or alternative planning strategy need not analyze global warming impacts resulting from cars and light duty trucks. A lead agency should consider whether such projects may result in GHG emissions resulting from other sources, however, consistent with these Guidelines.[13]

[13] Ibid.

CEQA Guidelines Section 15126.4(c)

Consistent with section 15126.4(a), lead agencies shall consider feasible means, supported by substantial evidence and subject to monitoring or reporting, of mitigating the significant effects of GHG emissions. Measures to mitigate the significant effects of GHG emissions may include, among others:

(1) Measures in an existing plan or mitigation program for the reduction of emissions that are required as part of the lead agency's decision;

(2) Reductions in emissions resulting from a project through implementation of project features, project design, or other measures, such as those described in Appendix F;

(3) Off-site measures, including offsets that are not otherwise required, to mitigate a project's emissions;

(4) Measures that sequester GHGs;

(5) In the case of the adoption of a plan, such as a general plan, long range development plan, or plans for the reduction of GHG emissions, mitigation may include the identification of specific measures that may be implemented on a project-by-project basis. Mitigation may also include the incorporation of specific measures or policies found in an adopted ordinance or regulation that reduces the cumulative effect of emissions.[14]

3.2 Relevant State and Regional GHG Reduction Targets

Executive Order S-03-05

On June 1, 2005, the governor issued EO S-03-05, which established a statewide goal of reducing GHG emissions to 1990 levels by 2020 and created the Climate Action Team. The 2020 GHG reduction target contained in EO S-03-05 was later codified by Assembly Bill (AB) 32.

Assembly Bill 32

California's major initiative for reducing GHG emissions is outlined in AB 32, the "California Global Warming Solutions Act of 2006," which was signed into law in 2006. AB 32 codifies the Statewide goal of reducing GHG emissions to 1990 levels by 2020 and requires the California Air Resources Board (CARB) to prepare a Scoping Plan that outlines the main State strategies for reducing GHG emissions to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of Statewide GHG emissions. Based on this guidance, CARB approved a 1990 Statewide GHG level and 2020 limit of 427 million metric tons (MMT) of carbon dioxide equivalents (CO_2e).[15] The Scoping Plan was approved by CARB on December 11, 2008 and included measures to address GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures. Many of the GHG reduction measures

[14] Ibid.

[15] Different types of GHGs have varying global warming potentials (GWPs). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas, CO_2, is used to relate the amount of heat absorbed to the amount of the gas emissions, referred to as carbon dioxide equivalent (CO_2e), and is the amount of a GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane has a GWP of 25, meaning its global warming effect is 25 times greater than CO_2 on a molecule per molecule basis (Intergovernmental Panel on Climate Change 2007).

included in the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted since approval of the Scoping Plan.[16]

In May 2014, CARB approved the first update to the AB 32 Scoping Plan. The 2013 Scoping Plan update defined CARB's climate change priorities for the next five years and set the groundwork to reach post-2020 Statewide goals. The update highlighted California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluated how to align the State's longer-term GHG reduction strategies with other State policy priorities, including those for water, waste, natural resources, clean energy, transportation, and land use. [17]

Executive Order B-30-15

On April 29, 2015, the governor issued EO B-30-15, which established state GHG emission reduction targets of 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050. The 2030 GHG emissions reduction target contained in EO B-30-15 was later codified by SB 32.

Senate Bill 32

On September 8, 2016, the governor signed SB 32 into law, extending AB 32 by requiring the State to further reduce GHG emissions to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, as well as implementation of recently adopted programs and policies, such as SB 350 and SB 1383. The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally appropriate quantitative thresholds consistent with Statewide per capita goals of six metric tons (MT) of CO_2e by 2030 and two MT of CO_2e by 2050. As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level analyses (city, county, subregional, or regional level), but not for specific individual projects because they include all emissions sectors in the State.[18]

Senate Bill 375

SB 375, signed in August 2008, enhances the state's ability to reach AB 32 goals by directing CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles by 2020 and 2035. SB 375 aligns regional transportation planning efforts, regional GHG reduction targets, and affordable housing allocations. Metropolitan Planning Organizations (MPOs) are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the MPO's Regional Transportation Plan (RTP). Qualified projects consistent with an approved SCS or Alternative Planning Strategy categorized as "transit priority projects" would receive incentives to streamline CEQA processing

[16] CARB. 2008. *Climate Change Scoping Plan*. December 2008. https://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf (accessed January 2020).

[17] CARB. 2014. *First Update to the Climate Change Scoping Plan*. May 15, 2014. https://ww3.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf (accessed January 2020).

[18] CARB. 2017. 2017 Climate Change Scoping Plan. https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf (accessed January 2020).

On March 22, 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. The San Luis Obispo Council of Governments (SLOCOG) was assigned targets of a 3 percent reduction in GHGs from transportation sources by 2020 and an 11 percent reduction in GHGs from transportation sources by 2035. SLOCOG adopted the 2019 RTP in June 2019, which includes the region's SCS and meets the requirements of SB 375.[19]

Executive Order B-55-18

On September 10, 2018, the governor issued EO B-55-18, which established a new Statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter. This goal is in addition to the existing Statewide GHG emission reduction targets established by SB 375, SB 32, SB 1383, and SB 100. EO B-55-18 also tasks CARB with including a pathway toward the EO B-55-18 carbon neutrality goal in the next Scoping Plan update.

3.3 Relevant GHG Emissions Analysis Case Law

Friends of Oroville v. City of Oroville (Case No. 070448)

The Third District Court of Appeal decision in the *Friends of Oroville v. City of Oroville* case was published on August 19, 2013. This decision evaluated the methodology used to analyze GHG emissions in an Environmental Impact Report (EIR) prepared for a Wal-Mart Supercenter development project that included replacing an existing Wal-Mart store with a Wal-Mart Supercenter in Oroville in Butte County. The EIR used consistency with the AB 32 emissions reduction target as its significance threshold for evaluating the project's GHG emissions and compared the magnitude of the proposed project's emissions to statewide 2004 emission levels as part of the analysis. The Court found that EIR applied "a meaningless, relative number to determine insignificant impact" rather than evaluating the project's emissions in light of the AB 32 emissions reduction target. The Court also found that the EIR "misapplied the [AB] 32 threshold-of-significance standard by [1] failing to calculate the GHG emissions for the existing Wal-Mart and [2] failing to quantitatively or qualitatively ascertain or estimate the effect of the Project's mitigation measures on GHG emissions." The Court determined that the EIR could and should have performed these quantifications to adequately evaluate the project's GHG emissions using the AB 32 emissions reduction target.

Sierra Club v. County of San Diego (Case No. 37-2018-00043084-CU-TT-CTL)

The Fourth District Court of Appeal decision in the *Sierra Club v. County of San* case was published on October 29, 2014. This decision evaluated the adequacy of the CAP prepared by the County of San Diego to satisfy Mitigation Measure CC-1.2 of the program EIR prepared for its 2011 General Plan. To reduce GHG emissions impacts of the 2011 General Plan to a less-than-significant level, Mitigation Measure CC-1.2 required the preparation of a CAP that would include "more detailed GHG emissions reduction targets and deadlines" and that would "achieve comprehensive and enforceable GHG emissions reduction of 17 percent (totaling 23,572 MT of CO_2e) from County operations from 2006 by 2020 and 9 percent reduction (totaling 479,717 MT of CO_2e) in community emissions from 2006 by 2020." The Court found the CAP did not include enforceable and feasible GHG emission reduction measures that would achieve the necessary emissions reductions; therefore, the CAP did not meet the requirements of Mitigation Measure CC-1.2 and would not

[19] San Luis Obispo Council of Governments. 2019. 2019 Regional Transportation Plan: Connecting Communities. https://slocog.org/2019RTP (accessed January 2020).

ensure that the mitigation measure would reduce GHG emissions to a less-than-significant impact. In addition, the Court found that the County failed to evaluate the environmental impacts of the CAP and its associated thresholds of significance under CEQA.

Center for Biological Diversity v. California Department of Fish and Wildlife (Case No. 217763)

The California Supreme Court's decision in the *Center for Biological Diversity v. California Department of Fish and Wildlife* case was published on November 30, 2015. This decision evaluated the methodology used to analyze GHG emissions in an EIR prepared for the Newhall Ranch development project that included approximately 20,885 dwelling units with 58,000 residents on 12,000 acres of undeveloped land in Los Angeles County. The EIR used a business-as-usual (BAU) approach to evaluate whether the project would be consistent with the AB 32 Scoping Plan. The Court found there was insufficient evidence in the record of that project to explain how a project that reduces its GHG emissions by the same percentage as the BAU reduction identified for the State to meet its Statewide targets supported a conclusion that project-level impacts were below the level of significance.

The California Supreme Court suggested regulatory consistency as a pathway to compliance by stating that a lead agency might assess consistency with the State's GHG reduction goals by evaluating for compliance with regulations designed to reduce GHG emissions. This approach is consistent with CEQA Guidelines Section 15064.4(b), which provides that a determination of an impact is not cumulatively considerable to the extent to which the project complies with regulations or requirements implementing a Statewide, regional, or local plan to reduce or mitigate GHG emissions. The Court also found that a lead agency may rely on numerical and efficiency-based thresholds of significance for GHG emissions, if supported by substantial evidence.

Golden Door Properties, LLC v. County of San Diego/Sierra Club, LLC v. County of San Diego (Case No. 072406)

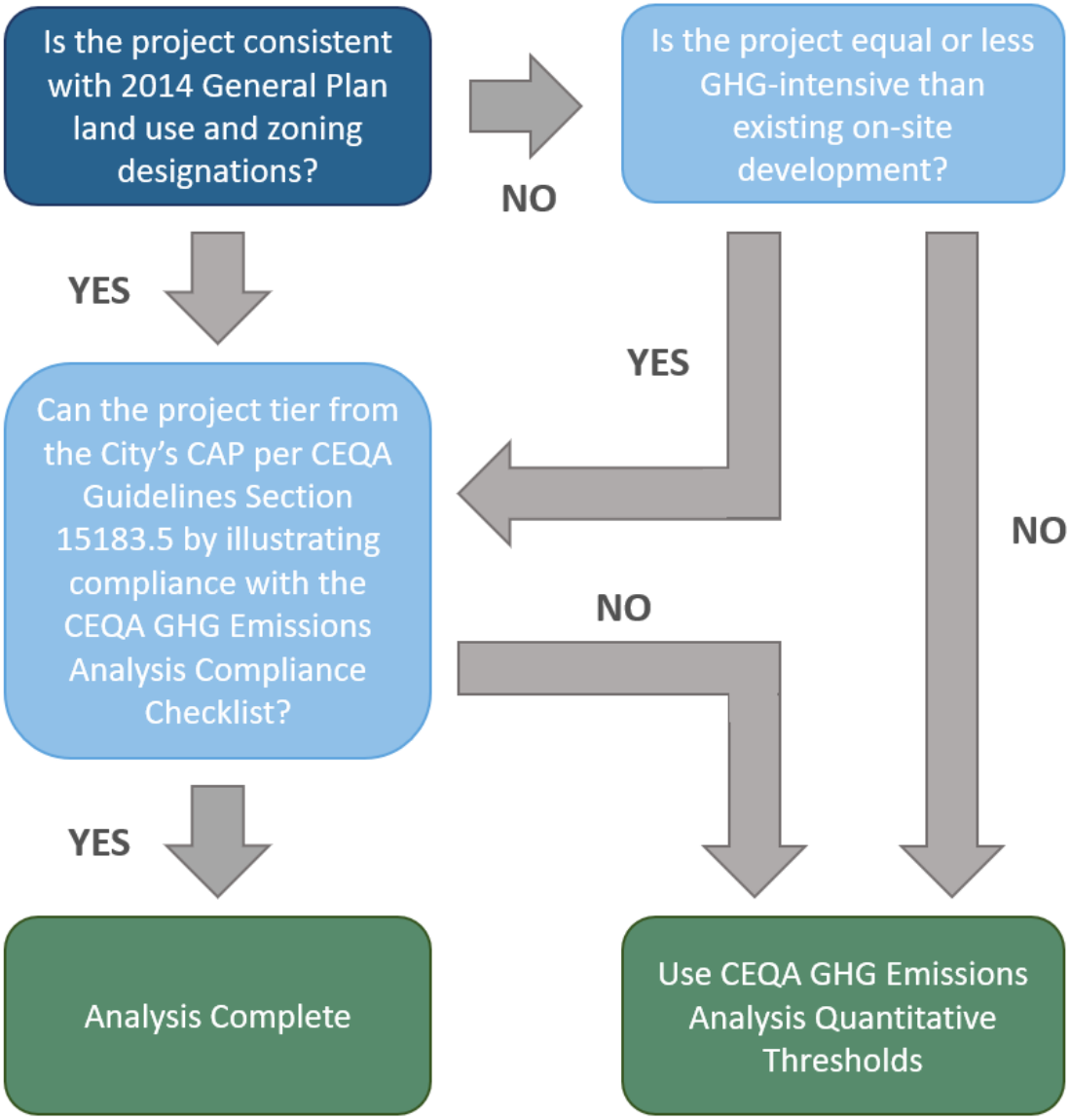
The Fourth District Court of Appeal decision in the *Golden Door Properties, LLC v. County of San Diego* case (published on September 28, 2018) evaluated the County of San Diego's 2016 Guidance Document's GHG efficiency metric, which establishes a generally applicable threshold of significance for proposed projects. The Court held that the County of San Diego is barred from using its 2016 Guidance Document's threshold of significance of 4.9 MT of CO_2e per service person per year for GHG analysis. The Court stated that the document violated CEQA because it was not adopted formally by ordinance, rule, resolution, or regulation through a public review process per CEQA Guidelines Section 15064.7(b). The Court also found that the threshold was not supported by substantial evidence that adequately explained how a service population threshold derived from Statewide data could constitute an appropriate GHG metric to be used for all projects in unincorporated San Diego County. Nevertheless, lead agencies may make plan- or project-specific GHG emissions threshold determinations.

4 Determining Consistency with the City's Climate Action Plan

As discussed in Chapter 2, *Climate Action Plan Summary*, upon public adoption of the CAP IS-ND and approval of the CAP by City Council, the City's CAP will be a qualified GHG emission reduction plan per the requirements of CEQA Guidelines Section 15183.5 for year 2030 and can, therefore, be utilized to streamline the GHG emissions analysis for plans and projects with buildout years through 2030.[20] Projects that are consistent with the demographic forecasts and land use assumptions used in the CAP can utilize the City's CEQA GHG Emissions Analysis Compliance Checklist to demonstrate consistency with the CAP's GHG emissions reduction strategy, and if consistent, can tier from the existing programmatic environmental review contained in the adopted IS-ND for the CAP. In doing so, these projects would result in less-than-significant GHG emissions and would not result in a cumulatively considerable impact related to GHG emissions and climate change. The following process, illustrated in Figure 3, explains how to demonstrate a plan/project's consistency with the CAP's GHG emissions reduction strategy and, thereby, tier from the adopted IS-ND for the CAP. This approach is consistent with the recommendations of the AEP Climate Change Committee (2016) for tiering from qualified GHG reduction plans that demonstrate substantial progress toward meeting the next milestone Statewide planning reduction target (i.e., a 40 percent reduction below 1990 levels by 2030 as set forth by SB 32).

[20] Projects that are statutorily or categorically exempt from CEQA compliance would not need to perform an analysis of GHG emissions or tier from the City's CAP.

Figure 3 Determining Consistency with the City's Climate Action Plan



Step 1: Consistency with the Demographic Forecasts and Land Use Assumptions

The demographic forecasts and land use assumptions of the CAP are based on the Land Use and Circulation Elements of the City's 2014 General Plan.[21] If a plan/project is consistent with the existing (2014) General Plan land use and zoning designation(s) of the plan area/project site as identified in the City's General Plan Land Use and Circulation Elements adopted in 2014, then the plan/project is consistent with the demographic forecasts and land use assumptions of the CAP and can move on to Step 2. In this case, the plan/project's associated GHG emissions were accounted for

[21] San Luis Obispo, City of. 2014. City of San Luis Obispo General Plan. Adopted December 9, 2014. https://www.slocity.org/government/department-directory/community-development/planning-zoning/general-plan (accessed January 2020).

in the GHG emissions forecasts included in the CAP and are within the scope of this plan's analysis of communitywide GHG emissions. Accordingly, the analysis of the plan/project's GHG emissions in its CEQA document should include a reference to the plan/project's consistency with the existing (2014) General Plan land use and zoning designation(s) of the plan area/project site and should explain the aforementioned connection between the existing (2014) General Plan land use and zoning designation(s) and the GHG emissions forecasts in the CAP. Then, proceed to Step 2.

If a plan/project is not consistent with the existing (2014) General Plan land use and zoning designation(s) of the plan area/project site but would result in equivalent or fewer GHG emissions as compared to existing on-site development, then the plan/project would still be within the demographic forecasts and land use assumptions of the CAP and can move on to Step 2. To provide substantial evidence for this determination, GHG emissions generated under existing conditions and the proposed project need to be quantified and included in the CEQA analysis. See Chapter 6, *Quantifying GHG Emissions*, for guidance on quantifying GHG emissions for existing conditions and the proposed plan/project. In this case, the analysis of the plan/project's GHG emissions in its CEQA document should include a quantitative comparison of the proposed plan/project's GHG emissions and GHG emissions generated by existing on-site development. The analysis should clearly explain how the plan/project's emissions are equivalent or less than those generated by existing on-site development. Then, proceed to Step 2.

If a plan/project is not consistent with the existing (2014) General Plan land use and zoning designation(s) of the plan area/project site and would result in either new development of undeveloped land or redevelopment with higher GHG emissions than existing on-site development, the plan/project cannot use the CEQA GHG Emissions Analysis Compliance Checklist to tier from the adopted IS-ND for the CAP. Instead, the plan/project's GHG emissions can be evaluated using the quantitative GHG thresholds described in Chapter 5, *Utilizing Quantitative CEQA GHG Thresholds*, to evaluate the significance of the plan/project's GHG emissions. This method can also be utilized for projects with a post-2030 buildout year.

Step 2: Consistency with CEQA GHG Emissions Analysis Compliance Checklist

The City has prepared the CEQA GHG Emissions Analysis Compliance Checklist for plans and projects to ensure that they are consistent with the measures of the CAP (Appendix B). A project applicant can utilize the checklist to show that the plan/project includes all applicable measures of the CAP. Projects that use the CEQA GHG Emissions Analysis Compliance Checklist are not required to quantify reductions from the measures included on the checklist because the reductions from applicable measures have already been quantified at a programmatic level in the CAP. If a plan/project is consistent with the applicable measures on the CEQA GHG Emissions Analysis Compliance Checklist, then the plan/project can tier from the programmatic environmental review included in the adopted IS-ND for the CAP pursuant to CEQA Guidelines Section 15183.5(b). A plan/project that is consistent with all applicable measures of the CEQA GHG Emissions Analysis Compliance Checklist would result in less-than-significant GHG emissions and would not result in a cumulatively considerable impact related to GHG emissions and climate change. In this case, the analysis of a plan or project's GHG emissions in its respective CEQA review document should include a summary of the plan/project's consistency with applicable measures of the CEQA GHG Emissions Analysis Compliance Checklist and an explanation with substantial evidence of why any measures in the checklist are not applicable to the plan/project.

5 Utilizing Quantitative CEQA GHG Thresholds

As discussed in Chapter 4, *Determining Consistency with the City's C,* if a plan/project is not consistent with the existing (2014) General Plan land use and zoning designation(s) of the plan area/project site or has a post-2030 buildout year, then the plan/project cannot use the CEQA GHG Emissions Analysis Compliance Checklist to tier from the adopted IS-ND for the CAP. Instead, the significance of the plan/project's GHG emissions can be evaluated using quantitative GHG thresholds derived from the assumptions of the CAP. If the plan/project's emissions are at or below the applicable threshold, the plan/project can tier from the existing programmatic environmental review contained in the adopted IS-ND for the CAP if it has a pre-2030 buildout year. In doing so, these plans/projects would result in less-than-significant GHG emissions and would not result in a cumulatively considerable impact related to GHG emissions and climate change. For plans/projects with post-2030 buildout years, emissions at or below the thresholds for 2035, which equate to 0 MT of CO_2e per year, would be considered less-than-significant, and these plans/projects would not result in a cumulatively considerable impact related to GHG emissions. The following sections provide an explanation of the methodology used to calculate the thresholds, guidance on how to utilize the thresholds, and justification for use of these thresholds.

5.1 GHG Emissions Calculation Methodology

CEQA Guidelines Section 15064.4 does not establish a specific quantitative threshold of significance for evaluating GHG emissions associated with a proposed plan or project. Lead agencies have the discretion to establish significance thresholds for their respective jurisdictions, and in establishing those thresholds, a lead agency may appropriately look to thresholds developed by other public agencies, or suggested by other experts, as long as the threshold chosen is supported by substantial evidence (CEQA Guidelines Section 15064.7[c]). The following methodology is consistent with guidance provided by the AEP Climate Change Committee in 2016 for establishing GHG emissions efficiency thresholds using the local jurisdictional GHG inventory and demographic forecasts.[22]

An efficiency threshold is a threshold expressed as a per-person metric (e.g., per resident, per employee, or per service person). Efficiency thresholds are calculated by dividing the allowable GHG emissions inventory in a selected calendar year by the resident, employee, or service population in that year.[23] The efficiency threshold identifies the quantity of GHG emissions that can be generated on a per-person basis without significantly impacting the environment.

Locally appropriate, plan- and project-specific GHG emissions efficiency thresholds were derived from the GHG emissions forecasts calculated for the CAP. These thresholds were created to comply with CEQA and the CEQA Guidelines and interpretive GHG emissions analysis case law, which are summarized in Chapter 3, *Regulatory and Legal Setting*. The City of San Luis Obispo GHG emissions efficiency thresholds were calculated using the emissions forecasts with all emissions sectors included, because plans and projects would generate vehicle trips, consume energy, and produce

[22] AEP. 2016. Final White Paper Beyond 2020 and Newhall: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California. https://califaep.org/docs/AEP-2016_Final_White_Paper.pdf (accessed January 2020).

[23] Per the method used by the San Luis Obispo Community Development Department, the service population is equal to the residential population plus half the number of jobs.

solid waste, thereby generating emissions in all categories. Efficiency thresholds were calculated for year 2030 to provide GHG emissions thresholds for new development in line with the State's next milestone target for year 2030.

GHG emissions efficiency thresholds would be used during the CEQA review process for new residential, non-residential, and mixed-use plans and projects. Therefore, forecasted GHG emissions in the CAP were disaggregated into existing development and new development for each threshold year. Furthermore, forecasted GHG emissions for new development were further disaggregated into residential and non-residential development for each threshold year for the purpose of calculating thresholds specific to residential, non-residential, and mixed-use projects. The results of the disaggregation of the GHG emissions forecast are presented in Figure 4 and Table 5, which summarizes the total amount of GHG emissions expected to be generated by existing, new residential, and new non-residential development for threshold year 2030.

Figure 4 Allowable GHG Emissions from Existing and New Development in Year 2030

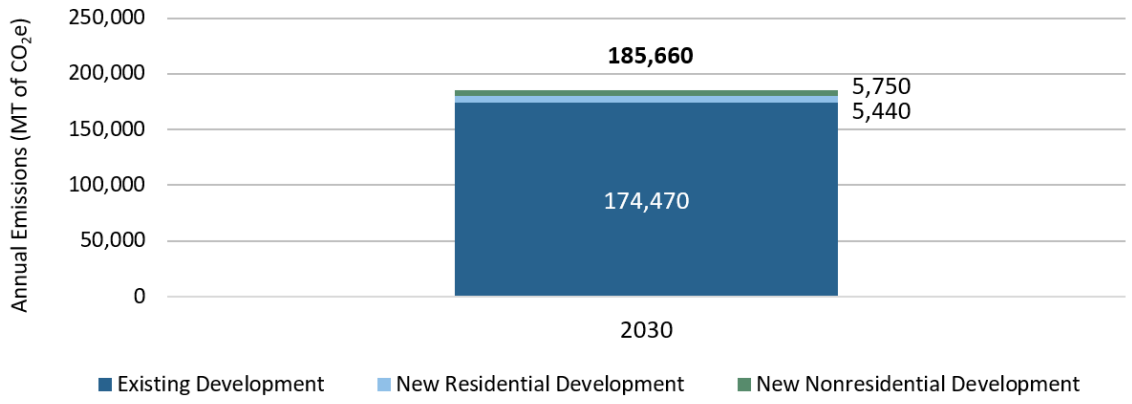


Table 5 GHG Emissions Forecast for Year 2030 by Type of Development (MT of CO_2e)

	2030		
		New Development	
Source	Existing Development	Residential	Non-Residential
Baseline GHG Emissions	339,290	24,750	17,930
State Laws/Programs	(62,620)	(8,560)	(4,220)
CAP Pillar 2: Clean Energy Systems	(23,170)	n/a	(2,880)
CAP Pillar 3: Green Buildings	(8,180)	(3,020)	(760)
CAP Pillar 4: Connected Community	(38,660)	(4,220)	(2,360)
CAP Pillar 5: Circular Economy	(31,970)	(3,490)	(1,950)
CAP Pillar 6: Natural Solutions[1]	(220)	(20)	(10)
Remaining Total GHG Emissions	**174,470**	**5,440**	**5,750**

( ) denotes a negative number; n/a = not applicable
Note: GHG emissions reductions achieved by Pillar 1: Lead by Example are not included because implementation of the foundational actions associated with this pillar would serve only to reduce municipal, rather than communitywide, emissions.
[1] Only includes reductions from Natural Solutions Measure 2 (Tree Planting) because implementation of Natural Solutions Measure 1 (Carbon Farming) is not the responsibility of existing and new development.
See Appendix C for calculations.

Table 6 summarizes the demographic projections for the City of San Luis Obispo that were used in calculating GHG efficiency thresholds for year 2030. As shown in Table 6, the numbers of residents, employees, and service persons are all anticipated to increase between 2016 and 2030.

Table 6 City of San Luis Obispo Demographic Projections

Metric	2016 Estimate	2030 Forecast	Net Increase from New Development (2016-2030)
Residents	46,117	53,934	7,817
Employees	50,985	59,723	8,738
Service Population[1]	71,610	83,796	12,186

[1] Per the method used by the City of San Luis Obispo Community Development Department, the service population is equal to the residential population plus half the number of employees.

Source: San Luis Obispo, City of. 2019. *Community Greenhouse Gas Emissions Inventory and Forecast*.

5.2 GHG Thresholds and Use

The GHG efficiency thresholds for residential, non-residential, and mixed-use projects built prior to December 31, 2030 are presented in Figure 5 and Table 7. If a plan or project's emissions do not exceed the applicable threshold, then it is consistent with the City's CAP and its GHG emissions impacts (both project- and cumulative-level) would not result in a cumulatively considerable impact related to GHG emissions and climate change and would, therefore, be less than significant. If a plan or project's emissions exceed the applicable threshold, then mitigation measures must be identified and respective GHG emissions reduction calculations included within the respective CEQA review document in order to reduce plan or project GHG emissions to at or below the applicable threshold

level. These thresholds are applicable to the following plan and project types as identified in Title 17 (Zoning Regulations) Table 2-1 and defined in San Luis Obispo Municipal Code Section 17.156:

- **Residential.** Single-family dwellings, multi-family dwellings, boarding house, caretaker quarters, fraternities and sororities, high-occupancy residential uses, continuing care communities, mobile-home parks, or any combination of these uses.
- **Non-residential.** All Commercial uses (including office and retail uses), all Lodging uses, all Public and Quasi-Public uses, elderly and long term care, hospice in-patient facilities, family day cares, residential care facilities, supportive and/or transitional housing, sports and entertainment assembly facilities, all Industry, Manufacturing & Processing, and Wholesaling uses that are not subject to San Luis Obispo County Air Pollution Control District (SLOAPCD) stationary source permitting or the State cap-and-trade program, or any combination of these uses.
- **Mixed-use.** A combination of at least one residential and at least one non-residential land use specified above.

Figure 5 City of San Luis Obispo GHG Efficiency Thresholds

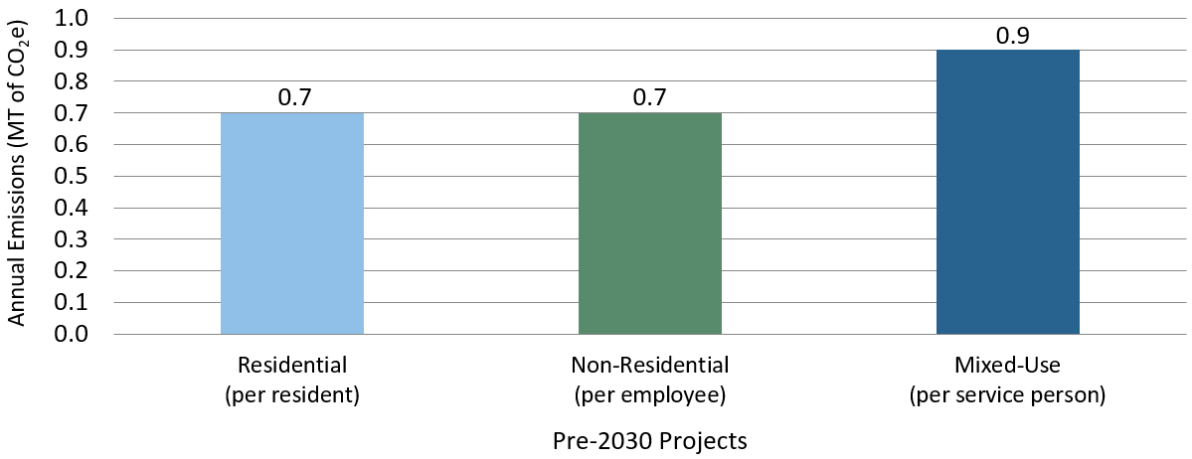


Table 7 City of San Luis Obispo Locally Applicable Plan- or Project-Specific CEQA GHG Emissions Thresholds

	2030 (New Development)		
	Residential	**Non-Residential**	**Mixed-Use**
GHG Emissions Forecast (MT of CO_2e per year)[1]	5,440	5,750	11,190
Demographic Metric[2]	7,817 residents	8,738 employees	12,186 service persons
GHG Efficiency Threshold (MT of CO_2e per year)	0.7 per resident	0.7 per employee	0.9 per service person

MT = metric tons; CO_2e = carbon dioxide equivalents

[1] See Table 5.

[2] Demographic estimates are for new plans or projects only and were calculated using the forecasts in Table 6.

5.3 Justification for Thresholds

Per CEQA Guidelines Section 15064(b)(1), "the determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data." In addition, CEQA Guidelines Section 15064(b)(2) states, "When using a threshold, the lead agency should briefly explain how compliance with the threshold means that the project's impacts are less than significant." Furthermore, CEQA Guidelines Section 15064.7(b) states "Thresholds of significance to be adopted for general use as part of the lead agency's environmental review process must be adopted by ordinance, resolution, rule, or regulation, and developed through a public review process and be supported by substantial evidence." Therefore, the key considerations when developing thresholds of significance are 1) the thresholds' basis on scientific and factual data; 2) demonstration of how compliance with the thresholds reduces project impacts to a less-than-significant level; 3) support of the thresholds by substantial evidence; and 4) adoption of the thresholds by ordinance, resolution, rule, or regulation, and developed through a public review process. The following subsections address these four key considerations.

Basis on Scientific and Factual Data

As discussed in Section 5.1, *Calculation Methodology*, the quantitative thresholds were developed using data from the City's 2005 and 2016 communitywide GHG inventories and the GHG emissions forecasts for year 2030. These inventories and forecasts were developed by the City in compliance with all relevant protocols and guidance documents, including the U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions, Local Government Operations Protocol, the Global Protocol for Community Scale GHG Emissions, and the Intergovernmental Panel on Climate Change (IPCC) Guidelines for National GHG Inventories. Furthermore, the inventories and forecasts are based on locally appropriate data for the San Luis Obispo jurisdiction provided by Pacific Gas & Electric (PG&E), Southern California Gas Company, the City of San Luis Obispo Public Works and Utilities Departments, San Luis Obispo Air Pollution Control District (SLOAPCD), CARB, and Cold Canyon Landfill (City of San Luis Obispo 2019b).[24] Therefore, the emission inventory and forecast data underlying the thresholds is both scientific and factual.

As discussed in Section 2.3, *GHG Emissions Forecast*, implementation of the City's CAP will achieve a 45 percent reduction in 1990 emissions levels by 2030. Therefore, this local target is more stringent than the State targets of a 40 percent emission reduction in 1990 levels by 2030 and makes substantial progress toward achieving the State's long-term goal of carbon neutrality by 2045. The quantitative thresholds are tied directly to the level of GHG emissions anticipated for new development in the CAP for year 2030. As a result, because the CAP is consistent with the State's 2030 GHG emission target, the quantitative thresholds are also consistent with the next State milestone GHG emission reduction target for 2030 and the State's long-term goal of carbon neutrality by 2045. The State's GHG emission reduction targets for 2030 and 2045 are set at the levels scientists say are necessary to meet the Paris Agreement goals to reduce GHG emissions and limit global temperature rise below two degrees Celsius by 2100 in order to avoid dangerous climate change (CARB 2017; EO B-55-18). Therefore, the City's emission reduction targets that inform the CAP and the associated quantitative thresholds are based on scientific and factual data on the level

[24] San Luis Obispo, City of. 2019. Community Greenhouse Gas Emissions Inventory and Forecast.

of emissions reductions necessary to ensure the City does not have a cumulatively considerable contribution to the cumulative impact of climate change.

Reduction of Plan or Project Impacts to a Less-than-Significant Level

As shown in Table 5 in Section 5.1, *Calculation Methodology*, implementation of the City's CAP would reduce communitywide emissions by 45 percent by 2030. The quantitative thresholds are tied directly to the level of GHG emissions anticipated for new development in the CAP for year 2030. Therefore, the thresholds are consistent with the City's local emission reduction target, which is consistent with the State's GHG emission reduction targets. As mentioned in the preceding subsection, the State's GHG emission reduction targets for 2030 and 2045 are set at the levels scientists say are necessary to meet the Paris Agreement goals to reduce GHG emissions and limit global temperature rise below two degrees Celsius by 2100 in order to avoid dangerous climate change (CARB 2017; EO B-55-18). Therefore, the quantitative thresholds are set at the level necessary to ensure the City does not have a cumulatively considerable contribution to the cumulative impact of climate change. As a result, projects with GHG emissions at or below the quantitative thresholds would also not have a cumulatively considerable contribution to the cumulative impacts of climate change, and project impacts would be less than significant.

Support of Substantial Evidence

Substantial evidence regarding the calculation of the quantitative GHG emissions thresholds is provided in Section 5.1, *Calculation Methodology*. The following subsections provide additional evidence of how the GHG emissions thresholds are locally appropriate and plan- or project-specific; how the thresholds distinguish between existing and new development; and why interim year thresholds were developed.

Use of Local Data

The quantitative thresholds were developed using the City's communitywide GHG emissions forecasts for year 2030 and are therefore specific to the City of San Luis Obispo. The thresholds are directly tied to the population and employment growth anticipated by the City's (2014) General Plan Land Use and Circulation Elements as well as to the City-specific GHG emission reduction measures (i.e., pillars, measures, and foundational actions) that the City has proposed to reduce communitywide emissions. In addition, the magnitude of local GHG emission reductions achieved by State legislation/policies (i.e., vehicle fuel efficiency standards, the RPS, and Title 24) was estimated based on City-specific growth and vehicle miles travelled (VMT) forecasts. As a result, these locally appropriate thresholds directly address the concerns raised in the *Golden Door Properties, LLC v. County of San Diego/Sierra Club, LLC v. County of San Diego* (2018) case because they are based on local GHG emissions data rather than Statewide GHG emissions data.

Disaggregation of Existing versus New Development

The quantitative thresholds were developed by disaggregating the City's business-as-usual GHG emissions forecasts for year 2030 into emissions forecasts for existing and new development, which are shown in Table 5 in Section 5.1, *Calculation Methodology*. The emissions reductions specific to new development achieved by State legislation/policies and the CAP were then subtracted from the business-as-usual forecast to determine emissions "caps" of emissions from new residential and new non-residential development for year 2030. These "caps" were then divided by the numbers of residents, employees, and service persons forecasts for new development to determine efficiency

thresholds for residential, non-residential, and mixed-use development, respectively. Therefore, these thresholds directly address the concerns raised in the *Center for Biological Diversity v. California Department of Fish and Wildlife* (2015) case regarding the different rates of GHG emissions reductions anticipated for new development as compared to existing development in order to meet the specified GHG reduction target.

Selection of Sector-Specific Thresholds

The quantitative thresholds are separated into three categories – residential, non-residential, and mixed-use – which are intended to apply to the three main types of development projects in San Luis Obispo. These thresholds were calculated by disaggregating the City's business-as-usual GHG emissions forecasts for new development in year 2030 into emissions forecasts for new residential and new non-residential development, which are shown in Table 5 in Section 5.1, *Calculation Methodology*. The emissions reductions specific to new residential and new non-residential development achieved by State legislation/policies and the CAP were then subtracted from the business-as-usual forecast to determine "caps" of emissions for new residential and new non-residential development for year 2030. These emissions "caps" were then divided by the numbers of residents and employees forecast for new development in year 2030 to determine efficiency thresholds for residential and non-residential projects, respectively. For mixed-use development, the residential and non-residential emissions "caps" were summed, then divided by the service population forecast for new development in year 2030 to determine an efficiency threshold for mixed-use projects. As a result, these project-specific thresholds directly address the concerns raised in the *Center for Biological Diversity v. California Department of Fish and Wildlife* (2015) case because they are specific to each development project type.

Adoption via Public Review Process

In compliance with CEQA Guidelines Section 15064.7(b), this guidance document and the quantitative thresholds contained herein will be presented to the City Council for formal adoption via resolution through a public review process, which will include an opportunity for public input. The public review process for these City of San Luis Obispo CEQA GHG Thresholds and Guidance will specifically occur via public review of and comment on a joint CAP and CEQA GHG Thresholds and Guidance Draft IS-ND. The opportunity for public comment will also be available at a public hearing (i.e., City Council meeting) considering adoption of the CAP and CEQA GHG Thresholds and Guidance. This process directly addresses the concerns raised in the *Golden Door Properties, LLC v. County of San Diego/Sierra Club, LLC v. County of San Diego* (2018) case regarding formal adoption of new CEQA thresholds and how lead agencies should afford the opportunity for public review and input prior to adoption and use.

6 Quantifying GHG Emissions

There are a variety of analytical tools available to estimate project-level GHG emissions, including the California Emissions Estimator Model (CalEEMod),[25] which is a free, publicly available computer model developed for the California Air Pollution Control Officers Association (CAPCOA) in collaboration with various air quality districts throughout the State. Alternative tools may be used to quantify emissions if they can be substantiated. In general, the most current version of CalEEMod should be used to calculate total emissions for discretionary development projects. The analysis should focus on carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) because these are the GHGs that most development projects would generate in the largest quantities. Fluorinated gases, such as hydrofluorocarbons, perfluorocarbons, and sulfur hexafluorides, should also considered for the analysis. Emissions of all GHGs should be converted into their equivalent global warming potential in terms of CO_2 (CO_2e). Calculations should be based on the methodologies recommended by the CAPCOA and the SLOAPCD and include the use of guidance published by CARB.[26, 27, 28]

6.1 Construction GHG Emissions

Construction activities emit GHGs primarily though combustion of fuels (mostly diesel) in the engines of off-road construction equipment and in on-road construction vehicles and in the commute vehicles of the construction workers. Smaller amounts of GHGs are emitted indirectly through the energy required for water used for fugitive dust control and lighting for the construction activity. Every phase of the construction process, including demolition, grading, paving, and building, emits GHG emissions in volumes proportional to the quantity and type of construction equipment used. Heavier equipment typically emits more GHGs per hour of than lighter equipment because of its engine design and greater fuel consumption.

The SLOAPCD recommends amortizing construction-related GHG emissions over the life of the plan/project and adding amortized construction emissions to annual operational emissions for the purpose of providing a mechanism for the plan/project to mitigate these impacts alongside operational impacts. The SLOAPCD recommends an amortization period of 50 years for residential projects and 25 years for commercial projects.[29] The SLOAPCD does not provide a recommended amortization period for mixed-use projects; however, these projects should use a conservative amortization period of 30 years, which is consistent with the recommendations of the South Coast Air Quality Management District.[30]

[25] The most current available version of CalEEMod should be used. As of January 2020, CalEEMod version 2016.3.2 is the most current version and should be used to quantify project-level emissions.

[26] California Air Pollution Control Officers Association. 2008. *CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA)*. January 2008.

[27] SLOAPCD. 2012. CEQA Air Quality Handbook. April 2012. https://www.slocleanair.org/rules-regulations/land-use-ceqa.php (accessed January 2020).

[28] CARB. 2018. EMFAC2017 Volume III – Technical Documentation v.1.0.2. July 20, 2018. https://ww3.arb.ca.gov/msei/downloads/emfac2017-volume-iii-technical-documentation.pdf (accessed January 2020).

[29] SLOAPCD. 2012. CEQA Air Quality Handbook. April 2012. https://www.slocleanair.org/rules-regulations/land-use-ceqa.php (accessed January 2020).

[30] South Coast Air Quality Management District. 2008. Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold. October 2008. http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgattachmente.pdf (accessed February 2020).

CalEEMod generates a default construction schedule and equipment list based on the plan-/project-specific information, including land use, project size, location, and construction timeline.[31] In general, if specific applicant-provided information is unknown, the default construction equipment list and phase lengths are the most appropriate inputs. However, if more detailed site-specific equipment and phase information (i.e., data from the project applicant) is available, the model's default values can (and should) be overridden.[32]

6.2 Operational GHG Emissions

CalEEMod estimates operational emissions of CO_2, N_2O, and CH_4 generated by area sources, energy use, waste generation, and water use and conveyance as well as CO_2 and CH_4 generated by project-generated vehicle trips (i.e., mobile sources). Operational emissions should be calculated for year 2030, rather than the plan/project buildout year, in order to provide an appropriate comparison of project emissions to the year 2030 threshold.

Area Source Emissions

Area sources include GHG emissions that would occur from the use of landscaping equipment, hearths, and woodstoves, which emit GHGs associated with the equipment's fuel combustion. The landscaping equipment emission values in CalEEMod are derived from the 2011 Off-Road Equipment Inventory Model.[33] Emission rates for combustion of wood and natural gas for wood stoves and fireplaces are based on those published by the U.S. EPA in Chapter 1.9 of AP-42. Typically, no adjustments to landscaping equipment inputs are necessary. The number of hearths and woodstoves should be adjusted to reflect the project design.

Energy Use Emissions

GHGs are emitted on-site during the combustion of natural gas for cooking, space and water heating, and decorative uses and off-site during the generation of electricity from fossil fuels in power plants. CalEEMod estimates GHG emissions from energy use by multiplying average rates of residential and non-residential energy consumption by the quantities of residential units and non-residential square footage entered in the land use module to obtain total projected energy use. This value is then multiplied by electricity and natural gas GHG emission factors applicable to the plan/project location and utility provider. Building energy use is typically divided into energy consumed by the built environment and energy consumed by uses that are independent of the building, such as plug-in appliances. Non-building energy use, or "plug-in energy use," can be further subdivided by specific end-use (refrigeration, cooking, office equipment, etc.). In California, Title 24 governs energy consumed by the built environment, mechanical systems, and some types of fixed lighting.

Electricity emissions are calculated by multiplying the energy use by the carbon intensity of the utility district per kilowatt hour.[34] Projects would be served either by Monterey Bay Community Power or by PG&E. The specific energy intensity factors (i.e., the amount of CO_2, CH_4, and N_2O per

[31] CAPCOA. 2017. California Emissions Estimator Model User Guide: Version 2016.3.2. Prepared by BREEZE Software, A Division of Trinity Consultants in collaboration with South Coast Air Quality Management District and the California Air Districts. http://www.aqmd.gov/caleemod/user's-guide (accessed January 2020).

[32] Ibid.

[33] Ibid.

[34] Ibid.

kilowatt-hour) for the applicable utility should be used in the calculations of GHG emissions. CalEEMod does not include Monterey Bay Community Power as a utility company choice; therefore, users must select "User Defined" and manually enter energy intensity factors. Users should contact the City's Community Development Department for the most recent energy intensity factors for Monterey Bay Community Power's current mix of power. For projects served by PG&E, the energy intensity factors included in CalEEMod are based on 2009 data by default by default at which time PG&E had only achieved a 14.1 percent procurement of renewable energy.[35] Per SB 100, the Statewide Renewable Portfolio Standard (RPS) Program requires electricity providers to increase procurement from eligible renewable energy sources to 33 percent by 2020 and 60 percent by 2030. Users should contact the City's Community Development Department for the most recent energy intensity factors for PG&E.

Energy emissions should also be adjusted to account for the effects of new iterations of Title 24. For examples, CalEEMod version 2016.3.2 does not account for the requirements of the 2019 Title 24 standards, which went into effect on January 1, 2020. According to the California Energy Commission, single-family homes and nonresidential buildings built to the 2019 Title 24 standards will use approximately 7 percent and 30 percent less energy, respectively, due to more stringent energy efficiency measures and lighting upgrades. Therefore, energy usage from single-family residential usage should be reduced by 7 percent, and non-residential energy usage should be reduced by 30 percent to account for the requirements of 2019 Title 24 standards.[36]

In accordance with Section 150.1(b)14 of the 2019 Building Energy Efficiency Standards, all new residential uses three stories or less must install photovoltaic (PV) solar panels that generate an amount of electricity equal to expected electricity usage. The calculation method contained in Section 150.1(b)14 of the 2019 Building Energy Efficiency Standards should be utilized to estimate the number of kilowatts of PV solar panels that would be required for a residential project three stories or less. In addition, modeling should account for local regulations pertaining to mandatory solar provisions.[37] Online resources can be used to determine the amount of kilowatt-hours that would be generated per year by the required solar PV system.[38] The energy reduction achieved by on-site PV solar panels should be included in CalEEMod.

Mobile Source Emissions

CalEEMod quantifies mobile source emissions of CO_2, and CH_4. If available, project-specific trip generation rates or VMT data should be input in CalEEMod. To calculate mobile source emissions, CalEEMod uses CO_2 emission factors from the EMFAC2014 Emissions Inventory based on the aggregated model year and aggregated speed and CH_4 emission factors provided by CARB for the plan/project's first year of full operations.[39] Because CalEEMod does not calculate N_2O emissions

[35] California Public Utilities Commission. 2011. Renewables Portfolio Standard Quarterly Report. 1st Quarter 2011. http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=5858 (accessed January 2020).

[36] California Energy Commission. 2019. "2019 Building Energy Efficiency Standards." March 2018. https://ww2.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf (accessed January 2020).

[37] In 2020, the City Council will consider adoption of the Clean Energy Choice Program for New Buildings, which may include solar requirements for other types of land uses.

[38] Zientara, Ben. 2019. "How much electricity odes a solar panel produce?" Last updated: November 6, 2019. https://www.solarpowerrocks.com/solar-basics/how-much-electricity-does-a-solar-panel-produce/ (accessed March 2020).

[39] CAPCOA. 2017. California Emissions Estimator Model User Guide: Version 2016.3.2. Prepared by BREEZE Software, A Division of Trinity Consultants in collaboration with South Coast Air Quality Management District and the California Air Districts. http://www.aqmd.gov/caleemod/user's-guide (accessed January 2020).

from mobile sources, N_2O emissions should be quantified using guidance from CARB and the EMFAC2017 Emissions Inventory. [40, 41]

Water and Wastewater Emissions

The amount of water used, and the amount of wastewater generated by a plan/project generate indirect GHG emissions. These emissions are a result of the energy used to supply, convey, and treat water and wastewater. In addition to the indirect GHG emissions associated with energy use, the wastewater treatment process itself can directly emit both CH_4 and N_2O.

The indoor and outdoor water use consumption data for each land use subtype comes from the Pacific Institute's (2003) *Waste Not, Want Not: The Potential for Urban Water Conservation in California*.[42] Based on that report, a percentage of total water consumption is dedicated to landscape irrigation, which is used to determine outdoor water use. Wastewater generation is similarly based on a reported percentage of total indoor water use.

New development will be subject to CalGreen, which requires a 20 percent increase in indoor water use efficiency. Thus, in order to account for compliance with CalGreen, a 20 percent reduction in indoor water use should be included in the water consumption calculations for new residential, non-residential, and mixed-use development. In addition to water reductions associated with building code compliance and project design features, the GHG emissions from the energy used to transport the water for development should also account for compliance with the RPS using the guidance provided under "Energy Use Emissions."

Solid Waste Emissions

The disposal of solid waste produces GHG emissions from the transportation of waste, anaerobic decomposition in landfills, and incineration. To calculate the GHG emissions generated by solid waste disposal, the total volume of solid waste is calculated using waste disposal rates identified by the California Department of Resources Recycling and Recovery (CalRecycle). The methods for quantifying GHG emissions from solid waste are based on the IPCC method, using the degradable organic content of waste. Users should contact the City's Community Development Department to obtain the most recent solid rate diversion rate to be included in the calculation of solid waste GHG emissions.

Plan or Project Design Features

Users should use the "Mitigation" tabs to include project design features applicable to the plan/project.[43] These features often include increased density, improved destination accessibility, proximity to transit, integration of below market rate housing, unbundling of parking costs, provision of transit subsidies, implementation of alternative work schedules, use of energy- and/or water-efficient appliances, use of reclaimed and/or grey water, and installation of water-efficient irrigation system. Users should consider the applicability of these features to the plan/project and

[40] CARB. 2018. EMFAC2017 Volume III – Technical Documentation v.1.0.2. July 20, 2018. https://ww3.arb.ca.gov/msei/downloads/emfac2017-volume-iii-technical-documentation.pdf (accessed January 2020).

[41] CARB. 2019. EMFAC2017 Web Database. https://www.arb.ca.gov/emfac/2017 (accessed January 2020).

[42] CAPCOA. 2017. California Emissions Estimator Model User Guide: Version 2016.3.2. Prepared by BREEZE Software, A Division of Trinity Consultants in collaboration with South Coast Air Quality Management District and the California Air Districts. http://www.aqmd.gov/caleemod/user's-guide (accessed January 2020).

[43] "Mitigation" is a term of art for the modeling input and is not equivalent to mitigation measures that may apply to the CEQA impact analysis.

review the CAPCOA *Quantifying Greenhouse Gas Mitigation Measures* (2010) publication to ensure that the chosen features are relevant and feasible in light of the plan/project.[44]

Residents, Employees, and Service Populations

The quantitative thresholds presented in Chapter 5, *Utilizing Quantitative CEQA GHG* Thresholds, are expressed in terms of per resident for residential projects, per employee for non-residential projects, and per service person for mixed-use projects. Estimates of the resident, employee, or service population for a plan/project should be based on substantial evidence. The City of San Luis Obispo Community Development Department defines service population as defined as the number of residents plus half the number of employees for a given project.[45] Data provided by the applicant as well as the following resources may be utilized in estimating resident and employee populations:

- **City of San Luis Obispo Community Development Department.** Users should contact the City's Community Development Department for the most recent estimate of persons per household in San Luis Obispo. This estimate can be multiplied by the number of proposed residential units to estimate a plan/project's resident population.
- **Proposed Number of Beds.** For projects such as group homes, assisted living facilities, nursing homes, or similar uses, the number of beds can be used to determine the resident population.
- **United States Green Building Council.** The United States Green Building Council has published a summary of building area per employee by business type. These rates, which are expressed in terms of square feet per employee, can be utilized to estimate the number of employees a plan/project would require. This document is included as Appendix D.

6.3 Modeling GHG Emissions from Existing Land Use

For a plan/project that would result in a change in the plan area/project's site General Plan land use designation, emissions anticipated for the existing (2014) General Plan land use designation must be calculated in conjunction with emissions for the proposed plan/project to demonstrate whether the plan/project would be more or less GHG-intensive than development anticipated for the existing (2014) General Plan land use designation for the site. In this case, GHG emissions should be reported for both the existing and proposed scenarios. Emissions anticipated for the existing land use should be quantified using the methods described in Section 6.1, *Construction Emissions*, and Section 6.2, *Operational Emissions* with consistent assumptions between the two scenarios as applicable. Any emission reduction credits applied to the proposed plan/project scenario that are related to State legislation/policies (e.g., the RPS, vehicle standards, Title 24) or the plan area/project site location (e.g., proximity to transit, destination accessibility, etc.) should also be applied to the existing scenario. Emission reduction credits that are specific to the proposed plan/project (e.g., use of recycled water, increased density, installation of energy and/or water-efficient appliances, integration of below market rate housing, etc.) should only be included for the proposed plan/project scenario. In addition, care should be taken to identify any emission reduction credits that might be unique to the existing land use designation that would not apply to the proposed plan/project. For example, if the existing land use designation allows for single-family residences and the proposed land use designation would allow for only commercial uses, then the existing scenario should include the emission reduction credit associated with the 2019 Building

[44] CAPCOA. 2010. Quantifying Greenhouse Gas Mitigation Measures. August 2010. http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf (accessed January 2020).

[45] San Luis Obispo, City of. 2019. Community Greenhouse Gas Emissions Inventory and Forecast.

Energy Efficiency Standards requirements for PV solar panels on residential uses that are three stories or less whereas the proposed plan/project scenario should not include this credit unless PV solar panels are included as a plan/project design feature.

7 Moving into the Future

Full implementation of the City's CAP will reduce communitywide GHG emissions by approximately 66 percent below 1990 levels by 2035, which would leave a gap of approximately 111,030 MT of CO_2e per year that will need to be addressed to achieve carbon neutrality. This gap represents emissions that could be addressed by laws, regulations, policies, programs, and ordinances set forth by the federal and State governments, regional agencies, and local partners. The gap also represents the uncertainty that the City faces in taking a leadership role in addressing a challenge that has not been solved before. The City is committed to embracing that uncertainty, committing to constant learning, engaging in systemic change using the tools and actions that local governments are uniquely suited to carry out, and positioning itself to take full advantage of future innovations, technologies, and policies and legislation that may be undertaken at the State and federal level. Technological innovation, clean-tech innovation, and changes to climate related policy and regulation occur rapidly. Several of the State's most successful environmental policy initiatives, including the RPS, also had a gap between what was known at the time of adoption and eventual successful implementation. By committing to the ambitious target of carbon neutrality by 2035, the City intends to catalyze innovation, invite resources from funding sources and partners, and provide climate leadership.

The CAP acknowledges that additional actions beyond those identified in the plan will be necessary to achieve carbon neutrality and therefore provides a mechanism for updating and adopting a new climate action plan every other financial plan cycle (i.e., in conjunction with the 2023-2025, 2027-2029, and 2031-2033 cycles) in order to incorporate new measures and innovative technologies that will further the City toward meeting its goal of carbon neutrality.[46] As the CAP is updated, the associated CEQA GHG Emissions Analysis Compliance Checklist will also be updated as needed to incorporate new pillars, measures, and/or foundational actions that discretionary development projects will need to incorporate, as applicable, to demonstrate consistency with the CAP. At the time at which the City identifies measures to achieve its carbon neutrality goal in totality, the City will adopt those measures in a public process following CEQA review, at which time the CAP will become a qualified GHG emission reduction plan for projects with post-2030 buildout years. However, the quantitative thresholds included in this guidance document will not need to be updated because residential, non-residential, and mixed-use projects with post-2030 buildout years will still need to achieve GHG emissions equivalent to 0 MT of CO_2e per year to demonstrate consistency with the City's CAP.

In addition, if future amendments or updates of the City's General Plan Land Use and Circulation Elements occur, then these amendments or updates will be incorporated into future updates of the CAP to ensure that project applicants can continue to utilize the streamlining process, which is partly dependent on a plan/project's consistency with the demographic forecasts and land use assumptions based on the General Plan Land Use and Circulation Elements, to the greatest extent practicable.

[46] San Luis Obispo, City of. 2019. Carbon Neutrality Vision and Three-Year Strategic Plan Technical Report. November 2019.

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Appendix A

Overview of GHG Emissions and Climate Change

Overview of Greenhouse Gas Emissions and Climate Change

1.1 Climate Change and Greenhouse Gases

Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period. The term "climate change" is often used interchangeably with the term "global warming," but climate change is preferred because it conveys that other changes are happening in addition to rising temperatures. The baseline against which these changes are measured originates in historical records that identify temperature changes that occurred in the past, such as during previous ice ages. The global climate is changing continuously, as evidenced in the geologic record, which indicates repeated episodes of substantial warming and cooling. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed acceleration in the rate of warming over the past 150 years. The United Nations Intergovernmental Panel on Climate Change (IPCC) expressed a high degree of confidence (95 percent or greater chance) that the global average net effect of human activities has been the dominant cause of warming since the mid-twentieth century.[1]

Gases that absorb and re-emit infrared radiation in the atmosphere are called greenhouse gases (GHGs). The gases widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO_2), methane (CH_4), nitrous oxides (N_2O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere, and natural processes, such as oceanic evaporation, largely determine its atmospheric concentrations.

GHGs are emitted by natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are usually by-products of fossil fuel combustion, and CH_4 results from off-gassing associated with agricultural practices and landfills. Human-made GHGs, many of which have greater heat-absorption potential than CO_2, include fluorinated gases and SF_6.[2] Different types of GHGs have varying global warming potentials (GWP). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO_2) is used to relate the amount of heat absorbed to the amount of the

[1] IPCC. 2014. Climate Change 2014: Mitigation of Climate Change. Summary for Policymakers - Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

[2] United States Environmental Protection Agency. 2019. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2017. U. S. EPA #430-R-19-001. April 2019. https://www.epa.gov/sites/production/files/2019-04/documents/us-ghg-inventory-2019-main-text.pdf (accessed January 2020).

gas emitted, referred to as "carbon dioxide equivalent" (CO_2e), and is the amount of GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane has a GWP of 25, meaning its global warming effect is 25 times greater than carbon dioxide on a molecule per molecule basis.[3]

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat-trapping effect of GHGs, the earth's surface would be about 34° Celsius (°C) cooler.[4] However, emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, are believed to have elevated the concentration of these gases in the atmosphere beyond the level of concentrations that occur naturally.

1.2 Greenhouse Gas Emissions Inventories

Worldwide Emissions Inventory

Worldwide anthropogenic emissions of GHGs were approximately 46,000 million metric tons (MMT or gigatonne) CO_2e in 2010. Carbon dioxide emissions from fossil fuel combustion and industrial processes contributed about 65 percent of total emissions in 2010. Of anthropogenic GHGs, carbon dioxide was the most abundant, accounting for 76 percent of total 2010 emissions. Methane emissions accounted for 16 percent of the 2010 total, while nitrous oxide and fluorinated gases accounted for 6 percent and 2 percent respectively.[5]

Federal Emissions Inventory

Total United States (U.S.) GHG emissions were 6,456.7 MMT of CO_2e in 2017. Since 1990, total U.S. emissions have increased by an average annual rate of 0.04 percent for a total increase of 1.3 percent since 1990. However, emissions decreased by 0.5 percent from 2016 to 2017. The decrease from 2016 to 2017 was a result of multiple factors, including (1) a continued shift from coal to natural gas and other non-fossil fuel energy sources in the electric power sector and (2) milder weather in 2017 resulting in overall decreased electricity usage. In 2017, the industrial and transportation end-use sectors accounted for 30 percent and 29 percent, respectively, of GHG emissions while, the residential and commercial end-use sectors accounted for 15 percent and 16 percent of GHG emissions, respectively, with electricity emissions distributed among the various sectors.[6]

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[3] Intergovernmental Panel on Climate Change (IPCC). 2007. Summary for Policymakers. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.

[4] California Environmental Protection Agency. 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature. http://www.climatechange.ca.gov/climate_action_team/reports/2006report/2006-04-03_FINAL_CAT_REPORT.PDF (accessed February 2020).

[5] IPCC. 2014. Climate Change 2014: Mitigation of Climate Change. Summary for Policymakers - Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

[6] United States Environmental Protection Agency. 2019. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2017. U. S. EPA #430-R-19-001. April 2019. https://www.epa.gov/sites/production/files/2019-04/documents/us-ghg-inventory-2019-main-text.pdf (accessed January 2020).

California Emissions Inventory

Based on the California Air Resource Board's (CARB) California Greenhouse Gas Inventory for 2000-2017, California produced 424.1 MMT of CO_2e in 2017. The major source of GHG emissions in California is transportation, contributing 41 percent of the state's total GHG emissions. The industrial sector is the second largest source, contributing 24 percent of the state's GHG emissions, and electric power accounts for approximately 15 percent. California emissions are due in part to its large size and large population compared to other states. However, a factor that reduces California's per capita fuel use and GHG emissions, as compared to other states, is its relatively mild climate. In 2016, the State of California achieved its 2020 GHG emission reduction targets as emissions fell below 431 MMT of CO_2e.[7] The annual 2030 statewide target emissions level is 260 MMT of CO_2e.[8]

1.3 Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources though potential impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the twenty-first century than were observed during the twentieth century. Each of the past three decades has been warmer than all the previous decades in the instrumental record, and the decade from 2000 through 2010 has been the warmest. The observed global mean surface temperature (GMST) from 2015 to 2017 was approximately 1.0°C (1.8°F) higher than the average GMST over the period from 1880 to 1900.[9] Furthermore, several independently analyzed data records of global and regional Land-Surface Air Temperature (LSAT) obtained from station observations jointly indicate that LSAT and sea surface temperatures have increased. Due to past and current activities, anthropogenic GHG emissions are increasing global mean surface temperature at a rate of 0.2°C per decade. In addition to these findings, there are identifiable signs that global warming is currently taking place, including substantial ice loss in the Arctic over the past two decades.[10, 11]

According to *California's Fourth Climate Change Assessment*, statewide temperatures from 1986 to 2016 were approximately 0.6 to 1.1°C higher than those recorded from 1901 to 1960. Potential impacts of climate change in California may include reduced water supply from snow pack, sea level

[7] CARB. 2019. "California Greenhouse Gas Emission Inventory – 2019 Edition. Last modified: August 12, 2019. https://ww3.arb.ca.gov/cc/inventory/data/data.htm (accessed February 2020).

[8] CARB. 2017. California's 2017 Climate Change Scoping Plan. December 14, 2017. https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf (accessed February 2020).

[9] National Oceanic and Atmospheric Administration, 2019. "Global Climate Report – Annual 2018." January 2019. https://www.ncdc.noaa.gov/sotc/global/201813 (accessed January 2020).

[10] IPCC. 2014. Climate Change 2014: Mitigation of Climate Change. Summary for Policymakers - Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

[11] IPCC. 2018. Summary for Policymakers. In: Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. https://www.ipcc.ch/sr15/ (accessed February 2020).

rise, more extreme heat days per year, more large forest fires, and more drought years.[12] While there is growing scientific consensus about the possible effects of climate change at a global and statewide level, current scientific modeling tools are unable to predict what local impacts may occur with a similar degree of accuracy. In addition to statewide projections, *California's Fourth Climate Change Assessment* includes regional reports that summarize climate impacts and adaptation solutions for nine regions of the state and regionally-specific climate change case studies.[13] A summary follows of some of the potential effects that could be experienced in California as a result of climate change.

Air Quality

Higher temperatures are conducive to air pollution formation and could worsen air quality in California as they rise. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. As temperatures have increased in recent years, the area burned by wildfires throughout the state has increased, and wildfires have occurred at higher elevations in the Sierra Nevada Mountains.[14] If higher temperatures continue to be accompanied by an increase in the incidence and extent of large wildfires, air quality would worsen, but if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution. This would effectively reduce the number of large wildfires, thereby ameliorating the pollution associated with them. Severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state.[15]

Water Supply

Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future precipitation trends and water supplies in California. Year-to-year variability in statewide precipitation levels has increased since 1980, meaning that wet and dry precipitation extremes have become more common.[16] This uncertainty regarding future precipitation trends complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. The average early spring snowpack in the western U.S., including the Sierra Nevada Mountains, decreased by about 10 percent during the last century. During the same period, sea level rose over 0.15 meter along the central and southern California coasts.[17] The Sierra snowpack

[12] State of California. 2018. California's Fourth Climate Change Assessment Statewide Summary Report. August 27, 2018. http://www.climateassessment.ca.gov/state/ (accessed February 2020).

[13] Ibid.

[14] Ibid.

[15] California Natural Resources Agency. 2009. 2009 California Climate Adaptation Strategy. March 2009. http://resources.ca.gov/docs/climate/Statewide_Adaptation_Strategy.pdf (accessed February 2020).

[16] California Department of Water Resources. 2018. Indicators of Climate Change in California. May 2018. https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf (accessed February 2020).

[17] State of California. 2018. California's Fourth Climate Change Assessment Statewide Summary Report. August 27, 2018. http://www.climateassessment.ca.gov/state/ (accessed February 2020).

provides the majority of California's water supply, as snow that accumulates during wet winters is released slowly during the dry months of spring and summer. A warmer climate is predicted to reduce the fraction of precipitation that falls as snow and result in less snowfall at lower elevations, thereby reducing the total snowpack. Projections indicate that average spring snowpack in the Sierra Nevada and other mountain catchments in central and northern California will decline by approximately 66 percent from its historical average by 2050.[18]

Hydrology and Sea Level Rise

Climate change could affect the intensity and frequency of storms and flooding.[19] Furthermore, climate change could induce substantial sea level rise in the coming century. Rising sea level increases the likelihood of and risk from flooding. The rate of increase of global mean sea levels over the 2001-2010 decade, observed by satellites, ocean buoys, and land gauges, was approximately 3.2 millimeters per year, double the twentieth century trend of 1.6 millimeters per year. Global mean sea levels averaged over the last decade were about 0.20 meter higher than those of 1880.[20] Sea levels are rising faster now than in the previous two millennia, and the rise will probably accelerate, even with robust GHG emission control measures. The most recent IPCC report predicts a mean sea-level rise of 0.25 to 0.94 meter by 2100.[21] A rise in sea levels could erode 31 to 67 percent of southern California beaches and cause flooding of approximately 370 miles of coastal highways during 100-year storm events. This would also jeopardize California's water supply due to salt water intrusion and induce groundwater flooding and/or exposure of buried infrastructure. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.[22]

Agriculture

California has a $50 billion annual agricultural industry that produces over a third of the country's vegetables and two-thirds of the country's fruits and nuts.[23] Higher CO_2 levels can stimulate plant production and increase plant water-use efficiency, but if temperatures rise and drier conditions prevail, certain regions of agricultural production could experience water shortages of up to 16 percent. This would increase water demand as hotter conditions lead to the loss of soil moisture; crop-yield could be threatened by water-induced stress and extreme heat waves; and plants may be

[18] Ibid.

[19] Ibid.

[20] World Meteorological Organization (WMO). 2013. A summary of current and climate change findings and figures: a WMO information note. March 2013. https://library.wmo.int/opac/index.php?lvl=notice_display&id=15892#.Wt9-Z8gvzIU (accessed February 2020).

[21] IPCC. 2018. Summary for Policymakers. In: Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. https://www.ipcc.ch/sr15/ (accessed February 2020).

[22] State of California. 2018. California's Fourth Climate Change Assessment Statewide Summary Report. August 27, 2018. http://www.climateassessment.ca.gov/state/ (accessed February 2020).

[23] California Department of Food and Agriculture. 2018. "California Agricultural Production Statistics." Last modified: August 30, 2018. https://www.cdfa.ca.gov/statistics/ (accessed February 2020).

susceptible to new and changing pest and disease outbreaks.[24] Temperature increases could change the time of year certain crops, such as wine grapes, bloom or ripen, and thereby affect their quality.[25]

Ecosystems and Wildlife

Climate change and the potential resulting changes in weather patterns could have ecological effects on the global and local scales. Increasing concentrations of GHGs are likely to accelerate the rate of climate change. Scientists project that the annual average maximum daily temperatures in California could rise by 2.4 to 3.2°C in the next 50 years and by 3.1 to 4.9°C in the next century.[26] Soil moisture is likely to decline in many regions, and intense rainstorms are likely to become more frequent. Rising temperatures could have four major impacts on plants and animals: timing of ecological events; geographic distribution and range of species; species composition and the incidence of nonnative species within communities; and ecosystem processes, such as carbon cycling and storage.[27, 28]

[24] State of California. 2018. California's Fourth Climate Change Assessment Statewide Summary Report. August 27, 2018. http://www.climateassessment.ca.gov/state/ (accessed February 2020).

[25] California Climate Change Center (CCCC). 2006. Climate Scenarios for California.

[26] State of California. 2018. California's Fourth Climate Change Assessment Statewide Summary Report. August 27, 2018. http://www.climateassessment.ca.gov/state/ (accessed February 2020).

[27] Ibid.

[28] Parmesan, C. August 2006. Ecological and Evolutionary Responses to Recent Climate Change.

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Appendix B

CEQA GHG Emissions Analysis Compliance Checklist

CEQA GHG EMISSIONS ANALYSIS COMPLIANCE CHECKLIST

CLIMATE ACTION PLAN CONSISTENCY CHECKLIST FOR New Development

The City of San Luis Obispo has prepared a Climate Action Plan (CAP) that establishes 2030 greenhouse gas emissions (GHG) targets and a communitywide goal of carbon neutrality by 2035 and provides foundational actions to establish a trajectory towards achieving that goal. The CAP includes specific actions to achieve the short-term communitywide emissions reduction targets of 45 percent below 1990 levels by 2030 and 66 percent below 1990 levels by 2035. This is consistent with California's goal of reducing GHG emissions to 40 percent below 1990 levels (Senate Bill 32) by 2030 and provides substantial progress towards achieving the state's long-term GHG reduction goal of carbon neutrality (Executive Order B-55-18). The City Council, City staff, and community will continue to develop an approach to the long-term aspirational goal of carbon neutrality.

Over the years, new City programs have been implemented while others have evolved. Plans from a range of departments have been executed and updated. Per the 2020 SLO CAP, the CAP will be updated every four years with annual reviews of progress on implementation of specific CAP foundational actions. The City Office of Sustainability is updating the City's progress towards GHG reductions in 2019 to align with the next major CAP update milestone year.

Pursuant to CEQA Guidelines Section 15183.5, a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project complies with the requirements in a previously adopted plan or mitigation program under specified circumstances. In order for the 2020 SLO CAP to be considered a qualified GHG reduction strategy and provide for CEQA streamlining of GHG analysis for future development the CAP it must identify those measures that are applicable to new development. The 2020 SLO CAP includes measures that are applicable to existing developments, municipal government operations, as well as voluntary and mandatory measures to be applied to new development for public and private projects. Mandatory GHG reduction programs that are applicable to new development are summarized in the following California Environmental Quality Act (CEQA) GHG Emissions Compliance Checklist (referred to herein as the CEQA GHG Checklist). This CEQA GHG Checklist identifies applicable regulations, applicability, requirements, and monitoring and reporting required by regulations. The purpose of the CEQA GHG Checklist is to assist with determining project consistency with the CAP and other applicable sustainability-focused regulations and provide a streamlined review process for proposed new development projects that are subject to discretionary review and trigger environmental review pursuant to the CEQA.

This CEQA GHG Checklist contains measures that are required to be implemented on a project-by-project basis to ensure that the specified emissions targets identified in the CAP are achieved. Implementation of these measures would ensure that new development is consistent with CAP assumptions for relevant CAP strategies toward achieving the identified GHG reduction targets. Projects or plans that are consistent with the CAP as determined through the use of this CEQA GHG Checklist may rely on the CAP Initial Study-Negative Declaration GHG emissions analysis

for the respective project- and cumulative-level GHG emissions impacts analysis. Projects that are identified as not consistent with the CAP through the use of this CEQA GHG Checklist must prepare a project-specific analysis of GHG emissions, including quantification of existing and projected GHG emissions compared to the SLO CEQA GHG Threshold(s) and incorporation of the CAP foundational actions in this CEQA GHG Checklist to the extent feasible.

Cumulative GHG emissions associated with construction from a land use development project are generally orders of magnitude lower than the operational emissions from a project, because construction emissions are generally short in duration compared to the project's overall lifetime, and thus can be assessed qualitatively as part of related CEQA GHG emissions analysis. However, some projects may have long construction periods or entail large quantities of cut and fill that could result in construction-related GHG emissions that may be considered significant. Thus, the City retains the discretion on a project-by-project basis to consider whether a project's construction-related GHG emissions could be cumulatively considerable and require more detailed quantitative CEQA GHG emissions analysis and respective mitigation.

This CEQA GHG Checklist may be periodically updated to incorporate new GHG reduction techniques, to comply with later amendments to the CAP, or to reflect changes in other sustainability-focused local, State, or federal laws, regulations, ordinances, and programs. At a minimum, this CEQA GHG Checklist will be updated every four years consistent with CAP update timing.

APPLICATION SUBMITTAL REQUIREMENTS

The CEQA GHG Checklist is required to accompany the City's Environmental Determination Application Checklist for all projects and plans subject to CEQA review, whether supported by private or government (local of State) funding, proposed within the City limits. The CEQA GHG Checklist is designed to assist the applicant in identifying the minimum CAP and other applicable sustainability-focused requirements specific to a proposed project or plan. However, it may be necessary to supplement the completed CEQA GHG Checklist with supporting materials, calculations, or certifications to demonstrate compliance with CAP and other applicable sustainability-focused requirements. If not already committed to clearly as part of the CEQA project description, in the CEQA GHG Checklist will be included in the respective project or plan conditions of approval.

GENERAL PROJECT INFORMATION

Contact Information	
Project or Plan Name:	
Address:	
Applicant Name and Co.:	
Contact Phone:	**Contact Email:**
Was a consultant retained to complete this checklist? Yes☐ No☐ If Yes, complete the following:	
Consultant Name: _____ Company Name: _____	Contact Phone: _____ Contact Email: _____
Project Information	
What is the size of the project site or plan area (acres)? **Gross:** _____ **Net:** _____	
Identify all applicable proposed land uses: ☐ Residential (indicate # of single-family dwelling units): _____ ☐ Residential (indicate # of multi-family dwelling units): _____ ☐ Commercial (indicate total square footage, gross and net): _____ ☐ Industrial (indicate total square footage, gross and net): _____ ☐ Agricultural (indicate total acreage, gross and net): _____ ☐ Other (describe): _____	
Project description. This description should be consistent with the project description that will be used for the CEQA document. The description may be attached to the GHG Checklist if there are space constraints. _____ _____ _____ _____ _____ _____ _____ _____ _____	

COMPLIANCE CHECKLIST TABLE

LAND USE CONSISTENCY			
Regulation	**Requirements**	**Project/Plan Compliance**	**Explanation**
General Plan	1a. Does the project include a land use element and/or zoning designation amendment? If "No", proceed to Section II – CAP Measures Consistency. If "Yes", proceed to question 1b.	Yes☐ No☐ N/A☐	_____ _____ _____ _____ _____
General Plan	1b. Does the land use element and/or zoning designation amendment result in an equivalent or less GHG-intensive project when compared to the existing designations? If "Yes", attach to this checklist the estimated project emissions under both existing and proposed designation(s) for comparison. Compare the maximum buildout of the existing designation and the maximum buildout of the proposed designation. If the proposed project is determined to result in an equivalent or less GHG-intensive project when compared to the existing designations, proceed to Step 2 of the checklist.	Yes☐ No☐ N/A☐	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____

	If “No” the applicant must prepare a project-specific analysis of GHG emissions, including quantification of existing and projected GHG emissions compared to the SLO CEQA GHG Threshold(s) and incorporation of the CAP foundational actions in this CEQA GHG Checklist to the extent feasible.		_____ _____ _____ _____ _____ _____ _____ _____

CAP FOUNDATIONAL ACTIONS CONSISTENCY

Pillar 1: Lead by Example

The foundational actions of this pillar pertain exclusively to municipal operations of the City of San Luis Obispo. In order to display consistency with the Climate Action Plan for the purposes of CEQA, applicants must complete the questions for pillars two through six.

Pillar 2: Clean Energy Systems

Regulation	Requirements	Project/Plan Compliance	Explanation
Climate Action Plan Volume II, Energy 1.1	2. Does the Project/Plan include an operational commitment to participate in Monterey Bay Community Power?	Yes☐ No☐ N/A☐	_____ _____ _____ _____ _____

Pillar 3: Green Buildings

Regulation	Requirements	Project/Plan Compliance	Explanation
Clean Energy Choice Program for New Buildings Municipal Code Section 15.04.110	3. Does the Project/Plan exclusively include “All-electric buildings”? For the purpose of this checklist, the following definitions and exemptions apply: *All-electric building*. A new building that has no natural gas plumbing installed within the building and that uses electricity as the source of energy for all space heating, water heating, cooking appliances, and clothes drying appliances. An All-Electric Building may be plumbed for the use of natural gas as fuel for appliances in a commercial kitchen.	Yes☐ No☐ N/A☐	_____ _____ _____ _____ _____ _____ _____ _____

	Specific exemptions to the requirements for all-electric buildings include: • Commercial kitchens • The extension of natural gas infrastructure into an industrial building for the purpose of supporting manufacturing processes (i.e. not including space conditioning). • Accessory Dwelling Units that are attached to an existing single-family home. Essential Service Buildings including, but not limited to, public facilities, hospitals, medical centers and emergency operations centers. • Temporary buildings. • Gas line connections used exclusively for emergency generators. • Any buildings or building components exempt from the California Energy Code. • Residential subdivisions in process of permitting or constructing initial public improvements for any phase of a final map recorded prior to July 1, 2020, unless compliance is required by an existing Development Agreement. If the proposed project falls into an above exemption category, what measures are applicants taking to reduce onside fossil fuel consumption to the maximum extent feasible? If not applicable (N/A), explain why this action is not relevant.		_____ _____

Clean Energy Choice Program for New Buildings Municipal Code Section 15.04.110	4. If the Project/Plan includes a new mixed-fuel building or buildings (plumbed for the use of natural gas as fuel for space heating, water heating, cooking or clothes drying appliances) does that building/those buildings meet or exceed the City's Energy Reach code?	Yes☐ No☐ N/A☐	_____ _____ _____ _____ _____ _____ _____
Pillar 4: Connected Community			
Regulation	**Requirements**	**Project/Plan Compliance**	**Explanation**
Municipal Code Chapter 17.72	5. Does the Project/Plan comply with requirements in the City's Municipal Code with no exceptions, including bicycle parking, bikeway design, and EV charging stations?	Yes☐ No☐ N/A☐	_____ _____ _____ _____ _____
Multimodal Transportation Impact Study Guidelines	6a. Is the estimated Project/Plan-generated Vehicle Miles Traveled (VMT) within the City's adopted thresholds, as confirmed by the City's Transportation Division?	Yes☐ No☐ N/A☐	_____ _____ _____ _____ _____
Multimodal Transportation Impact Study Guidelines	6b. If "No", does the Project/Plan include VMT mitigation strategies and/or a Transportation Demand Management (TDM) Plan approved by the City's Transportation Division? Please explain. TDM components may include, but are not limited to: • Telecommuting • Car Sharing	Yes☐ No☐ N/A☐	_____ _____ _____ _____ _____

	• Shuttle Service • Carpools • Vanpools • Bicycle Parking Facilities • Participate in Rideshare's Back n Forth Club • Transit Subsidies • Off-Site Sustainable Transportation Infrastructure Improvements		_____ _____ _____ _____ _____ _____ _____
Bicycle Transportation Plan	7. Does the Project/Plan demonstrate consistency with the City's Bicycle Transportation Plan[1]?	Yes☐ No☐ N/A☐	_____ _____ _____ _____ _____
Pillar 5: Circular Economy			
Regulation	**Requirements**	**Project/Plan Compliance**	**Explanation**
Development Standards for Solid Waste Services	8. Will the Project/Plan subscribe all units and/or buildings to organic waste pick up and provide the appropriate on-site enclosures consistent with the provisions of the City of San Luis Obispo Development Standards for Solid Waste Services? Please provide a letter from San Luis Garbage company verifying that the project complies with their standards and requirements for organic waste pick up.	Yes☐ No☐ N/A☐	_____ _____ _____ _____ _____ _____
Pillar 6: Natural Solutions			

[1] The City is set to adopt an Active Transportation Plan (ATP) in October of 2020 which will effectively update and replace the current Bicycle Transportation Plan. Upon adoption, the ATP will become the new regulation with which compliance is required for the purposes of this checklist.

Regulation	Requirements	Project/Plan Compliance	Explanation
Municipal Code Chapter 12.24	9. Does the Project/Plan comply with Municipal Code requirements for trees?	Yes☐ No☐ N/A☐	_____ _____ _____ _____ _____ _____ _____

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Appendix C

GHG Threshold Calculations

Sector	2030 Emissions Reductions (MT of CO2e)				Timeline
	Existing	New		Total	
		Residential	Nonresidential		
Baseline	**339,290**	**24,750**	**17,930**	381,970	
State Law/Programs					
Vehicle Standards	62,620	6,840	3,820	73,280	By 2030
Title 24	-	1,720	400	2,120	By 2030
Clean Energy Systems	23,170	0	2,880	26,050	By 2030
Green Buildings	8,180	3,020	760	11,960	By 2030
Connected Community	38,660	4,220	2,360	45,240	By 2030
Circular Economy	31,970	3,490	1,950	37,410	By 2030
Natural Solutions	220	20	10	260	By 2030
Remaining Total	174,470	5,440	5,750	185,650	

2030 Demographics for New Development	
Residents	7,817
Jobs	8,738
Service Population	12,186

Other 2030 Demographics	
Existing Service Population	71,610
2030 Service Population	83,796

2030 Thresholds	
Residential	0.7
Nonresidential	0.7
Mixed-Use	0.9

Assumptions	
State Law/Programs	-Per SP emission reductions are the same for existing and new development for vehicle standards -Vehicle Standards Source: Community GHG Inventory Workbook "Forecast and Goals Summary" tab
Clean Energy Systems	- Source: 1. Community_Carbon Neutrality Calculator workbook "Tables for Reports" tab
Green Buildings	- Source: 1. Community_Carbon Neutrality Calculator workbook "Tables for Reports" tab
Connected Community	- Per SP emissions are the same for existing and new development - Source: 1. Community_Carbon Neutrality Calculator workbook "Tables for Reports" tab
Circular Economy	- Per SP solid waste disposal is the same for existing and new development - Source: 1. Community_Carbon Neutrality Calculator workbook "Tables for Reports" tab
Natural Solutions	- Carbon farming is not responsibility of development. - Tree planting is equal responsibility of new development and existing development (trees per SP is the same) - Source: 1. Community_Carbon Neutrality Calculator workbook "Tables for Reports" tab
Others	

Emissions Forecast with State Laws and City's CAP							
Sector	**1990**	**2005**	**2016**	**2030**	**2035**	**Percent Change by 2030**	**Percent Change by 2035**
Transportation	191,580	225,390	212,980	116,050	78,660	39%	59%
Nonresidential Energy	49,340	58,050	44,270	29,710	21,000	40%	57%
Residential Energy	47,130	55,450	39,410	27,680	13,160	41%	72%
Solid Waste	40,580	47,740	42,630	12,470	5,260	69%	87%
Natural Solutions		0	0	-3,610	-7,050		
Total	**328,630**	**386,630**	**339,290**	**182,300**	**111,030**	**45%**	**66%**

Business as Usual GHG Emissions Forecast (MT of CO2e)					
Sector	**2005**	**2016**	**2020**	**2030**	**2035**
Transportation	225,390	212,980	219,150	234,570	242,280
Nonresidential Energy	58,050	44,270	46,150	51,860	54,880
Residential Energy	55,450	39,410	41,340	45,660	47,990
Solid Waste	47,740	42,630	44,890	49,880	52,560
Off-Road	-	-	-	-	-
Total	386,630	339,290	351,530	381,970	397,710

Source: Table from Community GHG Inventory Workbook "Forecast (BAU)" tab.

Demographic Forecasts					
Metric	**2005**	**2016**	**2020**	**2030**	**2035**
Population	44,519	46,117	48,826	53,934	56,686
Jobs	43,847	50,985	53,153	59,723	63,199
Service Population	66,443	71,610	75,403	83,796	88,286

Sources
- Population and Jobs sourced from 2016 GHG Inventory Update Table 5.1
- Service population is equal to residential population plus 1/2 the number of jobs, consistent with method described in 2016 GHG Inventory Update Table 5.1

Clean Energy Systems and Green Buildings Measures

Table 1. Clean Energy Systems			
	2020	**2030**	**2035**
Projected residential electricity (kWh)	79,178,790	79,178,790	79,178,790
Opt out rate (%)	2%	2%	2%
Projected MBCP residential kWh	77,595,214	77,595,214	77,595,214
Projected PG&E residential kWh	1,583,576	1,583,576	1,583,576
Projected nonresidential electricity (kWh)	170,086,700	187,482,010	187,482,010
Opt out rate (%)	3%	3%	3%
Projected MBCP nonresidential kWh	164,984,099	181,857,550	181,857,550
Projected PG&E nonresidential kWh	5,102,601	5,624,460	5,624,460
Projected MBCP Coefficient (MTCO2e/kWh)	0.00004	0.00004	0
Projected PG&E Coefficient (MTCO2e/kWh)	0.000134228	0.000112	0.00011
Projected MBCP Emissions	9700	10,380	0
Projected PG&E Emissions	900	810	810
Total Emissions	10600	11,190	810
Emissions w/out RPS or MBCP	33810	37,790	39900
Emissions Savings from Title 24 Electricity (to avoid double counting)	40	550	80
Emissions reductions	**-23,170**	**-26,050**	**-39,010**

Source: Community_Carbon Neutrality Calculator

Table 2. Green Buildings			
	2020	**2030**	**2030**
Commercial building electrification			
Projected emissions reduction (MTCO2e)	410	670	870
Residential building electrification			
Projected emissions reduction (MTCO2e)	100	4,170	13,540
Commercial benchmarking			
Projected emissions reduction (MTCO2e)	0	40	120
Commercial retrocommissioning			
Projected emissions reduction (MTCO2e)	40	530	820
Residential retrocommissioning			
Projected emissions reduction (MTCO2e)	80	990	1,530
Commercial retrofits			
Projected emissions reduction (MTCO2e)	60	950	1,710
Residential retrofits			
Projected emissions reduction (MTCO2e)	30	830	1,900
Commercial new construction			
Projected emissions reduction (MTCO2e)	60	760	1,200
Residential new construction			
Projected emissions reduction (MTCO2e)	240	3,020	5,050
Emissions Reductions (MTCO2e)	1,020	11,960	26,740

Source: Community_Carbon Neutrality Calculator

Rincon Calculations

Clean Energy Systems 2020 Emissions Reductions				
		2020 Emissions	Percentage	2020 Emission Reductions
Existing	Residential	3,316	31%	7,249
	Nonresidential	7,284	69%	15,922
	Total	10,601		23,171

Clean Energy Systems 2030 Emissions Reductions				
		2020	2030	2035
New	Net New Nonresidential Electricity	0	0	0
	Net New Nonresidential Emissions	0	2880	0

2035 Reduction for Existing Development from Lower MBCP Coefficient	9,703
Residential	3,104
Nonresidential	6,599

2035 Reduction for New Development	3257
**All new development emissions are non-residential because there is no increase in residential electriciy from 2020-2035*	

Green Buildings Emissions Reductions by Type of Development				
		2020	2030	2035
Existing	Residential Savings	210	5,990	16,970
	Nonresidential Savings	510	2,190	3,520
New	Residential Savings	240	3,020	5,050
	Nonresidential Savings	60	760	1,200
	Total	1,020	11,960	26,740

Title 24 Emissions Reductions			
Emission savings	**2020**	**2030**	**2035**
Residential electricity	40	390	30
Residential natural gas (direct)	70	1330	2430
Nonresidential electricity	0	160	50
Nonresidential natural gas (direct)	10	240	450
Total	120	2120	2960

Source: Table from Community GHG Inventory Workbook "Title 24" tab.

Natural Solutions Measure Emission Reductions			
Action	**2021**	**2030**	**2035**
Carbon Storage - Land Mgmt	90	3,350	6,675
Trees	20	260	375
Total	110	3,610	7,050

2025 Reduction Estimates

EMFAC2025

VMT

2016	2025	2030	2035
1,370,706	1,460,040	1,509,669	1,559,299
475,634,980	506,633,713	523,855,232	541,076,750
^Inventory	*^Interpolated*	*^Interpolated*	*^Forecast*

Source: City-provided data

Emissions Coefficient (from EMFAC; can show work if needed)

2025	% EMFAC VMT	Total VMT	MTCO2e/VMT	Total Emissions
All other buses	0.11%	543,248	0.001272	691
LDA	59.43%	301,067,361	0.000222	66,852
LDT1	2.70%	13,702,076	0.000276	3,778
LDT2	19.84%	100,524,943	0.000331	33,297
LHD1	2.06%	10,414,797	0.000716	7,462
LHD2	0.54%	2,753,935	0.000734	2,022
MCY	0.47%	2,358,243	0.000174	409
MDV	11.20%	56,754,168	0.000448	25,406
MH	0.11%	556,182	0.001292	719
Motorcoach	0.04%	207,604	0.001741	361
OBUS	0.08%	411,766	0.001313	541
PTO	0.03%	146,278	0.002170	317
SBUS	0.07%	378,641	0.001162	440
T6	1.27%	6,411,928	0.001254	8,040
T7	1.94%	9,830,386	0.001667	16,392
UBUS	0.11%	572,158	0.002106	1,205
Total	100%	506,633,713		167,930

2025 VMT	506,633,713
2025 MTCO2e	167,930
Average MTCO2e/VMT	0.000331462

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Appendix D

United States Green Building Council Building Area per Employee by Business Type Rates[47]

[47] United States Green Building Council. 2008. "Building Area per Employee by Business Type." May 13, 2008. https://www.usgbc.org/Docs/Archive/General/Docs4111.pdf (accessed October 8, 2015).

BUILDING AREA PER EMPLOYEE BY BUSINESS TYPE

Land-Use	ITE Land-Use Code	ITE Sq.Ft./ Employee	USDOE Sq.Ft./ Employee	SANDAG Sq.Ft./ Employee
Commercial Airport	21	224		
General Aviation Airport	22	392		
Truck Terminal	30	427		
General Light Industrial	110	463		
Heavy Industrial	120	549		
Industrial Park	130	500		
Manufacturing	140	535		
Warehousing	150	781	2114	
Elementary School	520	1250	1131	
High School	530	1587		
Hospital	610	372	486	
General Office - Suburbs	710	304		
Corporate HQ - Suburbs	714	260		
Single Tenant Office	715	295		
Medical-Dental Building	720	207		
U.S. Post Office	732	230		
Office Park	750	278		
Research & Development Center	760	405		
Business Park	770	332		249
Building Material - Lumber Store	812	806		
Specialty Retail Store	814	549		
Discount Store	815	654		
Hardware Store	816	1042		
Nursery-Garden Center	817	529		
Quality Restaurant (Sit Down)	831	134		
High Turnover (Sit Down)	832	100		
Fast Food w/o drive-thru	833	70		
Fast Food w/ drive-thru	834	92		
Grocery			938	
Lodging			1124	917
Bank				317
Office under 100,000 sq.ft.				228
Office over 100,000 sq.ft.				221
Neighborhood Retail				588
Community Retail				383

Sources:
ITE -- Institute of Transportation Engineers
USDOE -- U.S. Department of Energy
SANDAG -- San Diego Assn of Governments

5/13/2008

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