

## MEMORANDUM

DATE March 15, 2024

SUBJECT Climate Action and Adaptation Plan – Greenhouse Gas Emissions Reduction Target Setting

### Introduction

PlaceWorks is working with the City of Laguna Beach (City) to prepare the City's Climate Action and Adaptation Plan (CAAP), a comprehensive plan to assess and reduce Laguna Beach's greenhouse gas (GHG) emissions and adapt to climate change-related hazards. This includes an assessment of Laguna Beach's current GHG emissions (calendar years 2018 and 2021) and identification of a path to achieve long-term GHG emissions reductions. PlaceWorks and the City have completed an analysis of Laguna Beach's historic and projected future GHG emissions and the GHG emissions reductions that are expected from existing and planned State, regional, and local efforts.

The next step in developing the CAAP is to identify appropriate community-wide GHG emissions reduction targets for Laguna Beach. The GHG emissions reduction target is the quantity of community GHG emissions the City commits to reduce by a certain year. GHG reduction targets would apply to all GHGs attributed to the community and all sectors as identified in the City's GHG inventories. This memo describes types of targets, existing State and local targets, and recommendations for short- and long-term GHG emissions reduction targets that the City may adopt in the CAAP. These targets are based on a determination that Laguna Beach's 1990 emissions level is 215,260 metric tons of carbon dioxide equivalent (MTCO<sub>2e</sub>) and that 2005 is the baseline year for Laguna Beach's GHG emissions.

The City has the following existing targets:

- Seven percent below estimated 1990 levels by 2012 (2009 Climate Protection and Action Plan).
- Net carbon neutrality by 2045 (Laguna Beach City Council Resolution No. 22.072, August 16, 2022).

PlaceWorks proposes to keep the City's existing target to achieve net carbon neutrality by 2045, and to add the following new targets, which provide certainty on minimum community-wide GHG emissions reductions consistent with adopted statewide targets;

- 40% below 1990 equivalent (2030 target): 129,160 MTCO<sub>2e</sub>
- 85% below 1990 equivalent (2045 target): 32,290 MTCO<sub>2e</sub>

### Target Types

There are two primary types of GHG emissions reduction targets commonly used by state and local governments: 1) absolute targets (sometimes called mass emissions targets), and 2) per-capita (or efficiency) targets. In addition, a third option that is gaining popularity as a visionary target, often in combination with an absolute or per-capita target, is a carbon-neutral target.

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#### ABSOLUTE TARGETS

Absolute targets establish a specific, fixed level of GHG emissions to be emitted by a certain year. The intention is that the community will reduce its GHG emissions to be equal to or below this level by the year indicated. Such targets are often expressed as reducing GHG emissions as a percent below a particular baseline, such as a target of 40 percent below 1990 GHG emissions levels by 2030. In this example, a community with a 1990 GHG emissions level of 100,000 MTCO<sub>2</sub>e would have a 2030 target of 60,000 MTCO<sub>2</sub>e. Laguna Beach's adopted 2012 target as established in the 2009 Climate Protection and Action Plan (CPAP) is an absolute target. The State's adopted targets for 2020 and 2030 are absolute targets. The State's 2045 target is a carbon neutrality target with a minimum absolute reduction.

#### PER-CAPITA TARGETS

Per-capita targets establish a level of GHG emissions by a certain year per person, either for every resident (most common use of per capita) or for every resident plus everyone who works in the community (referred to as the service population). These targets are usually expressed as a numeric level of GHG emissions per person (for example, 4 MTCO<sub>2</sub>e per resident). Unlike absolute targets, the total level of GHG emissions reductions specified by per capita targets varies depending on the level of future demographic change.

For example, imagine a community of 100,000 people with baseline per capita emissions of 6 MTCO<sub>2</sub>e that sets a per-capita target of 4 MTCO<sub>2</sub>e by 2030. If the community grows to 110,000 people by 2030, this translates to target GHG emissions of 444,000 MTCO<sub>2</sub>e (4 times 110,000) compared to 660,000 (6 times 110,000). Per-capita targets can be particularly useful for fast-growing communities, which may not be able to achieve significant absolute GHG emissions reductions because of their rapid population growth. Per-capita GHG emission levels are similar to an individual carbon footprint in that they allocate GHG emissions to an individual person, which can be useful in motivating individuals to adopt measures to reduce GHG emissions. Carbon footprint calculations differ slightly in that they usually consider indirect lifecycle GHG emissions from the consumption of products and services.

**CARBON NEUTRAL TARGETS**

Carbon neutral emission targets (sometimes called “zero carbon”, “zero emission”, or “net zero”) call for reducing GHG emissions to zero, either total GHG emissions or “net”. Under a total carbon neutral target, the community pledges to reduce all GHG emissions that are attributed to it, from all sources, to zero. Net carbon neutral targets, by contrast, accept that the community will still produce some GHG emissions but that these will be balanced out by removing GHGs from the atmosphere through carbon sequestration or carbon offsets.

Communities may establish a net carbon neutral target by itself or in conjunction with other GHG emissions reduction targets by specifying an absolute or per-capita level of GHG emissions reduction to be achieved and the remainder to be offset through net zero actions. Total carbon neutral targets on their own are extremely difficult for local governments to achieve because it may not be possible to completely eliminate all GHG emissions due to technological limitations, regulatory limitations, other legal considerations, economic challenges, or other barriers.

**Carbon Neutral Terminology**

**Carbon neutral target:** Any target that calls for reducing GHG emissions to zero, which may be measured in different ways.

**Total carbon neutral target:** A type of carbon neutral target that calls for entirely removing all GHG emissions attributed to the community.

**Net carbon neutral target, or “net zero”:** A type of carbon neutral target that calls for any GHG emissions attributed to the community to be balanced out through carbon removal practices so that the “net” emissions are zero.

**Target Guidance**

The State of California provides guidance to local governments on GHG emissions reduction targets through the State’s own GHG reduction targets, plans, and guidance documents.

**STATE GHG REDUCTION TARGETS**

California has committed to achieving GHG emissions reductions through legislative actions and executive orders. Legislative actions are binding targets that are codified in State law. Executive orders do not have the force of law but provide an indication of the State’s goals and intentions.

**Table 1** shows the State’s GHG emissions reduction targets.

**Table 1: State GHG Emissions Reduction Targets**

TARGET YEAR	TARGET	ESTABLISHING ACT
2020	Reduce GHG emissions to 1990 levels	Assembly Bill 32 (2006)
2030	Reduce GHG emissions 40% below 1990 levels	Senate Bill 32 (2016)
2045	Carbon neutral emissions and 85% below 1990 levels	Assembly Bill 1279 (2022)

**STATE CLIMATE CHANGE SCOPING PLAN**

Assembly Bill (AB) 32 codified into law California’s target of reducing GHG emissions to 1990 levels by 2020 and directed the California Air Resources Board (CARB) to oversee and plan the State’s GHG

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reduction efforts.<sup>1</sup> CARB first produced the Climate Change Scoping Plan (originally called the AB 32 Scoping Plan) in 2008, laying out a framework for achieving the State’s GHG emissions reduction target. CARB updated the Scoping Plan in 2013, 2017, and 2022. The first Scoping Plan identified local jurisdictions as key partners in the State’s efforts to reduce GHG emissions and provided guidance for local jurisdictions to establish GHG emissions reduction targets. Recognizing that many local jurisdictions did not have the data needed to calculate 1990 GHG emissions, the first Scoping Plan declared that reducing local GHG emissions 15 percent below “current” (2005–2010) levels by 2020 would be equivalent to reducing GHG emissions to 1990 levels for local governments. For this reason, many jurisdictions use a year between 2005 and 2010 as a baseline year for GHG emissions inventories. PlaceWorks proposes a 2005 baseline year for Laguna Beach.

Subsequent updates to the Scoping Plan confirm the importance of local government actions in achieving the State’s targets. The 2022 Scoping Plan identifies local governments as strategic partners to achieving the State goal of reducing human-caused GHG emissions to a minimum of 85 percent below 1990 levels, achieving carbon neutrality by 2045, and continuing GHG reductions beyond 2045. The Scoping Plan recommends that local governments adopt locally-appropriate goals that support overall state goals, recognizing that each region has distinctive sources and systems.

#### CALIFORNIA ENVIRONMENTAL QUALITY ACT

Developing a CAAP can also provide streamlined environmental review for new projects subject to the California Environmental Quality Act (CEQA). Under the CEQA Guidelines,<sup>2</sup> climate action plans and other strategic plans to reduce GHG emissions can help with the environmental review process for new development projects defined as projects under CEQA. If these plans meet the State criteria as determined by the City as the lead agency, projects that are consistent with the GHG emissions reduction approach in the plan could be determined to have a less-than-significant impact on GHG emissions, reducing the need for additional analyses or mitigation measures. The City intends to prepare the CAAP consistent with CEQA Guidelines.

Community GHG reduction plans must meet six criteria, established in the CEQA Guidelines, Section 15183.5(b)(1). Climate action plans that meet these criteria are often referred to as “CEQA Qualified” plans. One of these criteria is that the plan must “establish a level, based on substantial evidence, below which the contribution to greenhouse gas emissions from activity covered by the plan would not be cumulatively considerable”. Additionally, the plan must identify measures and performance standards that can be clearly shown to achieve this level. As a result, a plan must have a GHG emissions reduction target or targets that not only substantially reduce GHG emissions, but which can also be feasibly achieved.

#### Local Commitments

The Laguna Beach 2009 Climate Protection Action Plan (CPAP) established a GHG emissions reduction target of 7 percent below 1990 levels by 2012, or 10 percent below “present levels”.<sup>3</sup> This

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<sup>1</sup> The State’s Climate Change Scoping Plan is available online: <https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan>.

<sup>2</sup> 2024 CEQA Guidelines are available online: [https://www.califaep.org/docs/2024\\_CEQA\\_Statute\\_and\\_Guidelines\\_Handbook.pdf](https://www.califaep.org/docs/2024_CEQA_Statute_and_Guidelines_Handbook.pdf).

<sup>3</sup> City of Laguna Beach, 2009, *City of Laguna Beach Climate Protection Action Plan*.

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is consistent with the charge from the City Council to implement the key provisions of the U.S. Mayors Climate Protection Agreement. The CPAP uses State-level per-capita emissions to estimate 1990 per-capita emissions levels for Laguna Beach. However, we recommend preparing a revised version of this estimate that more accurately reflects long-term changes in statewide GHG emissions and considers that Laguna Beach has grown at a different rate than California as a whole.

In preparation of the CAAP, the City prepared GHG emissions inventories for the years 2018 and 2021 and forecasted GHG emissions for 2030 and 2045. For consistency with the State targets, the project team needed to be able to identify a 1990 (and by extension, a 2005-2010) emissions level.

1. Per the CAAP inventory, Laguna Beach’s 2021 GHG emissions levels were 189,430 MTCO<sub>2</sub>e, or 7.86 MTCO<sub>2</sub>e/person.
2. Per the State GHG inventory, California’s GHG emissions levels were 13.27 MTCO<sub>2</sub>e/person in 2005 and 9.69 MTCO<sub>2</sub>e/person in 2021, a decrease of approximately 27 percent.
3. The 27 percent decrease in statewide per-person GHG emissions applied to Laguna Beach produces estimated 2005 emissions of 10.78 MTCO<sub>2</sub>e/person, or 253,250 MTCO<sub>2</sub>e total.
4. The State recommends estimating 1990 GHG emissions levels for local governments as 15 percent below 2005-2010 emissions levels. This would set Laguna Beach’s 1990 emissions levels at 15 percent below 253,250 MTCO<sub>2</sub>e, or 215,260 MTCO<sub>2</sub>e.

Based on the assessment completed to date, the community’s GHG emissions have declined from estimated 1990 levels and are expected to decline as follows before considering the benefit of strategies that will be included in the CAAP.

- Inventoried 2021 GHG emissions (189,430 MTCO<sub>2</sub>e) were 12 percent below 1990 levels.
- Forecasted 2030 GHG emissions are projected at 163,280 MTCO<sub>2</sub>e, or 24 percent below 1990 levels, factoring in GHG emissions reductions from existing and planned State, regional, and local efforts.
- Forecasted 2045 GHG emissions are estimated to be 124,390 MTCO<sub>2</sub>e, or 42 percent below 1990 levels.

**Table 2** shows the City’s baseline, projected future GHG emissions, and GHG emission levels relative to 1990 emission levels.

**Table 2: Laguna Beach Historic and Projected Future GHG Emissions**

	<b>1990 (ESTIMATED)</b>	<b>2005 (ESTIMATED BASELINE)</b>	<b>2018</b>	<b>2021</b>	<b>2030</b>	<b>2040</b>
GHG emissions (MTCO <sub>2</sub> e)	215,260	253,250	179,610	189,430	-	-
Forecasted GHG emissions with existing and planned actions (MTCO <sub>2</sub> e)	-	-	-	-	163,280	124,390
GHG emissions relative to 1990 levels	-	18% above	17% below	12% below	24% below	42% below

Note: All numbers are rounded to the nearest 10.

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**Regional Target Examples**

Many communities, including several in the Southern California region, have recently adopted post-2020 GHG emissions reduction targets or are in the process of doing so. Laguna Beach is not required to adopt GHG emissions reduction targets that are consistent with surrounding communities, but the regional examples, shown in **Table 3**, provide an indication of what other communities consider a feasible and appropriate level of GHG emissions reduction, and how these compare to Laguna Beach’s adopted and proposed targets.

**Table 3: Regional Post-2020 GHG Emissions Reduction Targets**

COMMUNITY	2030 TARGET	2035 TARGET	2045 TARGET
City of Encinitas	44% below 2012 levels	-	-
City of Irvine	48% below 1990 levels	-	85% below 1990 levels
City of La Habra	-	30% below 2010 levels	-
City of Laguna Beach	40% below 1990 levels (proposed)	-	85% below 1990 levels (proposed) and net-climate neutrality (adopted)
City of San Clemente	38% below 2009 levels	-	-
City of Santa Ana	-	30% below 2008 levels	-
City of Solana Beach	-	50% below 2010 levels	-

**Target Options**

Under State guidance, Laguna Beach should select GHG emissions reduction targets that are most appropriate for the community. However, since the City intends to use the CAAP as a Qualified GHG Reduction Strategy, recent legal rulings have emphasized that the City’s GHG emissions reduction targets be at least as stringent as the State’s guidance.<sup>4</sup> All options presented here meet this standard.

**OPTION 1: ABSOLUTE TARGETS**

Laguna Beach may select the State’s absolute GHG emissions reduction targets of 40 percent below 1990 levels by 2030 and 85 percent below 1990 levels by 2045, consistent with the Climate Change

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<sup>4</sup> Prominent cases include the 2016 *Center for Biological Diversity v. California Department of Fish and Wildlife* decision, often known as the Newhall Ranch decision after the proposed development at the heart of the case, and the 2017 *Cleveland National Forest Foundation v. San Diego Association of Governments* decision.

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Scoping Plan’s guidance that 15 percent below 2005–2010 levels is comparable to 1990 levels. Given Laguna Beach’s estimated 2005 GHG emissions level of 253,250 MTCO<sub>2</sub>e, the equivalent 1990 levels would be 215,260, resulting in 2030 and 2045 targets as shown in **Table 4**.

**Table 4: Option 1: Absolute GHG Emissions Reduction Targets for Laguna Beach**

	MTCO <sub>2</sub> E
2005 estimated GHG emissions	253,250
15% below 2005 estimated GHG emissions (1990 equivalent)	215,260
40% below 1990 equivalent (2030 target)	129,160
85% below 1990 equivalent (2045 target)	32,290

**OPTION 2: PER-CAPITA TARGETS**

Alternatively, the City may establish per-capita GHG reduction targets. These targets divide the GHG emissions level of the absolute targets by the City’s population projections. The demographic projections used in the CAAP anticipate that Laguna Beach’s 2030 population will be 23,810 residents, and that the community’s 2045 population will be 23,350 residents. Given this anticipated population decrease, the community-specific absolute targets could be translated to per-capita GHG emissions levels, as shown in **Table 5**.

**Table 5: Option 2: Laguna Beach’s Per-Capita GHG Emissions Reduction Targets**

	2030	2045
Per-capita GHG emissions reduction target	5.4 MTCO <sub>2</sub> e per person	1.4 MTCO <sub>2</sub> e per person
Anticipated population	23,810 residents	23,350 residents

**OPTION 3: CARBON NEUTRAL TARGETS**

Laguna Beach currently has a goal of achieving net zero carbon emissions by 2045. PlaceWorks recommends that Laguna Beach maintain the carbon neutrality target for 2045, and that the City add an absolute or per-capita 2045 target, consistent with the State’s carbon neutral target, to guide the City to reduce emissions as low as possible before considering opportunities to achieve carbon neutrality. We also suggest an additional interim absolute and/or per-capita target for 2030 that is consistent with or more aggressive than the State’s target. This will allow the CAAP to provide a more certain trajectory for achieving GHG emissions reductions and will support more effective monitoring of plan implementation.

**OTHER OPTIONS**

Laguna Beach may select a different GHG emissions reduction target as desired. These targets may be expressed as absolute or per-capita level. They may be selected for any year, but PlaceWorks recommends ensuring that the GHG emissions reductions trajectory achieved by these targets would result in 2030 and 2045 GHG emissions that are at or below the level achieved by targets consistent

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with State guidance, as this will support a more effective environmental review. The CAAP should clearly communicate why the City selected these reduction levels and years.

**Next Steps**

PlaceWorks will work with the City to develop GHG emissions reduction measures and to determine the amount of GHG emissions to be reduced by these measures. This will demonstrate how Laguna Beach will meet or exceed its adopted GHG emissions reduction targets in the CAAP.



## Appendix A: Legislative Framework

California law first addressed climate change in 1988 with the adoption of AB 4420, directing the State to prepare a GHG emissions inventory and study the effects of climate change. Since then, California has adopted several other laws and regulations related to climate change. This appendix describes State actions that affect GHG emissions reduction targets.

### EXECUTIVE ORDER S-03-05

In 2005, former Governor Schwarzenegger issued Executive Order S-03-05, which established the first statewide GHG emissions reduction goals for California: reduce GHG emissions to 2000 levels by 2010, reduce emissions to 1990 levels by 2020, and reduce emissions 80 percent below 1990 levels by 2050.

### ASSEMBLY BILL 32

Assembly Bill 32, the California Global Warming Solutions Act, was enacted in 2006. It codifies the 2020 goal of Executive Order S-03-05, directing the State to reduce GHG emissions to 1990 levels by 2020, although it did not codify the 2010 or 2050 goals into law. The legislation directs the California Air Resources Board to develop regulatory and market mechanisms to meet this target, to identify early action items that could be quickly implemented to achieve rapid reductions, to create a Scoping Plan to achieve the target in a technologically feasible and cost-effective way, and to create and adopt regulations requiring major emitters to report and verify their emissions.

### EXECUTIVE ORDER B-30-15

Former Governor Jerry Brown signed Executive Order B-30-15 in 2015. The order directs State agencies to take several steps to reduce California's GHG emissions and support efforts to adapt to changing climate conditions. One section of the order establishes a state-level GHG emissions-reduction goal of 40 percent below 1990 levels by 2030.

### SENATE BILL 32

Senate Bill 32 was signed into law in 2016. It amends the California Global Warming Solutions Act to codify into law a State GHG emissions reduction target of reducing emissions 40 percent below 1990 levels by 2030. The law also identifies the disproportionate impact of climate change on disadvantaged communities and requires the State's most stringent GHG emissions reduction efforts to benefit these communities.

### EXECUTIVE ORDER B-55-18

In 2018, former Governor Jerry Brown issued Executive Order B-55-18, which established a statewide reduction goal of net carbon neutrality "as soon as possible, and no later than 2045", and to maintain net negative emissions afterwards. Under the terms of this goal, any GHG emissions produced by California must be fully offset by 2045. The order does not override or alter the State's other GHG emission-reduction targets or goals.

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**ASSEMBLY BILL 1279 – CALIFORNIA CLIMATE CRISIS ACT**

In 2022, the California legislature passed AB 1279, the California Climate Crisis Act, which updated the State’s targets for mitigating GHGs. California must achieve net carbon neutrality for GHG emissions by 2045 and reduce emissions to at least 85 percent below 1990 levels. The subsequent 2022 update to the Scoping Plan identifies a path to achieving the AB 1279 target. In the 2017 Scoping Plan, CARB recommended per capita targets for 2030 and 2050. Because the State is now pursuing carbon neutrality no later than 2045, the Scoping Plan recommends that jurisdictions focus on developing locally appropriate, plan-level targets that align with the trajectory to carbon neutrality by 2045 instead of focusing on a per capita 2050 target.