Climate Action Plan *Update*

JULY 2024

ASCENT

City of Carlsbad

CITY OF CARLSBAD

Climate Action Plan

July 2024

Prepared for:

City of Carlsbad

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Acknowledgments

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Executive Summary

Sustainable Carlsbad

Climate Action Plan Update

To support California's ambitious emissions reduction goals, in 2015, the City of Carlsbad was one of the first cities in the county to adopt a Climate Action Plan that outlined strategies and policies to reduce greenhouse gas emissions in a measurable way.

Since 2015, state targets have been updated, and the city has more current information about the amount of greenhouse gas emissions generated by different sources in Carlsbad. The Climate Action Plan Update reflects the most recent data and legislation.

Climate action plans are comprehensive roadmaps that outline the specific activities that a government agency will undertake to reduce greenhouse gas emissions. These plans typically include:

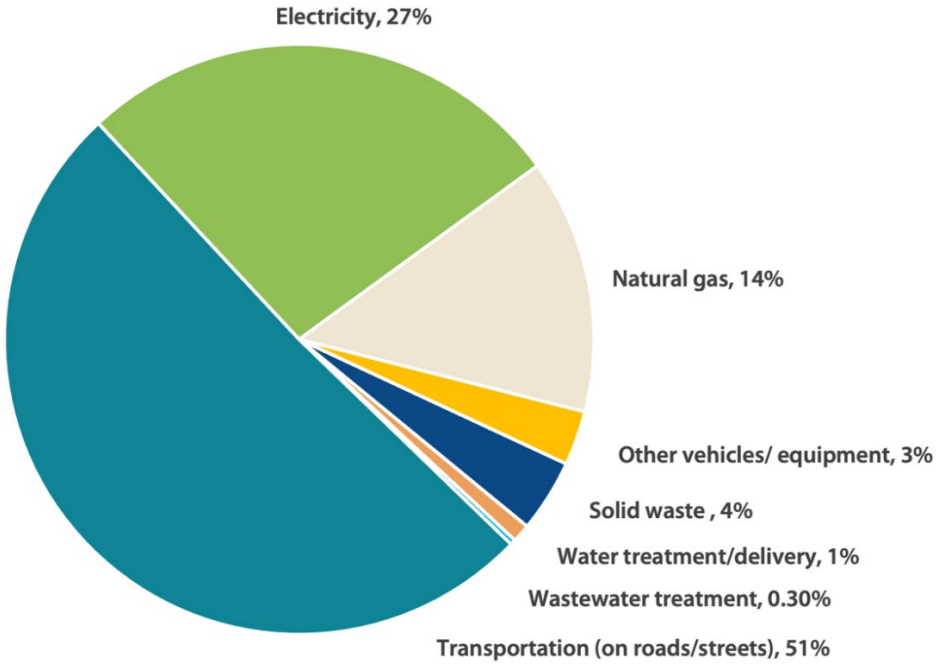
- Specific city-sponsored initiatives and actions that the city controls directly, such as operations at city buildings and the types of cars in the city's fleet.
- Policies to direct, guide or influence actions of third parties, such as a requirement to recycle food scraps and energy efficiency standards for new building construction.

Greenhouse gas reduction measures

The Climate Action Plan Update includes 25 measures to reduce greenhouse gas emissions, grouped into six categories or "strategies." These measures align the city with the State of California's targets while also addressing the specific needs of the Carlsbad community, including low-income and historically disadvantaged communities.

Greenhouse gas emissions in Carlsbad

An updated greenhouse gas emissions analysis informed the Climate Action Plan Update and greenhouse reduction measures. This analysis included a 2016 inventory covering all greenhouse gas emissions-generating activities in Carlsbad.



Gases that trap heat in the atmosphere are often called "greenhouse gases," or GHGs. Burning fossil fuels generates greenhouse gas emissions, like carbon dioxide and methane, which contribute to climate change.

How are greenhouse gases generated in Carlsbad?

Greenhouse gas emissions typically come from the following actions:

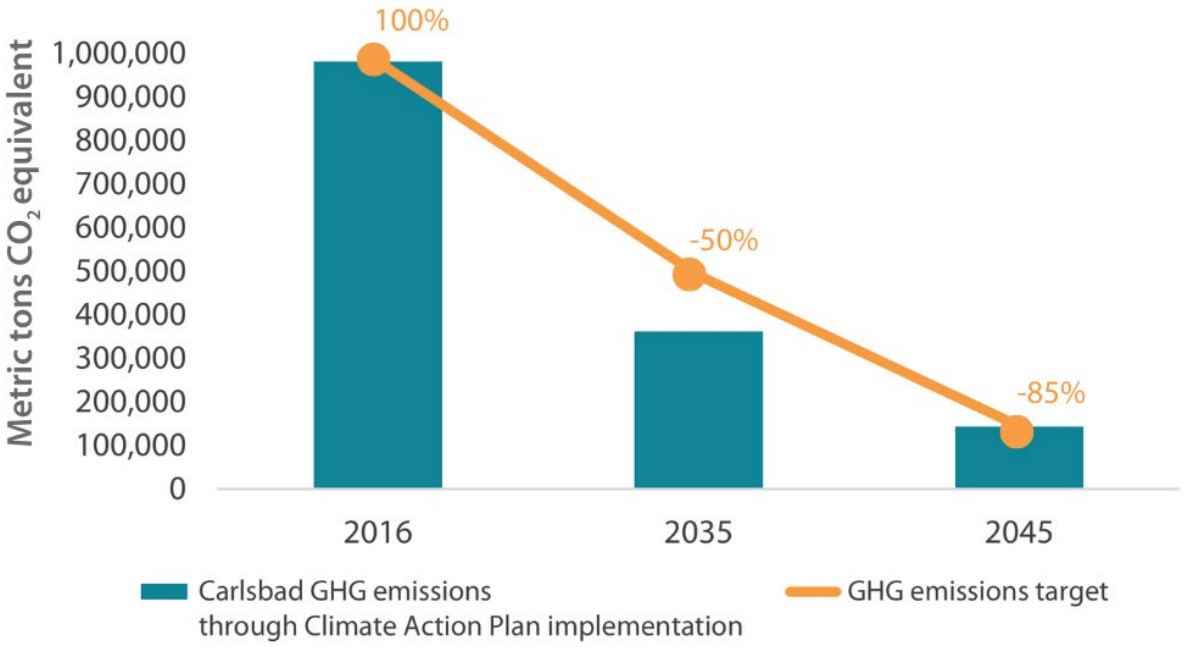
- The operation of city offices, community centers, libraries and other buildings
- Energy to operate streetlights and traffic signals
- Energy required to pump water to homes and businesses
- Energy required to pump wastewater from homes and businesses to the treatment plant, plus the energy to treat and dispose of the wastewater
- Vehicles, such as fire trucks, police cars, utility trucks and cars
- Equipment like bulldozers, skip loaders and excavators
- Power generation for homes and businesses
- Energy needed to collect and process trash, recycling and organics

Greenhouse gas reduction targets

California state laws set targets for greenhouse gas emission reductions. The city's Climate Action Plan Update outlines measures to achieve these reduction targets.

The Climate Action Plan Update outlines strategies and measures to achieve the following greenhouse gas emission reductions:

- 50% below 2016 emissions by 2035
- 85% below 2016 levels by 2045



Tracking the city's progress

To track Climate Action Plan Update progress, the city will collect data to measure the success of the greenhouse gas reduction measures and report this information annually, along with any greenhouse gas inventory updates.

Help Carlsbad achieve its goals

The success of the Climate Action Plan Update relies on the participation of all community members. Visit carlsbadca.gov/cap to learn about easy and cost-effective ways residents and businesses can reduce their carbon footprint.

1 Introduction

The City of Carlsbad (city) strives to provide a clean and safe environment for residents, workers and visitors by protecting natural resources and facing the challenge of climate change head on. With these goals in mind, Carlsbad has become a regional leader in climate action with early and sustained efforts to reduce its contribution to climate change. This Climate Action Plan Update (CAP Update) serves to continue and elevate this commitment by realigning its climate action policies with the most recent technological advancements, best practices and state legislation.

The CAP Update contains strategies to reduce local greenhouse gas (GHG) emissions and streamline environmental review of future development projects in the city in accordance with the California Environmental Quality Act (CEQA) such that new development is designed and built following sustainable practices. This is the city's second comprehensive CAP, following the original CAP, which was adopted in September 2015 and then amended in May 2020. This document is hereafter referred to as the "CAP Update" and is understood to supersede the existing CAP once adopted. CAP Update strategies reflect the goals and policies of the city's General Plan, addressing topics such as increasing energy efficiency, expanding bicycle and pedestrian infrastructure and achieving solid waste reduction. The CAP Update also supports the city's Community Vision, most notably the "Sustainability" Core Value[1].

Development of the CAP Update allowed the city to reassess its near- and long-term targets for reducing local GHG emissions. The GHG emissions inventory, presented in Chapter 2, illustrates the sources of all citywide GHG emissions and was used to target areas where strategies for GHG reduction were most needed and could have the greatest impact. These GHG emissions reduction strategies are necessary to prevent the acceleration of global warming and the worsening of climate-related events, as well as to align with the goals of the State of California and the Paris Agreement[2]. As a commitment to reducing its GHG emissions and to remain consistent with state legislation, the city has identified GHG reduction targets for the years 2035 and 2045 that align with the state's GHG reduction targets codified by Senate Bill (SB) 32 and Assembly Bill (AB) 1279. These GHG reduction targets are discussed in more detail in Chapter 2.

[1] See here for further background on the city's Community Vision: https://www.carlsbadca.gov/residents/community-vision.

[2] The primary goal of the Paris Agreement is to keep "a global temperature rise this century well below 2 degrees Celsius (i.e., 3.6 degrees Fahrenheit) above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius (i.e., 2.5 degrees Fahrenheit)" (UN Climate Change n.d.)

1.1 Climate Change and Greenhouse Gas Emissions Overview

As California continues to experience rising temperatures, increasingly volatile severe storms, intense drought, and other devastating climate impacts, it is evident that the effects of global climate change are already occurring. The impacts of climate change across the state will vary due to California's diverse biophysical setting, climate, and community characteristics. However, even modest changes in temperature and precipitation regimes could have significant effects on the state's ecosystems (OPR, CEC, and CNRA 2018). At a regional level, the average annual temperature in San Diego County is projected to continue increasing steadily over time, with shorter wet seasons and greater fluctuations in year-to-year precipitation (CEC 2024). These projected climatic changes can directly and adversely impact community members, natural resources, critical facilities, buildings, services and infrastructure across the city (City of Carlsbad 2023).

The science behind climate change is related to the greenhouse effect, which is a natural process that insulates the Earth and helps regulate its temperature due to the presence of GHGs in the atmosphere. Metaphorically, GHGs, such as water vapor, carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O), act as a blanket surrounding our planet and are necessary to sustain life on Earth—without them, temperatures would be much colder, leaving Earth unsuitable to sustain human life. However, even though the greenhouse effect is a necessary, natural process, it has become exacerbated by human activities, notably through the burning of fossil fuels. These human activities are continuing to release an excess amount of GHGs into the atmosphere that have caused the Earth's climate to warm at an unprecedented rate (i.e., climate change), which has already been proven to have dire consequences around the world.

Carlsbad will continue to experience the effects of climate change and is highly vulnerable to the same hazards present throughout San Diego County due to its coastal location and dry climate (City of Carlsbad 2023). The annual average maximum temperature is predicted to increase by at least 3.2 degrees Fahrenheit over the next 30 years (City Carlsbad 2023; CEC 2024). Future drought conditions will continue to exacerbate the threat of wildfire and contribute to slope instability following periods of heavy rain (County of San Diego 2022). Along the Carlsbad coast, the sea level is expected to rise at least one foot by 2050, with an increase of at least six feet by 2100 due to rising temperatures across the globe and ocean thermal expansion coupled with melting ice (City of Carlsbad, 2023). Populations that are most affected by these hazards include but are not limited to those who are socially vulnerable, indigenous, chronically ill, disabled, children, elders, pregnant and workers who labor outdoors or are in emergency response professions (EPA 2023). Carlsbad has also identified strategies to aid people experiencing homelessness, which remains a particularly vulnerable population (City of Carlsbad 2022). As climate change continues to increase the frequency and severity of climate hazards, Carlsbad remains committed to reducing its emissions, as evidenced by this CAP Update.

1.2 Climate Regulatory Framework

Since the adoption of the original CAP, new federal and state legislation has been adopted to both strengthen commitments to and implement regulations to support reducing GHG emissions. Recently, federal climate legislation has targeted vehicle emissions via updates to the Corporate Average Fuel Economy (CAFÉ) Standards and the Renewable Fuel Standard Program. President Biden issued Executive Order (EO) 13990, "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis," in January 2021, directing executive departments and agencies to confront the climate crisis. A few months later, the Infrastructure Investment and Jobs Act, also known as the Bipartisan Infrastructure Act, promised long-term investment toward tackling the climate crisis. In 2022, President Biden signed the Inflation Reduction Act, committing federal investment in GHG reduction strategies and setting a target to reduce GHG emissions by roughly 40 percent below 2005 levels by 2030.

At the state level, even more aggressive GHG reduction targets have been adopted since Carlsbad's first CAP was adopted in 2015. AB 32 was signed into law in 2006, which codified the first statewide GHG reduction target of reducing statewide emissions below 1990 levels by 2020. The AB 32 target served as the basis for Carlsbad's reduction targets in 2015 CAP. California surpassed the AB 32 target of reducing GHG emissions to 1990 levels with its reported statewide 2016 inventory (CARB 2020). In September 2016, SB 32 codified into statute a GHG reduction target of 40 percent below 1990 emissions levels by 2030; this target was first incorporated into the city's CAP through the 2020 amendment. More recently, AB 1279, signed in September 2022, established a statewide target of reducing GHG emissions by 85 percent below 1990 levels no later than 2045 and achieving net zero emissions through carbon dioxide removal. AB 1279 is a key reason for Carlsbad's CAP Update, and the city intends to reach the 85 percent reduction target by 2045 established by the legislation. As further described in Chapter 2, the state's plan to achieve net zero emissions by 2045 relies on carbon removal through natural and mechanical means, which is not feasible at scale for local jurisdictions, including Carlsbad.

1.3 Planning Process

The CAP Update is intended to build upon the successes of the original CAP while reflecting the needs and goals of the Carlsbad community. The planning process for the CAP Update was collaborative and iterative and allowed stakeholders to provide informed input on their vision for Carlsbad. Data from the city's GHG emissions inventory and CAP Annual Reports were used to provide a clear picture of successes and challenges in the past.

Climate Action Plan Annual Reports

Since the adoption of the original CAP, the city has completed the implementation of 16 measures, or nearly half of all measures included in the CAP. The successes and challenges with each measure from the original CAP are included in the CAP Annual Reports, which are published annually, with the most recent being the seventh report published in April 2024. The CAP Annual Reports provided a data-informed decision-making tool highlighting how existing GHG reduction measures could be modified to achieve further success and identifying target areas for new GHG reduction measures as part of the CAP Update.

Public Engagement

Throughout the CAP Update process, the city has conducted extensive and targeted outreach to engage as many community members as possible and ensure that the planning process is inclusive and representative of various needs and viewpoints. The city conducted two phases of outreach for the CAP Update, with the first phase focused on receiving input on broader environmental sustainability needs and priorities, and the second phase focused on receiving more targeted feedback on the GHG reduction measures being considered.

The city conducted a variety of public engagement activities, reaching a wide range of audiences and striving to ensure the format of participation was accessible. This included virtual workshops, online surveys, stakeholder interviews, tabling or speaking at community events, hosting informational booths and soliciting feedback from the City Council. It was important to the city to engage with underrepresented communities to ensure the CAP Update would reflect the interests and meet the needs of all of Carlsbad. Intentional stakeholder engagement was crucial to the development of the CAP Update; feedback from stakeholders informed the climate action planning process and the incorporation of equity was central to the city's considerations. A detailed summary of the feedback received and the community engagement efforts undertaken by the city is provided in Appendix E.

1.4 City Plans and Policies

The CAP Update is just one document adopted by the City of Carlsbad addressing climate change. The CAP Update works concurrently with several other plans and policies. In tandem with the identification of GHG reduction targets and measures included in the CAP, the city has developed plans that assist in the implementation of these actions. The Five Year Strategic Plan, adopted in 2021, is one such document that prioritizes where the city will dedicate its resources within five core areas, one of which is sustainability and the natural environment. This CAP Update is a deliverable of the Five Year Strategic Plan. The city's 2021 Climate Emergency Declaration doubles down on the Five Year Strategic Plan and emphasizes the urgency of addressing climate change under which the CAP Update is being developed.

2015 CAP and 2020 CAP Amendment #1

The city's original CAP was developed in 2015 in response to AB 32 and the increasing severity of climate events. As statewide targets were adjusted, the city adapted its CAP and GHG reduction targets accordingly. On July 14, 2020, the City Council approved CAP Amendment No. 1 to revise the GHG inventory, reduction targets, and forecast, update calculations for existing measures, remove measures that were superseded by legislative and technology changes, and incorporate community choice energy as a new reduction measure. This was partially influenced by the publication of the 2017 California Air Resources Board (CARB) Climate Change Scoping Plan and the 2018 San Diego Association of Governments (SANDAG) Regional Climate Action Planning Framework (ReCAP). Both documents included new guidance on calculating GHG reduction targets. The amended CAP contains a 2012 GHG inventory, requiring the recalculation of 2020 and 2035 emissions reduction targets, the business-as-usual (BAU) forecast, state and federal emissions reductions, and local reductions needed to reach the updated reduction targets. The BAU forecast assumed no additional actions to reduce GHG emissions occur after 2016 (the updated baseline inventory year), providing an assessment of how Carlsbad's GHG emissions would change with future growth.

Climate Emergency Resolution

In 2021, the City Council signed a declaration of a climate emergency. The Climate Emergency Resolution is an acknowledgment of how climate change is affecting the community and stresses the urgency with which the city needs to act to address these impacts. The reduction of GHG emissions not only decreases Carlsbad's contributions to global warming, but it also has benefits for the health of its residents and its economy. The city's commitment to items such as promoting electric vehicles and infrastructure, investing in green technologies and research, and continuing to educate private and public entities are demonstrated in this CAP Update.

City of Carlsbad Five-Year Strategic Plan

In 2021, the City Council adopted a Five-Year Strategic Plan to focus its resources on community and Council goals. The following strategic goals support the Carlsbad Community Vision: community character, quality of life and safety, sustainability and the natural environment, economic vitality, and organizational excellence and fiscal health. Each goal is categorized by objectives, projects and service commitments. The first strategic objective within the sustainability and the natural environment section is completing a CAP Update to address the ongoing impacts of climate change.

1.5 California Environmental Quality Act Streamlining

The CAP Update will continue to serve as a resource for CEQA streamlining, per the provisions of state CEQA Guidelines Section 15183.5. Under these provisions, a project that is subject to discretionary review and is consistent with the city's 2021-2029 Housing Element Update growth projections can streamline its GHG analysis under CEQA by demonstrating consistency with applicable GHG reduction measures in the CAP Update. The CAP Update serves to fulfill mitigation measure GHG-1 of the Housing Element Implementation and Public Safety Element Update Supplemental Environmental Impact Report (SEIR), with the CAP Update GHG reduction target synchronized with the SEIR. The city has also considered the potential environmental impacts of the CAP Update with an addendum to the Housing Element Implementation and Public Safety Element Update Supplemental SEIR.

A "qualified" CAP, or a GHG reduction plan consistent with CEQA Guidelines Section 15183.5, will allow project-specific environmental documents, if eligible, to tier from and/or incorporate by reference the CAP Update's programmatic review of GHG impacts in their cumulative impact analyses for GHGs. Streamlined projects fulfill the city's strategic approach to environmental sustainability, expediting environmental review while meeting the demand for green development. New development constructed in compliance with CAP Update GHG reduction measures further supports a variety of General Plan strategies. Strategies that are aligned between the CAP Update and the General Plan include mixed-use development, higher density infill development and increasing energy efficiency.

The CAP Update Consistency Checklist (see Appendix F) is used to demonstrate consistency with the CAP Update and ensure that the specified emissions targets identified in the CAP Update are achieved. A project's incremental contribution to cumulative GHG emissions may be determined not to be cumulatively considerable based on consistency with forecasts used in the CAP Update and its GHG reduction measures.

1.6 How to Read This Plan

Purpose

To reduce GHG emissions in line with statewide goals and targets, the City of Carlsbad continues to identify areas in which it can take greater action. This CAP Update includes updated measures and actions that outline where emissions reductions are necessary to achieve its updated GHG reduction targets. Tracking the progress of emissions reductions via quantifiable metrics and detailed implementation steps is one way the city can provide transparency in its efforts to prevent the acceleration of climate change. These efforts will ultimately increase Carlsbad's resiliency in the face of climate impacts.

Organization and Style

The CAP Update is organized into four chapters. Chapter 1 introduces the purpose of the CAP Update, its development, and how it fits in with existing climate legislation. Chapter 2 contains the city's GHG emissions inventory, forecast of future emissions in the city, and GHG reduction targets. GHG reduction strategies, measures, actions and other data and details are included in Chapter 3, organized into six strategies: (1) water & wastewater; (2) energy; (3) solid waste; (4) transportation; (5) off-road equipment; and (6) carbon sequestration. Chapter 4 provides a framework for implementing and monitoring the CAP and includes guidance for future climate action planning efforts. Lastly, Chapter 5 includes works cited.

Co-Benefits

While the CAP Update is primarily geared toward reducing GHG emissions and addressing climate change-related vulnerabilities within the city, it will also result in numerous environmental, economic, and social "co-benefits" to residents, workers and visitors. Co-benefits result from the implementation of CAP Update actions and are additional valuable outcomes that are not the primary intent of GHG reduction measures, such as improvements to local air quality and water supply, increases in local green jobs and cost savings, and benefits to public health and improved mobility options. For example, in addition to reducing GHG emissions, implementation of an action to encourage the installation of solar panels on buildings will reduce GHG emissions, but it will also provide the co-benefit of financial savings to building owners through reduced energy costs and increased resiliency against grid outages during extreme weather events.

Co-benefits identified in this CAP Update include air pollution prevention, benefits to health and well-being, increased reliability of critical infrastructure and services, enhancement of community character, job development and resource preservation.

Equity

The city understands the importance of equity, especially in the context of climate change, and will work to ensure that all members of the community experience the benefits that result from CAP Update implementation. Because of that, equity considerations were included in the development of GHG reduction measures, where applicable (see Chapter 3 for more details). The city also strove to reach a wide audience, especially underrepresented groups, to solicit input on the CAP Update. However, the equity considerations included in this CAP Update should serve only as a starting point in promoting equity within the city. Further analyses and additional efforts are needed to ensure that benefits are accessible and distributed equitably.

2 Greenhouse Gas Emissions Inventory, Forecasts, and Targets

An important component of climate action planning is the data-informed process of understanding how greenhouse gas (GHG) emissions are generated in the City of Carlsbad (city) and how they are expected to change with future growth. This process, which is known as preparing a GHG emissions inventory, is the accounting of emissions generating activities (such as vehicle travel and energy use) within a jurisdiction's boundary to demonstrate its overall contribution to climate change. A series of questions can be answered from a GHG inventory to assist in the climate action planning process, including:

- What are the GHG emissions sources in the city from smallest to largest?
- How might GHG emissions change in the future with growth and as a result of state and federal regulations?
- How do the city's GHG emissions compare to the reduction targets informed by state legislation?
- What is within the city's control to reduce local GHG emissions?

This information is even more impactful when GHG emissions inventories are performed regularly over time, as they allow the city to monitor how GHG emissions are changing as GHG reduction measures are implemented.

This chapter presents the technical basis for the Climate Action Plan Update (CAP Update). It includes an overview of Carlsbad's 2016 GHG emissions inventory, how future GHG emissions may change (i.e., GHG emissions forecasts), and city-specific GHG reduction targets that align with state legislation. Technical methods are elaborated further in Appendix C.

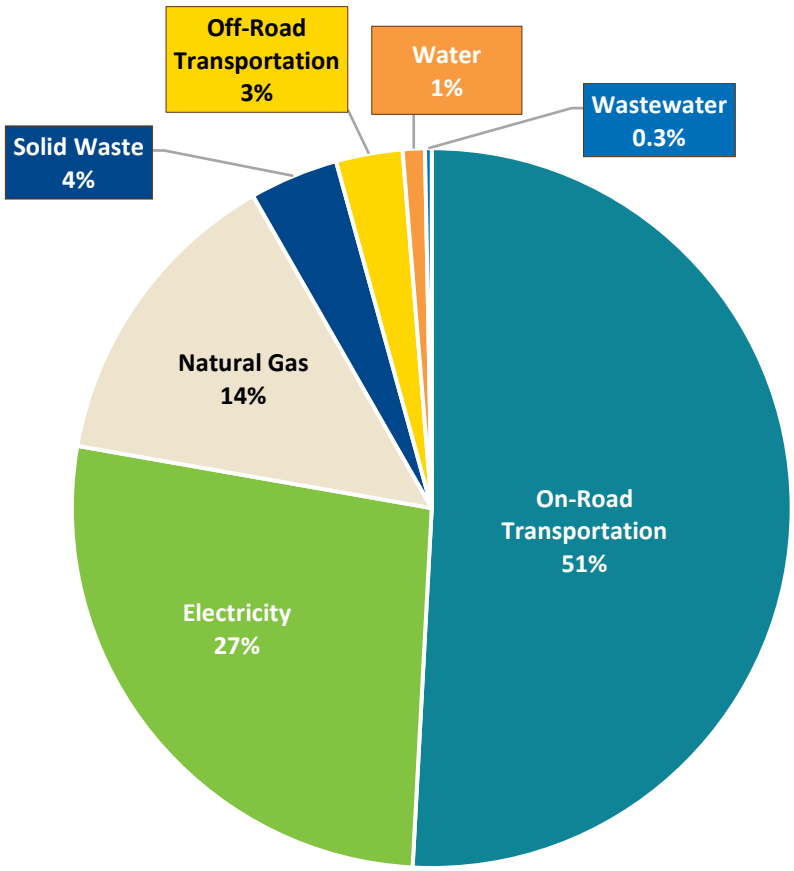
2.1 2016 Greenhouse Gas Emissions Inventory

Generally, community GHG emissions inventories identify the sources, activities, and sectors that generate emissions from activities within a jurisdiction and the relative contributions of each. Several community inventories have been prepared for the city since the original CAP, providing a detailed accounting of the sources and quantities of GHG emissions generated from activities within the community over time. This CAP Update uses 2016 as the baseline year for its GHG inventory, which provides a snapshot of GHG emissions and may influence related policy decisions to reduce emissions. The GHG inventory was prepared in accordance with the U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions (Community Protocol), developed by the International Council for Local Environmental Initiatives (ICLEI). The California Air Resources Board (CARB) advises local governments to utilize the Community Protocol for GHG emissions assessments and climate action planning processes. Methods based on the Community Protocol were modified with regional- or city-specific data when available.

The three primary GHGs considered in the city's GHG inventory are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Emissions of these gases were converted to a comparable unit by multiplying each non-CO_2 gas by its global warming potential (GWP), which enables the reporting of emissions in terms of carbon dioxide equivalent (CO_2e). For example, CH_4 is 25 times more potent than CO_2 over a 100-year time period. This conversion allows consideration of all gases in comparable terms and makes it easier to communicate how various sources and types of GHG emissions contribute to climate change. GHG emissions are reported in metric tons of CO_2e ($MTCO_2e$), the standard measurement for the amounts of GHG emissions created and released into the atmosphere, using the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report GWP values.

The basic calculation for estimating GHG emissions involves two primary inputs: activity data and emissions factors. Activity data refers to the amount of GHG emission generating activities that occur within the city boundary, while emissions factors are the amount of GHG emissions that are produced for each of these activities. Emissions factors are applied to activity data (i.e., the two values are multiplied) to estimate GHG emissions.

The results of the 2016 GHG emissions inventory show that total emissions for the city equal 981,000 $MTCO_2e$. Emissions from on-road transportation, which includes fossil fuel (e.g., gasoline and diesel) combustion in vehicles, accounted for approximately 51 percent of community emissions. The second largest sector in 2016 was electricity, which contributed approximately 27 percent of community GHG emissions, with the natural gas sector representing 14 percent of the city's emissions. Solid waste and off-road transportation (e.g., light commercial equipment, lawn and garden equipment, construction equipment) accounted for four percent and three percent, respectively, and water contributed one percent of the total emissions. Wastewater contributed less than one percent of the total emissions. Figure 2.1 and Table 2.1 provide a summary of the city's GHG emissions inventory results.



Notes: Percentages are rounded to the nearest whole percentage and may not add up to 100 percent due to rounding; % = percent.

Source: EPIC 2023.

Figure 2.1 Greenhouse Gas Emissions in Carlsbad (2016)

Table 2.1 Greenhouse Gas Emissions in Carlsbad (2016)

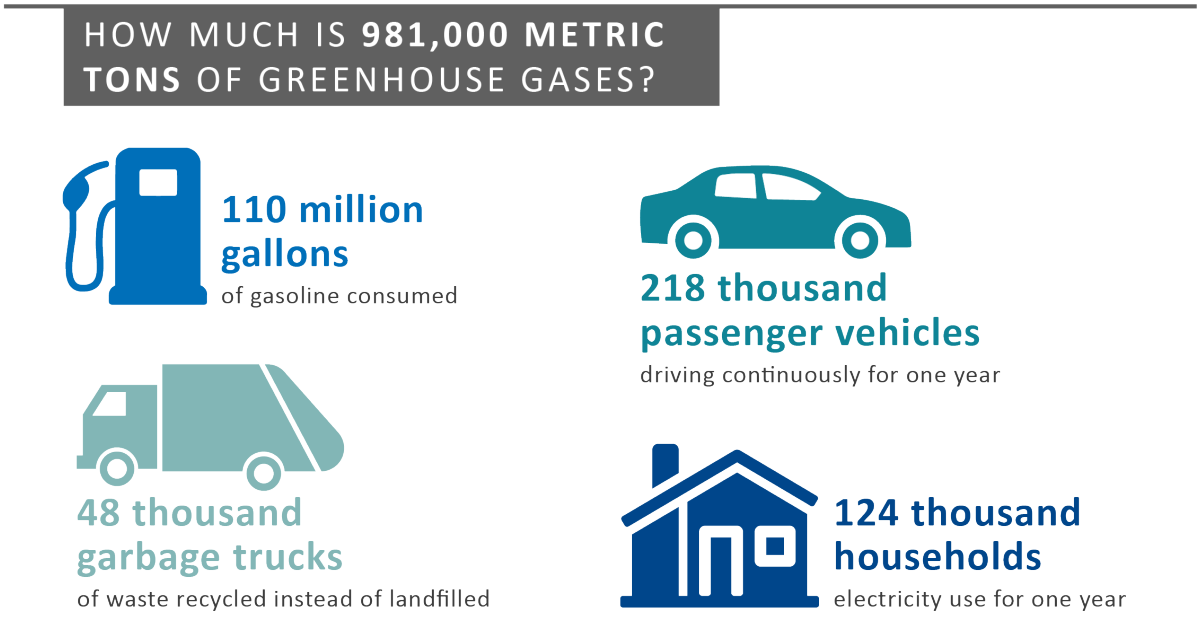
Sector	GHG Emissions ($MTCO_2e$)	Percent of Total
On-Road Transportation[1]	502,000	51%
Electricity	269,000	27%
Natural Gas	133,000	14%
Solid Waste	35,000	4%
Off-Road Transportation	31,000	3%
Water	8,000	1%
Wastewater	3,000	<1%
Total	**981,000**	**100%**

Notes: GHG emissions are rounded to the nearest thousand, and percentages are rounded to the nearest whole percentage. All table values were calculated before being rounded, and individual values may not add up to totals due to rounding. < = less than; % = percent; GHG = greenhouse gas; $MTCO_2e$ = metric tons of carbon dioxide equivalent.

[1] 2016 vehicle miles traveled data is from SANDAG's activity-based model (ABM2+), No Build Dataset 41 (DS 41) base year.

Source: EPIC 2023.

As shown in Figure 2.2, community emissions in 2016 of 981,000 $MTCO_2e$ are equivalent to using 110 million gallons of gasoline or driving 218,000 passenger vehicles continuously for one year. It is also equivalent to 48,000 garbage trucks of waste recycled instead of landfilled and 124,000 homes' electricity use for one year (EPA 2024).

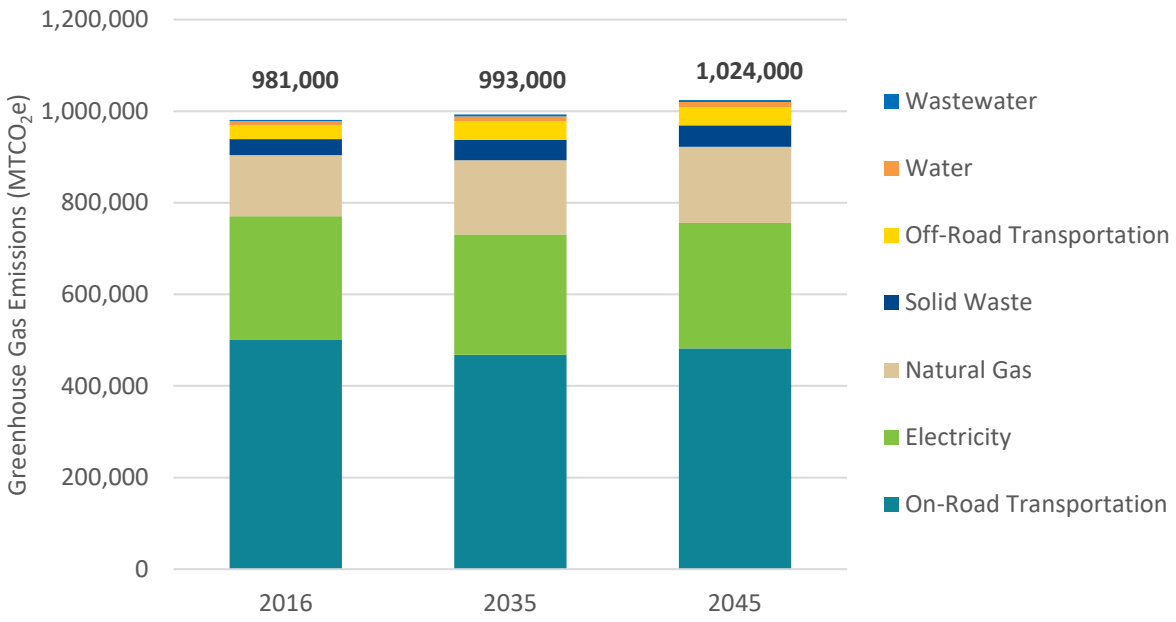


Source: EPA 2024; adapted by Ascent in 2024.

Figure 2.2 Examples of Greenhouse Gas Emissions Equivalencies

2.2 Business-as-Usual Greenhouse Gas Emissions Forecasts

A business-as-usual (BAU) GHG emissions forecast provides an estimate of how GHG emissions in Carlsbad may change in the future with no further action taken to reduce GHG emissions beyond 2016. This BAU scenario provides an emissions trajectory that shows how the implementation of federal, state, and local actions may affect future GHG emissions after accounting for expected growth in the city. In short, the BAU forecast was developed by scaling the 2016 GHG emissions inventory with forecasted growth in population, housing units, and jobs. More detail on methods for developing the BAU forecast is available in Appendix C. The results of the BAU forecast estimate GHG emissions in the city to increase steadily by 43,000 $MTCO_2e$, or four percent, above 2016 levels by 2045. A summary of the results of the BAU forecast is provided in Figure 2.3, with further detail available in Appendix C.



Notes: $MTCO_2e$ = metric tons of carbon dioxide equivalent.

Source: EPIC 2023.

Figure 2.3 Business-as-Usual Greenhouse Gas Emissions Forecasts

2.3 Greenhouse Gas Reduction Targets

A core component of a CAP is establishing GHG reduction targets to determine the level of effort needed for GHG reduction measures and actions. The CAP Update targets were developed to align with the statewide GHG reduction targets established by Senate Bill (SB) 32 and Assembly Bill (AB) 1279. As directed in SB 32 and AB 1279, the state aims to reduce annual GHG emissions to:

- 40 percent below 1990 levels by 2030 and
- 85 percent below 1990 levels by 2045, with net-zero emissions achieved through carbon dioxide removal.

While state legislative targets are based on 1990 statewide GHG emissions levels, Carlsbad, like most jurisdictions in California, does not have an emissions inventory from the year 1990 and must apply a more recent inventory to 1990 levels using statewide GHG emissions data. In 2016, the state's GHG emissions inventory showed that total statewide GHG emissions levels were nearly equivalent to 1990 levels (CARB 2019). As such, it is reasonable to assume that local GHG emissions have evolved on a similar trend. Estimating equivalent reductions needed from the 2016 baseline, the city aims to reduce emissions to:

- 50 percent below 2016 levels by 2035 (aligned with and extrapolated from SB 32), and
- 85 percent below 2016 levels by 2045 (aligned with AB 1279).

A 2035 target year was chosen to maintain consistency with the city's General Plan buildout year and to be on a GHG emissions trajectory consistent with SB 32.

The city's approach to GHG reduction targets for this CAP Update is focused on a reduction in anthropogenic emissions within its influence and control. A net-zero GHG goal for the year 2045 is not

feasible for Carlsbad based on local conditions and the current state and cost-effectiveness of available technologies. The state's strategy for meeting the AB 1279 target, as outlined in the 2022 Climate Change Scoping Plan, indicates that net-zero emissions would be achieved through CO_2 removal through both carbon sequestration in natural lands and mechanical carbon capture and storage technologies (CARB 2022). Because Carlsbad does not have the ability to substantially increase carbon sequestration on natural lands to the levels required to offset all emissions (due to factors such as topography and lack of remaining open space) and does not have the geologic conditions needed for geologic carbon storage (DOC 2024). Additionally, CO_2 removal and carbon capture and storage technologies are being evaluated by the state, and it is not feasible for local jurisdictions, including Carlsbad, to scale these mechanical solutions independently to achieve net-zero GHG emissions by 2045. As the CAP Update is implemented and more guidance is available from state agencies, the city will reassess the applicability and feasibility of a net-zero goal and update the CAP as appropriate.

The city's reduction targets require GHG emissions to be reduced to 490,000 $MTCO_2e$ in 2035, and to 147,000 $MTCO_2e$ in 2045, as shown in Table 2.2 below. Achievement of the 2045 target will require significant investments at the state and local levels to transform the transportation and energy sectors to low- and zero-carbon.

Table 2.2 Business-as-Usual Greenhouse Gas Emissions Forecasts and Reduction Targets

Year	BAU GHG Emissions Forecasts[1] ($MTCO_2e$)	Reduction Targets (Percent Below 2016 Baseline)	Reduction Targets ($MTCO_2e$)
2016	981,000	—	—
2035	993,000	50%	490,000
2045	1,024,000	85%	147,000

Notes: GHG emissions forecasts and reduction targets are rounded to the nearest thousand; % = percent; BAU = business-as-usual; GHG = greenhouse gas; $MTCO_2e$ = metric tons of carbon dioxide equivalent.

[1] BAU GHG emissions forecasts provide an estimate of how GHG emissions may change in the future with no further action taken to reduce emissions beyond a baseline year—which, in this instance, is 2016.

Source: EPIC 2023.

2.4 Greenhouse Gas Reductions from Federal and State Actions

Reductions in communitywide GHG emissions in Carlsbad are expected to occur because of adopted local, state, and federal regulations. A legislatively adjusted emissions forecast that includes federal and state actions provides the city with the information needed to focus efforts on certain emissions sectors and sources that have the most GHG reduction opportunities and where the city has high control and/or influence.

Federal and California Vehicle Efficiency Standards

Fuel efficiency standards result in an increase in vehicle efficiency over time. This has a significant impact on GHG emissions because as vehicles use less fuel and use fuel more efficiently, they release fewer GHG emissions. CARB's Mobile Source Emissions Inventory EMFAC2021 model, used to estimate emissions from on-road vehicles, includes most key federal and state regulations related to tailpipe GHG emissions reductions for both light-duty and heavy-duty vehicles that were in place through 2020. The model incorporates federal legislation, such as the Corporate Average Fuel Economy (CAFE) standards, in addition to state legislation, such as the Pavley regulation, which regulates the GHG

emissions of new passenger vehicles. Predicted emissions reductions from the Advanced Clean Cars II regulations[1] are also included in the legislatively adjusted forecast.

California Energy Efficiency Programs

In September 2017, the California Public Utilities Commission (CPUC) adopted energy efficiency goals for ratepayer-funded energy efficiency programs (Decision 17-09-025); these went into effect in 2018. The adopted energy saving goals for San Diego Gas & Electric's (SDG&E's) service territory are given in the Decision on an annual basis from 2018 to 2030. The sources of energy savings include but are not limited to, rebated technologies, building retrofits, behavior-based initiatives, and codes and standards.

Renewables Portfolio Standard

SB 100, the 100 Percent Clean Energy Act of 2018, adopts a 60% Renewable Portfolio Standard for all of California's retail electricity suppliers by 2030. The legislation also provides goals for the intervening years before 2030 and establishes a state policy requiring that "zero-carbon" resources supply 100% of all retail electricity sales to end-user customers and all state agencies by December 31, 2045. The interim 2035 target would be to provide 73% renewable electricity.

Clean Energy, Jobs, and Affordability Act of 2022

SB 1020, the Clean Energy, Jobs, and Affordability Act of 2022, requires that eligible renewable energy and zero-carbon resources supply 100 percent of electricity procured to serve all state agencies by 2035. The legislation also updates the Renewables Portfolio Standards established by SB 100 to include interim targets in 2035 and 2040 to achieve 90 percent and 95 percent renewably sourced electricity retail sales, respectively.

California Solar Policies, Programs and Mandates

California has several policies and programs to encourage customer-owned, behind-the-meter photovoltaic (PV) systems, such as the California Solar Initiative, New Solar Home Partnership, Net Energy Metering, and electricity rate structures designed for solar customers. The latest California 2019 Building Energy Efficiency Standards, which went into effect on January 1, 2020, require all newly constructed single-family homes, low-rise multi-family homes, and detached accessory dwelling units (ADUs) to have PV systems installed unless the building receives an exception.

2.5 Local Greenhouse Gas Emissions Gap

The city is forecasted to achieve its 2035 GHG emissions reduction target through state and federal legislative measures. However, state and federal regulations alone will not be sufficient to achieve the city's 2045 target. The city needs to implement additional actions to close the remaining "local emissions gap" and achieve its reduction targets. This "gap" is calculated by subtracting the target emissions value from the forecasted emissions that account for reductions from state and federal actions. By 2045, there is a GHG emissions "gap" of 135,000 $MTCO_2e$. Since these actions take time, the city needs to begin implementation of the CAP Update as soon as possible.

[1] The Advanced Clean Cars II regulations established a target for all new passenger cars, trucks, and sport utility vehicles sold in California to be 100 percent zero-emission vehicles by 2035. See more here: https://ww2.arb.ca.gov /our-work/programs/advanced-clean-cars-program/advanced-clean-cars-ii.

Table 2.3 2035 and 2045 Greenhouse Gas Emissions Reductions and "Gap"

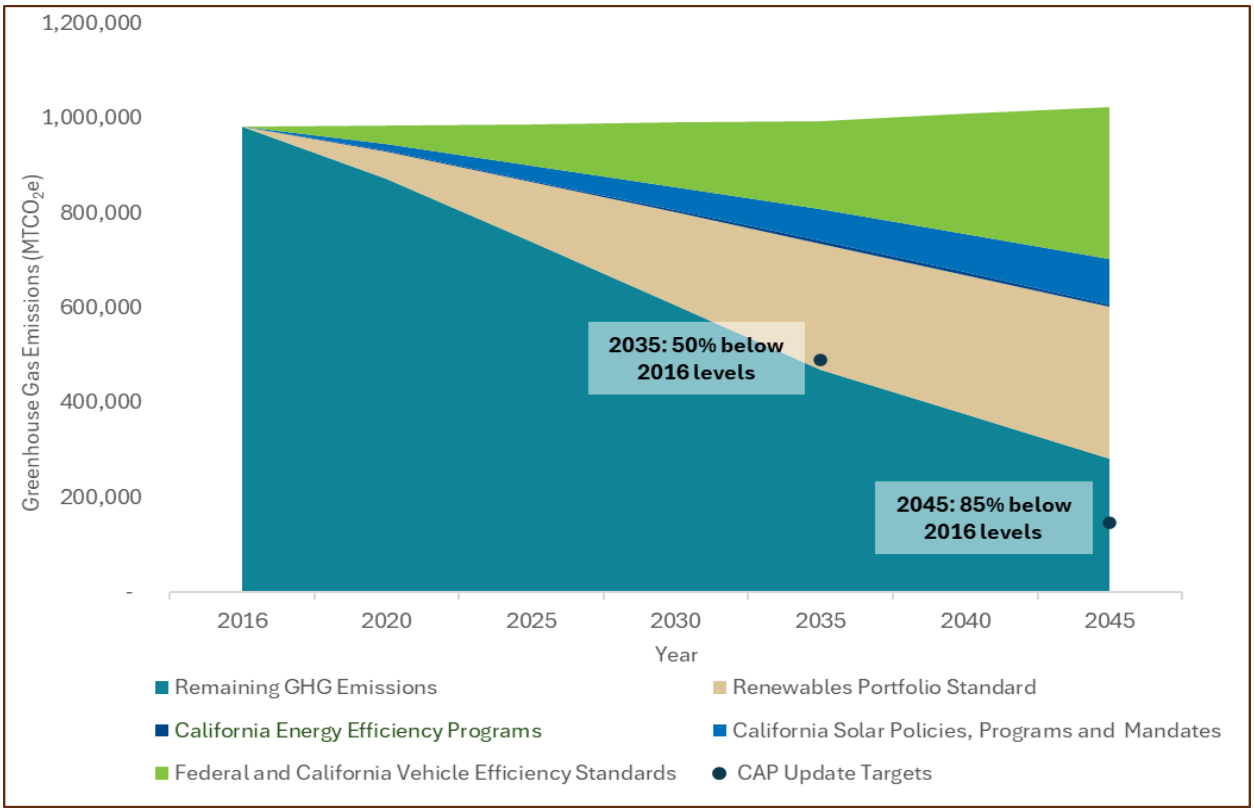
Reductions	GHG Emissions ($MTCO_2e$)	
	2035	2045
Total BAU GHG Emissions	993,000	1,024,000
CAP Update Reduction Targets	490,000	147,000
Reductions Needed to Meet Target	503,000	877,000
Total Reductions from Federal and State Regulations	525,000	742,000
Target Met?	Yes	No
Remaining Gap to Target	(22,000)[1]	135,000

Notes: Numeric values are rounded to the nearest thousand. BAU = business-as-usual; CAP Update = Climate Action Plan Update; GHG = greenhouse gas; $MTCO_2e$ = metric tons of carbon dioxide equivalent.

[1] The 2035 target is projected to be achieved solely by federal and state regulations with a surplus of reductions.

Source: EPIC 2023.

In Figure 2.4, the colored wedges represent the reduction from federal and state actions. Each wedge represents the cumulative GHG reduction from each action. The grey area beneath the colored wedges represents the remaining emissions after all the actions have taken place. This "emissions gap" will be addressed through local GHG reduction measures that are included in Chapter 3 of this CAP Update.



Notes: % = percent; $MTCO_2e$ = metric tons of carbon dioxide equivalent.

Source: EPIC 2023; adapted by Ascent in 2024.

Figure 2.4 Greenhouse Gas Emissions Reductions and Targets

3 Greenhouse Gas Reduction Strategies and Measures

This chapter presents the strategies and measures that the City of Carlsbad (city) will implement to reduce greenhouse gas (GHG) emissions and build resilience to the impacts of climate change. These locally based initiatives are organized under six strategies and include descriptions of actions that will be taken for implementation.

3.1 Overview

This Climate Action Plan Update (CAP Update) includes six strategies and 25 measures that will reduce GHG emissions and build resilience to climate impacts in the community (i.e., GHG reduction strategies). The strategies, which are overarching categories or focus areas for reducing GHG emissions, include: (1) water and wastewater; (2) energy; (3) waste diversion; (4) transportation; (5) off-road equipment; and (6) carbon sequestration. These strategies are used to organize GHG reduction measures, which are statements that articulate overarching intentions and/or desired outcomes for each strategy. Each measure includes specific implementation actions that define the activities, programs, policies, and/or projects that the city will undertake to implement each measure (see Figure 3.1 for a visual hierarchical display of strategies, measures, and implementation actions for this CAP Update). While the primary purpose of the measures, collectively, is to reduce GHG emissions, many of them will result in additional co-benefits across the city, such as improved public health, improved air and water quality, reduced energy use, and reduced traffic congestion, among others.

The strategies and measures discussed in this chapter were informed by the results of the city's GHG emissions inventory and forecasts, engagement with the public and stakeholders, feedback from city staff and elected officials, and the best available climate action planning guidance.

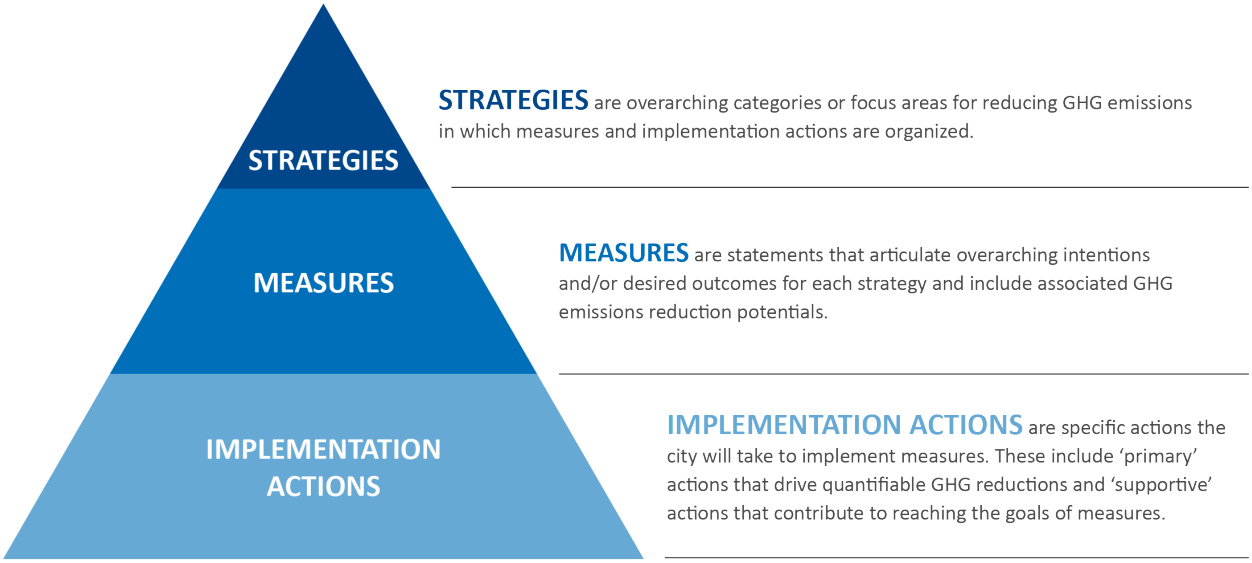


Figure 3.1 Structure of Greenhouse Gas Reduction Strategies and Measures

3.2 Greenhouse Gas Emissions Reduction Quantification Analysis

The city estimated potential GHG emissions reductions associated with all measures as part of this CAP Update. In summary, the total estimated GHG emissions reductions for all CAP Update measures are approximately 105,000 metric tons of carbon dioxide equivalent ($MTCO_2e$) in 2035 and 142,000 $MTCO_2e$ in 2045. More details can be found in Table 3.1 below, organized by measure, along with the impact of federal and state regulations.

Table 3.1 Summary of 2035 and 2045 Emissions Reductions from Greenhouse Gas Reduction Measures

CAP Update Strategies	CAP Update Measures & Federal and State Regulations	GHG Emissions Reductions ($MTCO_2e$)	
		2035	2045
Transportation	T-1 Traffic Calming & Optimization	1,334	746
	T-2 Transportation Demand Management Program	3,254	8,630
	T-3 Safe Routes to School	70	39
	T-4 Bikeway System Improvements	566	324
	T-5 Pedestrian System Improvements	55	31
	T-6 Local Transportation Improvements	Not Quantified[1]	Not Quantified[1]
	T-7 Municipal Transportation Demand Management	92	51
	T-8 Increase Public Zero Emission Vehicle Infrastructure	Supporting California Vehicle Efficiency Standards (Advanced Clean Cars II Regulation)	

CAP Update Strategies	CAP Update Measures & Federal and State Regulations	GHG Emissions Reductions ($MTCO_2e$)	
		2035	2045
	T-9 Zero Emission City Fleet	1,059	592
	T-10 Parking Management Strategies	Not Quantified[1]	Not Quantified[1]
Energy	E-1 Renewable Electricity at Municipal Facilities	751	1,306
	E-2 Community Choice Energy	17,110	-
	E-3.1 Nonresidential Building Energy– Existing Reach Code	770	1,296
	E-3.2 Nonresidential Building Energy– Updated Reach Code	2,773	5,796
	E-3.3 Nonresidential Building Energy– Solar Carports	Not Quantified[1]	Not Quantified[1]
	E-4.1 Residential Building Energy– Existing Reach Code	3,212	3,710
	E-4.2 Residential Building Energy– Updated Reach Code	1,196	1,488
	E-5 Building Energy Benchmarking	4,308	7,358
	E-6 Decarbonize Existing Buildings	22,356	44,305
Water and Wastewater	W-1 Wastewater System Improvements	59	—
	W-2 Water System Improvements	1,516	1,583
Waste Diversion	WD-1 Solid and Organic Waste Diversion	31,776	37,040
Off-Road Equipment	OR-1 Convert Gas-Powered Leaf Blowers	396	386
	OR-2 Increase Renewable or Alternative Fuel in Construction Equipment	4,698	15,081
Carbon Sequestration	CS-1 Community Forest Management	7,519	11,966
Federal and State Regulations	Federal and California Vehicle Efficiency Standards	186,134	320,795
	California Energy Efficiency Programs	6,385	4,998
	Renewables Portfolio Standard	267,309	319,919
	California Solar Policy, Programs and Mandates	64,878	95,985
Total Reductions from Federal and State Regulations		525,000	742,000
Total Reductions from CAP Update Measures		105,000	142,000
Total Reductions (Federal, State and CAP Update Measures)		**630,000**	**883,000**

Notes: 2035 and 2045 values are rounded to the nearest thousand for "Total Reductions from Federal and State Regulations," "Total Reduction from CAP Update Measures," and "Total Reductions (Federal, State, and CAP Update Measures);" CAP Update = Climate Action Plan Update; GHG = greenhouse gas; $MTCO_2e$ = metric tons of carbon dioxide equivalent.

[1] Based on the timing of the CAP Update, certain measures were "Not Quantified" due to lack of available data for calculations. As policies and programs in these measures progress, the CAP Update's calculations can be updated.

Source: EPIC 2024.

As discussed in Chapter 2, the city is expected to be able to achieve its 2035 GHG reduction target without additional local action. However, the scale of reductions needed to achieve the 2045 target requires the city to accelerate implementation efforts sooner rather than later. Implementation of the near- and long-term GHG reduction strategies and measures included in the CAP Update are expected to set the city on this trajectory and allow for exceeding the state legislative reduction targets. Table 3.2 shows the total GHG emissions, targets, and the GHG reductions achieved by state regulations and CAP Update measures, demonstrating that the city's state-aligned GHG reduction targets can be achieved with the CAP Update.

Table 3.2 2035 and 2045 Greenhouse Gas Emissions Reductions and Targets

Reductions	GHG Emissions ($MTCO_2e$)	
	2035	2045
Total BAU GHG Emissions	993,000	1,024,000
CAP Update Reduction Targets	490,000	147,000
Reductions Needed to Meet Target	503,000	877,000
Total Reductions from Federal and State Regulations	525,000	742,000
Total Reductions from CAP Update Measures	105,000	142,000
Total Reductions (Federal, State and CAP Update Measures)	630,000	883,000
Remaining Gap to Target	(128,000)[1]	(6,000)[1]
Target Met?	**Yes**	**Yes**

Note: All values in this table are rounded to the nearest thousand. BAU = business-as-usual; CAP Update = Climate Action Plan Update; GHG = greenhouse gas; $MTCO_2e$ = metric tons of carbon dioxide equivalent.

[1] Indicates target has been achieved with a surplus of reductions.

Source: EPIC 2024.

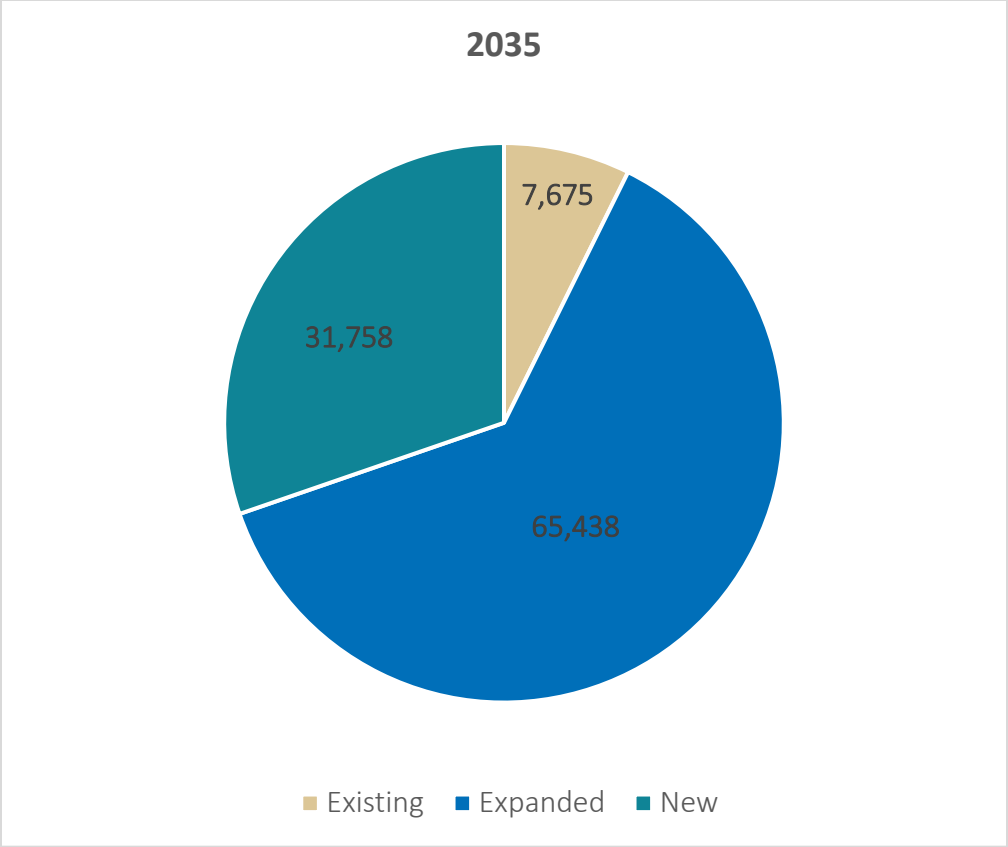
3.3 Detailed Strategies and Measures

The following sections provide descriptions for each GHG reduction strategy and measure included in the CAP Update, as well as information about the actions the city will take to implement each measure. Additionally, each measure is supplemented with an array of details that are specific to each measure, which include:

- **GHG Reductions:** The GHG reduction estimates are the amount of GHG emissions (represented in metric tons of carbon dioxide equivalent [$MTCO_2e$]) that would be avoided through measure implementation for the target years of 2035 and 2045. Measures where the GHG reductions were not quantified for any reason (e.g., lack of quantification methodologies, avoidance of double-counting GHG emissions reductions) do not include an estimate. Further details on GHG quantification methods and results can be found in Appendix C.
- **Monitoring Benchmarks**: The monitoring benchmarks show the activities that are responsible for driving GHG emissions reductions with a corresponding value that allows the city to track progress on implementation over time. The years associated with the monitoring benchmarks indicate that the benchmark should be achieved by the *end* of that year.

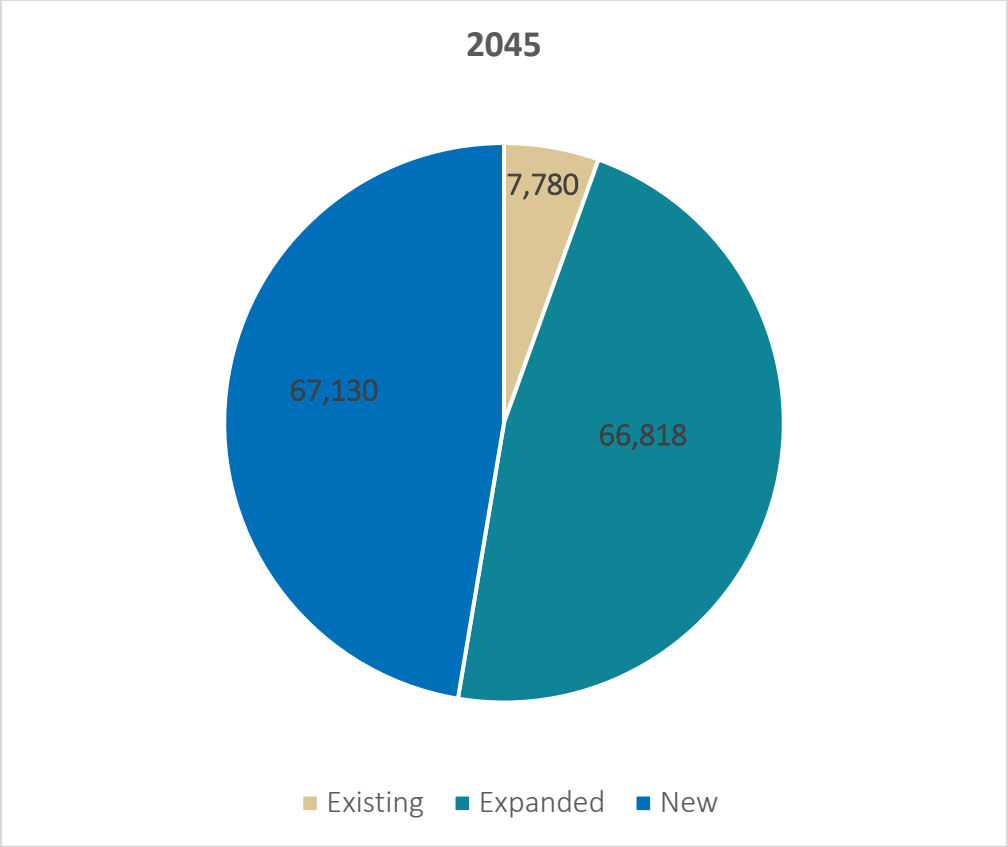
- Data Needed to Monitor: Data is needed to monitor progress toward emission reductions and serve as input for the monitoring metric(s). For example, if the monitoring metric is the percent of food waste reduced, the data required for tracking this is tons of food waste disposed and recovered annually.
- Implementation Details: Implementation details include the timeframe under which implementation will take place, the city department primarily responsible for implementation, and any supporting departments. These components ensure that the city is accountable for meeting its targets and provides transparency to city departments on their responsibilities for implementation. The following notations are used to denote implementation timeframes:
  - Short-term: 0-5 years
  - Medium-term: 6-10 years
  - Long-term: 11 or more years
  - Ongoing: indicates that the program or process was in place at the time of the CAP Update and the existing processes will continue as planned, working towards the benchmarks identified.
- Co-Benefits: In the development of each measure, co-benefits were identified. Co-benefits are additional environmental, social, and/or economic benefits beyond GHG emissions reductions.
- Equity Considerations: The consideration of equity was crucial to the formation of the measures in the CAP Update. The city strives to provide procedural access to the benefits of the CAP Update and for the benefits to be distributed across all members of the community while mitigating any potential negative impacts to community members. However, these equity considerations should serve only as a starting point in promoting equity within the city. Further analyses (e.g., local climate equity index or similar metrics) and additional efforts informed by the data are needed to ensure that CAP Update benefits are distributed in an equitable manner.

Each measure is also denoted with an "Existing," "Expanded," or "New" tag, which respectively indicates whether the measure was a pre-existing measure from the original CAP (or other city program or policy), a measure that was expanded upon from the original CAP (or other city program or policy), or a brand new measure as a part of this CAP Update. In total, this CAP Update includes 11 "Existing" measures, seven "Expanded" measures, and seven "New" measures. The two pie charts below (Figures 3.2 and 3.3) visually display the amount of GHG emissions reductions that would be achieved in 2035 and 2045 through successful implementation of the "Existing," "Expanded," and "New" measures.



Source: EPIC 2024.

Figure 3.2 Greenhouse Gas Reductions ($MTCO_2e$) by Measure Type (2035)



Source: EPIC 2024.

Figure 3.3 Greenhouse Gas Reductions ($MTCO_2e$) by Measure Type (2045)

Water & Wastewater

W-1. Wastewater System Improvements

W-2. Water System Improvements

WATER AND WASTEWATER MEASURES

The delivery, storage, and treatment of water, in addition to the collection and treatment of wastewater, is an essential service to city residents and businesses. Carlsbad receives its water from many sources, like the Colorado River, Sacramento-San Joaquin Delta, and local recycled and desalinated water. Facilities use energy to transport and treat this water and wastewater, resulting in GHG emissions. The city is served by three water districts: Carlsbad Municipal Water District (CMWD), which is a legal subsidiary of the city, Olivenhain Municipal Water District, and Vallecitos Water District. CMWD purchases treated water from the San Diego County Water Authority, which is the agency responsible for importing water from outside the Southern California region and for the water purchased from the local desalination plant. The City of Carlsbad's Utilities Department collects and delivers wastewater to the Encina Wastewater Authority for the majority of the city. The Leucadia Wastewater District and Vallecitos Water District provide wastewater collection services for small portions of the city. The CMWD and the city's Utilities Department are expected to service about 100,000 residents by 2045 (CMWD 2021). Shifting to more renewable energy sources and updating current water and wastewater systems are actions the city can take to operate more sustainably and meet the demand of future residents. There are two measures included under the Water and Wastewater strategy, including: W-1) Wastewater System Improvements and W-2) Water System Improvements. These measures and their respective actions are described further below.

MEASURE W-1: Wastewater System Improvements

EXISTING

Measure W-1 is focused on improvements to the wastewater system. This applies to the existing city sewer pipes and lift stations. The city has identified renewable energy goals for its wastewater collection system, specifically pertaining to lift stations. Lift stations pump wastewater to the treatment plant. Using GHG-free electricity to operate lift stations can reduce the carbon intensity of essential services provided to residents and businesses. In addition to upgrades to the collection system, the city's Supervisory Control & Data Acquisition (SCADA) Master Plan establishes a strategy for future improvements in energy efficiency of wastewater operations.

Implementation Actions

Primary

- **Action W-1.a**: Continue making improvements to the City of Carlsbad's collection system, including but not limited to upgrading lift stations.

Supportive

- **Action W-1.b**: Explore system improvements based on SCADA Master Plan.

GHG Reductions

- 2035: 59 $MTCO_2e$
- 2045: 0 $MTCO_2e$

Implementation Details

- Timing: Ongoing
- Lead Department: Utilities

Monitoring Benchmarks

- By 2025: Supply lift stations with 100% renewable/carbon free electricity from Clean Energy Alliance
- By 2035: Reduce wastewater collection energy intensity by 10% from 2016 baseline

Data Needed to Monitor

- Wastewater energy usage data

Equity Considerations

- Promote incentive programs (e.g., multifamily, low-income)

Co-Benefits

- Improved public health

MEASURE W-2: Water System Improvements

EXISTING

Improving CMWD's potable and recycled water systems can increase energy efficiency and strengthen the reliability of local water supplies to meet community needs. As climate change continues to impact the availability of water, utilizing existing resources and identifying additional supply options is essential to water security. With Measure W-2, CMWD plans to explore more water reuse. As of now, the San Diego County Water Authority (SDCWA) supplies 100% of the potable water used by CMWD (CMWD 2021). Water sourced by the SDCWA is energy intensive because it is being imported from across the state. By expanding local water sources and using renewable energy to power water systems, the city can reduce its GHG emissions.

Implementation Actions

Primary

- **Action W-2.a**: Continue making improvements to CMWD's potable and recycled water systems, including but not limited to expanding water reuse and using renewable energy to power facilities.

Supportive

- **Action W-2.b**: Continue to explore local water supply options and assess feasibility and cost to benefit ratio.
- **Action W-2.c**: Assess feasibility and seek funding for renewable energy and/or storage at CMWD facilities.

GHG Reductions

- 2035: 1,516 $MTCO_2e$
- 2045: 1,583 $MTCO_2e$

Implementation Details

- Timing: Ongoing
- Lead Department: Utilities

Monitoring Benchmarks

- By 2025: Supply recycled water pump stations with 100% renewable/carbon free electricity from Clean Energy Alliance
- By 2035: Achieve the active and passive water conservation goals described in the Urban Water Management Plan (2020)
  - 2,295 acre feet (AF) within CMWD service area and 2,981 AF within the entire city

Data Needed to Monitor

- Water energy usage data

Equity Considerations

- Promote rebate and incentive programs (e.g., multi-family, low-income)

Co-Benefits

- Improved water quality

Energy

ENERGY MEASURES

Addressing GHG emissions from energy use is a crucial component of reaching the city's GHG reduction targets. Per the city's GHG emissions inventory, a collective 41 percent of the city's emissions are from electricity and natural gas use—about 27 and 14 percent respectively. Addressing these emissions through building decarbonization, transitioning to renewable electricity, reducing reliance on natural gas, and improving energy efficiency, among other related efforts, will help to further promote sustainability within the city. These efforts are reflected in the following measures under the Energy strategy: E-1) Renewable Electricity at Municipal Facilities, E-2) Community Choice Energy, E-3) Nonresidential Building Energy, E-4) Residential Building Energy, E-5) Building Energy Benchmarking, and E-6) Decarbonize Existing Buildings. These measures and their respective actions are described further below.

MEASURE E-1: Renewable Electricity at Municipal Facilities

EXPANDED

Measure E-1 pertains to the actions the city will take to ensure its buildings and facilities are powered by renewable electricity. The city aims to demonstrate its commitment to climate action by taking steps to reduce its own contribution to GHG emissions through the eventual elimination of natural gas use at its facilities, where feasible, and increasing the percentage of renewables used in its electricity supply to 100%.

Implementation Actions

Primary

- **Action E-1.a**: Increase percentage of renewable electricity purchased for existing city facilities and street and safety lighting to 100%.
- **Action E-1.b**: Have 100% renewable electricity be the default for new city facilities and street and safety lighting.
- **Action E-1.c**: Eliminate natural gas use at city facilities, where feasible.

Supportive

- **Action E-1.d**: Coordinate with the city's energy suppliers on the purchase of 100% renewable electricity (e.g., "Green Impact" level from Clean Energy Alliance).
- **Action E-1.e**: Continue certifying city facilities in the Carlsbad Green Business Program.
- **Action E-1.f**: Conduct analysis to determine best practices and technologies for eliminating natural gas use at city facilities.
- **Action E-1.g**: Leverage local and regional partnerships and seek funding to support identified renewable electricity upgrades and elimination of natural gas use at city facilities.
- **Action E-1.h**: Upgrade all street and safety lighting to more energy efficient options.

GHG Reductions

- 2035: 751 $MTCO_2e$
- 2045: 1,306 $MTCO_2e$

Implementation Details

- Timing: Long-term
- Lead Department: Intergovernmental Affairs
- Supporting Departments: Finance; Fleet & Facilities

Monitoring Benchmarks

- By 2025: Increase percentage of renewable electricity purchased for existing city facilities and street and safety lighting to 100%.
- By 2025: Have 100% renewable electricity be the default for new city facilities.
- By 2035: Upgrade all street and safety lighting to more energy efficient options.
- By 2045: Eliminate natural gas use at city facilities, where feasible.

Data Needed to Monitor

- Number of city facilities on 100% renewable electricity
- Number of street and safety lights on 100% renewable electricity
- Energy usage data for city facilities and street and safety lighting
- Natural gas usage data for city facilities
- Number of city facilities where natural gas use is eliminated

Equity Considerations

- Establish additional city facilities as "cool zones" using social, economic, and environmental data
- Support high-road green job growth

Co-Benefits

- Reduced energy usage

MEASURE E-2: Community Choice Energy

EXPANDED

Increasing access to renewable energy provides community members with an opportunity to reduce their own carbon emissions and support the city's GHG reduction targets. The city encourages the utilization of renewable energy through its Community Choice Energy program, the Clean Energy Alliance. Measure E-2 continues to support this program. The Clean Energy Alliance is an alternative to San Diego Gas & Electric, allowing customers to choose where their power comes from. The Clean Energy Alliance generates electricity through a variety of GHG-free resources, largely via utility-scale solar but also on- and off-shore wind and geothermal. Sourcing renewable energy from local providers increases the resiliency of energy infrastructure, in addition to reducing GHG emissions. The city can set the default amount of renewable energy that electricity customers in Carlsbad receive, and increasing the default to 100% renewable electricity can significantly reduce GHG emissions on an accelerated timeline.

Implementation Actions

Primary

- **Action E-2.a**: Continue the participation in the Clean Energy Alliance (CEA) Community Choice Energy program.
- **Action E-2.b:** Set 100% renewable electricity (e.g., CEA's "Green Impact") as the default option for CEA customers within the city.

Supportive

- **Action E-2.c:** Explore the purchase of renewable energy credits if CEA is not reaching its 2035 goal.
- **Action E-2.d**: Support promotion of CEA's customer programs and encourage CEA customers to participate.

GHG Reductions

- 2035: 17,110 $MTCO_2e$
- 2045: 0 $MTCO_2e$

Implementation Details

- Timing: Ongoing
- Lead Department: Intergovernmental Affairs
- Supporting Departments: Communications, Environmental Sustainability

Monitoring Benchmarks

- By 2030: Set 100% renewable electricity (e.g., "Green Impact") as the default option for CEA customers within the city.
- By 2035: Explore purchase of renewable energy credits if CEA is not reaching its 2035 goal.

Data Needed to Monitor

- CEA participation rates
- Number of CEA customers at 100% renewable electricity ("Green Impact")
- Number of CEA customers below 100% renewable electricity

Equity Considerations

- Promote CEA's customer programs

Co-Benefits

- Reduced energy usage

MEASURE E-3.1: Nonresidential Building Energy – Existing Reach Code

EXISTING

One way cities can influence energy use in buildings is through amendments to energy building codes, also known as "reach codes". In 2019, Carlsbad was one of the first cities in California to adopt a reach code that focused on requiring solar photovoltaic (PV) and other energy efficiency measures for new and existing nonresidential buildings. The core of this reach code is to help the city reduce GHG emissions from nonresidential buildings, while helping businesses improve energy efficiency and reduce long-term energy costs. Measure E-3.1 aims to continue the implementation and enforcement of this reach code for nonresidential buildings, so long as updates to the California Green Building Code do not supersede its requirements.

Implementation Actions

Primary

- **Action E-3.1.a**: Continue implementing existing building energy efficiency and water heater ordinances (adopted in 2019).

Supportive

- **Action E-3.1.b**: Analyze feasibility of eligible sites for renewable energy infrastructure across all city facilities, leveraging any pre-existing analyses that are applicable.
- **Action E-3.1.c**: Seek grant funding for installation of renewable energy infrastructure at existing and new city facilities (e.g., solar, battery storage, microgrids).

GHG Reductions

- 2035: 770 $MTCO_2e$
- 2045: 1,296 $MTCO_2e$

Implementation Details

- Timing: Ongoing
- Lead Departments: Community Development; Fleet & Facilities
- Supporting Department: Intergovernmental Affairs

Monitoring Benchmark

- By 2030: Analyze feasibility of eligible sites for renewable energy infrastructure across all city facilities, leveraging any pre-existing analyses that are applicable.

Data Needed to Monitor

- Size of renewable energy projects installed at city facilities
- Energy usage of renewable energy projects installed at city facilities
- Building permit data applicable to reach code implementation (e.g., number of permits, sq. ft. of building, number of water heaters installed)

Equity Considerations

- Support high-road green job growth

Co-Benefits

- Reduced energy usage

MEASURE E-3.2: Nonresidential Building Energy – Updated Reach Code

EXPANDED

In addition to the existing reach code, Measure E-3.2 includes updated reach codes for nonresidential buildings. The construction of new buildings presents a significant opportunity to implement measures that will reduce GHG emissions from buildings for their entire useful life. These ordinances will require eligible nonresidential buildings meet updated energy performance requirements that are approved by the state. This will reduce GHG emissions from energy use within these buildings.

Implementation Actions

Primary

- **Action E-3.2.a**: Update city's building code, or "reach code," to include updated energy performance-based requirements for new nonresidential buildings.

Supportive

- **Action E-3.2.b**: Leverage CEA and SDG&E customer programs, or other similar programs.
- **Action E-3.2.c**: Explore pilot programs and incentives to educate businesses on energy efficiency and renewable energy options for new and existing buildings.

GHG Reductions

- 2035: 2,773 $MTCO_2e$
- 2045: 5,796 $MTCO_2e$

Implementation Details

- Timing: Short-term
- Lead Department: Community Development
- Supporting Departments: Communications; Environmental Sustainability

Monitoring Benchmarks

- By 2025: Update city's building code, or "reach code", to include updated energy performance-based requirements for new nonresidential building

Data Needed to Monitor

- Building permit data applicable to reach code implementation (e.g., number of permits, sq. ft. of building)

Equity Considerations

- Support high-road green job growth

Co-Benefits

- Reduced energy usage

MEASURE E-3.3: Nonresidential Building Energy–Solar Carports

NEW

Nonresidential buildings may use energy, but they can also be a source of energy. Due to Carlsbad's geographic location, solar is a readily available renewable energy resource. Carports and parking lots can be adapted to make this passive source of energy available for electric vehicle charging and providing building energy. Measure E-3.3 focuses on the installation of solar carports at city-owned parking lots.

Implementation Actions

Primary

- **Action E-3.3.a:** Construct solar carports (also known as installing solar panels over outdoor parking spaces) at eligible city-owned parking lots.

Supportive

- **Action E-3.3.b:** Conduct feasibility study for solar carport installation at city facilities to determine which are eligible and for what size of system. *(Note: at the time the CAP Update was published, the feasibility study was not underway. Therefore, GHG Reductions, Monitoring Benchmarks, and Data Needed to Monitor have not been assigned. These sections would be updated as appropriate following the completion of this analysis.)*
- **Action E-3.3.c:** Seek grant funding and leverage partnerships to install solar carports.

GHG Reductions

- 2035: Not quantified
- 2045: Not quantified

Implementation Details

- Timing: Medium-term
- Lead Department: Transportation
- Supporting Departments: Community Development; Environmental Sustainability; Intergovernmental Affairs

Monitoring Benchmarks

- By 2030: Conduct feasibility study for solar carport installation at city facilities to determine which are eligible and for what size of system, leveraging any pre-existing analyses that are applicable.

Data Needed to Monitor

- Number of solar carports installed at city-owned parking lots
- Size of solar carport systems installed at city-owned parking lots
- Energy usage of solar carports installed at city-owned parking lots

Equity Considerations

- Support high-road green job growth

Co-Benefits

- Reduced energy use

MEASURE E-4.1: Residential Building Energy - Existing Reach Code

EXISTING

Residential building energy use represents the largest portion of the city's electricity emissions. Measure E-4.1 is similar to Measure E-3.1 in that reach codes can be used to facilitate the transition of building energy usage to renewable sources and improve energy efficiency. Increasing the energy efficiency of residential buildings will not only lead to a reduction in emissions, it can help decrease the energy burden on households. Measure E-4.1 aims to continue the implementation and enforcement of the city's existing reach code for residential buildings, so long as updates to the California Green Building Code do not supersede its requirements.

Implementation Actions

Primary

- **Action E-4.1.a:** Continue implementing existing building energy efficiency and water heater ordinances (adopted in 2019).

Supportive

- **Action E-4.1.b:** Explore updating the Home Energy Score Assessment Pilot Program.
- **Action E-4.1.c:** Leverage CEA and SDG&E customer programs, or other similar programs.
- **Action E-4.1.d:** Explore pilot programs and incentives to educate residents on energy efficiency and renewable energy options for new and existing buildings.

GHG Reductions

- 2035: 3,212 $MTCO_2e$
- 2045: 3,710 $MTCO_2e$

Implementation Details

- Timing: Ongoing
- Lead Department: Community Development
- Supporting Department: Communications; Environmental Sustainability

Monitoring Benchmarks

- No benchmarks identified

Data Needed to Monitor

- Building permit data applicable to reach code implementation (e.g., number of permits, sq. ft. of building, number of water heaters installed)

Equity Considerations

- Explore new phase for Home Energy Score Assessment Pilot Program to provide free scores to low-income, multi-family, seniors, etc.
- Support high-road green job growth
- Offer pilot programs and incentives that target low-income, multi-family, seniors, etc.

Co-Benefits

- Reduced energy usage

MEASURE E-4.2: Residential Building Energy – Updated Reach Code

EXPANDED

By 2045, Carlsbad will have an estimated additional 7,000 housing units that will require access to energy. Similar to Measure E-3.2, Measure E-4.2 updates the city's current reach codes to require that new residential buildings meet updated energy performance requirements as approved by the state. In addition to reducing GHG emissions, updated reach codes could save homeowners money by providing on-bill energy savings to building occupants.

Implementation Actions

Primary

- **Action E-4.2.a:** Update city's building code, or "reach code," to include updated energy performance-based requirements for new residential buildings.

Supportive

- **Action E-4.2.b:** Leverage CEA and SDG&E customer programs, or other similar programs.
- **Action E-4.2.c:** Explore pilot programs and incentives to educate residents on energy efficiency and renewable energy options for new and existing buildings.

GHG Reductions

- 2035: 1,196 $MTCO_2e$
- 2045: 1,488 $MTCO_2e$

Implementation Details

- Timing: Short-term
- Lead Department: Community Development
- Supporting Department: Communications; Environmental Sustainability

Monitoring Benchmarks

- By 2025: Update city's building code, or "reach code", to include updated energy performance-based requirements for new residential buildings

Data Needed to Monitor

- Building permit data applicable to reach code implementation (e.g., number of permits, sq. ft. of building)

Equity Considerations

- Support high-road green job growth
- Offer pilot programs and incentives that target low-income, multi-family, seniors, etc.

Co-Benefits

- Reduced energy usage

MEASURE E-5: Building Energy Benchmarking

NEW

Measure E-5 is focused on developing and implementing a citywide building energy benchmarking program. Benchmarking is a way to assess building performance by looking at energy use data. Building energy use data can help inform building owner decisions, including making cost-effective upgrades and improving energy efficiency. This data can also foster accountability; as energy consumption levels are made known, building owners have the opportunity to reduce their emissions by upgrading equipment or reducing overall energy consumption.

Implementation Actions

Primary

- **Action E-5.a:** Develop, adopt, and implement a building energy benchmarking ordinance.

Supportive

- **Action E-5.b:** Prepare a building stock analysis.
- **Action E-5.c:** Explore options and best practices for requiring existing commercial and residential buildings of a certain size to submit energy data annually.
- **Action E-5.d:** Conduct education and outreach to building owners and the public regarding new requirements.

GHG Reductions

- 2035: 4,308 $MTCO_2e$
- 2045: 7,358 $MTCO_2e$

Implementation Details

- Timing: Medium-term
- Lead Department: Environmental Sustainability
- Supporting Department: Communications

Monitoring Benchmarks

- By 2030: Prepare a building stock analysis.
- By 2030: Explore options and best practices for requiring commercial and residential buildings of a certain size to submit energy data annually.
- By 2035: Conduct education and outreach to building owners and the public regarding new requirements.
- By 2035: Adopt ordinance.

Data Needed to Monitor

- Number of buildings within ordinance requirements
- Square footage of buildings within ordinance requirements
- Energy benchmarking data submitted by buildings within ordinance requirement

Equity Considerations

- Design program to be "equity first," leveraging existing resources from other jurisdictions (e.g., City of Seattle, City of Denver, City of Minneapolis)

Co-Benefits

- Reduced energy usage

MEASURE E-6: Decarbonize Existing Buildings

NEW

With implementation of the GHG reductions measures that rely on reach codes to reduce energy consumption and emissions from buildings, there are still likely to be existing residential buildings that are not effected by the reach codes and need to be targeted for decarbonization. The city will need to leverage existing programs and incentives, as well as develop creative and data-informed strategies to affect emissions from remaining buildings and reach decarbonization goals. Measure E-6 targets energy efficiency and electrification in existing residential buildings that are not affected by reach codes or other energy focused GHG reduction measures.

Implementation Actions

Primary

- **Action E-6.a:** Reduce energy usage and decarbonize existing residential buildings, particularly existing residential buildings not covered by any reach code requirements.

Supportive

- **Action E-6.b:** Explore updating the Home Energy Score Assessment Pilot Program.
- **Action E-6.c:** Leverage CEA and SDG&E customer programs, or other similar programs.
- **Action E-6.d:** Seek external funding to launch and/or leverage existing pilot programs and incentives to support existing building decarbonization (e.g., appliance exchange, weatherization, solar PV installation, battery storage).
- **Action E-6.e:** Leverage building stock analysis (prepared for E-5) to target existing residential buildings.

GHG Reductions

- 2035: 22,356 $MTCO_2e$
- 2045: 44,305 $MTCO_2e$

Implementation Details

- Timing: Long-term
- Lead Department: Environmental Sustainability
- Supporting Department: Communications; Community Development

Monitoring Metrics

- By 2030: Leverage building stock analysis (prepared for E-5) to target existing residential buildings.
- By 2045: Reduce 33% of the 2016 baseline natural gas use in existing residential buildings
  - Equivalent to electrifying 12,000 homes, or approximately 25% of housing units

Data Needed to Monitor

- Number of homes participating in pilot and incentive programs
- Number of homes electrified (fully or partially)
- Residential natural gas usage data

Equity Considerations

- Target outreach and incentives for multi-family, low-income, seniors, etc.
- Explore new phase for Home Energy Score Assessment Pilot Program to provide free scores to low-income, multi-family, seniors, etc.

Co-Benefits

- Reduced energy use
- Improved air quality
- Improved public health
- Increased local green jobs

Waste Diversion

WD-1. Solid and Organic Waste Diversion

WASTE DIVERSION MEASURES

Solid and Organic Waste Diversion is a key focus area for GHG emissions reductions within the Waste Diversion sector, which represents 4% of total emissions in 2016. In Carlsbad, solid and organic waste is collected by Republic Services and delivered to the Palomar Transfer Station and Materials Recovery to end up in landfills throughout Southern California. Waste can be compromised of various components; the two largest contributors to waste in Carlsbad are organics and paper, which make up 57% and 13% of the waste stream, respectively. Preventing solid and organic waste from reaching the landfill can reduce GHG emissions, and providing options to appropriately dispose of this waste can encourage more sustainable decision making. Directing waste to be reused, recycled, or composted extends the life of salvageable materials and allows for the cycling of nutrients as opposed to the release of emissions. The Waste Diversion strategy details how the city can reduce its waste emissions under its measure WD-1) Solid and Organic Waste Diversion, which is described in further detail below.

How various types of waste are disposed has important GHG emissions implications. Organic waste can greatly contribute to methane emissions if disposed in a landfill, with methane being a much stronger climate pollutant than carbon dioxide. Food waste alone represents 23% percent of waste in Carlsbad, and reducing this amount of organic waste that is disposed can greatly reduce emissions associated with landfills. Waste can originate from many sources and requires a comprehensive management system including hauling, recovery, and disposal. Measure WD-1 includes strategies to continue to increase the diversion of waste from landfills.

Implementation Actions

Primary

- **Action WD-1.a:** Divert 75% solid waste by 2035 and 90% by 2045.
- **Action WD-1.b:** Divert 75% organic waste by 2035 and 90% by 2045.

Supportive

- **Action WD-1.c:** Research ordinance for requirement of a percentage of disposal for organic waste.
- **Action WD-1.d:** Encourage maximum organics diversion from local businesses.
- **Action WD-1.e:** Establish a Construction & Demolition diversion program.
- **Action WD-1.f:** Maximize edible food recovery.
- **Action WD-1.g:** Establish a program for permitted haulers for proper diversion of all waste streams.
- **Action WD-1.h:** Continue implementing existing Sustainable Materials Management systems and ordinances citywide, including at city facilities and events.

- **Action WD-1.i:** Continue implementing existing compost and mulch giveaway programs; explore launching new giveaway programs that target specific users.
- **Action WD-1.j:** Update the city's sustainable purchasing policy to include regulatory requirements for sustainable procurement.
- **Action WD-1.k:** Pursue vendor contracts to help implement diversion goals and monitor compliance.

GHG Reductions

- 2035: 31,776 $MTCO_2e$
- 2045: 37,040 $MTCO_2e$

Implementation Details

- Timing: Ongoing
- Lead Department: Environmental Sustainability
- Supporting Department: Communications

Monitoring Benchmarks

- By 2025: Update the city's sustainable purchasing policy to include regulatory requirements for sustainable procurement.
- By 2030: Establish a Construction & Demolition diversion program.
- By 2030: Establish a program for permitted haulers for proper diversion of all waste streams.
- By 2030: Research ordinance for requirement of a percentage of disposal for organic waste.
- By 2035: Divert 75% of solid and organic waste.
- By 2045: Divert 90% of solid and organic waste.

Data Needed to Monitor

- Disposal of solid waste
- Disposal of organic waste
- Tons of edible food recovered

Equity Considerations

- Promote incentive and rebate programs for multi-family, low-income, seniors, etc.

Co-Benefits

- Reduced waste
- Increased local green jobs

Transportation

T-1. Traffic Calming & Optimization

T-2. Transportation Demand Management Program

T-3. Safe Routes to School

T-4. Bikeway System Improvements

T-5. Pedestrian System Improvements

T-6. Local Transportation Improvements

T-7. Municipal Transportation Demand Management

T-8. Increase Public Zero Emission Infrastructure

T-9. Zero Emission City Fleet

T-10. Parking Management Strategies

TRANSPORTATION MEASURES

Transportation is a critical sector, as it is the largest source of Carlsbad's GHG emissions. These emissions are measured by vehicle miles traveled (VMT), with over 3 million VMT generated per weekday in Carlsbad from travel by residents, workers, and visitors. These vehicle trips can be reduced with investments in alternative transportation and by transitioning to zero emission vehicles. The investment in alternative modes of transportation not only results in GHG reductions, it also contributes to the safety of roadways and improves connectivity across the city. The transition to renewable fuels and zero emission vehicles (ZEVs) is also crucial to ensure a greater portion of trips in Carlsbad are emission-free. The Transportation strategy includes ten GHG reduction measures, including: T-1) Traffic Calming & Optimization, T-2) Transportation Demand Management Ordinance, T-3) Safe Routes to School, T-4) Bikeway System Improvements, T-5) Pedestrian System Improvements, T-6) Local Transportation Improvements, T-7) Municipal Transportation Demand Management, T-8) Increase Public Zero Emission Infrastructure, T-9) Zero Emission City Fleet, and T-10) Parking Management Strategies. These measures and their respective actions are described further below.

MEASURE T-1: Traffic Calming & Optimization

EXISTING

GHG emissions from on-road vehicle travel can be exacerbated by congestion and frequent traffic stops and starts. Measure T-1 aims to reduce congestion that contributes to GHG emissions through traffic calming and optimization. The goal of traffic calming is to improve the safety of roadways by slowing or redirecting vehicle traffic. In residential areas, traffic can be attributed to the continuous stop-and-go of vehicles at stop signs. Reducing the speed of vehicles without stopping vehicle traffic through features such as roundabouts can result in reduced emissions, as cars spend less time idling and have less rapid acceleration and deceleration.

Implementation Actions

Primary

- **Action T-1.a:** Continue optimizing traffic signals within the city, adjusting as needed as traffic volumes and conditions change, and coordinating along major corridors.
- **Action T-1.b:** Install roundabouts or traffic circles when feasible, utilizing the city's engineering standard for intersection control.

Supportive

- **Action T-1.c:** Leverage the Sustainable Mobility Plan and Intersection Control Evaluation engineering standards to determine the location of new roundabouts and traffic circles.

GHG Reductions

- 2035: 1,334 $MTCO_2e$
- 2045: 746 $MTCO_2e$

Implementation Details

- Timing: Ongoing
- Lead Department: Transportation

Monitoring Benchmarks

- By 2035: Optimize traffic signals at 20 intersections.
- By 2035: Install 10 roundabouts or traffic circles.

Data Needed to Monitor

- Number of traffic signals optimized
- Number of roundabouts or traffic circles installed

Equity Considerations

- Layer social, economic, and environmental data to assess where traffic improvements go.

Co-Benefits

- Improved air quality
- Reduced traffic congestion
- Improved public health

MEASURE T-2: Transportation Demand Management Program

EXPANDED

Measure T-2 covers continued implementation of and updates to the city's Transportation Demand Management (TDM) program, a major component of which is an ordinance. The TDM ordinance, adopted in 2019, regulates nonresidential developments that are anticipated to generate over 110 average daily employee trips. These developments are required to submit TDM plans that outline strategies to reduce vehicle daily trips by employees through incentives for alternative modes of travel. Continued use and improvement of the TDM ordinance will ensure the development of nonresidential land uses provide alternatives to use of single-occupancy vehicles for commuting and contribute to reducing citywide VMT.

Implementation Actions

Primary

- **Action T-2.a:** Continue implementing existing TDM program and enforcing existing TDM ordinance (adopted 2019), mandating TDM improvements and strategies for non-residential development.
- **Action T-2.b:** Update TDM ordinance to modify existing threshold for compliance (e.g., reducing average daily trips threshold) as well as streamlining of other reporting requirements, as appropriate, by 2045.

Supportive

- **Action T-2.c:** Continue surveying businesses, pursuant to the TDM ordinance, to monitor implementation and track compliance.
- **Action T-2.d:** Update TDM strategies in the TDM program as new technology emerges.
- **Action T-2.e:** Leverage Carlsbad Commuter and other city channels to educate commuters on alternative commute choices and resources available.

GHG Reductions

- 2035: 3,254 $MTCO_2e$
- 2045: 8,630 $MTCO_2e$

Implementation Details

- Timing: Ongoing
- Lead Departments: Community Development; Transportation
- Supporting Departments: Communications; Economic Development

Monitoring Benchmark

- By 2035: Continue implementing and enforcing the existing TDM ordinance.
  - 40% alternative mode share for new development
  - 30% alternative mode share for existing development
- By 2045: Update TDM ordinance to modify existing threshold for compliance (e.g., reducing Average Daily Trips threshold), as well as streamlining of other reporting requirements, as appropriate.

Data Needed to Monitor

- Annual TDM ordinance surveys and mode shift data
- Number of businesses covered by the TDM ordinance
- Number of employees covered by the TDM ordinance

Equity Considerations

- Explore creating incentives for implementing TDM plan strategies for community-based organizations

Co-Benefits

- Improved air quality
- Reduced traffic congestion
- Improved public health

MEASURE T-3: Safe Routes to School

EXISTING

Improving the safety of streets, especially around schools, prioritizes the ability for residents to choose active forms of transportation over vehicle travel when traveling to and from school. Measure T-3 focuses on the Safe Routes to School program which will continue to be implemented. It includes strategies such as walk audits, carpool programs, creating conceptual improvement maps, parent surveys and working with the school districts to improve drop-off and pick-off operations and parent surveys.

Implementation Actions

Primary

- **Action T-3.a:** Continue implementing a Safe Routes to School program to encourage walking and biking to school.

Supportive

- **Action T-3.b:** Leverage the city's Sustainable Mobility Plan to determine location-specific improvements.
- **Action T-3.c:** Seek funding to launch Safe Routes to Schools programs at additional school sites.
- **Action T-3.d:** Leverage the Sustainable Mobility Plan to conduct Safe Routes to School-related education and outreach activities at schools throughout the city.

GHG Reductions

- 2035: 70 $MTCO_2e$
- 2045: 39 $MTCO_2e$

Monitoring Benchmarks

- No benchmarks identified

Equity Considerations

- Layer social, economic, and environmental data to assess where improvements go

Implementation Details

- Timing: Ongoing
- Lead Department: Transportation
- Supporting Department: Communications

Data Needed to Monitor

- Mode share counts at participating schools
- Active Transportation Monitoring Report data

Co-Benefits

- Reduced traffic congestion
- Improved public safety
- Improved public health
- Improved air quality
- Improved access to low-cost transportation options

MEASURE T-4: Bikeway System Improvements

EXISTING

In the *Carlsbad Sustainable Mobility Plan*, the city calls attention to the need for bicycle system improvements, including more bike parking and safety features (City of Carlsbad 2020). In development of the *Sustainable Mobility Plan,* Carlsbad residents expressed that bikeway safety concerns and limited accessibility reduce the desire to use bicycling as a primary mode of transportation. Measure T-4 aims to address these concerns by expanding bicycle infrastructure to make biking a more safe and accessible mode of transportation.

Implementation Actions

Primary

- **Action T-4.a:** Construct 7.9 added miles of Class I multi-use bike paths.
- **Action T-4.b:** Improve 61.2 miles of Class II bike lanes to Class II buffered bike lanes.
- **Action T-4.c:** Continue other bikeway system improvements, as available.

Supportive

- **Action T-4.d:** Leverage the city's Sustainable Mobility Plan to determine location of bikeway system improvements and secure bike parking and/or storage.
- **Action T-4.e:** Explore launch of a local on-demand microtransit program, such as the City of Oceanside's program.
- **Action T-4.f:** Evaluate the city's Supportive Bicycle Infrastructure, such as adding new bicycle parking at highly used coastal destinations, bike repair stations, and additional bike-related amenities.

GHG Reductions

- 2035: 566 $MTCO_2e$
- 2045: 324 $MTCO_2e$

Implementation Details

- Timing: Ongoing
- Lead Department: Transportation

Monitoring Benchmarks

- By 2030: Evaluate the city's Supportive Bicycle Infrastructure
- By 2030: Improve 40 miles of Class II bike lanes to buffered Class II bike lanes
- By 2030: Construct 2 miles of Class-I multi-use bike paths.
- By 2035: Improve 10 miles of Class II bike lanes to buffered Class II bike lanes, for a total of 50 miles improved
- By 2040: Improve 5 miles of Class II bike lanes to buffered Class II bike lanes, for total of 55 miles improved
- By 2040: Construct 2 miles of Class-I multi-use bike paths , for total of 4 miles added
- By 2045: Improve remaining miles of Class II bike lanes to buffered Class II bike lanes, for a total of 61.2 miles improved
- By 2045: Construct remaining miles of added bike lanes, for a total of 7.9 miles added.

Data Needed to Monitor

- Miles of bike lanes added by Class
- Miles of bike lanes improved by Class
- Total miles of bike lanes by Class

Equity Considerations

- Layer social, economic, and environmental data to assess where improvements go

Co-Benefits

- Enhanced safety
- Reduced traffic congestion
- Improved access to low-cost transportation options
- Improved public health
- Improved air quality
- Enhanced community character

MEASURE T-5: Pedestrian System Improvements

EXISTING

Automobile use is the largest contributor to GHG emissions, largely because roads prioritize the movement of cars instead of pedestrians. Measure T-5 aims to improve pedestrian safety and mobility by adding approximately six miles of sidewalk to existing infrastructure. Increasing the connectivity of sidewalk networks, particularly in areas highly frequented by the community, can encourage walking as a preferable mode of transport.

Implementation Actions

Primary

- **Action T-5.a:** Add 6.1 miles of sidewalk.

Supportive

- **Action T-5.b:** Utilize the city's Sustainable Mobility Plan to identify suitable locations for pedestrian system improvements, focusing on creating safer and more user-friendly infrastructure to facilitate ease of use for pedestrians.

GHG Reductions

- 2035: 55 $MTCO_2e$
- 2045: 31 $MTCO_2e$

Implementation Details

- Timing: Ongoing
- Lead Department: Transportation

Monitoring Benchmarks

- By 2030: Add 1.5 miles of sidewalk
- By 2035: Add 1.5 miles of sidewalk, for a total of 3 miles added
- By 2040: Add 1.5 miles of sidewalk, for a total of 4.5 miles added
- By 2045: Add remaining miles of sidewalk , for a total of 6.1 miles added

Data Needed to Monitor

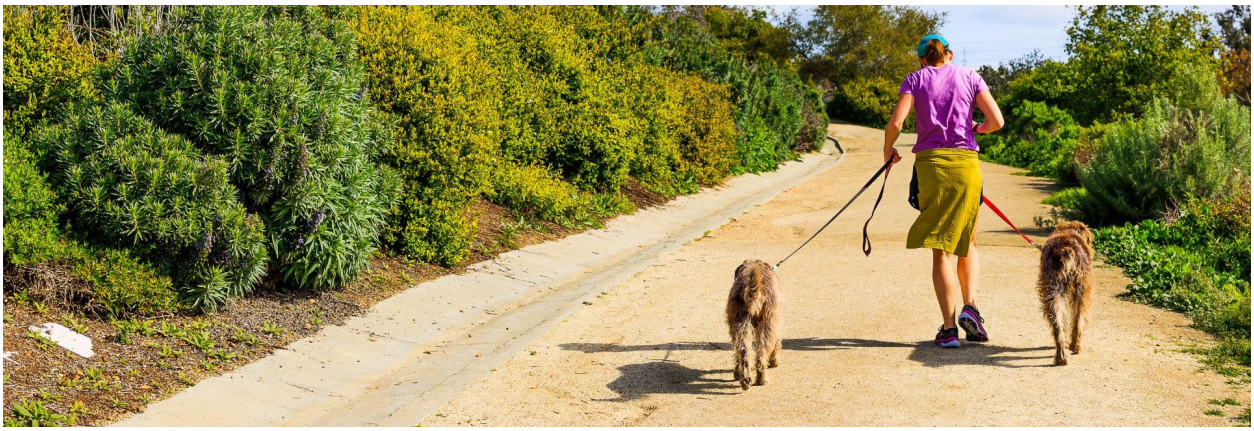
- Miles of sidewalk installed
- Total miles of sidewalk

Equity Considerations

- Layer social, economic, and environmental data to assess where improvements go

Co-Benefits

- Enhanced safety
- Improved public health
- Reduced traffic congestion
- Improved access to low-cost transportation options
- Enhanced community character
- Improved air quality



MEASURE T-6: Local Transportation Improvements

EXPANDED

The type of transportation people choose is largely due to ease of access. Local transportation is often underutilized due to lack of accessibility. By improving and expanding existing local transportation, Measure T-6 pushes for a shift toward more sustainable transportation modes. The addition of transit stops or micromobility services can influence individual decisions, such as choosing to ride a bus instead of a car. Thus, investing in local transportation can help reduce single-occupancy vehicle ridership and subsequent GHG emissions. Providing individuals with a convenient, safe, and accessible methods of transportation as a desirable alternative to driving also reduces vehicular traffic.

Implementation Actions

Primary

- **Action T-6.a:** Explore local transportation improvements to provide sustainable on-demand, flexible fleet transit and first-mile last-mile solutions.
- **Action T-6.b:** Leverage the Multimodal Transportation Impact Fee for implementation of local transportation improvements. *(Note: at the time the CAP Update was published, the Multimodal Transportation Impact Fee was still under development. Therefore, GHG Reductions, Monitoring Benchmarks, and Data Needed to Monitor have not been assigned. These sections would be updated as appropriate following the completion of the Multimodal Transportation Impact Fee.)*

Supportive

- **Action T-6.c:** Leverage existing regional transportation plans (e.g., North County Comprehensive Multimodal Corridor Plan, SANDAG Regional Transportation Plan) to add or update improvements to the transportation system within Carlsbad.
- **Action T-6.d:** Coordinate with regional and local agencies and partners on influencing transportation improvements throughout the region and within Carlsbad.

GHG Reductions

- 2035: Not quantified
- 2045: Not quantified

Implementation Details

- Timing: Ongoing
- Lead Department: Transportation
- Supporting Department: Intergovernmental Affairs

Monitoring Benchmarks

- No benchmarks identified

Data Needed to Monitor

- No monitoring data identified

Equity Considerations

- Layer social, economic, and environmental data to assess where improvements go

Co-Benefits

- Improved public health
- Improved access to low-cost transportation options
- Improved community character
- Improved air quality

MEASURE T-7: Municipal Transportation Demand Management

EXISTING

The method city staff members use to commute has an impact on the city's municipal emissions. For example, if all staff were to drive their personal vehicles, the associated GHG emissions are significant. A municipal Transportation Demand Management program could facilitate cooperation between staff to collectively reduce carbon emissions via incentives and resources.

Implementation Actions

Primary

- **Action T-7.a:** Continue implementing existing Transportation Demand Management programs for eligible city staff.

Supportive

- **Action T-7.b:** Explore establishing new Transportation Demand Management programs for city staff, resulting in Transportation Demand Management plans for city facilities.

GHG Reductions

- 2035: 92 $MTCO_2e$
- 2045: 51 $MTCO_2e$

Implementation Details

- Timing: Ongoing
- Lead Department: Transportation
- Supporting Departments: Communications; Human Resources

Monitoring Benchmarks

- No benchmarks identified

Data Needed to Monitor

- Staff TDM participation rates by program
- Staff commute distance
- Staff commute mode share data

Equity Considerations

- Not applicable

Co-Benefits

- Improved air quality
- Reduced traffic congestion
- Improved public health

MEASURE T-8: Increase Public Zero Emission Infrastructure

EXPANDED

Public zero emission infrastructure is an important aspect of planning for emissions reductions and making communities more connected. Ensuring that buildings and facilities offer zero emission vehicle and bike charging influences individual decision-making. People are more likely to use transportation that has supported infrastructure; for example, if a city has charging stations, people have more of an incentive to use a zero emission vehicle. The city intends to expand its public zero emission infrastructure by installing more charging stations.

Implementation Actions

Primary

- **Action T-8.a:** Increase the number of zero emission miles traveled within the city by installing and incentivizing public zero emission vehicle and bicycle infrastructure.

Supportive

- **Action T-8.b:** Seek external funding and/or partnerships for installation of zero emission vehicle and bicycle infrastructure (e.g., CEA customer programs).
- **Action T-8.c:** Explore creation of incentive programs for new construction and existing buildings to install zero emission vehicle and bicycle infrastructure beyond building code requirements.
- **Action T-8.d:** Continue education and outreach on zero emission vehicle options and rebates.
- **Action T-8.e:** Update existing Electric Vehicle Siting Plan to incorporate additional sites for zero emission vehicle and bicycle infrastructure, as well as new technologies, expanded zero emission vehicle types, and best practices.
- **Action T-8.f:** Explore employee purchase programs to encourage workplace charging for city staff.

GHG Reductions

- 2035: Supporting California Vehicle Efficiency Standards (Advanced Clean Cars II Regulation)
- 2045: Supporting California Vehicle Efficiency Standards (Advanced Clean Cars II Regulation)

Implementation Details

- Timing: Ongoing
- Lead Department: Transportation
- Supporting Departments: Communications; Environmental Sustainability

Monitoring Benchmarks

- By 2025: Update existing Electric Vehicle Siting Plan to incorporate additional sites for zero emission vehicle and bicycle infrastructure, as well as new technologies, expanded zero emission vehicle types, and best practices

Data Needed to Monitor

- Energy distributed from public zero emission chargers
- Number of zero emission vehicles purchased and licensed citywide
- Number of public zero emission charging stations installed

Equity Considerations

- Prioritize installation using social, economic, and environmental data
- Launch and/or promote incentive or rebate programs to install zero-emission charging infrastructure and/or purchase zero-emission vehicles

Co-Benefits

- Improved air quality

MEASURE T-9: Zero Emission City Fleet

EXPANDED

To demonstrate its commitment to zero emissions, the city will continue to electrify its fleet as part of Measure T-9. Transitioning away from fossil fuel-dependent vehicles reduces the city's GHG emissions and communicates its support of the CAP Update. The city can take immediate actions to install zero emission charging infrastructure and purchase technologies to sustain its fleet.

Implementation Actions

Primary

- **Action T-9.a:** Continue transition and expansion of the city's zero emission fleet.
- **Action T-9.b:** Install zero emission charging infrastructure to support fleet conversion and deployment needs.

Supportive

- **Action T-9.c:** Establish city fleet regulations for idling.
- **Action T-9.d:** Plan for fleet conversion and deployment, including updates to technology, legislation, and other best practices.
- **Action T-9.e:** Research technology options and purchase technology to sustain city fleet operations during emergencies.
- **Action T-9.f:** Transition all passenger fleet vehicle purchases after FY 2022-23 to be electric vehicles, with the exception of public safety vehicle purchases, which will be electric where feasible.
- **Action T-9.g:** Update city policies to encourage use of zero emission vehicles wherever feasible.

GHG Reductions

- 2035: 1,059 $MTCO_2e$
- 2045: 592 $MTCO_2e$

Implementation Details

- Timing: Ongoing
- Lead Department: Fleet & Facilities

Monitoring Benchmarks

- By 2025: Plan for fleet conversion and deployment, including updates to technology, legislation, and other best practices
- By 2030: Establish city fleet regulations for idling
- By 2030: Update city policies to encourage the use of zero emission vehicles wherever feasible

Data Needed to Monitor

- Number of zero emission fleet vehicles
- Amount of petroleum fuel used by fleet vehicles
- Number of zero emission charging stations for fleet vehicles
- Energy usage from city fleet zero emission charging stations

Equity Considerations

- Not applicable

Co-Benefits

- Improved air quality
- Improved public health

MEASURE T-10: Parking Management Strategies

EXISTING

One way the current transportation infrastructure supports the use of cars is through the provision of parking. Measure T-10 calls for the use of parking management strategies such as reducing short-term parking, time-limits on parking, and reducing or elimiating parking minimums in feasible locations while maintaing public access to the city's coastline.

Implementation Actions

Primary

- **Action T-10.a:** Reduce vehicle miles traveled per capita citywide through parking management strategies. (*Note: at the time the CAP Update was published, the update to the Carlsbad Village, Barrio, and Beach Area Parking Management Plan was under review. The extent of the revisions, if any, to the plan will depend on the findings of this analysis. Therefore, GHG Reductions, Monitoring Benchmarks, and Data Needed to Monitor have not been assigned. These sections would be updated as appropriate following the completion of the review of the Carlsbad Village, Barrio, and Beach Areas Parking Management Plan*.)

Supportive

- **Action T-10.b:** Implement and update city's parking management strategies (e.g., Carlsbad Village, Barrio, and Beach Areas Parking Management Plan, Village and Barrio Master Plan) to encourage alternative modes of transportation throughout the city.

GHG Reductions

- 2035: Not quantified
- 2045: Not quantified

Implementation Details

- Timing: Ongoing
- Lead Department: Transportation
- Supporting Department: Community Development

Monitoring Benchmarks

- No benchmarks identified

Data Needed to Monitor

- No monitoring data identified

Equity Considerations

- Layer social, economic, and environmental data to assess where improvements go

Co-Benefits

- Improved air quality
- Improved public health

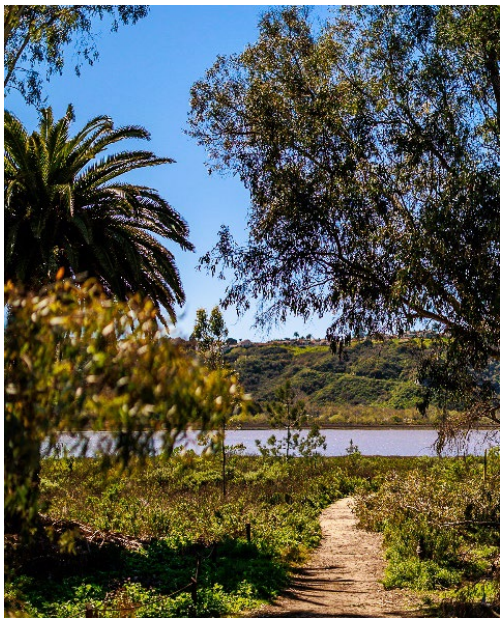
Off-Road Equipment

OR-1. Convert Gas-Powered Leaf Blowers

OR-2. Increase Renewable or Alternative Fuel Construction Equipment

OFF-ROAD EQUIPMENT MEASURES

Off-road emissions represent a variety of machinery and vehicle operations that currently utilize gasoline and diesel fuel. This includes, but is not limited to, construction equipment, generators, lawn equipment, and forklifts. Equipment powered by fossil fuels releases pollutants besides carbon dioxide that contribute to poor air quality and negative health impacts. By investing in alternatives to this equipment that use electricity or other fuel types, Carlsbad's off-road equipment emissions will be reduced. Less off-road emissions will also improve local air quality conditions and benefit public health. The Off-Road Equipment strategy includes two GHG reduction measures: OR-1) Convert Gas-Powered Leaf Blowers and OR-2) Increase Renewable or Alternative Fuel Construction Equipment. These measures and their respective actions are described further below.



MEASURE OR-1: Convert Gas-Powered Leaf Blowers

NEW

Prohibiting the use of gas-powered leaf blowers is an effective way to reduce GHG emissions. Gas-powered leaf blowers are notorious for their inefficient combustion of fuel, resulting in emissions that rival the combustion engines of vehicles. Gas-powered leaf blowers also emit toxic pollutants that can be harmful to human health and the ozone layer. Measure OR-1 supports alternatives to this equipment and eliminates a significant source of noise pollution.

Implementation Actions

Primary

- **Action OR-1.a:** Develop, adopt, and implement an ordinance prohibiting the use of gas-powered leaf blowers.

Supportive

- **Action OR-1.b:** Leverage existing state and regional resources to promote trade-in of existing gas-powered leaf blowers or other similar incentives.
- **Action OR-1.c:** Conduct outreach regarding the new requirements.

GHG Reductions

- 2035: 396 $MTCO_2e$
- 2045: 386 $MTCO_2e$

Implementation Details

- Timing: Medium-term
- Lead Department: Environmental Sustainability
- Supporting Departments: Communications; Community Development; Finance; Police

Monitoring Benchmarks

- By 2030: Develop, adopt, and implement an ordinance prohibiting the use of gas-powered leaf blowers
- By 2035: Reduce 100% emissions from gas-powered leaf blowers

Data Needed to Monitor

- Data related to ordinance implementation and enforcement
- Number of gas-powered leaf blowers converted within city equipment

Equity Considerations

- Launch and/or promote incentive program for trading out leaf-blowers

Co-Benefits

- Improved public health
- Improved air quality

MEASURE OR-2: Increase Renewable or Alternative Fuel Construction Equipment

NEW

Construction equipment is essential to the development of infrastructure and depends on a variety of medium- and heavy-duty equipment. Construction equipment accounts for over half of the city's off-road emissions. As construction is such an integral part of public and private projects, it is important to reduce its associated emissions. Measure OR-2 includes strategies for increasing the use of renewable and alternative fuel construction equipment.

Implementation Actions

Primary

- **Action OR-2.a:** Develop, adopt, and implement an ordinance requiring new developments and significant land-moving and construction projects to use electric-powered or alternatively-fueled construction equipment that reduces 50% of emissions from project construction activities.

Supportive

- **Action OR-2.b:** Exempt small residential and non-residential projects from this requirement.
- **Action OR-2.c:** Conduct outreach regarding new requirements.
- **Action OR-2.d:** Seek external funding and leverage existing resources to support conversion of medium and heavy duty vehicles.

GHG Reductions

- 2035: 4,698 $MTCO_2e$
- 2045: 15,081 $MTCO_2e$

Implementation Details

- Timing: Long-term
- Lead Departments: Community Development; Construction Management & Inspection
- Supporting Departments: City Attorney; Communications

Monitoring Benchmarks

- By 2035: Develop and adopt an ordinance requiring new developments and significant land-moving and construction projects to use electric-powered or alternatively-fueled construction equipment that reduces 50% of emissions from project construction activities
- By 2035: Conduct outreach regarding new requirements
- By 2045: Reduce 50% emissions from construction equipment

Data Needed to Monitor

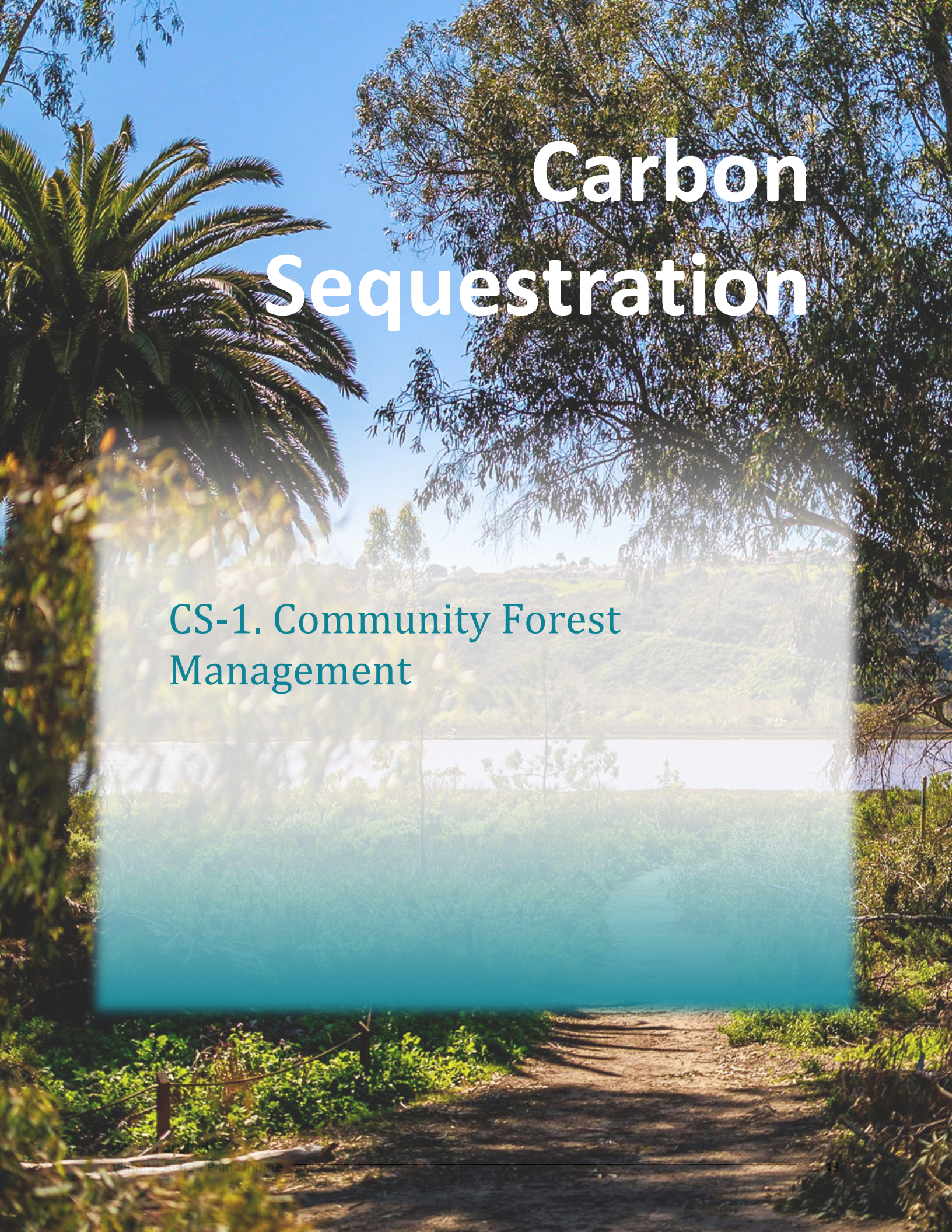
- Data related to ordinance implementation
- Fuel reduced by construction equipment

Equity Considerations

- Support high-road green job growth

Co-Benefits

- Improved air quality
- Improved public health



Carbon Sequestration

CS-1. Community Forest Management

CARBON SEQUESTRATION MEASURES

Carbon Sequestration is an important strategy for reaching long-term decarbonization goals and preserving the ecosystem services that trees and natural lands provide. Vegetation within the community plays an important role in the sequestration of carbon that is released by human activities while providing many co-benefits, such as reducing the urban heat island effect and reducing air pollution. The Carbon Sequestration strategy includes one GHG reduction measure. This measure, CS-1) Community Forest Management, is described further below.

MEASURE CS-1: Community Forest Management

EXPANDED

Urban trees are the main source of carbon sequestration in developed cities. The city's Community Forest Management Plan protects the more than 28,000 trees under its jurisdiction (City of Carlsbad 2019). Community forests not only store carbon, but they also offer shade that reduces the urban heat and improve the resiliency of the city against events such as heat waves, which are expected to increase in frequency and intensity as climate change progresses.

Implementation Actions

Primary

- **Action CS-1.a**: Increase city's tree inventory by continuing to implement the Community Forest Management Plan.
- **Action CS-1.b**: To help sustain the city's tree inventory, continue replacing trees at a 2:1 ratio.
- **Action CS-1.c**: Conduct an inventory to assess urban canopy cover every five years.

Supportive

- **Action CS-1.d**: Explore additional locations for tree planting beyond what is included in the Community Forest Management Plan, with "right tree right space," ongoing budget, and maintenance costs taken into consideration.
- **Action CS-1.e**: Encourage eligible residents to take part in a free street tree planting assessment.

GHG Reductions

- 2035: 7,519 $MTCO_2e$
- 2045: 11,966 $MTCO_2e$

Implementation Details

- Timing: Ongoing
- Lead Department: Parks
- Supporting Department: Environmental Sustainability

Monitoring Benchmarks

- By 2025: Conduct an inventory to assess urban canopy cover
- By 2025: Complete implementation of Community Forest Management Plan Goal 2.A. (3,000 total trees added to inventory through 2025)
- By 2030: Explore additional locations for tree planting beyond what is included in the Community Forest Management Plan, with "right tree right space", ongoing budget, and maintenance costs taken into consideration.
- By 2030: Conduct a second inventory to assess urban canopy cover
- By 2035: Conduct a third inventory to assess urban canopy cover
- By 2040: Conduct a fourth inventory to assess urban canopy cover
- By 2045: Achieve 32% urban canopy cover

Data Needed to Monitor

- Number of trees added to inventory
- City-wide urban canopy cover

Equity Considerations

- Prioritize tree planting using social, economic, and environmental data

Co-Benefits

- Reduced heat island effects
- Enhanced community character
- Improved air quality
- Improved water quality
- Improved public health
- Increased natural habitat
- Improved resilience to climate impacts

4 Implementation and Monitoring

This chapter outlines the process by which the City of Carlsbad (city) will implement Climate Action Plan Update (CAP Update) strategies and measures, and how progress will be monitored over time to ensure the CAP Update is effective in reducing greenhouse gas (GHG) emissions. This chapter also discusses the application of the CAP Update for future development projects in relation to the California Environmental Quality Act (CEQA).

4.1 Implementation Strategy

Effective implementation of the CAP Update will require ongoing management and oversight. Multiple ongoing and interrelated city efforts serve as the basis for the CAP Update implementation strategy. For example, the Five Year Strategic Plan, adopted in 2021, focuses resources on community and City Council goals that support the city's Community Vision, a variety of which align with CAP Update measures identified in Chapter 3. For example, pedestrian and bike street improvements are integral to numerous priority projects; this addresses the Five Year Strategic Plan goals of safety, community character, and sustainability, in addition to fulfilling transportation actions in the CAP Update. Progress towards these goals is assessed during the annual budget process, whereupon the city can allocate its resources to ensure goals are met in the 2023-2027 timeframe. Another example is the Implementation Cost Analysis prepared as a part of this CAP Update. The Implementation Cost Analysis details the cost to the city of implementing each CAP measure during the first five years of implementation, which allows the city to budget funding accordingly. Similar to the Five Year Strategic Plan, the Implementation Cost Analysis can allow the city to make budget requests more readily and holistically. See Appendix E for more details.

Chapter 3 provides implementation details for each measure to help guide implementation of CAP Update actions. This provides transparency as to how an action will reduce GHG emissions and provides accountability by identifying implementation timeframes and responsible departments. Each measure that was evaluated included: monitoring benchmarks data needed to monitor, GHG reductions, implementation details, co-benefits, and equity considerations. The schedule by which each measure is to be implemented, beginning from the year the CAP Update is adopted, range from short-term, mid-term, long-term, and ongoing. These designations, in addition to considerations of equity, will help city staff determine which measures should be implemented and when, which will contribute to the effectiveness of the CAP Update. Regarding emissions reductions, for each measure, the city has identified benchmarks and data needs to track their progress toward 2035 and 2045 targets. Collecting the appropriate data is essential to provide an accurate indicator of measure completion progress.

4.2 California Environmental Quality Act Streamlining

The CAP Update will continue to serve as a resource for CEQA streamlining, per the provisions of state CEQA Guidelines Section 15183.5. Under these provisions, a project that is subject to discretionary review and is consistent with the city's 2021-2029 Housing Element Update growth projections can streamline its GHG analysis under CEQA by demonstrating consistency with applicable GHG reduction measures in the CAP.

A "qualified" CAP, or a GHG reduction plan consistent with CEQA Guidelines Section 15183.5, will allow project-specific environmental documents, if eligible, to tier from and/or incorporate by reference the CAP's programmatic review of GHG impacts in their cumulative impact analyses for GHGs. Streamlined projects fulfill the city's strategic approach to environmental sustainability, expediting environmental review while meeting the demand for green development.

The CAP Update Consistency Checklist is the mechanism that is used to demonstrate consistency with the CAP Update and ensure that the specified emissions targets identified in the CAP Update are achieved. A project's incremental contribution to cumulative GHG emissions may be determined not to be cumulatively considerable based on consistency with forecasts used in the CAP and its GHG reduction measures.

4.3 Monitoring and Reporting

Once the CAP Update is adopted, the city will begin implementing measures and actions and collecting any necessary data needed for monitoring. City staff will need to evaluate and monitor CAP Update performance over time and alter or amend the plan if it is not following the emissions trends needed to meet its reduction targets. This will include conducting periodic GHG emissions inventories and analyzing individual actions' performance, as well as incorporating CAP Update implementation needs into the annual budgeting cycle. Each GHG reduction measure included in the CAP Update includes a quantitative tracking metric to allow for data-decision making on the success of each measure. This monitoring approach will also allow city staff to ensure the CAP Update stays relevant and effective.

To gauge progress over time, CAP Update monitoring will also require updates to its GHG emissions inventory. The San Diego Association of Governments (SANDAG) provides GHG inventory updates through the Regional Climate Action Planning Framework (ReCAP). Included in the ReCAP are best practices for monitoring and implementing CAPs, with additional technical appendices that assist in target selection, cost-benefit analyses, and calculating the reduction of GHG emissions per measure. SANDAG has committed to providing GHG inventories at no cost to its member agencies every two years. An updated GHG inventory is the most critical piece of monitoring data for the CAP Update;

without SANDAG's technical assistance, the city would need to separately contract and pay for these inventories every two years.

The city will continue to monitor and report on CAP Update implementation activities annually. The city has published annual CAP reports since 2017, which include the most recent GHG emissions data, the implementation status of each action, and progress toward achieving the performance targets of the corresponding emissions reduction measure. As technologies and markets change and the city implements the actions in the CAP Update, these reports will be used to track progress and identify actions that need to be improved, adjusted, or removed. The reports have been used for annual updates to the City Council about implementation progress on actions and overall progress towards CAP Update objectives. The reports also provide transparency and promote engagement with the public for CAP Update implementation.

Ensuring that the measures identified in the CAP Update result in emissions reductions improvements is central to the success of the CAP. Achieving these goals will require investments and long-term commitments from the city government as well as participation from staff in various city departments. The success of CAP Update implementation will also depend on the participation of residents, businesses, and other stakeholders in Carlsbad.

Finally, the city will prepare a comprehensive update to the CAP Update every five years. The next update is anticipated to be in 2029. Future updates will be necessary to account for any new state or federal legislation, measures and actions that may have been difficult to implement previously due to a lack of available technologies or high upfront implementation costs and any relevant findings and recommendations from the city's annual monitoring reports.

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5.4 Chapter 3 – Greenhouse Gas Reduction Strategies and Measures

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CMWD. *See* Carlsbad Municipal Water District.

5.5 Chapter 4 – Implementation and Monitoring

No references were cited.

Appendix A

Glossary

Glossary

Baseline: The first year an annual greenhouse gas inventory is completed; a calculated level of annual emissions against which future inventories can be compared.

Business As Usual (BAU): Regarding GHG emissions forecasts, a BAU scenario is based on a continuation of current trends in activity and does not account for GHG emissions reductions resulting from laws and regulations adopted by local, regional, state, or federal agencies.

California Environmental Quality Act (CEQA): A statute that generally requires state and local government agencies to inform decision makers and the public about the potential environmental impacts of proposed projects, and to mitigate significant environmental impacts to the extent feasible.

Carbon Capture: Process of capturing carbon dioxide before it enters the atmosphere and storing it for centuries or millennia.

Carbon Dioxide Equivalent (CO_2e): A way to measure and equalize the different warming potencies of the six internationally recognized GHGs. Measuring emissions in terms of CO_2e helps to normalize all GHG emissions to CO_2, which is the most prevalent GHG emitted by human activities and has a global warming potential (GWP) value of 1.

Carbon Neutrality: All GHG emissions emitted into the atmosphere balanced in equal measure by GHGs that are removed from the atmosphere, either through carbon sinks (i.e., natural or anthropogenic systems that absorb or hold more carbon than they emit) or CCUS. (See also “Net Zero GHG Emissions”).

Carbon Sequestration: Process of capturing, securing, and storing carbon from the atmosphere for example in vegetation such as grasslands or forest, as well as in soils and oceans.

Climate Change Scoping Plan: The State of California’s climate action plan, which is designed to provide a statewide strategy for achieving the GHG reduction targets established in AB 32 and subsequent laws.

Co-Benefit: Additional positive benefits that are not the primary intent of GHG reduction measures.

Community Greenhouse Gas Emissions Inventory: A community GHG emissions inventory identifies the sources, activities, and sectors that generate emissions from activities within the city and the relative contributions of each.

Composting: A process by which organic materials such as yard waste, grass, tree trimmings, fruit, and sometimes meat products and sewage sludge are converted to fertilizer through controlled decomposition.

Decarbonization: The reduction or elimination of carbon dioxide emissions from a process such as manufacturing or the production of energy.

Desalination: The process of converting saline water into freshwater.

Electrification: The process of replacing systems that use fossil fuels (e.g., coal, oil, natural gas) with ones that use electricity as a source of power.

Energy Storage: The capture of energy produced at one time (e.g., high production with low demand) so that it can be used at another time (e.g., low production with high demand). Building more energy storage allows renewable energy sources to power more of the electric grid.

Equity: In the context of this CAP, the term equity means the just distribution of the benefits of climate action efforts and the alleviation of unequal burdens created by climate change.

General Plan: A mandatory local government plan in California that serves as a blueprint for local land use and meeting the community's long-term vision for the future.

Greenhouse Gas Reduction Target: A goal of reducing GHG emissions a certain amount by a specified point in time; typically reflected as a percent reduction from a historic baseline by a certain year.

Global Warming Potential (GWP): The relative potency of various GHGs when compared to carbon dioxide. 4. The GWPs for various greenhouse gases are used to calculate the total CO_2e from emissions sources for use in GHG inventories.

Greenhouse Effect: A warming of Earth's surface and atmosphere caused by the presence of greenhouse gases, which has been enhanced by human activities resulting in the release of excess greenhouse gases.

Land use: The way a parcel of land is used or occupied.

Legislative-Adjusted GHG Emissions Forecast: An assessment of how emissions will change over time considering legislative and regulatory actions that are already being implemented at the regional, state, or federal levels.

Microgrid: A local electrical grid with defined electrical boundaries, acting as a single and controllable entity, and with the ability to operate both grid-connected and independently.

Mode share: The percentage of travelers using a particular type of transportation, such as by bicycle, by private vehicle (e.g., car, truck, taxicab, van, motorcycle), by public transportation (e.g., bus, rail, ferry), and by foot.

Net Zero GHG Emissions: Removing an equal amount of GHGs from the atmosphere as are released into it. AB 1279 set California on a path to net zero GHG emissions by 2045. While similar to carbon neutrality, net zero GHG emissions applies to all GHGs emitted into the atmosphere.

Nitrogen Oxides (NO_X): A family of poisonous, highly reactive gases that form when fuel is burned at high temperatures; are commonly emitted by automobiles, trucks, off-road vehicles, and industrial sources, like power plants. Includes nitric oxide, nitrogen dioxide, and other nitrogen-based oxides.

Off-Road Equipment: Any non-stationary device powered by an internal combustion engine or electric motor used primarily off roadways, such as those used for agricultural, landscaping or construction purposes.

Organic Waste: Solid waste containing material originated from living organisms and their metabolic waste products, including but not limited to food, green waste, landscape and pruning waste, applicable textiles and carpets, wood, lumber, fiber, manure, biosolids, digestate and sludges.

Resiliency: The ability to anticipate, prepare for, respond to, and recover from hazardous events, trends, or disturbances related to climate.

Renewable Energy: Renewable energy is energy derived from natural sources that are replenished at a higher rate than they are consumed.

Solid waste: Any garbage or refuse, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, resulting from industrial, commercial, mining, and agricultural operations, and from community activities.

Traffic Calming Measures: Roadway design features which serve to decrease vehicle speeds, make drivers more aware of their surroundings, or divert vehicles from neighborhood roadways not intended for through traffic.

Transit: The movement of people or goods typically via public transportation.

Transportation Demand Management (TDM): Also known as travel demand management, TDM is the application of strategies and policies to reduce travel demand of single-occupancy private vehicles, traffic congestion, or to redistribute this demand in space or in time.

Underrepresented Communities: A collective of individuals that often lack representation in decision making processes due to their identity(s).

Vehicle Miles Traveled (VMT): VMT is a measure of how much motor vehicle activity occurs on the roadway network in total miles traveled over a given period of time, and it is a key input into measuring GHG emissions from motor vehicles broadly at various scales.

Zero-Emission Vehicle (ZEV): Any vehicle that produces zero GHG emissions in its day-to-day operations.

Appendix B

List of Acronyms and Abbreviations

Acronyms and Abbreviations

ºC	degrees Celsius
%	percent
AB	Assembly Bill
ADU	accessory dwelling units
AF	acre feet
BAU	business-as-usual
CAFE	Corporate Average Fuel Economy
CAP	Climate Action Plan
CAP Update	Climate Action Plan Update
CARB	California Air Resources Board
CEA	Clean Energy Alliance
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFCs	chlorofluorocarbons
CH_4	methane
city	City of Carlsbad
CMWD	Carlsbad Municipal Water District
CNRA	California Natural Resources Agency
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CPUC	California Public Utilities Commission
CSI	California Solar Initiatives
DOC	California Department of Conservation
EIR	Environmental Impact Report
EO	Executive Order
EPA	US Environmental Protection Agency
EPIC	Energy Policy Initiatives Center
EV	electric vehicle
GHG	greenhouse gas
GWP	global warming potential

HFC	hydrofluorocarbon
ICLEI	International Council for Local Environmental Initiatives
IPCC	Intergovernmental Panel on Climate Change
kWh	kilowatt-hour
MT	metric ton
N_2O	nitrous oxide
OPR	Governor's Office of Planning and Research
PFC	perfluorocarbon
PV	photovoltaic
ReCAP	Regional Climate Action Planning Framework
SANDAG	San Diego Association of Governments
SCADA	Supervisory Control & Data Acquisition Master Plan
SB	Senate Bill
SDCWA	San Diego County Water Authority
SDG&E	San Diego Gas & Electric
SF_6	sulfur hexafluoride
TDM	Transportation Demand Management
VMT	vehicle miles traveled
ZEV	zero emission vehicle

Appendix C

GHG Emissions Inventory, Forecast and Targets Documentation and GHG Reduction Measures Quantification

Methods for Estimating Greenhouse Gas Emissions and Emissions Reductions

April 2024

Prepared for the City of Carlsbad's Climate Action Plan Update

Prepared by the Energy Policy Initiatives Center

About EPIC

The Energy Policy Initiatives Center (EPIC) is a non-profit research center of the University of San Diego School of Law that studies energy policy issues affecting California and the San Diego region. EPIC's mission is to increase awareness and understanding of energy- and climate-related policy issues by conducting research and analysis to inform decision makers and educate law students.

For more information, please visit the EPIC website at www.sandiego.edu/epic.

Table of Contents

Tables

Figures

1 OVERVIEW

This Appendix provides a summary of the 2016 greenhouse gas (GHG) emissions inventory for the City of Carlsbad (referred to as "Carlsbad" or "the city"), the business-as-usual (BAU) emissions projections through 2045, and the methods used to calculate the GHG emissions reductions from the measures included in the city's Climate Action Plan (CAP) Update.

This Appendix includes the following sections:

- Section 2 describes the background sources used for this Appendix;
- Section 3 provides the 2016 GHG emissions inventory results summary and the methods used to prepare each emissions category of the inventory;
- Section 4 provides a summary of the emissions projections for 2035 and 2045, and the methods used to prepare projections for each emissions category;
- Section 5 describes this CAP Update's 2035 and 2045 targets;
- Section 6 provides a summary of emissions impacts from federal, State (California), and local CAP strategies; and
- Section 7 details the common data sources and methods used to estimate emissions reductions, and the methods used to estimate emissions reductions from federal, State, regional, and local CAP Update strategies.

Unless stated otherwise, all activity data, GHG emissions, and GHG emissions reductions reported in this Appendix are annual values for the calendar year, and all emission factors reported in this document are annual average values for the calendar year.

Rounding is used for the final GHG values within the tables and figures throughout the document. Values are not rounded in the intermediary steps in any calculation. Because of rounding, some totals may not equal the values summed in any table or figure.

2 BACKGROUND

2.1 Greenhouse Gases

The primary GHGs included in the city's emissions estimates are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Each GHG has a different capacity to trap heat in the atmosphere, known as its global warming potential (GWP), which is normalized relative to CO_2 and expressed in carbon dioxide equivalents (CO_2e). In general, the 100-year GWPs reported by the Intergovernmental Panel on Climate Change (IPCC) are used to estimate GHG emissions. The GWPs used in this inventory are from the IPCC Fourth Assessment Report (AR4),[1] provided in Table 1.

[1] IPCC Fourth Assessment Report: Climate Change 2007: Direct Global Warming Potentials (2013).

Table 1 Global Warming Potentials

Greenhouse Gas	Global Warming Potential
Carbon dioxide (CO_2)	1
Methane (CH_4)	25
Nitrous oxide (N_2O)	298
IPCC 2013.	

2.2 Demographics

State Housing Element law requires all local governments to plan for housing needs of their residents every eight years to ensure adequate opportunities for housing development. The 2021-2029 Housing Element is the city's plan for meeting future housing needs. With the implementation of Carlsbad's 2021-2029 Housing Element Update (HEU), which facilitates the development of rezoned sites to accommodate residential development, the city would have 56,516 housing units and a population of 127,263 in 2035, the city's General Plan buildout year. The CAP Update relies on the HEU's probabilistic development forecasts to determine future housing and population growth in the city. When adopting the HEU rezoning program, the City Council certified the Supplemental Environmental Impact Report (SEIR), which studied the overall impacts of rezoning 18 properties to accommodate future housing. Ultimately, the City Council only approved the rezoning of 16 properties and removed sites 5 and 18 from the map.[2] Although actual housing and population growth in the future depends on growth patterns, economic conditions, and state and local regulations, underlying HEU record data utilized for the CAP Update slightly overestimates housing development opportunities (by including housing sites 15 and 18). While the certified SEIR discussed the potential environmental impacts (both direct and indirect) associated with the development of housing on all 18 sites as part of the HEU's implementation, it is of continuing informational value when assessing future demographic trends of the city within the CAP Update. The CAP Update, and the analysis of future year sources of GHGs, is not sensitive to the removal of sites 5 and 18 and leads to a more conservative analysis of quantified objectives.

The HEU does not project population or housing units in Carlsbad beyond 2035. To project the GHG emissions through 2045 for the CAP Update, the population and housing units are projected separately. The population through 2045 is based on (1) the 2035 population from the HEU and (2) the San Diego regional 2035-2045 population increase projected by the California Department of Finance.[3] Housing units through 2045 are based on (1) the 2035-2045 Carlsbad population and (2) the 2035 persons per household in the HEU (2.42 persons per household).[4]

The HEU does not generate a jobs projection. However, the San Diego Association of Governments (SANDAG) does estimate population, housing, and jobs for all jurisdictions in the San Diego region. SANDAG generates multiple forecasts during each Regional Plan preparation. At the time the CAP Update was developed, one SANDAG forecast was the baseline Series 14 Regional Growth Forecast, which represents a combination of economic and demographic projections, existing land use plans and policies, and potential land use plan changes that may occur in the region. Another SANDAG forecast

[2] Carlsbad Housing Element Update Environmental Impact Analysis (4.11 Population and Housing), June 23, 2023.
[3] California Department of Finance: P-2 County Population Projections (2020-2060), released on July 19, 2023, accessed on July 20, 2023. For San Diego County (region), the population is 3,403,354 in 2035 and 3,412,606 in 2045.
[4] 127,263 persons per 56,516 housing units from the Carlsbad HEU, data provided by City to EPIC, June 27, 2023

was the 2021 Regional Plan Sustainable Communities Strategy (SCS) land use pattern scenario, which is based on the baseline Series 14 Regional Growth Forecast but assumes a densification of land use within Mobility Hubs. The jobs projection through 2045 from the SCS land use pattern scenario forecast is used for the CAP Update because this forecast is referenced in the HEU.[5]

The population, housing, jobs, and service population estimates for 2016 and projections for 2035 and 2045 are provided in Table 2.[6]

Table 2 Population, Housing, and Jobs Estimates

Year	Population	Housing Units	Jobs	Service Population
2016	112,264	46,152	76,623	188,887
2035	127,263	52,516	90,801	218,064
2045	127,609	53,399	95,762	223,371

Housing unit types include single detached units, single attached units, two to four units, five plus or apartment units, and mobile homes.
Service population is the sum of population and jobs.

Carlsbad 2023, SANDAG 2021, Energy Policy Initiatives Center, University of San Diego 2023

3 BASELINE 2016 GREENHOUSE GAS EMISSIONS INVENTORY

3.1 Summary of 2016 Greenhouse Gas Emissions Inventory

The total GHG emissions from Carlsbad in 2016 were approximately 981,000 metric tons CO_2e (MT CO_2e), distributed into categories as shown in Figure 1.[7]

[5] SANDAG: Baseline Series 14 Regional Growth Forecast, and 2021 Regional Plan Appendix F: Regional Growth Forecast and Sustainable Communities Strategy Land Use Pattern (2021).
[6] 2016 and 2035 numbers are from Carlsbad HEU, data provided by City to EPIC, June 27, 2023. 2016 are based on SANDAG's off-the-shelf model data. 2045 population and housing units are projected with the methods described in this section. 2045 jobs number is from 2021 Regional Plan Appendix F: Regional Growth Forecast and Sustainable Communities Strategy Land Use Pattern (2021), 2016-2050 jobs number were provided by SANDAG to EPIC, December 21, 2021.
[7] The latest Carlsbad CAP annual report (published 2024) includes a 2016 and 2018 GHG inventory. The revisions made to the 2016 GHG inventory reported are: (1) updated vehicle miles and vehicle emission rates data from the latest models; (2) updated off-road transportation emissions from the latest model; and (3) updated water emissions based on latest local water energy intensity data.

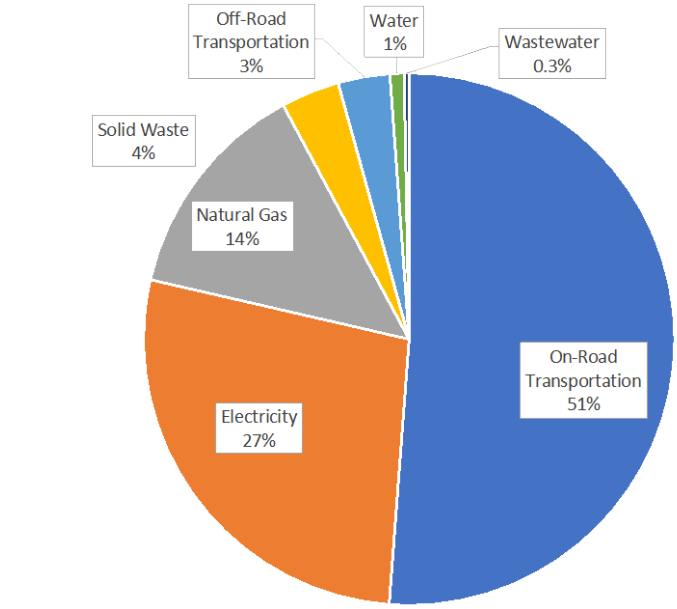


Figure 1 2016 Greenhouse Gas Emissions in Carlsbad

Table 3 2016 Greenhouse Gas Emissions in Carlsbad

Emissions Category	2016 Inventory	
	GHG Emissions ($MT CO_2e$)	Distribution (%)
On-Road Transportation*	502,000	51%
Electricity	269,000	27%
Natural Gas	133,000	14%
Solid Waste	35,000	4%
Off-Road Transportation	31,000	3%
Water	8,000	1%
Wastewater	3,000	0.3%
Total	**981,000**	**100%**

Sums may not add up to totals due to rounding. GHG emissions for each category are rounded to the nearest thousand. Values are not rounded in the intermediary steps in the calculation.
*2016 VMT is from SANDAG's activity-based model (ABM2+), No Build Dataset 41 (DS 41) base year.

Energy Policy Initiatives Center, University of San Diego 2023

3.2 Method to Calculate 2016 Greenhouse Gas Emissions Inventory

The CAP follows the U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions (U.S. Community Protocol),[8] developed by ICLEI USA. It requires a minimum of five basic

[8] ICLEI – Local Governments for Sustainability USA: U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions, Version 1.2 (2019).

emissions-generating activities to be included in a Protocol-compliant community-scale GHG inventory. These categories are electricity, natural gas, on-road transportation, water and wastewater, and solid waste. GHG emissions are calculated by multiplying activity data (e.g., kilowatt-hours of electricity) by an emission factor (e.g., pounds of CO_2e per unit of electricity). For these five categories, methods based on the U.S. Community Protocol were modified with regional- or city-specific data when available.

Additionally, GHG emissions from off-road activity were included in the inventory and projections, based on the methods and models used by California Air Resources Board (CARB) in the statewide GHG emission inventory.[9]

3.2.1 On-Road Transportation

The emissions associated with on-road transportation are calculated by multiplying the estimated Carlsbad VMT and the average vehicle emission rate in the San Diego region in 2016.

2016 annual VMT was estimated based on the average weekday VMT for Carlsbad using SANDAG's activity-based model (ABM2+) No Build Dataset 41 (DS 41) base year data.[10] VMT derived from ABM2+ was then allocated to Carlsbad using the Origin-Destination (O-D) method.[11] The O-D VMT method estimates miles traveled based on where a trip originates and ends to attribute on-road emissions to cities and regions (Figure 2). This is the preferred method proposed by the U.S Community Protocol in "TR.1 Emissions from Passenger Vehicles" and "TR.2 Emissions from Freight and Service Trucks".[12]

[9] California Air Resources Board (CARB): California Greenhouse Gas Emission Inventory – 2021 Edition.
[10] Fehr & Peers (June 8, 2023), City of Carlsbad Housing Element Update Transportation Modeling Considerations and Results [Memorandum], accessed July 31, 2023.
[11] SANDAG (2013): Vehicle Miles Traveled Calculation Using the SANDAG Regional Travel Demand Model. Technical White Paper.
[12] ICLEI – Local Governments for Sustainability USA: U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions, Version 1.2 (2019), Appendix D: Transportation and Other Mobile Emission Activities and Sources.

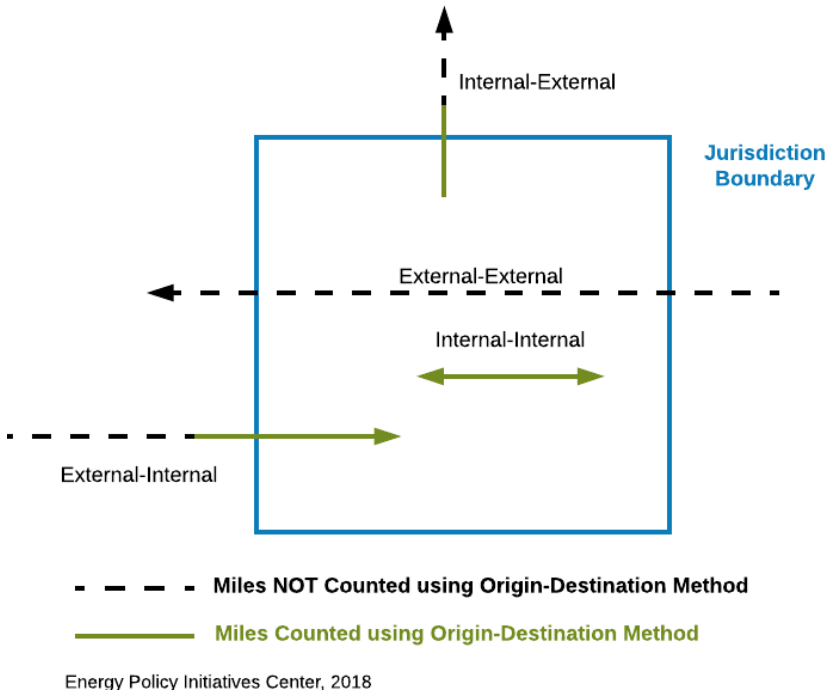


Figure 2 O-D Method for VMT Calculation

O-D VMT allocated to Carlsbad include all miles traveled for trips that originate and end within Carlsbad city limits (referred to as Internal-Internal) and half of the miles traveled for trips that either begin within Carlsbad and end outside the city (referred to as Internal-External), or vice versa (referred to as External-Internal). In accordance with the methodology, VMT from trips that begin and end outside Carlsbad (referred to as External-External) are not included in the total city VMT. The total average weekday VMT were multiplied by 347 to adjust from average weekday VMT to average annual VMT which includes weekends.[13]

The average weekday VMT estimates for each trip type and the total VMT allocated to Carlsbad in 2016 are given in Table 4.[14]

Table 4 O-D VMT Estimates by Trip Types and Total VMT

Year	VMT by Trip Type (miles/weekday)			Total City VMT (100% * I-I + 50% * I-E/E-I) (miles per weekday)	Total City VMT (miles per Year)
	Internal-Internal (I-I) Trips	External-Internal (E-I) Trips	Internal-External (I-E) Trips		
2016	609,696	2,655,837	2,649,204	3,262,216	1,131,989,126
Based on SANDAG ABM2+, No Build Dataset 41 (DS 41) base year estimates. The conversion factor from miles per weekday to miles per year is 347. Fehr & Peers 2023, Energy Policy Initiatives Center, University of San Diego 2023					

[13] The conversion of 347 weekdays to 365 days per year is as used by CARB. CARB: California's 2000–2014 Greenhouse Gas Emission Inventory Technical Support Document (2016 Edition), p. 41 (September 2016).

[14] 2016 VMT was provided by Fehr & Peers to City of Carlsbad (June 26, 2023 based on the SANDAG Activity Based Model 2+ Release v14.2.2, Series 14 Forecast, Scenario ID 469, September 2021).

The average annual vehicle emission rate expressed in grams of CO_2e per mile driven (g CO_2e/mile) is derived from the statewide mobile source emissions model, EMFAC2021, developed by CARB.[15] EMFAC2021 was run in the default activity mode to generate the total VMT and total vehicle GHG emissions for the San Diego region, including all vehicle model years, classes, and fuel types. This document assumes that Carlsbad has the same distribution of vehicle types as the San Diego region.

Total estimated VMT, average vehicle emission rates, and corresponding GHG emissions from on-road transportation from 2016 are given in Table 5.

Table 5 Greenhouse Gas Emissions from On-Road Transportation

Year	Total VMT (miles/year)	Average Vehicle Emission Rate (g CO_2e/mile)	GHG Emissions (MT CO_2e)
2016	1,131,989,126	427	502,000
GHG emissions for each category are rounded. Values are not rounded in the intermediary steps in the calculation. Energy Policy Initiatives Center, University of San Diego 2023.			

3.2.2 Electricity

Emissions from electricity in Carlsbad were estimated by multiplying electricity use by the city-specific electricity emission factor in 2016. This is the method from Built Environment (BE.2) in the U.S. Community Protocol.[16]

Annual metered electricity sales data within the city were provided by the local investor-owned utility (IOU), San Diego Gas & Electric (SDG&E).[17] The electricity sales were then adjusted by (1) a loss factor[18] of 1.082[19] to account for transmission and distribution losses and (2) subtracting electricity use associated with moving water within the city limits, which is allocated to the water category (Section 3.2.6). The adjusted net energy for load (electricity sales + losses) is provided in Table 6.

For a given year, the city-specific electricity emission factor, expressed in pounds of CO_2e per megawatt-hour (lbs CO_2e/MWh), is estimated based on the specific power mix of bundled power[20] and Direct Access (DA) power[21] in the city and their respective emission factors.

[15] CARB: EMission FACtors model, EMFAC2021 v1.0.2, on May 2, 2022 and EMFAC Emissions Inventory Web Database: On-Road Emissions.
[16] ICLEI – Local Governments for Sustainability USA: U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions, Version 1.2 (2019), Appendix C: Built Environment Emission Activities and Sources.
[17] 2016 metered electricity sales were provided to EPIC by SDG&E (February 28, 2018).
[18] The transmission and distribution loss factor is used to scale end-use demand or retail sales to produce net energy for load. L. Wong, *A Review of Transmission Losses In Planning Studies*, CEC Staff Paper (August 2011).
[19] The loss factor is from the California Energy Commission's Energy Demand 2019 Forecast. For each forecast cycle, utilities provide the estimates, which remain relatively stable. Personal communication with CEC staff. March 23, 2020.
[20] SDG&E's bundled customers are those who receive both electric generation and electric delivery service from SDG&E (bundled service). SDG&E: Customer Choice Service Types.
[21] Direct Access customers receive electric generation from an Electric Service Provider (not SDG&E), but electricity is delivered by SDG&E. SDG&E: Customer Choice Service Types.

The SDG&E bundled emission factors are calculated using Federal Energy Regulatory Commission (FERC) Form 1[22] data, the California Energy Commission (CEC) Power Source Disclosure (PSD) Program[23] data on SDG&E-owned and purchased power, and the U.S. EPA Emissions and Generating Resource Integrated Database (eGRID) 2016 Edition[24] on specific power plant emissions. The 2016 SDG&E bundled emission factor calculated using the sources above is 525 lbs CO_2e/MWh. The DA emission factor is 836 lbs CO_2e/MWh and based on California Public Utilities Commission (CPUC) Decision D.14-12-037.[25] The city-specific electricity emission factors are provided in Table 6.

Emissions are calculated by multiplying the adjusted net energy for load (electricity sales + losses) and the corresponding city-specific electricity emission factor. The net energy for Carlsbad's load, electricity emission factors, and corresponding GHG emissions from the electricity category for 2016 are shown in Table 6.

Table 6 Greenhouse Gas Emissions from Electricity

Year	Net Energy for Load (electricity Sales + losses) (MWh)	City-Specific Emission Factor (lbs CO_2e/MWh)	GHG Emissions (MT CO_2e)
2016	1,086,656	545	269,000
City-specific emission factors are for Carlsbad only and do not represent the emission factors of SDG&E bundled electricity or of other jurisdictions in the San Diego region. GHG emissions for each category are rounded. Values are not rounded in the intermediary steps in the calculation. Energy Policy Initiatives Center, University of San Diego 2023			

3.2.3 Natural Gas

Emissions from natural gas use in Carlsbad were estimated by multiplying the natural gas usage and the natural gas emission factor in 2016. This uses the method Built Environment (BE.1) from the U.S. Community Protocol.[26]

Annual natural gas sales were provided by SDG&E and broken down by residential, commercial, and industrial customer classes.[27] The natural gas emission factor is based on the heat content of the fuel and the fuel's CO_2, CH_4, and N_2O emissions. The heat content of fuel and the emissions from CO_2, CH_4, and N_2O were based on CARB's statewide inventory.[28]

To estimate emissions from the combustion of natural gas, end-use activity was multiplied by the emission factor. The total natural gas end-use and corresponding GHG emissions from the natural gas category for 2016 are given in Table 7.

[22] FERC: Form 1 – Electric Utility Annual Report: Report Year 2018, updated July 9, 2019, and accessed September 18, 2019.
[23] CEC: Power Source Disclosure Program under Senate Bill 1305. The SDG&E 2016 power source disclosure report was provided by CEC staff to EPIC.
[24] U.S. EPA. eGRID 2016 Edition, released February 15, 2018, accessed June 29, 2018.
[25] CPUC: Decision 14-12-037, December 18, 2014 in Rulemaking 11-03-012 (filed March 24, 2011). The recommended emission factor is 0.379 MT CO_2e/MWh (836 lbs CO_2e/MWh). The recommended emission factor has not changed since 2014. All electric service suppliers must meet the Renewables Portfolio Standards in the target years.
[26] ICLEI– Local Governments for Sustainability USA: U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions, Version 1.2 (2019), Appendix C: Built Environment Emission Activities and Sources.
[27] 2016 metered natural gas sales were provided to EPIC by SDG&E (February 28, 2018).
[28] CARB: GHG Current California Emission Inventory Data. 2000–2021 GHG Inventory (2023 Edition).

Table 7 Greenhouse Gas Emissions from Natural Gas

Year	Natural Gas End-Use (Million therms)	Natural Gas Emission Factor (MT CO_2e/therms)	GHG Emissions (MT CO_2e)
2016	24.3	0.00545	133,000
GHG emissions for each category are rounded to the nearest thousand. Values are not rounded in the intermediary steps in the calculation. SDG&E 2020, Energy Policy Initiatives Center, University of San Diego 2023			

3.2.4 Solid Waste

Emissions from the decomposition of organic material in waste disposed at landfills were estimated by multiplying the amount of waste disposed by the city in 2016 and an emission factor for mixed solid waste. This uses method Solid Waste (SW.4) from the U.S. Community Protocol[29] and represents immediate and future emissions from decay of this waste.

Solid waste disposal is the waste disposed by the city in landfills, regardless of whether the landfills accepting the waste are located inside or outside of the city boundary. The emission factor of mixed solid waste depends on the percentage of each waste type within the waste stream disposed in a landfill. The closest city to Carlsbad with a recent waste characterization study is the Oceanside; therefore, this study was used as a substitute for Carlsbad to determine the emission factor based on the percentage of each waste type within mixed solid waste.[30] Only the CH_4 emissions from waste degradation are considered non-biogenic and included in this category. Conversely, the CO_2 emissions from waste degradation are considered biogenic and not included in this category.

The EPA Waste Reduction Model (WARM) is used to determine the emission factor of each waste type. WARM is a life-cycle GHG model to assess and compare waste management options (e.g., landfilling, recycling, source reduction, composting), through the life-cycle of waste materials (from material extraction to disposal). However, under the U.S Community Protocol, only emissions from the disposal and associated degradation of waste are included. Therefore, only the landfill emission factors in WARM are used in the calculation. WARM reports the landfill CH_4 emission factor of each waste material in MT CO_2e/short ton, both with and without Landfill Gas (LFG) recovery.

The mixed solid waste emission factor is given in Table 8. The landfill emission factors without LFG recovery are identified in Table 8 and the LFG recovery is applied later in this Appendix.

Table 8 Mixed Solid Waste Emission Factor

Waste Component	Waste Distribution[1] (%)	Landfill Gas Emissions	
		CH_4 without LFG Recovery (MT CO_2e/short ton)	Source[2]
Organics	57.2%	-	-

[29] ICLEI – Local Governments for Sustainability USA: U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions, Version 1.2 (2019), Appendix E: Solid Waste Emission Activities and Sources.
[30] City of Oceanside 2017 Organic Management Detailed waste characterization study results were provided by Carlsbad city staff.

Waste Component	Waste Distribution[1] (%)	Landfill Gas Emissions	
		CH_4 without LFG Recovery (MT CO_2e/short ton)	Source[2]
Food	*22.8%*	1.57	Exhibit 1-49, WARM V14 Organic Materials
Other Misc. Paper-Compostable	*0.4%*	2.24	Average of paper components
Remainder/Composite Paper – Compostable	*10.8%*	2.24	Average of paper components
Leaves and Grass	*3.1%*	0.55	Average of grass and leaves, Exhibit 2-11 WARM V14 Organic Materials
Pruning and Trimmings	*2.1%*	0.59	Exhibit 2-11 WARM V14 Organic Materials
Branches and Stumps	*0.8%*	0.77	Exhibit 2-11 WARM V14 Organic Materials
Manures	*0.1%*	n/a	n/a
Textiles	*3.9%*	n/a	n/a
Carpet	*1.0%*	n/a	Exhibit 3-26, WARM V14 Construction and Demolition Materials, no landfill CH_4
Clean Dimensional Lumber	*1.0%*	0.15	Exhibit 11-19, WARM V14 Construction and Demolition Materials
Clean Engineered Wood	*0.6%*	0.16	Wood flooring, Exhibit 10-13, WARM V14 Construction and Demolition Materials
Clean Pallets & Crates	*1.7%*	0.05	Wood product, Exhibit 11-19, WARM V14 Construction and Demolition Materials
Other Wood Waste	*2.3%*	0.05	Wood product, Exhibit 11-19, WARM V14 Construction and Demolition Materials
Remainder/Composite Organic	*6.6%*	0.84	Average of all organic material
Paper	13.0%	-	-
Uncoated Corrugated Cardboard	*2.3%*	2.36	Exhibit 3-27, WARM v14 Containers /Packaging
Paper Bags	*0.3%*	2.36	Assume the same as cardboard, Exhibit 3-27, WARM v14 Containers /Packaging
Newspapers	*2.1%*	0.95	Exhibit 3-27, WARM v14 Containers /Packaging
White Ledger Paper	*0.8%*	3.50	Exhibit 3-27, WARM v14 Containers /Packaging
Other Office Paper	*1.0%*	3.50	Exhibit 3-27, WARM v14 Containers /Packaging
Magazine and Catalogs	*0.7%*	1.08	Exhibit 3-27, WARM v14 containers /packaging

Waste Component	Waste Distribution[1] (%)	Landfill Gas Emissions	
		CH_4 without LFG Recovery (MT CO_2e/short ton)	Source[2]
Phone Books and Directories	*0.0%*	2.14	Exhibit 3-27, WARM v14 containers /packaging
Other Misc. Paper – Other	*3.7%*	2.14	Exhibit 3-27, WARM v14 containers /packaging
Remainder/Composite Paper	*2.1%*	2.14	Exhibit 3-27, WARM v14 containers /packaging
Glass	2.8%	-	-
Metal	3.5%	-	-
Electronics	0.9%	-	-
Plastic	13.9%	-	-
Inerts and Other Material	3.1%	-	-
Household Hazardous Waste	0.5%	-	-
Special Waste	3.7%	-	-
Mixed Residue	1.3%	-	-
Mixed Waste Emission Factor		**0.98**	
Source: [1] City of Oceanside Waste Characterization Study (2017), [2] EPA Waste Reduction Model (WARM) Version 14			

The mixed waste emission factor given in Table 8 is the emission factor without LFG. The U.S. Community Protocol's 75% default capture rate of CH_4 emissions from landfills is applied in the emissions calculation. The total solid waste disposal and the corresponding GHG emissions for 2016 are given in Table 9.

Table 9 Greenhouse Gas Emissions from Solid Waste

Year	Solid Waste Disposed		GHG Emission Factor (MT CO_2e/short ton)	Oxidation Rate	Total GHG Emissions (MT CO_2e)	Default CH_4 Capture Rate	Remaining Emissions (MT CO_2e)
	Citywide (short tons/year)	Citywide (MT/year)					
2016	158,252	143,563	0.98	10%	139,617	75%	35,000
GHG emissions for each category are rounded. Values are not rounded in the intermediary steps in the calculation. The oxidation rate is the default amount of CH_4 that is oxidized and not emitted; therefore, only 90% of total CH_4 emissions are produced. Energy Policy Initiatives Center, University of San Diego 2023							

3.2.5 Off-Road Transportation

Emissions from off-road vehicles and equipment, are from the diesel and gasoline fuel combustion in internal combustion engines.

CARB's OFFROAD2021, an online emissions inventory database for off-road equipment and vehicles, generates off-road vehicles emissions by region, vehicle category, equipment type, horsepower (HP),

and fuel type.[31] OFFROAD2021 integrates data from several updated off-road models, such as SORE 2020 which generates emissions for off-road vehicles with engines less than or equal to 25 HP, and RV 2018 which generates emissions for recreational vehicles.

Due to the lack of jurisdiction-specific data from these models, the emissions or fuel consumption from the CARB model outputs for the San Diego region were scaled to Carlsbad based on sub-category-specific scaling factors. The off-road activity sub-categories and the respective scaling factors are given in Table 10.[32] This does not include all sub-categories identified in CARB's off-road models, only those that are relevant to Carlsbad.[33]

Table 10 Off-Road Transportation Sub-Categories

Sub-Category	Common Equipment Type	Scaling Factor
Lawn and Garden Equipment	Lawn mowers, trimmers, brush cutters, chainsaws, leaf blowers/ vacuums	Population
Light Commercial Equipment	Generator set, pumps, welders	Commercial Jobs
Construction and Mining	Excavators, off-highway tractors, loaders, paving equipment	Construction Jobs
Industrial	Aerial lifts, forklifts, sweepers/scrubbers	Industrial Jobs
Energy Policy Initiatives Center, University of San Diego 2023		

The ratio and corresponding GHG emissions from the off-road transportation category for 2016 are given in Table 11.[34]

[31] CARB: Updates to CARB's Online Emissions Inventory Database for Off-Road Equipment and Vehicles. October 19, 2021. The previous comprehensive CARB off-road equipment and vehicle model was OFFROAD2007, released in 2007. After the release of OFFROAD2007, CARB developed category specific methods and inventory models for specific regulatory support, which replaced the results of specific vehicle categories in OFFROAD2007.
[32] The sub-categories listed in this table are not the comprehensive off-road mobile sources listed in CARB, as some of the sub-categories are not relevant to Carlsbad, such as airport ground support, pleasure craft, commercial marine vessels, etc.
[33] Carlsbad: Climate Action Plan (Adopted September 2015, amended May 2020). Section 2 Emissions Inventory.
[34] CARB: Updates to CARB's Online Emissions Inventory Database for Off-Road Equipment and Vehicles. October 19, 2021.

Table 11 Greenhouse Gas Emissions from Off-Road Transportation

Year	Sub-Category	Scaling Factor	GHG Emissions (MT CO_2e)
2016	Lawn and Garden Equipment	3%	1,615
	Light Commercial Equipment	5%	3,061
	Construction and Mining	10%	17,694
	Industrial	10%	8,571
		Total	**31,000**

Not all off-road transportation emissions are included, only selected sub-categories are included. Total GHG emissions are rounded to the nearest thousands. Values are not rounded in the intermediary steps in the calculation.

CARB 2021, SANDAG 2021, Energy Policy Initiatives Center, University of San Diego 2023

3.2.6 Water

Emissions from water use in a jurisdiction result from the energy required to move water from origin sources to end-use customers, including upstream supply and conveyance, water treatment, and water distribution, as circled in Figure 3. The energy required to move water is primarily electricity but may include natural gas or other fuels.

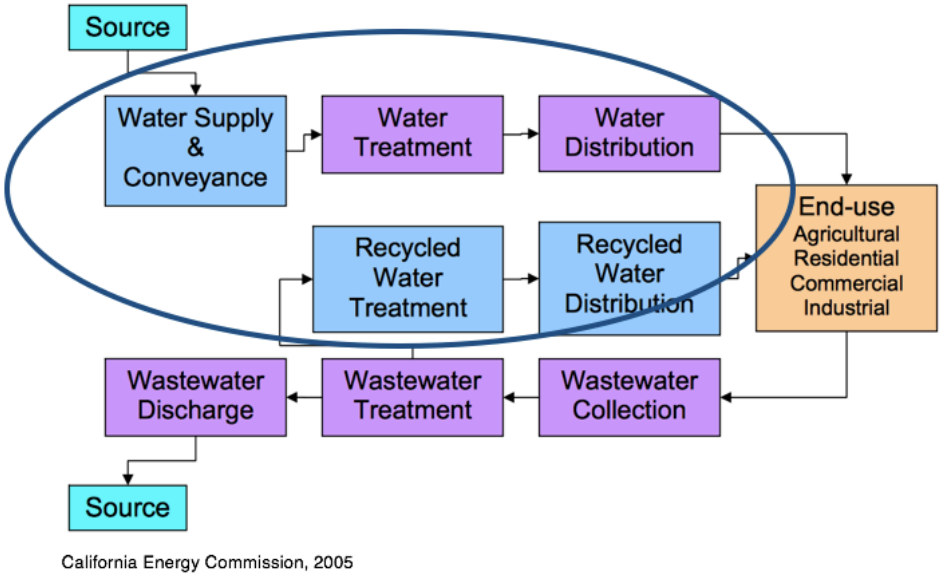


Figure 3 Example of Water Cycle

Emissions from water were estimated using the method Wastewater and Water (WW.14) from the U.S. Community Protocol.[35] Emissions associated with water end-use, such as water heating and cooling, are included in the electricity and natural gas category and not in the water category, as data are not available to separate out those values.

The Carlsbad Municipal Water District (CMWD) is a San Diego County Water Authority (SDCWA) member agency that provides both potable and recycled water service within Carlsbad. CMWD services the

[35] ICLEI – Local Governments for Sustainability USA: U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions, Version 1.2 (2019), Appendix F: Wastewater and Water Emission Activities and Sources.

majority of the city's potable water service area, covering77% of the city's population.[36] The remaining portion of the city is served by Olivenhain Municipal Water District (OMWD) and Vallecitos Water District (VWD).[37] 100% of the city's potable water supply is imported water from SDCWA.[38] The potable water supplied within CMWD service area and within the entire city is given in Table 12.[39]

Table 12 CMWD and Total Water Supplied

Year	Carlsbad Municipal Water District (CMWD) Potable Water Supplied (acre-feet)	Total Potable Water Supplied (acre-feet)
2016	13,638	17,734
CMWD services the majority of the city's potable water, covering 77% of the city population. City of Carlsbad 2018, Energy Policy Initiatives Center, University of San Diego 2023		

The energy used to produce and distribute water from each source is different due to the different raw source types and locations. The energy intensity of water, or the energy needed to move one unit of water through each segment of the water-use cycle (water supply and conveyance, water treatment, and water distribution), is expressed in kWh per acre foot (kWh/Acre-foot) and is described below.

Upstream Supply and Conveyance – This is defined as supply and conveyance of water from the raw source to the local service area. The upstream supply and conveyance energy use for SDCWA untreated water consists of conveyance of water from the State Water Project and the Colorado River through Metropolitan Water District (MWD)'s and SDCWA's service areas. The upstream supply and conveyance energy use for SDCWA treated water consists of with the energy use of SDCWA's untreated water and the water treatment energy use before the water is delivered to Carlsbad's service area. The water may be treated at MWD's or SDCWA's water treatment plants (WTPs).[40] The city does not have operational control over the upstream supply and conveyance.

Water suppliers have begun to voluntarily report the energy intensity in their service areas in Urban Water Management Plans (UWMPs). The energy intensities reported in SDCWA's and MWD's 2015 UWMPs are used to calculate the upstream supply energy intensity for SDCWA's member agencies. The energy intensity is based on the average of fiscal years 2013 and 2014 and is shown in Table 13.

[36] Carlsbad Municipal Water District: 2015 Urban Water Management Plan (June 2016). Section 3.1.3 Population and Demographics.
[37] City of Carlsbad. Water District Map.
[38] CMWD and VWD import 100% treated water from SDCWA. OMWD imports both treated and untreated water from SDCWA. The untreated water is treated at OMWD's David C. McCollom Water Treatment Plant.
[39] Potable water supplied within the CMWD service area (2012-2016) were provided by city staff (January 2018). Population served by CMWD and population within entire city (2010-2016) were provided by SANDAG (April 2017). Potable water supplied within entire city was calculated based on the population ratio between CMWD service area and the city (77%).
[40] SDCWA 2016: Urban Water Management Plan 2015, Metropolitan Water District of Southern California, Urban Water Management Plan 2015.

Table 13 Average Upstream Energy Intensity for SDCWA Member Agencies

Water System Segment	FY 2013 and 2014 Average Energy Intensity (kWh/acre-Foot)	Data Source
MWD delivered untreated*	1,817	MWD UWMP 2015 Appendix 9
SDCWA conveyance**	-62	SDCWA UWMP 2015 Appendix K
SDCWA treatment	60	SDCWA UWMP 2015 Appendix K
SDCWA distribution***	1.1	SDCWA UWMP 2015 Appendix K
SDCWA Treated Total	**1,816**	

MWD – Metropolitan Water District, SDCWA – San Diego County Water Authority, UWMP – Urban Water Management Plan, WTP – Water Treatment Plant.
*Includes conveyance from the State Water Project & Colorado River to MWD's distribution system, as well as distribution from MWD to MWD's member agencies.
**Conveyance of raw water supplied to the water treatment plants or to member agency connections (negative value represents hydro-electric generation by SDCWA).
*** Distribution of treated water from SDCWA's Twin Oaks WTP to SDCWA's member agencies.
"Upstream" refers to moving water from the original source to SDCWA's member agency's service area or first connection point

MWD 2016, SDCWA 2016, Energy Policy Initiatives Center, University of San Diego 2018

Local Potable Water Treatment –This is the energy used for WTP operations. CMWD imports treated water directly and does not own a WTP. Therefore, there is no energy used for local potable water treatment.

Local Potable Water Distribution – This is defined as the energy required to move treated water from WTPs to end-use customers. This includes energy use for water pump stations, pressure reduction stations, water tanks, etc. The local potable water distribution energy intensity is 15 kWh/acre-foot.[41]

In addition to providing potable water, CMWD delivers recycled water within the entire city.[42] The recycled water delivered by CMWD is from three sources: (1) the Carlsbad Water Recycling Facility (WRF), (2) the Meadowlark WRF, and (3) the Gafner WRF. The Meadowlark WRF is owned by VWD, and the Gafner WRF is owned by Leucadia Wastewater District (LWWD); both agencies sell the recycled water to CMWD for distribution.[43] CMWD has operational control over the Carlsbad WRF and recycled water distribution. The recycled water treatment and distribution energy intensity is 299 kWh/acre-foot.[44] Recycled water is supplied to golf courses, parks, industrial areas, homeowner association common areas, and more. The total potable and recycled water supplied and the corresponding GHG emissions from the water category in 2016 are given Table 14.

[41] The distribution energy intensity for CMWD service area in 2015 (the latest year with data available) was provided by city staff (January 2018) and used as a proxy for 2016.
[42] CMWD delivers recycled water within its service area and also adjacent agency service areas. CMWD is the only recycled water provider within the city. The recycled water distribution area is less than half of the city.
[43] CMWD: 2020 Urban Water Management Plan (June 2021). Section 6.7.2 Wastewater Treatment and Collection Facilities.
[44] CMWD: 2020 Urban Water Management Plan (June 2021). Section 5.10 Energy Intensity of Supply. The recycled water treatment energy intensity is 296 kWh/acre-foot (895,619 kWh for 3,029 acre-feet recycled water); and the recycled water distribution energy intensity is 3 kWh/acre-foot (11,159 kWh for 3,764 acre-feet recycled water). The energy intensity is based on CMWD's January-December 2020 data, and is used as a proxy for 2016 and beyond.

Table 14 Greenhouse Gas Emissions from the Water

Year	Potable Water Supplied (acre-feet)	Recycled Water Supplied (acre-feet)	GHG Emissions (MT CO_2e)
2016	17,734	4,057	8,000
GHG emissions for each category are rounded to the nearest thousands. Values are not rounded in the intermediary steps in the calculation. Energy Policy Initiatives Center, University of San Diego 2023			

3.2.7 Wastewater

The emissions from wastewater were estimated based on the total amount of wastewater generated in a given year and the emission factor of the wastewater treatment processes.

Wastewater in Carlsbad is collected and delivered to the Encina Wastewater Authority (EWA) for treatment at the Encina Water Pollution Control Facility (Encina WPCF). The wastewater treatment GHG emissions and total wastewater flow for the Encina WPCF were provided by EWA. In 2013, the Encina WPCF treated an average of 22.8 million gallons per day (MGD) with annual GHG emissions of 11,359 MT CO_2e. This resulted in an emission factor of 1.37 MT CO_2e/million gallons treated, which consists of emissions from: (1) stationary combustion of anaerobic digester gas; (2) process emissions from wastewater treatment with nitrification and denitrification; and (3) direct anaerobic digester gas. The wastewater emission factor derived from the Encina WPCF was applied to all wastewater flow in the city. As similar data were not available for the other years, the 2013 emission factor was used as an estimate for 2016.

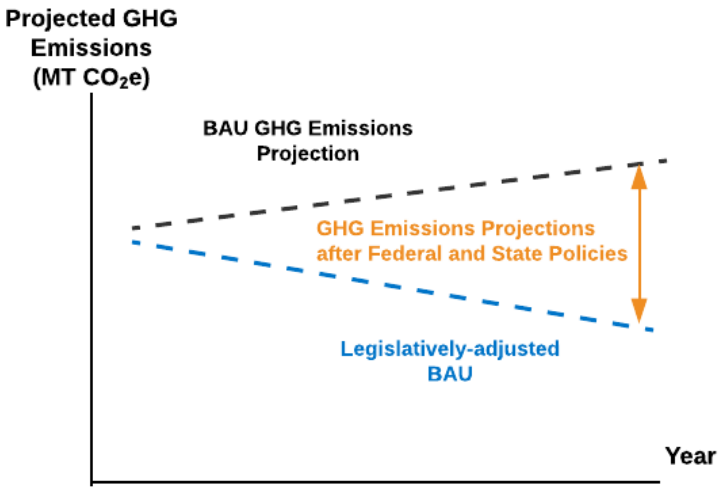
The total wastewater flow, the wastewater emission factor, and corresponding GHG emissions are given in Table 15.

Table 15 Greenhouse Gas Emissions from Wastewater

Year	Total Wastewater Generated (million gallons/year)	Wastewater Emission Factor (MT CO_2e/ million gallon)	GHG Emissions (MT CO_2e)
2016	2,170	1.37	3,000
GHG emissions for each category are rounded to the nearest thousand. Values are not rounded in the intermediary steps in the calculation. Energy Policy Initiatives Center, University of San Diego 2023			

4 BUSINESS-AS-USUAL EMISSIONS PROJECTION

To inform the development of GHG reduction strategies within the CAP Update, GHG emissions are projected using the 2016 baseline year GHG inventory, as well as estimates for population, housing, and job growth. This is used to develop a “business-as-usual” (BAU) projection, which demonstrates emissions growth in the absence of any new policies and programs. Next, future emissions reductions expected from applicable federal and State policies and programs are applied, creating a legislatively-adjusted BAU. Figure 4 provides an illustrative example of the difference between a BAU and a legislatively-adjusted BAU.



Energy Policy Initiatives Center, 2018

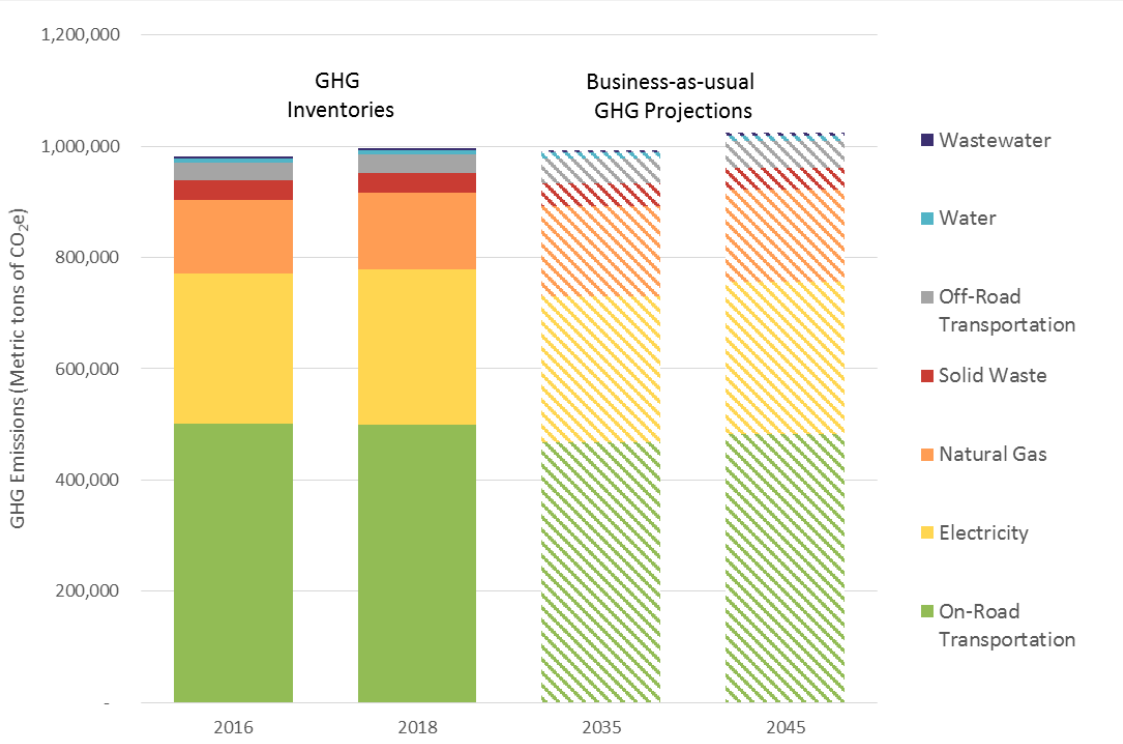
Figure 4 Example of Business-As-Usual and Legislatively-Adjusted Business-As-Usual Emissions Projections

The total BAU projected emissions are presented in Table 16 and Figure 5.

Table 16 Business-As-Usual Emissions Projections

Emissions Category	Projected GHG Emissions (MT CO_2e)	
	2035	2045
On-Road Transportation	468,000	482,000
Electricity	263,000	274,000
Natural Gas	162,000	166,000
Off-Road Transportation	45,000	47,000
Solid Waste	40,000	40,000
Water	11,000	11,000
Wastewater	4,000	4,000
Total	**993,000**	**1,024,000**

Sum may not add up to totals due to rounding.
Projected GHG emissions for each category are rounded. Values are not rounded in the intermediary steps in the calculation.
Energy Policy Initiatives Center, University of San Diego 2023



Business-as-usual GHG emissions projection with population, jobs, and housing units growth in Carlsbad, not including future impacts of adopted federal, state, or regional policies.
Energy Policy Initiatives Center, University of San Diego 2023

Figure 5 Greenhouse Gas Inventory and Business-As-Usual Emissions Projections

The methods used to project activity level and emission factors for each emissions category are described in Table 17 below.

Table 17 Method to Project Business-as-usual Emissions

Emissions Category	Activity	Method to Project Activity Level	Emission Factor	Method to Project Emission Factor
On-Road Transportation	VMT	Through 2035: Projection under HEU 2035-2045: Service population increase	Average vehicle emission factor	All new vehicles have the same emission rate as new vehicles in baseline year

Emissions Category	Activity	Method to Project Activity Level	Emission Factor	Method to Project Emission Factor
Electricity	Net energy for load	Residential: Population increase Non-Residential: Jobs increase	City-specific emission factor	Fixed at the latest year with data available (2020)
Natural Gas	Natural gas end-use	Residential: Population increase Non-Residential: Jobs increase	Natural gas emission factor	0.00545 MT CO_2e/ therms
Solid Waste	Waste disposal	Population Increase	Mixed waste emission factor	0.98 MT CO_2e/short ton
Off-Road Transportation	All adopted rules included in the CARB OFFROAD2021 Model			
Water	Potable and recycled water supply	Potable water: Population increase Recycled water: Fixed at the latest year with data available (2020)	Energy intensity and electricity emission factor	Fixed at the latest year with data available (2020)
Wastewater	Wastewater generation	Population increase	Wastewater emission factor	0.37 MT CO_2e/ million gallon
Method to project business-as-usual emissions only Population, jobs, and service population are provided in Table 2 Energy Policy Initiatives Center, University of San Diego 2023				

5 2035 AND 2045 REDUCTION TARGETS

Table 18 shows the BAU emissions projections and the 2035 and 2045 reduction targets.

Table 18 Emissions Projections, Reduction Targets, and Emissions Reductions Needed

Year	Business-as-usual Projection* (MT CO_2e)	Target Emissions Level (% below baseline)	Target Emissions Level (MT CO_2e)
2016	981,000	-	-
2035	993,000	50%	490,000
2045	1,024,000	85%	147,000
Emissions projections and targets are rounded. *BAU projection without impact of federal, State, regional, and local CAP Update strategies. Energy Policy Initiatives Center, University of San Diego 2023.			

A comparison of the 2016 and 2018 GHG inventory, BAU projection, and the 2035 and 2045 reduction targets is provided in below Figure 6.

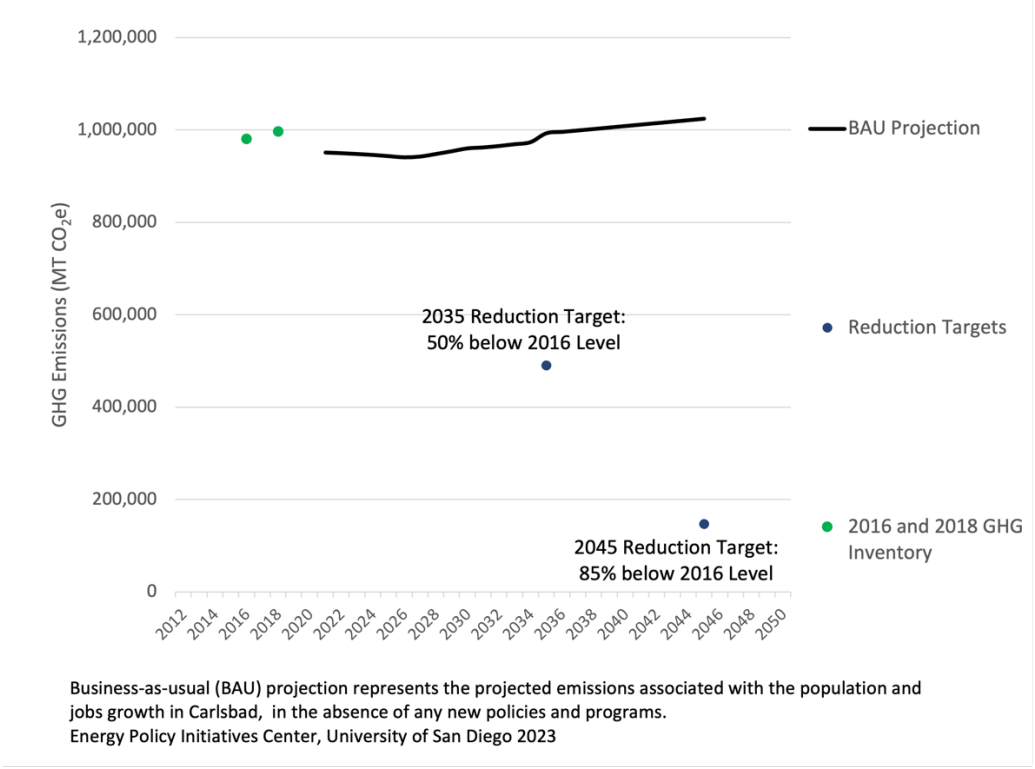


Figure 6 Business-As-Usual Projections and Reduction Targets

6 SUMMARY OF EMISSIONS REDUCTION ESTIMATES

This section summarizes the GHG emissions reductions identified for each strategy and measure included in the CAP Update. Table 19 below presents a summary of emissions reductions from each strategy including the reductions from federal and State regulations.

Table 19 2035 and 2045 GHG Emissions Reductions by Strategy

Strategy	Emissions Reductions (MT CO_2e)	
	2035	2045
Transportation	6,000	10,000
Energy	52,000	65,000
Water and Wastewater	2,000	2,000
Waste Diversion	32,000	37,000
Off-Road Equipment	5,000	15,000
Carbon Sequestration	8,000	12,000
Federal and State Regulations	525,000	742,000
Total Reduction*	**630,000**	**883,000**

*Total emissions reduction values in 2035 and 2045 are rounded. The total includes values from federal, State, regional, and local CAP Update strategies.
Energy Policy Initiatives Center, University of San Diego 2024

Each strategy has several measures. Table 20 presents a detailed summary of the emissions reductions from each CAP Update measure, including each federal and State action.

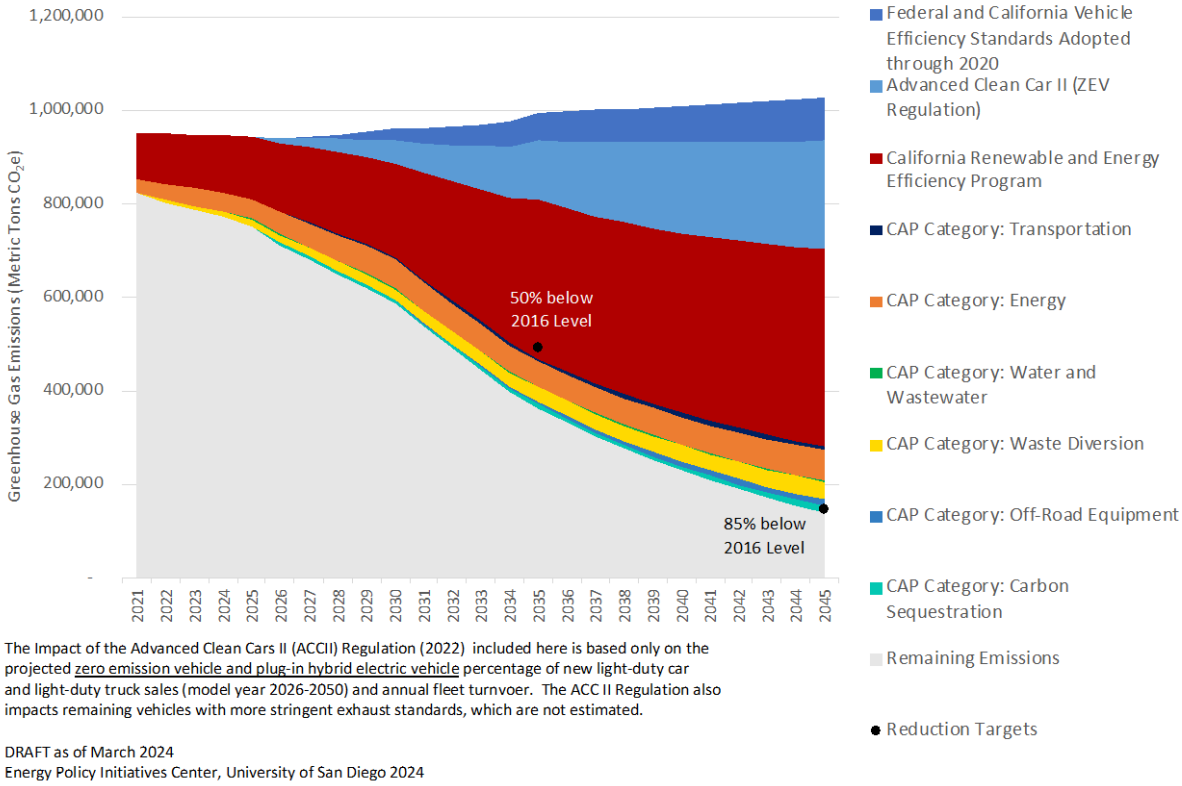
Table 20 2035 and 2045 GHG Emissions Reductions by Measure

Strategy	Measure	Emissions Reductions (MT CO_2e)	
		2035	2045
Transportation	T-1 Traffic Calming & Optimization	1,334	746
	T-2 Transportation Demand Management Ordinance	3,254	8,630
	T-3 Safe Routes to School	70	39
	T-4 Bikeway System Improvements	566	324
	T-5 Pedestrian System Improvements	55	31
	T-6 Local Transportation Improvements	Not quantified	
	T-7 Municipal Transportation Demand Management	92	51
	T-8 Increase Public Zero Emission Vehicle Infrastructure	Supporting California's Advanced Clean Car II Regulation	
	T-9 Zero Emission City Fleet	1,059	592
	T-10 Parking Management Strategies	Not Quantified	
Energy	E-1 Renewable Energy at Municipal Facilities	751	1,306
	E-2 Community Choice Energy	17,110	-
	E-3.1 Nonresidential Building Energy - Existing Reach Code	770	1,296
	E-3.2 Nonresidential Building Energy - Updated Reach Code	2,773	5,796
	E-3.3 Nonresidential Building Energy - Solar Carports	Not quantified	
	E-4.1 Residential Building Energy - Existing Reach Code	3,212	3,710
	E-4.2: Residential Building Energy - Updated Reach Code	1,196	1,488
	E-5 Building Energy Benchmarking	4,308	7,358
	E-6 Decarbonize Existing Buildings	22,356	44,305
Water and Wastewater	W-1 Wastewater System Improvements	59	-
	W-2 Water System Improvements	1,516	1,583
Waste Diversion	WD-1 Solid Waste and Organic Waste Diversion	31,776	37,040
Off-Road Equipment	OR-1 Convert Gas-Powered Leaf Blowers	396	386
	OR-2 Increase Renewable or Alternative Fuel in Construction Equipment	4,698	15,081
Carbon Sequestration	CS-1 Community Forest Management	7,519	11,966
Federal and State Regulations	Federal and California Vehicle Efficiency Standards	186,134	320,795
	California Energy Efficiency Programs	6,385	4,998
	Renewables Portfolio Standard	267,309	319,919
	California Solar Policy, Programs and Mandates	64,878	95,985
Total from Federal and State Regulations		524,707	741,697
Total from CAP Update Measures		104,871	141,728

Strategy	Measure	Emissions Reductions (MT CO_2e)	
		2035	2045
Total Reduction*		**630,000**	**883,000**

*Total emissions reductions values in 2035 and 2045 are rounded. The total includes reductions from federal, State, and CAP Update measures.
Energy Policy Initiatives Center, University of San Diego 2024

Figure 7 provides a visualization of the emissions trends through 2045.



The Impact of the Advanced Clean Cars II (ACCII) Regulation (2022) included here is based only on the projected zero emission vehicle and plug-in hybrid electric vehicle percentage of new light-duty car and light-duty truck sales (model year 2026-2050) and annual fleet turnvoer. The ACC II Regulation also impacts remaining vehicles with more stringent exhaust standards, which are not estimated.

DRAFT as of March 2024
Energy Policy Initiatives Center, University of San Diego 2024

Figure 7 Greenhouse Gas Emissions Trend (2021–2045)

In Figure 7, the colored wedges represent the reduction from each CAP Update strategy and from federal and State actions. Each wedge represents the cumulative GHG reduction from through 2045. The grey area beneath the colored wedges represents the remaining emissions after all the actions have taken place.

7 METHODS TO ESTIMATE GREENHOUSE GAS EMISSIONS REDUCTIONS

The following sub-sections describe the methods to estimate GHG emissions reductions:

- Section 7.1 through Section 7.3 discuss a set of common assumptions and sources used to calculate emissions reductions in energy and on-road transportation categories;
- Section 7.4 describes the emissions reductions from federal and State actions; and
- Section 7.5 describes the emissions reductions from the CAP Update measures.

7.1 Common Assumptions and Methods for Calculating Electricity Emissions Reductions

The following overall assumptions and methods are used in the calculation of emissions reductions related to electricity, including those from federal and State actions as well as CAP Update measures.

7.1.1 GHG Emission Factor for Electricity

The electricity emission factors in Carlsbad (i.e., citywide electricity emission factors) are the weighted average emission factors of gross generation from four sources of supply: 1) SDG&E; 2) the electric retail suppliers for SDG&E's DA customers; 3) Clean Energy Alliance (CEA), a Community Choice Energy program launched in 2021; and 4) behind-the-meter photovoltaic (PV) systems. The citywide electricity emission factors are different from the emission factors used in the GHG inventory because the electricity generated from behind-the-meter PV systems are assumed to be zero emissions and not accounted for in the GHG inventory. However, all sources are considered to estimate the effects of State actions and CAP Update measures that increase the grid-supply of renewable and zero-carbon electricity. Considering behind-the-meter PV as a source that contributes to the citywide electricity emission factor reflects the effects of energy efficiency programs that may reduce behind-the-meter electricity use, or the effects from additional electric vehicle (EV) charging load, which may come from behind-the-meter electricity sources and not just from grid supply.

The citywide electricity emission factor is calculated based on the percentage of renewable content in and the percentage of gross generation from each supply source as described below. This method is applied to 2020 onward when the projection from electricity category starts. As the percentage of renewable and zero-carbon supply in the mix increases, the citywide electricity emission factor decreases.

7.1.1.1 Supply from San Diego Gas & Electric

As of 2020, SDG&E's bundled power mix is 31% renewable.[45] It is assumed SDG&E will meet the 45% renewable by 2024, 60% renewable by 2030, 90% renewable and zero-carbon by 2035, and 100% renewable and zero-carbon by 2045 as required by the Renewables Portfolio Standard (RPS) under SB 100 (de León) and SB 1020 (Laird).[46] Estimates in this Appendix assume that 100% renewable and zero-carbon means supplying every hour of the year with renewable and carbon-free electricity resources. The legislative mandates are discussed in detail in Section 7.4.1.

7.1.1.2 Supply from Electric Retail Suppliers of San Diego Gas & Electric Direct Access Customers

Like SDG&E, electric retail suppliers of SDG&E DA customers are required to meet RPS targets.

7.1.1.3 Supply from Clean Energy Alliance

CEA, the Community Choice Energy program launched in 2021, would increase its renewable and zero-carbon electricity supply beyond the current RPS mandates. This is discussed in detail in Section 7.5.2.2.

Because all of California's retail electricity suppliers need to meet the RPS requirement, a portion of the emissions reduction from RPS compliance is credited to State actions. The remaining portion of reductions is attributed to CAP Update Measure E-2.

[45] SDG&E: 2020 Power Content Label.

[46] SB 100 (de León) California Renewables Portfolio Standard Program: emissions of greenhouse gases (2017–2018). The interim RPS targets are 44% by 2024 and 52% by 2027 from eligible renewable energy resources. SB 1020 (Laird) Clean Energy, Jobs, and Affordability Act of 2022 (2021-2022).

7.1.1.4 Supply from Behind-the-Meter Photovoltaic Systems

Electricity generation from behind-the-meter PV systems, including residential and non-residential PV, is considered part of the overall electricity supply. Electricity generation from PV is considered 100% zero-carbon (i.e., GHG-free). The State's solar policies, programs, and mandates are discussed in Section 7.4.1.1.

7.1.1.5 Citywide Electricity Emission Factors

The citywide electricity emission factor is based on the percentage of gross generation from each supply, as well as the percentage of renewable and zero-carbon content in each supply.

Table 21 shows the contribution from each supply to gross generation, its renewable and zero-carbon content, and the overall citywide electricity emission factors for 2020, 2035, and 2045.

Table 21 Carlsbad Citywide Electricity Emission Factors

Year		2020	2035	2045
Clean Energy Alliance	% of Gross Generation Supplied	-*	49%	46%
	Renewable and Zero-Carbon Content in Supply	-*	100%	100%
Other Electric Retail Suppliers	% of Gross Generation Supplied	6%	5%	5%
	Renewable and Zero-Carbon Content in Supply	33%	90%	100%
SDG&E	% of Gross Generation Supplied	84%	27%	26%
	Renewable and Zero-Carbon Content in Supply	31%	90%	100%
Behind-the-meter PV	% of Gross Generation Supplied	10%	18%	24%
	Renewable and Zero-Carbon Content in Supply	100%	100%	100%
Citywide	Renewable and Zero-Carbon Content in Supply	37%	97%	100%
	Electricity Emission Factor (lbs CO_2e/MWh)	576	30	-

*Clean Energy Alliance was launched in 2021.
The overall citywide emission factors here are different from the emission factors used in the GHG inventories. The emission factors used in GHG inventories do not include behind-the-meter supplies.
2020 is the latest year with utility data available. 2035 and 2045 data are projections based on CAP Update assumptions, current status, and future impact of State policies and programs.

Energy Policy Initiatives Center, University of San Diego 2023

In 2020, SDG&E and other electric retail suppliers supplied 90% of the projected gross generation, and behind-the-meter PV systems supplied the remainder. In 2035, the projected electricity supply from behind-the-meter PV systems is estimated to be 18% of gross generation. To comply with the mandated renewable and zero-carbon targets for 2035, the renewable content in electricity from both SDG&E and other electric retail suppliers will increase to 90%. This Appendix assumes the renewable and zero-carbon supply is fixed at the RPS mandate level to avoid overestimating the emissions reductions from these supplies. Based on the target for CAP Measure E-2, it is assumed CEA will have 100% renewable and zero-carbon sources by 2035. Based on these supply contributions, the citywide annual weighted electricity emission factor in 2035 is projected to be 30 lbs CO_2e/MWh (97% renewable and zero-carbon)) and zero lbs CO_2e/MWh in 2045 (100% renewable and zero-carbon).

The citywide electricity emission factors are used to calculate the emissions reductions from electricity savings, as well as State actions and CAP Update measures that increase renewable supply.

7.1.2 GHG Emissions Reductions from Actions that Increase Renewables in Electricity

The projected citywide electricity emission factor is used to estimate the GHG emissions reductions from any actions that increase the overall renewable and zero-carbon supply. The total reduction from State and local CAP Update measures that increase renewable supply is given in Table 22, calculated using the projected gross generation in target years and the difference in the 2035 and 2045 citywide emissions and BAU emission factors.

Table 22 GHG Emissions Reductions from Actions Increasing Renewable and Zero-Carbon Supply

Year	Gross Generation (GWh)	BAU Projections		Projections with State and Local CAP Update Actions in Increasing Renewable and Zero-Carbon Supply		GHG Emissions Reductions from Increased Renewable and Zero-Carbon Supply (MT CO_2e)
		BAU Electricity Emission Factor (lbs CO_2e/MWh)	BAU Emissions from Electricity (MT CO_2e)	Projected Electricity Emission Factor (lbs CO_2e/MWh)	Projected Emissions from Electricity (MT CO_2e)	
2035	1,381	576	361,126	30	18,724	342,401
2045	1,558	576	407,283	-	-	407,283

The projections with increasing renewable and zero-carbon supply are based on CAP Update assumptions and State policies and programs, including the additional electric load from electric vehicles due to California's Advanced Clean Cars II regulations.

Energy Policy Initiatives Center, University of San Diego 2023

The BAU emission factor for 2020 (Table 21) is kept constant through the year 2045. The total emissions reductions from increasing renewable supply, as calculated above (Table 22), is attributed to each supply based on its renewable and zero-carbon content compared to the total renewable and zero-carbon content. This is shown in Table 23.

Table 23 GHG Emissions Reductions by Supply

Year	Electricity Supply	Total	CEA	Other Electric Retail Suppliers	SDG&E	Behind-the-meter PV
2035	% of Gross Generation Supplied by Renewables Sources	97%	49%	5%	25%	18%
	Emissions Reduction from Increased Renewables Supply (MT CO_2e)	342,401	174,256	16,351	86,916	64,878
2045	% of Gross Generation Supplied by Renewables Sources	100%	46%	5%	26%	24%
	Emissions Reduction from Increased Renewables Supply (MT CO_2e)	407,283	186,238	19,818	105,243	95,985

CEA: Clean Energy Alliance
2035 and 2045 data are the projections based on CAP Update assumptions and the future impact of State policies and programs.
Energy Policy Initiatives Center, University of San Diego 2023

7.2 Common Assumptions and Methods for Calculating Natural Gas Emissions Reductions

As described in Section 3.2.3, the default natural gas emission factor of 0.00545 MT CO_2e per therm is used for all years to estimate the emissions reductions for the CAP Update measures that reduce natural gas use.

7.3 Common Assumptions and Methods for Calculating On-Road Transportation Emissions Reductions

The following assumptions and methods are used to calculate emissions reductions for strategies related to on-road transportation, including federal and State actions and local CAP Update measures.

7.3.1 GHG Emission Factor for On-Road Transportation

The GHG emission factor for on-road transportation is used in several ways throughout the Appendix: (1) to estimate the effect of federal and State actions that increase the vehicle fuel efficiency standard and increase zero-emission vehicles (ZEVs); and (2) the impact of VMT reduction.

7.3.1.1 Impact of Federal and State Actions on Average Vehicle Emission Rates

The latest CARB EMFAC2021 model includes the effects of federal and State regulations related to tailpipe GHG emissions reductions that were adopted by the end of 2020.[47] In August 2022, CARB adopted the Advanced Clean Cars II (ACCII) regulations that established standards for new post-2026 model year light-duty vehicles. ACCII amended: (1) the low-emission vehicle (LEV) regulations to strengthen standards for light-duty vehicles and trucks to reduce smog-forming emissions; and (2) the ZEV regulations to require an increasing number of ZEVs to meet air quality and climate change emissions standards.[48] The ZEV amendments support Governor Newsom's Executive Order N-79-20 that requires all new passenger vehicles sold in California to be ZEVs by 2035.[49]

Starting in 2026, ACCII has a significant impact on the percentage of new ZEVs and plug-in hybrid electric vehicles (PHEVs). However, EMFAC2021 default outputs do not include the effect of ACCII. The pending update of the EMFAC model, EMFAC202Y, will include the impact of ACCII and other light-duty and heavy-duty vehicle regulations passed after the adoption of EMFAC2021.[50]

Figure 8 shows the differences in projected ZEV and PHEV sales as required by ACCII and in EMFAC2021.

[47] CARB: EMFAC2021 Volume III Technical Document, Version 1.0.1 (April 2021). Section 1.3.5 Regulations and Policies includes a list of polices and regulations covered in EMFAC2021.
[48] CARB: Advanced Clean Cars II.
[49] Id.
[50] CARB Presentation EMFAC202Y: An Update to California on-road Mobile Source Emissions Inventory (October 12, 2022).

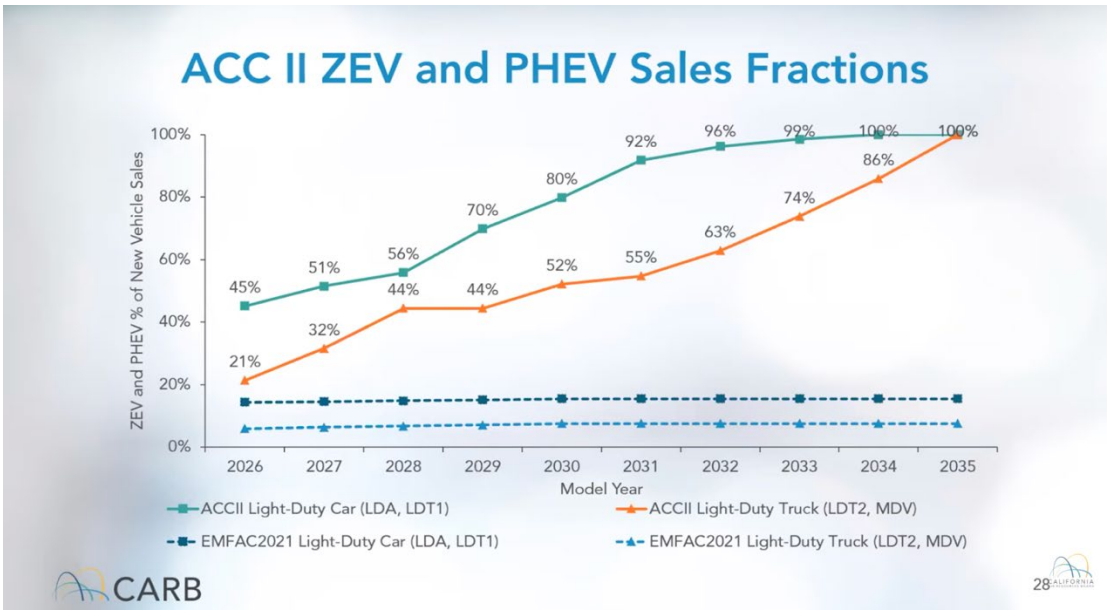


Figure 8 ACCII ZEV and PHEV Sales (Adapted from CARB October 2022 Public Workshop for the EMFAC202Y Model, Presentation Slide 28)

To estimate the impact of ACC off-model, the ACCII ZEV and PHEV sales in Figure 8 are applied to new light-duty cars trucks starting in model year 2026. For example, 45% of new light-duty cars in model and calendar year 2026 will be ZEVs and PHEVs, with the remaining light-duty cars split between gasoline and diesel[51]. Starting with model year 2035, new light-duty vehicles (both cars and trucks) will be 100% ZEVs or PHEVs.

The average vehicle emission rates (g CO_2e/mile) are calculated based on the distribution of VMT in each vehicle class with ACCII adjustment for light-duty vehicles, as well as the emission rate of each vehicle class. The average vehicle emission rates (Table 24) are used to estimate the GHG emissions reduction impact of federal and State policies that increase vehicle efficiency and ZEVs.

[51] Based on the EMFAC2021 default gasoline-diesel cars fraction.

Table 24 Average Vehicle Emission Rate in the San Diego Region

Year	EMFAC2021 Default Results (with the Impact of all Adopted State and Federal Policies through 2020)		Adjusted EMFAC2021 Default Results with ACCII ZEV Regulations	
	Ratio of e-VMT to Total VMT (%)	Average Vehicle Emission Rate (g CO_2e/mile)	Ratio of e-VMT to Total VMT (%)	Average Vehicle Emission Rate (g CO_2e/mile)
2019	1.4%	428	1.4%	428
2035	10%	317	44%	218
2045	13%	296	74%	122

ACCII: Advanced Clean Cars II Regulations
e-VMT: electric vehicle miles traveled
EMFAC2021 includes all key federal and State regulations related to tailpipe GHG emissions reductions that were adopted by the end of 2020. EMFAC2021 results are adjusted to include the ACCII ZEV regulations.

CARB 2021, Energy Policy Initiatives Center, University of San Diego 2023

This Appendix assumes that the impact of ACCII in the San Diego region will be the same as its impact statewide due to the lack of regional specific data available. The additional electric load from the ZEVs and PHEVs is included in the projected gross generation in the electricity category.

7.4 Federal and State Actions that Reduce GHG Emissions in Carlsbad

In addition to how federal and State regulations affect the emissions factors of electricity and on-road transportation, these same policies lead to significant emissions reductions in Carlsbad through 2045. This section provides a summary of the methods used to estimate and attribute the emissions reductions associated with the following federal and State actions that increase renewable electricity, building energy efficiency, and clean and efficient transportation:

- California RPS – SB 100 and SB 1020
- California Solar Programs, Policies and Mandates
- California Energy Efficiency Programs
- Federal and California Vehicle Efficiency Standards

7.4.1 California Renewables Portfolio Standard

SB 100, the 100 Percent Clean Energy Act of 2018, adopts a 60% RPS for all of California's retail electricity suppliers by 2030. SB 100 also provides goals for the intervening years before 2030 and establishes a State policy requiring that zero-carbon resources supply 100% of all retail electricity sales to end-user customers and all State agencies by December 31, 2045.[52] SB 1020, the Clean Energy, Jobs, and Affordability Act of 2022, adopts two interim targets for all retail electricity sales to end-use customers: 90% renewable and zero-carbon electricity by 2035 and 95% renewable and zero-carbon electricity by 2040.[53] The statewide renewable and zero-carbon targets are shown in Figure 9 below.

[52] SB 100 (de León): California Renewables Portfolio Standard Program: emissions of greenhouse gases (2017–2018). The interim RPS targets are 44 percent by 2024 and 52 percent by 2027 from eligible renewable energy resources.
[53] SB 1020 (Laird): the Clean Energy, Jobs, and Affordability Act of 2022 (2021–2022).

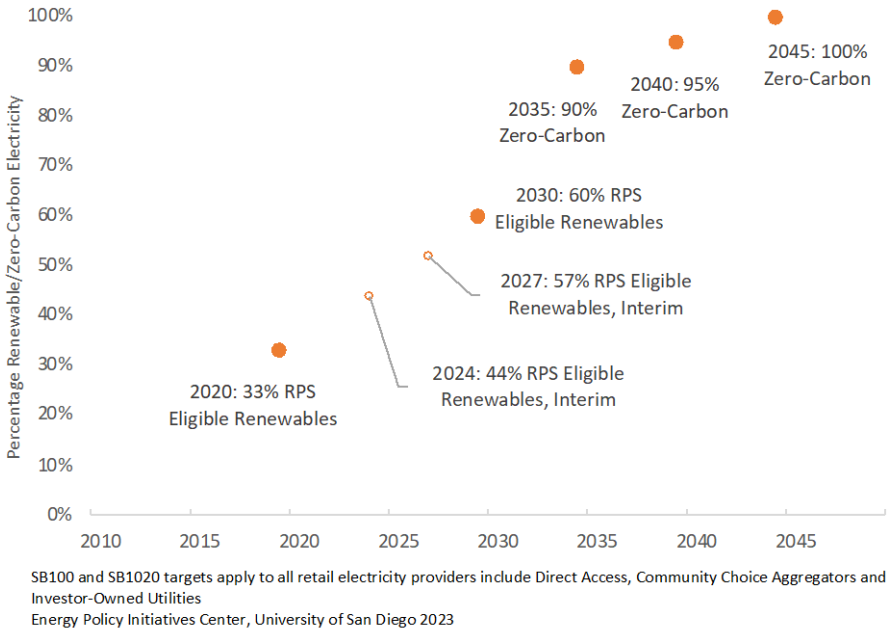


Figure 9 SB 100 and SB 1020 Targets

All retail electricity suppliers are required to meet the State's RPS requirements, including SDG&E, retail electricity suppliers for SDG&E's DA customers, and CEA. In this Appendix, a conservative approach is taken. It's assumed all providers for current utility customers, including electricity sales to DA customers, will meet, but not surpass, the RPS requirements. Under this assumption, all emissions reductions from SDG&E and electric retail suppliers reaching 90% renewable and zero-carbon in 2035 are credited to the State under the RPS requirements. In 2045, because all retail electricity suppliers are required to meet the 100% renewable and zero-carbon requirement, all emissions reductions are credited to the State.

For CEA, a portion of the emissions reductions in 2035 from the program will be credited to the State under RPS compliance, and the remaining reduction will be attributed to a local CAP Update measure (E-2), as described in Section 7.5.2.2. In addition, the electricity related to bring water down from the State Water Project and the Colorado River also must be renewable or zero-carbon under the mandates. Table 25 shows results from RPS mandates in target years.

Table 25 Emissions Reductions from California Renewables Portfolio Standard

Year	RPS-Related Emissions Reductions from SDG&E* (MT CO_2e)	RPS-Related Emissions Reductions from CEA (MT CO_2e)	RPS-Related Emissions Reductions from Upstream Water-Energy Use (MT CO_2e)	Total RPS-Related Emissions Reductions (MT CO_2e)
2035	103,267	156,830	7,212	267,309
2045	125,060	186,238	8,621	319,919

CEA: Clean Energy Alliance
*Includes SDG&E and electric retail suppliers of SDG&E DA customers.
2035 and 2045 data are projections under the CAP based on current status, future impact of State policies and programs, and CAP Update measures assumptions.

Energy Policy Initiatives Center, University of San Diego 2023

7.4.1.1 California Solar Programs, Policies, and Mandates

California has several policies and programs to encourage customer-owned, behind-the-meter PV systems, such as the California Solar Initiative, New Solar Home Partnership, Net Energy Metering, and electricity rate structures for solar customers. The California 2019 Building Energy Efficiency Standards, which went into effect on January 1, 2020, required all newly constructed single-family homes, low-rise multi-family homes, and detached accessory dwelling units (ADUs) to have PV systems installed, unless the building receives an exception.[54] The latest California 2022 Building Energy Efficiency Standards (2022 Code), which went into effect on January 1, 2023, expanded the PV requirement to include non-residential buildings. In addition, the 2022 Code encourages efficient electric heat pumps and establishes electric-ready requirements for new residential construction.[55]

The California Energy Demand 2022–2035 Forecast, developed by the CEC, has projections for PV capacity from behind-the-meter PV adoption in the SDG&E planning area through 2035, including the impact of the residential and non-residential PV mandates.[56] The baseline PV projection from 2022–2035 in the SDG&E planning area is used to forecast PV generation in this Appendix.[57]

The California Distributed Generation (DG) Statistics database includes capacities of behind-the-meter PV systems interconnected in a jurisdiction in a given year for each of the three Investor-Owned Utility (IOU) planning areas, including SDG&E. This provides a historical record used to determine the capacity in GHG inventory years and the trends in PV installation.

[54] CEC: 2019 Building Energy Efficiency Standards – 2019 Residential Compliance Manual (December 2018). For the requirements on newly constructed single-family and low-rise multi-family homes, see Section 7.2 Prescriptive Requirements for Photovoltaic System. For the requirements on newly constructed and detached ADU, see Section 9.3.5 Accessory Dwelling Units.
[55] CEC: 2022 Building Energy Efficiency Standards.
[56] The New Billing Tariff that went into effect in April 2023 and the federal ITC extension announced in August 2022 will have a long term an impact the behind-the-meter PV installation. The Energy Demand Forecasts are updated annually, and the impacts will be assessed in future versions.
[57] CEC: California Energy Demand Update 2022-2035 accessed June 3, 2023.

A comparison of the estimated capacity and electricity generation from PV systems in Carlsbad and in the SDG&E planning area is given in Table 26.[58]

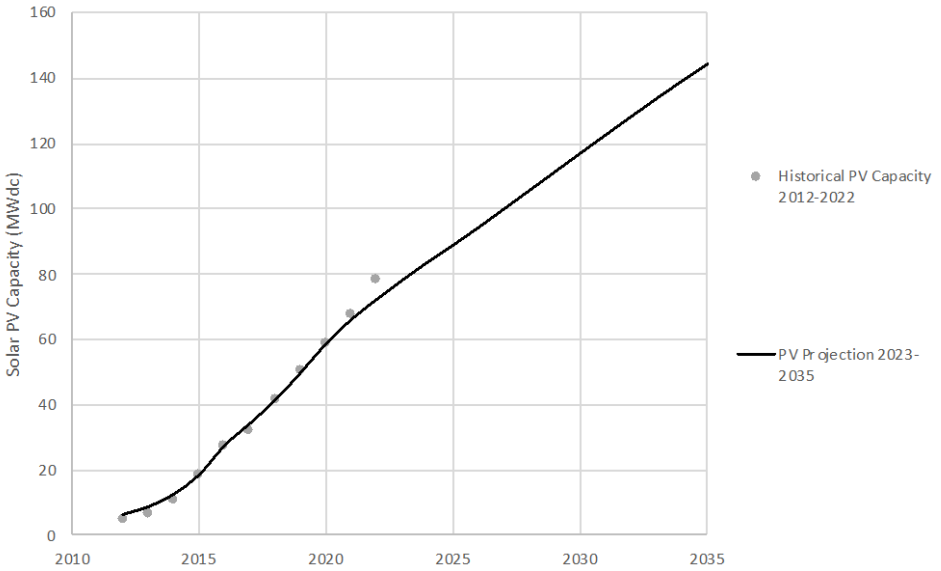
Table 26 Behind-the-meter PV Capacity and Estimated Electricity Generation

Year	Carlsbad*		SDG&E Planning Area**	Historical Carlsbad to SDG&E Ratio of Electricity Generation from PV
	PV Capacity (MW)	Estimated Electricity Generation (GWh)	Estimated Electricity Generation (GWh)	
2019	6	11	367	3.1%
2020	11	18	531	3.5%
2021	18	32	784	4.1%
2022	27	47	1,170	4.0%

MW: megawatt; GWh: gigawatt hour
*Estimated electricity generation based on PV capacity and 20% capacity factor.
**California Energy Demand Baseline 2022–2035 Forecast
California DG Statistics 2023, CEC 2023, Energy Policy Initiatives Center, University of San Diego 2023

For future years, the electricity generation and capacity of behind-the-meter PV systems in Carlsbad are estimated based on the PV generation in CEC's baseline forecast for SDG&E's planning area and the average ratio of PV generation in Carlsbad to that of SDG&E's planning area from 2016–2022 (4.1%). Because of California's solar programs, policies, and mandates, the estimated 2035 PV capacity in Carlsbad is projected to be 145 megawatts (MW). The trend of behind-the-meter PV in Carlsbad is shown in Figure 10.

[58] The capacity of all interconnected PV systems in Carlsbad was from the California Distributed Generation Statistics NEM Currently Interconnected Data Set (current as of March 30, 2023), download date: June 3, 2023. National Renewable Energy Laboratory: Residential PV Resources Classes, Mean DC Capacity Factor.



Source of historical capacity: California Distributed Generation Statistics, 2023.
Source of capacity trend: California Energy Demand 2022-2035 Baseline Forecast in San Diego planning area, baseline scenario (Jan 2023 version).
Energy Policy Initiatives Center, University of San Diego, 2023

Figure 10 Behind-the-meter Photovoltaic Historical Capacity and Projections

Because there are no statewide PV projections beyond 2035, this Appendix assumes that the PV capacity from State programs beyond 2035 will have an annual growth rate of 3.8% (the 2034–2035 growth rate, or the last year with data available) beyond 2035.

The emissions reductions from all State and CAP Update measures that increase behind-the-meter renewable supply are calculated in Section 7.1.1 and shown in Table 27 below.

Table 27 Key Assumptions and Results for California Solar Policies, Programs, and Mandates

Year	California Solar Polices, Programs, and Mandates	
2035	Projected Behind-the-meter PV Capacity (MW)	145
	Projected Emissions Reduction (MT CO_2e)	64,878
2045	Projected Behind-the-meter PV Capacity (MW)	210
	Projected Emissions Reduction (MT CO_2e)	95,985
Solar policies, programs, and mandates include the impact of the PV mandates from the 2019 and 2022 Building Energy Efficiency Standard. The projected capacity and emissions reductions are based on CAP Update assumptions, current status, and future impact of State policies and programs. Energy Policy Initiatives Center, University of San Diego 2023		

7.4.2 California Energy Efficiency Program

In September 2021, the CPUC adopted energy efficiency goals for ratepayer-funded energy efficiency programs (Decision 21-09-037). The adopted energy saving goals for SDG&E's service territory are given

in the Decision on an annual basis from 2022 to 2032.[59] The sources of the energy savings include, but are not limited to, rebated technologies, building retrofits, behavior-based initiatives, and codes and standards.[60]

To evaluate the impact of the energy efficiency programs in Carlsbad, the total energy savings in SDG&E's service territory by 2032 are allocated to Carlsbad using a ratio of Carlsbad's natural gas and electricity demand to those of SDG&E's entire service territory. The average 2016–2020 ratios are 5.3% for electricity and 5.2% for natural gas.[61] SDG&E's energy efficiency goal is not estimated by the CPUC beyond 2032; therefore, it is assumed the annual electricity and natural gas savings from energy efficiency programs post-2032 will be the same as in 2032. SDG&E's service territory electricity savings were allocated accordingly to Carlsbad, as shown in Table 28.[62]

Table 28 Estimated Energy Savings from California Energy Efficiency Programs

Year	Electricity Savings* (GWh)		Natural Gas Savings (million therms)	
	SDG&E Service Territory	Allocation of Savings to Carlsbad by Demand	SDG&E Service Territory	Allocation of Savings to Carlsbad by Demand
2032	1,914	102	18	0.9

*Include transmission and distribution losses.
SDG&E service territory savings are the cumulative based on the 2022-2032 annual saving goals in CPUC Decision 21-09-037.
Energy Policy Initiatives Center, University of San Diego 2023

Emissions reductions from electricity savings are calculated by multiplying the electricity savings by the citywide GHG emission factor for electricity, discussed in Section 7.1.1 and shown in Table 21. As the renewable and zero-carbon content in electricity increases, the emissions reductions from the electricity portion of energy efficiency programs decrease. Emissions reductions from natural gas savings were calculated using the natural gas savings amount and the natural gas emission factor discussed in Section 7.2. Table 29 summarizes the energy savings and GHG emissions reductions in the years 2035 and 2045.

[59] CPUC: Decision 21-09-037, Adopting Energy Efficiency Goals for 2022-2032, accessed September 16, 2022. SDG&E's electricity service territory is larger than San Diego region.
[60] Guidehouse: 2021 Energy Efficiency Potential and Goals Study (April 23, 2021), accessed September 16, 2022. Rebated technologies are the energy efficiency technologies from the utility's historic incentive programs, including equipment and retrofits. Existing and future Codes and Standards included in the Study is discussed in Section 3.9 Codes and Standards.
[61] SDG&E's service territory demand is from California Energy Demand Update 2022-2035 accessed June 3, 2023. 2020 is the latest year with historical data available for both Carlsbad and SDG&E service territory.
[62] CPUC: Decision 21-09-037, Adopting Energy Efficiency Goals for 2022-2032, accessed September 16, 2022. The 2022 and beyond goals are given on an annual basis for each year from 2022 to 2032.

Table 29 Emissions Reductions from California Energy Efficiency Programs

Year	Electricity Savings			Natural Gas Savings			Total GHG Emissions Reductions (MT CO_2e)
	Electricity Savings (GWh)	Emission Factor (lbs CO_2e/MWh)	GHG Emissions Reductions from Electricity Savings (MT CO_2e)	Natural Gas Savings (million therms)	Emission Factor (MT CO_2e/therm)	GHG Emissions Reductions from Natural Gas Savings (MT CO_2e)	
2035	102	30	1,387	0.9	0.0054	4,998	6,385
2045	102	-	-	0.9	0.0054	4,998	4,998

The emissions reductions are projected based on CAP Update assumptions and future impact of State policies and programs.

Energy Policy Initiatives Center, University of San Diego 2023

7.4.3 Federal and California Vehicle Efficiency Standards

As discussed in Section 7.3, CARB's EMFAC2021 model includes all key federal and State regulations related to tailpipe GHG emissions reductions for both light-duty and heavy-duty vehicles that were in place by the end of 2020. EMFAC2021 results were adjusted to include ACCII ZEV regulations which require an increasing number of ZEVs for post-2026 model year light-duty vehicles. Table 30 summarizes the key assumptions and results in the years 2035 and 2045.

Table 30 Federal and California Vehicle Efficiency Standards

Year	Projected Carlsbad VMT (million miles per year)	BAU Projection With No Regulatory Impacts		With Impact of Adopted Regulations Through 2020 and ACCII ZEV Regulations		GHG Emissions Reductions (MT CO_2e)
		Average Vehicle Emission Rate* (g CO_2e/mile)	GHG Emissions from On-Road Transportation (MT CO_2e)	Average Vehicle Emission Rate (g CO_2e/mile)	GHG Emissions from On-Road Transportation (MT CO_2e)	
2035	1,295	361	467,932	218	281,798	186,134
2045	1,327	363	482,107	122	161,312	320,795

ACCII: Advanced Clean Cars II Regulation
ZEV: zero-emission vehicles
*Despite the absence of additional policies and programs to increase vehicle efficiency, the BAU average vehicle emission rate decreases with natural fleet turnover as new vehicles replace old vehicles.
The emission rates and emissions reductions are projected based on CAP Update assumptions and future impact of State policies and programs.

Energy Policy Initiatives Center, University of San Diego 2023

7.5 Climate Action Plan Update Measures

The following section describes the methods used to estimate the GHG reductions from the CAP Update measures, which are organized into the following six strategies:

- Transportation
- Energy
- Water and Wastewater

- Waste Diversion
- Off-Road Equipment
- Carbon Sequestration

7.5.1 Transportation

7.5.1.1 Measure T-1: Traffic Calming & Optimization

The goals of Measure T-1 are: (1) to synchronize traffic signals at 53 intersections by 2035 to obtain more efficient fuel use through smoother traffic flow; and (2) to install 10 new roundabouts or traffic circles by 2035. The effect of traffic signal synchronization and roundabouts on fuel reduction depends on the traffic volume and size of the intersections on the arterials. Based on the study of a traffic signal synchronization project of a similar size, the annual fuel savings per intersection is around 2,400 gallons.[63] The city's Intersection Control Evaluation engineering standards requires intersections to be analyzed for roundabouts or traffic signals and installed wherever feasible. Based on a study of roundabouts with similar sizes, the annual fuel savings per roundabout is around 19,000 gallons.[64]

As vehicles get more efficient and the number of ZEVs increases, the fuel savings per roundabout and per intersection will decrease. Tables 31 and 32 summarize the key assumptions and results.

[63] Sunkari: The Benefits of Retiming Traffic Signals (2004). The Jacksonville traffic signal retiming project at a 25-intersection section resulted in estimated annual fuel savings of 65,000 gallons.
[64] Varhelyi: The Effects of Small Roundabouts on Emission and Fuel Consumption: A Case Study (2002). The study estimated the traffic volume of the intersection and the fuel consumption before and after the roundabout. The traffic volume is 23,500 vehicles per day and the fuel savings are approximately 144 kg per day after the roundabout installation.

Table 31 Measure T-1 Assumptions and Results - Traffic Signal Synchronization

Year	Number of Intersections with Traffic Signal Synchronization	Increase in Vehicle Fuel Efficiency Compared to Baseline Year*	Equivalent Fuel Saving per Intersection* (gallons/ year)	Fuel Saving from All Intersections (gallons/year)	GHG Emissions for Fuel** (lbs CO_2e/gallon)	GHG Emissions Reductions (MT CO_2e)
2035	53	54%	1,177	62,390	18.5	524
2045	53	73%	658	34,866	18.5	293

*Increase in vehicle fuel efficiency is based on the decrease of the average vehicle emission rate.
**Emissions per gallon of fuel use for an average vehicle in the San Diego region, regardless of fuel type, vehicle type, or fuel economy. The emissions reductions are the projections under the CAP Update, based on CAP Update assumptions and future impact of State policies and programs.

Energy Policy Initiatives Center, University of San Diego 2023

Table 32 Measure T-1 Assumptions and Results - Roundabouts

Year	Number of New Roundabouts	Increase in Vehicle Fuel Efficiency Compared to Baseline Year*	Equivalent Fuel Savings per Intersection* (gallons/year)	Fuel Savings for All Intersections (gallons/year)	GHG Emissions for Fuel** (lbs CO_2e/gallon)	GHG Emissions Reductions (MT CO_2e)
2035	10	54%	9,646	96,459	18.5	810
2045	10	73%	5,390	53,905	18.5	453

*Increase in vehicle fuel efficiency is based on the decrease of the average vehicle emission rate.
**Emissions per gallon of fuel use for an average vehicle in the San Diego region, regardless of fuel type, vehicle type, or fuel economy. The emissions reductions are the projections under the CAP Update, based on CAP Update assumptions and future impact of State policies and programs.

Energy Policy Initiatives Center, University of San Diego 2023

By adding the totals from Tables 31 and 32, to the total GHG emissions reductions from Measure T-1 are 1,334 MT CO_2e in 2035 and 746 MT CO_2e in 2045.

7.5.1.2 Measure T-2: Transportation Demand Management Ordinance

In 2019, the city adopted a Transportation Demand Management (TDM) ordinance requiring nonresidential developments that generate over 110 average daily employee trips to submit TDM plans and implement TDM strategies to increase alternative travel modes.[65] The developments covered by the ordinance are required to report their employees' baseline travel modes and achieve 40% sustainable mode share (or modes other than driving alone) by 2035. Based on a post-COVID monitoring report from 2022, 18 companies with a total of 3,700 employees reported a baseline of 23% sustainable mode share across the companies.[66] Through implementing and updating the TDM ordinance and subsequent TDM Handbook, the goal of this measure is to have 22,000 commuters using alternative mode for their commutes in 2045, or approximately 23% of the 2045 employment rate in Carlsbad.

[65] Carlsbad: Transportation Demand Management.
[66] Quarterly TDM Monitoring Reports are provided by city staff to EPIC, December 5, 2022.

The GHG emissions reductions are based on the number of commuters using alternative modes, estimated average driving distance avoided, and the average vehicle emission rate. Table 33 summarizes the key assumptions and results.[67]

Table 33 Measure T-2 Assumptions and Results

Year	Commuter Miles Avoided* (miles/person/year)	New Commuters Under Ordinance	Total VMT Avoided (miles/year)	Average Vehicle Emission Rate (g CO_2e/mile)	GHG Emissions Reductions (MT CO_2e)
2035	3,227	4,637	14,960,084	218	3,254
2045	3,227	22,000	70,983,251	122	8,630
*26 miles round-trip per workday and 255 workdays per year. The emissions reductions are the projection under the CAP Update, based on CAP Update assumptions and future impact of State policies and programs. Energy Policy Initiatives Center, University of San Diego 2023					

7.5.1.3 Measure T-3: Safe Routes to School

The city has an ongoing effort to implement the Safe Routes to School (SRTS) program, as part of the city's Sustainable Mobility Plan. The SRTS program provides each school site a range of options from infrastructure improvements to educational programs. Based on the residential density maps and the SRTS walk audit report, 13% (or 1,497 out of 11,346) of students are within a ½-mile walking distance from the schools currently participating in SRTS.[68]

The city will continue the implementation of the SRTS program to increase the number of students walking, riding bicycles, and rolling to and from school. The SRTS program would include infrastructure improvements, as well as educational programs at schools (e.g., pedestrian and bicycle safety education curriculum, safety trainings, safety awareness campaigns).

Assuming the city completes the SRTS program at all schools covered, the number of additional students walking, riding bicycles, or rolling to school are shown in Table 34.[69]

[67] The round-trip employee commute (driving) distance for Carlsbad employees is 26 miles based on the SANDAG Mode Choice Report.
[68] Carlsbad: Sustainable Mobility Plan (2020)Appendix G through L.
[69] It is assumed the students within walking distance from the schools would walk to school with the SRTS program implementation. Carlsbad: Sustainable Mobility Plan. Appendix G through L. The current percentage of students who ride bicycles to school in Carlsbad schools is not available. The results are based on a San Diego Unified School District 2015–2016 student-parent survey (EPIC), unpublished. The percent increase in riding bicycles to school are based on Stewart, et al., 2014: Multistate Evaluation of Safe Routes to School Program, accessed August 10, 2019.

Table 34 Number of Students in Safe Routes to School Program

Year	Number of Students Covered to the SRTS Programs*	Students Walking to Schools		Students Riding Bicycles to Schools		
		SRTS Walk Audit Report (%)	Number of Additional Students	Baseline (%) **	With Safe Routes to School Programs (%)	Number of Additional Students Riding Bicycle to School
2035	12,411	13%	1,638	2.0%	2.5%	60
2045	12,445	13%	1,643	2.0%	2.5%	60

SRTS: Safe Routes to School
The SRTS Walk Audit Report focuses on increasing the number of students walking to school, however, SRTS programs have the additional benefits in increasing the number of students riding bicycles to schools. The additional benefits are captured here.
* Students currently covered by the SRTS Program with an annual rate of increase the same as population rate of increase
** The baseline assumption is based on a San Diego Unified School District 2015–2016 student-parent survey.

Energy Policy Initiatives Center, University of San Diego 2023

The avoided VMT were estimated based on the number of additional students walking, riding bicycles, or rolling to school and miles avoided per trip. Miles avoided per year were converted to GHG emissions reductions using the average vehicle emission rates. Table 35 summarizes the key assumptions and results.[70]

Table 35 Measure T-3 Assumptions and Results

Year	VMT Avoided from SRTS* (miles/year)	Average Vehicle Emission Rate (g CO_2e/mile)	GHG Emissions Reductions (MT CO_2e)
2035	321,662	218	70
2045	322,537	122	39

SRTS: Safe Routes to School
*Assumes a one-mile roundtrip distance for students walking to school and a 2.5-mile roundtrip distance for students riding bicycles to school, based on a San Diego Unified School District 2015–2016 student-parent survey, and 180 school days per year.
The emissions reductions are the projections under the CAP Update, based on CAP Update assumptions and future impact of State policies and programs.

Energy Policy Initiatives Center, University of San Diego 2023

7.5.1.4 Measure T-4: Bikeway System Improvements

Bicycle facilities have five classifications: (1) Class I multi-use paths, which have a completely separated right-of-way designed for the exclusive use of bicycles and pedestrians; (2) Class II separated bicycle lanes, typically designated with striping; (3) Class III bicycle routes, where bicyclists share the street with vehicular traffic; (4) Class IV cycle tracks, that provide a right-of-way designated exclusively for bicycle travel which are physically protected from vehicular traffic; and (5) Class V bicycle boulevards, which do not provide separation from vehicular traffic but have features like traffic calming to lower vehicular traffic volumes and speeds, and give bicycle travel priorities.

[70] The current trip distance of students who walk or ride bicycles to school in Carlsbad is not available. The results are based on a San Diego Unified School District 2015–2016 student-parent survey (EPIC), unpublished.

The city plans to complete the planned bikeway network in the Sustainable Mobility Plan, as shown in Table 36.[71]

Table 36 Bikeway Mileage in the Sustainable Mobility Plan

Bicycle Facility Classification	Existing (miles)	Planned (miles)	Change in Mileage
Multi-Use (Class I)	3.2	9.3	6.1
Bicycle Lane (Class II)	157.6	92	-65.6
Buffered Bicycle Land (Class II Buffered)	0	61.2	61.2
Bicycle Route (Class III)	5.1	5.2	0.1
Cycle Track (Class IV)	0	5.1	5.1
Bicycle Boulevard (Class V)	0	1.3	1.3
New Bicycle Facilities			7.9
Improved Bicycle Facilities			61.2
New and Improved Bicycle Facilities			69.1
Table adapted from Table 5-3 in the City of Carlsbad's Sustainable Mobility Plan (2020)			

The impact of adding new and improving existing bicycle facilities is calculated in two ways. First, constructing or improving bicycle facilities (Class I, II, or IV) that connect to a larger existing bikeway network encourages a mode shift on the roadway parallel to the bicycle facilities from vehicles to bicycles. With the completion of the planned bikeway network above, the city will have a completed bikeway network that reduces the I-I VMT (internal-internal vehicle miles, described in Section 3.2.1). Based on the existing average one-way bicycle vehicle trip length and an active transportation adjustment factor, the percentage reduction in I-I VMT is 0.2%.[72]

Second, expanding the bikeway network (Class I, II, or IV) reduces employee commute vehicle travel within the community. With the completion of the planned bikeway network, the percentage reduction in Carlsbad employee commuting is 0.01% based on the difference between existing (166) and planned (174) bikeway miles in the city, bicycle mode share and vehicle mode share in the city, average one-way bicycle and vehicle trip length, and an elasticity factor.[73]

The total VMT avoided (I-I miles avoided and employee commuting miles avoided) is converted to GHG emissions reductions using the average vehicle emission rates. Table 37 summarizes the key assumptions and results.

[71] City of Carlsbad: Sustainable Mobility Plan Chapter 5 The Planned Mobility Network. Table 5-3 Summary of Bikeway Mileage.
[72] The calculation method and factors are based on CAPCOA GHG Handbook T-19-A Construct or Improve Bike Facility. Default factors are used except existing one-way bicycle trip length and one-way vehicle trip length. One-way bicycle trip length, 2.9 miles, is based on San Diego regional average from the SANDAG Sustainable Communities Strategy Appendix B; and the one-way vehicle trip length, 8.2 mile, is Carlsbad average vehicle trip length from SANDAG Mode Choice Report.
[73] The calculation method and factors are based on CAPCOA GHG Handbook T-20 Expand Bikeway Network. The default factor used is the 0.25 elasticity of bike commuters with respect to bikeway miles per 10,000 population. The one-way bicycle trip length, 2.9 miles, is based on the San Diego regional average from SANDAG's Sustainable Communities Strategy Appendix B; and the one-way vehicle trip length, 8.2 miles, is Carlsbad's average vehicle trip length from SANDAG's Mode Choice Report. Bicycle mode share, 1.5%, and vehicle mode share 75%, are Carlsbad's daily mode choice from SANDAG Mode Choice Report.

Table 37 Measure T-4 Assumptions and Results

Year	Jobs	Reduction in Employee Commuting due to Expanded Bikeway Network	Total Employee Commuting Miles (miles/year)*	Employee Commuting Miles Avoided (miles/year)	Carlsbad I-I Miles (miles/year)	Reduction in I-I Miles	I-I Miles Avoided (miles/year)	Total VMT Avoided (miles/year)	Average Vehicle Emission Rate (g CO_2e /mile)	GHG Emissions Reductions (MT CO_2e)
2035	90,801	0.01%	531,185,850	44,854	1,171,190,921	0.2%	2,558,939	2,603,792	218	566
2045	95,762	0.01%	560,207,700	47,304	1,199,693,873	0.2%	2,621,215	2,668,519	122	324

*Assumes 26 miles per workday and 225 workdays per year.
The emissions reductions are the projections under the CAP Update, based on CAP Update assumptions and future impact of State policies and programs.

Energy Policy Initiatives Center, University of San Diego 2023

7.5.1.5 Measure T-5: Pedestrian System Improvements

Providing sidewalks and an enhanced pedestrian network improves pedestrian access in Carlsbad and encourages people to walk instead of drive. The city plans to complete the planned pedestrian network in the Sustainable Mobility Plan, as shown in Table 38.[74]

Table 38 Pedestrian Network Mileage in the Sustainable Mobility Plan

Classification	Existing (miles)	Planned (miles)	Change in Mileage
Multi-Use	3.2	9.3	6.1
Standard Sidewalks	651.6	651.6	0
School Streets	13.4	13.4	0
Alternative Streets	24	24	0
Total	692.2	698.3	6.1

Table adapted from Table 5-1 in the City of Carlsbad's Sustainable Mobility Plan (2020), not including the priority corridors for enhanced treatment classification.

Pedestrian network improvements reduce household vehicle travel within the community. With the completion of the planned pedestrian network, the percentage reduction in Carlsbad household vehicle travel is 0.04% based on the difference between existing sidewalk length (692.2 miles) and planned sidewalk length (698.3 miles) in the city and an elasticity factor.[75]

The avoided VMT is estimated based on Carlsbad VMT per capita, persons per household, and the percent VMT reduction due to the pedestrian network improvements. Miles avoided were converted to GHG emissions reductions using the average vehicle emission rates. Table 39 shows the key assumptions and results.[76]

[74] City of Carlsbad: Sustainable Mobility Plan Chapter 5 The Planned Mobility Network. Table 5-1 Summary of Pedestrian Network Mileage.
[75] The calculation method and factors are based on CAPCOA GHG Handbook T-18 Provide Pedestrian Network Improvement.
[76] 2035 VMT per capita is based on the VMT analysis from the Housing Element Update, February 12, 2023. The persons per capita is based on the population and housing unit projections discussed in Section 4.

Table 39 Measure T-5 Assumptions and Results

Year	Household VMT* (miles/year)	Reduction in Household VMT due to Pedestrian Network Improvement	Total Citywide Household VMT (miles/year)	Miles Avoided (miles/year)	Average Vehicle Emission Rate (g CO_2e/mile)	GHG Emissions Reductions (MT CO_2e)
2035	19,845	0.04%	574,805,581	253,373	218	55
2045	19,570	0.04%	576,368,187	253,962	122	31

*Assumes 23.6 miles per capita, 2.4 persons per household, and 347 weekdays per year
The emissions reductions are the projections under the CAP Update, based on CAP Update assumptions and future impact of State policies and programs.

Energy Policy Initiatives Center, University of San Diego 2023

7.5.1.6 Measure T-6: Local Transportation Improvements

The city will improve and expand local transportation options to provide on-demand flexible fleet service and other first-mile last-mile solutions. This includes leveraging existing regional transportation plans, such as those prepared by SANDAG, as well as the city's Multimodal Transportation Impact Fee. Because the city's Multimodal Transportation Impact Fee was still under development at the time of the CAP Update, the GHG emissions reductions are not quantified for this measure.

7.5.1.7 Measure T-7: Municipal Transportation Demand Management

The city currently has a telecommute program[77] and will consider other TDM options for city employees at different facilities. The avoided VMT is estimated based on the commute distance avoided per workday of all eligible city staff and the 2023 average telecommute days per week. Miles avoided were converted to GHG emissions reductions using the average vehicle emission rates. Table 40 shows the key assumptions and results.[78]

Table 40 Measure T-7 Assumptions and Results

Year	Miles Avoided from City Staff Transportation Demand Management* (miles/year)	Average Vehicle Emission Rate (g CO_2e/mile)	GHG Emissions Reductions (MT CO_2e)
2035	765,000	218	92
2045	765,000	122	51

[77] The City Manager, not the City Council, has the authority to update and amend the existing telecommuting program. Per Carlsbad Administrative Order 86, "at any time, the City Manager's Office may evaluate the effectiveness of the Telecommuting Program. Upon assessment, the Telecommuting Program will be discontinued or amended." Any changes to the Telecommuting Program would be reflected in regularly monitoring and annually reporting on CAP Update implementation efforts. City of Carlsbad Administrative Order No. 86, revised 04/22/2021. https://cityrecords.city.carlsbadca.gov/WebLink/DocView.aspx?id=5155223&dbid=0&repo=CityOfCarlsbad

[78] One-way commute distance avoided per workday, 5,000 miles, was provided by city staff to EPIC based on city internal data analysis, August 17, 2023.

*Assumes 5,000 miles commute distance avoided per workday from all telecommute eligible employee, 3 average telecommute days a week, and 51 average work weeks per year
The emissions reductions are the projections under the CAP Update, based on CAP Update assumptions and future impact of State policies and programs.

Energy Policy Initiatives Center, University of San Diego 2023

7.5.1.8 Measure T-8: Increase Public Zero Emission Infrastructure

The city will increase zero emission infrastructure by installing and incentivizing public ZEV and bicycle infrastructure. Because this infrastructure will support the State's ZEV mandates and ACCII (described in Section 7.4.3), the GHG emissions reductions this measure are not quantified separately.

7.5.1.9 Measure T-9: Zero Emission City Fleet

The city plans to convert gasoline vehicles within its fleet to ZEVs and to switch eligible heavy-duty fleet vehicles to renewable diesel. Assuming the municipal fleet size does not increase from the baseline year 2019, Table 41 and Table 42 show the key assumptions and results.[79]

Table 41 Measure T-9 Assumptions and Results - Gasoline

Year	% Reduction in Gasoline	Gasoline Fuel Use* (gallons)	Gasoline Reduction (gallons)	Emissions Reduction from Gasoline Reduction** (MT CO_2e)	Gasoline Fleet Miles (miles/year)	Additional Electric Load (kWh)	Emissions Added due to Electric Load*** (MT CO_2e)	Net GHG Emissions Reductions (MT CO_2e)
2035	100%	96,978	96,978	774	4,118,521	1,235,556	-	774
2045	100%	54,195	54,195	432	4,218,752	1,265,626	-	432

*Assuming the fleet size is the same, as vehicles get more efficient and more ZEVs are on the market due to California's ZEV mandates, the gasoline demand decreases
**Calculated based the gasoline reduction and the gasoline carbon intensity of 7,978 CO_2e/gallon
***Emissions added due to additional electric load were zero because the electricity will be 100% renewable or zero-carbon on and after 2035
The emissions reductions are the projections under the CAP Update, based on CAP Update assumptions and future impact of State policies and programs.

Energy Policy Initiatives Center, University of San Diego 2023

Table 42 Measure T-9 Assumptions and Results - Diesel

Year	% Reduction in Diesel	Diesel Fuel Use* (gallons)	Diesel Reduction (gallons)	GHG Emissions Reductions** (MT CO_2e)
2035	100%	34,903	34,903	286
2045	100%	19,505	19,505	160

*Assuming the fleet size is the same, as vehicles get more efficient and more electric vehicles are on the market due to California's ZEV mandates, the diesel demand decreases
**Calculated based on diesel reduction and the difference between diesel blend carbon intensity (8,661 CO_2e/gallon) and renewable diesel carbon intensity (478 CO_2e/gallon)

[79] Fuel carbon contents are based on CARB statewide GHG inventor 2022 Edition, last updated on October 26, 2022. Fiscal year 2020-2021 fleet fuel use and vehicle mileage are provided by city staff, July 5, 2022.

The emissions reductions are the projections under the CAP Update, based on CAP Update assumptions and future impact of State policies and programs.
Energy Policy Initiatives Center, University of San Diego 2023

The total GHG emissions reductions from Measure T-9 are 1,059 MT CO_2e in 2035 and 592 MT CO_2e in 2045.

7.5.1.10 Measure T-10: Parking Management Strategies

The city will assess the feasibility of reducing VMT per capita citywide through parking management strategies. Because the city's Carlsbad Village, Barrio, and Beach Area Parking Management Plan was being updated at the time of the CAP Update, the GHG emissions reductions for this measure are not quantified.

7.5.2 Energy

7.5.2.1 Measure E-1: Renewable Electricity at Municipal Facilities

The goals of Measure E-1 are to: (1) have 100% renewable or zero-carbon electricity at new and existing city facilities by 2025; (2) have 100% renewable or zero-carbon electricity for street and safety lighting; and (3) eliminate natural gas use at city facilities by 2045. To capture additional electricity demand from future new city facilities, an annual 0.5%-0.9% increase is applied to the 2021 electricity use at city facilities (5,800 MWh), based on the citywide commercial electricity annual rate of increase.[80] The average of 2019 and 2020 street and highway lighting electricity use, the latest years with data available, is used to project citywide public lighting electricity use.[81]

The emissions reductions from additional renewable electricity are based on the difference between the renewable content of electricity under RPS compliance and CEA's renewable content. Emissions reductions from eliminating natural gas are based on natural gas savings and the natural gas emission factor discussed in Section 7.2. Table 43 summarizes the key assumptions and results.[82]

Table 43 Measure E-1 Assumptions and Results

Year	Reduction in Natural Gas Use (%)	Projected City Facilities Natural Gas Use (therms)	Natural Gas Reduction (therms)	Emissions Reductions from Natural Gas (MT CO_2e)	City Facilities and Public Lighting Electricity Use* (MWh)	Emissions from Electricity Use with RPS-Compliant Renewable (MT CO_2e)	Emissions from Electricity Supplied by CEA (MT CO_2e)	GHG Emissions Reductions from Renewable Electricity (MT CO_2e)	Total GHG Emissions Reductions (MT CO_2e)
2035	33%	239,455	79,818	435	7,551	316	-	316	751
2045	100%	239,455	239,455	1,306	7,911	-	-	-	1,306
CEA: Clean Energy Alliance									

[80] 2019-2021 city facility electricity and natural gas use were downloaded from the city's Portfolio Manager account, downloaded on May 25, 2022.
[81] Public lighting electricity use was provided by city staff, July 15, 2022.
[82] 2019 city facilities natural gas use was reported in the 2020 CAP Annual Report. The 1.5% annual increase is the same assumption as in the 2015 CAP and confirmed by city staff.

*BAU electricity use is projected based on the 2021 city facilities electricity use, 2019 and 2020 street and highway lighting electricity use, and a 0.5-0.9% annual increase
The electricity supplied by CEA is assumed to be zero-emission (100% renewable or carbon-free electricity) by and after 2035. All electric service providers have to supply 100% renewable or carbon-free electricity on and after 2045.
The emissions reductions are the projections under the CAP Update, based on CAP Update assumptions and future impact of State policies and programs.

Energy Policy Initiatives Center, University of San Diego 2023

7.5.2.2 Measure E-2: Community Choice Energy

As discussed in Section 7.4.1, SB 100 and SB 1020 adopted the 60% RPS by 2030 for California's retail electricity suppliers, 90% renewable and zero-carbon electricity by 2035, and 100% renewable and zero-carbon electricity by 2045. Measure E-2 assumes that CEA, launched in 2021 with a default product of 50% renewable and 75% zero-carbon content ("Clean Impact Plus"), would increase the renewable and zero-carbon electricity of its default product beyond the current RPS mandates to 100% renewable and zero-carbon by 2035. As previously explained in Section 7.4.1, because CEA is required to comply with the State's RPS mandates, a portion of the total emissions reductions from CEA's renewable and zero-carbon electricity is credited to the State's RPS compliance. The emissions reductions from Measure E-1 are also removed from Measure E-2 to avoid double counting. The remaining emissions reductions beyond RPS compliance are allocated to local Measure E-2. Table 44 summarizes the key assumptions and results.[83]

Table 44 Measure E-2 Assumptions and Results

Year	State or City Action	Total for CEA*	CEA - Complying with RPS	CEA - Above RPS	GHG Emissions Reductions from Measure E-1	GHG Emissions Reductions from Measure E-2
2035	Projected Renewables and Zero Carbon (%)	100%	90%	10%	-	-
	GHG Emissions Reductions (MT CO_2e)	174,256	156,830	17,426	316	17,110
2045**	Projected Renewables and Zero Carbon (%)	100%	100%	-	-	-
	GHG Emissions Reductions (MT CO_2e)	186,238	186,238	-	-	-

CEA: Clean Energy Alliance
*Calculated in Table 23.
** All electric service providers must supply 100% renewable or carbon-free electricity on and after 2045.
The emissions reductions are the projections under the CAP Update, based on CAP Update assumptions and future impact of State policies and programs.

Energy Policy Initiatives Center, University of San Diego 2023

7.5.2.3 Measure E-3.1: Nonresidential Building Energy – Existing Reach Code

In 2019, the city adopted a nonresidential PV and water heating ordinance for new and existing nonresidential buildings; this type of ordinance is also known as a "reach code".[84] Only the impact of the

[83] Carlsbad's participation rate and electric load of each of CEA's products ("Clean Impact," "Clean Impact Plus," and "Green Impact") for fiscal year 2022 (June 2021-May 2022) are provided by CEA via city staff to EPIC, July 28, 2022.
[84] City of Carlsbad: Nonresidential Photovoltaic & Water Heating Ordinances, adopted by the Carlsbad City Council, March 12, 2019 and approved by CEC, August 2019.

water heating requirements on new nonresidential buildings is captured in the calculations for this measure. This is because the 2022 California Green Building Code mandates PV at new nonresidential construction and because limited data are available for the existing non-residential square footages covered by the reach code since 2019.

The current water heating requirement in the city's building code states: "Any newly constructed nonresidential building shall derive its service water heating from a system that provides at least 40 percent of the energy needed for service water heating from on-site solar energy or recovered energy". Energy savings from this requirement are calculated using a heat pump water heater (HPWH) on a per-gross floor area basis. Table 45 shows the results for different non-residential building types and the average.[85]

Table 45 Measure E-3.1 Potential Energy Savings

Non-Residential Building Type	Building Size (sq. ft.)	Electricity Added with HPWH (kWh per year)	Electricity Added with HPWH (kWh/year/ sq. ft.)	Natural Gas Savings with HPWH (therms per year)	Natural Gas Savings with HPWH (therms/year/ sq. ft.)
New Construction Small Office with HPWH	5,502	2,272	0.41	252	0.05
New Construction Medium Office with HPWH	53,628	9,802	0.18	449	0.01
New Construction Warehouse with HPWH	49,495	2,673	0.05	182	0.00
New Construction Retail Strip Mall with HPWH	9,375	3,205	0.34	141	0.02
Average of New Construction Commercial with HPWH			0.25	-	0.02

HPWH: heat pump water heater

City of Carlsbad 2019, Energy Policy Initiatives Center, University of San Diego 2023

HPWHs are used as an example here, though other types of water heaters may be used to replace existing water heaters.[86] Similarly, four nonresidential building types are used here, though other types of buildings (e.g., restaurants) have different water heating energy use on a per-square footage basis and are not captured here.

Based on the cost effectiveness analysis prepared for the reach code, an annual average of approximately 501,407 sq. ft. of new nonresidential developments would be subject to this reach code.[87] Emissions reductions from natural gas savings were calculated using the natural gas savings per sq. ft., gross floor area, and the natural gas emission factor discussed in Section 7.2. The emissions reductions from natural gas savings due to E-3.1 are summarized in Table 46.

[85] City of Carlsbad: Energy Conservation Ordinance Cost Effectiveness Analysis, February 20, 2019.
[86] Other options include, but are not limited to: instantaneous electric, electric tank solar water heater with HPWH back up, and solar water heater with electric tank back up.
[87] Pre-ordinance analysis is based on the average annual new construction data from CoStar, provided by city staff to EPIC, January 20, 2020.

Table 46 Measure E-3.1 Assumptions and Results - Natural Gas

Year	Annual Nonresidential Developments Subject to the 2019 Reach Code (sq. ft./year)	Total Nonresidential Developments with Updated Water Heaters Due to the 2019 Reach Code (sq. ft.)	Natural Gas Savings from Using Updated Water Heater* (therms/sq. ft./year)	Total Natural Gas Savings (therms/year)	Natural Gas Emission Factor (MT CO_2e/therm)	GHG Emissions Reductions (MT CO_2e)
2035	501,407	8,022,518	0.02	146,193	0.0054	797
2045	501,407	13,036,592	0.02	237,563	0.0054	1,296

*Assumes the alternatively-powered water heaters are HPWH
The projections are based on current status, future impact of State policies and programs, and CAP Update assumptions.

Carlsbad 2019, Energy Policy Initiatives Center, University of San Diego 2023

Emissions from added electricity use are calculated using the electricity use per sq. ft., gross floor area, and the citywide electricity emission factor. As the renewable and zero-carbon content in electricity increases, the emissions decrease correspondingly. The emissions from electricity use due to Measure E-3.1 are summarized in Table 47.

Table 47 Measure E-3.1 Assumptions and Results - Electricity

Year	Annual Nonresidential Developments Subject to the 2019 Reach Code (sq. ft./year)	Total Nonresidential Developments With Updated Water Heaters Due to the 2019 Reach Code (sq. ft.)	Electricity Added from Using Updated Water Heater* (kWh/sq. ft./year)	Total Electricity Use (kWh/year)	Electricity Emission Factor (lbs CO_2e/MWh)	GHG Emissions Increase from Additional Electricity Use (MT CO_2e)
2035	501,407	8,022,518	0.25	1,988,763	30	27
2045	501,407	13,036,592	0.25	3,231,740	-	-

*Assumes the alternatively-powered water heaters are HPWH
The projections are based on current status, future impact of State policies and programs, and CAP Update assumptions.

City of Carlsbad 2019, Energy Policy Initiatives Center, University of San Diego 2023

The net GHG emissions reductions from Measure E-3.1 are 770 MT CO_2e in 2035 and 1,296 MT CO_2e in 2045.

7.5.2.4 Measure E-3.2: Nonresidential Building Energy – Updated Reach Code

The city will update the existing reach code to require new nonresidential buildings to meet a higher energy performance standard as approved by the State after the next 2025 California Energy Code is enforced. Because the 2019 reach code (Measure E-3.1) already requires updates to water heating technology, this was not included in Measure E-3.2. Similar to Measure E-3.1, natural gas savings and additional electricity use are calculated on a per-gross floor area basis. Table 45 shows the results for different nonresidential building types and the average.[88]

[88] California Energy Codes & Standard Reach Codes Program: 2022 Non-Residential New Construction Cost-Effectiveness Study (March 24, 2023), accessed September 2023.

Table 48 Measure E-3.2 Potential Energy Savings

Nonresidential Building Type	Building Size (sq. ft.)	Electricity Added Under Updated Reach Code (kWh/year)	Electricity Added Under Updated Reach Code (kWh/year/sq. ft.)	Natural Gas Savings Under Updated Reach Code (therms per year)	Natural Gas Savings Under Updated Reach Code (therms/year/sq. ft.)
New Construction Medium Office	53,628	15,005	0.28	747	0.01
New Construction Small Hotel	42,554	166,238	3.91	9,977	0.23
Average of New Nonresidential Construction			2.09	-	0.12
Average of New Nonresidential Construction with HPWH (Measure E-1)			0.25	-	0.02
Revised Average of New Nonresidential Construction			1.85		1.11

HPWH: heat pump water heater
The 2022 nonresidential new construction cost effectiveness study includes medium retail as a building type; however, the base case already assumes heat pumps for heating and cooling and an electric resistance water heater, so it is not included.

Energy Policy Initiatives Center, University of San Diego 2023

The average of nonresidential building types is used here, though other types of buildings (e.g., restaurants) have a different energy use on a per-sq. ft. basis and are not captured here. The same annual average sq. ft. of new nonresidential developments (501,407 sq. ft.) as in Measure E-3.1 is used here.[89] The emissions reductions from natural gas savings and from additional electricity use due to Measure E-3.2 are summarized in Table 49 and Table 50.

Table 49 Measure E-3.2 Assumptions and Results - Natural Gas

Year	Annual Nonresidential Developments Subject to the Reach Code Update (sq. ft./year)	Total Nonresidential Developments Subject to the Reach Code Update (sq. ft.)	Natural Gas Savings (therms/sq. ft./year)	Total Natural Gas Savings (therms/year)	Natural Gas Emission Factor (MT CO_2e/therm)	GHG Emissions Reductions from Natural Gas Savings (MT CO_2e)
2035	501,407	5,014,074	1.85	531,338	0.0054	2,898
2045	501,407	10,028,148	1.85	1,062,677	0.0054	5,796

The projections are based on current status, future impact of State policies and programs, and CAP Update assumptions.

City of Carlsbad 2019, Energy Policy Initiatives Center, University of San Diego 2023

Table 50 Measure E-3.2 Assumptions and Results - Electricity

Year	Annual Nonresidential Developments Subject to the Reach Code Update (sq. ft./year)	Total Nonresidential Developments Subject to the Reach Code Update (sq. ft.)	Electricity Added (kWh/sq. ft./year)	Total Electricity Use (kWh/year)	Electricity Emission Factor (lbs CO_2e/MWh)	GHG Emissions Increase from Additional Electricity Use (MT CO_2e)

[89] Pre-reach code analysis is based on the average annual new construction data from CoStar, provided by city staff to EPIC, January 20, 2020.

2035	501,407	5,014,074	0.11	9,252,273	30	125
2045	501,407	10,028,148	0.11	18,504,547	-	0
The projections are based on current status, future impact of State policies and programs, and CAP Update assumptions. City of Carlsbad 2019, Energy Policy Initiatives Center, University of San Diego 2023						

The net GHG emissions reductions from Measure E-3.2 are 2,773 MT CO_2e in 2035 and 5,796 MT CO_2e in 2045.

7.5.2.5 Measure E-3.3: Nonresidential Building Energy – Solar Carports

The city will consider adding solar PV systems at eligible city-owned parking lots. To begin implementing this measure, the city will need to prepare a feasibility study to know which city-owned parking lots could support a solar PV system, what size these systems could be, how much energy they could generate, and more. Because this feasibility study was not completed at the time of this CAP Update, the emissions reductions are not quantified for this measure.

7.5.2.6 Measure E-4.1: Residential Building Energy – Existing Reach Code

Similar to Measure E-3.1, the city adopted a residential building ordinance, or "reach code" in 2019. The updated building code states: "Any newly constructed residential building shall derive its service water heating from a system that provides at least 60 percent of the energy needed for service water heating from on-site solar energy or recovered energy".

The energy savings from this reach code assumes the replacement of a natural gas-storage water heater (104 therms/year for a single-family home and 73 therms/year for a multi-family home) with a HPWH (919 kWh/year for a single-family home and 406 kWh/year for a multi-family home).[90]

While HPWH is used as an example here, other types water heaters may be used as a replacement water heater.[91] Since the reach code was adopted, an average of 352 new water heaters per year were permitted in the city.[92] The number of new single-family and multi-family units projected through 2045 are based on the housing projections described in Section 4. The emissions reduced from natural gas savings and emissions added from electricity use are shown in Table 51 and Table 52.

[90] City of Carlsbad: Energy Conservation Ordinance Cost Effectiveness Analysis, February 20, 2019.
[91] Other options include, but are not limited to: instantaneous electric, tank-based electric water heater, solar water heater with HPWH back up, and solar water heater with electric tank back up.
[92] Ordinance compliance data from 2019 through May 2022 were provided by the city staff, May 18, 2022.

Table 51 Measure E-4.1 Assumptions and Results - Natural Gas, Existing Reach Code

Year	Residential Unit Type	Total New Updated Water Heaters Due to the 2019 Reach Code	Natural Gas Savings Per Updated Water Heater (therms/year)	Total Natural Gas Savings (therms/year)	Natural Gas Emission Factor (MT CO_2e/therm)	GHG Emissions Reductions from Natural Gas Savings (MT CO_2e)
2035	Single-Family	1,635	104	170,067	0.0054	928
	Multi-Family	5,826	73	423,845	0.0054	2,312
2045	Single-Family	2,164	104	225,044	0.0054	1,227
	Multi-Family	6,160	73	448,166	0.0054	2,444
The natural gas savings and emissions reductions are the projections under the CAP Update assumptions, including the future impact of State policies and programs. Energy Policy Initiatives Center, University of San Diego 2023						

Table 52 Measure E-4.1 Assumptions and Results - Electricity, Existing Reach Code

Year	Residential Unit Type	Total New Updated Water Heaters Due to the 2019 Reach Code	Electricity Added from Updated Water Heaters** (kWh/year)	Total Electricity Use (kWh/year)	Electricity Emission Factor (lbs CO_2e/MWh)	GHG Emissions Increase from Additional Electricity Use (MT CO_2e)
2035	Single-Family	1,635	919	1,502,808	30	20
	Multi-Family	5,826	406	2,362,464	30	32
2045	Single-Family	2,164	919	1,988,608	-	-
	Multi-Family	6,160	406	2,498,023	-	-
The natural gas savings and emissions reductions are the projections under the CAP Update assumptions, including the future impact of State policies and programs. Energy Policy Initiatives Center, University of San Diego 2023						

The city also adopted a Residential Energy Conservation Ordinance (RECO) in 2019, requiring all residential property owners conducting major renovations with a permit value of $60,000 or more to implement energy retrofit measures to reduce the energy use in existing homes. The energy efficiency activities that could be required under this measure include: attic insulation, HVAC ducts, cool roof installation, installation of water heaters installation of a heating package or packages, and/or installation of lighting packages.[93]

Since adoption, an average of 121 residential projects per year (including major alterations, additions, single-family development, and accessory dwelling units) met this threshold and were subject to the RECO.[94] Assuming the trend continues, approximately 121 homes per year will be required to implement energy efficiency measures.[95] Energy savings from retrofit activities depend on the type of home (single-family or multi-family) and the age of the home, as older homes will yield higher energy

[93] City of Carlsbad: Residential Energy Conservation Ordinance, adopted by the Carlsbad City Council on March 12, 2019 and approved by CEC on August 2019.
[94] Ordinance compliance data from 2019 through May 2022 were provided by city staff, May 18, 2022.
[95] The number of residential projects that met the threshold from 2014 to 2018 were provided by city staff (July 2019). The average from 2014 to 2018 is used here.

savings when implementing the same retrofit activity than newer homes. For an average home, the average energy savings are 93 kWh and 2 therms.[96]

The GHG emissions reductions from electricity and natural gas savings due to the RECO are summarized in Table 53 and Table 54.

Table 53 Measure E-4.1 Assumptions and Results - Electricity, Residential Energy Conservation Ordinance

Year	Number of Home Energy Retrofits Due to the 2019 RECO	Electricity Savings per Retrofit* (kWh/home/year)	Total Electricity Savings from All Retrofits (kWh/year)	Electricity Emission Factor (lbs CO_2e/MWh)	GHG Emissions Reductions from Electricity Savings (MT CO_2e)
2035	1,820	93	168,838	30	2
2045	3,033	93	281,397	-	-

*Energy savings are based on the City of Carlsbad's RECO energy efficiency measure examples
The projected retrofits and emissions reductions are the projections under the CAP Update, based on current status, future impact of State policies and programs, and CAP Update assumptions.
Carlsbad 2019, Energy Policy Initiatives Center, University of San Diego 2023

Table 54 Measure E-4.1 Assumptions and Results - Natural Gas, Residential Energy Conservation Ordinance

Year	Number of Home Energy Retrofits Due to the 2019 RECO	Natural Gas Savings per Retrofit** (therms/home/year)	Total Natural Gas Savings from All Retrofits (therms/year)	Natural Gas Emission Factor (MT CO_2e/therm)	GHG Emissions Reductions from Natural Gas Savings (MT CO_2e)
2035	1,820	2	4,195	0.0054	23
2045	3,033	2	6,991	0.0054	38

*Energy savings are based on City of Carlsbad's RECO energy efficiency measure examples
The projected retrofits and emissions reductions are the projections under the CAP Update, based on current status, future impact of State policies and programs, and CAP Update assumptions.
Carlsbad 2019, Energy Policy Initiatives Center, University of San Diego 2023

By adding the totals from Tables 51 through 54, the net GHG emissions reductions from the 2019 reach code and RECO are 3,212 MT CO_2e in 2035 and 3,710 MT CO_2e in 2045.

7.5.2.7 Measure E-4.2: Residential Building Energy – Updated Reach Code

Similar to Measure E-3.2, the city will update the existing reach code to require new residential buildings to meet a higher energy performance standard as approved by the State after the next 2025 California Energy Code is enforced.

Based on the 2022 new construction cost-effectiveness studies, the cost-effectiveness of a code-compliant home meeting higher energy performance standards varies by Climate Zone. Table 55 shows the natural gas savings and the additional electricity demand in Climate Zone 7 where Carlsbad is located. [97]

[96] Carlsbad's RECO is based on a statewide Existing Building Efficiency Upgrade Cost-Effective Study, for the 2016 Energy Code (June 2018). The results from Table 20 for Climate Zone 7 – single-family efficiency upgrade package cost-effectiveness results are used here. The average energy savings are the average of energy savings of pre-1978, 1978–1991, and 1992–2005 homes. The ratio of single-family homes to total homes is 68% based on housing projection in Carlsbad.

[97] California Energy Codes & Standard Reach Codes Program: 2022 Single Family New Construction and 2022 Multifamily New Construction (June 20, 2023), accessed September 2023.

Table 55 Assumptions of Higher Energy Performance Homes

Higher Energy Performance Home Type	Single-Family	Multi-Family
Natural Gas Savings Compared with Base Case Home (therms per unit)	69	29
Increased Electricity Use Compared with Base Case Home (kWh per unit)	1,328	299
Based on prototypes in the cost-effectiveness study. For new single-family homes, the base case is modeled based on electric heat pump water heater with natural gas cooking and clothes drying. For new multi-family homes, the base case is modeled based on a natural gas centralized boiler with solar thermal, and electric cooking and clothes drying. California Statewide Reach Codes Program, 2023		

The number of new single-family and multi-family units projected through 2045 are based on the housing projections described in Section 4The emissions reduced from natural gas savings and emissions added from electricity use are shown in Table 56 and Table 57.

Table 56 Measure E-4.2 Assumptions and Results - Natural Gas

Year	Single-Family Homes		Multi-Family Homes		Total		
	Number of New Single-Family Homes Subject to the Reach Code Update	Natural Gas Savings per Single-Family Home (therms/home/year)	Number of New Multi-Family Homes Subject to the Reach Code Update	Natural Gas Savings per Multi-Family Home (therms/home/year)	Total Natural Gas Savings (therms/year)	Natural Gas Emission Factor (MT CO_2e/therm)	GHG Emissions Reductions from Natural Gas Savings (MT CO_2e)
2035	1,032	69	5,314	29	0.2	0.0054	1,236
2045	1,560	69	5,648	29	0.3	0.0054	1,488
The projected retrofits and emissions reductions are the projections under the CAP Update, based on current status, future impact of State policies and programs, and CAP Update assumptions. Energy Policy Initiatives Center, University of San Diego 2023							

Table 57 Measure E-4.2 Assumptions and Results - Electricity

Year	Single-Family Homes		Multi-Family Homes		Total		
	Number of New Single-Family Homes Subject to the Reach Code Update	Increased Electricity Use per Single-Family Home (kWh/home/year)	Number of New Multi-Family Homes Subject to the Reach Code Update	Increased Electricity Use per Multi-Family Home (kWh/home/year)	Total Electricity Added (kWh/year)	Electricity Emission Factor (lbs CO_2e/MWh)	GHG Emissions Increase from Additional Electricity Use (MT CO_2e)
2035	1,032	1,328	5,314	299	1,370	30	40
2045	1,560	1,328	5,648	299	2,072	-	-
The projected retrofits and emissions reductions are the projections under the CAP Update, based on current status, future impact of State policies and programs, and CAP Update assumptions. Energy Policy Initiatives Center, University of San Diego 2023							

Combining the totals from Tables 56 and 57, the net GHG emissions reductions from Measure E-4.2 are 1,196 MT CO_2e in 2035 and 1,488 MT CO_2e in 2045.

7.5.2.8 Measure E-5: Building Energy Benchmarking

The city will develop and implement a citywide building energy benchmarking program. Based on an U.S. Environmental Protection Agency (EPA) study of building energy data reported using EPA's ENERGY STAR Portfolio Manager, the average annual savings in energy use from benchmarking programs is approximately 2.4%.[98] The city's program will be similar to California's statewide building energy benchmarking program but administered locally, like the City of San Diego's existing building energy benchmarking program; the City of San Diego requires commercial, multi-family, and mixed-use buildings over 50,000 sq.ft. to submit energy data annually.[99]

A building stock analysis for Carlsbad is not available at the time the CAP Update was developed. Therefore, the analysis from the City of San Diego, the only jurisdiction in the San Diego region with a completed building stock analysis, is used a proxy. Based on this, 29% of built sq. ft. across the city is assumed to be covered by a building energy benchmarking program.[100] Table 58 summarizes the key assumptions and results.

Table 58 Measure E-5 Assumptions and Results

Year	Non-Residential Natural Gas Savings due to Building Energy Benchmarking Program* (therms/year)	Natural Gas Emission Factor (MT CO_2e/therm)	Emissions Reductions from Natural Gas Savings (MT CO_2e)	Non-Residential Natural Gas Savings due to Building Energy Benchmarking Program* (kWh/year)	Electricity Emission Factor (lbs CO_2e/MWh)	GHG Emissions Reductions from Electricity Savings (MT CO_2e)	GHG Emissions Reductions (MT CO_2e)
2035	727,606	0.0054	3,968	25,041,310	30	339	4,308
2045	1,349,154	0.0054	7,358	46,432,543	-	-	7,358

*Assume the benchmarking program would start in 2026 and 29% of the non-residential built sq. ft. (non-residential energy use) would be subject to the requirement
The projected energy and emissions reductions are the projections under the CAP Update, based on current status, future impact of State policies and programs, and CAP Update assumptions.
Energy Policy Initiatives Center, University of San Diego 2023

7.5.2.9 Measure E-6: Decarbonize Existing Buildings

The goal of Measure E-6 is to decarbonize existing buildings that are not subject to the reach code requirements described under other CAP Update measures. The goal is to reduce 33% of the 2016 baseline natural gas use by 2045. Emissions reductions were calculated using the natural gas savings and the natural gas emission factor discussed in Section 7.2. Table 59 summarizes the key assumptions and results.

[98] EPA: Benchmarking and Energy Savings.
[99] CEC: Building Energy Benchmarking Program. San Diego: Building Energy Benchmarking.
[100] Building Electrification Institute: San Diego Building & Housing Stock Analysis (August 2023).

Table 59 Measure E-6 Assumptions and Results

Year	Baseline 2016 Natural Gas Use (million therms/year)	Natural Gas Savings (%)	Natural Gas Savings (million therms/year)	Natural Gas Emission Factor (MT CO_2e/therm)	GHG Emissions Reductions (MT CO_2e)
2035	24	17%	4	0.0054	22,356
2045	24	33%	8	0.0054	44,305
The projected energy and emissions reductions are the projections under the CAP Update, based on current status, future impact of State policies and programs, and CAP Update assumptions. Energy Policy Initiatives Center, University of San Diego 2023					

The decarbonization potential of each existing home varies depending on building size, age, type of appliances used. To meet the goal, approximately 12,000 existing homes would need to be retrofitted and decarbonized with 100% renewable electricity by 2045. Currently, a housing stock analysis with a breakdown of single-family and multi-family home energy usage is not currently available. The number of units needed to be retrofitted and decarbonized is based on existing energy data and assumes all decarbonization would be realized in the residential sector, though decarbonization of the non-residential sector would also contribute to this measure's goal.

7.5.3 Water and Wastewater

7.5.3.1 Measure W-1: Wastewater System Improvements

The city will continue making improvements to Carlsbad's wastewater collection system, including but not limited to upgrading wastewater lift stations. The goal of Measure W-1 is to: (1) reduce the wastewater energy intensity by 10% by 2035 and after; and (2) supply the wastewater lift stations with 100% renewable or zero-carbon electricity from CEA.

The emissions reductions are calculated based on the difference between the BAU wastewater system electricity use and renewable content of electricity under RPS compliance, and the wastewater system electricity after the 10% reduction in energy intensity and CEA's renewable content. Table 60 summarizes the key assumptions and results.[101]

Table 60 Measure W-1 Assumptions and Results

Year	% Reduction in Wastewater Energy Intensity	Wastewater Generated (million gallons)	BAU Projection - Wastewater System			Projection with Measure W-1			GHG Emissions Reductions (MT CO_2e)
			Wastewater System Electricity Use* (kWh)	RPS-Compliant Electricity Emission Factor (lbs CO_2e /MWh)	GHG Emissions from Wastewater System (MT CO_2e)	Wastewater System Electricity Use (kWh)	CEA Emission Factor (lbs CO_2e/MWh)	GHG Emissions from Wastewater System (MT CO_2e)	
2035	10%	2,759	1,411,242	92	59	1,270,118	-	-	59
2045	10%	2,767	1,415,079	-	-	1,273,571	-	-	-
CEA: Clean Energy Alliance									

[101] Wastewater system energy intensity 156 kWh/acre-foot (478 kWh/million gallon) is based on Carlsbad Municipal Water District: 2020 Urban Water Management Plan (June 2021). Appendix H.

* Wastewater system energy intensity 156 kWh/acre-foot (478 kWh/million gallons)
The electricity supplied by CEA is assumed to be zero-emission (100% renewable or carbon-free electricity) by and after 2035. All electric service providers must supply 100% renewable or carbon-free electricity on and after 2045.
The projected reductions are the projections under the CAP Update, based on current status, future impact of State policies and programs, and CAP Update assumptions.

Energy Policy Initiatives Center, University of San Diego 2023

7.5.3.2 Measure W-2: Water System Improvements

The city will continue making improvements to the CMWD's potable and recycled water systems, including but not limited to expanding use of water reuse, and using renewable energy to power facilities. The goal of Measure W-2 is to: 1) achieve the active and passive water conservation goals described in CMWD's 2020 Urban Water Management (UWMP); and 2) supply all pump stations with 100% renewable and zero-carbon electricity from CEA by 2035. As described in Section 3.2.6, CMWD's service area only covers 77% of Carlsbad. It is assumed the rest of the city will achieve the same level of water conservation effort as in CMWD's service area. The water savings will be 2,295 acre-feet within CMWD service area and 2,981 acre-feet within the entire city by 2035.[102]

The emissions reductions are calculated based on the water savings, the difference between the BAU water system electricity use, and the renewable content of electricity under RPS compliance and under CEA's renewable content. Table 61 summarizes the key assumptions and results.[103]

Table 61 Measure W-2 Assumptions and Results

Year	SDCWA - Treated Water Supply (acre-feet)	Reduction in Water Use from Active and Passive Conservation (acre-feet)	Projected Water Supply After Reduction (acre-feet)	Upstream GHG Emissions Reduction from Water Savings* (MT CO_2e)	Local GHG Emissions Reduction from Water Savings and Additional Renewable Supply** (MT CO_2e)	Total GHG Emissions Reductions (MT CO_2e)
2035	20,954	2,981	17,973	1,458	58	1,516
2045	21,011	3,236	17,774	1,583	-	1,583

*Upstream emissions reductions from water savings are calculated based on the BAU GHG intensity of SDCWA treated water supply (0.489 MT CO2e/acre foot) and the reduction in water use. The impact of increased renewable or zero-carbon electricity in the upstream supply due to RPS is captured under Section 7.4.1.
** Local emissions reductions include (1) the reduction in water distribution electricity use associated with water savings and (2) the reduction in both water and recycled water distribution emissions due to higher renewable and zero-carbon electricity content.
The projected reductions are the projections under the CAP Update, based on current status, future impact of State policies and programs, and CAP Update assumptions.

Energy Policy Initiatives Center, University of San Diego 2023

[102] CMWD: 2020 Urban Water Management Plan (June 2021), Table 4-4 Active and Passive Conservation.
[103] Wastewater system energy intensity 156 kWh/acre-foot (478 kWh/million gallon) is based on CMWD: 2020 Urban Water Management Plan (June 2021). Appendix H.

7.5.4 Waste Diversion

7.5.4.1 Measure WD-1: Solid and Organic Waste Diversion

The goal of Measure WD-1 is to reduce the pounds per person per day (PPD) of waste disposed in landfills to 4.2 PPD by 2035 and 1.7 PPD by 2045. The 2035 and 2045 PPDs are equivalent to a 75% waste diversion rate by 2035 and a 90% waste diversion rate by 2045.

The city's Environmental Sustainability department is responsible for ensuring solid and organic waste is diverted within the city. This is done through several supporting actions established through many programs and policies across the city. These actions are described Chapter 3 of the CAP Update and in the city's Sustainable Materials Management Plan and subsequent Sustainable Materials Management Implementation Plan.

The city has not conducted a waste characterization study, therefore, the 2016 waste composition data (used in the 2016 GHG inventory) from Oceanside are used and held constant through 2045.[104] The emissions avoided from increasing the waste diversion rate is the difference between the waste category BAU emissions and the solid waste emissions using the target diversion rates and corresponding PPDs. Table 62 summarizes the key assumptions and results.

Table 62 Measure WD-1 Assumptions and Results

Year	Waste Disposed at Landfills from Carlsbad			Landfill Gas Capture Rate	GHG Emissions with Targeted Diversion Rate (MT CO_2e)	BAU GHG Emissions (MT CO_2e)	GHG Emissions Reductions (MT CO_2e)
	lbs/person/day	short tons/year	MT/year				
2035	4.2	97,547	88,493	90%	8,606	40,382	31,776
2045	1.7	39,125	35,493	90%	3,452	40,492	37,040

Emissions from waste are calculated based on the mixed waste emission factor used in Section 3.2.4, an oxidation rate (10%), and the waste capture rates. The projected emissions reductions are based on the CAP Update assumptions.

Energy Policy Initiatives Center, University of San Diego 2023

7.5.5 Off-Road Equipment

7.5.5.1 Measure OR-1: Convert Gas-Powered Leaf Blowers

The goal of Measure OR-1 is to prohibiting the use of gas-powered leaf blowers use within the city. By 2035 and after, all emissions from gas-powered leaf blowers will be eliminated. The method to project emissions from gas-powered leaf blowers is discussed in Section 4 and is based on CARB's OFFROAD2021 model. Table 64 summarizes the key assumptions and results.

[104] Recent State actions include organic waste recycling, which may reduce the mixed waste emission factor in future years.

Table 63 Measure OR-1 Assumptions and Results

Year	Projected GHG Emissions from Gas-Powered Leaf Blowers (MT CO_2e)	Percent Reduction in GHG Emissions	GHG Emissions Reductions (MT CO_2e)
2035	1,994	100%	396
2045	2,014	100%	386
CARB 2021, Energy Policy Initiatives Center, University of San Diego 2023			

7.5.5.2 Measure OR-2: Increase Renewable or Alternative Fuel in Construction Equipment

The goal of Measure OR-2 is to require new developments and significant land-moving and construction projects to use renewable or alternatively-fueled construction equipment that reduces 50% of emissions from the project's construction activities. Through the development and adoption of an ordinance, this measure would require a 50% emissions reduction from construction equipment from eligible projects by 2045. The method to project construction emissions is discussed in Section 4 and is based on CARB's OFFROAD2021 model. Table 64 summarizes the key assumptions and results.

Table 64 Measure OR-2 Assumptions and Results

Year	Projected GHG Emissions from Construction Equipment (MT CO_2e)	Percent Reduction in GHG Emissions	GHG Emissions Reductions (MT CO_2e)
2035	28,189	17%	4,698
2045	30,162	50%	15,081
CARB 2021, Energy Policy Initiatives Center, University of San Diego 2023			

7.5.6 Carbon Sequestration

7.5.6.1 Measure CS-1: Community Forest Management

The city's Community Forest Management Plan (CFMP) has a goal to plant 500 trees per year at city-owned or controlled properties through 2025, which will increase Carlsbad's total tree canopy.[105] In addition, another goal of Measure CS-1 is to increase the urban canopy cover from the current 16.7% to 20% coverage by 2035 and 32% coverage by 2045.[106] The carbon sequestration potential is calculated based on: 1) the projected total number of trees planted through 2025 and the CO_2 absorption rate per tree; and 2) the projected canopy cover and the CO_2 absorption rate per acre.[107] Table 65 summarizes the key assumptions and results.

[105] City of Carlsbad: Community Forest Management Plan (2019).
[106] The current canopy cover is from the Community Forest Management Plan. City of Carlsbad: Community Forest Management Plan (2019).
[107] On average, the CO_2 sequestration rate is 0.035 MT CO_2 per tree per year. The carbon sequestration rate depends on the tree species, climate zone, planting location, and tree age. A more accurate carbon sequestration rate will be evaluated once the parameters are decided during implementation of the measure. California Emissions Estimator Model (CALEEMOD). Appendix D Default Data Tables (October 2017). Brown, et al.: Baseline Greenhouse Gas Emissions and Removals for Forest, Range, and Agricultural Lands in California (2004).

Table 65 Measure CS-1 Assumptions and Results

Year	Number of New Trees Added by Target Years*	CO_2 Sequestered** (MT CO_2/tree/year)	Carbon Sequestration from New Trees (MT CO_2)	Canopy Cover Target (%)	Targeted Canopy Cover (acres)	CO_2 Sequestered Rate (MT CO_2/acre)	Carbon Sequestration from Canopy Cover (MT CO_2)	Total Carbon Sequestration (MT CO_2)
2035	3,000	0.0354	106	20%	4,756	1.56	7,413	7,519
2045	3,000	0.0354	106	32%	7,609	1.56	11,860	11,966

*500 trees per year from 2019 through 2025 at city-owned or controlled properties
**Average of trees. An improved estimate of the carbon sequestration rate can be evaluated once the implementation parameters are decided.

Brown et al 2004, City of Carlsbad 2019, Energy Policy Initiatives Center, University of San Diego 2023

Appendix D

Public Input Summaries

Summary of Public Engagement for Climate Action Plan Update

Final – March 2024

Prepared for

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Contents

Introduction

In 2015, the City of Carlsbad was one of the first jurisdictions in San Diego County to adopt a "qualified" Climate Action Plan, consistent with California Environmental Quality Act (CEQA) Guidelines, that outlined strategies and policies to reduce greenhouse gas (GHG) emissions. The Climate Action Plan was developed concurrently with the update of the city's General Plan. Since then, communitywide GHG inventories for the city and statewide GHG targets have been updated, presenting the opportunity for the city to update its Climate Action Plan and further pursue the community's goal of promoting a sustainable environment. The Climate Action Plan Update will evaluate the city's plan for reducing GHG emissions, including the following components:

- Evaluating existing GHG reduction targets and forecasts
- Assessing revisions to current GHG reduction measures
- Exploring potential new GHG reduction measures
- Conducting a benefit-cost analysis of revised and potential new measures
- Developing implementation monitoring procedures

The Climate Action Plan Update will also include preparation of the appropriate documentation to meet the requirements of CEQA.

Overview of Public Engagement

This summary provides an overview of public engagement conducted by the city between January and June 2022 (Phase I) and between July 2022 and November 2023 (Phase II) as part of the Climate Action Plan Update. This summary also includes public engagement conducted in the interim period between Phase I and Phase II, from October 2022 to May 2023.

Public Engagement Goal

To ensure the Climate Action Plan Update reflects the community's needs, priorities, and values.

Public Engagement Objectives

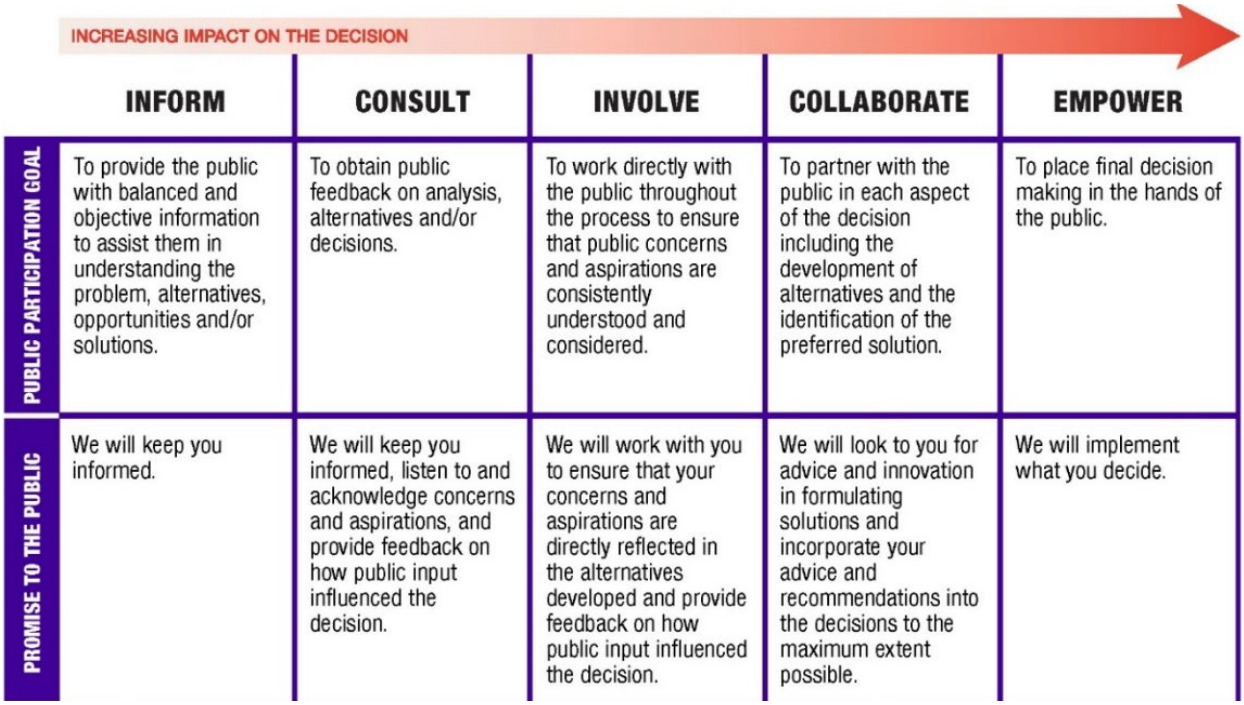
Specific engagement objectives include:

- Describe the importance of the Climate Action Plan and the city's role in environmental leadership.
- Relate climate change and its impacts to relatable scenarios and aspects of life for residents and businesses.
- Communicate constraints and/or pros/cons to Climate Action Plan measures.
- Remove industry jargon and other communication barriers so the average person can understand and provide meaningful input.
- Provide a variety of methods for the public to provide input, including in person and online.
- Create opportunities that will encourage traditionally underrepresented groups to provide input.

- Gather ideas on how equity can be integrated into the Climate Action Plan and implementation.
- Gauge comfort and interest level in helping to implement Climate Action Plan strategies.
- Inform the public how input will be used.

About the Input

The International Association of Public Participation's (IAP2) spectrum of public participation illustrates a range of approaches to involving the public in decision making. The public engagement process for the Climate Action Plan Update includes "inform," "consult," and "involve."



	INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
PUBLIC PARTICIPATION GOAL	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision making in the hands of the public.
PROMISE TO THE PUBLIC	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.

Source: International Association of Public Participation 2018

Qualitative Input with A Convenience Sample

The input included in this summary is qualitative in nature and was obtained through a convenience sample. This means that the city focused on gaining an in-depth understanding of community members' perspectives, and the results cannot be generalized to the city's entire population within a defined margin of error. Therefore, the input in this report should be considered with a similar weight as other forms of feedback that have always been part of the city's decision-making process, such as comments made at City Council meetings or emails sent to the city expressing an opinion.

Underrepresented Communities

Deliberate effort and attention were given to reach underrepresented communities in the city. Several groups representing people of different races and ethnicities, Native American tribes, low-income populations, LGBTQ+ communities, youth, and seniors were contacted based on their

interest in helping advocate for underrepresented groups in Carlsbad and the San Diego region. This includes 18 groups during Phase I and Phase II engagement activities. Although the city reached out to several stakeholders during Phase I and Phase II, many declined to participate in interviews and others could not be reached through available contact information. Appendix A includes a list of all 76 stakeholders contacted by the city in Phase I, and Appendix H includes a list of all 99 stakeholders contacted in Phase II. Throughout Phase I and Phase II, the city translated surveys and various outreach materials into Spanish to help further the reach of engagement activities.

Phase I Public Engagement Activities and Input Received

The overall goal of Phase I engagement was to activate and inform stakeholders about the Climate Action Plan Update development process while allowing the city to better understand the specific desires and needs of diverse stakeholder groups. This information would inform how the Climate Action Plan Update document would be framed and gain preliminary input on priorities for developing GHG reduction measures and actions. The city conducted the following public engagement between January and June 2022 as part of the first phase of the Climate Action Plan Update.

Targeted Outreach: Appendix A includes a list of all 76 stakeholders contacted by the city and invited to participate in stakeholder interviews and complete the online survey. This approach allowed the city to conduct early outreach focused on soliciting feedback from specific audiences, including environmental advocates, business and industry groups and community-based organizations representing underrepresented groups.

Stakeholder Interviews: The city met with 13 stakeholders, representing nine different community-based organizations, that participated in interviews between March 9, 2022 and May 16, 2022. The stakeholder interviews focused on input that will inform the development of the Climate Action Plan, including questions about the current Climate Action Plan, potential changes as part of the Climate Action Plan Update, suggestions on potential measures to include by emissions sector and ideas for how to integrate equity into the Climate Action Plan. The city developed a specific set of questions for these interviews. Appendix B includes a table that provides a list of stakeholders that participated in interviews, a record of discussion questions used during the interviews and a record of meeting notes from each interview.

Online Survey: An online survey was also available to stakeholders to complete instead of, or in addition to, participating in stakeholder interviews. The survey questions were similar to the prompts used for discussion during the stakeholder interviews, which provided an additional way for stakeholders to provide input as part of the Climate Action Plan Update. The survey was also made available to the public on the city's website. As of June 27, 2022, 16 survey responses were received. The survey questions and a summary of responses are included in Appendix C.

City Council Updates: City staff presented the Climate Action Plan Annual Report for Reporting Period 5 (January 1, 2021 – December 31, 2021) to the City Council on April 19, 2022. During the

same meeting, city staff also discussed the Climate Action Plan Update with the City Council and received feedback to use a traffic model customized to Carlsbad to get a more accurate estimate of GHG emissions and make sure the Climate Action Plan Update is aligned with other city plans using the same model.

Booth at Earth Month Celebration: City staff hosted a booth to share information and talk with members of the public about the Climate Action Plan Update as part of the City's annual Earth Month Celebration. The event was held on April 2, 2022, at Pine Avenue Community Center and Park. The booth allowed staff to have informal conversations with the public about climate change and the Climate Action Plan, with the goal of directing people to take the survey.

Additional Comments: Additional comments received by the city are included in Appendix E. The Rincon Band of Luiseño Indians submitted one additional comment letter on June 22, 2022.

Strategic Plan Priorities

The City Council identified the following main themes that they wanted to address in a five-year strategic plan:

- Economic vitality
- Sustainability and the environment
- Community character
- Quality of life and safety
- Organizational excellence and fiscal health

The Climate Action Plan Update supports sustainability and the environment.

Incorporating Input from 5-Year Strategic Plan (March 2022): The City Council developed a 5-year strategic plan[1] with policy goals to reflect the most important priorities of the community. The City Council adopted the strategic plan on October 11, 2022. These goals are one way the city delivers on the Carlsbad Community Vision, a set of nine core values community members said were important to Carlsbad's future.

Input related to "Sustainability and Natural Environment" collected during outreach for the city's 5-Year Strategic Plan in March 2022 was considered and incorporated as part of the Climate Action Plan Update. Public engagement for the 5-Year Strategic Plan included:

- Virtual workshop held on February 1, 2022, where the public could share ideas, ask questions and participate in breakout rooms with city staff about specific topics, including sustainability.
- Online ideas wall where people could share ideas, comment on ideas already added and see what others had to say.
- Online survey with three open-ended questions based on the themes from the Community Vision[2].

[1] For more information about the 5-year strategic plan, see: https://www.carlsbadca.gov/city-hall/city-council/strategic-plan

[2] For more information about the Carlsbad Community Vision, see: https://www.carlsbadca.gov/residents/community-vision

Interim Outreach Activities

The city conducted additional outreach for the CAP Update between Phase I and Phase II of engagement. This interim outreach was conducted between October 2022 and October 2023, during which city staff attended city- and stakeholder-sponsored events in various capacities to raise awareness and share information about getting involved in the CAP Update development process. A full list of events and the capacity of city staff attendance is provided in Appendix F. Events include attending city-sponsored Fix-it Clinics, tabling at the Carlsbad Village Street Faire, and presentations to stakeholder groups such as the Batiquitos Lagoon Foundation.

Phase II Public Engagement Activities and Input Received

Public input from Phase I was used to develop proposed GHG reduction measures and actions, while Phase II engagement was focused on gaining feedback on the proposed GHG reduction measures and actions. On October 18, 2023, the city shared an "Overview of proposed actions to reduce greenhouse gas emissions in Carlsbad" to identify proposed actions to reduce greenhouse gas emissions and describe the projected GHG reductions, measures of success, data to be used, related benefits; timeframe; and equity considerations for each proposed action. The overview of proposed actions was published in English and Spanish (included in Appendix G), which was used to provide stakeholders with the opportunity to provide informed feedback on what was being proposed for the Climate Action Plan Update. This document was shared through various methods throughout Phase II engagement, including the city's website, weekly city manager email, stakeholder email list, community events and tabling at city facilities. The city conducted the following public engagement between October 2023 and November 2023 as part of Phase II of the Climate Action Plan Update engagement.

Targeted Outreach: The city contacted stakeholder groups and organizations to obtain feedback on the proposed GHG reduction measures and actions. Appendix H includes a list of all 99 stakeholders contacted by the city and invited to participate in Phase II through meetings and an online survey.

Stakeholders were also contacted through email on October 18, 2023, using the city's Comms Sustainability list, which included 294 recipients. This email communication included many of the 99 stakeholders directly contacted during Phase II. The full list of stakeholders reached through the Comms Sustainability list is not provided for reference here as many are captured in Appendix H.

Stakeholder and Public Meetings: The city held six stakeholder meetings with organizations, with approximately 30 to 40 individual stakeholders, between October 25, 2023 and November 21, 2023[3]. The stakeholder meetings were attended at the request of stakeholders and focused on reviewing the proposed GHG reduction measures in detail, answering any questions about the

[3] An additional meeting was held outside of the Phase II engagement period. City staff met virtually with representatives of the Rincon Band of Luiseño Indians on Jan. 29, 2024.

proposed measures and obtaining additional feedback. Appendix I includes agendas and notes from these meetings.

City Council and DEI Committee: The city presented the potential GHG reduction measures for the Climate Action Plan Update to both City Council and the city's Diversity, Equity, and Inclusion Committees on November 7, 2023, and November 15, 2023, respectively. The presentations were intended to provide stakeholders with detail on the proposed GHG reduction measures and solicit feedback. These presentations were open to public comment, with 6 public comment letters received for the City Council meeting and additional public comments at the meeting itself. Notes on the public comments received at the City Council meeting and the public comment letters received are provided, along with the staff report for the meeting, in Appendix J.

Online Survey: An online survey was also available to stakeholders and the public to complete, which was intended to obtain additional feedback from stakeholders reached during Phase I and to engage new stakeholders in Phase II. The survey questions provided an opportunity for participants to indicate which of the proposed GHG reduction measures and actions they supported and provide feedback on why. The survey was also shared with the public on the city's website and advertised on social media and in the city manager's weekly email. The survey questions and a summary of responses are included in Appendix K. The survey was launched on October 18, 2023, and closed on November 17, 2023. A total of 86 survey responses were received.

Attending Community Events: City staff attended events throughout the city and region in various capacities to reach additional stakeholders as part of Phase II, including tabling at various locations and events. City staff tabled at six events to promote awareness of the Climate Action Plan Update and encourage engagement. These events allowed direct engagement with the public and provided opportunities for one-on-one discussions about the Climate Action Plan Update. A list of the events attended by city staff is provided in Appendix L.

"Pop-Up" Tabling: In addition to tabling at larger community events, city staff more informally tabled at various city facilities and parks. This "pop-up" style was done 10 times across all districts and at different dates and times throughout the week. Like the larger community events described above, this "pop-up" tabling allowed for direct engagement with the public and conversations about the Climate Action Plan Update. A list of the dates and locations of the "pop-up" tabling is provided in Appendix L.

Media and Marketing: The city promoted engagement opportunities for the Climate Action Plan Update through various media outlets to reach a broader range of stakeholders. These efforts included social media posts through the City of Carlsbad's accounts and the San Diego Regional Climate Collaborative's accounts in October 2023. Two emails were sent through the City Manager weekly email blast to promote participation in the Climate Action Plan process, one in October 2023 and another in November 2023. An article was published in the San Diego Union-Tribune on November 9, 2023, highlighting information about the Climate Action Plan Update and the presentation to the City Council. Additionally, the San Diego Regional Climate Collaborative

provided a direct link to the Phase II survey in their monthly newsletter for November 2023. The media and marketing social media posts and articles are compiled in Appendix M.

Additional Comments: The city received other comments via email, which are included in Appendix N. Many of these email comments were sent in direct response to a presentation at the City Council meeting on November 7, 2023, in which an update on the Climate Action Plan Update process was provided to the City Council.

Themes from Phase I Public Engagement

The themes presented below are a synthesis of comments shared during public engagement activities conducted as part of the first phase of the Climate Action Plan Update and are intended to highlight the range of ideas that were shared. The themes do not necessarily reflect all the ideas and perspectives shared. However, all verbatim responses and meeting summaries are included in the appendices to provide a comprehensive record of all the input gathered.

Theme 1: Take Bold Actions. Overall, responses emphasized the importance of prioritizing actions and the need to act now to minimize contributions to global climate change and taking action to protect against potential impacts. The Climate Action Plan Update should prioritize:

- Setting aggressive goals (i.e., zero carbon);
- Establishing ambitious targets (i.e., near-term emissions reduction); and,
- Focusing on implementation, monitoring and reporting.

Theme 2: Consider a Range of Actions. All actions to help reduce GHG emissions and address climate impacts should be considered. However, taking action to reduce GHG emissions from transportation and energy should be prioritized since they are the largest sources of emissions. The range of actions is organized by topic area below.

Mobility

- Creating mobility choices (e.g., public transportation, biking, walking)
- Promoting the adoption of electric vehicle (EV) adoption and help provide infrastructure

Energy

- Advance renewable energy sources
- Promote building electrification to reduce reliance on fossil fuels

Water

- Increase sustainable water sources, including treated wastewater
- Promote efforts to reduce the demand for water

Solid Waste

- Make it easy for homes and businesses to dispose of all different types of solid waste

Climate Change Impacts

- Wildfire, extreme heat and drought are the climate change impacts of greatest concern
- Sea level rise was also an important concern

Theme 3: Promote Equity and Public Awareness. The Climate Action Plan Update can help improve quality of life, and equity considerations should be integrated throughout the document. In addition, connecting with individuals can help drive climate action and support implementation.

- Integrate equity throughout the Climate Action Plan Update
- Help meet the everyday needs of people (i.e., access to housing and jobs)

- Public outreach, education and awareness are essential to achieving success

Theme 1: Take Bold Actions

Overall, responses emphasized the importance of prioritizing actions and the need to act now to minimize contributions to global climate change and taking action to protect against potential impacts. The Climate Action Plan Update should prioritize:

- Setting aggressive goals (i.e., zero carbon);
- Establishing ambitious targets (i.e., near-term emissions reduction); and,
- Strengthening implementation, monitoring and reporting.

Set more aggressive goals and ambitious targets for reducing greenhouse gas emissions:

- Climate action is urgent because we are in a climate emergency
- Reducing all types of GHGs (vehicle miles traveled, industrial, carbon dioxide, methane, other)
- Targets are too low and time too short in every category (e.g., should be 100% zero carbon by 2035)
- Set targets higher so there is a margin of safety to ensure the city still reaches GHG reduction targets
- Targets should include 5-year benchmarks for monitoring each measure
- Prioritize measures with co-benefits
- Responsibility, leadership and being proactive are important parts of climate action

Strengthen implementation, support ongoing monitoring and include regular reporting to provide transparency and opportunities for adaptive management.

- Reporting should occur more frequently (every six months) to allow for appropriate adjustments to the plan
- Reporting should include meaningful and measurable data
- Implementation cannot be an afterthought; needs to be central to developing the Climate Action Plan
- GHG inventories lag, so need to account for data delays
- Describe funding needed to implement Climate Action Plan
- Technology and individual action should not be the only means to achieving climate action
- Climate Action Plan should be integrated with other documents (Habitat Management Plan, sea-level rise planning, Intergovernmental Panel on Climate Change report)
- The city should use different tools within its power to take climate action (laws, policies, leadership, prioritization, incentives, investment, infrastructure, requirements on development)

Theme 2: Consider a Range of Actions

All actions to help reduce GHG emissions and address climate impacts should be considered. However, taking action to reduce GHG emissions from transportation and energy should be

prioritized since those are the largest sources of emissions. The range of actions is organized by topic area below.

Transportation

Providing mobility choices instead of just driving.

- Include measures to increase biking and transit use
- Stronger mode shift goals (biking, walking and transit) to get to 50% of alternative modes, but may not be realistic
- Safe and easy ways to get around without a car
- Think about trail network as part of the transportation system
- Encourage one day/month of no driving
- Bicycle and Pedestrian Master Plan
- Complete Streets Policy

Biking

- The current bike lane design is a hazard
- Create separated/safe bike lanes to meet the increase in electric e-bike usage (more Class IV bike lanes)
- Create corridors that reduce lanes for cars and increase lanes dedicated to pedestrians and bicyclists. Example: El Camino Real could provide a separate path with full barriers only for bikes, e-bikes, golf carts
- Promote biking to work and school
- Bike parking, lockers, showers
- Make using bikes with public transit easier

Public Transportation

- Improved rail and bus transit
- Prioritize the utilization and popularity of public transportation
- Micromobility and transit, especially for employers
- Solar powered/electric buses
- Acquire modern, efficient public transportation locally (at least a rapid and regular connection with the City of San Diego and San Diego Airport)
- Carlsbad should demand the completion of the bullet train project between San Diego and Northern California

Promoting the adoption of electric vehicles (EVs) and help provide charging infrastructure.

- Charging infrastructure is needed and is important to increasing adoption of EVs
    - EV chargers everywhere, including existing buildings, COASTER Station parking lots and all city parking lots
    - Provide incentives for businesses and existing buildings to install EV chargers
    - Need charging stations to support tourism
    - Use solar carports

    - More affordable/free EV chargers. Charging costs at some locations are inflated or charge by time rather than the electricity used
- All city vehicles (including trucks) should be EVs
- Prioritize clean electric and hydrogen fuel cell transportation
- Electric trash trucks

Other Ideas for Clean Transportation

- Establish regional mitigation measures to reduce vehicle miles traveled so projects can pay into larger project pools
- Build upon the city's Transportation Demand Management (TDM) Plan/TDM Ordinance, Sustainable Mobility Plan and Charging Station Siting Plan (See Theme 4 for additional comment addressing equity in relation to the EV Charging Station Siting Plan)
    - Encourage businesses to use electric shuttles from transit centers and reward employees who do so
- Transit oriented development: living near transit makes it easy to use
- More efforts at traffic calming – fix the traffic light timing, speed bumps, bulb-outs, enhanced crosswalks, create traffic circles – to lower traffic speeds
- Smart traffic control systems
- Roundabouts can help reduce emissions from idling and acceleration from stop signs.
- Reduce vehicle idling through infrastructure and enforcement
- School buses can help address emissions associated with opening and closing of schools from driving and idling
- Carlsbad/North County needs a hydrogen fueling station

Energy

Renewable Energy Sources

- Achieve 100% renewable energy target through the Clean Energy Alliance
- Phasing out natural gas and focusing on all-electric with renewable sources
- Promote photovoltaic solar on homes, businesses, all city buildings and as cover for parks, parking, etc., to create shade and generate energy
- Provide subsidies/incentives for solar photovoltaics
- Upgrade city facilities to Clean Energy Alliance's Green Impact with 100% renewable energy
- Conservation efforts/home energy retrofits
- City-owned solar generation
- Local renewable energy grid with renewable energy sources
- City-owned Green Hydrogen Electrolyzer Hub
- Energy storage solutions with rebates for homeowners

Building Electrification

- Require building electrification for all new construction (no gas hookups)
- Retrofit homes with green hydrogen fuel cell production, water and refrigerant heat pumps, solar storage and induction stoves

- Convert municipal buildings to electric
- Retrofit existing buildings to electric
- Retrofitting should be done equitably
- Set timelines if not a specific measure
- Adopt an all-electric new construction reach code now; don't wait for the Climate Action Plan Update
- At least one comment was opposed to phasing out natural gas

Water

Increase sustainable water sources, including treated wastewater and efforts to reduce demand.

- Use recycled water as a potable water source (use Encina)
- Desalination is way too energy intensive
- Increase water efficiency
- Get rid of grass lawns
- Promote xeriscaping and native landscaping
- Continue to invest in new technologies for water and wastewater treatment
- Carlsbad has one of the most efficient wastewater facilities and purple pipe program
- Work on removing nanoplastics and pharmaceutical toxins
- More stormwater pollution awareness and reducing vehicle miles traveled will help decrease car-related stormwater pollution
- Develop a water usage report card for homeowners and businesses

Solid Waste

Make it easy for homes and businesses to dispose of solid waste.

- Include a target of 90% waste diversion by 2035
- Promote the goal of zero waste and expand composting, edible food recovery, green waste composting and recycling programs
- More events to collect household hazardous waste like paint cans and electronics
- Lead by example with organics recycling
- Many businesses still only have one trash can
- Develop and provide a city organic composting center
- Banning plastics by 2030 and incentives to help do so
- Education about recycling
- Major fines for throwing away hazardous waste
- Fee structure should be based on how much you dispose of
- State mandates, including solid waste requirements, can have a negative impact on businesses.

Other Actions

Consider the full range of actions to help reduce GHG emissions and address climate impacts.

- Preserve natural unbuilt land/open space

- Reducing the urban heat island effect on roadways and parking lots should be a high priority
- Include a tree planning measure / urban forestry plan
    - Include a specific canopy target between 30-35%
- Use green streets/stormwater capture
- Consider the role of land use
- Create walkable, transit-friendly communities
- Increase affordable housing to live near work/jobs
- Increase access to park within a half-mile of all residences
- Work with the County to address Airport pollution, especially in the community that is most affected
- Promote the Carlsbad Green Business Program as part of the Climate Action Plan Update
- Integrate carbon sequestration (restoring native habitat)
- Account for off-road emissions, such as leaf blowers, in the GHG inventory

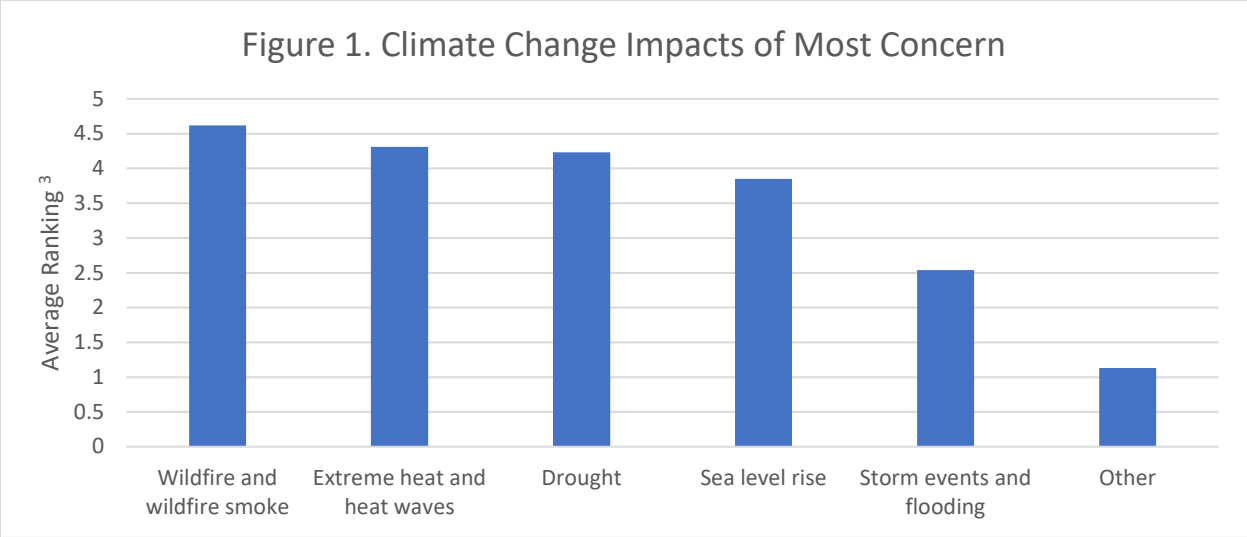
Climate Change Impacts

Wildfire and wildfire smoke, extreme heat and heat waves, and drought were consistently ranked as the climate change impacts of greatest concern. Sea level rise was identified as an important concern for some stakeholders but was not the most important for many others. Storm events and flooding were of the least concern based on the responses received.

Figure 1 shows the responses to the online survey by average score of each climate change impact based on the ranking of climate change impacts in each survey response[4]. Other potential impacts of climate change that were of concern included food supply, biodiversity and habitat loss. In addition, some comments acknowledged that the global nature of climate change impacts is different than the local impacts.

[4] Weights are applied in reverse. In other words, the respondent's most preferred choice (which they rank as #1) has the largest weight, and their least preferred choice (which they rank in the last position) has a weight of 1. In this case, the #1 choice has a weight of 6, because it was the first out of 6 options, and the #6 choice has a weight of 1. Average ranking is calculated as follows, where: *w* = weight of ranked position, *x* = response count for answer choice and:

$$\frac{1w1 + x2w2 + x3w3 \ldots xnwn}{\text{Total response count}}$$



Theme 3: Promote Equity and Public Awareness

The Climate Action Plan Update can help improve quality of life, and equity should be integrated throughout the document. In addition, connecting with more people can help drive climate action by individuals.

Integrate equity throughout the Climate Action Plan Update.

- Work with underrepresented communities
- Help meet the everyday needs of people
- Link housing and jobs with sustainable transportation options
- Low-income communities are most likely to be impacted by climate change
- Protect vulnerable communities and adapt to the impacts of climate change
- The City of Oakland's Climate Action Plan has equity in the title
- Every section in the Climate Action Plan should have an equity component
- Create a Climate Equity Index (like the Cities of San Diego and Chula Vista); if not, use CalEnviroScreen
- Consider subsidies for low-income households to increase solar, e-bikes & hybrid vehicles
- Increase access to microgrids in lower income areas
- Assess the impacts of Climate Action Plan measures by neighborhood
- Improved air quality benefits everyone
- Prioritize underrepresented communities in the EV siting plan
- Relieve multi-family housing projects with at least 20 percent affordable units from Climate Action Plan requirements
- Job transition programs for workers in the fossil fuel industry, we must also create a pathway for jobs in environmental justice communities
- Carlsbad is generally a very wealthy place, so planning regionally so that cities like Oceanside, Vista and San Marcos can learn from our steps in the right direction
- The city should have an inclusionary housing ordinance (with a 10 to 15 percent requirement)

- More equitable land use policies will be the most impactful
- Concerns about displacement as buildings are upgraded to meet Climate Action Plan goals
- Make incentives easy and free of barriers so everyone can take advantage
- Provide information in Spanish to make programs accessible to all

Public outreach, education and increased awareness are essential to achieving success.

- Ask citizens within the community how the Climate Action Plan Update would impact their daily lives
- More education and community engagement
- Educate on what an individual can do and reinforce with kudos
- We are the problem and need to be part of the solution
- More specific engagement of employers
- Create and then hire a climate communication and engagement position to ensure better community engagement
- Communicate through multiple methods
- Create a Sustainability Commission that reports to City Council
- Create a Spare the Air Program (like Bay Area Air Quality Management District's) for days when air quality is expected to be unhealthy to educate residents about air pollution and encourage actions to improve air quality

The Climate Action Plan Update provides an opportunity to modernize the document to connect with more people.

- The Climate Action Plan is lengthy and not approachable for laypeople
- Improve readability, remove jargon and make it more interesting, compel people to act
- Provide a one or two-page snapshot of the Climate Action Plan
- Educational links help make it more readable
- Emphasize the need for urgent action
- Get rid of soft verbs within measures like "promote" and "encourage"
- Provide more educational information on how individuals can help with their own actions

Themes from Phase II Public Engagement

Many of the themes and sub-themes that emerged from the second phase of public engagement mirrored those reflected in the first phase, emphasizing some of the most important priorities for the community. These themes and sub-themes are presented in the list below, but for the sake of brevity and to avoid redundancy, many of the more specific details are not repeated here (see Themes from Phase I Public Engagement for more context):

- Theme 1: Take Bold Actions
    - Setting aggressive goals (i.e., zero carbon)
    - Establishing ambitious targets (i.e., near-term emissions reduction)
    - Strengthening implementation, monitoring and reporting
- Theme 2: Consider a Range of Actions

    - Providing mobility choices instead of just driving
    - Promoting the adoption of EVs and help provide charging infrastructure
    - Renewable energy sources
    - Building electrification
- Theme 3: Promote Equity and Public Awareness
    - Integrate equity throughout the Climate Action Plan Update
    - Public outreach, education and awareness are essential to achieving success

In addition to these themes and sub-themes that were reflective of those established in Phase I, the additional list below identifies some of the more specific, notable ideas that were prominent across Phase II. It should be noted that this list does not nearly reflect the entirety of input received but includes ideas that were notably repeated in several instances. It should also be noted that though certain ideas had broad, general support, there were some instances where concerns were expressed too (e.g., electric vehicles and building electrification).

- Electrification/decarbonization of new and existing buildings
- Increased focus on transportation demand management (TDM) strategies
- Sustainable transportation and land use planning (e.g., traffic calming measures, mixed-use development, creating jobs where people live)
- Electric vehicles and charging infrastructure
- Public support/education is needed (e.g., on climate/sustainability topics) for successful implementation
- Tree planting for a variety of benefits; green/natural infrastructure
- More aggressive/ambitious GHG reduction goals/targets
- Establishing clear, interim benchmarks for implementation
- Strong emphasis on municipal operations (i.e., the city should "walk the walk")
- Focused efforts on priority actions with the highest GHG reduction potential (e.g., buildings, transportation)

The themes, sub-themes and ideas presented above are a synthesis of comments shared during Phase II of public engagement and are intended to provide a snapshot of the type of feedback received. They do not necessarily reflect all the ideas and perspectives shared. However, all verbatim responses and meeting summaries are included in the appendices to provide a comprehensive record of all the input gathered.

How Input was Incorporated into Climate Action Plan Update

Phase I input was used to develop the list of potential measures to reduce greenhouse gas emissions in the Climate Action Plan Update. This was done by focusing on the three themes that emerged and input on specific measures. Other considerations when developing the potential measures included:

- Leveraging existing city efforts to defray additional costs and staff time as much as possible

- Including successful and applicable measures from the previous Climate Action Plan, as well as greenhouse gas emissions reduction strategies included in state guidance documents
- Incorporating input from city staff across all departments so the measures can be implemented; and
- Creating reportable measures so the Climate Action Plan Update process is transparent.

Phase II input reiterated and amplified the themes identified in Phase I. Several proposed measures reflected these themes and individual comments made through the survey and at public meetings. However, some input focused on how to improve the Climate Action Plan Update. The table below summarizes this input and how these comments were addressed:

Phase II public input received	How input was addressed
Establish clear, interim benchmarks between the 2035 and 2045 target years for transparency and accountability	Benchmarks were added into the proposed measures
Add in more measures so the total greenhouse gas emissions reductions are higher than the 2045 reduction target	Three additional measures were added to the Climate Action Plan Update – two measures proposing updates to the city's reach code and one measure to install solar PV in city-owned parking lots.
Add a measure to install solar PV in city-owned parking lots	This was included as a supporting measure during Phase II. Staff moved this from a supporting measure and made it a standalone measure; however, staff were not able to calculate greenhouse gas emissions for this measure. This measure would require an analysis of how many parking lots would be suitable for solar PV and how large these systems could be; once this analysis is complete, a reduction calculation could be added to the Climate Action Plan Update.
Add a measure banning artificial turf within the city	Staff had analyzed this as a potential measure after reviewing Phase I public input. It was deemed infeasible then since there were no greenhouse gas reductions associated with the action. After Phase II concluded, staff re-analyzed this measure. Not only did it lack emissions reductions, but the cost to replace artificial turf was extremely high. Because of this combination, staff did not include it in the Climate Action Plan Update.

Conclusion

The city made a concerted effort to engage the community throughout the Climate Action Plan Update development process between January 2022 and November 2023. The city utilized numerous strategies to reach many different types of stakeholders, and as such was able to solicit input and comments from various perspectives. Input and comments received during public engagement for Phase I of engagement were reviewed and considered by the city and informed the tone and approach for preparation of the Climate Action Plan Update. The feedback on GHG reduction measures and key community priorities received in Phase I and II were incorporated, as appropriate, into the GHG reduction measures to be included in the Public Draft Climate Action Plan Update.

Appendix A – Stakeholder Contact List

A list of all stakeholders that were contacted by the city and invited to participate in stakeholder interviews and complete the online survey is included in the subsequent pages.

Name	Organization	Stakeholder Group	Date(s) E-Mailed	Response?	Follow-Up Meeting?	Date + Type of Follow-Up Meeting
Judy Frankel	Bike Walk Carlsbad	Bike/Pedestrian	3/7/2022; 3/9/2022	No	N/A	N/A
Cindy Cremona	Bike Walk Carlsbad	Bike/Pedestrian	3/9/2022	No	N/A	N/A
Nicole Burgess	Bike Walk Carlsbad	Bike/Pedestrian	3/9/2022	No	N/A	N/A
Michael von Neumann	Bike Walk Carlsbad	Bike/Pedestrian	3/9/2022	Yes	No; declined	N/A
Michell Thitathan	Bike Walk Carlsbad	Bike/Pedestrian	3/9/2022	No	N/A	N/A
Colin Parent	Circulate San Diego	Bike/Pedestrian	3/7/2022; 3/14/2022	Yes	Forwarded to below	N/A
Dara Braitman	Circulate San Diego	Bike/Pedestrian	3/14/2022; 5/5/2022	Yes	No; providing written comments pending review	N/A
Andy Hanshaw	San Diego County Bicycle Coalition	Bike/Pedestrian	3/3/2022	No	Yes	3/9/2022; Zoom
Will Rhatigan	San Diego County Bicycle Coalition	Bike/Pedestrian	3/3/2022	Yes	Yes	3/9/2022; Zoom
Norval Lyon	North County Cycle Club	Bike/Pedestrian	3/7/2022	Yes	Forwarded to below	N/A
Ken Chin-Purcell	North County Cycle Club	Bike/Pedestrian	3/9/2022; 5/5/2022	Yes	Pending CAP review	N/A
NOT IN MASTER SHEET	Bike the Coast San Diego	Bike/Pedestrian	3/7/2022; 3/14/2022	No	N/A	N/A
NOT IN MASTER SHEET	Celo Pacific Bicycle Racing Team	Bike/Pedestrian	3/7/2022	UNDELIVERED	N/A	N/A
Christine Davis	Carlsbad Village Association	Business Association	3/3/2022; 3/11/2022; 5/5/2022	Yes	Pending CAP review	N/A
Tommy Thompson	North County SD Association of Realtors	Business Association	3/3/2022; 3/11/2022	No	N/A	N/A
Debra Rosen	North San Diego Business Chamber	Business Association	3/3/2022; 3/11/2022	No	N/A	N/A
W. Erik Bruvold	San Diego North Economic Developmet Council	Business Association	3/3/2022; 3/11/2022; 5/5/2022	Yes	Pending CAP review	N/A
Mark Cafferty	San Diego Regional Economic Development Corporation	Business Association	3/3/2022; 3/11/2022	No	N/A	N/A
Brett Schanzenbach	Carlsbad Chamber of Commerce	Business Association	3/3/2022; 3/11/2022	Yes	Yes	3/24/2022; Zoom
Deborah Mossa	Batiquitos Lagoon Foundation	Environmental	3/7/2022; 3/14/2022	No	N/A	N/A
Don Rideout	Carlsbad Watershed Network	Environmental	3/7/2022; 3/14/202	UNDELIVERED	N/A	N/A
Diane Nygaard	Preserve Calavera	Environmental	3/3/2022	Yes	Yes	3/28/2022; Zoom
Natalie Shapiro	Buena Vista Audubon Society	Environmental	3/7/2022; 3/14/2022	No	No; other BVAS member attended a meeting	N/A
Ron Wooton	Buena Vista Lagoon Society	Environmental	3/7/2022; 3/14/202	UNDELIVERED	N/A	N/A
Lisa Cannon-Rodman	Agua Hedionda Lagoon Foundation	Environmental	3/7/2022; 3/14/2022	Yes	No; will complete survey	N/A
Travis Kemnitz	SD Audobon Society	Environmental	3/9/2022; 3/17/2022	Yes	No; will complete survey	N/A

Name	Organization	Stakeholder Group	Date(s) E-Mailed	Response?	Follow-Up Meeting?	Date + Type of Follow-Up Meeting
Lee	Carlsbad Community Gardens Collaborative	Environmental	3/9/2022; 3/17/2022	No	N/A	N/A
Mitch Silverstein	Surfrider	Environmental	3/3/2022; 5/5/2022	Yes	Pending CAP review	N/A
Matt O'Malley	SD Coastkeeper	Environmental	3/9/2022; 3/17/2022	No	N/A	N/A
Steve Morris	I Love a Clean San Diego	Environmental	3/9/2022; 5/4/2022	Yes	No; will complete survey	N/A
Kathleen	Friends of Cardiff & Carlsbad State Beaches	Environmental	3/7/2022	UNDELIVERED	N/A	N/A
Dee Dee Flynn	Friends of Cardiff & Carlsbad State Beaches	Environmental	3/9/2022	No	N/A	N/A
John Hamilton	Friends of Cardiff & Carlsbad State Beaches	Environmental	3/9/2022	No	N/A	N/A
Stephen Flynn	Friends of Cardiff & Carlsbad State Beaches	Environmental	3/9/2022	No	No; completed survey	N/A
Karl Adlinger	Sierra Club	Environmental	3/2/2022	Yes	Yes	3/10/2022; Zoom
Madison Coleman	Climate Action Campaign	Environmental	3/2/2022	Yes	Yes	3/9/2022; Zoom
Masada Disenhouse	SD 350	Environmental	3/9/2022; 3/17/2022	Yes	Forwarded to below	N/A
Anne Sheridan	SD 350	Environmental	3/17/2022	Yes	Yes	3/23/2022; Zoom
Livia Borak	Coast Law Group	Environmental	3/9/2022; 3/17/2022	No	N/A	N/A
Marco Gonzalez	Coastal Environmental Rights Foundation	Environmental	3/9/2022; 3/17/2022	No	N/A	N/A
Howard Krausz	North County Advocates	Environmental	3/28/2022	Yes	Yes (Diane Nygaard invited)	3/28/2022; Zoom
Jay Klopfenstein	Carlsbad Community Gardens Collaborative	Environmental	4/13/2021	Completed survey	N/A	N/A
Ellen Bartlett	Preserve Calavera	Environmental	N/A	N/A	Yes: Diane Nygaard invited	3/28/2022; Zoom
Joan Herskowitz	Buena Vista Audubon Society	Environmental	N/A	N/A	Yes; Diane Nygaard Invited	3/28/2022; Zoom
Paige DeCino	Sierra Club	Environmental	3/2/2022	Yes	Yes	3/10/2022; Zoom
Simon Freedman	Sierra Club	Environmental	3/2/2022	Yes	Yes	3/10/2022; Zoom
Mike McMahon	Sierra Club	Environmental	3/2/2022	Yes	Yes	3/10/2022; Zoom
Sarah	Stay Cool 4 Grandkids	Environmental / Underrepresented	3/9/2022	Yes	No; declined, but will complete survey	N/A

Name	Organization	Stakeholder Group	Date(s) E-Mailed	Response?	Follow-Up Meeting?	Date + Type of Follow-Up Meeting
Suzanne Hume	Clean Earth 4 Kids	Environmental / Underrepresented	4/7/2022; 4/14/2022	No	N/A	N/A
Matthew Adams	Building Industry Association San Diego	Industry Association	3/3/2022; 3/11/2022	No	N/A	N/A
Kelly Batten	Building Industry Association San Diego	Industry Association	5/5/2022; 5/12/2022	Yes	Yes	5/16/2022; Zoom
Nate Fairman	IBEW 465	Industry Association	5/5/2022; 5/31/2022	Yes	No; will complete survey	N/A
Craig Bendetto	SD Building Owners & Managers; NAIOP SD	Industry Association	5/5/2022	Yes	Yes	5/16/2022; phone call - Craig setting up presentation
Genevieve Black	Woman's Club of Carlsbad	Underrepresented	4/13/2022; 5/11/2022	No	N/A	N/A
Linda Kurokawa	Mira Costa College Community Education and Workforce Development	Underrepresented	4/13/2022; 5/5/2022	No	N/A	N/A
Kristen Huyck	Mira Costa College Community Education and Workforce Development	Underrepresented	4/13/2022; 5/5/2022	No	N/A	N/A
NOT IN MASTER SHEET	North San Diego County NAACP	Underrepresented	4/13/2022; 5/5/2022	No	N/A	N/A
Yusef Miller	North County Equity and Justice Coalition	Underrepresented	4/13/2022; 5/5/2022; 5/12/2022 (call)	Yes - also represents Clean Earth 4 Kids and North SD County NAACP	No; declined, but will complete survey	N/A
Max	North County LGBTQ Resource Center	Underrepresented	4/13/2022; 5/5/2022	Yes	No; declined	N/A
Marylynn McCorkle	Alliance for Regional Solutions	Underrepresented	4/13/2022; 5/5/2022; 5/11/2022 (web form)	No	N/A	N/A
Craig Jones	Alliance for Regional Solutions	Underrepresented	5/18/2022; 5/26/2022	Yes	No; completed survey	N/A
Carmen Mojado	Saving Sacred Sites / San Luis Rey Band of Mission Indians	Underrepresented	4/13/2022; 5/5/2022	No	N/A	N/A
Valerie A. Gómez	Mexican-American National Association	Underrepresented	4/13/2022; 5/5/2022	No	N/A	N/A
Aly Vredenburgh (president)	Carlsbad Equality Coalition	Underrepresented	4/13/2022; 5/5/2022; 5/12/2022 (web form)	Yes	No; will complete survey	N/A
Graciela Gutierrez	North County Lifeline	Underrepresented	4/13/2022; 5/5/2022	No	N/A	N/A
Cheryl Madrigal	Rincon Band of Luiseño Indians	Underrepresented	4/13/2022; 5/5/2022	Yes; submitted letter		

Name	Organization	Stakeholder Group	Date(s) E-Mailed	Response?	Follow-Up Meeting?	Date + Type of Follow-Up Meeting
Tina Jimenez	Torres Martinez Desert Cahuuilla Indians	Underrepresented	4/13/2022; 5/5/2022	No	N/A	N/A
Jesse Morales, Acting Chairman	Mesa Grande Band of Diegueno Mission Indians	Underrepresented	4/13/2022; 5/5/2022	No	N/A	N/A
Norma M. Contreras	La Jolla Band of Luiseño Indians	Underrepresented	4/13/2022; 5/5/2022	No	N/A	N/A
KC Krause	N/A	N/A	N/A	Completed survey	N/A	N/A
Daniel McLoughlin	N/A	N/A	N/A	Completed survey	N/A	N/A
Bruce Olson	N/A	N/A	N/A	Completed survey	N/A	N/A
Katrina Olson	N/A	N/A	N/A	Completed survey	N/A	N/A
Vanessa Marshall	Interfaith Community Services	Underrepresented	4/13/2022; 5/5/2022	No	N/A	N/A
Mary Ferro	Interfaith Community Services	Underrepresented	5/11/2022; 5/18/2022; web form	No	N/A	N/A
Sierra Lambert, Zoe Goldstein	Carlsbad Cleanup Crew (student group)	Underrepresented / Environmental	4/7/2022; 4/14/2022; 5/5/2022	Yes	No; will copmlete survey	N/A

Appendix B – Stakeholder Interviews

The table below documents the stakeholder interviews that were conducted as part of the CAP. Detailed notes are included in subsequent pages.

Table A-1. Stakeholder Interviews Conducted for the CAP Update

Date	Stakeholder Participants
March 9, 2022	Madison Coleman, Climate Action Campaign
March 9, 2022	Will Rhatigan, San Diego County Bicycle Coalition
March 10, 2022	Mike McMahon, Sierra Club Paige DeCino, Sierra Club Karl Aldinger, Sierra Club Simon Freedman, Sierra Club
March 23, 2022	Anne Sheridan, SanDiego350
March 24, 2022	Bret Schanzenbach, Carlsbad Chamber of Commerce
March 28, 2022	Diane Nygaard, Preserve Calavera Howard Krausz, North County Advocates Joan Herskowitz, Buena Vista Audubon Society Ellen Bartlett, Preserve Calavera
May 16, 2022	Kelly Batten, BIA SD

City of Carlsbad
MEETING **SUMMARY**

Carlsbad CAP Update Outreach
Climate Action Campaign

Wednesday, March 9, 9 to 10 a.m.
Zoom (Virtual)

Attendees

Katie Hentrich, City of Carlsbad
Jamie Wood, City of Carlsbad
Poonam Boparai, Ascent Environmental
Madison Coleman, Climate Action Campaign
Serena Schlosser, City of Carlsbad

Meeting Goal: Initial stakeholder outreach for CAP Update.

1. **What does climate action mean to you?**

   Center equity; zero carbon future; holistic; reaching out to CoCs in Carlsbad; people just want clean air and streets to bike and walk to their jobs and community benefits/grocery stores; don't want to be stuck in heat islands

2. **What climate change impacts are you most concerned about?**

   Sea level rise; extreme heat and heat waves; wildfire and wildfire smoke; storm events and flooding; drought; other

   Wildfire; heat; TPAs

3. **What about the adopted Climate Action Plan is important to keep in the Climate Action Plan Update? Why?**

   100% renewable energy with CEA; charging station siting plan (but can add to language to prioritize adding charging to CoCs); TDM plan; Sustainable Mobility Plan

4. **What about the adopted Climate Action Plan would you like to see changed in the Climate Action Plan Update? Why?**

   adding 5 year benchmarks for monitoring for each reduction measure; equity throughout each measure (Oakland's CAP has equity in the title); just transition plan for workers for zero carbon shift; stronger mode shift goals (biking, walking, and transit) to cumulate to 50% but not realistic for a lot of jurisdictions

5. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean transportation? Why?**

   mode shift goals (see above); 100% municipal fleet to ZEVs; bicycle/pedestrian master plan;

Complete Streets policy

6. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean energy? Why?**

   already committed to CEA and 100% renewable energy; ordinance for all new construction to be all electric; equitable retrofit measures; all electric municipal buildings by 2035 to align with State goals

7. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote water and wastewater? Why?**

   ordinances for water conservation for all buildings; setting a target is good but an ordinance is more significant; reducing water/wastewater/recycled water supply emissions already exists but ordinance would strengthen

8. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean solid waste? Why?**

   specific target of 90% waste diversion by 2035; eliminate or significantly reduce single use plastics (e.g., Vista); divert organic and food waste through best use strategies; edible food recovery

9. **What can the city do to make sure the benefits of climate action are felt equally in Carlsbad?**

   every section in the CAP should have an equity component; create a Climate Equity Index (like SD and CV); if not, using CalEnviroScreen as much as possible when developing policies and plans; prioritizing smart growth and affordable housing near job centers and transit; inclusionary housing ordinance (SD ordinance is 4% currently – want between 10-15% for all new development over a certain amount of units); outreach to specific stakeholders consistently

10. **What other actions could the city prioritize to reduce greenhouse gas emissions in Carlsbad?**

    green infrastructure (tree canopy percentage target – SD is 35%, want between 30-35%); holistic urban forestry plan / green streets / stormwater capture; food systems (climate smart food production and carbon smart farming practices – locally sourced foods)

11. **Any other questions or comments?**

    CAC will be sending multiple letters throughout the process; draft report card coming soon

City of Carlsbad
MEETING **SUMMARY**

Carlsbad CAP Update Outreach
San Diego County Bicycle Coalition

Wednesday, March 9, 2 to 3 p.m.
Zoom (Virtual)

Attendees

Katie Hentrich, City of Carlsbad
Will Rhatigan, San Diego County Bicycle Coalition

Meeting Goal: Initial stakeholder outreach for CAP Update.

1. **What does climate action mean to you?**

   Reducing GHG emissions; climate justice (links to housing and mobility justice); allowing people to live without a car; making sure consequences of climate action are benefitting everyone equitably

2. **What climate change impacts are you most concerned about? Please rank in order from most concerned to least concerned.**

   Sea level rise; extreme heat and heat waves; wildfire and wildfire smoke; storm events and flooding; drought; other

   Wildfire; extreme heat; SLR (more globally); crop failure (globally)

3. **What about the adopted Climate Action Plan is important to keep in the Climate Action Plan Update? Why?**

   "realistically, most of it"; a lot of short-term emissions measures of what already exists in Carlsbad; "I don't see anything I'd remove"

4. **What about the adopted Climate Action Plan would you like to see changed in the Climate Action Plan Update? Why?**

   building on existing CAP; "a plan to actually transform Carlsbad into a sustainable city"; Carlsbad is sprawling and car dependent city that is extremely unaffordable for people; walkable, transit-friendly, increased affordable housing to live and work near jobs

5. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean transportation? Why?**

   implementing bicycle master plan; existing master plan does not have a lot of Class 4 bikeways; upgrade Class 2 to Class 4 wherever possible (Class 2 is majority of what's planned for in master

plan, but plan to upgrade to buffered Class 2); don't want to slow down implementation of master plan but can look at opportunities to upgrade to Class 4 while installing on project by project basis

Pedestrian accessibility; traffic calming (speed bumps, bulb outs, etc); street lighting and shade trees along pedestrian routes; enhanced crosswalks; does Carlsbad have a sidewalk master plan? Is it in the Sustainable Mobility Plan? Yes!

Increasing transit service in Carlsbad (Coaster, SPRINTER)

6. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean energy? Why?**

   N/A

7. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote water and wastewater? Why?**

   N/A

8. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean solid waste? Why?**
   N/A

9. **What can the city do to make sure the benefits of climate action are felt equitably in Carlsbad?**

   existing programs aren't super linked to transportation; more equitable land use policies in CAP Update, will be the most impactful to change behaviors and get people out of cars; eliminate new sprawl and development (VMT fees?); "Carlsbad can grow if it allows itself to" but focus growth that's accessible to transit and have huge emphasis on walkability and bike-ability; "what's missing most in Carlsbad is the mixed use factor"; updating the zoning code to allow for greater mixed use projects; more housing units can help with affordability; "my one pet peeve is parking minimums", certain # of parking units are mandated and changing those minimums will help to reduce VMT, abolish parking minimums at TPAs or ban citywide; opposing parking maximums at TPAs (e.g., Carlsbad Village) aka building unnecessary parking in developments

10. **What other actions could the city prioritize to reduce greenhouse gas emissions in Carlsbad?**

    current CAP's emphasis is heavier on vehicle electrification, which is great; should be one component of a greater strategy to reduce transportation emissions; EVs still have emissions associated with them that are higher than biking or walking and also has resource bottlenecks with production side; shouldn't be a substitute to getting people out of their cars entirely

    Mode share data; commuter incentive program (definitely for City employees and ways to provide incentives) – layer on top of existing TDM ordinance

    Bike parking, lockers, showers, etc., bikes on busses

11. **Any other questions or comments?**

City of Carlsbad
MEETING **SUMMARY**

Carlsbad CAP Update Outreach
Sierra Club

Thursday, March 10, 1:30 to 2:30 p.m.
Zoom (Virtual)

Attendees

Katie Hentrich, City of Carlsbad
Jamie Wood, City of Carlsbad
Poonam Boparai, Ascent Environmental
Mike McMahon, Sierra Club
Paige DeCino, Sierra Club
Karl Aldinger, Sierra Club
Simon Freedman, Sierra Club

Meeting Goal: Initial stakeholder outreach for CAP Update.

1. **What does climate action mean to you?**

   Decarbonizing; limit emissions as quickly as possible to zero; mitigate emissions that we have so far as much as we can; transformational shift away from fossil fuels to renewable energy as quickly as reasonably possible; knowing that we have a climate emergency and having a CAP that measures our progress

2. **What climate change impacts are you most concerned about? Please rank in order from most concerned to least concerned.**

   Sea level rise; extreme heat and heat waves; wildfire and wildfire smoke; storm events and flooding; drought; other

   Agricultural food supplies; loss of biodiversity and habitat; overall tipping point is more of a concern (global tipping point); continuing pumping of poisonous foods into the air; ocean plastics; reaching 1.5 centigrade tipping point, not backing away from

   Second most concern – impacts to droughts and the water supply (human and habitat)

   Failure to address in reasonable amount of time means rush to address it at a later point will be chaotic and poorly done. Setting self up badly for disarray of reactionary changes

3. **What about the adopted Climate Action Plan is important to keep in the Climate Action Plan Update? Why?**

   CEA/CCA; Measure B (commercial and industrial PV) but augment to include building electrification; Measure L (ZEV miles traveled) because transportation emissions are biggest contributor; TDM ordinance – upgrading bike lanes because of boom of electric bike usage, tricky to put TDM onto the backs of employers only since mode shift is larger than workforce, may still be a need for SOVs within the timeframe of this CAP but should not be the only thing considered (e.g., micromobility and transit); large commercial/industrial uses don't use their large real estate most effectively and

now with COVID some of those office parks are no longer being used effectively – can land use shifts be addressed within the CAP?

4. **What about the adopted Climate Action Plan would you like to see changed in the Climate Action Plan Update? Why?**

   get rid of soft verbs like "promote" and "encourage"; such a lag between getting the GHG inventories and so we need to be aggressive to account for data delays; "toothless tiger approach"; new construction should be all electric to mirror other jurisdictions; account for off-road emissions such as leafblowers; improve readability, remove jargon and make it more interesting, compel people to want to take action; 100% clean energy target, use CEA to make that happen; converting existing building to electric – may not be specific measures for how to do that in the CAP but maybe setting timelines

5. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean transportation? Why?**

   electrify city fleet faster – no need to buy PHEV anymore, set up a rebate program (Simon's e-mail); improve bike infrastructure; increase charging infrastructure (e.g., charging corridor along the 78); 101 bike lane improvements from Palomar Airport Road to Tamarack; increase mode share; EVs will be hard to make towards 2050 as we strive towards zero carbon goals; TDM has too high of a threshold for businesses (is there any follow up with how businesses are implementing their TDM plans?)

6. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean energy? Why?**

   building electrification; 100% clean energy; switch default for CEA customers into the 100% clean energy; educate rooftop solar customers that they can opt up to 100% clean energy; municipal services should opt up to 100% clean energy; advancement of distributed renewable energy in the city (through Carlsbad's board seat at CEA) versus procuring from other locations; check MW goals for solar installation; add commitments to energy storage; rebates for homeowners to install storage; info on how residents can replace appliances with electric (rebates); pilot program to work with CEA to have electricians respond to home electrification requests (existing buildings)

7. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote water and wastewater? Why?**

   educating the public better about stormwater pollution; better job monitoring; water conservation; drought tolerant landscaping; policing process for water users (or promoting water savers)

8. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean solid waste? Why?**

   practice sustainability at home level; promote composting at neighborhood level; shift recycling and trash trucks to electric; do cleaned and properly disposed of recyclables actually get recycled?; France pays for trash that they actually put out (by weight, or if they don't put out trash cans); increase bulk food options from shop owners; reusable takeout containers

9. **What can the city do to make sure the benefits of climate action are felt equitably in Carlsbad?**

   always target low-income and vulnerable communities first (e.g., GRID Alternatives to install solar on low-income housing); don't compel lower income residents to switch over to 100% clean electricity as quickly; rebates for EVs; understand relationships with landlords to avoid gentrification as buildings are upgraded; careful about how we use incentives and instead make transition to electric easy and available and natural (point of purchase rebate versus income need); senior populations; retrofitting natural gas kitchens for health purposes

10. **What other actions could the city prioritize to reduce greenhouse gas emissions in Carlsbad?**

    create a Sustainability Commission; off-road transportation emissions reduction (leaf blowers) – even City staff are using them; lead by example; demand response at the city level

11. **Any other questions or comments?**

City of Carlsbad
MEETING **SUMMARY**

Carlsbad CAP Update Outreach
SanDiego350

Wednesday, March 23, 9:30 to 10:30 a.m.
Zoom (Virtual)

Attendees

Katie Hentrich, City of Carlsbad
Jamie Wood, City of Carlsbad
Matt Gelbman, Ascent Environmental
Anne Sheridan, SanDiego350

Meeting Goal: Initial stakeholder outreach for CAP Update.

1. **What does climate action mean to you?**

   What are the actions that the city can take that are in its jurisdiction both structurally and to encourage individual change; the trickier part is individual behavior

2. **What climate change impacts are you most concerned about? Please rank in order from most concerned to least concerned.**

   Sea level rise; extreme heat and heat waves; wildfire and wildfire smoke; storm events and flooding; drought; other

   Personally – ability to produce food; city/regionally – sea level rise, wildfire

3. **What about the adopted Climate Action Plan is important to keep in the Climate Action Plan Update? Why?**

   Building electrification; transportation

4. **What about the adopted Climate Action Plan would you like to see changed in the Climate Action Plan Update? Why?**

   Building electrification; implementation can not be an afterthought and needs to be central to development of the CAP – what's the goal, can there be more calculations between 2035/2045 and present? annual reporting

5. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean transportation? Why?**

   Focusing on VMT and reducing VMT; public transportation and transit; mode share targets; increasing EV usage (municipal especially)

6. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean energy? Why?**

   Building electrification; incentivizing retrofits; plan for retrofitting existing building; commit to 100% renewable energy for municipal operations; require rooftop solar for commercial to reach 85% of load; require rooftop solar for schools/city buildings/nonprofits

7. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote water and wastewater? Why?**

   treating wastewater and methane recapture; use less; rain collection/rain barrel program

8. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean solid waste? Why?**

   municipal zero waste plan; SB 1383 compliance; edible food recovery

9. **What can the city do to make sure the benefits of climate action are felt equitably in Carlsbad?**

   definitely a concern; include CoCs in outreach; public health and pollution and how those are connected and how the CAP can address that issue; Climate Equity Index (like SD or CV); how will jobs be impacted by different measures

10. **What other actions could the city prioritize to reduce greenhouse gas emissions in Carlsbad?**

    zero carbon goal; is there funding to implement and can that be described?, better communication within and across departments

11. **Any other questions or comments?**

    good CAPs – latest City of SD CAP (but needs more with implementation), also includes a big gap related to future technology but doesn't identify what it is or how the reductions could be met; County's Regional Decarbonization Framework menu of options; don't rely too much on unknowns

City of Carlsbad
MEETING **SUMMARY**

Carlsbad CAP Update Outreach
Carlsbad Chamber of Commerce

Thursday, March 24, 11 a.m. to 12 p.m.
Zoom (Virtual)

Attendees

Katie Hentrich, City of Carlsbad
Jamie Wood, City of Carlsbad
Matt Sanford, City of Carlsbad
Bret Schanzenbach, Carlsbad Chamber of Commerce

Meeting Goal: Initial stakeholder outreach for CAP Update.

1. **What does climate action mean to you?**

   Approach to try and reduce greenhouse gases within a given jurisdiction by a variety of means; proactive means environmentally; like planting more trees to absorb climate impacts and carbon dioxide; reducing carbon dioxide emissions; finding ways to incentivize people to use less

2. **What climate change impacts are you most concerned about? Please rank in order from most concerned to least concerned.**

   Sea level rise; extreme heat and heat waves; wildfire and wildfire smoke; storm events and flooding; drought; other

   Fires and Santa Ana's; there used to be a "fire season" and there's no such thing as a fire season anymore, there is an ever-present threat of fire; there's just no seasonality anymore and it is a constant threat; always just one bad rainy season away from another drought and any given drought could turn into an extended drought, you have no idea how long it is going to last; we are a coastal community and sea level rise makes sense

3. **What about the adopted Climate Action Plan is important to keep in the Climate Action Plan Update? Why?**

   Not sure I know it well enough to speak authoritatively enough; it is really important to have proactive measures like "how many more trees do we want to have in our community" since trees can help beautify and reduce carbon emissions; government has set aggressive goal with electric cars; until charging infrastructure gets more robust then there's no incentive to drive EVs; incentivize businesses to install EV charging stations since there are only so many new developments that will be built, incentivizing with existing buildings; the more chargers are available the easier it is to adopt; want people coming from elsewhere for tourism to be able to charge

4. **What about the adopted Climate Action Plan would you like to see changed in the Climate Action Plan Update? Why?**

tree planting measure; existing building charging infrastructure (as mentioned above); EV charging in Coaster station parking lot

5. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean transportation? Why?**

   EV charging infrastructure; start the Carlsbad Connector again, making transit convenient and building out first mile last mile connections from transit stations to business park areas; better bike infrastructure and making sure it is thought through and safe and more separate than what they are now, there could be times where removing parking to install better bike lanes could occur because there theoretically would be a little less need for parking for automobiles; still very poor mass transit to Palomar Airport Corridor, Legoland is huge and majority of its employees should be able to take mass transit to work

6. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean energy? Why?**

   looking at city facilities where solar could be added and where practical; CEA and being greener in how we procure energy; incentivize existing buildings to install solar (discounts on business license fees for a period of time if they go solar)

7. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote water and wastewater? Why?**

   the desalination plant is great; Oceanside just opened a recycling water facility; how to reuse water that we already have in our system? Like growing out purple pipe network; no ideas for stormwater

8. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean solid waste? Why?**

   food recycling and recovery via SB 1383; a lot of education around the "why" of food recycling because it is such a change in behaviors and want to capture the full benefit of it; businesses will be the biggest consumers of it and have the biggest incentives to do it correctly, but residents should be doing it as well to support the impact; it's uncomfortable to go places that don't have the same mentality that we do

9. **What can the city do to make sure the benefits of climate action are felt equitably in Carlsbad?**

   translating things into Spanish or other languages to make any programs that we do accessible

10. **What other actions could the city prioritize to reduce greenhouse gas emissions in Carlsbad?**

    Carlsbad Green Business Network should get more marketing attention so more businesses are aware of it, there are a lot of businesses that would want their name associated with those practices; capture promotion of this in the plan

11. **Any other questions or comments?**
    None

City of Carlsbad
MEETING **SUMMARY**

Carlsbad CAP Update Outreach
Preserve Calavera / North County Advocates / Buena Vista Audubon Society

Monday, March 28, 11 a.m. to 12 p.m.
Zoom (Virtual)

Attendees

Katie Hentrich, City of Carlsbad
Jamie Wood, City of Carlsbad
Poonam Boparai, Ascent Environmental
Diane Nygaard, Preserve Calavera
Howard Krausz, North County Advocates
Joan Herskowitz, Buena Vista Audubon Society
Ellen Bartlett, Preserve Calavera

Meeting Goal: Initial stakeholder outreach for CAP Update.

1. **What does climate action mean to you?**

   skip

2. **What climate change impacts are you most concerned about? Please rank in order from most concerned to least concerned.**

   Sea level rise; extreme heat and heat waves; wildfire and wildfire smoke; storm events and flooding; drought; other

   skip

3. **What about the adopted Climate Action Plan is important to keep in the Climate Action Plan Update? Why?**

   Annual reporting is important to keep but ones without updated data (like inventories) is less impactful than ones that do (like with SANDAG snapshot); make sure measures have meaningful and measurable data but still isn't excessively costly

4. **What about the adopted Climate Action Plan would you like to see changed in the Climate Action Plan Update? Why?**

   Prioritize measures with co-benefits and balancing costs of implementation; the CAP isn't a standalone document for the City and is integrated with other environmental documents (HMP needs updates to incorporate adaptive management); interrelated with sea level rise documents and the triggers included, IPCC report released and results are alarming; set targets higher so margin of safety of not hitting reduction targets can accommodate GHG reductions to help with climate change impacts

Electrification; CCE still figuring out programs but City can coordinate and can be a driver for things like energy retrofit programs for existing buildings; good focused locally produced research about how to get "biggest bang for the buck" for reduction measures; capture mitigation from projects (locally and not elsewhere in state or country)

Adaptive management and building in a system of how things are changing and triggers can push city towards next level of action (without having to do a full CAP update) – baseline assumptions assume CA fleet mix (assume State and federal legislation won't be as successful?) will be very high so an example could be to build in something related to EV measures as stopgaps if fleet conversion isn't as high as anticipated

5. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean transportation? Why?**

   TDM ordinance (e.g., Aldea project was conditioned to have a TDM program but then TDM wasn't needed); Marja Acres had a similar issue (poorly written and no monitoring enforcement, no assurance there will be any TDM improvements); monitoring and follow-up for TDM ordinance needs to be more involved to show trip reductions, thresholds need to be lower; mode share/split and increasing bicycle infrastructure outside of the downtown/Village area, strategic programs to capture data with large employers; Carlsbad Connector was a good program but needs some tweaking; undergrounding the railroad tracks through Carlsbad – transportation dollars would be better spent elsewhere and undergrounding doesn't reduce GHGs; strategically implementing public transit; parking management as another strategy to change mode split and further integrate with other city documents

   Increase usage of EVs, city needs to do "everything possible" to encourage people to use EVs and to charge them; municipal charging for employees; need to have inexpensively generated electricity available, have both "carrots" and "sticks", uniform system for charging at parking lots; charging stations for delivery vans or encouraging delivery services to go electric

6. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean energy? Why?**

   electrification; CEA; energy retrofits for existing buildings (cost factor to scale that up)

7. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote water and wastewater? Why?**

   Carlsbad has the benefit of the very high energy water production from the desal plant; integrating so how energy to clean and transport water becomes a more important part of the decision making; percentage of municipal operations is still a relatively small percent and water is a small percent of that; always looks good for public agencies to be leaders; water conservation programs were seemingly effective; will have to depend more and more on recycled water in the future; new construction for higher density buildings can lead to problems with water usage if the tenants aren't paying for the water; mandatory conservation like with previous droughts; xeriscaping and drought tolerant plants; water harvesting/cisterns; lots of restrictions with greywater and reuse and sometimes ordinances can make this more complicated

8. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean solid waste? Why?**

   zero waste; food waste handling and doing so in a way that uses less energy; encouraging backyard composting

9. **What can the city do to make sure the benefits of climate action are felt equitably in Carlsbad?**

   EV adoption and charging installation; harder in suburban areas; don't have groups locally that have good feedback on that; air quality impacts (Holiday Park is next to the freeway); to really do that right it will take some effort

   Financial incentives for leaf blowers

   Let the community come up with their own projects; integrate with street planning and water quality improvements/stormwater

10. **What other actions could the city prioritize to reduce greenhouse gas emissions in Carlsbad?**

    carbon sequestration (restoring native habitat), can track and show if we are losing or gaining habitat, building in how much sequestration we can have by keeping lands natural and can support adding more natural lands, LIDAR tree canopy study which shows canopy percentage data, tree planting per year is meaningless but percentage of canopy cover is more meaningful (life cycle of trees); where are trees located and are we strategically placing them, add as development criteria to add shade to the buildings and other ped/bike infrastructure; Vista has strong focus on native trees

    Prohibit gas powered leaf blowers

11. **Any other questions or comments?**

    None

City of Carlsbad
MEETING **SUMMARY**

Carlsbad CAP Update Outreach
Building Industry Association

Monday, May 16, 11 a.m. to 12 p.m.
Zoom (Virtual)

Attendees

Katie Hentrich, City of Carlsbad
Poonam Boparai, Ascent Environmental
Kelly Batten, BIA SD

Meeting Goal: Initial stakeholder outreach for CAP Update.

1. **What does climate action mean to you?**

   Having a smaller footprint, producing more efficient homes, more fire-safe homes, a lot more technologies have to be installed in homes now, being good stewards of the environment

2. **What climate change impacts are you most concerned about? Please rank in order from most concerned to least concerned.**

   Sea level rise; extreme heat and heat waves; wildfire and wildfire smoke; storm events and flooding; drought; other

   Everything is a lot more cleaner burning now and we should continue on that path, especially with corporations

3. **What about the adopted Climate Action Plan is important to keep in the Climate Action Plan Update? Why?**

   Wouldn't get rid of anything in particular, it's just a matter of how it's all regulated. More incentivizing things rather than mandating. Layer on top of existing measures, already going above and beyond, already on a trajectory of making a difference. Want to see how we are doing before making so many substantive changes. Going beyond state standards is where we are most

4. **What about the adopted Climate Action Plan would you like to see changed in the Climate Action Plan Update? Why?**

   Going beyond state standards is where we are most concerned / most issues. Decarbonization is a big one that is new. Some things are fine – we all know we have to add solar now – but it does add costs and housing is already so expensive.

5. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean transportation? Why?**

   Incentivizing folks to drive EVs, incentivizing builders to have charging stations on site. Right now there is no incentive because it's not a mitigation factor for VMT. Who is responsible for building all of those charging stations? Cost of installation and maintenance are barriers to builders, also working with whatever utility to pay for the fees associated. Who pays – property owner? Also expensive to purchase the plugs for "EV ready" in homes, supply chain issues to acquire. Challenges for charging in multifamily buildings.

6. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean energy? Why?**

   Electrification makes a small difference, building a trench for all utilities (natural gas and electricity). Electric heat pumps are hard to get. Electric water heaters don't meet Title 24 requirements. Installing electric tank water heater takes up just as much energy of gas water heater so it's running all the time to keep that water warm. Supply chain issues to get water heaters and more expensive.

   Technology is going to continue to improve and we'll be using less and less as a result. Taking into consideration with all electrification – SDG&E has done a study showing that we don't have enough electricity to get through the summer (brownouts, blackouts). Adding more electricity to the grid doesn't help that situation, we're a little ahead of ourselves in a way.

   Battery storage needs to get up to par to support the electric load. How do we even keep up with the demand (e.g., electric charging stations for EVs)? Energy resilience coupled with using less in a home (e.g., better windows, better HVAC).

7. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote water and wastewater? Why?**

   see above for water heating. Everything is very water efficient now as far as usage. Some of the codes now for stormwater are almost impossible (e.g., cleaning water for runoff on site and capturing). One of the top things BIA is working on. Specifically related to construction, already codes in state law. Compliance around it delays projects and is costly, looking into managing this better and more realistic to apply.

8. **What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean solid waste? Why?**

   Nothing super specific in the industry for solid waste, infrastructure related. How to work with cities on infill projects – if you're going to build infill development, the developers responsible for replacing and upgrading sewage and water pipes that may be older. First person to come in and build is responsible for all of the costs (even if there are multiple parcels). Would cities help with that burden or are there federal funds? Not so much of an issue outside of infill.

9. **What can the city do to make sure the benefits of climate action are felt equitably in Carlsbad?**

   retrofitting current buildings. 350 new units a year on average in Carlsbad, so any regulations for new buildings would be a small impact. Incentivizing older homes to be retrofitted will really see more savings.

10. **What other actions could the city prioritize to reduce greenhouse gas emissions in Carlsbad?**

    a lot of movement on sidewalks and accessibility to transit, for new homes it's a matter of incentivizing e-scooters and e-bike charging and EV infrastructure, it'll be up to SANDAG/NCTD/MTS to get more transit in north county, easier pathways to using transit

11. **Any other questions or comments?**

    Reach codes are always an issue. Really concerned about the strain on the grid already. SDG&E presentation was really concerning and way more storage is needed than we already have. Building storage is sometimes not supported by the community and the projects don't get built. Always reach out. Appreciate a phase in of policies versus an up front mandate, it takes time to change how homes are built. Battery storage and how do you replace them or dispose of them.

Appendix C – Online Survey Results

The online survey questions and a summary of responses are included in subsequent pages.

#1

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Wednesday, March 09, 2022 2:59:52 PM
Last Modified:	Wednesday, March 09, 2022 3:20:49 PM
Time Spent:	00:20:56
IP Address:	104.178.252.176

Page 1

Q1

What does climate action mean to you?

Reduce industrial and transportation and other greenhouse effect sources.

Q2

What climate change impacts are you more concerned about? Please rank in order from most concerned to least concerned.

Sea level rise	**3**
Extreme heat and heat waves	**2**
Wildfire and wildfire smoke	**1**
Storm events and flooding	**4**
Drought	**5**
Other	**6**

Q3

Respondent skipped this question

What about the adopted Climate Action Plan is important to keep in the Climate Action Plan Update? Why?

Q4

Respondent skipped this question

What about the adopted Climate Action Plan would you like to see changed in the Climate Action Plan Update? Why?

Q5

Respondent skipped this question

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean transportation? Why?

Q6

Respondent skipped this question

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean energy? Why?

Q7

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean water and wastewater? Why?

Expand and promote private and nonprofit

Q8

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean solid waste? Why?

Don’t know

Q9

What can the city do to make sure the benefits of climate action are felt equitably in Carlsbad?

Not sure

Q10

What other actions could the city prioritize to reduce greenhouse gas emissions in Carlsbad?

Promote alternative non-polluting options for local transportation.

Q11

If you would like to stay informed on the Climate Action Plan Update, please provide your contact information below.

Name	**Stephen Flynn**
E-Mail	[redacted]
Organization	**Friends of Cardiff and Carlsbad State Beaches**

#2

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Tuesday, March 15, 2022 10:06:26 AM
Last Modified:	Tuesday, March 15, 2022 4:45:53 PM
Time Spent:	06:39:27
IP Address:	66.75.53.142

Page 1

Q1

What does climate action mean to you?

Maximizing our future quality of LIFE by minimizing waste and reducing our carbon footprint to zero.

Q2

What climate change impacts are you more concerned about? Please rank in order from most concerned to least concerned.

Sea level rise	**3**
Extreme heat and heat waves	**5**
Wildfire and wildfire smoke	**2**
Storm events and flooding	**4**
Drought	**1**
Other	**6**

Q3

What about the adopted Climate Action Plan is important to keep in the Climate Action Plan Update? Why?

Replace fossil fuel use with solar & hybrid vehicles.

Q4

What about the adopted Climate Action Plan would you like to see changed in the Climate Action Plan Update? Why?

Focus on hybrid vehicles first and then ZEV. 90% of car trips are 40 miles or less & most of the carbon used in ZEV is not in operating it.

Q5

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean transportation? Why?

Promote hybrid vehicles and safe E-Bike lanes.

Q6

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean energy? Why?

Solar on all homes. Fossil fuels are more expensive than solar panels now.

Q7

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean water and wastewater? Why?

Reuse the water like the OC does. Desal is way too energy intensive.

Q8

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean solid waste? Why?

Not sure.

Q9

What can the city do to make sure the benefits of climate action are felt equitably in Carlsbad?

Help lower income homes with solar, E-Bikes & hybrid vehicles.

Q10

What other actions could the city prioritize to reduce greenhouse gas emissions in Carlsbad?

Focus less on cars & more on E-Bike infrastructure.

Q11

If you would like to stay informed on the Climate Action Plan Update, please provide your contact information below.

Name	**KC Krause**
E-Mail	[redacted]
Organization	**SKRE**

#3

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Tuesday, March 22, 2022 4:56:43 PM
Last Modified:	Tuesday, March 22, 2022 5:00:28 PM
Time Spent:	00:03:45
IP Address:	68.224.171.125

Page 1

Q1

What does climate action mean to you?

Requiring projects to do what they reasonably can to minimize VMT and GHG emissions.

Q2

What climate change impacts are you more concerned about? Please rank in order from most concerned to least concerned.

Sea level rise	**2**
Extreme heat and heat waves	**4**
Wildfire and wildfire smoke	**5**
Storm events and flooding	**3**
Drought	**1**

Q3

What about the adopted Climate Action Plan is important to keep in the Climate Action Plan Update? Why?

Mitigation measures around increased transit and biking

Q4

What about the adopted Climate Action Plan would you like to see changed in the Climate Action Plan Update? Why?

More high value regional mitigation measures to reduce VMT (so projects can pay into larger project pools)

Q5

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean transportation? Why?

separated bike lanes; ebikes will save us

Q6

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean energy? Why?

distributed residential solar subsidies

Q7

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean water and wastewater? Why?

potable sewage recycling at Encina, ASAP

Q8

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean solid waste? Why?

organics recycling

Q9

What can the city do to make sure the benefits of climate action are felt equitably in Carlsbad?

relieve multi-family housing projects with at least 20% low affordable units from CAP compliance

Q10

What other actions could the city prioritize to reduce greenhouse gas emissions in Carlsbad?

Local carbon offset program

Q11

If you would like to stay informed on the Climate Action Plan Update, please provide your contact information below.

Respondent skipped this question

#4

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Thursday, March 24, 2022 9:07:55 AM
Last Modified:	Thursday, March 24, 2022 11:32:45 AM
Time Spent:	02:24:50
IP Address:	66.75.54.37

Page 1

Q1

What does climate action mean to you?

Reduce methane gases

Q2

What climate change impacts are you more concerned about? Please rank in order from most concerned to least concerned.

Sea level rise	**4**
Extreme heat and heat waves	**5**
Wildfire and wildfire smoke	**1**
Storm events and flooding	**2**
Drought	**3**

Q3

What about the adopted Climate Action Plan is important to keep in the Climate Action Plan Update? Why?

Core value

Q4

What about the adopted Climate Action Plan would you like to see changed in the Climate Action Plan Update? Why?

State mandates are restrictive to business

Q5

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean transportation? Why?

Provide more educational information of how individuals can help.

Q6

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean energy? Why?

Safer Circulation for small trips to be walked or electric bike. Specifically developing the trail segments arounf

Q7

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean water and wastewater? Why?

Target and educate toward the GHG emissions of 2035 as outlined

Q8

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean solid waste? Why?

It’s too low to focus on when there are modifications to other areas ie. cars and electrify that meaningful outcomes could be realized with appropriate resources allocated

Q9

What can the city do to make sure the benefits of climate action are felt equitably in Carlsbad?

Communicate via multiple players and modules to widely educate on what an individual can do and reenforce with kudos.

Q10

What other actions could the city prioritize to reduce greenhouse gas emissions in Carlsbad?

Plant only native landscape to reduce water/ electricity usage

Q11

If you would like to stay informed on the Climate Action Plan Update, please provide your contact information below.

Name	**Lisa**
E-Mail	[redacted]
Organization	**AHLF**

#5

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Thursday, March 24, 2022 5:18:40 PM
Last Modified:	Thursday, March 24, 2022 5:37:45 PM
Time Spent:	00:19:05
IP Address:	66.27.103.59

Page 1

Q1

What does climate action mean to you?

To me, climate action means top to bottom investment in infrastructure that will help us ween off of our wasteful, car dependent lives. This means investment in safe bike paths, rail transit infrastructure, renewables etc.

Q2

What climate change impacts are you more concerned about? Please rank in order from most concerned to least concerned.

Sea level rise	**3**
Extreme heat and heat waves	**4**
Wildfire and wildfire smoke	**1**
Storm events and flooding	**5**
Drought	**2**
Other	**6**

Q3

What about the adopted Climate Action Plan is important to keep in the Climate Action Plan Update? Why?

photovoltaic because we are an extremely sunny place and realistically can get much of our electricity needs from photovoltaic systems

Q4

What about the adopted Climate Action Plan would you like to see changed in the Climate Action Plan Update? Why?

more investment in actual, realistic alternatives to driving. There needs to be safe and easy ways to get around our city without a car, and the current bike lane design is truly a hazard. It seems like not much thought is put in to other modes of transportation

Q5

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean transportation? Why?

protected bikelanes that follow a Dutch style design, improved rail and bus transit, traffic calming, pedestrianization. These all give alternatives to the private car which contributes 48% of our ghg emmisions.

Q6

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean energy? Why?

photovoltaic. There is so much potential with photovoltaics that can fill in the gaps where sierra snowpack dependent hydro will have shortfalls.

Q7

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean water and wastewater? Why?

more water pollution awarness and a reduction of the amount of cars on the road. Runoff from streets contains many synthetic oils that are persistent organic pollutants. reducing vehicle miles travveled will in turn lower car related water pollution.

Q8

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean solid waste? Why?

banning plastics by 2030, and incentives + education about recycling. there should be major fines for throwing away hazardous waste and the city needs to further their recycling programs.

Q9

What can the city do to make sure the benefits of climate action are felt equitably in Carlsbad?

Carlsbad is generally a very wealthy place, so planning regionally so that cities like oceanside, vista, and san marcos can learn from our steps in the right direction. Connecting low income households throughout the north county region to employment centers should also be high priority

Q10

What other actions could the city prioritize to reduce greenhouse gas emissions in Carlsbad?

Reduction in the urban heat island effect which will in turn decrease ground level ozone. Carlsbad has a shocking number of massive roadways and parking lots which lead to a warming effect that facilitates ground level ozone and increased demand for water and air conditioning. this should be high priority.

Q11

If you would like to stay informed on the Climate Action Plan Update, please provide your contact information below.

Name	**Daniel McLoughlin**
E-Mail	[redacted]
Organization	**Pacific Ridge School**

#6

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Saturday, March 26, 2022 9:30:45 AM
Last Modified:	Saturday, March 26, 2022 11:08:06 AM
Time Spent:	01:37:21
IP Address:	76.176.13.251

Page 1

Q1

What does climate action mean to you?

creating policies and incentives to allow the transition from fossil fuels to alternative forms of energy in order to slow down the climate changes that are already devastating our planet- and which will cause suffering and economic hardship unless we take universal action.

Q2

What climate change impacts are you more concerned about? Please rank in order from most concerned to least concerned.

Sea level rise	**5**
Extreme heat and heat waves	**2**
Wildfire and wildfire smoke	**3**
Storm events and flooding	**6**
Drought	**4**

Q3

What about the adopted Climate Action Plan is important to keep in the Climate Action Plan Update? Why?

I like your use of LEAN principles and the PDSA cycle of improvement- but the cycle needs to happen every 6 months or you will not be able to make appropriate adjustments to your plan. general concepts about GHG reduction opportunities are correct but the targets are not ambitious enough. I like the educational links.

Q4

What about the adopted Climate Action Plan would you like to see changed in the Climate Action Plan Update? Why?

targets too low and time too short in every category- solar panels, home energy retrofits, use of LEDs (who uses anything but LEDs now?, it should be 100% by tomorrow), all new construction electric/no gas hookups, more community engagement- we are the problem and need to be part of the solution. More specific engagement of employers- willingly/with incentives or by penalties. Does not sound urgent enough. More attention to social media, community organizations, schools to ask them to engage in specific ways.

Q5

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean transportation? Why?

1. all government vehicles should be EV's (including trucks), 2. more efforts at traffic calming- fix the traffic light timing, create traffic circles 3. make some roads bike/e-bike, golf cart only- ex take el Camino Real and take 1-2 lanes ONLY for bikes, e-bikes, golf carts- separate it from the main road with full barriers, (collaborate with Encinitas) 4. lower traffic speeds, 5. encourage businesses to use electric shuttles from transit centers and reward employees who do so,

Q6

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean energy? Why?

1.Create and then hire a climate communication and engagement position- to ensure better community engagement- one on one conversations, social media, community organizations, schools, churches, businesses. With success metrics. Even with a great climate action plan you will not succeed if it requires people to pay attention- it needs challenges, active engagement and participant-involved education. I think that people care but get busy, apathetic and resist change. Climate change is literally a war right now and we need to treat it as such.

Q7

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean water and wastewater? Why?

report cards to homeowner and businesses as to how they perform compared to their peers

Q8

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean solid waste? Why?

green waste composting

Q9

What can the city do to make sure the benefits of climate action are felt equitably in Carlsbad?

job transition programs for workers in the fossil fuel industry, we must also create a pathway for jobs in environmental justice communities.

Q10

What other actions could the city prioritize to reduce greenhouse gas emissions in Carlsbad?

have one day/month of no driving?, bike-to-work/school, city-wide educational programs about then CAP, why and how to help on an individual basis

Q11

If you would like to stay informed on the Climate Action Plan Update, please provide your contact information below.

Name	**Katrina Olson**
E-Mail	[redacted]

#7

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Saturday, March 26, 2022 10:57:19 AM
Last Modified:	Saturday, March 26, 2022 11:35:12 AM
Time Spent:	00:37:53
IP Address:	76.176.13.251

Page 1

Q1

What does climate action mean to you?

Prioritized changes to decrease greenhouse gas emissions

Q2

What climate change impacts are you more concerned about? Please rank in order from most concerned to least concerned.

Sea level rise	**3**
Extreme heat and heat waves	**1**
Wildfire and wildfire smoke	**4**
Storm events and flooding	**5**
Drought	**2**
Other	**6**

Q3

What about the adopted Climate Action Plan is important to keep in the Climate Action Plan Update? Why?

Vehicle emissions—largest contribution and relative ease of implementation

Q4

What about the adopted Climate Action Plan would you like to see changed in the Climate Action Plan Update? Why?

More aggressive mpg targets

Q5

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean transportation? Why?

Electrify Carlsbad city vehicles—easier to implement and sends a message

Q6

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean energy? Why?

Incentivize photovoltaics-can pay for itself

Q7

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean water and wastewater? Why?

Get rid of grass-promote xeroscaping—water usage report card to residents

Q8

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean solid waste? Why?

Promote composting

Q9

What can the city do to make sure the benefits of climate action are felt equitably in Carlsbad?

Note improved air quality—other benefits less evident in the short term

Q10

What other actions could the city prioritize to reduce greenhouse gas emissions in Carlsbad?

Smart traffic control systems

Q11

If you would like to stay informed on the Climate Action Plan Update, please provide your contact information below.

Name	**Bruce Olson**
E-Mail	[redacted]
Organization	**Resident**

#8

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Sunday, April 03, 2022 6:59:39 PM
Last Modified:	Sunday, April 03, 2022 7:08:41 PM
Time Spent:	00:09:01
IP Address:	76.167.188.234

Page 1

Q1

What does climate action mean to you?

Leadership, showing that you care about the future

Q2

What climate change impacts are you more concerned about? Please rank in order from most concerned to least concerned.

Sea level rise	**4**
Extreme heat and heat waves	**1**
Wildfire and wildfire smoke	**2**
Storm events and flooding	**5**
Drought	**3**
Other	**6**

Q3

What about the adopted Climate Action Plan is important to keep in the Climate Action Plan Update? Why?

It's all good!

Q4

What about the adopted Climate Action Plan would you like to see changed in the Climate Action Plan Update? Why?

Add a Building Electrification section with three parts: 1. All electric new construction, 2. Convert municipal buildings to electric, 3. Support converting all existing buildings to electric

Q5

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean transportation? Why?

transit oriented development. live near transit makes it easy to use.

Q6

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean energy? Why?

Upgrade city facilities to Green Impact with 100% renewable power

Q7

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean water and wastewater? Why?

increase water efficiency, get rid of grass lawns

Q8

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean solid waste? Why?

NA

Q9

What can the city do to make sure the benefits of climate action are felt equitably in Carlsbad?

assess CAP measure impacts per neighborhood

Q10

What other actions could the city prioritize to reduce greenhouse gas emissions in Carlsbad?

Do an all-electric new construction reach code now, don't wait for CAP update.

Q11

If you would like to stay informed on the Climate Action Plan Update, please provide your contact information below.

Respondent skipped this question

#9

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Wednesday, April 13, 2022 9:55:05 PM
Last Modified:	Wednesday, April 13, 2022 10:52:22 PM
Time Spent:	00:57:16
IP Address:	76.88.86.94

Page 1

Q1

What does climate action mean to you?

Reducing the carbon dioxide and methane levels to prevent loss of life and living conditions on the planet

Q2

What climate change impacts are you more concerned about? Please rank in order from most concerned to least concerned.

Sea level rise	**3**
Extreme heat and heat waves	**1**
Wildfire and wildfire smoke	**2**
Storm events and flooding	**5**
Drought	**4**
Other	**6**

Q3

What about the adopted Climate Action Plan is important to keep in the Climate Action Plan Update? Why?

Yes, Important to monitor progress and to continue environmental improvements

Q4

What about the adopted Climate Action Plan would you like to see changed in the Climate Action Plan Update? Why?

I would like to see us have our own renewable energy local grid projects and supply like solar fields and our own Green Hydrogen Electrolyzer Hub

Q5

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean transportation? Why?

Prioritize clean electric and hydrogen fuel cell transportation.

Q6

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean energy? Why?

Implement ordinances for all new and retrofit buildings and development meet new electrification standards

Q7

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean water and wastewater? Why?

Carlsbad has one most efficient wastewater facilities and purple pipe program. Work on removing nano plastics and pharmaceutical toxins

Q8

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean solid waste? Why?

Develop and provide our own city organic composting center

Q9

What can the city do to make sure the benefits of climate action are felt equitably in Carlsbad?

Provide greater access to low cost access to micro grids in lower income sections of our city.

Q10

What other actions could the city prioritize to reduce greenhouse gas emissions in Carlsbad?

Incentivize our homes, schools and businesses to move away from fossil fuel to electrification, retrofit with green hydrogen furl cell production, water and refrigerant heat pumps, solar storage and induction stoves

Q11

If you would like to stay informed on the Climate Action Plan Update, please provide your contact information below.

Name	**Jay Klopfenstein**
E-Mail	[redacted]
Organization	**Carlsbad Community Gardens Collaborative**

#10

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Tuesday, April 19, 2022 11:06:22 AM
Last Modified:	Tuesday, April 19, 2022 11:35:09 AM
Time Spent:	00:28:46
IP Address:	99.165.39.79

Page 1

Q1

What does climate action mean to you?

A Climate Action should be proactive and not merely cashing in on improvements already happening with technology or the goodwill of citizens.

Q2

What climate change impacts are you more concerned about? Please rank in order from most concerned to least concerned.

Sea level rise	**2**
Extreme heat and heat waves	**3**
Wildfire and wildfire smoke	**4**
Storm events and flooding	**5**
Drought	**1**

Q3

What about the adopted Climate Action Plan is important to keep in the Climate Action Plan Update? Why?

A climate change update should go much farther than the current adopted Climate Action Plan.

Q4

What about the adopted Climate Action Plan would you like to see changed in the Climate Action Plan Update? Why?

Not "changed" but increased by many necessary measures.

Q5

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean transportation? Why?

Promote efficiently, in deeds and votes, the acquisition of modern efficient public transportation, locally (at least a rapid and regular connection with the City of San Diego and San Diego airport) and statewide (Carlsbad should demand the completion of the bullet train project between San Diego and Northern California.) Transportation is the first cause of greenhouse gas emissions in California.

Q6

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean energy? Why?

Public Transportation. The whole county is underdeveloped regarding transportation. Morocco or Turkey have better transport systems.

Q7

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean water and wastewater? Why?

Respondent skipped this question

Q8

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean solid waste? Why?

Respondent skipped this question

Q9

What can the city do to make sure the benefits of climate action are felt equitably in Carlsbad?

"felt" is not the right word. The destruction of our climate impacts in priority poor communities. A real serious climate action would, of course, alleviate this effect.

Q10

What other actions could the city prioritize to reduce greenhouse gas emissions in Carlsbad?

At least, ALL vehicles belonging to Carlsbad and catering for Carlsbad City should already be electric, without option. The city of carlsbad SHOULD vote for a modern, fast and comprehensive public transport system in SANDAG. Carlsbad SHOULD NOT destroy more natural unbuilt land. Businesses SHOUL NOT be allowed to waste water in lavish acres of lawn. In a climate like ours, we should see on public buildings and others a lot more photovoltaic heating and cooling systems.

Q11

If you would like to stay informed on the Climate Action Plan Update, please provide your contact information below.

Respondent skipped this question

#11

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Tuesday, May 03, 2022 9:31:45 AM
Last Modified:	Tuesday, May 03, 2022 9:38:37 AM
Time Spent:	00:06:51
IP Address:	209.242.149.227

Page 1

Q1

What does climate action mean to you?

Reducing emissions for cleaner air, prevent global warming

Q2

What climate change impacts are you more concerned about? Please rank in order from most concerned to least concerned.

Sea level rise	**4**
Extreme heat and heat waves	**3**
Wildfire and wildfire smoke	**2**
Storm events and flooding	**5**
Drought	**1**

Q3

What about the adopted Climate Action Plan is important to keep in the Climate Action Plan Update? Why?

i dont have time to read a 140 page document

Q4

What about the adopted Climate Action Plan would you like to see changed in the Climate Action Plan Update? Why?

please provide a 1 or 2 page snapshot for residents to skim

Q5

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean transportation? Why?

create cooridors that reduce lanes for cars and increase lanes dedicated for pedestrians and bicylists

Q6

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean energy? Why?

continue rolling out solar panels as cover for parks, parking, etc to create shade and generate energy

Q7

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean water and wastewater? Why?

continue to invest in new technologies for water and wastewater treatment

Q8

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean solid waste? Why?

lead by example with organics recycling, and make it very easy for residents and businesses to participate in the 3 bin system. Many business still only have 1 trash can, unbelievable. Please step up enforcement of the 3 bin system.

Q9

What can the city do to make sure the benefits of climate action are felt equitably in Carlsbad?

do NOT offer rebates or incentives for residents to buy or upgrade cars, solar, battery storage, etc. This only benefits those that can afford these things in the first place! Leave these programs up to the state and federal level.

Q10

What other actions could the city prioritize to reduce greenhouse gas emissions in Carlsbad?

focus on where vehicle idling is taking place the most, and start to look at how capital infrastructure and enforcement can reduce this idling (areas of congested traffic, school pickup and drop off, etc).

Q11

If you would like to stay informed on the Climate Action Plan Update, please provide your contact information below.

Respondent skipped this question

#12

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Monday, May 16, 2022 4:30:09 PM
Last Modified:	Monday, May 16, 2022 4:52:26 PM
Time Spent:	00:22:16
IP Address:	76.171.176.132

Page 1

Q1

What does climate action mean to you?

To C3, climate action means taking a stand against climate change and harmful laws that impact the environment.

Q2

What climate change impacts are you more concerned about? Please rank in order from most concerned to least concerned.

Sea level rise	**1**
Extreme heat and heat waves	**2**
Wildfire and wildfire smoke	**3**
Storm events and flooding	**6**
Drought	**4**
Other	**5**

Q3

What about the adopted Climate Action Plan is important to keep in the Climate Action Plan Update? Why?

I think step 5, "Implementation, Monitoring and Reporting", will be the most important thing to keep in the CAP update. We think that limiting and enforcing these rules will help keep environmental law structured and encourage eco-friendly action.

Q4

Respondent skipped this question

What about the adopted Climate Action Plan would you like to see changed in the Climate Action Plan Update? Why?

Q5

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean transportation? Why?

To further promote clean transportation, the city should prioritize the utilization and popularity of public transportation, as well as implementing solar powered/electric busses and vehicles.

Q6

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean energy? Why?

Action 5 will ensure that the public will shift to eco-friendly living, as long as there is a reward/punishment for not cooperating.

Q7

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean water and wastewater? Why?

4.11, this ensures improvements on the utilization of clean water and other water systems within the city.

Q8

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean solid waste? Why?

5.2.4 Solid Waste, this is jaw dropping, the projected growth of emissions and water use based off of solid waste growth.

Q9

What can the city do to make sure the benefits of climate action are felt equitably in Carlsbad?

Ask citizens within the community how this would impact their daily lives.

Q10

What other actions could the city prioritize to reduce greenhouse gas emissions in Carlsbad?

Respondent skipped this question

Q11

If you would like to stay informed on the Climate Action Plan Update, please provide your contact information below.

Name	**Zoe Goldstein**
E-Mail	[redacted]
Organization	**Carlsbad Cleanup Crew (C3)**

#13

COMPLETE

Collector:	Web Link 1 (Web Link)
Started:	Tuesday, May 17, 2022 2:47:48 PM
Last Modified:	Tuesday, May 17, 2022 2:58:44 PM
Time Spent:	00:10:55
IP Address:	108.249.108.108

Page 1

Q1

What does climate action mean to you?

Taking responsibility for improving our environment and reducing pollution

Q2

What climate change impacts are you more concerned about? Please rank in order from most concerned to least concerned.

Sea level rise	**4**
Extreme heat and heat waves	**2**
Wildfire and wildfire smoke	**1**
Storm events and flooding	**3**
Drought	**5**
Other	**6**

Q3

What about the adopted Climate Action Plan is important to keep in the Climate Action Plan Update? Why?

Reduction of GHGs in general, ZEVs, solar panels, renewable energy -- we need to keep everything in the plan and do more also.

Q4

What about the adopted Climate Action Plan would you like to see changed in the Climate Action Plan Update? Why?

I would like to add to the plan. Zero waste, EV chargers and solar carports everywhere, city-owned solar farms, conservation efforts, phasing out natural gas and focusing on all-electric with renewable sources.

Q5

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean transportation? Why?

EV chargers in all city parking lots!

Q6

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean energy? Why?

Solar panels on all city buildings and a city owned solar farm.

Q7

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean water and wastewater? Why?

Recycled drinking water.

Q8

What is the top action the city should prioritize in the Climate Action Plan Update to further promote clean solid waste? Why?

More community events to collect toxic waste like paint cans and electronics.

Q9

What can the city do to make sure the benefits of climate action are felt equitably in Carlsbad?

Education events, subsidies for low income households.

Q10

What other actions could the city prioritize to reduce greenhouse gas emissions in Carlsbad?

Move to 100 percent electric and use only renewable energy sources.

Q11

If you would like to stay informed on the Climate Action Plan Update, please provide your contact information below.

Respondent skipped this question

Appendix D – 5-Year Strategic Plan

. Input collected during the city's 5-Year Strategic Plan (March 2022) related to "Sustainability and Natural Environment" was considered and incorporated by the city as part of the CAP Update. Related input from February 1, 2022 virtual workshop, online ideas wall, and online survey are all included in the subsequent pages.

Ideas wall comments – Environment tag

Save some of our beautiful open space.

"Work toward having a park within a half mile of all residences. Increase our park ratio to better than 3 acres/1000 residents. Neighboring cities have better ratios than Carlsbad.

Improve bike lane safety - use green paint to highlight the bike lanes."

First, create a sustainability commission to champion real change. Second, strengthen our Climate Action Plan to include a 100% clean energy target by 2035. Also in our CAP, develop stronger measures to decrease GHG emissions from transportation and increase measures for aggressive building electrification ordinances. Third, actually hit our goal of 40% open space that doesn't include locked school grounds.

It is extremely concerning to see how the homeless situation has not been successfully addressed. It is not safe for those individuals who are homeless and it isn't safe for residents. The trash that they generate is unacceptable…so where is our concern for the environment. Carlsbad…we need to do better. View the Village from a visitor arriving to our city at the train station…met by homeless individuals sleeping on the ground and on the benches. Carts obstructing sidewalks…

Making sure the County respects the community that is most effected environmentally by Airport pollution.

Yes, Carlsbad should create a mulch facility offering free mulch to residents. This will help reduce water use and the cost of sending all the clean green somewhere else.

An outdoor amphitheater (think smaller version of Rady Shell) on the current site of the Encina Power Plant. It can be designed with an integrated park system, underground parking and an outdoor museum covering the history of Carlsbad. It would be a community gathering space and generate revenue for the city by hosting outdoor concerts and plays. It can be designed to be environmentally sustainable with solar and wind power to reflect the future of renewable energy while recognizing the past.

Bring back and expand the summer concerts at the park (when safe to do so). Maybe expand to other venues. They're a great, unique way to gather in nature and have some fun as a community.

More affordable EV chargers (free is great too). Chargers at some locations are inflated or charge by the time rather than the electricity used.

Don't tear up beautiful green space to build high density, low income housing units. Build in high traffic areas that are already paved and unused -- like the huge, unused parking lot at the western end of the Carlsbad mall that is conveniently near employment and public transportation.

We should follow Oceanside's lead and make changes needed to reduce or eliminate train honking. The homeless problem really needs to be addressed. I don't feel safe using the bike path for morning runs because it's lined by people sleeping on it. All crosswalks should have a delay to give pedestrians a head start when the light turns green. This provides better visibility. At Tamarack and Adams I regularly almost get run over when I have the walk sign. Speed limit for e-bikes.

Wildlife corridors maintained

Maintain/create open spaces and green belts. Require developer to maintain pedestrian access [foot or bicycle] via easements or similar such that people can walk, jog and cycle throughout the city limits. As applicable when restriping roads place the fog line at the standard/design width from the centerline versus

placing it on the edge of pavement. On roads where the gradient exceeds 3% [and were applicable shift the centerline [as allowed] to hold lane widths to min. standard for DH traffic

Coastal South Carlsbad (ponto area) needs a community gathering area with restaurants, shops, coffee shops, and enhanced parks and open space. Not big hotels and massive condo developments

Create trails for residents to walk/hike/bike the south side of Agua Hedionda Lagoon. There is currently no access besides a very short trail near the nature center. So much missed potential there!

Not much anymore. The beautiful beaches, with free public parking. Trails, parks and open space. The historic Village and Barrio (but that's being ruined by gross height and pathetic density of over development).

We need a true coastal park in south Carlsbad for the thousands of residents who cannot walk to one, plus all of 92009 and 92011 residents who have No Coastal Parks. With Sea level rise and bluff erosion, it doesn't make environmental or economic $ense to reroute South Carlsbad Blvd. Why invest potentially $70 million for a miles long "walk way" along the PCH/101 while the bluffs are so unstable. Wouldn't it cost 1/2 to buy land on the east side of 101 instead of building more condos there?

"Change the way one pays for electric energy delivery. Right now it is tied to consumption, but that is not fair. Delivery should be a fixed monthly fee, much like water, based upon the panel size. Easier to calculate too.

Require SDG&E to provide the annual cost of maintaining the distribution system. Pay that plus their 10% guaranteed profit. That amount, divided by the sum of all panels (in Amps). A customer's bill panel size times cost per Amp This is how the distribution is designed."

The problem with a trail from the Batiquitos to the coast is litter and people wandering onto the trails, just loitering and littering and not even knowing anything about the lagoon and how it strives to stay nice for walkers, hikers, runners etc. People would wander in from the beach and come to the nature center and leave all their sand and trash there! The volunteers strive to keep that place clean every day of the week. Coastal access to the Batiquitos is a BAD IDEA!!!!

Homelessness. We need to take it more seriously and address it as a rapidly emerging crisis. This can cost the city in the near future if left unattended. If you closely watched the effect of Vista's laissez faire policy in tackling homelessness you will know that it led to substantial increase in violent crimes, sanitation issues and created an unfriendly environment for residents and effected desirability of the area

More green space. Quieter environment. Walking paths. Enhance downtown area with better shops, restaurants, pedestrian walkways without vehicles, outdoor eating spaces. Look at other north county cities like Solana Beach, Encinitas as they revitalize there parkways, services, restaurants, etc. Cut down on local street speeding with more enforcement. More visibility of police.

Gee, that's funny. The US Energy Information Administration gov't agency says that "Natural gas is a relatively clean burning fossil fuel" and we do see many buses that tout that they are utilizing "clean burning natural gas." Can't wait to see how clean the environment gets when all the Prius and Tesla batteries hit the landfills!

We need more community gardens in Carlsbad. The waiting list is over a year. We should be promoting sustainable lifestyles in Carlsbad. Growing our own gardens and eating local goods.

Ideas wall comments – Environment tag

WM is a company that is committed to sustainability. There is no other company in the industry like this. Please stay with WM.

From what I have seem, most of the development in the Village area has NOT contributed to the charm. Think of these structures: Five story grey and dark green ugly mess at State and Oak, 800 Grand, the new building going up near the Grand Grill, new structures going up near Madison and Oak, and let's not forget the prison-like structure right off the freeway on CVD that looks nothing like the renderings.

The Maintenance of parks, streets and common areas I consider important as well as keeping a rural feeling in the communities. Community gardens would be wonderful. Support for youth and senior centers will help to strengthen moral especially after this pandemic passes, hopefully.

"Carlsbad has a unique vibe. Please resist the temptation to "modernize" and build a generic looking west coast beach city like you'd see in Orange County. Those cities already exist, and we can drive to them. We don't need another.

Keep building small. Take the time the time to put better building design requirements in place to keep the vibe we have, and enforce it.

Keep the open space, we lose more every year. There are already plenty of concrete paradises along the west coast."

Carlsbad is attractive because of the open space/natural beauty, relatively low crime rate and good schools. Stop doing things that take away from our competitive strengths, such as building more strip malls with big box stores, tearing up open space for more development and permitting the homeless to take over downtown, urinating in public spaces and increasing crime. Build on our strengths, don't tear them down!

I agree! Our open spaces need to be protected. They add so much to our quality of life and preserve the native plants and wildlife.

Less greenhouse gas emissions, and a reduction of noise and smog pollution from landscaping crews who could be sparing a lot more of shade and green canopy that would protect us from skin cancer. In the future, I hope to not have to drive the vehicle 14 extra miles a day to get a child to school because it is unnecessary when there are plenty of schools much closer. Hopefully the redistricting will figure this out so that we have less cars on the road and more exercise for our families.

Agreed. We do not need more building growth; maintaining and expanding parks, trails, gardens and open space will help keep Carlsbad green and livable.

With covid, we have lost businesses. There is a glut of developed commercial space available, which lowers property values. Carlsbad is attractive because of its natural, open spaces. Owners clear and destroy habitat to make the property more attractive to developers. Please consider the following measures to maintain our unique open spaces 1. Moratorium on clearing open land until plans are approved and tenants have been secured. 2. Incentivize redevelopment of already developed properties.

Ideas wall comments – Environment tag

Public greenspace or a community park should be the priority reuse for the power plant area. Development of beachfront hotels and significantly underused commercial office space, may add to city tax revenues, but benefit a very small number of people -many of whom are not even Carlsbad residents.

Less development, more nature areas to enjoy

Let's complete the relocation of Coast Hwy, moving it off the coast a bit and develop that area into a green belt, parking and beach access.

"With COVID, and more folks using fast food in a frustrated environment, there is a lot more litter being thrown from cars out onto roadways than there was 2 years ago. The trash is a blight on our neighborhood.

Community volunteers have been addressing this throughout the Pandemic, but more support from the City would help.

All sidewalks should have trash cans strategically placed. There are some now, but we need more, especially near shopping centers where fast food is sold."

Despite its clean-sounding name, natural gas is a major contributor to the climate crisis. It is made mostly of methane, a greenhouse gas more than 80 times more potent than carbon-dioxide in the short term. This potent gas comes from fracking fields distant from where we live, leaking into our atmosphere all along the way. Adding more infrastructure is merely adding to what will become stranded infrastructure in the near future. Clean renewable electrification of our buildings is the future.

"Please protect our open spaces. Once gone, they will be difficult to replace. They add value to our lives, preserve native species, encourage exercise and mental health, and set us apart from LA concrete communities.

Promote organizations like Preserve Calavera for opportunities to volunteer to help maintain these spaces. Organize clean up events for our high schoolers, who need volunteer hours anyway, to get outside, pick up trash, plant, weed, etc."

I agree with this insight. It is environmentally insensitive to have traffic lights stop a long line of cars so that one car can turn right.

"I would love to see upgrades to Poinsettia Avenue between Paseo Del Norte and the beach. It would be nice to have better landscaping and charm for pedestrians.

Change the cheap hotels off Poinsettia avenue into more expensive boutique hotels. Some of the patrons of these current hotels cause crime to the local neighborhoods

Keep up the great work on the school system.

Minimize generic, production build home and chain restaurants. Welcome more, art, nature and charm."

"School Busses. California is the only state that doesn't have school busses....and California claims to be environmentally conscious! The polluting fuel emissions at school opening and closing times are detrimental to the quality of air. Idling cars spew out highly toxic gasses. The inconvenience to parents to find transportation for their children is outrageous.

Ideas wall comments – Environment tag

Carlsbad: be different. Lobby the state and/or the Unified District for school busses."

More open spaces more cultural art events like the independent film series at the Schulman theatre. More pickle ball courts, increased free large & hazardous waste pick up. Resurface streets, stop permitting large multi level buildings utilizing entire lots down town Carlsbad. These buildings are ruining the Carlsbad Village look and feel! Close down State street to pedestrian only, increase parking by demoing some old, run down residential units.

Carlsbad is an awesome place to live. Unfortunately, the environment is suffering because of it. It is time to put the environment first. We need to take a tough stand on climate change. To start, we can protect open space by building parks, walking trails, bike trails,and nature centers especially along our coast. Preserving the little open space that is still left in South Carlsbad for all to enjoy. We can set an example for other cities and preserve this great place for future generations.

A significant contributor to quality of life is an environment that is devoid of excessive, sustained, and loud noise. After 2017, two flight schools moved into Palomar Airport. Prop powered general aviation aircraft are far louder than automobiles. No pilot flies without a headset because the noise makes it otherwise impossible to communicate with the ground or other pilots. I prefer jets to prop planes because jets fly fast, high, and quickly out of the airspace, prop planes do not.

Carlsbad has done an excellent job and keeping and maintaining its open spaces throughout the City. Expansion of purple pipe options would be great. And if the City could find ways to encourage businesses and residential owners to go solar, that would be helpful. Enforcing recycling options within businesses is needed as well.

"I applaude the use of roundabouts as a way to reduce stop signs and accompanying pollution by cars, dling and acclerating from a start. These would be particularly appropriate in the Barrio along Roosevelt street.

Encourage the installation of more charging stations around the city for electric cars.

Question for anybody: would having bicycle charging stations for e-bikes encourage people to ride bikes? Needed or not needed? In front of or sponsored by businesses working with the city?"

"Carlsbad has a unique vibe. Please resist the temptation to “modernize” and build a generic looking west coast beach city like you’d see in Orange County. Those cities already exist, and we can drive to them. We don’t need another.

Keep buildings small. Take the time the time to put better building design requirements in place to keep the vibe we have, and enforce it.

Keep the open space, we lose more every year. There are already plenty of concrete paradises along the west coast."

Ideas wall comments – Environment tag

This is spot on. Build up the LOCAL economic ecosystem of Carlsbad with a range of diverse businesses....it's the bedrock of a sustainable and vibrant community. Perhaps turbo charging support with, for, and through the Carlsbad Chamber of Commerce who know this subject through and through.

New development should be low rise, preferrably 2-3 stories. re-development led by businesses like campfire, Handels, the village theatre, and even the new Taco themed restaurant which occupies fairly unique architecture are enjoyable. The rows of green condominiums/townhouses at the North end of State street detract from the village feel. It is simply adding to parking challenges for the locals who visit the businesses.

I like how Irvine, CA made use of the open space running alongside the train tracks and electric grids to create biking and pedestrian paths surrounded by easily maintained wilderness...not sure if we have any of that kind of space here in Carlsbad anymore.

Open space - no more building

What a fascinating idea...there are parts of where the only greenbelt is sandwiched between both lanes. Fascinating idea.

Yes, please, to more electric charging stations, definitely for cars...there are only 2 charge ports in the village!

Use native plants in landscaping projects to reflect and maintain the historic, natural beauty and charm of our beachside community and support a healthy natural environment for all to enjoy for years to come. Seek advice from local San Diego native plants specialists to provide input for design and local plant choices. The San Diego Native Plant Society is a good resource for referrals, as well as Moosa Creek Nursery, Native West Nursery and other native growers in San Diego County.

Stay the course. Carlsbad is a jewel, let’s keep it that way. Continue to focus on safety, no graffiti, don’t encourage homelessness, attract innovative businesses, balance growth vs green space.

"Retain the green spaces and parks that already exist.

Limit development that would destroy green spaces.

Develop a composting facility and encourage composting.

Outlaw Ready Roundup."

Poinsettia Community Park Pickleball venue is the new Carlsbad family and friends community gathering place. It offers a fun, safe and recreational environment for all ages.

Better bike lanes for commuting and safety for all the road and e-bikes driven all over the city. Safer bike lanes would help encourage more people to use them to run errands, travel throughout the city and reduce green house emissions to help protect our environment. Bike lanes created away from roads with their own paths into the interior that provide paths from neighbors safely to other neighborhoods and businesses would encourage more travel and healthier lifestyles.

Invest in public services at the beaches and parks including bathrooms, not portable toilets that are not maintained. Improve Carlsbad Village Drive and highway 5 access areas. Continue to bring in local businesses to enrich downtown area. Maintain open spaces and create more safe, accessible trails for the public.

Ideas wall comments – Environment tag

Many newer residents are not aware that there is a master plan voted in place with a copious amount of open space required. I think this was put in place in late 80's. It has been followed and you are witnessing the last little bits being filled in!

We need a public Bocce Ball Court in Carlsbad. (I don't know of any in Carlsbad, only perhaps in private housing areas.) Encinitas has a public court. Carlsbad is big and affluent enough to afford a Bocce court. I think the ideal place would be Holiday Park as it is nice and flat and has lots of open space. It would be relatively easy and inexpensive to build it there.

"The abundance of open space was one factor I considered when moving to North County 25 years ago. It is definitely disappearing and being replaced with more homes. Limiting growth would ensure our home values are protected, however, the double edge sword of increasing property taxes keeps cutting into our wallets.

And honestly, how many more businesses / shopping centers do we need? I was glad when the Strawberry Field shopping center was defeated. The fields are a regional treasure."

Please recognize, appreciate, and support our public safety and law enforcement. It is too easy to lose sight/misunderstand/take for granted what our police department does for our community 24/7. Especially in today's environment we have to explicity communicate this value so it doesn't get lost in the destructive narrative. Let's commit and recommit to supporting these services in our community. Carlsbad is attractive and safe because of our law enforcement. Let's make it known and clear.

Why? Progressives hammer us every day about global warming on TV, radio and print. Carlsbad doesn't need to get involved. We know already. Maybe when we buy an electric car in 2030.

I love the Eucalyptus trees. They are part of Carlsbad's history. They are one of the reasons I moved here. The tall, flowing trees are home to many species of hawks, owls and birds. A healthy population of raptors and other native wildlife is a sign of a healthy ecosystem, such opossums, raptors, rattle snakes. Why would anyone want to destroy natural life and beauty? We are so fortunate to have these trees cleaning our air and providing habitat for so many creatures throughout our city.

Protect the village, no more 4+ story buildings in the area and please none East of the 5. If people want to live in a dense, crowded, heavily trafficked area then can move to Orange County or Los Angeles. Protect the small town feel and protect the remaining open space.

The power poles and lines are an eyesore, an environmental threat, and a danger in high winds in North Carlsbad, especially along Chestnut neighborhoods where every view has wires hanging. Residents have been paying on their utility bills to put the utility lines underground for years. The plan was in place when I purchased my home 20 years ago. The road was recently dug up to put 5G underground by corporate interests. Why not utilities?

I wonder if the change in flight path coincided with when the 2 flight schools opened at the airport. Were the needs of these business to save fuel put above the safety of Carlsbad residents and the environmental impacts? It's easy for officials to shrug and say flight path is out of our control (determined by FAA), but are they asking why changes were made and advocating for safety of neighboring residential? Does there need to be an El Cajon-type crash for changes to be made?

Ideas wall comments – Environment tag

It’s easy for officials to shrug and say, out of our hands… but are they advocating for resident safety and environmental impacts? Do they question why flight path changed to climb dangerously low(and loud) over residential areas? Did the flight path change yo accommodate fuel efficiency of flight school businesses over noise/air pollution and safety of families living below? Are they waiting to El Cajon-type crash before changes are made/addressed?

We need native landscape. 90% of native wildlife has been destroyed by development; 90% of wildlife can only survive on native landscapes, so wildlife cannot survive without native landscape revival.

Great point! So challenging in a state (and now our County board) that is very business unfriendly. Vista is an example of a local city that has done a great job doing as much as possible to be as accessible and friendly to business as possible to help offset the negative state/county environment. Maybe we replicate Vista. I also think we could attract Bay Area firms to relocate here.

Yes! And more allotted space for community gardens and their security. The wait lists are LONG. So many residents are interested. If Carlsbad insists on incentivizing monstrous condos to maximize taxable property, sacrificing family oriented homes with a bit of plot for growing, then lets preserve more community oriented property along the way.

There used to be a wonderful wildlife rehab center that closed, we really need someplace like that again. It was a great benefit to our community and very educational to out kids.

"Homeless prevention and rehousing.

Carlsbad needs a robust 5 year strategy that is focused on helping prevent individuals become homeless and support those who are to get access to care, medication as well as reasonable ""housing"".

There are many cities around the world engaging in innovative solutions.

Establish a clear path forward over the next 5 years based on the following 3 priorities: Health/ wellness ;Safe shelters; Economic sustainability (incentivize business community partnerships)"

Single family homes with 10' spacing on the sides is a "joke". Combine the "green" expectations by creating 10- 30 story within 3 blocks of the stations with adjacent green space. There is no way we can have affordable housing with current growth in population. Sure, have an area of "historic" homes but let's get real - we don't have "Olde Carlsbad" anymore. A green future doesn't include 40minute commutes, one person per car.

Quality of travel within the City would improve if the traffic signaling was improved. We often sit at red lights when there is no other vehicles in the other parts of the intersection. Lights turn green for turning into schools when no one is in the turning lane or it's a weekend. Lights turn green out of shopping centers (the Forum) at 6am and hold up those traveling along the roads. Something needs to be done so we are not stopping at a red light every time we approach an intersection.

Get the drugged out homeless junkies out of the village. Most of them are not just “unhomed,” but are on the new meth. This drug is very dangerous and causes the user to become violent. They all hang out directly across from Status Skate shop where kids go to spend time. My son’s soccer practice had to be moved from Pine park due to these people harassing kids and parents. They also are in the Smart and Final lot and yell at people. This has created a very unsafe environment for our community.

Ideas wall comments – Environment tag

Cbad is a unique combination of a coastal relaxed vibe and a vibrant economic city. It is important to me that we not be see as elitist or only one dimensional. I have lived here since 1984. Despite my groaning over the incredible growth I've witnessed (I think the population was close to 45k in 1984!), I can now appreciate the excellent planning and decision making over the past 4 decades. It's all about balance - between the residents, tourists, businesses and environment.

When I think of Carlsbad I think of the beaches, lagoons, excellent schools and great parks. It's a great place to raise a family with a mostly small town feel still hanging on. Most cities don't have gems like Calavera open space, the campgrounds/ponto area, strawberry and flower fields. These places need to be considered part of the fabric of our community with no possibility of development. Would love to see a park that exists near the beach like other cities have…see San Clemente.

Buy the power plant property and turn it into the most amazing beachside park. Open up the south side of Calavera to mountain biking and purchase any available land. This area is a hidden open space gem. Connect trails-we could have 30-50 miles of connected trails instead of shirt 1-2 mile trails everywhere. It would be great to see a bike park in Carlsbad. Not sure why our city seems to dislike mountain bikers but every other progressive cool city seems to embrace and work together.

Hold onto the 'family-friendly beach village' feel of our town. For instance: 1) do not allow new construction of buildings with more than 3 stories. 2) Make the town as pedestrian-friendly as possible. 3) Create more hiking trails in the open spaces. 4) Protect the historic Barrio and its original character.

While I also want parks and open space here, the Mall is already there - so let's make it an attraction not an eye sore. The UTC open-air mall would be a good model to follow - allowing for lots of friendly spots to commune.

"Smerdu Community Garden suffers from poor security. Tools and harvests are stolen. Creepy people lurk. Parks and Recreation needs to install adequate perimeter fencing and change the gate code regularly.

There are hundreds of Carlsbad residents on the waiting list for a community garden plot. We need more community gardens and more responsive P&R staff willing to enforce non-compliance issues that deprive others from a garden plot."

We need more community gardens! The wait list is 300+, condos and apartments without yards or personal plots are going up like gangbusters, and finances are tight for service and retail level workers whom may otherwise not be able to allocate their pay toward the skyrocketing prices of ORGANIC and HEALTHY food. Lets forego a condo complex or two. The gardens really are one of the best health oriented things that a city can do for its residences ;) Keep new buildings to a 2 story maximum.

The 40% open space the city likes to brag about includes all the acreage of the three lagoons in the city. Remove all of that acreage and our open space drops to less than 1/2 this percentage. A more rational standard is the amount of park acreage in a community with a suggested standard of 5 acres per 1,000 population with golf courses excluded from the definition of park acreage. This is the acreage that ALL the citizens can enjoy.

This proposal does not go far enough as it relates only to community gardens. The more dense housing created in the city the less private open space per person there will be. We are already short on needed

neighborhood parks, especially in the southwest section of the city which has no parks west of I-5 as opposed to almost 35 acres of parks north of Cannon Road west of I-5. And this SW section is the most densely populated quadrant in the city already. Such parks could include these gardens.

I think is preferable that any new community gardens not be set inside of parks as the garden at Pine ST. is but in a less obvious space, as that garden is routinely vandalized and robbed by loiterers.

"We love Carlsbad Village, all the beautiful home developments and the proximity to the beach. Carlsbad seems to have had a good strategic plan for years.

The areas along 101, where the bluff is dangerously falling are of a big concern. The abandoned old State highway along Highway 101, bordering South Carlsbad State Beach, could be cleaned up and turned into a green area or parking for beach access. It would be a start before the drastic project of moving Highway 101 East is planned."

The train tracks gone? Lol. Moved underground, possibly. The train was here when we were a tiny village. Like wildlife, it was here first. It is a vital corridor.

Regarding energy... Please do not make the same mistake Encinitas made, and disallow natural gas as an energy source for residents and businesses alike. Nothing is more economical, and it's clean !! The energy myopia is irresponsible, and we will suffer terribly if it continues. Losing San Onofre was dumb..and the blackouts will only increase. Don't follow Europe's example. Germany has reworked their building codes after their green initiatives failed. There are successes, but huge costs.

40% open space was a good goal 40 years ago. It is even more important today. It was one more way Carlsbad can be a regional leader, protect its one unique character and preserve the biodiversity of our area.

Carlsbad to consider an annual beach parking pass similar to Oceanside for all Beaches. The revenue could support lifeguards/police/parks and rec. and the environmental impact brought by tourists and debris they leave. And residents could benefit as well from a 50% reduction in the annual pass. $100 for residents $200 for non-city residents. Or an $10 day pass or $40 week pass. It would clean up the graffiti on the sea wall and keep the beach clean. Separate from a State Park Pass.

"Create a Spare the Air Program (like BAAQMD's) for days when air quality is expected to be unhealthy, to educate residents about air pollution, & to encourage actions to improve air quality. When particulate matter levels are forecast to be high, issue a Spare the Air Alert, making wood burning illegal.

Asks residents to reduce pollution by taking transit, driving less, reducing energy consumption at home, and making many other daily choices that improve air quality.

See SpareTheAir dot org"

Yes. Plant low-pollen trees, and develop pollen-control statutes/ordinances to avoid triggering allergies or asthma -- per 2021 USDA Forest Service paper "Variations in urban forest allergy potential among cities and land uses" https://www.fs.fed.us/nrs/pubs/jrnl/2021/nrs_2021_nowak_001.pdf and https://blogs.scientificamerican.com/guest-blog/botanical-sexism-cultivates-home-grown-allergies/

For bicyclists, crossing major intersections such as El Camino Real & La Costa Ave needs to be safer. Given busy intersections on El Camino Real and on La Costa Ave, for example, how can bicyclists safely ride

to Alga Norte Community Park from Calle Barcelona (La Costa Valley area)? Unfortunately, safest choice is to drive a car (contributing to greenhouse gas) rather than riding a bike.

"**Less concrete more trees; make a requirement, for x amount of building development you have to plant x amount of trees with it, they are our natural carbon reducers.

A dog beach. Maybe near the campgrounds. People who like to camp are probably the same kind of people who like to bring their dog to enjoy the beach too. Real dog parks with grass, and not under power lines.

City-organized each cleanups, park cleanups, etc.

A downtown community garden."

"I think Carlsbad's economic vitality is just fine. But maybe we can focus on trying to fill the empty commercial buildings around the airport with some GOOD businesses. B Certified ones. And have solar and EV charging stations everywhere. How about a seaweed farm. You know, focusing on business that's also good for the environment.

Also more trees."

Other Calif cities like Palo Alto offer a regional solar group-buy program administered by Business Council on Climate Change (BC3) offering 10% - 15% discounts on residential solar and battery storage. Their webinars teach residents about solar & battery electric storage, provide sample pricing for several standard types of installations, and provide an online solar calculator tool that takes into account your address and your energy bills to estimate possible savings.

Develop pollen-control statutes/ordinances to avoid triggering allergies or asthma. Refer to 2021 USDA Forest Service paper "Variations in urban forest allergy potential among cities and land uses" by Nowak and Ogren. Plant low-pollen trees and landscaping, preferably native and drought-tolerant appropriate for our climate. Eliminate acacia trees (high pollen self-sowing trees) growing in urban/rural (e.g. La Costa Canyon) interface. Prevent exotic escape of pollen-producing trees & plants.

Actively educate and engage residents on sustainability focus areas: electrification, mobility (Reducing the carbon intensity of fuels, Increasing vehicle efficiency, Reducing vehicle miles travelled (VMT)), EV adoption, water, reduce green house gas, sustain natural environment, zero waste. Hold educational webinars & hands-on workshops to engage residents to work towards sustainability.

"HOMETOWN PERSONALITY -IDENTITY, PRIDE & SPIRIT

Imagine Cbad believes these community traits are built on a number of factors, all important to those of us who call Cbad our home town.

We believe a strong sense of place is one important factor. Not only the natural character but also the man made character, the physicality of our environment. It starts with your home, your street, neighborhood, community your town. We say we want Beach Town character, IC is proposing a few more on GP"

I totally understand the lowering of the tracks, BUT I think we should either tunnel (I got no response from Elon Musk's Tunnel Company) or "bury" the tracks by utilizing prefab concrete side walls and a prefab lid, all covered by dirt. This would create a phenomenal open space instead of having a giant canyon cutting the City in half. I contacted a SanDag consultant but it fell on deaf ears.

Virtual workshop

Breakout rooms

Quality of Life & Community Character

1. How do you define these terms? What do they mean to you?
2. Five years from now, how will you know this has been successful?

Environmental Sustainability

1. What would you like the City Council to consider when it comes to environmental sustainability?
2. What are some of the key issues or challenges the city should focus on?
3. Five years from now, how will you know this has been successful?

Natural Environment

1. What would you like the City Council to consider when it comes to the natural environment?
2. What are some of the key issues or challenges the city should focus on?
3. Five years from now, how will you know this has been successful?

Carlsbad's Coastline

1. What would you like the City Council to consider when it comes to Carlsbad's coastline?
2. What are some of the key issues or challenges the city should focus on?
3. Five years from now, how will you know this has been successful?
4. What do you enjoy most about the coastline today?
5. What would make the coastline even better?

Keeping Our Community Safe

1. What would you like the City Council to consider when it comes to keeping our community safe?
2. What are some of the key issues or challenges the city should focus on?
3. Five years from now, how will you know this has been successful?

Other Topics

1. What would you like the City Council to consider when it comes to other topics that are important to you that were not listed?

City Council 5-Year Strategic Plan
Feb. 1, 2022, Workshop Notes

Breakout room name: Quality of Life & Community Character (group 1)
Number of participants: 15

Quality of life and community character
How do you define these terms? What do they mean to you?

- Walkability and community that combines people together in the community together in different activities, comm engagement opportunity, common events
- Cover train issue, train noise
- Friend in Oceanside, put silent horns there, so much better, relatively close couple of blocks
- Trenching have not heard anything recently
- Lived in Highland before, now by Carlsbad by the Sea, small village feel going away, putting up 3-4 stories condos right off village, what do they see now, ruining town, barrio chopping down little houses
- Noise pollution, love to see in your home, hear outside noise, love to see us do what Encinitas did with those leaf blowers, city has made electric and quiet at night, leaf blowers are biggest polluters, can smell the grass, see Carlsbad do what Encinitas did, require all gardeners to use electric leaf blowers
- Noise from traffic, off Calle Barcelona and RSF, seems since pandemic that noise has gotten so much worse, not sure if home more, love to see traffic calming or enforcement of speeding, mufflers, motorcycle racing – would contribute to QOL
- Especially in village and barrio, have sidewalks and amenities to walk to, positive for QOL, walkability to schools, groceries, pharmacy and beach, concerned with historic preservation and acknowledgement, no historic list to preserve our buildings, Magee Park, station, those not under park supervision, private with character is up for grabs, new housing element, need list and Mills Act, historic is part of character, need definition of community character, been looking for years, would help us grow
- Tossed around the ability of our community to maintain things that are important like the beach, seawall, access, central train station, improve with trenching to enhance safety downtown, our town is defined by center of village, grows beyond that, our own history is part of the Marron history, elements to help define community character, start with historic buildings
- SD alliance with drug free youth, community parents, teens, advocate, La Costa resident, implement tobacco retail licensing program to allow city to limit what the retailers are selling, to limit advertising, displays, fund minor decoy operations so they are not selling to minors, adopt multi-unit housing policy, can't enjoy own home since neighbor is smoking all the time, invest in filters, if smoke-free policy, management can do something, love living in Carlsbad 18 years
- Resident for 6 years with husband, coming from Bay Area hustle and bustle, everyone uptight, here is relaxed, beach vibe, great people, people care for each other, quaintness of

village, not another LA or Orange County or NY where boxes of homes everywhere, some housing buying for Vrbo, not residents, older homes being torn down for high rises, disheartening to shove homes, preserve space, amazing drive from La Costa Ave to see amazing coastal view for QOL

- Resident for last 40 years, before in Oceanside, wouldn't argue with others, elements of QOL, define it – attempt about 10 years ago, Vision Statement, recommend go through that process of refining it once again, garnered quite a bit of community involvement to put it together, came to be a meaningful description of what the community wanted, things have changed, maybe not same priority, but a lot remain same objective of most citizens like #1 core value, small town feel, beach community, connectivity, things have not changed much, survey effort to take existing vision statement and ask what you would change and a good way to start off rather than shotgun
- David G core values reinforced by City Council on website – nine core values, which ones should we focus on, so far same core values remain important
- After 40 years in Carlsbad, still matter to all of us, chose Carlsbad for specific reason, still love it, want a piece of it retained for next generation (Old Carlsbad)
- Having lived in Chicago, NY, came here in 2019, small community life, moved business, bought home here, real estate price explosion, neighbors are selling, flippers are buying, not families moving in, concerned about it, would lose small town feel, shed big city life, don't want to lose what brought me here, noise, leaf blowers, gardening, RSF Rd noticed timing of traffic lights sometimes during the day, red light every single time, people race, dangerous, pedestrians almost get hit, cars almost get hit, QOL, curious, not timing true all the time, not always the same time, sometimes every single time is red (Paz encouraged watching traffic signal presentation during semiannual transportation report on Jan 25 Council meeting for status of signal improvements)
- Ebikes and regulation on ebikes, live in Old Carlsbad, ebikes are everywhere, new technology so they don't need to drive children to school, where do regulations come from, the state, afraid for the children on ebikes, some with surfboards, on traffic lanes, two girls swerving on major street, concern for children, work for children, bike lanes
- Ebikes – cycling a lot, SD Bike Coalition, class is extremely good, city should require reference for smart cycling if they take the class, echo concerns, where appropriate, take the travel lane, noise on leaf blowers, support it, train noise and silencing
- Historical preservation – great place to live, almost 30 years, opportunity, Highland and CVD, old Victorian for sale, city with historical society and preserve in addition to city's other buildings, a lot of funding to restore it
- Reinforce previous comments, two things that terrify me – one is ebikes, can't image slew of children not injured already, no consistency, kids do not have concept of stop signs, getting from parents and others, not particular problem before, last couple of years, blowing off red lights, people gun it into red light, city has taken red lights out, probably because too many complaints, need to bring them back – real threats to QOL
- Red light cameras, against it in Chicago, morass, grift, crime by politicians, please do not bring them back, ECR/Olivenhain still has it, don't punish people and charge $500, please do not do that instead of solving the problem

- Not just children on ebikes, not just ebikes, not just traffic enforcement, bicycles on La Costa between ECR and 101, need lighting, use road a lot at night between La Costa and RSF, shut down by sheriff, car and bike accidents, not just cyclists at fault, examine the whole issue, not just blame one thing, we don't have access to all data, make it public so we can all be aware, not enough light on that road, too hard to see, QOL for everybody
- Red light cameras, agree that so much corruption in other cities, will fight to make sure it doesn't happen here, traffic light timing is a big thing every day, not much timed lights, side streets triggering Poinsettia many times, everyone else stops, trigger immediate red, start 60-90 second timer, so one person can come out
- Walkability, coastline, limited walkable boardwalk to Cannon Road, walk in dirt or traffic after that, more sidewalks, more walkable to southern edge of Carlsbad, more accessible, walking dogs, stretch farther
- 10 years from now, quaintness and historic preservation, come from Los Gatos area, smoking, runner along beach, ordinance in LG, outside of buildings couldn't smoke
- Tamarack near drive-thru Starbucks, building across street, for sale for a long time, improve near I-5, improvements around there, a business if possible

What would you like the City Council to consider when it comes to quality of life and community character?

See above

What are some of the key issues or challenges the city should focus on?

See above

Five years from now, how will you know this has been successful?

What will be different?

- Lived here for a decade, originally from Bay Area, LA, with wife, would love more things to do there between triangular park, no desire to go to Dino's or Vigilucci's, no restaurants right here, a few places like that, we are a destination place, resort town, casual or fine dining down there
- Love the area and campgrounds, created a little store on site, great view of entire ocean, buy a glass of wine, beer, feel safer in campground not PCH, maybe trails around that area, safer places
- Fairly involved in housing element, fear going away in 5 years, state is pushing for high density housing along coast and throughout city, fighting the state on this
- In real estate and sell houses, everything is so packed together, no yards anymore, lucky to have balcony, a real park in Ponto, more parks within 10-15 minutes' walk from homes, especially by the beach, keep character of Carlsbad, not another Santa Monica, wall to wall restaurants, towers, environmentally friendly, see the coast, go inland for restaurant, park

where picnics and things, sea level rise, beach may be less accessible, less in south Carlsbad where we can hang out but not promenade thing, more like real park
- Look at traffic, I-5 is getting more crowded, 101 trying to get to downtown, see consideration before we build anything, ability to get places and parking when they get there, love coast the way it is, see the view and drive, or park and enjoy, relax, nicer park with picnic tables, not so in love with new restaurants, can build them inland
- What would it take to get a frisbee or disc golf course in Carlsbad?

What will stay the same?
- Still see ocean driving on PCH, not buildings, charming to go down to sea, live here 22 years, seen a lot of changes, not all for the better, hope in 5 years we are not a concrete jungle like other cities in SD, cherish the coastline

City Council 5-Year Strategic Plan
Feb. 1, 2022, Workshop Notes

Breakout room name: **Quality of Life & Community Character (Group 2)**

Number of participants total: **12-15**

What would you like the City Council to consider when it comes to Quality of Life and Community Character? What are some of the key issues or challenges the city should focus on?

- Business owner is concerned that we're losing greenspace and the charm that lured her to move here. Concerned about the movement of the homeless that we haven't seen before – it's more prolific. How do we manage the growth so as not to lose what is wonderful about Carlsbad but yet keep a balance?

- Long time resident who lives in the house she was born in, also business owner. She cares about the parks, beach, community services and would like to see those continue to be developed. Husband is disabled – let's make our community accessible to everyone so that people can age in place and enjoy the community.

- Carlsbad is not that accessible. Her roommate is blind she wishes to improve his quality of life. She's concerned about overbuilding and turning the Village into square boxes that aren't attractive. She's concerned about things that don't look like how they were approved. Example is Carlsbad Village Drive west of the freeway on the North side. It looks like a prison. The renderings showed trees, open space, cafes.

- Improve quality of life for the disabled and for those aging. Connecting some of the trails to enjoy Downtown without having to go on the PCH. Some trails don't connect all the way. Pedestrian underpass study at Agua Hedionda lagoon – what happened to that? Ramps for the disabled at the Tamarack parking lot.

- 30-year resident doesn't like to get into the hole of saying that everything was better here before. Yupification of the village – can't say it's not going to happen, but keep involving the community like you're doing. This is a great way to get the pulse of the neighborhood. She applauds the city for that.

- She wants to be able to age in place. Very concerned about transportation. We're better than San Diego, we have opportunities for people who no longer drive to access all of the city. The village is losing its charm. Old Carlsbad fire and safety is great. Kudos.

- He realizes the village will change but wonders why there couldn't be a better architecture design like Del Mar, Santa Barbara. Unfortunately developers here are

turning it into box by the sea instead of village by the sea. The city is very well run and the employees are amazing. His interaction with employees are great. He's more concerned about the Mayor and City Council. Having more parks to walk and bike to is great instead of parks to drive to.

- Aging and place and access is important. He saw Carlsbad is #2 of top beach communities for retirement in America. That means mobility services are essential in connecting our community with urban sprawl. He would like this group to advocate for aging in place and mobility. Economic development – he's impressed with the vibrant economic ecosystem and he'd like us to capitalize because economics are the foundation of a vibrant community. When we use that foundation we lose the wealth creation that's created and redistributed among our residents.

- Rapid growth of four story buildings that's impacted the village a lot. It impacts the quality of life. The feeling is not what is what. She's worried that small sections on State street will get hit with the same tall buildings, live/work spaces and it will drive out the small quaint businesses. She doesn't know how they'll coexist. Oceanside – that's not quality of life with the growth and the taller buildings. That doesn't help the residents if you catered to those who want to visit. It's happening rapidly and it's very sad to see.

- After a decade of living in Carlsbad, they want to see some more commerce come into the community. More restaurants. There's no commerce at the coast. Let's ditch the campground and put in some decent restaurants. People come here for golf, Legoland, where do they go to eat? We have a lot of open space, we love the beach, but we're not Del Mar. We don't have enough commerce. We should be able to go to a nice restaurant close to home and not have to drive to another coastal community.

- She says we're trying to escape the commerce and commercialism when moving here. She says the coast is our jewel and we can have commerce inland. Many of us don't want to lose that because that's what happened in so many other communities. They have nothing beautiful to look at anymore.

- 28 year residents. They've loved Carlsbad from the moment they moved here. They're not against progress but they don't want the downtown community to turn into just another coastal city. We are unique. We can go get an ocean view restaurant within driving distance. There's plenty to do here. More art would be great. Don't change the coastline in any way. Legoland is a great tourist attraction and we don't see it which is great. New resort in Encinitas – we can't afford that hotel. She doesn't want a high class restaurant on the coast.

- City Council should consider listening to the citizens. Change the planning permission procedures. They can't just check off the reports and then build. The reports aren't valid. Example of Robertson Ranch. Planning should consider how the citizens feel. The city should focus on traffic on El Camino Real. It's getting worse already in the village because of the new boxes. They are so ugly it's a sin. She thinks the city is doing was

much as they possibly can to address homelessness with they tools they have. They can't do any more and people need to stop complaining – instead we need to help. She's really researched what the city is doing and she believes they're doing the best they can do.

Five years from now, how will you know this has been successful?

- Making the construction and architecture cohesive would really improve the village. She still has young people in her home and doesn't want them moving away so she likes that there's growth in the city. To see success is to see forward progress. Streets and underpasses will take time and money but events like this where we can talk and collaborate to disseminate information to someone who can make a difference. We have a great place to live and an really good community. She's impressed at the turnout at this meeting. It feels very positive that the community is concerned for the future.

- She likes the comradery in this meeting. She hopes in 5 years we won't have too much more box housing – instead more aging in place. She'd like to see people outdoors – even disabled. More people outside than in cars. Carlsbad is on the right track for that. There's a big book in cycling and more of us who are aging might be biking but paths need to be safe, they would be appreciated. She'd like some slow traffic bike trails downtown in the village. Enjoy our wonderful city, climate and nature.

- The road quality is disastrous in the City of San Diego. Carlsbad roads are well constructed and maintained and she wants that to stay. She'd like to see a balance in ages. It's important. Our libraries are outstanding. Workshops and programs, foreign film Fridays – wants to see that continue. All the summer programs are a wonderful benefit to all of us.

- The seed library – gave a shout out. The city needs more affordable housing. Affordable does not mean low income. It should be what the average person can afford without spending more than 30% of their income. People's kids won't be able to afford to live here, people can't afford to age in place, disabled people can't afford housing here on lower incomes.

- Barometer of success would be to see small businesses thriving and being attracted to Carlsbad. Businesses that choose Carlsbad because of its vibrant economy and support would be a sign that we're progressing towards a robust economy. To see a multitude of individuals of all physical capacities and ages being supported in our community – not just those that are fit and healthy.

- Compliments to the city. She's very involved, garden plot, walks, enjoys the beach. She hopes in the future that the city keeps an eye on the laws in place. Example, the beach has a curfew that's not really enforced. She sees a lot of overnight camping on city streets, especially in the village. There are simple things that can be done, this really shouldn't occur.

- Concern about coyotes. Near Kelly drive there are packs of coyotes roaming. It's frightening. She's all for relocating them. There are so many canyons around and they are thriving. She'd rather them not eat her dog. Several neighbors have had their dogs snatched right off the leash when out walking.

What will be different?

What will stay the same?

- We have wonderful accessibility to the beach. We can drive right along the beach – miles of precious coastline. The campground is constantly filled to capacity. It makes affordable vacations for families. We have to make things affordable for all income levels. We need to rethink before we start taking things away that have been there for many years.

- The campgrounds are enjoyable as a resident to be able to have that for their families to enjoy when they visit.

- The campgrounds are on state owned land so that won't change. The mall is eventually going to be mixed use housing. The village has a bunch of units they are developing but some of those housing units may be transferred to the mall.

- If we're worried about sea level rise, we certainly can't be building on the bluffs.

- The flower fields are huge for our personality. Staged performances there are hugely successful. It's a great attraction for all ages. Wants to see that stay. Page Break

Quality of life and community character
How do you define these terms? What do they mean to you?

- She'd like to see some way that we could help the city think a little outside the box. People don't want to see the downtown gentrified, but what can we offer as solutions? Instead of complaining about what we don't like. Residents need to participate a little more effectively perhaps than they have in the past. Instead of complaining help to suggest solutions. She's concerned about the homeless but they have a right to live as well. Is there some other way we can accommodate the homeless? Can we think outside the box? Maybe the Sears at the mall – it has utilities, bathrooms, it could be turned over to some kind of housing without reinventing the wheel. Spreading out the burden of how accommodations are allocated throughout the city.

- There's a transit center at the mall. The city owns the parking lot. Great ideas for low income housing. It's a shame that after all of the upgrades that the mall isn't thriving. She's seen these projects in the Midwest where they gave people proper living areas and they became lovely communities. There's a huge opportunity there.

- Senior housing is going up in the middle of nowhere. How do you get to where you need to go? You need a car. No transit.
- These are tough questions today. This is going to take more thought than these initial discussions. She hopes the conversation will continue. How do we make change? How do we help our officials make the most effective change for the residents? It's a very deep discussion and she's glad it's begun.

City Council 5-Year Strategic Plan
Feb. 1, 2022, Workshop Notes

Breakout room name: Environmental Sustainability (Group 1)

What would you like the City Council to consider when it comes to environmental sustainability?

- Trash trucks say they run on natural/clean gas, but there is nothing clean or natural about gas. Trash trucks need to be electric.
- I'm concerned with water quality. I live by the beach and have been picking up trash every day. There is a lot of it. I've picked up 500 to 1,000 lbs of trash in the last year. There are not enough trash cans in the area. It would help if there were more. It was not like this before the pandemic.
- I'd like us to ban gas leaf blowers and lawn mowers. Electric ones are much less noisy. It's a 'low-hanging fruit.' The city could have rebate incentive programs of $50 for each leaf blower.
- There's something in people's brains that says we can keep putting this off. If the city doesn't get serious about this (going beyond state and federal regulations), who's going to? It needs to be done. We're fortunate because we have the resources to do it.
- Encinitas is far beyond state and federal regulations.
- Electric bikes are wonderful. The Village has to get more and better bike lanes for electric bikes.
- Stanford University has miles of bike paths where no cars are allowed. That would be great.
- Northern CA is way ahead of us because they have a public-owned utility. SDGE is not a public-owned utility.
- State law that says new buildings have to have solar, but there is a minimum of four panels. The law says more panels can be added, but then there has to be a whole new system. The systems are expensive. Solar panels are coming down in price, why are the systems going up in price?
- The utility company has a power plant in Carlsbad. It would be great if the utility company could manage solar repairs for city.
- The city declared a climate emergency three months ago. Let's act like it.
- It would be great to have an electric trolley (e.g., Charlotte, NC).
- There could be incentives for electric cars. Anyone who buys within city would get a rebate from the city.
- I tell people this is the best place in the world to retire because we have unlimited volunteer opportunities. Maybe we could use those resources better if they were better organized or advertised.

- There's this piece of property on corner of Poinsettia and Avenida Encinas. I'd like it to be part of the trails. I can't get anyone to let me in to clean the trash up. It's a nice piece of property with trees. The people own it, and we should be able to use it.
- I'm very interested in environmental sustainability. I've learned a lot through the city. I think the city is doing a good job training. I like that they're offering rain barrels and classes. Some of the training could be done online or maybe through social media.
- Is the composting working like Encinitas? I have a composting bin from years ago, but the worms are all dried up.
- We do an induction hot plate program. Every third Saturday, will give an induction hot plate to use. It is on the city website.
- Oceanside has a beach erosion program where they'll be adding jetties. Carlsbad said they didn't want to, but they should reconsider it.
- Lagoons need to be dredged on a regular basis to stay healthy. We should be dredging the lagoons more often.
- We were the first city to require water pump water heaters. The ordinance expires in 2023, so it needs to be renewed.
- Carlsbad has a lot of businesses involved in new technology. Maybe they could be involved in making some of this tech more efficient (e.g. solar panels).
- How about retrofitting all municipal buildings with solar panels?
- Ordinances need deadlines, otherwise they have no teeth.
- I love the diversity of Carlsbad.
- One community member said she would not want to give up her gas stove and barbecue.
- All homes should have battery storage. The city should have battery storage, too.
- We shouldn't be relying on massive grids to rely electricity anymore. We should be thinking about mini grids. With the state of the country, I just think it's the way to go. With everyone getting on the internet, they (e.g., some kind of terrorist) could shut down the whole thing.
- About the new garbage rules – maybe the city can provide a special bin to homeowners for raw meat.

Five years from now, how will you know this has been successful?

- Learning how to count GHG emissions. We have to know how to measure. We don't really know how bad the emissions are.

What will be different?

- It will be easier to breathe, especially for people with breathing disorders.
- Making GHG emissions zero in five years. We have the money and resources to fix it.
- Asking for things like electric garbage trucks.
- All city vehicles are slowly going to electric. Replace all city vehicles and make them electric.

What will stay the same?

- I like that Carlsbad is a walkable community. Many cities around here are extremely hilly, and Carlsbad is not. People are always outside here.
- I'm blown away by all of the things the government is doing, like traffic. The planners did an amazing job here (e.g., wide streets).

Environmental sustainability / Climate Action Plan

What would you like us to consider as we are creating this plan?

- No more gas lines being built by developers in new communities or homes. I want this put into the CAP. I have just electrified my home. I have asthma and I need to be careful of gases in the air. It's an important thing for people that have breathing problems to not have gas leaks. Homes should be retrofitted (e.g., changing out water heaters and stoves). Nitrous oxide from methane gas is really terrible for you.
- Emissions from airport don't count in the CAP, but they should. We're in too far of a dire straits situation for that to continue. Airports and gas stations are exempt. There is methane gas coming off of the airport.
- How do we fix that? Should we have airplanes fly over the ocean?
- Put into the CAP: all government buildings have solar panels. Community solar for people who can't have panels on their homes.

What questions does this raise for you?

- What are we planning to do with the funds from Community Choice Energy?

What challenges would these kinds of changes face?

- Will the city have enough electricity to support the new electric vehicles, etc.?
- Will we have enough storage for the electricity we generate all summer long?
- Who will maintain solar panels if we retrofit municipal buildings? Maybe city staff can do it.

City Council 5-Year Strategic Plan
Feb. 1, 2022, Workshop Notes

Breakout room name: Environmental sustainability (Group 2)
Number of participants total: 7

What would you like the City Council to consider when it comes to Environmental Sustainability?

Solar Storage
I would like the city to find out what neighborhoods have SDG&E wiring for solar storage capabilities and which do not. This is regarding the CPUC proposed decision regarding electricity rates and the push regarding solar to provide equity and to have solar customers go to storage batteries. Does the program funnel profit to utilities or go to underserved communities. Excellent idea to move to storage batteries. SDG&E indicated that the older part of La Costa neighborhood does not have sufficient availability to support solar storage. Each home would have to pay for wiring. This presents a financial burden to each household.

Natural Gas/methane – One resident not in favor of a ban, others in favor of building electrification and no gas hookups
We've been told that natural gas is a clean fossil fuel, but I'm seeing a trend to push natural gas aside in favor of electric and solar. This concerns me because the USA has a large natural gas reserve. If we outlaw natural gas in homes, we are more vulnerable to global issues.

When we say natural gas, it refers to methane. This would be an educational talking point.

Can you educate the community about solar heat pumps? Southern California is a good climate for a heat pump to reduce natural gas. Electric hot water heater. Carlsbad could consider efficiencies of scale for sustainable heating in developments. (Katie mentioned that there is a suite of requirements for new developments currently.)

Solar Outreach, Education and Promotion
Long time resident, moved into mother's home. Father was on planning commission and mentor to Mayor Matt. I understand Carlsbad has to grow. I have an electric car, and would like to put in solar panels. I would like Carlsbad to have a program for businesses/residents to encourage solar energy. It would be helpful to have an education program to help residents work with SDG&E, etc. The older residents in our community may need a little more help with this. Could the city create a program to bring solar to businesses and residents. Maybe there are a couple solar companies to work with and offer a rebate program of discount using the clout of the city to bring this type of energy to homes/cars/businesses.

There could be a bulk purchase option for solar like they have in Palo Alto.

What are some of the key issues or challenges the city should focus on?
Sustainability
Would like the city to consider transitioning to sustainable vehicles and buildings. The city has the capability of being a leader in a lot of areas and has started transitioning buildings, etc. to minimize greenhouse gas emissions.

Outreach Ideas to reach the community
Several residents would like to see more community outreach related to how residents can be sustainable. Both live and online combination would be fantastic. City Manager Update, email, direct mail. Older people may not view websites and social media as much.

Program idea: Try and buy electric cars, landscaping tools: It would be nice if the city hosted a program where you could see and interact with electric vehicles and/or electric blowers, etc. You could do this at festivals, fairs. We also like Zoom and online options.

Youth ambassador program idea for schools and students on sustainability topics could be effective to help educate the community. Recycling, dog waste, chemical waste, electric batteries and vehicles, etc. could be good topics.

Idea: Land responsibility initiative to educate young people in schools and make it socially responsible not to litter, etc. This could be through the parks department.

Alternative to HHW disposal program
Hazardous waste cabinet: In Palo Alto, they have a program where residents can bring extra paint, etc. and the city inspects and it and makes it available to the community.

Organics Waste Recycling
More outreach about new organic waste recycling.

Open space
Preserving open space, particularly Ponto. If something becomes available, we should do a good faith effort if something becomes available, to be able to respond quickly. Is there a way to do preemptive support to see if we can purchase more expensive land so we don't lose out on it?

We should be proactive in acquiring open land. Ponto is a good example of where the city should do this.

Clean Air
Would like to see clean air programs. I live in La Costa, and we can smell the smoke from restaurants that hangs in the air. In the Bay Area, they have "Spare the air" days where folks can schedule when to take public transportation, non-polluting activities.

Water
As the city moves forward with developments, consider water reclamation when building.

Composting program
Excellent example of the city pushing out information to residents and getting people involved. This is a great program.

Plastic waste
We should do more to keep plastic out of our oceans. Reduce, reuse and recycle should be incorporated into everything the city it doing.

Litter, trash, dog waste in open space/parks/beaches
Visitors and crowds leave debris, trash and dog waste. Would like to see more being done about it.

Transportation choices
We should continue giving people options other than cars. We can build on these programs: Shuttles to downtown, bicycle support/bike racks, safe bike lanes and safe routes to schools.

Carlsbad advertises money to bring tourists to the area. Let's get people to come to the city on the bus. Let's engage people to learn how wonderful it is to get around on public transit.

Energy audits is a good program.

Five years from now, how will you know this has been successful?

It would look like less waste, trash, dog waste, pesticides and chemicals making their way into the water.

Emissions and exhaust
I would like to see Carlsbad phase out two stroke engines for blowers, mowers, landscaping tools. In 5 years, it would be great for this to be phased out.

This is also an equity issue where making electric blowers, tools are accessible to the community at everyone's price point. A rebate program or subsidy would be good to help people transition.

Environmental sustainability / Climate Action Plan

What would you like us to consider as we are creating this plan?
Transportation choices: We should continue giving people options other than cars. We can build on these programs: Shuttles to downtown, bicycle support/bike racks, safe bike lanes and safe routes to schools. Trolleys would be helpful to get people around.

I like that we don't have rideshare vehicles littering our streets (scooters, bicycles, etc.) These items have become litter/trash in the communities. The idea is good, the execution is horrid. I like that Carlsbad's ordinance prevents this.

Tree canopy cover and planting trees in the right location to shade buildings, paths, should be included in the Climate Action Plan. We should make sure the trees are appropriate to our climate and not pollen heavy. We did not like a previous city program where a tree was put in resident's yards, but residents had no control over the type of tree.

City Council 5-Year Strategic Plan
Feb. 1, 2022, Workshop Notes

Breakout room name: **Natural Environment (Group 1)**
Number of participants total: **11 (not including City staff)**

What would you like the City Council to consider when it comes to the natural environment?

- The oceans and lagoons are precious resources
- Access to the ocean brings in tourism and money – hotels, restaurants, etc. The visitors to the city keep our economy going
- Lagoons are important for oceanic health
- Concern about dogs in parks
    - Talked to surfers who mention that after rainstorms, the ocean has unhealthy levels of dog runoff
    - Some people don't follow rules about dogs on lower beach – dogs leave droppings
    - CA is encouraging birds to build nests along the coast – if they see dogs, they might be discouraged to nest in the area
    - If something could be done about dogs, that would be great – asking for a "creative solution"
    - Off leash dogs can be hazardous
    - Consider creating sections for dogs in parks
- Concern about protecting natural environment and live side by side with natural environment
- Preserves and connections between preserves are important
- 60-acre city land could be used to expand native habitat along the coast w/hiking and biking trails
- How is Carlsbad committing to the 30x30 initiative? – 30% of land being saved by 2030
    - As the city is developing, how are we preserving land?
- Concerns about state mandates and how the City is responding to population growth
- Protecting breeding grounds for birds and other native species
- 1980s Carlsbad commitment to open space has gotten lost over time. Adopting conservation protocols and wants our City to step up as leaders in the region for environmental protection.
- Plan how to preserve and protect lagoons and wetlands as a priceless resources
- Strategies for sea level rise and protecting wetlands
- Protect land and quality of life for future generations
- Consider purchasing Ponto – can the City forward fund or forward approve these expenditures? Give it serious consideration based on community input and price.
- Continue to focus on natural environment and open spaces – leave habitat natural and don't develop with landscaped parks.

- Focus on historical and interpretive signage – information about the history, Native American residents, and environmental education about the flora and fauna of the region
- Enforcement in parks – keeping bikes off foot trails and natural habitats
- Raise public awareness of natural habitat and environmental impact. Volunteers in parks dept can do a nature walk in Calavera or nature talk at low tide at tidepools – engage the community in caring about our environment
- Parking along the beach – add QR codes to parking meters so visitors/residents can view open spaces. Make the most of technology
- Sandy beaches – public education and advocacy

What are some of the key issues or challenges the city should focus on?

- Manage recreation in wildlife habitats – striking a balance between recreation and preservation
- How sea level rise and climate change impact our natural resources
- Degradation of Calavera Highlands Ecological Preserve due to recreation in the area
- Advocacy and leadership in the region to promote preservation
- Provide education for new and prospective residents about the natural habitat in the region, not just the beach
- Funding commitment – shortfall in regional funding sources. Recognizing the need of securing funding on many levels.
- Acquiring land when it's available and have the secured funding to do so
- Rely on NGOs and volunteers to assist with supporting the City mission

What will be different?

- Amount of natural open space will increase
- City funding allocated to connect open spaces and acquire natural habitat
- Population of sensitive species will increase
- All children able to interact with nature in a meaningful way, esp. areas with multifamily housing and apartments (require developers to include parks)

What will stay the same?

- No loss of endangered plants and species – ex: threadleaf rhodea

City Council 5-Year Strategic Plan
Feb. 1, 2022, Workshop Notes

Breakout room name: **Natural Environment (Group 2)**
Number of participants total: **4**

What would you like the City Council to consider when it comes to the natural environment?

- When the city makes decisions, I would like more visibility of what the decisions are and more communication as things progress. E.g. decisions about Veterans Park, when it will be done, how it will open up? Other examples:
    - The bridge being built at Cannon and El Camino. We have no idea what's being built there and why.
    - Retail near Robertson's Ranch. What is going on with that? Nothing is happening and it would be nice to have that will all of those houses nearby.
    - Sportspark plans near Robertson's ranch (near Fire Station 3). What is the status and when is it slated to be done?
    - More visibility might look like…. communication about these things via email, open city council meetings, a Carlsbad newspaper.
- I think the parks are maintained really well, I love that we have the opportunity to garden and I like the natural spaces that have the opportunity for habitat. I also love the classes that the city offers. I would like to see the city encourage planting of native plants. As we are developing new homes, retail, etc. we should encourage planting native plants. By planting more native plants in our yards and in the community, we can provide habitats to different animals that we are displacing with development.
- I like the idea of natural environments and connecting natural habitats/corridors.
- We have a lot of trails, but let's not think that we have done all that we can do with trails in the city.
- It would be nice to have a policy that neighborhoods, developments and private areas have to follow related to trees – planting and taking down trees, e.g. plant 2 for every one removed.
- I would like see a concerted effort to see more areas with trails. Whenever there is a new development, include plans to connect trails through those new communities.
- Keep the lagoons free of all of the unnatural plants. I have noticed a lot of reeds growing, especially in the Buena Vista lagoon that are not natural and blocking the water flow. The lagoons seem to have less and less water all the time. We need to save the lagoons because they make Carlsbad special.
- When I first started living in Carlsbad, there was a notion that development would be focused on east of El Camino Real. But I am noticing lots of development in the Village now. We need more housing and can't close the door to development but how can we do so in a way that is kind to our community? Ideas include building more multi-family homes and not single-family homes, taking down buildings we already have and replacing rather than encroaching into natural places. If they made new development

more cohesive (e.g. more city control over the architecture) then maybe we would like the development a bit more.
- I am here because I am interested in what's going on in the city. There is so much change – buildings being torn down, lots of housing, condos, apartments and townhouses going up.
- I am wondering what will happen when the power plant comes down, what will that look like, what will go in its place?
- I am worried about what parking will be like in Carlsbad with multi family structures being built. It is not bad now, but worried about that this will change with more development.

What are some of the key issues or challenges the city should focus on?

- Setting aside/finding money/funding for these efforts (trails, open space, lagoon preservation).
- Education – educate people about natural environment, native plants – if we could educate people about native plants and that there are attractive options, this might help overcome some people's reluctance to planting native.
- City's "plant palette" – share this out more. I just discovered this and think it would be good for others to learn about what plantings are endorsed and recommended by the city.
- I don't know how they would go about removing the unnatural reeds in the lagoon. It is impeding the water flow like dams. Want to preserve the lagoons and prevent people from being able to build on land surrounding lagoons as they become smaller and smaller.
- It is challenging for residents to know who has authority over different things. How can we be a part of the multi levels of government with protecting the lagoons? Can we have help knowing who to contact – state, federal and other to share our input on protecting the lagoons? How we can be more effective advocates?

Five years from now, how will you know this has been successful?

What will be different?

- More trails and more parks. Continuity of trails throughout the city. Every kind of trails, variety – no specific preference for trail type. It would be nice to have a trail that goes around Agua Hedionda Lagoon.
- Native plantings in more places.

What will stay the same?

- Open space that we have will remain open. Preserve what we have.

- Lots of open space remaining – not every spot has houses built on it. We have all these canyons and open space, I hope that those will stay open.
- My perfect vision is to keep it as natural as possible, stop over development, stop paving and building over open space.

City Council 5-Year Strategic Plan
Feb. 1, 2022, Workshop Notes

Breakout room name: **Carlsbad's coastline (Group 1)**
Number of participants total: **~25**

What would you like the City Council to consider when it comes to Carlsbad's coastline?

- Protection of the bluffs and what we have left. The beach is narrow, low tide gives us beach, but if we need to shore that up, hope the coast can be protected from boulders, or like Terramar to protect the erosion.
- Erosion - protect it. Keep it as natural as possible.
- Don't want to pave paradise and put up a parking lot
- Don't want to see a big parking lot
- Erosion is a threat to coastline
- Concern – if merging, overlook this area, two to four lanes? Big concern because we already have a lot of traffic noise. Resident of Solamar.
- Traffic noise is a concern
- Open space would be similar to Terramar Bluffs - warm water bluffs
- Minimal concrete
- What has the city committed to for the grant? What do we need to do take advantage of that money? Tied to commitments?
- No parking lot
- No development
- Concern - preserve the natural beauty – includes visuals and what we hear.
- Live in Solamar- walk along oceanfront and no sidewalk. Close to southbound traffic lanes.
- All traffic disturbs enjoyment of walkway
- Reduce traffic
- Could have 4 lanes, thinks of Leucadia Boulevard. Naturally encourages people to slow traffic with curbs and turns in the road.
- Access – community access. Many access points from Cannon to Campland, if you have 4 solid lanes of traffic that will prevent people from enjoying coastline.
- Nice access points
- Near Kelly Elementary – what I love is the beauty. Can't stop at the beach but enjoy it regularly by driving past it. No obstructions like in Encinitas with all the buildings along the coastline.
- No buildings, no development, no restaurant to obstruct the view.
- Already have the Village – don't have need to develop another area
- Make it a park, with benches like La Jolla with pavilion picnic areas along the cliffs
- Smooth paths for rollerblading and biking

- Keep it a park and no buildings obstructing the view
- This is why I love Carlsbad - these meetings. Thanks for putting this on.
- Never go down to two lanes. Slow down traffic but going down from four to two lanes, we'll learn a hard way.
- Not much traffic now, but once things pick up again, rude awakening for 101 if it goes down to two lanes.
- Before the I-5 was built, the 101 was so congested.
- Widening the I-5 freeway, but going down one lane on Carlsbad Boulevard will bottleneck on a Friday or Saturday.
- Keep it beautiful, slow it down, but don't go down to two lanes
- Concern – live at Poinsettia, is the development. We love coastlines. This is the beauty-access to beaches for free.
- Active physically – run through the coastline and want to still have the access.
- Problematic areas- cycling, running, cars. Would love to see we represent our city values to provide safety for all who enjoy in whatever way we travel.
- Median through - crossing safely from one side to another
- Main importance – no over development. No more restaurants or hotels to block that.
- More green space and access, less parking spaces
- Keep it an open and natural space so we can all enjoy what Carlsbad offers
- Other north cities don't offer this. Del Mar, La Jolla- all buildings.
- Embrace open natural beauty for all residents in the city
- Concern with the bluffs, not much beach. What happens with erosion then whole park thing is gone.
- It'll be more like walkway, not like a park.
- Walkways and patches of grass along the walkway – spent so much money and then it's gone from erosion.
- Not happy with going down to two lanes on 101 – nightmare.
- Not have any shopping centers. No hotel, Starbucks, buildings to block view
- Great to drive on coast highway to see ocean. Get out to walk.
- Don't want to get out around buildings
- Taking away beauty of Carlsbad if you have to go around buildings
- One lane on each side not good either – bottleneck.
- Parking lot creates exhaust for people there
- We're a destination. Between the Village and channelers, the Hilton, Cape Rey and 60 acre piece, there's no commerce. No interest to Vigilucci's. Dated. Have to go all the way down to Chandler's to go to a restaurant. Could be cool to get a couple of restaurants and more revenue options.
- More things to do for us locals
- We're known for R&R- restaurants and dining cool to give thought or opportunity
- Oceanside to San Diego coastline – so little coastal drive. We're the fortunate benefactors to still have that. That's what separates us from Santa Monicas, Del Reys of the world.

- No development, no linear park, we don't need it.
- Enough time hard to get cars through that strip of traffic
- Need to manage traffic on that strip and leave it alone
- Shouldn't be developing that property – that's it.
- Don't want to see any shops along coastline – it's such a unique part of Carlsbad. go inland
- Our natural beauty of coast is irreplaceable
- Not for moving highway
- Look at Ponto Park instead of linear park
- Should stay the way it is
- Concern – the beach. The sand that has evaporated. Is that part of plan to revive beach along this southern stretch?
- Concern – bike suicide lanes. Any plans should have bike safety considered to make lanes not a hazard to the bikers, let alone drivers.
- Won't ride a bike along this street not, it's suicide.
- Solamar- let's keep what we have with open views of ocean and bluffs.
- Fix bluffs and access to the beach – steps down to the beach whether it's at Solamar drive or paths that have been created.
- Can't believe were talking about moving 101 to the left.
- Save our money, because if climate change is real, have to save that money. Rename it the 101. If you drive down 101, see turnarounds. Epic. Old school epic- walk down to the beach and hang out. Can't do this anywhere else, been here since the 80s. Park at Ponto along the sand.
- How to make that U-Turn doable at La Costa. Fix the light.
- Destroying view of 101, cannot get that elsewhere. Greatest thing to do with daughter who can't get to the beach, is parking and seeing view of ocean.
- If too loud, reduce lanes in some areas.
- Don't waste money to put restaurant and buildings up after moving lanes.
- Historic 101. Don't need to knock down.
- If concerned about climate change, move asphalt – whole beach to use
- Don't understand need to move road.
- Erosion
- Have to help save what we have left.
- There's this town of Cambria – wooden deck that's pretty. Raise the platforms so people don't climb down the cliffs. Pretty ways to give walking areas. Bridge over traveled waters.
- Bridge if there's erosion instead of moving it.
- Considering giving space to State Parks? For more camping areas and recreation. Day use lot? Enable access across.
- Any estimates to protect the bluffs from further erosion?
- Wouldn't money factor into what you can and cannot do?

What are some of the key issues or challenges the city should focus on?

- Addition to making this a park space, linear park space, make sure we're being careful. Not too much access for additional homeless in this area and cause safety concerns.
- In other towns where you get close access to the beach, there's a park specifically there, it's harder to manage homelessness there.
- As things can and may get worse in years to come, make sure we are prepared to not make it more challenging. Will attract more homeless with a park.
    - Mission beach, Venice, Santa Monica – concerns for homeless at beaches.

Five years from now, how will you know this has been successful?

What will be different?

- Safety for pedestrians and bikers

Carlsbad's Coastline
What do you enjoy most about the coast today?

- Open space.
- Don't overbuild
- Nature
- Don't want to see over development
- Make it even better - not reducing traffic lanes
- Focus on Ponto Park – not shoving linear park when it's there. We know what we want.
- Preserved – any expenditure is through government grant? Not coming from taxpayers.
- Paid for by federal government
- Radio control airspace flyer- fly in dead center – Dave's Beach – little beach – fly radio controlled planes that are gliders, no noise – peaceful – entertaining
    - That has a long history in Carlsbad since 1940s
    - Hate to see that go away like other flying sites that have gone away
- Stand out as close as possible along coast to fly planes
- Ok with improving Carlsbad Boulevard, but this site maintained by a park, or a sponsored glider park. Strip of this park radio control activity. Glider only (no powered with sound)
- Retail down below with condos are a NO.
- Love to see changes but want to keep it Carlsbad.
- Keep 101 as it is. Want Ponto Park. Needs to be a real 6-8-10 acre park,
- Sit down on the grass, picnic blanket and don't have to be right by the cars whizzing by
- Southwest Carlsbad deserves a park. Prefer quiet, peaceful.
- Don't want hotels, restaurants.
- Up 101 – there's the ocean. Felt like driving by, actually going to the beach. Don't cover it up or make it harder to get to.

- No actual access to the beach from the car, from turnaround to Ponto. Great to have a lot to park, or easy way to get family down to the beach like a walk, so you can get down to campground beaches. Like San Elijo campgrounds and beaches.
- What I enjoy most – biking. Trips from Orange County to San Diego – first time done ride on bike and when I got to Carlsbad and Terramar, like wow, this is beauty. Favorite part of the entire road.
- I drive 101 as much as I can to avoid the 1-5 or El Camino. Make it a point to drive the coast to see the ocean without getting out of the car, not always get out or bike.
- Live by the coast – drive by.
- Drive up and down the 101 – my wife and I did that almost every day during COVID. It was an outlet that was priceless. That's the key - maintain that visibility of the beach and ocean.
- Improve the access to the beach. Make the beach a beach. It's a challenge, but part of the cost to reinvigorate the beach to enjoy it once we get down there.
- Radio controlled gliders present at that location
- I like the highway how it is – two lanes in each direction. The city should concentrate on reinforcing the cliffs to make sure erosion stops, keep natural beauty. There is nothing else like it.
- That drive is so beautiful- even for people, I can do nothing but drive. Love that drive. Nice to be able to do that and see coastline. Don't change.
- Nothing – whole idea of pristine view.
- No development – no services. Leave it as is.
- Open space.
- Keep the Village the Village. Don't develop.
- If you're going to develop the coast, make it nice. Not four-story buildings – hideous.
- Open space – nothing to distract.

City Council 5-Year Strategic Plan
Feb. 1, 2022, Workshop Notes

Breakout room name: **Carlsbad Coastline (Group 2)**
Number of participants total: **~25**

What would you like the City Council to consider when it comes to the Carlsbad's Coastline?

- This section of the city's coastline provides the most opportunity to do something very special.
- The city has been studying this area for too long, need more beach parking, more beach access, an Oceanview restaurant and coffee shops, better separated bike trails, more facilities along the beach like restrooms
- Preserve environmentally sensitive habitat areas along wetlands, lagoons, etc.
- Love the coast and enjoy walking there
- Need dog friendly walking paths and dog friendly beaches
- The existing coastline is gorgeous but is in need of updating and better facilities for recreational users
- Sidewalks need fixing by Solara and fences are not attractive
- Would prefer to maintain natural vegetation as much as possible, balance with whatever the proposed development may be.
- Excited about the opportunity for commerce – besides the Village there are no other areas with waterfront dining, and shopping.
- Existing restaurants are dated so it would be very refreshing to have new fine dining restaurants here.
- Need to preserve open space, provide parks with ocean vistas/views
- Preserving the open space would create a unique destination as the majority of the SoCal coastline is completely developed.
- Loves the idea of bike lanes, used to ride a lot but doesn't feel comfortable biking near high speed roadways like Carlsbad Blvd. Wants separated bike lanes or bike trails.
- Need a dog friendly beach
- Open stretch of coastline is a unique resource and needs to be preserved. If developed it would ruin the future of the coastline and the most beautiful location in the city.
- The coastline as it is a jewel. Loves the sense of tranquility that the current open spaces provides. It's a delicate coastline. If we are truly concerned about sea level rise why would we want to develop it?
- Agrees that this stretch of coastline needs to be preserved
- Coming from Huntington Beach which is very overdeveloped and afraid South Carlsbad Blvd will become developed.
- Would prefer any development to be placed on the east side of Carlsbad Blvd to maintain an unobstructed view of the coastline.

- E-bike user that doesn't feel safe biking on Carlsbad Blvd. Recommends a bike trail that they can enjoy and feel safe riding at lower speeds.
- Would like the council to consider the impacts of sea level rise before making any plans
- Recommends we look at the results of the adaptation study by Scripps. Should look at the 2050 Horizon year for sea level rise estimates. Wants full disclosure of the cost and potential impacts due to sea level rise.
- Concerned with additional traffic congestion and vehicle emissions which may be created by new development and congestion from bringing Carlsbad Blvd. down to a single lane
- Lived here 30 years. Hilton to Island Way is the jewel in the crown of the coastline. The water is breathtaking. Please do not put any development here, must preserve the open space the way it is. It's the only open coastline left in Carlsbad.
- Love's to hear everyone's excitement about open space. Agree that open space must be maintained.
- Southwest Carlsbad is the jewel of the city. Everything should be done to preserve this space.
- Concerned about development being proposed here such as the Ponto hotel. This will impact coastal access, views, and bring more traffic.
- Want a linear park along the coastline and it's vital to preserve the open space.
- Agreed that the open space must be maintained.
- Consider sea level rise in any proposal
- If new development is proposed, this will impact traffic significantly.
- Agreement that open space should be maintained. Leave the coastline alone. Our coastline is a precious resource that should be maintained but it should not be developed.
- Disappointed with the development going on in the Village, does not want this level of density at S. Carlsbad Blvd.
- Does not want Carlsbad to become a Huntington Beach which is overdeveloped and congested.
- Surprised that the survey includes an option for development of new businesses or hotels at all. Why are these uses even needed? The open space should be maintained and not developed.
- Want a place to ride a bicycle that is safe, to take in nature and recuperate and enjoy the open spaces along the coastline.

What are some of the key issues or challenges the city should focus on?

- Does the land include the campsite? A: No the project area only includes the city right-of-way or city owned parcels, area west of the fence at the campgrounds.
- Issues are that the area needs to be left open and sidewalks/walking areas need to be repaired and maintained better
- Development is an issue. There are plenty of other areas in the city where people can go to find good businesses, i.e. Village, inland areas, etc… The coastline should be preserved and kept natural for recreational purposes only.
- In agreement with everything everyone is saying about preservation

- Hwy 101 acts as a parallel / alternative route to I-5. Concerned with narrowing Carlsbad Blvd. to single lane each direction when I-5 is congested. It's a beautiful scenic drive.
- Parking is an issue. Parking spillover into residential neighborhoods along the coast is a concern.
- Biggest issue is adhering to the general plan, maintaining the right balance of open space is key
- Need safer bike and walking trails
- Need better connections to the Lagoon trails and surrounding recreational uses
- Keeping the open space is necessary
- Better bicycle and pedestrian access may address the parking problem
- Lack of adequate facilities such as bathrooms, showers, etc.
- Want it to be a linear park, travel way for people walking, biking, etc.
- Interested in the area being left as open space. No shopping, businesses, small concession stand for food.
- Parking should be on the furthest east side, this would preserve views
- Not adequate beach access for surfers, swimmers, beach goers. Need ADA compliant ramps, stairs to the beach.
- Unanimous- no businesses along the coastline, preserve the open space. Sufficient amount in the Village and other areas
- Need more seating, eating/picnic areas, space for recreation.
- Development would threaten this valuable and rare resource.
- Want dogs on the beach and trails. Currently no good areas for dogs to enjoy the coastline in Carlsbad.
- Dogs are less impactful than humans in terms of trash being left on the beach, traffic, etc..
- Homeless population may impact the beach, don't have a solution but homeless should be addressed as part of any proposal for the coastline area.
- Seems like development is approved too quickly. Aesthetics should be considered more when approving structures along the coastline.
- Concerned that projects are being approved that don't actually reflect the renderings that are reviewed at the Planning Commission / City Council
- Believes the residents should be considered more than business interest
- Maybe its ok to have a little less tax income and have a better quality of like
- Changing Carlsbad Blvd to one lane each way would be a disaster. I-5 is a parallel route that when congested spills over to Carlsbad Blvd.
- While open space is important. Need something to fund (tax income) the recreational / park amenities that everyone wants with things such as new land uses.
- Need designated sources for providing the funding for maintenance
- Surf culture needs to be considered and it needs to be easily accessible beaches for surf access
- Timeshares provide a tremendous amount of tax don't need any new development for more tax revenues
- Very much against having more the Village like development along the coastline
- Bike lanes and walking conditions are currently unsafe
- Want some type of educational and recreational component

- Very sensitive to runners, strollers being in the bike lane, need separate space for people biking and walking.
- Caution us to not replicate the separated bike facilities in Cardiff where there are too many conflicts with bikes and people walking along the coastline
- Need a route specifically for e-bikes. Need to consider how to safely accommodate different users including pedestrians walking, joggers, manual bikes, and higher speed e-bikes... where do they all go? All users need to be considered in any plans.

Five years from now, how will you know this has been successful?

What will be different?

- We will have much better access for people walking, biking, e-bikes, surfing, and people just enjoying the beach.
- More people using the beach, on bikes, walking, and surfing in the area.

What will stay the same?

- Maintain the open space, views, clean beach and natural resources
- Open space is such a unique part of the coastline and it must be maintained

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Breakout room name: **Keeping Our Community Safe (Group 1)**
Number of participants total: **12**

What would you like the City Council to consider when it comes to keeping our community safe?

- Fire and police do a great job, resident for 30 yrs
- More traffic concern and parking
- Traffic; need to complete Cannon and College missing links both for safety standpoint
- Great employer in Carlsbad but people have to go home and have to drive all over the place
- Have to complete traffic flow
- Downtown 1pm lunch parking; parking has gotten to the point where the city needs to come up with a parking plan to increase parking structures downtown
- The more we develop downtown the more people will leave their cars downtown
- Beach parking could never get a spot but paid parking at Tamarac regulates the parking
- Homelessness as far as council is concerned problem isn't addressed; homeless that don't want help causing problems in village and wants council to address that problem
- Gentleman walking down state street screaming at the top of his lungs talking to himself very frightening
- Cops CPD and firefighters are incredible
- CPD ensuring public safety is great hats off to great job that you guys do
- Thank you for the ebike safety presentation and materials that you guys have been putting out
- Thank you for educating parents about the dangers of ebikes
- We are experiencing resurfacing in different areas at drop off times for schools and creates huge traffic congestion magnolia, valley, and Carlsbad high; if city can communicate withy contractors on when appropriate time is to do the work
- Mental health and homeless issues – example of Be Well OC facility to help folks; overwhelmingly homelessness has become a key word but forgetting they're individuals that need to be met where they are in their struggle and wondering what the city is going to do to help homeless population and related crime
- Thank you for participating and leading this feedback and outreach for the community you guys are doing an excellent job
- Ebikes grown exponentially in city and with that growth has come a lot of traffic and minors trying to navigate the roads and creating a traffic issues and personal safety issue not sure they have the education they would need to interact with an automobile
- Come up with a plan with how you're going to educate, register, enforce laws for minors operating ebikes in city

- Has to be accountability at the parent level, if that's financial or otherwise, because can't leave it to the kids to be responsible; had two near missed where the child didn't know how close they came to being significantly harmed
- I've seen children collide with cars and then keep going, not stopping and not acknowledging that that was an accident; need education that there's a penal code
- Or even confiscate the bike and bring the kid home in a cruiser; I think there has to be more accountability; what we're doing as a community doesn't seem to be working
- New resident, coming for a few years; the amount of homelessness is incredibly more and noticed other towns around here don't have as much homelessness; scary at night walking down the street at night or during the day; people don't have the same sense of control as others
- The sidewalks are horribly dirty to the extent have to look down to see where you're walking
- Having clean streets helps reduce the amount of homelessness because if you're dirty then it's fine to be dirty
- Lighting at night can help reduce homeless
- In Manhattan, a police officer walking downtown at all times
- People passed out under benches; no officers in sight; people hesitate to call police cause just don't know that person's situation
- Clean up the town
- As far as parking, in the Village Fair it's really hard to get parking; has changed a lot in last three years
- Above ground parking structure would change the character so much
- Shuttles with parking farther away or concierge parking or underground parking so it doesn't ruin the village architecture
- Against a parking structure; free shuttles from outside area
- Friend with a guy that sleeps in the bushes and at night there's no police presence; we need the homeless team
- Moved here from Santa Cruz and they had a parking structure that you couldn't even walk into because is was so bad and inhabited by so many homeless
- Sometime last year city funded officers on bikes to patrol the Village and I think we saw one bike officer within a few weeks after that was funded and haven't seen any officers on foot or bikes since then; would like to know where the police dept is on that
- City Council support legislation on definition of danger to oneself or to the public that allows law enforcement to remove someone that is not that high of a definition
- Cities like Monterey; parking structures can be done tastefully like a two story at the train station or behind the buildings in the village
- We need a legitimate police substation in the Village and also a fire station on the west side of I-5
- I see Carlsbad trucks and cars all the time and if they see something they should say something; people in bushes on the rail trail doing something inappropriate I won't say what; I got to the end of the trail where a public works employee was and asked him to check on it and said he wouldn't do it and that's not his job; report when they see an incident or a homeless person or someone in trouble

- There are areas in the Village we know where the encampments are and those areas need to be addressed maybe three or four times a day; I don't think citizens should be the ones calling
- We do have a magnet program the church that feeds the homeless program; is there someone from the homeless team at every feeding? I never see anyone from HOT there
- I feel for you Christie because there are items in place like Prop 47 that prevent you from doing your job; I think some of this is the frustrations we're feeling in the Village area is a direct result of tying hands of law enforcement
- I think it is just terrible that PD placed in that terrible position and I support you 100% and I hope there are recruits that wants to sign up to help with homelessness in Carlsbad like what OC has done
- There's also going to be an issue with parking; subterranean parking is the way to go
- I appreciate all the work you're doing after hours to listen to the people of Carlsbad; we appreciate you and what you do
- Prop 47 detrimental to public safety; 100% on board with getting rid of that
- Homeless people do not stay in one city; traffic between where they can get services so my suggestion is that we continue to grow the regional approach to homelessness; severely mentally ill, really work on that piece for more longer term care; I think we have to, as a community, work with other like communities who are experiencing the same thing and go to our legislators that we want the mentally ill off our streets for longer than 72 hours

What are some of the key issues or challenges the city should focus on?

- We have a problem with our kids about vaping; if I go down with my wife and I see people vaping I want to hold my breath; it is dangerous to people
- There is such a thing a second hand smoke; laws regarding smoking in public areas; need to protect public from second hand vaping; protect from narcotics in the smoke
- I would hope the city addresses vaping in condensed areas like the Village
- Homeless travelers, transient population in the city; my wife and I swim every morning at 5:30 am; on Armada this past Thursday morning, we counted 4 motor homes and 12 automobiles sleeping overnight on Armada; on Saturday morning we counted 6 motorhomes and 17 cars occupied with people sleeping on the streets at 5:30 am
- The last attempt by the city to address this problem, people sleeping on streets would be given a hotel room and social workers would move them; if that's happening at all that's happening on a limited basis
- I know of at least six other places where people are sleeping in the streets in Carlsbad; whatever we are doing now is not effective
- Encinitas seems to be addressing this a little more practically; a safe parking lot established for specific hours; it is monitored by the police and it is a safe place for people to be with no place left to go
- People see Carlsbad is a place for free living; I would like to live on Armada Drive for free wouldn't you; vehicles parked there for weeks or months at a time completely undisturbed and will only get worse as word spreads that Carlsbad is the place to come for a free vacation and the worst that can happen to you is a free hotel room

- At least two cases I know where only in jail for one night and then released to the streets the next day
- Does oversized vehicles exclude people living in their cars? Cause that seems to be its own problem
- What is the time limit for parking on the street? Also for everyone to understand that a lot of this comes from Sacramento and I feel in my heart so desperately for you cause you can't do what you signed up to do; it's really about what the citizens initiatives have done and Sacramento so thank you Christie and your whole team and CPD for what you're doing to mitigate today
- Whether it's an RV, a car or a tent, we have to address the situation; we do not have the resources in north county to do what we need to do but we can get there

Five years from now, how will you know this has been successful?

What will be different?

- The population along our coastline and our beaches is going to increase drastically
- Observing population growth along the beaches; seeing 25,000 people on our beaches on an ordinary Sunday; that population is going to increase and we still have very limited facilities to deal with people management; where are they going to park and use the bathroom
- Not the level of sanitation facilities that we need; have no idea how we're going to go about managing that many people
- The beaches are eroding away
- Decrease substantially the criminal homeless element and those that are severely mentally ill and the veteran homeless optimistically
- State requirements on housing going to increase density in Carlsbad severely; all the issues with parking and traffic going to increase
- We do have a density issue in Carlsbad; when I look at the buses, there are two or three people on the busses; SANDAG has a completely different idea
- I am a mom and we need to be able to go to Costco and stock up
- We have this challenge or opportunity moving forward so this is a wonderful place to voice our opinions on how we want to see Carlsbad moving forward
- Grateful for planning commission
- Very concerned for what Sacramento is doing to our beautiful community; they have the power to effect negative or positive change for Carlsbad
- If we can lower the trains that is a safety issue as well; I support that; and for the noise reduction

City Council 5-Year Strategic Plan
Feb. 1, 2022, Workshop Notes

Breakout room name: Keeping our Community Safe (Group 2)
Number of participants total: 5

What would you like the City Council to consider when it comes to Keeping our community safe?

- Community member lives in barrio and is concerned about Windsor Point, the one that is not for Veterans. Doesn't feel this location is a great place to house persons with mental illness. She would like to see the population change to senior low income living due to not having mental health and behavioral health staff on site 24/7. Beef up restrictions to include taking medication, etc., she understands that there maybe uneasiness as a person gets stabilized. Please consider the impact on neighboring residents. Mental health staffing should be on site 24/7. Curious as to what type of security will be provided? Concerned security can't make people take their meds and not commit crime.

- City Staff: Strict rules as possible for the residents. Security on site. Social work and Behavioral health are there M-F. Security will be on site to enforce the rules of the complex.

- Another community member was interested in overall safety, and wished there was a 3-digit number to text for non-emergencies. She was provided the non-emergency number and told that there is no wait and the same dispatchers that answer 911 would also answer the non-emergency calls.

- Community member often calls for police response to activity in the barrio and she doesn't want to be asked if the person is homeless. She doesn't think it's important and she is unable to tell at night.

- Called 4 times, and the officers never showed up. Was asked for specifics and PD offered follow-up on her calls, but she declined.

- The SPIDR survey (used by PD) miscommunicates timeframes for CFS delay causing the reporting party to believe that officers have extreme delay or won't be responding at all.

- Traffic is an issue in the barrio. Roosevelt, Madison (wants to stop signs), Harding isn't too bad because of the parks. Take away some of the red curbs for parking.

- Please upgrading crosswalks and red curbs to make them more visible. Zebra type crosswalks like the one at Jefferson/Madison.

- Public servants do a great job (fire/police). Working really hard on the homeless population, but would like more enforcement, education for e-bikes. Children and not understanding the laws and the level of damage they can do to themselves if they are not obeying the laws.

- Can the city council do anything to make education mandatory for e-bike riders?

- Kids are oblivious when riding their e-bikes. Motorist have to be cautious as well. Separated bike lanes, with poles or bawlers, especially on PCH.

- Homeless shifting and moving into different locations. Increase in crime, but not attributing that to the homeless. Is concerned to walk around the village due to aggressive transients. No easy solutions, huge problem. Can't offer any reasonable solution, understands that it is an issue.

Other notes

- Windsor Point: There are concerns about security and mental health staffing not being 24/7. Can council consider more funding to keep directed staff onsite 24/7.
- Traffic safety in the barrio area: There is a lot of traffic on Roosevelt, Madison and Harding. Perhaps the city council can consider more stop signs, upgrading the crosswalks to make them bigger and more visible and upgrading the red curbs.
- E-bike safety: Concerned about children riding recklessly throughout the city. Can city council provide mandatory education and also think about sectioning bike lanes with poles or bawler?
- General homelessness: Brief overview was provided on what the Homeless Outreach Team does daily. Can the city council fund more housing for the homeless and also think about bringing in tiny homes.
- General increase in crime and what is contributing to this. We discussed the current laws and effects of the pandemic on housing in jails.

Questions

What does the Homeless Outreach Team do daily? (Brief overview provided).

- Staff provided information on housing and bed space. Windsor space 24 units for mentally ill homeless persons. How do we fund and where do we house them?

Are we aware of tiny homes like the ones they built in LA?

- 30 will be going in in the city of Chula Vista.

City Council 5-Year Strategic Plan
Feb. 1, 2022, Workshop Notes

Breakout room name: **Other Topics**
Number of participants total: **1**

What would you like the City Council to consider when it comes to other topics that are important to you that were not listed in one of the other breakout groups?

- Interested in economics of Carlsbad, supporting & reinvesting in a vibrant economic ecosystem.
- Small, medium and large businesses create an ecosystem of wealth that stays in Carlsbad.
- Investing in economic infrastructure that Carlsbad has.
- Identify how city promotes an environment of regulations that are easily navigated.
- Policies that create a climate to promote business creation.
- Bring businesses to Carlsbad and create economic infrastructure so Carlsbad is self-supporting.
- Promote the creation of small business ownership and the equity in the community it creates. Find ways to make sure wealth that is created is enjoyed by our residents. Investments in our community for our community.
- Identify ways to promote Carlsbad and attract quality investments and attention?
- Be sure to continue to promote accessibility and mobility services for those that choose to age in place in Carlsbad.

Appendix E – Additional Comments

Includes all additional comments that were received.

Rincon Band of Luiseño Indians
CULTURAL RESOURCES DEPARTMENT

One Government Center Lane | Valley Center | CA 92082
(760) 749-1092 | Fax: (760) 749-8901 | rincon-nsn.gov

June 22, 2022

Sent via email: Katie.Hentrich@carlsbadca.gov
City of Carlsbad
Katie Hentrich
Climate Action Plan Administrator
1635 Faraday Ave.
Carlsbad, CA 92008

Re: Carlsbad Climate action Plan Update

Dear Ms. Hentrich:

This letter is written on behalf of the Rincon Band of Luiseño Indians ("Rincon Band" or "Tribe"), a federally recognized Indian Tribe and sovereign government. We have received your notification regarding the above-mentioned project and we request consultation to assess potential impacts to cultural resources. The identified location is within the Traditional Use Area (TUA) of the Luiseño people and within the Rincon Band's specific Area of Historic Interest (AHI). As such, the Rincon Band is traditionally and culturally affiliated to the project area.

The Rincon Band is dedicated to managing environmental concerns within our reservation boundaries. As our Traditional Use Area (TUA) is mainly outside of our reservation boundaries, it is critical for the Rincon Band to be involved in the protection of our cultural, including cultural natural, resources within our TUA. From the publically available information, the Tribe understands that this is a policy-based document to reflect new greenhouse gas reduction strategies.

The Tribe has the following comments and concerns regarding the Climate Action Plan Update:

 How are Tribal Cultural Resources that could be impacted by pollution/climate change being identified? It is critical to consider the exposure of our Tribe's archeological sites and assets to climate impacts such as flooding to ensure their continued protection and preservation. The Band would like the City to consider climate effects and how cultural sites may be vulnerable based on their locations and characteristics. Tribal cultural resources on a low-lying area near water bodies, for example, may be at risk of flooding or sea level rise impacts, which may temporarily or permanently inundate sites, impede access, and corrode certain materials. More frequent and intense rainfall may inundate areas near rivers and streams that were previously outside flood risk zones.

Furthermore, traditional gathering places for traditional food sources, basket materials, and other natural resources are mostly outside our reservation boundaries. It is crucial, that impacts to such resources due to pollution and climate change are being assessed and that management plans are being developed, to ensure subsidence of and access to such resources.

 How will the City create partnerships with local Tribes to identify culturally-relevant resources, educate about clean energy programs, ensure collaborative efforts for habitat management and reforestation?

 How will Tribal Traditional Knowledge be incorporated as a vital part of climate initiatives to assess cultural-use plants, foods, habitats, and animals?

 How will the City identify how pollution and climate changes will affect foods that play a critical role in the Tribe's community and their culture;

 How will the City establish reporting systems to distribute information regarding potential impacts to these resources to the Tribes? Habitat restoration and reforestation should be conducted in consultation with local Tribes.

 How will the City protect undeveloped areas to provide conditions for intact ecosystems?

We ask to be notified and involved in the entire environmental review process for the entirety of the project's duration. Please also include the Rincon Band on all distribution lists for environmental document reviews, consultations, circulation of public documents, and notices for public hearings and scheduled approvals. Also, we understand that the Climate Action Plan Update might not be the regulatory document for some of these concerns, and if there are other regulations and guidelines that these issues can be addressed with, we would like to learn how the Tribe can consult on such documents.

If you have additional questions or concerns, please do not hesitate to contact our office at your convenience at (760) 749 1092 ext. 323 or via electronic mail at cmadrigal@rincon-nsn.gov. Thank you for the opportunity to protect and preserve our cultural assets.

Sincerely,

Cheryl Madrigal
Tribal Historic Preservation Officer
Cultural Resources Manager

Appendix F – Interim Outreach Activities

The following is a list of events that city staff attended to for Climate Action Plan Update outreach activities during the interim period between Phase I and Phase II, October 2022 to October 2023.

Table A-2. Interim Outreach Acitivities for the Climate Action Plan Update

Date	Time	Location	District	Type of Event	Host / Partner
October 20, 2022	5-7 pm	Faraday	2	Citizen's Academy	City-sponsored event
November 6, 2022	all day	Village	1	Carlsbad Village Street Faire	Carlsbad Chamber of Commerce
December 10, 2022	10-11 am	Batiquitos Lagoon Foundation	4	Presentation	Batiquitos Lagoon Foundation
January 22, 2023	8:30-9:30 am	S. Ponto Beach parking lot	4	Tabling during king tides	Batiquitos Lagoon Foundation & Sierra Club
February 23, 2023	5 pm start	Faraday	2	Presentation to Growth Management Committee	City committee
March 4, 2023	10 am - 1 pm	Dove Library	3	Fix-it clinic	City-sponsored event
April 1, 2023	10 am - 1 pm	Cole Library	1	Fix-it clinic	City-sponsored event
April 8, 2023	10 am - 1 pm	Poinsettia Park	3	Eggstravaganza	City-sponsored event
April 15, 2023	9 am - 1 pm	Pine Park	1	Earth Day	City-sponsored event
April 18, 2023	11:30 am - 12 pm	online	all	Earth Week Lunch and Learn	City-sponsored event
May 7, 2023	all day	Village	1	Carlsbad Village Street Faire	Carlsbad Chamber of Commerce
August 26, 2023	10 am - 2 pm	Library Learning Center	1	Library Learning Center Anniversary	City-sponsored event
October 5, 2023	5-7 pm	Faraday	2	Citizen's Academy	City-sponsored event
October 10, 2023	7:30-8:30 am	online	all	Presentation to Green Business Committee	Carlsbad Chamber of Commerce

Appendix G – Overview of proposed actions to reduce greenhouse gas emissions in Carlsbad (Phase II)

The English and Spanish versions of the document produced by the city to provide details to stakeholders about the proposed GHG reduction measures and actions for the Climate Action Plan Update are included in the subsequent pages.

Climate Action Plan *Update*

Sustainable Carlsbad

Overview of proposed actions to reduce greenhouse gas emissions in Carlsbad

To support California's ambitious emissions reduction goals, in 2015, the City of Carlsbad was one of the first cities in the county to adopt a Climate Action Plan that outlined strategies and policies to reduce greenhouse gas emissions in a measurable way.

Climate action plans are comprehensive roadmaps that outline the specific activities that a government agency will undertake to reduce greenhouse gas emissions. Climate action plans generally focus on those activities that can achieve the relatively greatest emission reductions in the most cost-effective manner. These plans typically include:

- Specific city-sponsored initiatives and actions that the city controls directly, such as operations at city buildings and the types of cars in the city's fleet.
- Policies to direct, guide or influence actions of third parties, such as a requirement to recycle food scraps and energy efficiency standards for new building construction.

State laws

California's Assembly Bill 32, known as the Global Warming Solutions Act of 2006, was the first program in the country to take a comprehensive, long-term approach to addressing climate change.

Senate Bill 32, passed in 2016, expands upon Assembly Bill 32 and requires a reduction in greenhouse gas emissions of at least 40% below the 1990 levels by 2030 and, via **Assembly Bill 1279**, passed in 2022, a long-term requirement to reduce greenhouse gas emissions at least 85% below 1990 levels by 2045.

Why is the city updating its Climate Action Plan?

Since 2015, state targets have been updated, and we have more current information about the amount of GHG emissions generated by different sources in Carlsbad. This is called our "GHG inventory."

What are greenhouse gas emissions?

Gases that trap heat in the atmosphere are often called "greenhouse gases," or GHGs. Burning fossil fuels generate greenhouse gas emissions, like carbon dioxide and methane, which contribute to climate change. The major GHGs that are being emitted into the atmosphere include:

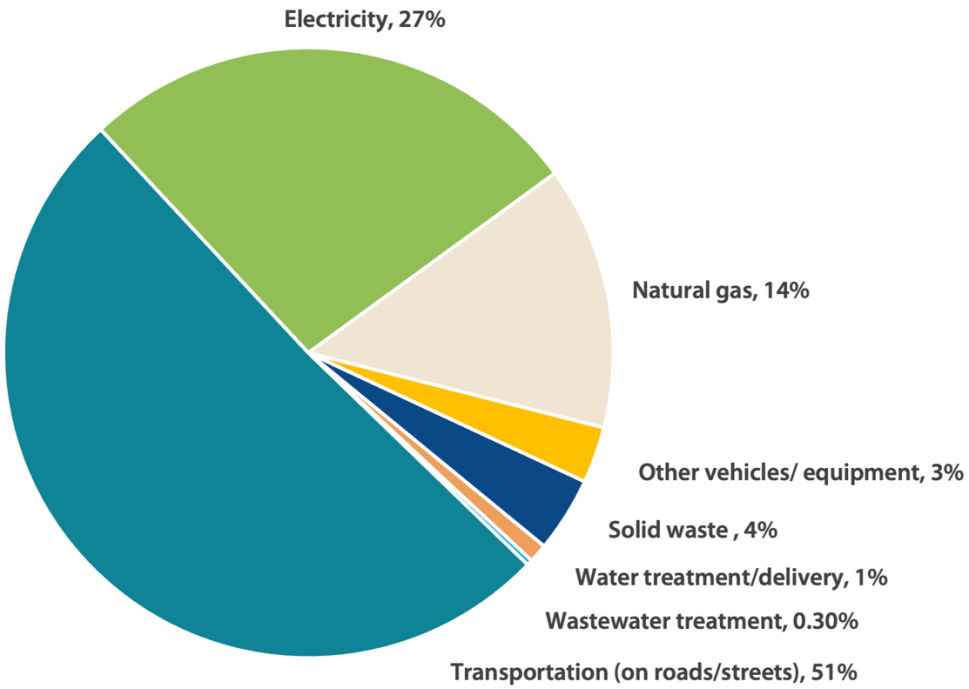
Carbon dioxide (CO_2)
Methane (CH_4)
Nitrous oxide (N_2O)
Hydrofluorocarbons (HFCs)
Perfluorocarbons (PFCs)
Sulfur hexafluoride (SF_6)
Nitrogen trifluoride (NF_3)

How are GHGs generated?

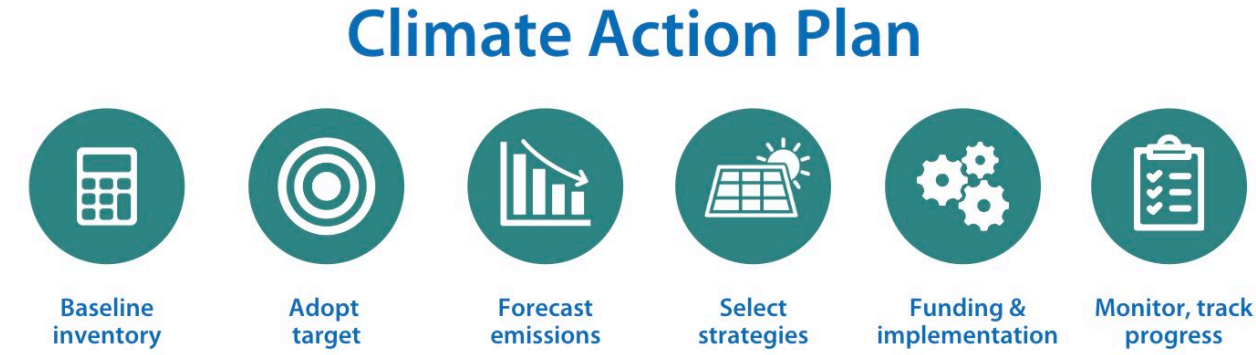
Greenhouse gas emissions typically come from the following actions:

- The operation of city offices, community centers, libraries and other buildings
- Energy to operate streetlights and traffic signals
- Energy required to pump water to homes and businesses
- Energy required to pump wastewater from homes and businesses to the treatment plant, plus the energy to treat and dispose of the wastewater
- Vehicles, such as fire trucks, police cars, utility trucks and cars
- Equipment like bulldozers, skip loaders and excavators
- Power generation for homes and businesses
- Energy needed to collect and process trash, recycling, and organics

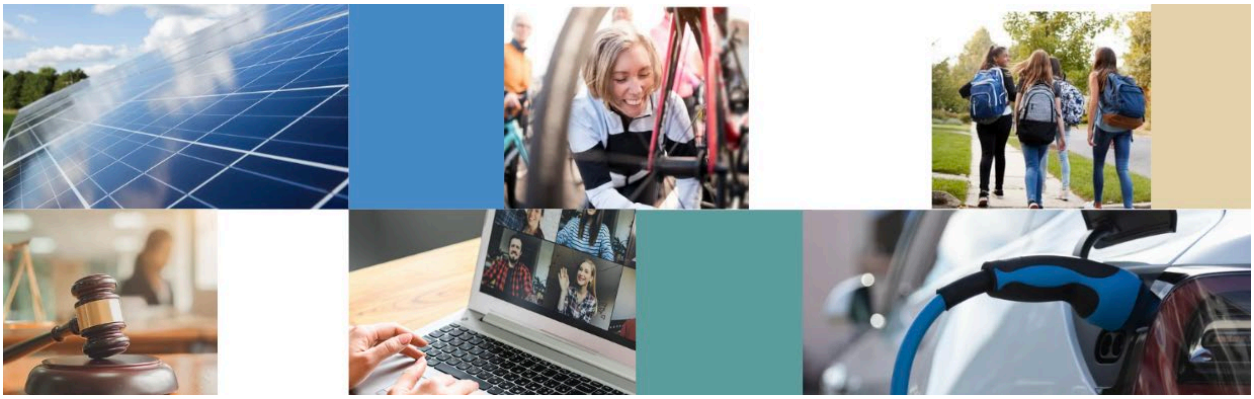
Sources of GHGs in Carlsbad



Energy Policy Initiatives Center, University of San Diego, 2023



Proposed actions



In early 2022, the city asked the public to shape the Climate Action Plan Update by providing input on environmental sustainability needs and priorities. This public input was used to help develop the proposed actions to reduce greenhouse gas emissions. These actions are described on the following pages, including:

- Projected GHG reductions
- Measures of success
- Data to be used
- Related benefits
- Timeframe
- Equity considerations

Wastewater/Wastewater System Improvements

Actions
Continue making improvements to the City of Carlsbad's collection system, including but not limited to upgrading lift stations

Supporting actions
Update the city's Wastewater Master Plan

Explore system improvements based on the updated Wastewater Master Plan

GHG reduction
2035 59 metric tons
2045 0 metric tons

How will we measure success?
Energy usage at wastewater facilities

Reduce wastewater collection energy intensity 10% by 2035 and supply lift stations with 100% renewable/carbon free electricity from Clean Energy Alliance

Data to be used
Wastewater energy/usage data

What other benefits do these actions provide?
Improved water quality in our oceans and lagoons.

Timeframe
Ongoing

Equity considerations
Promote rebate or incentive programs (e.g., multi-family, low-income)

Water System Improvements

Actions

Continue making improvements to the Carlsbad Municipal Water District's potable and recycled water systems, including but not limited to upgrading recycled water pumps, expanding use of recycled water, and using renewable energy to power facilities

Supporting actions

Continue to explore local water supply options and assess feasibility and cost to benefit ratio

Assess feasibility and seek funding for renewable energy and/or storage at Carlsbad Municipal Water District facilities

GHG reduction

2035 1,516 metric tons
2045 1,583 metric tons

How will we measure success?

Water usage/energy data

Achieve the active and passive water conservation described in 2020 UWMP (2,295 AF within CMWD service area and 2,981 AF within the entire city by 2035)

Supply recycled water pump stations with 100% renewable/carbon free electricity from Clean Energy Alliance

Data to be used

Water usage/energy data; water demand projections

What other benefits do these actions provide?

Improved water quality in our oceans and lagoons.

Timeframe

Ongoing

Equity considerations

Promote rebate or incentive programs (e.g., multi-family, low-income)

Renewable Energy at Municipal Facilities

Actions

Increase percentage of renewable electricity purchased for existing city facilities and street and safety lighting to 100%

Have 100% renewable electricity be the default for new city facilities

Eliminate natural gas use from city facilities

Supporting actions

Coordinate with the city's energy suppliers on the purchase of 100% renewable electricity (e.g., "Green Impact" level from Clean Energy Alliance)

Continue certifying city facilities in the Carlsbad Green Business Program to incorporate as many sustainable activities as possible

Leverage local and regional partnerships and seek funding to support identified energy efficiency upgrades

Upgrade all street and safety lighting to more energy efficient options

GHG reduction

2035 396 metric tons
2045 386 metric tons

How will we measure success?

Clean Energy Alliance opt-up date (estimated 2025); natural gas phase-out date

Data to be used

of facilities on 100% renewable electricity

# of street and safety lights on 100% renewable electricity

What other benefits do these actions provide?

Reduced energy usage

Timeframe

Long-term

Equity considerations

Establish additional city facilities as "cool zones" using social, economic, and environmental data

Support high-road green job growth

Community Choice Energy

Actions
Continue the participation in the Clean Energy Alliance Community Choice Energy program

Supporting actions
Explore the purchase of renewable energy credits if Community Choice Energy program is not reaching 2035 goal

Support promotion of Clean Energy Alliance's customer programs and encourage CEA customers to participate

Set 100% renewable electricity (e.g., "Green Impact") as the default option for customers

GHG reduction
2035 17,110 metric tons
2045 0 metric tons

How will we measure success?
CEA participation rates; # of customers at 100%

100% renewable electricity (CEA Green Impact) as the default CEA option

Data to be used
CEA participation rates

# of customers at 100% renewable

# of customers that opt down below 100% renewable

What other benefits do these actions provide?
Reduced energy usage

Timeframe
Ongoing

Equity considerations
Promote Clean Energy Alliance's customer programs

Nonresidential Building Energy Efficiency and Renewable Energy

Actions

Continue implementing existing building energy efficiency and water heater ordinances (adopted in 2019)

Update city's building code, or "reach code", with energy efficiency and renewable energy requirements in non-residential buildings (new construction + additions/ alterations over a certain threshold)

*GHG emissions reduced by 2035 and 2045 only assumes implementation of Primary Action 1

Supporting actions

Analyze feasibility of eligible sites for renewable energy infrastructure across all city facilities, leveraging any preexisting analyses that are applicable

Assess feasibility of installing solar panels over parking spots at city facilities

Seek grant funding for installation of renewable energy infrastructure at existing and new city facilities (e.g., solar, battery storage, microgrids)

GHG reduction

2035 770 metric tons
2045 1,296 metric tons

How will we measure success?

Reach code update adopted

# of buildings that reach code update would apply to

Data to be used

and size of projects installed

Energy usage of projects s (e.g., kWH)
Building permit data applicable to reach code (# of buildings, sq. ft. of building spaces, etc.)

What other benefits do these actions provide?

Reduced energy usage

Timeframe

Ongoing

Equity considerations

Support high-road green job growth

Residential Building Energy Efficiency and Renewable Energy

Actions

Continue implementing existing building energy efficiency and water heater ordinances (adopted in 2019)

Update city's building code, or "reach code", with energy efficiency and renewable energy requirements in residential buildings (new construction + additions / alterations over a certain threshold

Supporting actions

Explore updating the Home Energy Score Assessment Program

Leverage Clean Energy Alliance and SDG&E customer programs, or other similar programs

Explore pilot programs and incentives to educate residents on energy efficiency and renewable energy options for new and existing buildings

GHG reduction

2035 3,212 metric tons
2045 3,710 metric tons

How will we measure success?

Reach code update adopted

# of buildings (single-family and multi-family homes) and # of water heaters that reach code update would apply to

Data to be used

Building permit data applicable to reach code

What other benefits do these actions provide?

Reduced energy usage

Timeframe

Ongoing

Equity considerations

Explore new pilot phase for Home Energy Score Assessment Program to provide free scores to low-income, multi-family, seniors, etc.

Support high-road green job growth

Design new pilot programs or incentives to target low-income, multifamily, seniors, etc.

Building Energy Benchmarking

Actions
Develop, adopt, and implement a building energy benchmarking ordinance

Supporting actions
Prepare a building stock analysis

Explore options and best practices for requiring existing commercial and residential buildings of a certain size to submit energy data annually

Conduct education and outreach to building owners and the public regarding new requirements

---

GHG reduction
2035 4,308 metric tons
2045 7,358 metric tons

How will we measure success?
of buildings within ordinance requirements

Building square footage within ordinance requirements

Data to be used
Benchmarking data submitted via Portfolio Manager

What other benefits do these actions provide?
Reduced energy usage

Timeframe
Medium-term

Equity considerations
Design program to be “equity first”, leveraging existing resources from other jurisdictions (e.g., City of Seattle, City of Denver, City of Minneapolis)

Decarbonize Existing Buildings

Actions

Reduce energy usage in existing residential buildings, particularly existing residential buildings not covered by any reach code requirements

Supporting actions

Explore updating the Home Energy Score Assessment Program

Leverage Clean Energy Alliance and SDG&E customer programs, or other similar programs

Seek external funding to launch and/or leverage existing pilot programs and incentives to support existing building decarbonization (e.g., appliance exchange, weatherization, solar PV installation, battery storage)

Leverage building stock analysis (prepared for E-5) to target existing buildings

GHG reduction

2035 22,356 metric tons
2045 44,305 metric tons

How will we measure success?

Reduce 30% natural gas use from existing buildings (equivalent to electrifying 12,000 homes, or approximately 25% of the housing units in 2045)

Data to be used

of homes participating in programs; # of homes fully or partially electrified; reduction in natural gas use at homes participating in programs; residential energy usage data from utility providers

What other benefits do these actions provide?

Reduced energy use; improved air quality; improved public health; increased local green jobs

Timeframe

Long-term

Equity considerations

Target outreach and incentives for multifamily, low-income, seniors, etc.; explore new pilot phase for Home Energy Score Assessment Program to provide free scores to low-income, multi-family, seniors, etc.

Solid Waste and Organic Waste Diversion

Actions

Reduce waste disposal to 4.2 pounds per person per day (or the equivalent of a 75% diversion rate) by 2035 and thereafter

Divert 75% organic waste (85% from residential and 15% from commercial) by 2035 and thereafter

Supporting actions

Research ordinance for requirement of a percentage of disposal for organic waste

Encourage maximum organics diversion from local businesses

Establish a Construction & Demolition diversion program

Maximize edible food recovery

Establish a program for permitted haulers for proper diversion of all waste streams

Continue implementing existing Sustainable Materials Management systems and ordinances citywide, including at city facilities and events

Continue implementing existing compost and mulch giveaway programs; explore launching new giveaway programs that target specific users

Update the city's sustainable purchasing policy to include regulatory requirements for sustainable procurement

Pursue vendor contracts to help implement diversion goals and monitor compliance

GHG reduction

2035 31,776 metric tons
2045 37,040 metric tons

How will we measure success?

75% diverted solid waste; 75% diverted organic waste

Data to be used

Disposal of solid waste; tons of edible food recovered; disposal of organic waste

What other benefits do these actions provide?

Reduced waste; increased local green jobs

Timeframe

Ongoing

Equity considerations

Outreach and incentive/rebate programs for multi-family, low-income, seniors, etc.

Traffic Calming & Optimization

Actions
Continue optimizing traffic signals within the city, adjusting as needed as traffic volumes and conditions change, and coordinating along major corridors

Install roundabouts or traffic circles when feasible, utilizing the city's engineering standard for intersection control

Supporting actions
Leverage the Sustainable Mobility Plan and Intersection Control Evaluation engineering standards to determine the location of new roundabouts and traffic circles

GHG reduction
2035 1,334 metric tons
2045 746 metric tons

How will we measure success?
of roundabouts and traffic circles; # of traffic signals optimized

10 roundabouts or traffic circles by 2035

Traffic signals optimized at 20 intersections by 2035

Data to be used
of roundabouts and traffic circles; # of traffic signals optimized

What other benefits do these actions provide?
Reduced waste; increased local green jobs

Timeframe
Ongoing

Equity considerations
Layer social, economic, and environmental data to assess where improvements go

Transportation Demand Management Ordinance

Actions

Continue implementing and enforcing existing Transportation Demand Management ordinance mandating TDM improvements and strategies for non-residential development

Update TDM ordinance to modify existing threshold for compliance (e.g., reducing Average Daily Trips threshold) as well as streamlining of other reporting requirements, as appropriate, by 2045

Supporting actions

Continue surveying businesses, pursuant to the TDM ordinance, to monitor implementation and track compliance

Update TDM strategies as new technology emerges

Educate commuters on alternative commute choices and resources available

GHG reduction

2035 3,254 metric tons
2045 8,533 metric tons

How will we measure success?

Current TDM ordinance metric (40% alternative mode share for new development and 30% for existing development by 2035)

Date ordinance updated

Data to be used

Mode shift for commuters based on TDM surveys; # of businesses involved; updates to TDM Handbook

# of employees of the businesses (new development, existing buildings/tenant improvements)

What other benefits do these actions provide?

Improved air quality; reduced

Timeframe

Ongoing

Equity considerations

Explore creating incentives for implementing TDM plan strategies for community-based organizations

Safe Routes to School

Actions
Continue implementing a Safe Routes to School program to encourage walking and biking to school

Supporting actions
Leverage the city's Sustainable Mobility Plan to determine location-specific improvements

Seek funding to launch Safe Routes to Schools programs at additional school sites

Leverage the Sustainable Mobility Plan to conduct Safe Routes to School-related education and outreach activities at schools throughout the city

GHG reduction
2035 70 metric tons
2045 39 metric tons

How will we measure success?
Mode share at schools with Safe Routes to Schools programs

# of students walk or bike to school at schools with Safe Routes to Schools programs

Data to be used
Mode share counts at program sites; # of students walking or biking to school at program sites

What other benefits do these actions provide?
Enhanced safety; improved public safety

Timeframe
Ongoing

Equity considerations
Layer social, economic, and environmental data to assess where improvements go

Bikeway System Improvements

Actions

Construct 7.9 added miles of bike lanes

Improve 61.2 miles of Class II bike lanes to Class II buffered bike lanes

Continue other bikeway system improvements, as available

Supporting actions

Leverage the city's Sustainable Mobility Plan to determine location of bikeway system improvements and secure bike parking and/or storage

Explore launch of a citywide bikeshare program, such as the City of Encinitas's program

Evaluate the city's Supportive Bicycle Infrastructure, such as adding new bicycle parking at highly used coastal destinations, bike repair stations, and additional bike-related amenities

GHG reduction

2035 566 metric tons
2045 324 metric tons

How will we measure success?

Miles of added bike lanes installed by class; existing bike lanes improved by class

Data to be used

Active Transportation monitoring report for mode share counts; amount of bike lane installed and improved

What other benefits do these actions provide?

Enhanced safety, reduced traffic congestion, improved access to low-cost transportation options, improved public health, improved air quality

Timeframe

Ongoing

Equity considerations

Layer social, economic, and environmental data to assess where improvements go

Pedestrian System Improvements

Actions
Add 60.5 miles of sidewalk

Supporting actions
Utilize the city's Sustainable Mobility Plan and Multimodal Traffic Impact Fee to identify suitable locations for pedestrian system improvements, focusing on creating safer and more user-friendly infrastructure to facilitate ease of use for pedestrians

GHG reduction
2035 547 metric tons
2045 307 metric tons

How will we measure success?
Miles of sidewalk installed; miles of sidewalk improved

Data to be used
Amount of sidewalk installed; amount of sidewalk improved

What other benefits do these actions provide?
Enhanced safety, improved public health, reduced traffic congestion, improved access to low-cost transportation options, enhanced community character, improved air quality

Timeframe
Ongoing

Equity considerations
Layer social, economic, and environmental data to assess where improvements go

Local Transportation Improvements

Actions
Explore local transportation improvements to provide sustainable on-demand, flexible fleet transit and first mile last-mile solutions

Supporting actions
Leverage existing regional transportation plans (e.g., North County Comprehensive Multimodal Corridor Plan) to add or update improvements to the transportation system within
Carlsbad

Leverage the Multimodal Transportation Impact Fee for implementation of local transportation improvements

Coordinate with regional and local agencies and partners on influencing transportation improvements throughout the region and within Carlsbad

GHG reduction
2035 N/A metric tons
2045 N/A metric tons

How will we measure success?
Information from pending MTIF update

Data to be used
Ridership/usage data once local improvements are launched; TBID Circuit program data; AT Monitoring report; annual GMP monitoring program for vehicle traffic volumes

What other benefits do these actions provide?
Improved public health, improved access to low-cost transportation options, improved community character, improved air quality

Timeframe
N/A

Equity considerations
Layer social, economic, and environmental data to assess where improvements go

Municipal Transportation Demand Management Program

Actions
Continue implementing existing telecommute program for eligible city staff

Supporting actions
Establish a comprehensive Transportation Demand Management program for city staff to provide resources and incentives for alternative commutes, such as a carpool matching program for city staff

GHG reduction
2035 92 metric tons
2045 51 metric tons

How will we measure success?
Alternative commute rates; distance traveled

Data to be used
Telecommuting data; other TDM program participation data, if launched; travel distance between home and work for staff who telecommute

What other benefits do these actions provide?
Improved air quality, reduced traffic congestion, improved public health

Timeframe
Ongoing

Equity considerations
N/A

Increase Public Zero Emission Infrastructure

Actions
Increase the number of zero emission miles traveled within the city by installing and incentivizing public zero emission vehicle and bicycle infrastructure

Supporting actions
Seek external funding and/or partnerships for installation of zero emission vehicle and bicycle infrastructure (e.g., Clean Energy Alliance customer programs)

Explore creation of incentive programs for new construction and existing buildings to install zero emission vehicle and bicycle infrastructure beyond building code requirements

Continue education and outreach on zero emission vehicle options and rebates

Update existing Electric Vehicle Siting Plan to incorporate additional sites for zero emission vehicle and bicycle infrastructure, as well as new technologies, expanded zero emission vehicle types, and best practices

Explore employee purchase programs to encourage workplace charging for city staff

GHG reduction
2035 N/A (supporting Advanced Clean Cars II) metric tons
2045 N/A (supporting Advanced Clean Cars II) metric tons

How will we measure success?
of charging stations installed

Data to be used
kWH distributed from public-facing chargers; DMV/CVRP data on # of ZEVs purchased/licensed citywide; # of charging stations installed

What other benefits do these actions provide?
Improved air quality

Timeframe
Ongoing

Equity considerations
Prioritize installation using social, economic, and environmental data

Launch and/or promote incentive or rebate programs to install zero-emission charging infrastructure and/or purchase zero-emission vehicles

Zero Emission City Fleet

Actions

Continue transition and expansion of the city's zero emission fleet

Install zero emission charging infrastructure to support fleet conversion needs

Supporting actions

Establish city fleet regulations for idling

Update fleet conversion plan to include updates to technology, legislation, and other best practices

Research technology options and purchase technology to sustain city fleet operations during emergencies

Transition all passenger fleet vehicle purchases after FY 2022-23 to be electric vehicles, with the exception of public safety vehicle purchases, which will be electric where feasible

Update city policies to encourage use of zero emission vehicles wherever feasible

GHG reduction

2035 1,059 metric tons
2045 592 metric tons

How will we measure success?

Fleet vehicle purchase policies established; # of fleet vehicles transition to zero-emission; total % of fleet that is zero emission

100% of fleet light-duty vehicles and trucks to be zero emission; 100% of fleet heavy duty vehicles to use renewable diesel

Data to be used

of zero-emission fleet vehicles; petroleum fuel reduction; kWH chargers from fleet zero emission charging station

What other benefits do these actions provide?

Improved air quality, improved public health

Timeframe

Ongoing

Equity considerations

N/A

Parking Management Strategies

Actions
Reduce vehicle miles traveled per capita citywide through parking management strategies

Supporting actions
Implement and update city's parking management strategies (e.g., Parking Study and Management Plan, Village and Barrio Master Plan) to encourage alternative modes of transportation throughout the city

GHG reduction
2035 N/A metric tons
2045 N/A metric tons

How will we measure success?
Information from pending Parking Study and Management Plan update

Data to be used
VMT per capita

What other benefits do these actions provide?
Improved air quality, improved public health

Timeframe
Long-term

Equity considerations
Layer social, economic, and environmental data to assess where improvements go

Convert Gas-Powered Leaf Blowers

Actions
Develop, adopt, and implement an ordinance prohibiting the use of gas-powered leaf blowers

Supporting actions
Leverage existing State and regional resources to promote trade-in of existing gas-powered leaf blowers or other similar incentives

Conduct outreach regarding the new requirements

GHG reduction
2035 396 metric tons
2045 386 metric tons

How will we measure success?
Ordinance adopted

Reduce 100% emissions from gas-powered leaf blowers by 2035 and thereafter

Data to be used
Data on # of calls for public usage; # of leaf blowers converted in city equipment

What other benefits do these actions provide?
Reduced energy use, improved public health, improved air quality

Timeframe
Short-term

Equity considerations
Launch and/or promote incentive program for trading out leaf-blowers

Increase Renewable or Alternative Fuel Construction Equipment

Actions
Develop, adopt, and implement an ordinance requiring new developments and significant land moving and construction projects to use electric powered or alternatively fueled construction equipment that reduces 50% of emissions from project construction activities

Supporting actions
Exempt small residential and non-residential projects from this requirement

Conduct outreach regarding new requirements

Seek external funding and leverage existing resources to support conversion of medium and heavy duty vehicles

GHG reduction
2035 4,698 metric tons
2045 15,081 metric tons

How will we measure success?
Ordinance adopted

Reduce 50% emissions from construction activities by 2045

Data to be used
Fuel reduced by construction equipment

What other benefits do these actions provide?
Improved air quality; improved public health

Timeframe
Medium-term

Equity considerations
Support high-road green job growth

Community Forest Management

Actions

Increase city's tree inventory by continuing to implement the Community Forest Management Plan

To help sustain the city's tree inventory, continue replacing trees at a 2:1 ratio

Conduct an inventory to assess urban canopy cover every five years

Supporting actions

Explore additional locations for tree planting beyond what is included in the Community Forest Management Plan, with "right tree right space", ongoing budget, and maintenance costs taken into consideration

Encourage eligible residents to take part in a free street tree planting assessment

GHG reduction

2035 7,536 metric tons
2045 11,984 metric tons

How will we measure success?

of trees added

Add an average 500 new trees to city's tree inventory per year through 2025 (3,500 total trees)

Achieve 32% urban canopy cover, or double the current canopy cover, by 2045

Data to be used

of trees added per year; # of trees replaced per year; citywide tree canopy cover

What other benefits do these actions provide?

Reduced heat island effects, enhanced community character, improved air quality, improved water quality, improved public health, increased natural habitat, improved resilience to climate impacts

Timeframe

Ongoing

Equity considerations

Prioritize tree planting using social, economic, and environmental data

Climate Action Plan Update

Sustainable Carlsbad

Resumen de las acciones propuestas para reducir las emisiones de gases de efecto invernadero en Carlsbad

A efecto de respaldar los ambiciosos objetivos de reducción de emisiones de California, en 2015, la ciudad de Carlsbad fue una de las primeras ciudades del condado en adoptar un Plan de Acción Climática que establece estrategias y normas para reducir las emisiones de gases de efecto invernadero de manera mensurable.

Los Planes de Acción Climática son mapas de trayectoria integrales que describen las actividades específicas que emprenderá una agencia gubernamental para reducir las emisiones de gases de efecto invernadero. Los Planes de Acción Climática generalmente se centran en aquellas actividades que pueden lograr las reducciones de emisiones relativamente superiores con mayor eficiencia de costo. Estos planes normalmente incluyen:

- Iniciativas y acciones específicas patrocinadas por la ciudad controladas por esta directamente, como las operaciones en los edificios de la ciudad y los tipos de automóviles en la flota de la ciudad.
- Normas para dirigir, guiar o influir en acciones de terceros, como el requisito de reciclar restos de comida y los estándares de eficiencia energética para la construcción de nuevos edificios.

Leyes estatales

El Proyecto de Ley 32 de la Asamblea de California, conocido como Ley de Soluciones al Calentamiento Global de 2006, fue el primer programa del país que adoptó un enfoque integral y de largo plazo para abordar el cambio climático.

El Proyecto de Ley del Senado 32, aprobado en 2016, amplía el Proyecto de ley 32 de la Asamblea y requiere una reducción de las emisiones de gases de efecto invernadero de al menos un 40% por debajo de los niveles de 1990 para 2030 y, a través del Proyecto de Ley 1279 de la Asamblea, aprobado en 2022, un requisito a largo plazo para reducir emisiones de gases de efecto invernadero al menos un 85% por debajo de los niveles de 1990 para 2045.

¿Por qué la ciudad actualiza su Plan de Acción Climática?

Desde 2015, se han actualizado los objetivos estatales y tenemos información más actualizada sobre la cantidad de emisiones de GEI generadas por diferentes fuentes en Carlsbad. Esto se llama nuestro "inventario de GEI".

¿Qué son exactamente las emisiones de gases de efecto invernadero?

Los gases que atrapan el calor en la atmósfera con frecuencia se denominan "gases de efecto invernadero" o GEI (o GHG, por sus siglas en inglés). La quema de combustibles fósiles genera emisiones de gases de efecto invernadero, como dióxido de carbono y metano, que contribuyen al cambio climático.

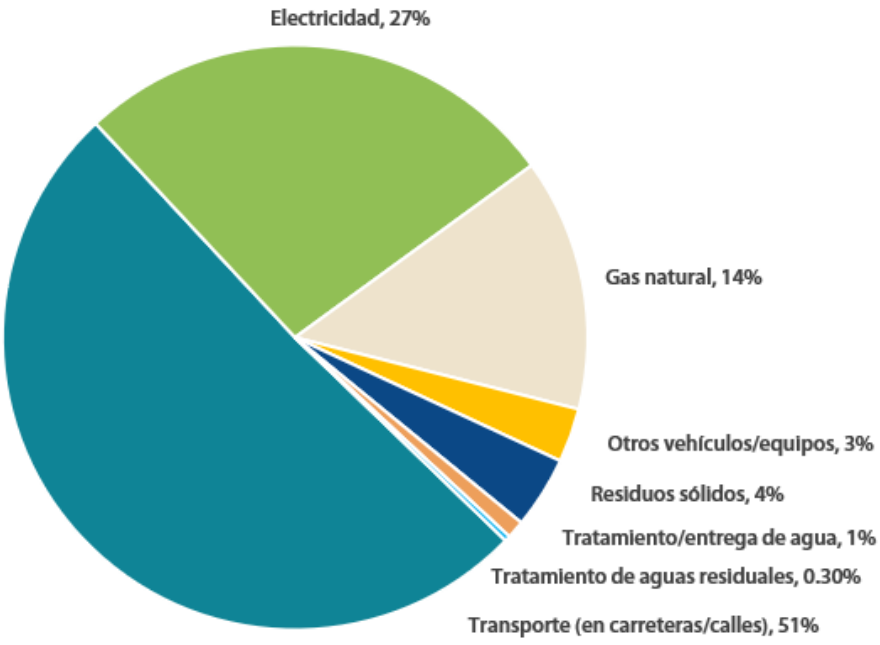
Los principales GEI que se están emitiendo a la atmósfera incluyen:
Dióxido de carbono (CO_2)
Metano (CH_4)
Óxido nitroso (N_2O)
Hidrofluorocarbonos (HFC)
Perfluorocarbonos (PFC)
Hexafluoruro de azufre (SF_6)
Trifluoruro de nitrógeno (NF_3)

¿Cómo se generan los GEI?

Las emisiones de gases de efecto invernadero normalmente provienen de las siguientes acciones:

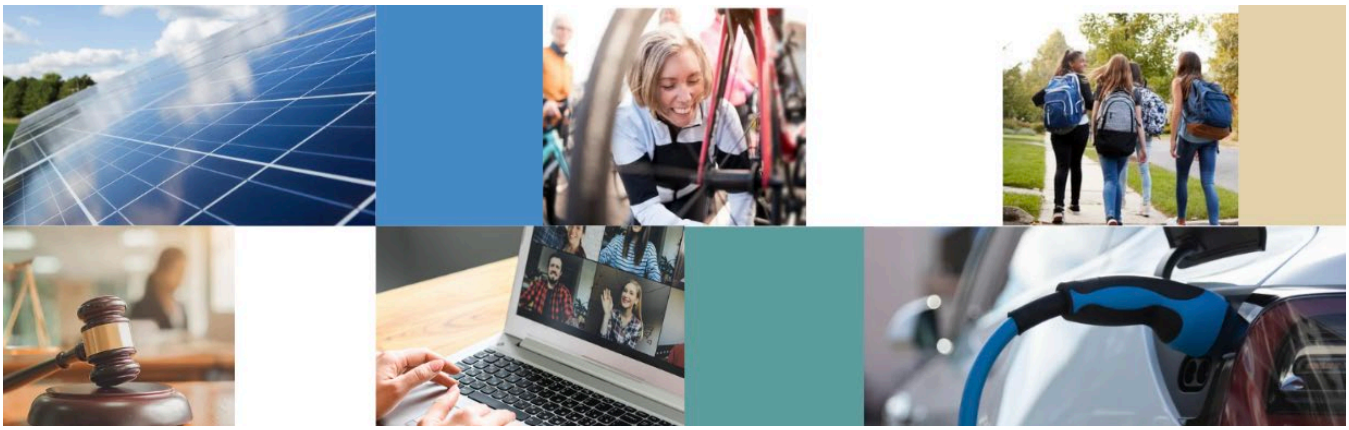
- El funcionamiento de oficinas municipales, centros comunitarios, bibliotecas y otros edificios.
- Energía necesaria para operar alumbrado público y señales de tránsito
- Energía necesaria para bombear agua a hogares y empresas
- Energía necesaria para bombear aguas residuales desde hogares y negocios a la planta de tratamiento residual, más la energía para tratar y eliminar dichas aguas residuales.
- Vehículos, como camiones de bomberos, coches de policía, camiones utilitarios y coches.
- Equipos como *bulldozers*, volquetes y excavadoras.
- Generación de energía para hogares y empresas.
- Energía necesaria para recolectar y procesar basura, reciclaje y materia orgánica.

Fuentes de GEI en Carlsbad



Centro de Iniciativas de Política Energética, Universidad de San Diego, 2023

Acciones propuestas



A principios de 2022, la ciudad pidió al público que ayudara a dar forma a la Actualización del Plan de Acción Climática, brindando información sobre las necesidades y prioridades de sustentabilidad ambiental. Este aporte público se utilizó para ayudar a desarrollar las siguientes acciones propuestas para reducir las emisiones de gases de efecto invernadero.

- Reducciones de GEI proyectadas
- Medidas de éxito
- Datos a utilizar
- Beneficios relacionados
- Periodo de tiempo
- Consideraciones de equidad

Aguas residuales/mejoras al sistema de aguas residuales

Acciones

Continuar realizando mejoras en el sistema de recolección de la ciudad de Carlsbad, incluidas, entre otras, la mejora de las estaciones de bombeo.

Acciones de apoyo

Actualizar el Plan Maestro de Aguas Residuales de la ciudad.

Explorar mejoras al sistema basadas en el Plan Maestro de Aguas Residuales actualizado.

Reducción GEI

2035	59 toneladas métricas
2045	0 toneladas métricas

¿Cómo vamos a medir los logros?

Uso de energía en instalaciones de aguas residuales.

Reducir en un 10% la intensidad energética en la recolección de aguas residuales para 2035 y suministrar a las estaciones de bombeo electricidad 100% renovable/libre de carbono de *Clean Energy Alliance*.

Información a utilizar

Datos de energía/uso de aguas residuales.

¿Qué otros beneficios aportan estas acciones?

Mejora de la calidad del agua en nuestros océanos y lagunas.

Cronograma

En curso.

Consideraciones de equidad

Promover programas de reembolsos o incentivos (por ejemplo, multifamiliares, de bajos ingresos).

Mejoras al sistema de agua

Acciones

Continuar realizando mejoras en los sistemas de agua potable y reciclada del Distrito Municipal de Agua de Carlsbad, incluidas, entre otras, la actualización de las bombas de agua reciclada, la ampliación del uso de agua reciclada y el uso de energía renovable para alimentar las instalaciones.

Acciones de apoyo

Continuar explorando opciones locales de suministro de agua y evaluar la viabilidad y la relación costo-beneficio.

Evaluar la viabilidad y buscar financiación para energía renovable y/o almacenamiento en las instalaciones del Distrito Municipal de Agua de Carlsbad.

Reducción GEI

2035	1,516 toneladas métricas.
2045	1,583 toneladas métricas.

¿Cómo vamos a medir los logros?

Datos de uso de agua/energía

Lograr la conservación activa y pasiva del agua descrita en el UWMP de 2020 (2295 AF dentro del área de servicio de CMWD y 2981 AF dentro de toda la ciudad para 2035).

Suministrar estaciones de bombeo de agua reciclada con electricidad 100% renovable/libre de carbono de *Clean Energy Alliance.*

Información a utilizar

Datos de uso de agua/energía; proyecciones de demanda de agua.

¿Qué otros beneficios aportan estas acciones?

Mejora de la calidad del agua en nuestros océanos y lagunas.

Cronograma

En curso.

Consideraciones de equidad

Promover programas de reembolsos o incentivos (por ejemplo, multifamiliares, de bajos ingresos).

Energías renovables en instalaciones municipales

Acciones

- Aumentar al 100% el porcentaje de electricidad renovable comprada para las instalaciones existentes de la ciudad; así como el alumbrado público y seguridad.
- Hacer que la electricidad 100% renovable sea la opción predeterminada para las nuevas instalaciones de la ciudad.
- Eliminar el uso de gas natural de las instalaciones de la ciudad.

Acciones de apoyo

- Coordinar con los proveedores de energía de la ciudad la compra de electricidad 100% renovable (por ejemplo, nivel de "Impacto Verde" de *Clean Energy Alliance*).
- Continuar certificando instalaciones de la ciudad en el Programa *Green Business* de Carlsbad para incorporar tantas actividades sostenibles como sea posible.
- Colaborar con las asociaciones locales y regionales; y buscar financiación para respaldar las mejoras de eficiencia energética identificadas.
- Actualizar todo el alumbrado público y de seguridad a opciones más eficientes energéticamente.

Reducción GEI

2035	396 toneladas métricas.
2045	386 toneladas métricas.

¿Cómo vamos a medir los logros?

Fecha de adhesión a *Clean Energy Alliance* (estimada para 2025); fecha de eliminación del gas natural.

Información a utilizar

de instalaciones con electricidad 100% renovable.
de alumbrado público y de seguridad con electricidad 100% renovable.

¿Qué otros beneficios aportan estas acciones?

Reducción del consumo de energía.

Cronograma

A largo plazo.

Consideraciones de equidad

Establecer instalaciones urbanas adicionales como "zonas frías" utilizando datos sociales, económicos y ambientales.

Apoyar el crecimiento de empleos verdes de alto nivel.

Energía de elección comunitaria (Community Choice Energy)

Acciones

Continuar la participación en el programa *Community Choice Energy* de *Clean Energy Alliance.*

Acciones de apoyo

Explorar la compra de créditos de energía renovable si el programa *Community Choice Energy* no alcanza la meta para 2035.

Apoyar la promoción de los programas para clientes de *Clean Energy Alliance* y alentar a los clientes de CEA a participar.

Establecer electricidad 100% renovable (por ejemplo, “Impacto verde”) como la opción predeterminada para los clientes.

Reducción GEI

2035	17,110 toneladas métricas.
2045	0 toneladas métricas.

¿Cómo vamos a medir los logros?

Tasas de participación en CEA; # de clientes al 100%.

Electricidad 100% renovable (*CEA Green Impact*) como opción CEA predeterminada.

Información a utilizar

Tasas de participación en CEA.

de clientes 100% renovables.

de clientes que optan por menos de 100% renovable.

¿Qué otros beneficios aportan estas acciones?

Reducción del consumo de energía.

Cronograma

En curso.

Consideraciones de equidad

Promover los programas para clientes de *Clean Energy Alliance.*

Eficiencia energética de edificios no residenciales y energías renovables

Acciones

- Continuar implementando las ordenanzas existentes sobre eficiencia energética de edificios y calentadores de agua (adoptadas en 2019).
- Actualizar el código de construcción de la ciudad, o "código de alcance", con requisitos de eficiencia energética y energía renovable en edificios no residenciales (nuevas construcciones + adiciones/modificaciones por encima de un cierto umbral).
- *La reducción de las emisiones de GEI para 2035 y 2045 solo supone la implementación de la acción primaria 1.

Acciones de apoyo

- Analizar la viabilidad de sitios elegibles para infraestructura de energía renovable en todas las instalaciones de la ciudad, aprovechando cualquier análisis preexistente que resulte aplicable.
- Evaluar la viabilidad de instalar paneles solares en plazas de estacionamiento en las instalaciones de la ciudad.
- Buscar subvenciones para la instalación de infraestructura de energía renovable en instalaciones urbanas nuevas y existentes (por ejemplo, energía solar, almacenamiento de baterías, microrredes).

Reducción GEI

2035	770 toneladas métricas.
2045	1,296 toneladas métricas.

¿Cómo vamos a medir los logros?

- Actualización del código de alcance adoptada.
- El número de edificios a los que se aplicaría la actualización del código de alcance.

Información a utilizar

- # y tamaño de proyectos instalados.
- Uso de energía de los proyectos (p. ej., kWH)
- Datos del permiso de construcción aplicables al código de alcance (nº de edificios, pies cuadrados de espacios de construcción, etc.)

¿Qué otros beneficios aportan estas acciones?

Reducción del consumo de energía.

Cronograma

En curso.

Consideraciones de equidad

Apoyar el crecimiento de empleos verdes de alto nivel.

Eficiencia energética de edificación residencial y energías renovables

Acciones

- Continuar implementando las ordenanzas existentes sobre eficiencia energética de edificios y calentadores de agua (adoptadas en 2019).
- Actualizar el código de construcción de la ciudad, o "código de alcance", con requisitos de eficiencia energética y energía renovable en edificios residenciales (nuevas construcciones + adiciones/modificaciones por encima de un cierto umbral).

Acciones de apoyo

- Explorar la actualización del Programa de evaluación de puntaje de energía del hogar.
- Aprovechar los programas para clientes de *Clean Energy Alliance* y SDG&E, u otros programas similares.
- Explorar programas piloto e incentivos para educar a los residentes sobre eficiencia energética y opciones de energía renovable para edificios nuevos y existentes.

Reducción GEI

2035 3,212 toneladas métricas.
2045 3,710 toneladas métricas.

¿Cómo vamos a medir los logros?

Actualización del código de alcance adoptada

El número de edificios (viviendas unifamiliares y multifamiliares) y el número de calentadores de agua que a los cuales se aplicaría la actualización del código de alcance.

Información a utilizar

Datos del permiso de construcción aplicables al código de alcance.

¿Qué otros beneficios aportan estas acciones?

Reducción del consumo de energía.

Cronograma

En curso.

Consideraciones de equidad

- Explorar una nueva fase piloto para el Programa de Evaluación de Puntuación de Energía del Hogar para proporcionar puntuaciones gratuitas a familias multifamiliares, de bajos ingresos, personas mayores, etcétera.
- Apoyar el crecimiento de empleos verdes de alto nivel.
- Diseñar nuevos programas piloto o incentivos dirigidos a personas de bajos ingresos, multifamiliares, personas mayores, etc

Evaluación comparativa energética de edificios

Acciones

Desarrollar, adoptar e implementar una ordenanza de evaluación comparativa de energía en edificios.

Acciones de apoyo

Preparar un análisis del stock de edificios.

Explorar opciones y mejores prácticas para exigir que los edificios comerciales y residenciales existentes de cierto tamaño presenten anualmente sus datos energéticos.

Llevar a cabo educación y divulgación a los propietarios de edificios y al público sobre los nuevos requisitos.

Reducción GEI

2035	4,308 toneladas métricas.
2045	7,358 toneladas métricas.

¿Cómo vamos a medir los logros?

de edificios dentro de los requisitos de la ordenanza

Metros cuadrados de construcción dentro de los requisitos de la ordenanza.

Información a utilizar

Datos de evaluación comparativa enviados a través del gestor de proyectos (*Portfolio Manager).*

¿Qué otros beneficios aportan estas acciones?

Reducción del consumo de energía.

Cronograma

A mediano plazo.

Consideraciones de equidad

Diseñar el programa para que sea “la equidad primero”, aprovechando los recursos existentes de otras jurisdicciones (por ejemplo, las ciudades de Seattle, Denver y Minneapolis).

Descarbonización de los edificios existentes

Acciones

Reducir el uso de energía en edificios residenciales existentes, particularmente en edificios residenciales existentes que no están cubiertos por ningún requisito del código de alcance.

Acciones de apoyo

- Explorar la actualización del Programa de Evaluación de Puntuación de Energía del Hogar.
- Aprovechar los programas para clientes de *Clean Energy Alliance* y SDG&E, u otros programas similares.
- Buscar financiación externa para lanzar y/o aprovechar programas piloto e incentivos existentes para apoyar la descarbonización de los edificios existentes (por ejemplo, intercambio de electrodomésticos, climatización, instalación de energía solar fotovoltaica, almacenamiento de baterías).
- Aprovechar el análisis del stock de edificios (preparado para E-5) para centrarse en los edificios existentes.

Reducción GEI

2035	22,356 toneladas métricas.
2045	44,305 toneladas métricas.

¿Cómo vamos a medir los logros?

Reducir un 30% el uso de gas natural en los edificios existentes (equivalente a electrificar 12.000 hogares, o aproximadamente el 25% de las unidades de vivienda en 2045).

Información a utilizar

de hogares que participan en programas; # de viviendas total o parcialmente electrificadas; reducción del uso de gas natural en los hogares participantes de los programas; datos de uso de energía residencial de proveedores de servicios públicos.

¿Qué otros beneficios aportan estas acciones?

Reducción del uso de energía; mejora de la calidad del aire; mejora de la salud pública; aumento de empleos verdes locales.

Cronograma

A largo plazo.

Consideraciones de equidad

Enfocarse en la divulgación y los incentivos para los hogares multifamiliares, de bajos ingresos, personas mayores, etc; explorar una nueva fase piloto para el Programa de Evaluación de Puntuación de Energía del Hogar para proporcionar puntuaciones gratuitas a hogares de bajos ingresos, multifamiliares, personas mayores, etc.

Desvío de residuos sólidos y residuos orgánicos

Acciones

- Reducir la eliminación de desechos a 4,2 libras por persona por día (o el equivalente a una tasa de desvío del 75%) para 2035 y en lo sucesivo.
- Desviar el 75% de los residuos orgánicos (85% de los residenciales y 15% de los comerciales) para 2035 y en lo sucesivo.

Acciones de apoyo

- Ordenanza de investigación para exigencia de un porcentaje de eliminación de residuos orgánicos
- Fomentar el máximo desvío de productos orgánicos de los locales.
- Empresas
- Establecer un programa de desvío de Construcción y Demolición
- Maximizar la recuperación de alimentos comestibles
- Establecer un programa para transportistas autorizados para el desvío adecuado de todos los flujos de residuos.
- Continuar implementando los sistemas y ordenanzas existentes de gestión de materiales sostenibles en toda la ciudad, incluso en instalaciones y eventos de la ciudad.
- Continuar implementando programas existentes de entrega de abono y mantillo; explorar el lanzamiento de nuevos programas de obsequios dirigidos a usuarios específicos
- Actualizar la política de compras sostenibles de la ciudad para incluir requisitos reglamentarios para adquisiciones sustentables.
- Buscar contratos con proveedores para ayudar a implementar objetivos de desvío y monitorear el cumplimiento.

Reducción GEI

2035	31,776 toneladas métricas.
2045	37,040 toneladas métricas.

¿Cómo vamos a medir los logros?

75% de residuos sólidos desviados; 75% de residuos orgánicos desviados.

Información a utilizar

Eliminación de residuos sólidos; toneladas de alimentos comestibles recuperados; eliminación de residuos orgánicos.

¿Qué otros beneficios aportan estas acciones?

Reducción de residuos; aumento de empleos verdes locales.

Cronograma

En curso.

Consideraciones de equidad

Programas de divulgación e incentivos/reembolsos para hogares multifamiliares, de bajos ingresos, personas mayores, etc.

Reducción y optimización del tráfico vial

Acciones

Continuar optimizando las señales de tráfico dentro de la ciudad, ajustándolas según sea necesario a medida que cambien los volúmenes y las condiciones del tráfico, y coordinando a lo largo de los corredores principales.

Instalar rotondas o glorietas cuando sea posible, utilizando el estándar de ingeniería de la ciudad para el control de intersecciones.

Acciones de apoyo

Aprovechar los estándares de ingeniería del Plan de Movilidad Sostenible y la Evaluación de Control de Intersecciones para determinar la ubicación de nuevas rotondas y glorietas.

Reducción GEI

2035	1,334 toneladas métricas.
2045	746 toneladas métricas.

¿Cómo vamos a medir los logros?

de rotondas y rotondas; # de señales de tráfico optimizadas.

10 rotondas o glorietas para 2035.

Semáforos optimizados en 20 intersecciones para 2035.

Información a utilizar

de rotondas y rotondas; # de señales de tráfico optimizadas.

¿Qué otros beneficios aportan estas acciones?

Reducción de residuos; aumento de empleos verdes locales.

Cronograma

En curso.

Consideraciones de equidad

Analizar datos sociales, económicos y ambientales para evaluar hacia dónde van las mejoras.

Ordenanza de gestión de la demanda de transporte

c

- Continuar implementando y haciendo cumplir la ordenanza existente de Gestión de la Demanda de Transporte que exige mejoras y estrategias de TDM para el desarrollo no residencial.
- Actualizar la ordenanza TDM para modificar el umbral existente de cumplimiento (por ejemplo, reducir el umbral de promedio de viajes diarios), así como simplificar otros requisitos de presentación de informes, según corresponda, para 2045.

Acciones de apoyo

- Continuar encuestando empresas, conforme al MDT
- ordenanza, para monitorear la implementación y realizar un seguimiento de su cumplimiento.
- Actualizar las estrategias de TDM a medida que surja nueva tecnología.
- Educar a los viajeros sobre opciones alternativas de viaje y
- recursos disponibles.

Reducción GEI

2035 3,254 toneladas métricas.
2045 8,533 toneladas métricas.

¿Cómo vamos a medir los logros?

Métrica de ordenanza TDM actual (40% de participación en modos alternativos para nuevos desarrollos y 30% para desarrollos existentes para 2035)

Fecha de actualización de la ordenanza.

Información a utilizar

Cambio de modo para viajeros basado en encuestas TDM; # de empresas involucradas; actualizaciones del manual de TDM.

de empleados de las empresas (nuevo desarrollo, edificios existentes/mejoras de inquilinos).

¿Qué otros beneficios aportan estas acciones?

Mejora de la calidad del aire; reducción de residuos

Cronograma

En curso.

Consideraciones de equidad

Explorar la creación de incentivos para implementar estrategias del plan TDM para organizaciones comunitarias.

Rutas seguras a la escuela.

Acciones

Continuar implementando un programa de Rutas Seguras a la Escuela para fomentar caminar y andar en bicicleta a la escuela.

Acciones de apoyo

Aprovechar el Plan de Movilidad Sostenible de la ciudad para determinar mejoras específicas de la ubicación.

Buscar fondos para lanzar programas de Rutas Seguras a las Escuelas en sitios escolares adicionales.

Aprovechar el Plan de Movilidad Sostenible para llevar a cabo actividades educativas y de divulgación relacionadas con Rutas Seguras a la Escuela en escuelas de toda la ciudad.

Reducción GEI

2035	70 toneladas métricas.
2045	39 toneladas métricas.

¿Cómo vamos a medir los logros?

Modo compartido en escuelas con programas Rutas Seguras a las Escuelas

de estudiantes que caminan o van en bicicleta a la escuela en escuelas con programas de Rutas Seguras a las Escuelas

Información a utilizar

El modo compartido cuenta en los sitios del programa; # de estudiantes caminando o en bicicleta a la escuela en los sitios del programa

¿Qué otros beneficios aportan estas acciones?

Seguridad mejorada; mejora de la seguridad pública.

Cronograma

En curso.

Consideraciones de equidad

Analizar datos sociales, económicos y ambientales para evaluar hacia dónde van las mejoras.

Mejoras al sistema de ciclovías

Acciones

Construir 7.9 millas adicionales de carriles para bicicletas

Mejorar 61.2 millas de carriles para bicicletas Clase II a Clase II carriles bici protegidos

Continuar con otras mejoras al sistema de ciclovías, según estén disponibles.

Acciones de apoyo

Aprovechar el Plan de Movilidad Sostenible de la ciudad para determinar la ubicación de las mejoras del sistema de ciclovías y el estacionamiento y/o almacenamiento seguro de bicicletas.

Explore el lanzamiento de un programa de bicicletas compartidas en toda la ciudad, como el programa de la ciudad de Encinitas.

Evaluar la infraestructura de apoyo para bicicletas de la ciudad, como agregar nuevos estacionamientos para bicicletas en destinos costeros muy utilizados, estaciones de reparación de bicicletas y servicios adicionales relacionados con las bicicletas.

Reducción GEI

2035	566 toneladas métricas.
2045	324 toneladas métricas.

¿Cómo vamos a medir los logros?

Millas de carriles para bicicletas adicionales instalados por clase; Carriles para bicicletas existentes mejorados por clase.

Información a utilizar

Informe de monitoreo de transporte activo para recuentos de modos compartidos; aumento y mejora de los carriles para bicicletas.

¿Qué otros beneficios aportan estas acciones?

Mayor seguridad, reducción de la congestión del tráfico, mejor acceso a opciones de transporte de bajo costo, mejor salud pública, mejor calidad del aire.

Cronograma

En curso.

Consideraciones de equidad

Analizar datos sociales, económicos y ambientales para evaluar hacia dónde van las mejoras.

Mejoras al sistema peatonal

Acciones

Agregar 60.5 millas de aceras.

Acciones de apoyo

Utilizar el Plan de Movilidad Sostenible y la Tarifa de Impacto del Tráfico Multimodal de la ciudad para identificar ubicaciones adecuadas para mejoras del sistema peatonal, enfocándose en crear una infraestructura más segura y fácil de usar para facilitar el uso de los peatones.

Reducción GEI

2035	547 toneladas métricas.
2045	307 toneladas métricas.

¿Cómo vamos a medir los logros?

Millas de acera instaladas; millas de acera mejoradas

Información a utilizar

Cantidad de aceras instaladas; cantidad de aceras mejoradas.

¿Qué otros beneficios aportan estas acciones?

Mayor seguridad, mejor salud pública, reducción de la congestión del tráfico, mejor acceso a opciones de transporte de bajo costo, mayor carácter comunitario, mejor calidad del aire

Cronograma

En curso.

Consideraciones de equidad

Analizar datos sociales, económicos y ambientales para evaluar hacia dónde van las mejoras.

Mejoras en el transporte local

Acciones

Explorar mejoras en el transporte local para brindar transporte de flota flexible y sustentable a pedido y soluciones de primera milla y última milla.

Acciones de apoyo

Aprovechar los planes de transporte regionales existentes (por ejemplo, el Plan Integral del Corredor Multimodal del Condado Norte) para agregar o actualizar mejoras al sistema de transporte dentro de Carlsbad.

Aprovechar la Tarifa de Impacto del Transporte Multimodal para la implementación de mejoras en el transporte local.

Coordinar con agencias y socios regionales y locales sobre influyendo en las mejoras del transporte en todo el región y dentro de Carlsbad.

Reducción GEI

2035	N/A toneladas métricas.
2045	N/A toneladas métricas.

¿Cómo vamos a medir los logros?

Información de la actualización MTIF pendiente.

Información a utilizar

Datos de uso/número de pasajeros una vez que se lancen las mejoras locales; Datos del programa del circuito TBID; Informe de seguimiento AT; Programa anual de seguimiento de GMP para volúmenes de tráfico de vehículos.

¿Qué otros beneficios aportan estas acciones?

Mejor salud pública, mejor acceso a opciones de transporte de bajo costo, mejor carácter comunitario, mejor calidad del aire.

Cronograma

N/A

Consideraciones de equidad

Analizar datos sociales, económicos y ambientales para evaluar hacia dónde van las mejoras.

Programa de gestión de la demanda de transporte municipal

Acciones

Continuar implementando el programa de teletrabajo existente para el personal municipal que reúne los requisitos de elegibilidad.

Acciones de apoyo

Establecer un programa integral de gestión de la demanda de transporte para que el personal de la ciudad proporcione recursos e incentivos para viajes alternativos, como un programa de combinación de viajes compartidos para el personal de la ciudad.

Reducción GEI

2035	92 toneladas métricas.
2045	51 toneladas métricas.

¿Cómo vamos a medir los logros?

Tarifas de viaje alternativas; distancia viajada

Información a utilizar

Datos de teletrabajo; otros datos de participación en el programa TDM, si este se implementa; distancia recorrida entre el hogar y el trabajo para el personal que teletrabaja.

¿Qué otros beneficios aportan estas acciones?

Mejora de la calidad del aire, reducción de la congestión del tráfico, mejora de la salud pública.

Cronograma

En curso.

Consideraciones de equidad

N/A

Incrementar la infraestructura pública de cero emisiones

Acciones

Aumentar el número de millas recorridas con cero emisiones dentro de la ciudad mediante la instalación e incentivos de infraestructura pública para vehículos y bicicletas de cero emisiones.

Acciones de apoyo

- Buscar financiación externa y/o asociaciones para la instalación de infraestructura para vehículos y bicicletas con cero emisiones (por ejemplo, programas para clientes de *Clean Energy Alliance*).
- Explorar la creación de programas de incentivos para construcciones nuevas y edificios existentes para instalar infraestructura para vehículos y bicicletas con cero emisiones más allá de los requisitos del código de construcción.
- Continuar con la educación y la divulgación sobre opciones y reembolsos de vehículos con cero emisiones.
- Actualizar el Plan de Ubicación de Vehículos Eléctricos existente para incorporar sitios adicionales para infraestructura de bicicletas y vehículos de cero emisiones, así como nuevas tecnologías, tipos ampliados de vehículos de cero emisiones y mejores prácticas.
- Explorar programas de compra de empleados para fomentar el cobro en el lugar de trabajo para el personal de la ciudad.

Reducción GEI

2035	N/A (que apoyan *Advanced Clean Cars* II) toneladas métricas.
2045	N/A (que apoyan *Advanced Clean Cars* II) toneladas métricas.

¿Cómo vamos a medir los logros?

de estaciones de carga instaladas.

Información a utilizar

KWH distribuidos desde cargadores al público; Datos del DMV/CVRP sobre el número de ZEV comprados/licenciados en toda la ciudad; # de estaciones de carga instaladas.

¿Qué otros beneficios aportan estas acciones?

Mejora en la calidad del aire.

Cronograma

En curso.

Consideraciones de equidad

Priorizar la instalación utilizando datos sociales, económicos y ambientales.

Lanzar y/o promover programas de incentivos o reembolsos para instalar infraestructura de carga de cero emisiones y/o comprar vehículos de cero emisiones.

Flota municipal cero emisiones

Acciones

- Continuar la transición y expansión de la flota cero emisiones de la ciudad
- Instalar infraestructura de carga de cero emisiones para respaldar las necesidades de conversión de flotas.

Acciones de apoyo

- Establecer regulaciones para la flota en reposo de la ciudad.
- Actualizar el plan de conversión de flota para incluir actualizaciones de tecnología, legislación y otras mejores prácticas.
- Investigar opciones tecnológicas y comprar tecnología para sostener las operaciones de la flota de la ciudad durante emergencias.
- Hacer la transición de todas las compras de flotas de vehículos de pasajeros después del año fiscal 2022-23 para que sean vehículos eléctricos, con la excepción de las compras de vehículos de seguridad pública, que serán eléctricas cuando sea posible.
- Actualizar las normas de la ciudad para fomentar el uso de vehículos de cero emisiones siempre que sea posible.

Reducción GEI

2035	1,059 toneladas métricas.
2045	592 toneladas métricas.

¿Cómo vamos a medir los logros?

Implementación de normas de compra de vehículos de flota; # de vehículos de la flota pasan a tener cero emisiones; % total de la flota que es cero emisiones.

El 100% de la flota de vehículos ligeros y camiones será de cero emisiones; el 100% de la flota de vehículos pesados utilizará diésel renovable.

Información a utilizar.

de vehículos de flota de cero emisiones; reducción de combustibles derivados del petróleo; Cargadores kWH de las estaciones de carga cero emisiones de la flota.

¿Qué otros beneficios aportan estas acciones?

Mejor calidad del aire, mejor salud pública.

Cronograma

En curso.

Consideraciones de equidad

N/A

Estrategias de gestión de estacionamiento

Acciones

Reducir las millas recorridas por vehículos per cápita en toda la ciudad mediante estrategias de gestión de estacionamiento.

Acciones de apoyo
Implementar y actualizar las estrategias de gestión de estacionamiento de la ciudad (por ejemplo, Estudio y Plan de Gestión de Estacionamiento, Plan Maestro de Pueblos y Barrios) para fomentar modos de transporte alternativos en toda la ciudad.

Reducción GEI

2035	N/A toneladas métricas.
2045	N/A toneladas métricas.

¿Cómo vamos a medir los logros?

Información de la actualización pendiente del Estudio de Estacionamiento y Plan de Gestión

Información a utilizar
VMT per cápita

¿Qué otros beneficios aportan estas acciones?

Mejor calidad del aire, mejor salud pública.

Cronograma

A largo plazo.

Consideraciones de equidad

Análisis social, económico y ambiental de datos para evaluar hacia dónde van las mejoras.

Convertir sopladores de hojas que usen gasolina

Acciones

Desarrollar, adoptar e implementar una ordenanza que prohíba el uso de sopladores de hojas que usen gasolina.

Acciones de apoyo

Aprovechar los recursos estatales y regionales existentes para promover el intercambio de sopladores de hojas que usen gasolina u otros incentivos similares.

Realizar divulgación sobre los nuevos requisitos.

Reducción GEI

2035	396 toneladas métricas.
2045	386 toneladas métricas.

¿Cómo vamos a medir los logros?

Ordenanza adoptada

Reducir el 100% de las emisiones de los sopladores de hojas que usen gasolina para 2035 y posteriormente.

Información a utilizar

Datos sobre # de llamadas de uso público; # de sopladores de hojas convertidos en equipos en uso de la ciudad.

¿Qué otros beneficios aportan estas acciones?

Reducción del uso de energía, mejora de la salud pública, mejora de la calidad del aire.

Cronograma

A corto plazo.

Consideraciones de equidad

Lanzar y/o promover un programa de incentivos para el intercambio de sopladores de hojas.

Aumentar los equipos de construcción con combustibles renovables o alternativos

Acciones

Desarrollar, adoptar e implementar una ordenanza que exija que los nuevos desarrollos y proyectos importantes de construcción y movimiento de tierras utilicen equipos de construcción eléctricos o de combustible alternativo que reduzcan el 50% de las emisiones de las actividades de construcción del proyecto.

Acciones de apoyo

Eximir a los pequeños proyectos residenciales y no residenciales de este requisito.

Realizar divulgación sobre nuevos requisitos.

Buscar financiación externa y aprovechar los recursos existentes para apoyar la conversión de vehículos de servicio mediano y pesado.

Reducción GEI

2035	4,698 toneladas métricas.
2045	15,081 toneladas métricas.

¿Cómo vamos a medir los logros?

Ordenanza adoptada

Reducir un 50% las emisiones de las actividades de construcción para 2045.

Información a utilizar

Reducciones en el combustible utilizado por equipos de construcción.

¿Qué otros beneficios aportan estas acciones?

Mejora en la calidad del aire; mejoras a la salud pública.

Cronograma

A mediano plazo.

Consideraciones de equidad

Apoyar el crecimiento de empleos verdes de alto nivel

Manejo forestal comunitario

Acciones

- Aumentar el inventario de árboles de la ciudad al continuar implementando el Plan de Manejo Forestal Comunitario.
- Para ayudar a sostener el inventario de árboles de la ciudad, continuar reemplazando árboles en una proporción de 2:1.
- Realizar un inventario para evaluar la cobertura verde urbana cada cinco años.

Acciones de apoyo

- Explorar ubicaciones adicionales para plantar árboles más allá de lo incluido en el Plan de Manejo Forestal Comunitario, teniendo en cuenta el "espacio adecuado para los árboles", el presupuesto continuo y los costos de mantenimiento.
- Aliente a los residentes elegibles a participar en una evaluación gratuita de plantación de árboles en las calles.

Reducción GEI

2035	7,536 toneladas métricas.
2045	11,984 toneladas métricas.

¿Cómo vamos a medir los logros?

de árboles agregados

Agregar un promedio de 500 árboles nuevos al inventario de árboles de la ciudad por año hasta 2025 (3500 árboles en total).

Lograr una cobertura de dosel urbano del 32%, o duplicar la cobertura de dosel actual, para 2045.

Información a utilizar

de árboles agregados por año; # de árboles reemplazados por año; cubierta de copas de árboles en toda la ciudad.

¿Qué otros beneficios aportan estas acciones?

Reducción de los efectos de las islas de calor, mejora del carácter comunitario, mejora de la calidad del aire, mejora de la calidad del agua, mejora de la salud pública, aumento del hábitat natural, mejora de la resiliencia a los impactos climáticos.

Cronograma

En curso

Consideraciones de equidad

Priorizar la plantación de árboles utilizando datos sociales, económicos y ambientales.

Appendix H – Stakeholder Contact List (Phase II)

A list of all stakeholders that were contacted by the city and invited to participate in stakeholder interviews and complete the online survey is included in the subsequent pages.

Name	Organization	Stakeholder Group	Date(s) E-Mailed	Date + Type of Follow-Up Meeting
Environmental Sustainability mailing list	N/A	N/A	Oct. 18, 2023	N/A
City Manager weekly email subscription list	N/A	N/A	Oct. 19, 2023; Nov. 9, 2023	N/A
San Diego Regional Climate Collaborative mailing list	N/A	N/A	Nov. 3, 2023	N/A
Hannah Gbeh	BIA SD	Building/Industry	Oct. 18, 2023	Nov. 8, 2023 - presentation to North County Legislative Committee (virtual)
Melanie Woods	CA Apartment Association	Building/Industry	Oct. 18, 2023	N/A
Christine Davis	Carlsbad Village Association	Business Association	Oct. 19, 2023	N/A
Tommy Thompson	North County SD Association of Realtors	Business Association	Oct. 19, 2023	N/A
Debra Rosen	North San Diego Business Chamber	Business Association	Oct. 19, 2023	N/A
Chris Thorne	North San Diego Business Chamber	Business Association	Oct. 19, 2023	N/A
W. Erik Bruvold	San Diego North Economic Development Council	Business Association	Oct. 19, 2023	N/A
Mark Cafferty	San Diego Regional Economic Development Corporation	Business Association	Oct. 19, 2023	N/A
Bret Schanzenbach	Carlsbad Chamber of Commerce	Business Association	Oct. 19, 2023	N/A
Judy Frankel	Bike Walk Carlsbad	Bike/Pedestrian	Oct. 19, 2023	N/A
Cindy Cremona	Bike Walk Carlsbad	Bike/Pedestrian	Oct. 19, 2023	N/A
Nicole Burgess	Bike Walk Carlsbad	Bike/Pedestrian	Oct. 19, 2023	N/A
Michael von Neumann	Bike Walk Carlsbad	Bike/Pedestrian	Oct. 19, 2023	N/A
Michell Thitathan	Bike Walk Carlsbad	Bike/Pedestrian	Oct. 19, 2023	N/A
Colin Parent	Circulate San Diego	Bike/Pedestrian	Oct. 19, 2023	N/A
Dara Braitman	Circulate San Diego	Bike/Pedestrian	Oct. 19, 2023	N/A

Name	Organization	Stakeholder Group	Date(s) E-Mailed	Date + Type of Follow-Up Meeting
Andy Hanshaw	San Diego County Bicycle Coalition	Bike/Pedestrian	Oct. 18, 2023	N/A
Will Rhatigan	San Diego County Bicycle Coalition	Bike/Pedestrian	Oct. 18, 2023	N/A
Chloe Lauer	San Diego County Bicycle Coalition	Bike/Pedestrian	Oct. 18, 2023	N/A
Norval Lyon	North County Cycle Club	Bike/Pedestrian	Oct. 19, 2023	N/A
Ken Chin-Purcell	North County Cycle Club	Bike/Pedestrian	Oct. 19, 2023	N/A
NOT IN MASTER SHEET	Bike the Coast San Diego	Bike/Pedestrian	Oct. 19, 2023	N/A
Deborah Mossa	Batiquitos Lagoon Foundation	Environmental	Oct. 19, 2023	N/A
Denise Brown	Batiquitos Lagoon Foundation	Environmental	Oct. 19, 2023	N/A
Diane Nygaard	Preserve Calavera	Environmental	Oct. 18, 2023	Nov. 1, 2023 - virtual meeting
Ellen Bartlett	Preserve Calavera	Environmental	Oct. 18, 2023	Nov. 1, 2023 - virtual meeting
Joan Herskowitz	Buena Vista Audubon Society	Environmental	Oct. 19, 2023	N/A
Natalie Shapiro	Buena Vista Audubon Society	Environmental	Oct. 19, 2023	N/A
Lisa Cannon-Rodman	Agua Hedionda Lagoon Foundation	Environmental	Oct. 19, 2023	N/A
Travis Kemnitz	SD Audubon Society	Environmental	Oct. 19, 2023	N/A
Mitch Silverstein	Surfrider	Environmental	Oct. 18, 2023	N/A
Matt O'Malley	SD Coastkeeper	Environmental	Oct. 19, 2023	N/A
Steve Morris	I Love a Clean San Diego	Environmental	Oct. 19, 2023	N/A
Kathleen	Friends of Cardiff & Carlsbad State Beaches	Environmental	Oct. 19, 2023	N/A
Dee Dee Flynn	Friends of Cardiff & Carlsbad State Beaches	Environmental	Oct. 19, 2023	N/A
John Hamilton	Friends of Cardiff & Carlsbad State Beaches	Environmental	Oct. 19, 2023	N/A

Name	Organization	Stakeholder Group	Date(s) E-Mailed	Date + Type of Follow-Up Meeting
Stephen Flynn	Friends of Cardiff & Carlsbad State Beaches	Environmental	Oct. 19, 2023	N/A
Karl Adlinger	Sierra Club	Environmental	Oct. 18, 2023	Oct. 25, 2023 - virtual meeting
Paige DeCino	Sierra Club	Environmental	Oct. 18, 2023	Oct. 25, 2023 - virtual meeting
Lynda Daniels	Sierra Club	Environmental	Oct. 18, 2023	Oct. 25, 2023 - virtual meeting
Mike McMahon	Sierra Club	Environmental	Oct. 18, 2023	Oct. 25, 2023 - virtual meeting
Madison Coleman	Climate Action Campaign	Environmental	Oct. 18, 2023	N/A
Serena Pelka	Climate Action Campaign	Environmental	Oct. 23, 2023	N/A
Masada Disenhouse	SD 350	Environmental	Oct. 18, 2023	N/A
Anne Sheridan	SD 350	Environmental	Oct. 18, 2023	N/A
Katrina Olson	SD 350	Environmental	Oct. 18, 2023	N/A
Sarah	Stay Cool 4 Grandkids	Environmental / Underrepresented	Oct. 19, 2023	N/A
Livia Borak	Coast Law Group	Environmental	Oct. 19, 2023	N/A
Marco Gonzalez	Coastal Environmental Rights Foundation	Environmental	Oct. 19, 2023	N/A
NOT IN MASTER SHEET	Coastal Environmental Rights Foundation	Environmental	Oct. 19, 2023	N/A
Genevieve Black	Woman's Club of Carlsbad	Underrepresented	Oct. 19, 2023	N/A
Sierra Lambert, Zoe Goldstein (may have graduated since last contacted)	Carlsbad Cleanup Crew (student group)	Underrepresented / Environmental	Oct. 19, 2023	N/A

Name	Organization	Stakeholder Group	Date(s) E-Mailed	Date + Type of Follow-Up Meeting
NOT IN MASTER SHEET	Mira Costa College Community Education and Workforce Development	Underrepresented	Oct. 19, 2023	N/A
NOT IN MASTER SHEET	North San Diego County NAACP	Underrepresented	Oct. 19, 2023	N/A
Yusef Miller	North County Equity and Justice Coalition	Underrepresented	Oct. 19, 2023	N/A
NOT IN MASTER SHEET	North County LGBTQ Resource Center	Underrepresented	Oct. 19, 2023	N/A
Max Rome	North County LGBTQ Resource Center	Underrepresented	Oct. 19, 2023	N/A
Marylynn McCorkle	Alliance for Regional Solutions	Underrepresented	Oct. 19, 2023	N/A
Carmen Mojado	Saving Sacred Sites / San Luis Rey Band of Mission Indians	Underrepresented	Oct. 20, 2023	Nov. 21, 2023 - presentation to San Luis Rey Band of Mission Indians (virtual)
Valerie A. Gómez	Mexican-American National Association	Underrepresented	Oct. 20, 2023	N/A
Brandon Tiongsen	Carlsbad Equality Coalition	Underrepresented	Oct. 18, 2023	N/A
Augustin Dao	Carlsbad Equality Coalition	Underrepresented	Oct. 18, 2023	N/A
Suzanne Hume	Clean Earth 4 Kids	Environmental / Underrepresented	Oct. 18, 2023	N/A
Howard Krausz	North County Advocates	Environmental	Oct. 19, 2023	N/A
Graciela Gutierrez	North County Lifeline	Underrepresented	Oct. 20, 2023	N/A
Cheryl Madrigal	Rincon Band of Luiseño Indians	Underrepresented	Oct. 20, 2023	Virtual meeting - Jan. 29, 2024

Name	Organization	Stakeholder Group	Date(s) E-Mailed	Date + Type of Follow-Up Meeting
Tina Jimenez	Torres Martinez Desert Cahuuilla Indians	Underrepresented	Oct. 20, 2023	N/A
Jesse Morales, Acting Chairman	Mesa Grande Band of Diegueno Mission Indians	Underrepresented	Oct. 20, 2023	N/A
Norma M. Contreras	La Jolla Band of Luiseño Indians	Underrepresented	Oct. 20, 2023	N/A
Vanessa Marshall	Interfaith Community Services	Underrepresented	Oct. 20, 2023	N/A
Mary Ferro	Interfaith Community Services	Underrepresented	Oct. 20, 2023	N/A
Jay Klopfenstein	Carlsbad Community Gardens Collaborative	Environmental; Chamber green business committee	Oct. 19, 2023	N/A
Nate Fairman	IBEW 465	Building/Industry	Oct. 19, 2023	N/A
Craig Bendetto	NAIOP SD	Building/Industry	Oct. 19, 2023	Nov. 2, 2023 - presentation to NAIOP SD Civic Engagement Committee (virtual); Nov. 2, 2023 - presentation to SD County Lodging Association Legislative Task Force (virtual)
Marshall Anderson	NAIOP SD	Building/Industry	Oct. 19, 2023	Nov. 2, 2023 - presentation to NAIOP SD Civic Engagement Committee (virtual); Nov. 2, 2023 - presentation to SD County Lodging Association Legislative Task Force (virtual)
Kelly Lyndon	SD Building Electrification Coalition	Environmental	Oct. 19, 2023	N/A

Name	Organization	Stakeholder Group	Date(s) E-Mailed	Date + Type of Follow-Up Meeting
Matthew Clough	Plastic Beach	business owner; Chamber green business committee	Oct. 19, 2023	N/A
Bobby Kouretchian	Koza Law Group	certified green business	Oct. 18, 2023	N/A
Mylene Merlo	Mylene Merlo	certified green business	Oct. 18, 2023	N/A
Sher Kopman	AVO Cafe	certified green business	Oct. 18, 2023	N/A
Neall Digert	Solatube	certified green business; Chamber green business committee	Oct. 18, 2023	N/A
Jani Jackson	Develop Your Team	certified green business; Chamber green business committee	Oct. 18, 2023; Oct. 19, 2023	N/A
Paola Richard	GelatoLove	certified green business	Oct. 18, 2023	N/A
Della Stewart	Dancin Soul Boutique	certified green business	Oct. 18, 2023	N/A
Wendy Wiegand	Wiegand Realty	certified green business	Oct. 18, 2023	N/A
AJ Van De Ven	Calsense	certified green business; Chamber green business committee	Oct. 18, 2023; Oct. 19, 2023	N/A

Name	Organization	Stakeholder Group	Date(s) E-Mailed	Date + Type of Follow-Up Meeting
Jim Morrison	Morrison Insurance Services	certified green business	Oct. 18, 2023	N/A
Jolanda Harris	Virtual Workplace Solutions	certified green business	Oct. 18, 2023	N/A
Samantha Richter	Agua Hedionda Lagoon Foundation	certified green business	Oct. 18, 2023	N/A
Jana Moreno	Activ8 LLC	certified green business	Oct. 18, 2023	N/A
Edmond Alberton	Straight Talk Solar Co	certified green business	Oct. 18, 2023	N/A
Beppie Mostert	Living Design Interiors	certified green business	Oct. 18, 2023	N/A
Charisa Clarkson	Microscope World	certified green business	Oct. 18, 2023	N/A
Marcy Browe	Marcy Browe Photography	certified green business; Chamber green business committee	Oct. 18, 2023	N/A
Abbey Glauch	Bitchin Sauce	Business	Oct. 20, 2023	N/A
Rosemary Eshelman	Carlsbad Unified School District	Chamber green business committee	Oct. 19, 2023	N/A
Ruby Teague	Viasat	business; Chamber green business committee	Oct. 19, 2023	N/A
Elise Ramirez	Viasat	business; Chamber green business committee	Oct. 19, 2023	N/A

Name	Organization	Stakeholder Group	Date(s) E-Mailed	Date + Type of Follow-Up Meeting
James Cliame	Net Result	business; Chamber green business committee	Oct. 19, 2023	N/A

Appendix I – Stakeholder Meetings (Phase II)

The table below documents the stakeholder meetings that were conducted as part of the Climate Action Plan Update. Detailed notes are included in subsequent pages for the meetings on October 25, 2023 and November 1, 2023.

Table A-3. Stakeholder Meetings Conducted for the Climate Action Plan Update

Date	Stakeholder Participants
October 25, 2023	Mike McMahon, Sierra Club Paige DeCino, Sierra Club Lynda Daniels, Sierra Club
November 1, 2023	Diane Nygaard, Preserve Calavera Paige DeCino, Preserve Calavera Anne-Catherine Roch-Levecq, Preserve Calavera
November 2, 2023	NAIOP San Diego Civic Engagement Committee (92 invitees) Invited by Craig Benedetto, NAIOP SD
November 2, 2023	San Diego County Lodging Association Legislative Task Force Invited by Marshall Anderson, NAIOP SD
November 8, 2023	BIA San Diego North County Legislative Committee (35 invitees) Invited by Hannah Gbeh, BIA SD
November 21, 2023	Carmen Mojado, San Luis Rey Band of Mission Indians

An additional meeting was held outside of the Phase II engagement period. City staff met virtually with two representatives of the Rincon Band of Luiseño Indians on Jan. 29, 2024.

City of Carlsbad
MEETING **SUMMARY**

Carlsbad CAP Update Outreach
Sierra Club

Wednesday, October 25, 1:00 to 2:00 p.m.
Microsoft Teams (Virtual)

Attendees

Katie Hentrich, City of Carlsbad
Mike McMahon, Sierra Club
Paige DeCino, Sierra Club
Lynda Daniels, Sierra Club

Meeting Goal: Stakeholder outreach for proposed measures for Climate Action Plan Update.

- What is the meeting on November 7 for?
- GHG baseline year?
- Will Council understand the make up of emissions?
- Why is 2016 the best available data for an inventory?
- CAP AR 6 emissions graph vs. new inventory questions
- Renewable energy at city facilities?
- Will Council be voting on priority actions?
- Idling ordinance?
- TDM ordinance – threshold for new business but also for existing?
- Concern that Council will not feel urgency about not doing very much
    - The sooner we implement the better, the easier

City of Carlsbad
MEETING **SUMMARY**

Carlsbad CAP Update Outreach
Preserve Calavera

Wednesday, November 1, 2:00 to 3:00 p.m.
Microsoft Teams (Virtual)

Attendees

Katie Hentrich, City of Carlsbad
Diane Nygaard, Preserve Calavera
Paige DeCino, Preserve Calavera
Anne-Catherine Roch-Levecq, Preserve Calavera

Meeting Goal: Stakeholder outreach for proposed measures for Climate Action Plan Update.

- Big picture overview of CAP; explaining SANDAG data
- Make sure to reference CARB 2022 Scoping Plan
- Important to outline interim actions within the document (implementation plan)
- E-1
    - How will this be done
- E-2
    - How will changing customers up to 100% bring about equity issues?
    - Storage is going to be an issue; how can local projects be built?
- E-3 and E-4
    - Reach code updates – lowering threshold to cover more existing buildings
- T-2
    - TDM ordinance – is threshold being updated?
- T-6
    - Will there be an MTIF to fund programs?
- T-8
    - EV charging
- CS-1
    - Tree planting and growing program at Preserve Calavera
    - How do we ensure trees are replaced within conditions of approval
    - Heritage tree program + mature trees
- Regional Decarbonization Framework
    - Open space and ag land preservation – Sunny Creek

Appendix J – City Council Meeting Notes and Public Comment (Phase II)

A summary of meeting notes and public comments received from the November 7, 2023 City Council meeting, as well as the staff report are included in the following pages.

City Council meeting notes – Nov. 7, 2023, Item 5

- Public comment (12 total)
    - Mike Burello: how much are we spending?
    - Vanessa Forsythe
        - Interim benchmark years – how do we know if we are on track before 2035 and 2045
        - How will community members stay informed? Include in plan
        - Create Environmental Commission
    - Pagie DeCino (Sierra Club)
        - More clearly stated than 2015 CAP
        - Transportation data from 2016 is old
        - Anti-idling ordinance: roll into Safe Routes to School measure
        - Zero emission fleet: gas police cars recently approved, ordinance to make sure that doesn't happen again should be passed quickly
        - TDM ordinance: should expand threshold, not super successful
        - Add in more timelines
    - Mike McMahon (Sierra Club)
        - All measures will need to be fully implemented
        - Need adequate planning and resources to implement
    - Lynda Daniels (Sierra Club)
        - Reduce GHGs in buildings; building electrification
    - Mary Hassing
        - Reduce GHGs through EE and renewable energy
        - Reach code updates; informing property owners of EE changes they can make
    - Ally Williams (Clean Earth 4 Kids)
        - 2045 targets are too far away
        - Create a community dashboard
        - Ban synthetic turf
    - Jay Klopfenstein
        - Climate education curriculum – promote within the CAP, very important component of behavior change
            - Good examples from UCSD, UCI, MIT
            - Could launch in partnership with the library
        - Work with College Corps or Climate Corps
    - Suzanne Hume (Clean Earth 4 Kids)
        - 2045 target is too far away
        - Reach code update is important
        - Happy to see the leaf blower measure
        - No idling signage → add into Safe Routes to Schools measure
        - Community dashboard, especially including equity information
    - John B. (Clean Earth 4 Kids)
        - Add in clean air section of CAP Update, like City of San Diego
        - Ban synthetic turf (SB 676, passed Oct. 2023)
            - Plastic gives off methane

    - Mike: public trust is missing
    - Missing name – need to check video: chem trails
- Council member questions
    - CM Luna
        - Need more EV charging, solar/battery
        - Grid reliability concerns, especially with NEM and duck curve
        - Cost is also a concern
    - CM Burkholder
        - Have we surveyed businesses before and asked what the barriers are to going all electric, 100% renewable, etc?
        - Cost is a concern
        - Do we have a formal climate equity or climate grief definition?
    - CM Acosta
        - Can synthetic turf removal get added in?
        - Have a bigger a la carte menu of measures to choose from so that Council doesn't have to do everything in there with no room for error (since we are meeting targets exactly)
        - Environmental progress dashboard – has it been explored
        - TDM ordinance – should we continue implementing?
        - Can we add in a clean air section (mentioned in public comment)?
        - How do we hold ourselves accountable for not doing things within the CAP?
        - Cost to residents?
        - Public change overall – how are we working on behavior change?
    - CM Bhat-Patel
        - Timeline with more benchmarks/target dates
        - Are we installing DC fast chargers?
    - Mayor Blackburn: no questions
- Council member final comments
    - Mayor Blackburn: climate action is important to all, find balance within the plan (costs, priority actions, etc)
    - CM Bhat Patel: transparency is valued
    - CM Acosta: co-creating a plan with the community, very clearly presented, add in more things related to the circular economy (similar to other CAPs), add some more measures so Council doesn't have to approve everything as staff's recommendations
    - CM Burkholder: create more options (add more measures)
    - CM Luna: budget concerns

MAIN TAKEAWAYS:

- Add in additional measures to get us above the 2045 target
    - Synthetic turf removal should be one (supporting action or its own tbd)
    - electric preferred reach code
    - solar carports over parking lots (if possible – largest parks and city parking areas – Alga Norte already has, can be used for calcs)
- Add in information on air quality to CAP document
- Add in more information on interim timelines within measure details
    - Better define short vs. med vs. long term
    - For measures that are "ongoing", still provide interim timelines
- Explore creation of a community dashboard (or incorporating into strat plan)
    - Communicating how to get involved/take actions on your own
    - Communicating information on rebates and incentives
    - Communicating how city is doing with progress on the CAP
- Cost is a big concern
    - ICA horizon only five years, but can ICA include info about when larger costs would need to be budgeted for?
    - For costs not to city, could language be added into measures that costs would need to be explored as part of implementation (like in supporting actions)? For transparency

CleanEarth4Kids.org

November 7, 2023

CleanEarth4Kids.org thanks the City of Carlsbad Council and staff for their environmental leadership and for all work that has gone into the Climate Action Plan (CAP).

Implementing the CAP will help protect the people of Carlsbad from air pollution and the impacts of climate change for a better future.

Our Comments and Suggestions are:

1. Climate-Safe Investments
2. 100% Building Electrification for New Construction with No Exceptions
3. Electrify Existing Buildings
4. Solar, Microgrids and Virtual Power Plants (VPP)
5. Community and Environmental Dashboard
6. Add a Clean Air Section to the CAP
    a. Ban Leaf Blowers
    b. No Idling
    c. Stop Wood Burning
    d. Stop Smoking
    e. Stop Leaded Aviation Gas (AVGAS)
7. Protect and Conserve Water
8. Transportation
9. No False Solutions
10. Stop Toxic Synthetic Pesticides
11. Community Gardens
12. Create Pocket Forests
13. Protect Wetlands, Lagoons and Waterways
14. Synthetic Grass/Artificial Turf

1. Climate-Safe Investments

- Divest any investments that support fossil fuels. Only invest in funds, stocks, bonds, etc. that guarantee they will not invest in fossil fuels.
- Use an eco-friendly bank, preferably a B-Corp, for City's cash accounts. Do NOT support banks that invest in fossil fuel projects.
- Include eco-friendly choices for employee retirement fund investment options.

2. 100% Building Electrification for New Construction with No Exceptions

The City must prioritize building electrification to move away from fossil fuels and

improve air quality to protect health and the environment. Over 60 cities in California have already passed electrification ordinances and others are underway.[1]

Natural gas is a marketing term for methane, a hazardous indoor air pollutant and a major contributor to climate change.[2,3] The use of gas stoves in the home increases the risk of asthma and other respiratory diseases.[4] And gas stoves leak methane even when turned off.[5] We must completely end the use of "natural gas".

This important action will encourage green buildings, reduce carbon emissions and air pollution, and help protect the health of children and future generations.

Burning methane creates outdoor and indoor air pollution. 14% of greenhouse gases (GHGs) in Carlsbad come from the burning of methane, mainly for heat and hot water. Studies of human exposure to air pollutants show that "indoor levels of pollutants may be two to five times, and occasionally more than 100 times, higher than outdoor levels," and a major source of indoor air pollution is gas stoves.[6] Here is a link to our *Dangers of Natural Gas* video.[7] Please go to our Team 3: Clean Air Saves Lives page for more information.[8]

3. Electrify Existing Buildings

It is critical the CAP provides incentives to encourage owners of existing buildings to electrify as 80% of the building stock for 2050 has already been built. Carlsbad can apply for state and federal grants to retrofit heat pumps, electric water heaters, induction cooktops, remove gas lines and other energy efficiency improvements like insulated windows and LED lighting.

4. Solar, Microgrids and Virtual Power Plants (VPP)

To maximize clean, local energy generation, coordinate with the Clean Energy Alliance (CEA) to locate solar and microgrids on all city owned parking lots and buildings. Engage with Carlsbad Unified to do the same for all school buildings. Each city and school building will provide local power generation and fault tolerance while serving as a resilience center in case of fire, earthquake or heat wave.

5. Community and Environmental Dashboard

Create a Climate & Environmental Dashboard to increase citizen awareness, knowledge, and participation on issues such as air pollution and energy utilization.

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[1] https://www.sandiegouniontribune.com/communities/del-mar-to-consider-building-electrification-ordinance
[2] https://www.vox.com/2022/1/27/22902490/gas-stoves-methane-climate-pollution-health-off
[3] http://www.eeb.cornell.edu/howarth/documents/Howarth_2021_Methane_and_Climate.pdf
[4] https://www.sciencetimes.com/gas-stoves-making-people-sicker-exposing-children-higher-risk-asthma.htm
[5] https://news.stanford.edu/2022/01/27/rethinking-cooking-gas/
[6] https://www.epa.gov/iaq-schools/why-indoor-air-quality-important-schools
[7] https://vimeo.com/704755689
[8] https://cleanearth4kids.org/clean-air#gas

These dashboards should be located in libraries, schools and businesses throughout Carlsbad.

6. Add a Clean Air Section to the CAP

The burning of fossil fuels does much more than just release GHGs. It also dumps toxic air pollution that harms everyone's health and the environment. We ask Carlsbad to include a Clean Air section in the CAP like the City of San Diego with clean air goals and yearly targets to reduce air pollution.[9]

- Take Climate Action and Protect Our Air: Stop Burning Fossil Fuels

Air pollution from fossil fuels and petrochemicals have a significant detrimental impact on human health,[10] particularly on the brain and the cognitive abilities of children.[11] Exposure to ambient air pollutants like PM2.5, NO2 and ozone and heavy metals like lead, arsenic and mercury have been associated with lower academic performance ,[12] attention deficit hyperactivity disorder (ADHD) symptoms,[13] behavioral problems and autism spectrum disorders in children.[14] Air pollution increases the risk of neurological disorders and accelerated cognitive decline in children by causing neuroinflammation and neurodegeneration.[15] These pollutants have also been associated with several other indicators of poor health, including asthma and infant mortality.[16] Recent findings indicate that air pollution is linked to cognitive impairment through various biological processes, such as oxidative stress and inflammation, endocrine disruption, epigenetic modifications, and changes in brain structure.[17] Exposure to fine particulate matter is correlated with reduced cortical thickness and thinner gray matter,[18] which may impact learning, memory, and information processing.[19]

Also causing significant harm to the brain, lowering cognitive abilities and reading and math scores are heavy metals including mercury, lead, manganese, and their compounds, and petrochemicals such as isoamyl alcohol, methanol, xylene, toluene, styrene, *n*-hexane, and ethylbenzene.[20]

- Fossil Fuel Air Pollution Harms Public Health

[9] https://www.sandiego.gov/sites/default/files/san_diegos_2022_climate_action_plan_0.pdf
[10] https://www.niehs.nih.gov/health/topics/agents/air-pollution/index.cfm
[11] https://journals.lww.com/The_Relationship_Between_Air_Pollution_and.1.aspx?context=LatestArticles
[12] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8663889/
[13] https://pubmed.ncbi.nlm.nih.gov/30909100/
[14] https://onlinelibrary.wiley.com/doi/10.1111/dmcn.14758
[15] https://www.sciencedirect.com/science/article/abs/pii/S0278262608001747
[16] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2727943/
[17] https://www.science.org/doi/10.1126/sciadv.add0285
[18] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6132565/
[19] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6908886/
[20] https://www.science.org/doi/10.1126/sciadv.add0285

Fossil fuel combustion is a leading cause of deadly PM2.5 exposure.[21] Extended exposure to PM2.5 is responsible for 62% of all deaths from air pollution in 2019.[22] PM 2.5 is especially deadly because its small size allows it to enter deep into the lungs and pass into the bloodstream, making it a significant contributor to cardiovascular disease and mortality.[23,24,25] PM2.5 also increases heart disease, lung cancer, COPD (chronic obstructive pulmonary disease), lower-respiratory infections, pneumonia, stroke, type 2 diabetes, and other serious conditions including gastrointestinal illness.[26,27] People with tuberculosis exposed to PM2.5 had increased replication of the disease.[28] PM2.5 impacts our most vulnerable populations, including minorities,[29] the elderly,[30] pregnant women,[31] and children.[32] Increased Particulate Matter reduced the health-related quality of life among the elderly, increasing pain and discomfort, anxiety, and depression.[33]

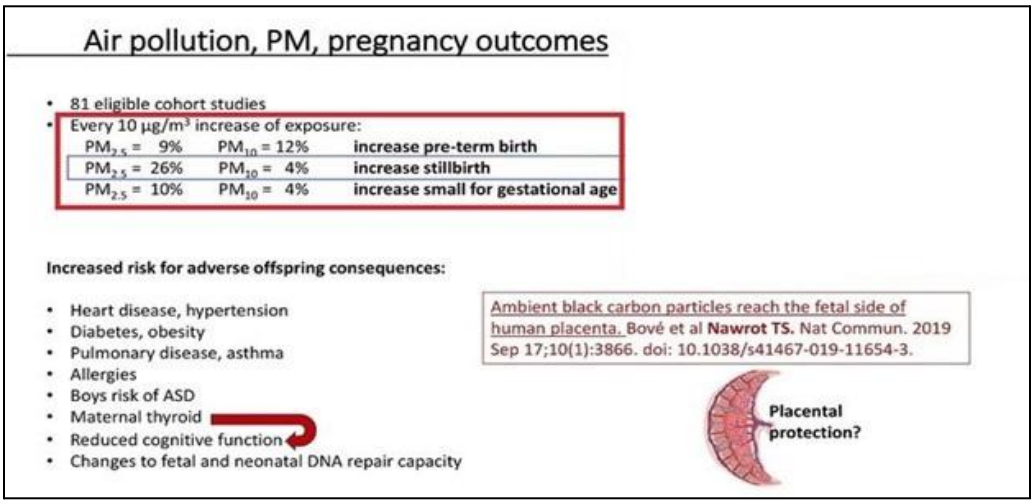
Childhood exposure to PM2.5 is linked to asthma,[34] which is the leading cause of school absences[35] and the third leading cause of hospitalizations among children under 15.[36] Poor air quality increases the likelihood of asthma attacks, breathing difficulty,[37] increased emergency room visits,[38] and hospitalization.[39] Air pollution can also inflame the brain, central nervous system, and hearts in children.[40,41]

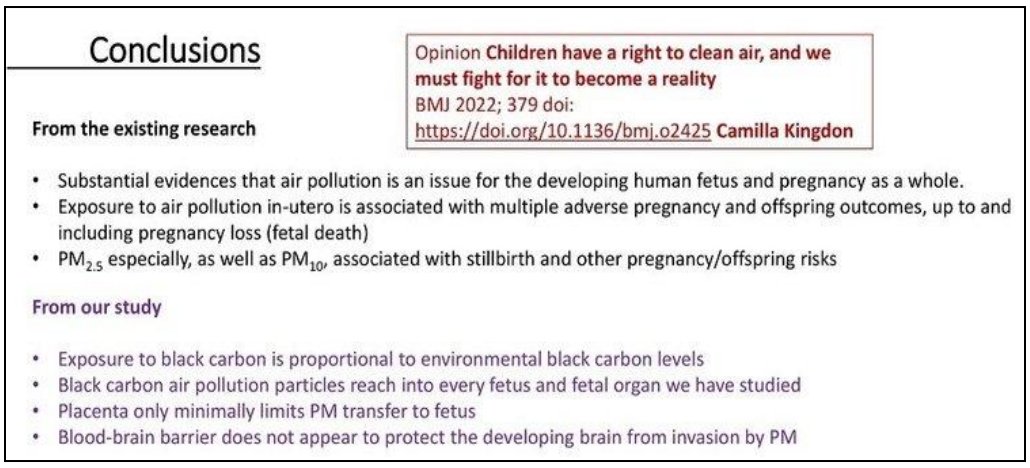
The health effects of air pollution start before a child is even born.[42] Pollutants can harm a fetus's brain, liver, lungs, and other organs because pollutants can travel to the tissues and organs of fetuses after being inhaled by pregnant women.[43,44] For example, black carbon[45] can enter the placenta, circulation system, and the organs[46] of the fetus via the mother's blood, which can affect the fetuses' liver, lungs, and

[21] https://www.nature.com/articles/s41467-021-23853-y
[22] https://www.stateofglobalair.org/health/pm#major-impacts
[23] https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm
[24] https://www.ahajournals.org/doi/10.1161/JAHA.120.016890
[25] https://www.lung.org/clean-air/outdoors/what-makes-air-unhealthy/particle-pollution
[26] https://www.stateofglobalair.org/health/pm
[27] https://www.sciencedirect.com/science/article/pii/S0147651323002063
[28] https://www.sciencedirect.com/science/article/pii/S0013935123004875
[29] https://www.hsph.harvard.edu/news/racial-ethnic-minorities-low-income-groups-u-s-air-pollution/
[30] https://www.sciencedirect.com/science/article/pii/S0147651323002944
[31] https://www.sciencedirect.com/science/article/abs/pii/S0013935122003930
[32] https://parentingscience.com/the-effects-of-air-pollution-on-children
[33] https://www.sciencedirect.com/science/article/pii/S0147651323002944
[34] https://www.sciencedirect.com/science/article/pii/S0160412022002240
[35] https://aafa.org/asthma/asthma-facts
[36] https://www.epa.gov/children/childrens-environmental-health-facts
[37] https://resphealth.org/clean-air/understanding-air-pollution/
[38] https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2801735?resultClick=3
[39] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6546668/
[40] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7352229
[41] https://pubmed.ncbi.nlm.nih.gov/35921508
[42] https://www.jpedhc.org/article/S0891-5245(21)00189-9/fulltext
[43] https://www.theguardian.com/environment/2022/oct/05/toxic-air-pollution-particles-found-in-lungs
[44] https://pubmed.ncbi.nlm.nih.gov/32556259
[45] https://www.livescience.com/black-carbon-reaches-placenta.html
[46] https://pubmed.ncbi.nlm.nih.gov/36719212/

brain.[47] Exposure to air pollution during pregnancy and infancy[48] is linked to increased rates of stillbirth,[49] preterm birth,[50] low birth weight,[51] SIDS[52] (Sudden Infant Death Syndrome) and decreased development of the brain, among other serious long-term effects.[53] Exposure to air pollution, even at relatively low levels during pregnancy and childhood significantly harms children's health.[54]

Below are two slides from Dr. Paul Fowler's extensive research and informative webinar[55] and presentation showing a 26% increase in stillbirths when air pollution is increased by 10 µg/m3.[56] The harm done by air pollution to unborn babies is clear.[57] It is imperative that we reduce air pollution to protect children's health, development, growth, learning, communication abilities, and future.





[47] https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(22)00200-5/fulltext
[48] https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2767260
[49] https://www.sciencedirect.com/science/article/abs/pii/S0269749121003328
[50] https://med.nyu.edu/pediatrics/divisions/environmental-pediatrics/air-pollution-preterm-births
[51] https://pubmed.ncbi.nlm.nih.gov/22726801/
[52] https://www.sciencedirect.com/science/article/abs/pii/S0045653520337139
[53] https://www.washington.edu/news/uw-link-between-air-pollution-and-child-brain-development/
[54] https://www.lung.org/clean-air/outdoors/who-is-at-risk/children-and-air-pollution
[55] https://youtu.be/40Ga9_StJQ0
[56] https://www.healthandenvironment.org/assets/images/CHE%20Jan%202023%20Fowler.pdf
[57] https://pubmed.ncbi.nlm.nih.gov/36208643/

- Air Pollution is A Racial, Social, Environmental, and Climate Justice Issue

Air pollution from the burning of fossil fuels harms people of color disproportionately.[58] Due to Social Determinants of Health (SDoH) factors, Black and low-income communities are disproportionately affected by air pollution in the United States.[59] Annually, fossil fuel industries in the US release about 9 million tons of methane gas and other toxic chemicals into the atmosphere.[60] Black and low-income communities are disproportionately affected by air pollution in the United States.[61] Exposure to poor air quality can cause numerous health problems such as emphysema and asthma[62]. Increased rates of asthma can lead to significant health disparities and reduced quality of life.[63] Approximately 13.4% of Black children suffer from asthma as compared to only 7.3% of White children.[53]

In total, African Americans are 75% more likely than White people to live in "fence-line" communities (areas near commercial facilities that produce noise, odor, traffic, or emissions that directly affect the population).[49]

6a. Ban Leaf Blowers

Most gas-powered leaf blowers are 2 stroke engines which burn a mix of oil and gas. These engines not only put out a massive amount of pollution, but they also do not have a filter. The pollutants[64] from a single gas-powered leaf-blower are 300x more than a pickup truck with gas-powered lawn equipment using an estimated 800 million gallons of gasoline. This contributes to more air pollution in our air, and damaging ozone as these nitrous oxides contribute to the damage that occurs.

With and without a filter, the dangers of gas-powered leaf blowers are immense. Gas-powered leaf-blowers emit carbon monoxide, nitrous oxides, hydrocarbons and other pollutants[65] such as formaldehyde, benzine, fine particulate matter, and smog forming chemicals. These pollutants are known to cause diseases that affect the heart and lungs, as well as cancer, dementia, and headaches[66]. The health effects[67] linked to gas-powered leaf blowers are asthma, cardiovascular disease, lung cancer, respiratory disease, and central nervous system disorders.

6b. No Idling

Car exhaust is full of toxic chemicals like benzene and carbon monoxide. 1 minute of

[58] https://psci.princeton.edu/tips/2020/8/15/racial-disparities-and-climate-change
[59] https://www.lung.org/clean-air/outdoors/who-is-at-risk/disparities
[60] https://psci.princeton.edu/tips/2020/8/15/racial-disparities-and-climate-change
[61] https://www.lung.org/clean-air/outdoors/who-is-at-risk/disparities
[62] https://www.catf.us/2017/11/study-african-american-health-impacts-oil-gas-pollution/
[63] https://aafa.org/asthma-allergy-research/our-research/asthma-disparities-burden-on-minorities/
[64] https://sustainability.wustl.edu/rethinking-lawn-equipment-2/
[65] https://sustainability.wustl.edu/rethinking-lawn-equipment-2/
[66] https://www.quietcleanpdx.org/leaf-blowers-dangers-pollution/
[67] https://www.quietcleandc.com/two-stroke-engine-public-health-issues

idling puts more carbon monoxide into the air than smoking 3 packs of cigarettes.[68] Please take action to reduce idling by parked vehicles, including purchasing only zero emission vehicles for the city fleet. Idling burns over 3.8 million gallons of fuel every day in the US, adding 30 million tons of CO2 to the atmosphere![69] Link for more information on idling.[70]

6c. Stop Wood Burning

We ask the City of Carlsbad to take action to stop wood smoke.

a. Work with the SD APCD (San Diego Air Pollution Control District) and surrounding cities to stop wood-burning fireplaces and stoves in new construction and renovations like the City of London.[71]
b. Implement programs and incentives to remove (not replace!) existing wood-burning fireplaces and stoves.
c. Work with SD APCD and all city, county, and state governments and agencies to stop recreational wood fires on all public lands like beaches and parks to protect clean air and our health.
d. Fund radio, print, TV and social media ads about the harms of wood smoke. Please see the CleanEarth4Kids.org Stop Wood Smoke video created by our youth.[72]

Wood smoke is a complex mixture of gases and fine particles, called particulate matter. PM2.5 is especially dangerous. These particles are 2.5 microns or smaller. By comparison, the average human hair is 50 microns wide. Researchers estimate that PM2.5 is responsible for almost 48,000 premature deaths in the US every year.[73] Particulate matter irritates the lungs and increases the risk of serious health outcomes including asthma, heart attacks, strokes, cancer, and brain conditions like Alzheimer's, Parkinson's and dementia.[74] Wood smoke also contains cancer causing pollutants like benzene, formaldehyde, acrolein and Polycyclic Aromatic Hydrocarbons or PAHs, along with carbon dioxide, carbon monoxide and methane.[75] Burning 10 lbs. of wood in 1 hour creates the same cancer-causing PAHs as 6,000 packs of cigarettes.[76] That's like smoking a pack of cigarettes a day for 16 years…just by sitting next to a wood fire. Here is a link for information about wood smoke.[77] You can also contact Doctors & Scientists Against Wood Smoke Pollution.[78]

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[68] http://enginesoff.com/pdfs/CASEO-Background-Report.pdf
[69] https://afdc.energy.gov/files/u/publication/idling_personal_vehicles.pdf
[70] https://cleanearth4kids.org/stop-idling
[71] https://www.theguardian.com/2023/feb/08/wood-burners-in-effect-banned-new-refurbished-homes-london
[72] https://vimeo.com/762477620
[73] https://www.lung.org/research/sota/health-risks
[74] https://woodsmokepollution.org/references.html
[75] https://www.verywellhealth.com/the-health-hazards-of-wood-burning-stoves-914956
[76] https://www.times-standard.com/2017/08/05/burning-firewood-is-an-airborne-public-health-hazard
[77] https://cleanearth4kids.org/team-3-no-wood-smoke
[78] https://woodsmokepollution.org/index.html

The San Diego Air Pollution Control District (SD APCD) 2021 Annual Air Quality Report and 2022 Regional Air Quality Strategy (RAQS) show residential combustion (wood burning) is tied with construction as the main source of $PM_{2.5.}$[79,80] These reports show wood burning dumps almost 3.5 TONS of particulate matter into San Diego County air EVERY DAY. Data from the US Energy Information Administration (EIA) shows households with higher incomes are more likely to burn wood.[81] Wood burning is being done for recreation, not need.

6d. Stop Smoking

Ban public smoking like the City of Encinitas and others. Second and thirdhand smoke is toxic and emits lead.[82,83] Fund radio, print, TV and social media ads about the harms of second and third hand smoke. Also ban smoking in multi-family housing.[84]

6e. Ask the County of San Diego to Stop Leaded Aviation Gas (AVGAS)

CleanEarth4Kids.org asks the City of Carlsbad to send a letter and pass a resolution calling on the County of San Diego to stop the sale, use and storage of leaded aviation fuel at all County of San Diego airports. A SD APCD study showed Palomar Airport exceeded NAAQS (National Ambient Air Quality Standards) for lead in 2013.[85] That was ten years ago!

According to EPA data, general aircraft at Palomar Airport dump over 700 pounds of lead into the air every year, Gillespie Field over 1,100 pounds and Ramona over 600 pounds.[86] That is over 2,400 pounds of lead in our air every single year from just 3 County airports. There is NO safe level of lead!

- Lead is Toxic

The WHO (World Health Organization),[87] CDC (Centers for Disease Control)[88] and the AAP (American Academy of Pediatrics)[89] have all stated there is no safe level of lead, a toxic heavy metal.[90] Its adverse effects are particularly severe for children and unborn babies as it damages their brains and nervous systems.[91]

Exposure to lead lowers IQ and causes behavior problems, learning disabilities, and

[79] https://www.sdapcd.org/content/dam/sdapcd/documents/community/annual-air-quality-reports
[80] https://legistarweb-production.s3.amazonaws.com/1814058/Item_E2_AttA_2022_RAQS.pdf
[81] https://www.eia.gov/todayinenergy/detail.php?id=15431
[82] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3040625/
[83] https://thirdhandsmoke.org/thirdhand-smoke-may-bring-lead-into-homes/
[84] https://cleanearth4kids.org/nosmoking#sample
[85] https://static1.squarespace.com/static/APCD_McClellan_Palomar_Airport_Lead_Gradient.pdf
[86] https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data#dataq
[87] https://www.who.int/news-room/fact-sheets/detail/lead-poisoning-and-health
[88] https://www.cdc.gov/nceh/lead/faqs/lead-faqs.htm
[89] https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/lead-exposure/Pages/default.aspx
[90] https://www.osha.gov/toxic-metals
[91] https://www.cdc.gov/nceh/lead/prevention/health-effects.htm

impaired impulse control.[92] Children's exposure to lead is linked to higher rates of suspension and detention along with lower reading and math test scores.[93,94] Childhood exposure to lead is also linked to higher crime rates.[95] According to the CDC, people with prolonged exposure to lead are at higher risk of high blood pressure, heart and kidney disease, and various forms of cancer.[96]

Most health impacts from lead exposure are lifelong and irreversible.[97] Lead exposure is also hazardous to adults, with 18% of all deaths in the US linked to lead exposure and is a significant risk factor for cardiovascular disease.[98,99] Lead is the number one reason for fatal heart attacks in the US.[100]

Please see our CleanEarth4Kids.org Team 5 page #GetTheLeadOut for more information on the dangers of lead.[101]

- The Harm of Leaded Aviation Fuel on Communities

The EPA has issued their public endangerment finding on lead emissions from aircraft, stating it will "cause or contribute to lead air pollution."[102]

The impact of lead pollution is especially damaging to children living close to these airports as they are very likely to have significantly higher levels of lead in their blood.[103] In the US, over 5 million people, including over 360,000 children under the age of 5, live near at least one lead-emitting airport and face a severe risk of lead poisoning.[104] Communities of color are most likely to be close to these sources of lead, resulting in higher blood levels on average than white children.[105]

In the County of Santa Clara, children living within half a mile of their airport had lead levels nearly twice that of kids in Flint, Michigan at the height of their lead crisis.[106,107] Recognizing the danger, the County of Santa Clara has stopped the sale and storage of leaded fuel at their airport which has already significantly reduced lead emissions.[108]

- Stopping Leaded Aviation Fuel

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[92] https://www.luc.edu/healthyhomes/leadsafeillinois/leadfacts/rippleeffectsofchildhoodleadpoisoning/
[93] https://www.nber.org/papers/w23392
[94] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4387706/
[95] https://www.sciencedirect.com/science/article/pii/S0166046222000667
[96] https://columbiainsight.org/dealing-with-washingtons-legacy-of-pesticides/
[97] https://www.who.int/news-room/fact-sheets/detail/lead-poisoning-and-health
[98] https://www.vox.com/science-and-health/2018/3/15/17107924/lead-health-adults-heart-problems
[99] https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(18)30025-2/fulltext
[100] https://www.vox.com/science-and-health/2018/3/15/17107924/lead-health-adults-heart-problems
[101] https://cleanearth4kids.org/team-5-get-the-lead-out
[102] https://www.epa.gov/system/files/documents/2023-10/420f23022_0.pdf
[103] https://news.sccgov.org/news-release/study-commissioned-county-santa-clara-finds-increased-lead-levels
[104] http://nepis.epa.gov/Exe/ZyPDF.cgi/P100YG4A.PDF?Dockey=P100YG4A.PDF
[105] https://news.sccgov.org/county-santa-clara-finds-increased-lead-levels-children-living-near
[106] https://news.sccgov.org/sites/g/files/exjcpb956/files/documents/RHV-Airborne-Lead-Study-Report.pdf
[107] https://www.nrdc.org/stories/flint-water-crisis-everything-you-need-know#summary
[108] https://countyairports.sccgov.org/pilots/aviation-fuel

Leaded aviation fuel is used by some piston-engine planes and helicopters in general aviation. According to the FAA (Federal Aviation Administration), an estimated 170,000 aircraft operating from over 20,000 airports across the US use leaded aviation fuel (AVGAS).[109] These aircraft are responsible for almost 70% of airborne lead pollution, putting out around 500 tons of lead each year, and are the largest source of lead in US air.[110]

Unleaded fuel is now available. The sale and use of leaded aviation fuel must stop!

7. Protect and Conserve Water

Set water use reduction goals and develop policies, guidelines and education programs to replace ornamental grass and other landscaping with native plants while transitioning to gray water reuse.

Create bioretention swales in medians and other areas like Los Angeles to serve as micro-reservoirs for landscaping while filtering stormwater runoff.[111,112]

Establish other rainwater capture and storage infrastructure throughout Carlsbad including capture barrels at every property.

Under California law, water is a basic human right. Carlsbad must take action to end water shutoffs and subsidize access to water for lower income residents.

8. Transportation

The CAP must identify methods to reduce Vehicle Miles Traveled (VMT) by encouraging the use of public and active transportation. Please develop plans to add miles of bike lanes and sidewalks, create car-free areas and implement electric shuttles in high traffic areas like downtown and the Carlsbad Outlet Mall.

9. No False Solutions

The CAP must clearly state the City of Carlsbad will not use or invest in false climate solutions like synthetic carbon capture (CCS, CCUS), dirty hydrogen, methane or biomass/biofuels. These types of greenwashed "solutions" only delay real climate action.

10. Stop Toxic Synthetic Pesticides

We ask the City to stop using synthetic pesticides in all city owned and leased parks, buildings and properties, including golf courses. Please adopt a non-toxic IPM (Integrated Pest Management) plan like the City of Malibu and many other cities.[113]

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[109] http://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=14754
[110] https://earthjustice.org/news/press/2022/epa-proposes-endangerment-finding-of-leaded-aviation-gasoline
[111] https://nacto.org/urban-street-stormwater-guide/green-stormwater-elements/bioretention-swale/
[112] https://dpw.lacounty.gov/WMD/STWQ/EastLA.aspx
[113] https://www.malibucity.org/DocumentCenter/View/24741/Earth-Friendly-Management-Policy-62419

99% of synthetic pesticides and fertilizers come from fossil fuels and the continued use of these petrochemicals is a direct threat to the climate and our world.[114]

We also ask the City to create and implement education programs encouraging everyone to use chemical free methods for pest control. Healthy soil is important to sequestering carbon.[115] But pesticides destroy the microbes that make healthy soil.

There is a massive amount of scientific studies showing the damage done by the use of synthetic pesticides to the environment and human health.[116] Pesticides are known to increase children's cancer risk and 95% of pesticides used miss their target.[117,118] Pesticides are poison, they are designed to kill. That is their purpose.

The US uses toxic pesticides banned in many other countries.[119] The US only bans 21 pesticides while China bans 54 and the EU bans 195. (For a list of pesticides banned in other countries, please click here.)[120] Legal does not mean safe! For more information on toxic pesticides and chemicals, please see our Team 5 page.[121] For more information on regenerative farming, permaculture, organics and healthy soils, please click here.[122]

CleanEarth4Kids.org asks the City of Carlsbad to work with local farms like the Strawberry and Flower Fields to stop the use of toxic synthetic pesticides. According to Pesticide Use Reports (PUR), these fields are using pesticides banned in other countries because of their harm to human health and the environment:

Bifenthrin. Banned 29 countries
Imidacloprid. Banned 28 countries
Oxadiazon. Banned 29 countries
Quinoxyfen. Banned 29 countries
1,3-Dichloropropen/Chloropicrin. Banned 34/37 countries

The proximity to agricultural pesticides is very important because pesticides can drift miles, harming children and families living near agricultural fields.[123,124] Pesticide drift settles on playgrounds, porches, laundry, toys, pools, furniture, gardens, and lawns where people and children live, learn, and play.[125] This exposes people, pollinators, and wildlife to danger from what they touch, breathe, and eat.

These toxic pesticides also contaminate our water. The National Water Quality

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[114] https://www.ciel.org/reports/fossil-fertilizers/
[115] https://www.cdfa.ca.gov/healthysoils/
[116] https://www.dw.com/en/pesticide-atlas-2022
[117] https://www.sciencedirect.com/science/article/abs/pii/S1438463919306212?via%3Dihub
[118] https://www.scientificamerican.com/article/pesticide-drift/
[119] https://biologicaldiversity.org/united-states-uses-85-pesticides-outlawed-in-other-countries-2019-06-06/
[120] https://pan-international.org/pan-international-consolidated-list-of-banned-pesticides/
[121] https://cleanearth4kids.org/stop-pesticides
[122] https://cleanearth4kids.org/farming-regenerative
[123] https://europepmc.org/article/AGR/IND20460440
[124] https://pubmed.ncbi.nlm.nih.gov/11097803/
[125] https://www.epa.gov/reducing-pesticide-drift/introduction-pesticide-drift

Assessment (NWQA) shows agricultural runoff as the main cause of pollution in rivers and streams.[126,127] As pesticides travel through soil and bedrock cracks, they contaminate groundwater systems which provide 70% of the water used for public and private water supplies, irrigation, and industry.[128] Pesticides are also absorbed by aquatic organisms through their skin, breathing, and mouths.[129] Long term exposure has many negative consequences for aquatic life, such as mortality, reproductive failure, egg shell thinning, suppression of the immune system, and other fish health complications such as excessive slime on fish scales and gills, cancers, tumors and lesions.[130]

For more information on toxic pesticides, please see our Team 5: Stop Toxic Pesticides page.[131]

11. Community Gardens

There are at least 400 families in Carlsbad waiting for plots in the existing community garden. Please expand the community garden program which will decrease heat islands, increase carbon sequestration while reducing food insecurity.

12. Create Pocket Forests

Identify small areas of 6 parking spaces or more and small vacant land areas for pocket forests. Engage with Carlsbad Unified to plant a pocket forest on each school's grounds.

Pocket forests are small areas of native trees and plants that restore nature into the urban environment.[132] This method was adopted from Japanese botanist Akira Miyawake, the creator of Tiny Forests.[133] The Miyawake method emulates an area's native ecosystem through a dense-planting method of only native species.[134]

These pockets forests provide vital habitats for native wildlife, attract important pollinators, provide an equitable urban landscape,[135] improve water infiltration of the soil, decrease stormwater runoff, protect against erosion,[136] provide educational opportunities to the community and absorb large amounts of carbon dioxide.[137]

13. Protect Wetlands, Lagoons and Waterways

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[126] https://www.usgs.gov/mission-areas/water-resources/science/national-water-quality-assessment-nawqa
[127] https://www.epa.gov/nps/nonpoint-source-agriculture
[128] https://www.uky.edu/Ag/Entomology/PSEP/6environment.html
[129] https://biointerfaceresearch.com.pdf
[130] https://www.sciencedirect.com/science/article/abs/pii/S2215153222001003
[131] https://cleanearth4kids.org/stop-pesticides
[132] https://www.americanforests.org/article/picking-pocket-forests/
[133] https://www.pocketforests.ie/new-page
[134] https://us.iahv.org/portfolio/greenpocketforests/
[135] https://a25.asmdc.org/20221206-assemblymember-kalra-introduces-bill-promote-urban-greening
[136] https://www.americanforests.org/article/picking-pocket-forests/
[137] https://www.weforum.org/agenda/2020/07/tiny-urban-forests-miyawaki-biodiversity-carbon-capture/

Plant kelp and other sea grasses as appropriate to sequester carbon while protecting coastal areas from pollution and sea level rise. Identify ecologically sound methods to protect beaches, cliffs, coastal roads and the LOSSAN train corridor from erosion.

14. Ban Synthetic Grass/Artificial Turf

CleanEarth4Kids.org asks the City of Carlsbad to ban all installations of artificial grass/synthetic turf. With the signing of SB 676 by Governor Newsom on October 8th, you have the authority to stop the use of this toxic plastic carpet in your city.[138] The City of Millbrae has already banned it.[139]

Our youth, interns, and volunteers have worked hard to create videos and resources that can be found on our CleanEarth4Kids.org Team 5: Stop Synthetic Turf page.[140]

- Synthetic Grass/Artificial Turf is Plastic Pollution

Synthetic grass/artificial turf is plastic, made from resins like polyethylene and nylon. PFAS are used in the extrusion of plastic yarn for the "grass" blades.[141] No synthetic grass/artificial turf manufacturer can state they are free of PFAS. PFAS, PAHS, lead, and other toxic chemicals have been found in synthetic grass/artificial turf.[142]

The installation and use of synthetic grass/artificial turf is the intentional installation and use of microplastics[143] which does serious harm to the environment[144] and human health.[145] Recent research[146] has found microplastics in placentas, infant feces, breastmilk, and even infant formula. Other studies have shown microplastics changing lung and liver cells.[147] Microplastics were banned in United States cosmetics[148] in 2015, but the ban on microplastics should apply to all areas of life in order to reduce these health risks.

Plastics don't break down in the environment, simply breaking down into microplastics. Wildlife can mistake microplastics for food and marine animals have been found to consume microplastics accidentally.[149] Microplastics attract and carry pollutants in the water and also release toxic chemicals.[150,151] Lab studies have shown that microplastics may impact the developmental stages of animals, causing

[138] https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202320240SB676
[139] https://www.ci.millbrae.ca.us/276/Prohibition-of-Artificial-Turf-Synthetic
[140] https://cleanearth4kids.org/team-5-synthetic-turf-toxic-chemicals
[141] https://www.documentcloud.org/documents/6434596-Kulikov2005.html
[142] https://theintercept.com/2019/10/08/pfas-chemicals-artificial-turf-soccer/
[143] https://ec.europa.eu/environment/marine/good-environmental-status/descriptor-10/pdf/microplastics_
[144] https://www.unep.org/news-and-stories/story/plastic-planet-how-tiny-plastic-particles-are-polluting-
[145] https://www.theguardian.com/environment/2021/dec/08/microplastics-damage-human-cells-study-
[146] https://www.news-medical.net/news/20220921/Microplastics-detected-in-placentas-infant-feces-breast
[147] https://www.onegreenplanet.org/environment/microplastics-are-disrupting-metabolism-of-lung-and-liver
[148] https://www.fda.gov/cosmetics/cosmetics-laws-regulations/microbead-free-waters-act-faqs
[149] https://marinedebris.noaa.gov/what-marine-debris/microplastics
[150] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7924819
[151] https://link.springer.com/article/10.1007/s42452-019-1352-0

reproductive issues and their ability to fight disease.[152] Furthermore, since humans consume fish and other marine animals, the impacts of microplastics are passed on to humans through the food chain.

The plastic life cycle is incredibly toxic. Research shows it causes premature birth, low birth weight, decreased fertility, asthma, childhood leukemia, lymphoma, brain cancer, breast cancer, mesothelioma, cardiovascular disease, chronic obstructive pulmonary disease, neuropathy, and lung cancer.[153]

- Synthetic Grass/Artificial Turf Hurts the Climate

Synthetic grass/artificial turf is plastic and plastic emits methane, a powerful greenhouse gas (GHG).[154] Plastics start as fossil fuels and emit greenhouse gasses in every stage of their lifecycle, from the extraction of oil/gas to the trash pile.[155] Plastics have a huge carbon imprint.[156] Research showed the emissions from plastics in 2019 were nearly 1.8 billion metric tons of greenhouse gasses, and that number is projected to continue growing.[157]

Dr. Sarah-Jeanne Royer of the Scripps Institution of Oceanography in California wrote a letter in opposition to synthetic grass/artificial turf, citing methane as a major concern.[158] Dr. Royer and her colleagues found that polyethylene, used to make synthetic turf/artificial grass, releases more methane than any other plastic.[159]

During the breakdown of polyethylene, the release of methane gas accelerates and the surface area of the plastic increases, reacting more with the sunlight and releasing more methane.[160] As synthetic grass/artificial turf is commonly made of polyethylene, these fields constantly release methane as it interacts with the sun and everyday use. Over a 20-year period, methane is 80x more potent at warming than carbon dioxide and is responsible for 25% of global warming.[161]

- Synthetic Grass/Artificial Turf is Not Recycled

Used synthetic grass/artificial turf is expected to produce 1-4 million tons of plastic waste[162] in the next ten years. The plastic carpet and rubber crumb infill from synthetic grass/artificial turf fields are often dumped illegally or sent to landfills

[152] https://www.frontiersin.org/articles/10.3389/ftox.2022.748912/full
[153] https://www.theguardian.com/environment/2023/plastics-cause-issues-from-cancer-to-birth-defects
[154] https://www.nytimes.com/2019/02/20/synthetic-turf-will-contribute-greenhouse-gas-problems/
[155] https://www.ciel.org/reports/plastic-health-the-hidden-costs-of-a-plastic-planet-may-2019/
[156] https://www.sciencedaily.com/releases/2019/04/190415144004.htm
[157] https://www.oecd.org/environment/plastics/increased-plastic-leakage-and-greenhouse-gas-emissions.htm
[158] https://drive.google.com/file/d/1Q9NHwhVtY0ygHCcZDHhufkfcRdGFA35k/view
[159] https://www.bbc.com/news/science-environment-45043989
[160] https://www.surfrider.org/new-study-shows-plastic-as-source-of-greenhouse-gases-potentially-contribut
[161] https://ecology.wa.gov/Blog/Posts/February-2023/The-trash-climate-connection-what-you-need-to-know
[162] https://www.ydr.com/in-depth/news/2019/11/18/old-artificial-turf-fields-pose-huge-waste-problem

since there are no United States recycling facilities for synthetic turf.[163,164] Reuse is not recycling![165]

- Synthetic Grass/Artificial Turf is HOT

Synthetic grass/artificial turf is 40°-70° hotter than surrounding air temperatures and has burned hands and feet.[166] A study by Brigham Young found the surface temperature of synthetic grass/artificial turf was 37° higher than asphalt and 86.5° hotter than natural grass.[167] A study found that in 90° weather, the surface temperature of a natural grass field was about 98° while a synthetic grass/artificial turf field was over 160°.[168] Shoes have melted from the heat on synthetic grass/artificial turf with players and coaches getting blisters on the bottom of their feet through their shoes.[169] First-degree burns occur at 118° with blistering and second-degree burns at 131°.[170] Several synthetic grass/artificial turf fields in the Los Angeles Unified School District are currently closed due to high heat and melting surfaces.[171]

- Synthetic Grass/Artificial Turf is Dangerous to Athletes

Playing on synthetic grass/artificial turf can cause more injuries. According to an NFL Players Association (NFLPA) study, playing and practicing on synthetic grass/artificial turf increases the chance of a lower extremity injury with a 69% higher rate of non-contact foot/ankle injuries than on natural grass.[172] The NFLPA has called for all NFL fields to be natural grass.[173]

A study of National Collegiate Athletic Association (NCAA) athletes found playing on synthetic grass/artificial turf greatly increased the chance of knee ligament injuries while another study of high school athletes found they were 58% more likely to sustain an injury playing on synthetic grass/artificial turf than natural grass.[174,175]

The United States Men's Professional Soccer Team and other national teams only play on natural grass in the World Cup, and the United States Women's Soccer Team sued FIFA to not play on synthetic grass/artificial turf due to the increased risk of

[163] https://www.theatlantic.com/science/artificial-turf-fields-are-piling-no-recycling-fix/603874/
[164] https://peer.org/artificial-turfs-big-lie-old-fields-not-recycled/
[165] https://peer.org/artificial-turfs-big-lie-old-fields-not-recycled/
[166] https://www.safehealthyplayingfields.org/heat-levels-synthetic-turf/
[167] https://aces.nmsu.edu/programs/turf/documents/brigham-young-study.pdf
[168] https://www.center4research.org/injuries-related-to-artificial-turf/
[169] https://ftw.usatoday.com/2015/08/its-so-hot-in-texas-turf-is-melting-cleats
[170] https://www.nist.gov/el/fire-research-division-73300/firegov-fire-service/fire-dynamics
[171] https://www.latimes.com/sports/highschool/story/2022-08-17/synthetic-l-a-unified-out-of-commission
[172] https://nflpa.com/posts/only-natural-grass-can-level-the-nfls-playing-field
[173] https://apnews.com/article/9b34d4402f2f82ae60708605f65aa560
[174] https://pubmed.ncbi.nlm.nih.gov/30995074/
[175] https://www.uhhospitals.org/articles-and-news/articles/2019/08/artificial-turf-vs-natural-grass

injury.[176] Soccer legend Lionel Messi will only play on real grass.[177]

Studies have also shown that more serious concussions come from playing on synthetic grass/artificial turf compared to grass.[178]

- Natural Grass is Best

We ask the City of Carlsbad to follow organic land management practices, especially for managing playing fields.

Training is available online through the University of California, Riverside and other locations.[179]

High-use, organically managed, natural grass fields have been in use in many areas including Irvine, CA.[180,181]

Natural grass is the healthiest choice for playing fields and parks.[182] Natural grass fields are more cost-effective than synthetic grass/artificial turf fields which have higher maintenance and long-term costs.[183,184] Natural grass fields are also cheaper to install than synthetic grass/artificial turf.[185]

With proper care and maintenance, a natural grass field can accommodate any amount of play as demonstrated by Marblehead, MA with 20 acres of organically managed fields for over 15 years.[186]

Take Climate Action NOW: There Is No Time To Waste

As shown in the United Nations Intergovernmental Panel on Climate Change (UN/IPCC) report[187] released March 20th 2023, our climate situation is at the point of no return. Even if we start today with immediate and strong action, we only have a very moderate chance of limiting global warming to the 1.5°C threshold by the world scientific community. We are in a climate emergency!

We already see the effects of climate change[188] as predicted by scientists: droughts, heat waves, extreme weather, raging wildfires, loss of sea ice, sea level rise, etc.

If we do not greatly reduce greenhouse gases now, global temperature will continue to

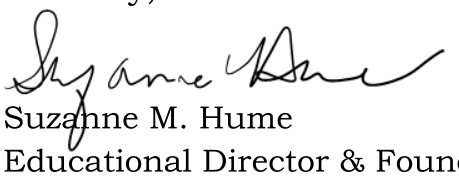
[176] https://www.npr.org/353312770/soccer-players-sue-over-proposed-turf-field-for-womens-world-cup
[177] https://www.sbnation.com/soccer/lionel-messi-inter-miami-mls-turf
[178] https://journals.sagepub.com/doi/10.1177/03635465000280050401
[179] https://cpe.rutgers.edu/landscape/natural-turf-certificate
[180] https://www.nontoxiccommunities.com/organic-athletic-fields.html
[181] https://youtu.be/o3P1T3fgy6I
[182] https://www.safehealthyplayingfields.org/health-benefits-of-natural-turf
[183] https://www.safehealthyplayingfields.org/s/Natural_Grass_Athletic_Fields_Ppoint_Final.ppt
[184] https://www.safehealthyplayingfields.org/maintenance-grass-vs-synthetic-turf
[185] https://www.safehealthyplayingfields.org/cost-grass-vs-synthetic-turf
[186] https://www.turi.org/content/NaturalGrassPlayingFieldCaseStudyMarbleheadMAJune202019.pdf
[187] https://report.ipcc.ch/ar6syr/pdf/IPCC_AR6_SYR_SPM.pdf
[188] https://climate.nasa.gov/effects/

rise and these impacts will also increase and intensify.

This is not a future problem, we are all being harmed right now.

The City of Carlsbad must implement a strong and enforceable Climate Action Plan now.

Sincerely,



Suzanne M. Hume
Educational Director & Founder
S@CleanEarth4Kids.org
(760) 650-2166
CleanEarth4Kids.org

Tammy Cloud-McMinn

From: Council Internet Email
Sent: Monday, November 6, 2023 1:09 PM
To: City Clerk
Subject: FW: Comments on CAP Update

All Receive - Agenda Item # 5
For the Information of the:
CITY COUNCIL
Date 11/4/23 CA ✓ CC ✓
CM ✓ ACM ✓ DCM (3) ✓

From: Diane Nygaard <dnygaard3@gmail.com>
Sent: Monday, November 6, 2023 1:01 PM
To: Council Internet Email <CityCouncil@carlsbadca.gov>
Subject: Comments on CAP Update

Honorable Mayor and Council

Meaningful efforts to reduce the impacts of climate change become more critical every day. We appreciate the challenges you face with this next CAP update.

We were all disappointed that this update can only be based on the most recent data that is available, and unfortunately that is the customized version of the 2016 SANDAG model.

Research results from around the world indicate that climate change is happening even faster than was predicted. Now, after several years of trying to implement GHG reduction measures, we have all learned how challenging this task is. The kinds of changes that are needed do not always work as well as was predicted, and it takes much longer to implement new programs than was anticipated.

In spite of efforts to reduce GHG since the original CAP was adopted, the staff report shows that the new 2016 annual baseline emissions are now 981k Metric tons of GHG, whereas they were 706K in the previous CAP. That is a substantial increase in overall community GHG emissions. The transportation sector that previously accounted for 39% of the total GHG now accounts for 51%.

We appreciate that the action list is still being refined based on your input and that from the community. We have provided more detailed input to staff. Today we offer just a few big picture thoughts for how to ensure the final CAP actually achieves the GHG reductions that are needed:

- Set a higher threshold to allow for contingencies

The CAP actions just barely meet the minimum required GHG reductions. The amount needed assumes substantial reductions will come from state actions so the City only needs to close the gap. But past results show the state failed to meet their targets and there is no reason to think that will get better. In addition, many of the action items from the 2015 CAP were not implemented as planned, or did not achieve the results that were predicted. Planning for contingencies- perhaps by setting a goal to achieve 10% greater reductions than the bare minimum, would help increase the odds of actually achieving the targets.

- Improve accountability be establishing stronger interim benchmarks for implementation

Many of the action items have targets years in the future with years of advance work needed to get programs ready. There is no easy way for you or the public to measure actual progress toward meeting the 2035 and 2045 targets without some clear interim benchmarks.

- Focus efforts on priority actions with the highest GHG reductions

Two that we think are critical include building electrification combined with 100% renewable energy through CEA, and a strengthened TDM program that addresses all land uses. Both of these efforts need to address both new and existing development and include both carrots and sticks.

Thank you for considering these comments.

Sincerely,

Diane Nygaard
On behalf of Preserve Calavera

Tammy Cloud-McMinn

From: Wendy Mihalic <wmihalic@gmail.com>
Sent: Tuesday, November 7, 2023 10:54 AM
To: City Clerk
Subject: Agenda Item #5, 11/7/23

All Receive - Agenda Item # 5
For the Information of the:
CITY COUNCIL
Date 11/7/23 CA ✓ CC ✓
CM ✓ ACM ✓ DCM (3) ✓

Honorable Mayor and Council Members,

Thank you for the opportunity to share some insights from my personal experience with decarbonizing buildings, namely my home. I do not live in Carlsbad but my La Mesa community faces many of the same environmental issues and is also in the process of updating their CAP. My home is now fully electric (the gas meter has been removed) and I can attest to the benefits of removing methane gas from my environment, including cleaner indoor air and lower utility bills.

Seven of the 22 potential measures recommended for inclusion in the Carlsbad CAP Update are from the Energy sector and of those seven, five are related to buildings. Buildings are second only to transportation in GHG emissions in our region when accounting for the electricity and natural gas consumed in our homes and businesses. Burning natural gas accounts for 14% of 2016 emissions in Carlsbad, largely due to heating homes, offices and water.

So, it makes sense that Carlsbad adopt strategies to focus on decarbonizing buildings. The access to clean electricity through the Clean Energy Alliance Community Choice Energy program makes the choice to 'electrify everything' that much clearer.

Funding available to communities and residents to retrofit their homes with energy efficient electric appliances is at an all-time high. Now is the time to provide education and outreach to help residents apply for Federal, State and Local incentives to increase the use of electric/ heat pump appliances in Carlsbad. Reducing energy usage, especially gas, in existing buildings is key to meeting climate goals.

Other recommendations include:

1. Work with Clean Energy Alliance to increase Carlsbad customer participation in 100% renewable energy by 2030.
2. Encourage and enable building energy audits to identify the best efficiency options.
3. Pass an ordinance for all new buildings, commercial and residential, to be electric. As stated above, encourage the electrification of existing residential and commercial buildings.
4. Retrofit all municipal buildings and establish a specific time-line to complete the conversion to all-electric.
5. Identify areas where distributed energy makes sense:
    a. Public sites suitable for rooftop or parking lot PV solar and/or battery storage.
    b. Private businesses that have space for rooftop or parking lot PV solar and may be interested in the SDCP feed-in tariff program, which provides incentives for small generators (< 1 MW).
    c. Explore the use of microgrids for municipal facilites.
6. Commit to electrifying the municipal fleet including all city-heavy duty and emergency responsevehicles.
7. Install public EV charging stations.
8. Require electric landscape equipment for businesses and residents, start with municipal operations.
9. Include requirements to phase out high-global warming potential refrigerants including switching to safer refrigerants and requiring existing systems to be exceptionally leak-tight.

The Themes from Phase I Public Comment (Exhibit 4, Pg 47-51) couldn't be better stated: Be bold, consider a range of actions with priority on largest GHGe reductions and promote equity and public awareness.

Thank you

Wendy Mihalic

Tammy Cloud-McMinn

From: kelly.leberthon12@gmail.com
Sent: Tuesday, November 7, 2023 11:35 AM
To: City Clerk
Subject: City Council November 7, 2023, Agenda 5

Financing the Green Agenda boondoggle presents a huge problem and is only superficially addressed in the memo noting that we can expect there will be a need for 'new staffing' – following the paradigm of government created and tax payer funded cottage industries like the homeless programs – new staff, new infrastructure, new administration, new funding. The memo goes on to state that "Because of the nature of a long-range planning program such as the Climate Action Plan update, actual resource needs have not been specifically identified at this time. However, staff will ensure that all available external funding sources."

The staff memo proposes measures like "Zero emission city fleet." How much will this cost? And if you allowed true freedom of speech and other-than-green-agenda- input you might even know that an all electric vehicle is NOT good for the environment!

What about the **Human Cost**? Are you aware that the minerals for EV batteries and solar panels largely come from communist China who use Uyghur slave labor to make them?

> "…environmental journalist Michael Shellenberger sounded the alarm over the connection between Chinese-made solar panels and the CCP's ongoing genocide of the Uyghur ethnic group…Shellenberger [referenced] a report by The New York Times that connected the production of solar panels in China to the 'forced labor' of minority groups in Chinese-occupied East…People say that what reduced the cost of solar panels was tech innovation, but it wasn't…It was Chinese government subsidies, coal, and forced labor. This issue should transcend politics. It's immoral to import products made in such horrific conditions."
> https://catholicvote.org/house-both-parties-confront-biden-over-solar-panels-made-by-forced-labor-in-china/

To gather the minerals countries like Democratic Republic of the Congo (DRC) in south central Africa use **child labor** to dig in dirt at pennies a day??

https://www.themainewire.com/2022/12/maine-ev-goals-put-green-ideology-over-lives-of-cobalt-mining-congolese-children/

"Cobalt is an essential ingredient in lithium-ion batteries. Around 74% of the cobalt on the planet lies in one small area of the Democratic Republic of the Congo (DRC) in south central Africa…the Chinese government and Chinese mining companies took control of almost all the big mines." Since then, Kara says, "The **local population has been displaced**, **is under duress**, and **they dig in absolutely sub-human gut-wrenching conditions for a dollar a day** feeding Cobalt up the supply chain."

Are you aware that **public demand for EV's is so low** that "Amazingly, **less than 10% of all new car sales over the past two years were EVs**. This is despite the fact that the U.S. government is writing a $7,500 check to people for buying an EV, and some states are kicking in $5,000 more…all-in EV subsidies can reach $40,000 per vehicle… It would practically be cheaper for the government to purchase a new gas vehicle for every American car buyer." And "Energy expert Robert Bryce estimates that Ford has lost $62,000 for each EV it has rolled off the assembly line."
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Lastly, the energy discussion should include **fossil fuels and nuclear** options. Climate alarmists have caused undue fear of these options. The truth matters.

"The rate of climate disaster death has gone down by a factor of 50. So it's gone down 98% in the last 100 years. Why? Because whatever warming impact we've had on climate is trivial compared to our ability to neutralize climate danger to what I call master climate. If you have a lot of energy to power irrigation systems and to power crop transport and to heat and to cool, and to build sturdy infrastructure and to have storm warning systems to tap evacuation, you're going to be incredibly safe from climate. So climate change doesn't matter compared

to climate mastery. And the way you get climate mastery is having cheap energy. And the only way you can get cheap energy on a large scale right now and for the foreseeable future is fossil fuels. So undoubtedly, Africa needs far more fossil fuels to develop and prosper, and that's not going to cause a crisis." https://alexepstein.substack.com/p/my-speech-and-interview-at-africa?utm_source=post-email-title&publication_id=513601&post_id=138247150&utm_campaign=email-post-title&isFreemail=true&r=plnld&utm_medium=email

Note too that **the Scientific Community is not monolithic**. An article titled "Coalition of Scientists: 'There is No Climate Emergency'" states "Climate science has degenerated into a discussion based on beliefs, not on sound self-critical science,...In the future, climate research must give significantly more emphasis to empirical science."

The signers highlighted that "natural as well as anthropogenic factors" have led to warming, but that this is no surprise or cause for alarm, because "the earth's climate has varied as long as the planet has existed, with natural cold and warm phases." https://catholicvote.org/coalition-of-scientists-no-climate-emergency/

Stop the fear mongering and stop spending our money on these climate hysteria programs and start better understanding the Energy Issues by opening up the conversation to those not on the green agenda alarm squad. Revise staff's stakeholder community to include those other than the Green Agenda community.

Tammy Cloud-McMinn

From: Krisha Markowicz <krisha2700@yahoo.com>
Sent: Tuesday, November 7, 2023 11:46 AM
To: City Clerk
Subject: No to agenda 5

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Krisha Wolter
District 2 resident.

Sent from my iPhone

Tammy Cloud-McMinn

From: Tamara Dixon <tamara9497@yahoo.com>
Sent: Tuesday, November 7, 2023 11:56 AM
To: City Clerk
Subject: Agenda 5

Dear council members ,

City Council November 7, 2023, Agenda 5

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gas vehicle for every American car buyer." And "Energy expert Robert Bryce estimates that Ford has lost $62,000 for each EV it has rolled off the assembly line." https://www.dailysignal.com/2023/10/31/the-great-green-energy-transition-that-wasnt/?utm_source=TDS_Email&utm_medium=email&utm_campaign=CapitolBell

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Thank you

Tamara Dixon

Tamara Dixon
Sent from my mobile phone
619-787-7396

Tammy Cloud-McMinn

From: George Corrales <george.corrales@interlogica.com>
Sent: Tuesday, November 7, 2023 12:10 PM
To: City Clerk
Subject: City Council Agenda 5, November 7, 2023

Financing the hysteria-driven Green Agenda is a huge waste of human resources, time, and money. As noted, for example, "new staffing" will be needed, but "because of the nature of a long-range planning program like the Climate Action Plan update, actual resource needs have not been specifically identified at this time." Translation, taxpayers are on the hook in perpetuity. That is not acceptable.

Another example includes moving the city towards a "zero-emission city fleet." The cost? Not specified. Why? Because the facts on EVs are in: all-electric vehicles are bad for the environment, lithium mining is off the backs of poverty-stricken nations, and new, better alternatives are on the near horizon, including Toyota's investment in hydrogen- and ammonia-powered vehicles.

The human cost must also be weighed. For example, communist China uses Uyghur slave labor to extract EV battery and solar panel minerals. Environmental writer Michael Shellenberger raised concerns about the link between Chinese-made solar panels and the CCP's continuing extermination of the Uyghur ethnic minority. According to Shellenberger, a New York Times study linked Chinese solar panel manufacture to forced labor of minority communities in Chinese-occupied East.

Tech innovation is often credited for lowering solar panel costs, however this is not true.China provided subsidies, coal, and forced labor. It should transcend politics. Importing items from such squalor is immoral."

See:
https://catholicvote.org/house-both-parties-confront-biden-over-solar-panels-made-by-forced-labor-in-china/

See:
https://www.themainewire.com/2022/12/maine-ev-goals-put-green-ideology-over-lives-of-cobalt-mining-congolese-children/

Cobalt is crucial to lithium-ion batteries. Approximately 74% of global cobalt is found in the Democratic Republic of the Congo (DRC) in south-central Africa, where the Chinese government and mining corporations control most major mines. Since then, Kara explains, "The local population has been displaced, is under duress, and they dig in

absolutely sub-human gut-wrenching conditions for a dollar a day feeding Cobalt up the supply chain."

Less than 10% of new automobile sales over the last two years were EVs, indicating poor consumer demand. Even if the U.S. government provides $7,500 for EV purchases and certain states contribute $5,000 extra, all-in EV subsidies may approach $40,000 per car. The government would save money by buying every American car buyer a new gas vehicle. Energy expert Robert Bryce says Ford has wasted $62,000 on each EV it has produced on the assembly line.

See:

https://www.dailysignal.com/2023/10/31/the-great-green-energy-transition-that-wasnt/?utm_source=TDS_Email&utm_medium=email&utm_campaign=CapitolBell

Finally, energy discussions should include fossil fuels and nuclear. Climate alarmists have created unnecessary dread about these choices. The truth counts.

"Climate catastrophe deaths have dropped 50-fold. The previous 100 years have seen a 98% drop. Why? Because our warming influence is negligible compared to our power to govern climate. You'll be climate-safe if you have enough energy to power irrigation systems, crop transport, heating, cooling, building durable infrastructure, and storm warning systems to evacuate. So climate mastery trumps climate change. With inexpensive energy, you can master climate. You can only obtain inexpensive energy on a massive scale from fossil fuels today and in the future. African development and prosperity need substantially more fossil fuels, but that won't trigger a catastrophe."

See:

https://alexepstein.substack.com/p/my-speech-and-interview-at-africa?utm_source=post-email-title&publication_id=513601&post_id=138247150&utm_campaign=email-post-title&isFreemail=true&r=plnld&utm_medium=email

Be aware that the Scientific Community is diverse. According to the article "Coalition of Scientists: 'There is No Climate Emergency'", climate science has become a topic focused on ideas rather than good evidence.Climate research must emphasize empirical science more in the future."

The signers noted that "natural as well as anthropogenic factors" have caused warming, but "the earth's climate has varied as long as the planet has existed, with natural cold

and warm phases." https://catholicvote.org/coalition-of-scientists-no-climate-emergency/

Stop the fear mongering and stop spending money on climate hysteria initiatives. Instead, open the discourse to non-green agenda alarmists to better comprehend energy issues. Add non-Green Agenda stakeholders to staff's stakeholder community.

From: tamara9497@yahoo.com
Sent: Tuesday, November 7, 2023 1:18 PM
To: City Clerk
Subject: agenda 5

Importance: High

Expires: Thursday, December 7, 2023 12:00 AM

Agenda 5

Dear Council Members,

A $500-million dollar project is finally getting started after years of hype and headlines about the Imperial Valley someday becoming a powerhouse in the fight against climate change.

An Australian company is preparing to tap a buried reservoir of salty, superheated water to produce renewable energy — **and lithium, a crucial ingredient in electric car batteries.**

Can you imagine the particles of dust and lithium that will float into nearby towns? Wait, isn't that Carlsbad where the batteries will be manufactured. What about the decimation to our land due to the digging.

Have people who want to only go electric realize they are voting "for" more pollution unbeknownst to them. What happens after the batteries cannot be used any longer? Will they be thrown into a battery graveyard to have lithium seep into our dirt and streams?

What happens if our electric grid goes down? How will everyone charge their car battery and be able to use their appliances.

If climate change is so important to you, will YOU give up your private trips by jet or gas guzzling car?

The most logical answer is not to go all electric as there is no such thing as climate change. The only climate change I see is the trash the homeless leave behind.

Thank you,

Tamara Dixon

Tammy Cloud-McMinn

From: Mike McMahon <2mmcmahon@gmail.com>
Sent: Monday, November 6, 2023 3:34 PM
To: City Clerk
Subject: City Council Meeting for Nov 7, 2023 Agenda Item 5, Potential GHG Emissions for the CAP Update

All Receive - Agenda Item # 5
For the Information of the:
CITY COUNCIL
Date 11/7/23 CA ✓ CC ✓
CM ✓ ACM ✓ DCM (3) ✓

SIERRA CLUB

COASTERS
NORTH COUNTY COASTAL GROUP

Explore, Enjoy & Protect the Planet

Dear Mayor and City Council,

Our city will need to reduce greenhouse gases (GHG) in 2030 by 50% and in 2045 by 85% from 1990 levels. These reductions are predicated on when the measures are implemented, the sooner measures are implemented the sooner we can meet these state deadlines. While building on some previous CAP measures, staff has listed additional measures that need immediate attention to enact and measure their progress in meeting our climate goals. This will require the city to have an implementation plan to actively fund and identify priority measures, chart costs, task responsible staff, interface with related agencies, and meet timelines.

All additional proposed CAP measures need to be acted on, but by far, energy and transportation will need the city's active attention and ongoing commitment to meet our mandated state GHG levels. We urge the city to focus on the following areas:

- The TDM is weak. With transportation ~50% of our emissions, this needs serious action. The recent purchase of 40 new police cruisers in lieu of looking at options for hybrids shows a lack of commitment to lowering GHGs in this sector. Recruit more businesses by adjusting the threshold for requiring a TDM plan.
- Our third highest generator of GHG is natural gas use. 2035 is the year our General Plan anticipates the city will be fully developed or built out. As a city that has declared a climate emergency, we can no longer continue to keep building out natural gas fossil fuel lines into buildings. We need to enact an ordinance for new building electrification (through building efficiency reach code adoption) and, at the same time, start the process of retrofitting buildings to higher efficiency standards. All new building codes should strongly incentivize if not mandate all electric soon so that residents aren't left with stranded methane infrastructure should the state move to removing gas from buildings.
- Establish a city wide CEA goal of 100% renewable energy by 2035 for residential, non-residential and municipal buildings.
- Make climate action front and center by creating a dashboard on the city's home page to monitor CAP progress and quick links for residents and businesses to learn about building decarbonization, and incentives available to make clean appliance purchases.

Again, we can't stress enough that action be taken soon. Locking in GHG reductions greatly improves our ability to meet our targets. Carlsbad needs to show it really is a sustainability leader and not just taking the path of least resistance.

Mike McMahon
On Behalf of Sierra Club North County Coastal Group

Tammy Cloud-McMinn

From: Mary Hassing <mehassing@gmail.com>
Sent: Monday, November 6, 2023 4:08 PM
To: City Clerk
Subject: Comment on Agenda #5, Potential Measures to Reduce Greenhouse Gas Emissions for the Climate Action Plan Update

Dear Council members,

As you go through the process of updating the city's Climate Action Plan, I urge you to prioritize the reduction of GHG emissions. If Carlsbad is to meet the mandated CA target goals of 50% reduction from 1990 levels in 2030 and 85% in 2045, there must be a firm commitment to an immediate implementation plan.

Electrification of new building construction through adoption of a reach code, and elimination of new gas lines, is an important step. Incentivizing all electric for commercial and residential buildings helps the city move into the future and helps businesses and residents update their infrastructure to achieve a cleaner and healthier environment. Certainly, new city facilities and renovations should automatically be all electric.

Transportation produces around 50% of emissions. Decisions we make every day influence that percentage, whether we use available public transportation, bike, walk or carpool. Many Carlsbad residents have chosen to purchase an electric or hybrid vehicle. It was discouraging to learn that the city recently decided to purchase 40 new gas engine police cruisers. How many years will those vehicles be on our roads and how many tons of GHG emissions will they produce?

We residents are looking for your leadership in fighting climate change. In the spirit of Carlsbad's Climate Emergency Declaration, please recommit to doing all you can for our environment.

Sincerely,

Mary Hassing
Carlsbad

Tammy Cloud-McMinn

From: kelly.a.lyndon@gmail.com
Sent: Monday, November 6, 2023 6:52 PM
To: City Clerk
Cc: Katie Hentrich
Subject: Comments on Item #5 on 11/7/23 agenda

Regarding Item #5 "POTENTIAL MEASURES TO REDUCE GREENHOUSE GAS EMISSIONS FOR THE CLIMATE ACTION PLAN UPDATE"

I'm pleased to see the progress on the CAP, this is such an important effort for the community of Carlsbad.

The following are my comments on the CAP proposed actions developed by staff:

1. Renewable Energy at Municipal Facilities: I recommend changing the title to add "and Energy Efficiency", based on content and parallel to other sections.
2. Renewable Energy at Municipal Facilities: while it does say "Eliminate natural gas use from city facilities", I suggest being more specific - all new municipal buildings and additions/alterations should be all-electric, including replacing gas systems with efficient electric systems at their end of life.
3. In the two sections on Res & NonRes EE & RE, I suggest adding a contingent action – to pass a reach code to require all-electric buildings if and when the associated legal issues (CRA vs Berkeley) are resolved. This CAP will last many years, hopefully one day the lawsuit will be resolved allowing this.
4. Building Energy Benchmarking: This is great, but it is just reporting usage. Usually cities take it further and create a "Building Performance Standard", which establish specific performance levels that buildings must achieve over time. I suggest a phased approach starting with Benchmarking and then adding Performance Standards
5. Decarbonize Existing Buildings: I suggest adding "Community-Driven Retrofit Accelerator" as another example under the supporting action "Seek external funding..."

Thank you,
Kelly Lyndon

Tammy Cloud-McMinn

From: Craig Benedetto <craigb@calstrat.com>
Sent: Tuesday, November 7, 2023 9:49 AM
To: Katie Hentrich
Cc: Melanie Cohn; Melanie Woods; Chris Duggan; Fred Tayco; Angeli Calinog Hoyos; Marshall Anderson; City Clerk; Lori Pfeiler; Hannah Gbeh; Manager Internet Email
Subject: Coalition Ltr - Carlsbad CAP Update - Item #5 - Nov 7, 2023
Attachments: Coalition Ltr - Carlsbad CAP Update - Nov 7, 2023.pdf

Good morning Katie. Please accept a comment letter from our coalition on the draft Climate Action Plan to be discussed this evening by the City Council. I've copied all of our members who have co-signed this letter. We look forward to further discussion with you about the specifics of the plan in the near future. In the meantime, please let us know if you have any comments or questions. Thanks and have a great rest of your morning.

Sent by:

Craig Benedetto
California Strategies
530 B Street, Suite 920
San Diego, CA 92101

O: (619) 546-7451
C: (619) 980-8032
E: craigb@calstrat.com

www.calstrat.com

NAIOP San Diego
BOMA San Diego
San Diego Regional Chamber of Commerce
Biocom California
California Apartment Association
California Restaurant Association
Building Industry Association of San Diego
San Diego County Lodging Association

TRANSMITTED ELECTRONICALLY

November 7, 2023

Katie Hentrich, CAP Administrator
Environmental Sustainability
City of Carlsbad
1635 Faraday Ave.
Carlsbad, CA 92008

RE: DRAFT Climate Action Plan Update

Dear Katie:

On behalf of the undersigned coalition, please accept some preliminary comments on the draft Climate Action Plan Update documents the City has posted on its website. It should be noted that the draft document is mostly thematic, so it's difficult to make direct comment to specific proposals, but we have endeavored to give our thoughts on the numerous issues that might be included under these thematic areas.

In general, our coalition appreciates that cities are regularly updating their climate action plans to reflect environmental priorities and state law changes. Our coalition's members have been leaders in reducing greenhouse gas emissions from the built environment. Our members see themselves as part of the solution to addressing climate change. Again, in general, our members and for those who have rental commercial or residential property, their tenants also recognize and support, within reason, the importance of protecting our planet by increasing energy efficiency.

It's important to note, and as the greenhouse gas inventory conducted by city staff demonstrates, the vast majority of climate emissions are from transportation. Our coalition believes the best way to control transportation emissions is to increase jobs creation adjacent to where people live. In Carlsbad, while there has been excellent planning to try and balance jobs

and housing, more could be done on this front to balance the distance between where people live, where they work and where they seek their services.

The remaining emission reduction opportunities are spread between a number of categories, all of which represent a small amount of GHG. As the City looks to adopt even more stringent rules, you should be careful to not harm the ability of jobs providers to create new commercial and industrial spaces, detrimentally impact your existing employers, as that could be counter to the important goal of reducing GHG by better co-location and balance of jobs-housing-services.

With these preliminary general thoughts in mind, we offer the following comments on the theme areas included in the draft plan:

- Emissions benchmarking reports - state law already requires this reporting. Other jurisdictions, like the City of San Diego, also have overlapping requirements for these reports. We would strongly recommend that the required reports mirror those already provided to the state. Energy Star Portfolio Manager is the tool used, and we'd recommend that tool be used here, if a duplicative requirement is desired.
- Building code energy efficiency requirements - the State of California already has some of the most stringent energy efficiency requirements in the world. Some jurisdictions like the public relations narrative of going beyond state requirements using "reach" or "stretch" codes. We would strongly encourage caution in going beyond already aggressive state standards. It creates uncertainty in the development process, as well as a competitive disadvantage in your community.
- Electrification - our coalition has opposed building electrification mandates. While we know that's not presently being considered, we also know it's still a potential future consideration, which is why we reinforce this point. Numerous examples exist of the need for a variety of clean energy production methods that cannot meet this standard. Whether its life sciences, restaurants or other manufacturers, including the provision of services in larger buildings, some processes or equipment require natural gas. It's a relatively small amount, by comparison to other emission sources, and shouldn't be immediately discarded given the implications. With regard to residential property, the mandated replacement of appliances, water heaters or other equipment in existing buildings would represent a significant cost which would accrue to residents.
- EV charging and photovoltaic mandates should be carefully considered. These are extremely expensive requirements that are not easily achieved, particularly in commercial settings. Serving those additional loads on a property by property basis can be challenging, and expensive. As in other comments, these mandates add to the cost of doing business or the cost of housing, and our coalition believes the cost-benefit should be a factor in these decisions.
- Incentives work. An excellent example is in the installation of photovoltaic as well as the acquisition of electric vehicles. When incentives, like tax credits, are applied, acceptance and adoption increases exponentially. When they drop, like the recent decision by the

CPUC to change net metering rules, adoption dramatically drops. The City should focus on incentives for change, rather than mandates.

- Transportation demand management is a cautionary tale. In some cases, mandates under a TDM program that drive either operational changes or impact employees from a cost or convenience standpoint could drive businesses out of Carlsbad, which harms your economic development efforts, as well as conflicts with the greatest means of reducing emissions, which is having jobs adjacent to homes in your community. Voluntary programs, coupled with financial incentives to pay for ride sharing are something to be used and expanded. Additional analysis should also be completed. Given COVID-era driven changes in work habits, a number of employers are allowing an even greater share of work from home opportunity, which may mean that these goals are already being readily met. Focus should also be paid to improving the areas transit services, including shuttle services to and from rail stations. Convenience drives behavior, so that could assist greatly in reducing auto trips. Lastly, the State of California has already mandated the phasing out of combustion vehicle sales. There should be much less concern about vehicle emissions, given the time horizons for these mandates.
- Parking Demand Management - Village and Barrio parking management studies are being conducted, so no action should be taken until those are done. Again, similar to the TDM discussion, caution should be used in creating rules or requirements that make it difficult to develop or maintain a business within your community. Many of the ideas discussed under TDM in this letter could be considered for this as well.

Lastly, we'd like to note our concerns about the public review process. We are disappointed that a council hearing is taking place before the conclusion of the very brief public comment period for the draft plan ends. In order for City decision makers to make well-informed decisions that will have lasting impact on Carlsbad and regionally, we ask that the remainder of this process is more open and collaborative with stakeholders and members of the public. In closing, we kindly request a cost-benefit analysis be done on any proposal to be considered.

Thank you for your time and consideration of these thoughts. Our organizations are willing to continue to discuss these issues as you proceed with more specific update proposals.

Sincerely,

Craig Benedetto, NAIOP San Diego & BOMA San Diego
Angeli Hoyos, San Diego Regional Chamber of Commerce
Melanie Cohn, Biocom California
Melanie Woods, California Apartment Association
Chris Duggan, California Restaurant Association
Lori Holt Pfeiler, Building Industry Association of San Diego
Fred Tayco, San Diego County Lodging Association

CC: Carlsbad City Council

Tammy Cloud-McMinn

From: Council Internet Email
Sent: Tuesday, November 7, 2023 2:19 PM
To: City Clerk
Subject: FW: Item 5 on tonight's agenda

All Receive - Agenda Item # 5
For the Information of the:
CITY COUNCIL
Date 11/8/23 CA ✓ CC ✓
CM ✓ ACM ✓ DCM (3) ✓

-----Original Message-----
From: Kathy Parker <casparker@outlook.com>
Sent: Tuesday, November 7, 2023 1:58 PM
To: Council Internet Email <CityCouncil@carlsbadca.gov>
Subject: Item 5 on tonight's agenda

> Council members,
>
> While I am glad to see you are at least, addressing some problems and solutions to our current climate crisis, I continue to be disappointed with the snails pace at which the city is actually implementing measures that will slow climate change. It would seem your reluctance to take action has to do with not alienating certain factions that could suffer financially from the restrictions that need to be imposed toward the goal of 100% clean energy. For the sake of the welfare of the planet, that my grandchildren will be inhabiting for the next many decades, I think we must be bold enough to set limits, whether popular or not, in the very near future.
>
> I urge you to be bold on your votes to implement the CAP despite the fact that you may find objections to some of the measures from your near sighted constituents who may find them inconvenient.
>
> Kathryn Parker
> Residing at 3784 Skyline Rd for the last 47 years.

Ana Alarcon

From: Barbara Diamond <diamondbarb@gmail.com>
Sent: Tuesday, November 7, 2023 1:57 PM
To: City Clerk
Subject: Agenda # 5 comment on the need for an educational out-reach program for the CAP

Dear Council Members,
There are many important CAP goals that deal with the reduction of fossil fuels. In my opinion, more emphasis should be on educating the public to gain commitment to these goals. Without public support, the goals will likely fall short.
There are many ways to gain the public attention. Community educators could be recruited to form an educational plan. Scott Chadwick's weekly newsletter could produce interesting articles and graphs as in the news about covid. Community organizations and student groups could promote climate goals and behavior change. Eye-catching posters and advertisements with suggestions for reducing fossil fuel use and changing to renewable energy placed in various locations could attract the attention of the public who tend to be unaware of climate issues. I am sure there are many more good ideas out there.
Please make this a priority that can be set into action in the near future.
Barbara C. Diamond
resident for 25 years in District 1.

--
~Barbara Diamond~

CITY COUNCIL
Staff Report

Meeting Date:	Nov. 7, 2023
To:	Mayor and City Council
From:	Scott Chadwick, City Manager
Staff Contact:	Katie Hentrich, Senior Program Manager katie.hentrich@carlsbadca.gov, 442-339-2623
Subject:	Potential Measures to Reduce Greenhouse Gas Emissions for the Climate Action Plan Update
Districts:	All

Recommended Action

Receive a report on potential measures to reduce greenhouse gas emissions for the draft Climate Action Plan update and provide feedback to staff as desired.

Executive Summary

Carlsbad's Climate Action Plan outlines the city's strategies and policies to reduce greenhouse gas emissions to meet state-mandated targets to reduce emissions to 4% below 2012 levels by 2020, and then to 52% below 2012 levels by 2035. The plan targets the community's greenhouse gas inventory, a list of emission sources and their associated emissions.

Since the city adopted the Climate Action Plan in 2015, the communitywide greenhouse gas inventories and the statewide targets have both been updated, making it necessary to update the plan to advance the community's goal of promoting a sustainable environment and align with updated statewide targets to reduce greenhouse gas emissions.

Following the direction of the City Council, staff have been working with a consultant to prepare a comprehensive update to the Climate Action Plan since 2021. This update is intended to meet two state targets: to reduce emissions to 50% below 2016 levels by 2035 and to reduce emissions to 85% below 2016 levels by 2045.

As part of that process, staff are now asking the City Council to review 22 potential greenhouse gas reduction measures for inclusion in the update of the Climate Action Plan so the city can comply with the state-wide goal. Some of the proposed measures relate to actions that the city is already taking.

The City Council's feedback on these potential measures, as well as community input gathered through public engagement efforts, will help guide the rest of the development of an updated Climate Action Plan.

After the City Council's review, staff will conduct a detailed analysis of the cost of implementing these measures and then, in early 2024, analyze their potential environmental impact, in keeping with the California Environmental Quality Act.

The City Council will be asked to make the final decision on the exact emissions reductions measures to be included and to adopt the updated Climate Action Plan, as well as to review and approve the associated environmental compliance document, in mid-2024.

Explanation & Analysis

Purpose of Climate Action Plan

Climate action plans are comprehensive plans that detail the specific activities that a government agency will undertake to reduce greenhouse gas emissions. Climate action plans generally focus on those activities that can achieve emission reductions most cost-effectively. These plans typically include:

- Specific city-sponsored initiatives and actions that the city controls directly, such as operations and energy use at city buildings and the types of cars in the city's fleet.
- State and city policies to direct, guide or influence outside actions, such as a requirement to recycle food scraps and energy efficiency standards for new building construction.

The City of Carlsbad was one of the first cities in the county to adopt a Climate Action Plan To support California's ambitious emissions reduction goals. The 2015 plan identified strategies and policies to reduce greenhouse gas emissions in a measurable way.

The plan further implements the city's Sustainability Guiding Principles and Community Values of Sustainability, as well as the actions identified in the Declaration of a Climate Emergency, approved by the City Council on Sept. 21, 2021, and the five-year Carlsbad Strategic Plan.

Climate Action Plan update timeline

- 2015 – Climate Action Plan adopted by the City Council.
- June 2021 – Funding for a comprehensive update to the Climate Action Plan was approved by the City Council as part of the fiscal year 2021-22 budget.
- Nov. 23, 2021 - The city executed a professional services agreement with the Energy Policy Initiatives Center, or EPIC, with Ascent Environmental as a sub-consultant, for help developing an update to the Climate Action Plan.
- April 19, 2022 - The City Council directed staff to use a customized run of the San Diego Association of Governments' most recent Activity Based Model tailored specifically for Carlsbad in its update of the Climate Action Plan rather than the standard forecasting model that was available.[1] This enabled the city to align the data and modeling used to forecast growth in Carlsbad for the Climate Action Plan with what is needed other concurrent city efforts, such as the assumptions and site analyses being used for the Housing Element update's rezoning program, ensuring that these official city plans and standards are consistent.

[1] The Activity Based Model uses community members' daily travel itineraries to try to forecast where, when and how people will travel outside their home, providing critical information for long-range transportation and planning efforts, such as the Climate Action Plan.

- Delivery of the data was delayed numerous times, as shown in Exhibit 1. To ensure the Housing Element rezoning work met its state deadline, staff used contingency funds within the current contract to have Ascent Environmental complete the necessary transportation modeling work.
- The first draft of that data was provided in May 2023, allowing the project team to move forward with preparing calculations and analyses for the Climate Action Plan update.

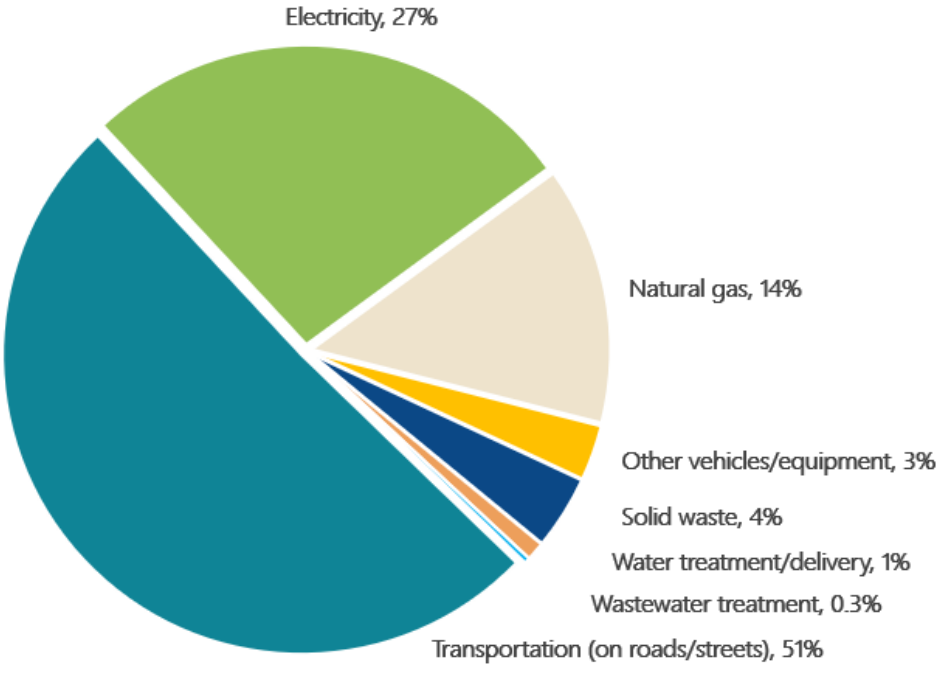
How the plan is updated

Updating the Climate Action Plan requires updating the greenhouse gas inventory and reduction targets, as detailed in Exhibit 2, to reflect the best available data and most recent state legislation.

The starting point for tracking activities in such a plan is the year it began, known as the baseline year. The update of the Climate Action Plan uses 2016 as the baseline year, because it provides the most comprehensive, recent and best available data. Greenhouse gas emissions are measured as metric tons of carbon dioxide equivalent, or MT CO_2e.[2]

Based on the 2016 data, the top three categories of emissions in Carlsbad are transportation on roads (basically vehicle travel), electricity and natural gas use, as shown in the chart below.

Carlsbad's 2016 greenhouse gas emissions inventory



The precise emission reduction totals, and other information, can be found in Exhibit 2, Methods for estimating GHG emissions and emissions reductions in the Carlsbad CAP Update – Draft.

[2] The unit CO_2e represents an amount of a greenhouse gas whose atmospheric impact has been standardized to that of one unit mass of carbon dioxide (CO_2), based on the global warming potential of the gas.

State targets
California's Legislature has set the following greenhouse gas reduction targets:

- **2030** - Senate Bill 32 (2016) requires the California Air Resources Board to ensure the state's greenhouse gas emissions are reduced to 40% below 1990 levels by 2030.
- **2045** - Assembly Bill 1279 (2022) requires the Air Resources Board to ensure emissions are reduced to 85% below 1990 levels by 2045.

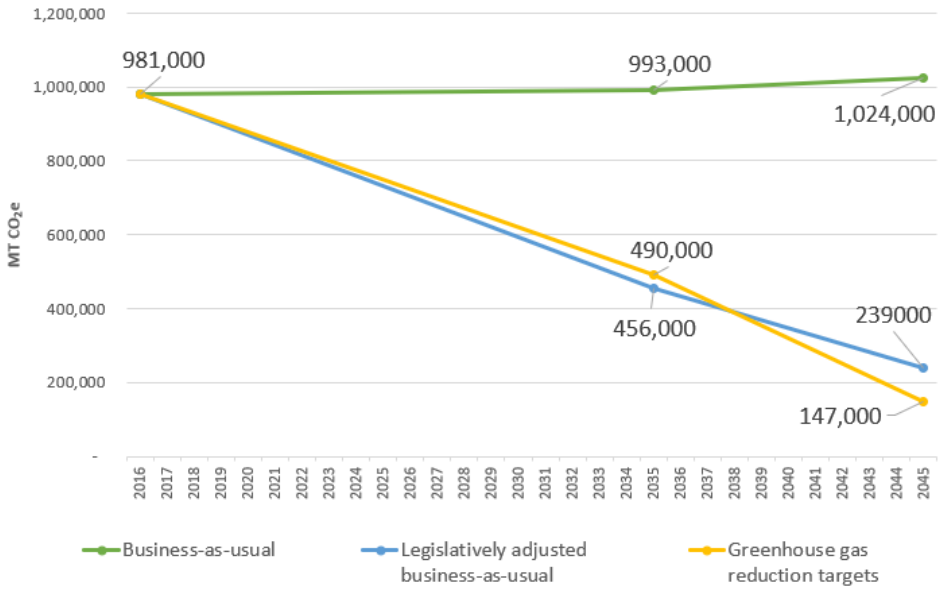
Projections to determine future emissions
Staff and the consultants projected the amount of greenhouse gases that would be produced in these categories into the future, using the 2016 greenhouse gas emissions inventory and estimates for population, housing and job growth. This is called a "business-as-usual" projection, which shows the anticipated growth in emissions from these sources in the absence of any new policies and programs.

Emission reductions that are expected to result from federal and state policies and programs are applied to the second set of projections, creating a "legislatively adjusted business-as-usual projection."

With the Air Resources Board's guidance, greenhouse gas emissions were projected for the target years 2035 and 2045, 2035 being chosen because that is the year that Carlsbad's General Plan anticipates the city will be fully developed or built-out.

The city will not meet the 2045 goals without adding new city measures. The chart below shows:

- The business-as-usual projection, with greenhouse gas emissions continuing unchanged
- The legislatively adjusted business-as-usual projection, which accounts for the impact of federal and state laws curbing emissions, as well as the potential results of the city's current Climate Action Plan. (More information on the federal and state programs included in the legislatively adjusted business-as-usual calculations are included in Exhibit 2.)
- The greenhouse gas reduction targets in 2035 and 2045.



State's recommendations

The California Air Resources Board provides the following guidance on how to best set targets within a Climate Action Plan:

- Evaluate and adopt robust, locally appropriate emissions goals based on a local greenhouse gas emissions inventory
- Express emissions goals based on mass greenhouse gas emissions reductions
- Show a downward-trending greenhouse gas emissions trajectory consistent with the statewide goals

Potential measures proposed

To meet the greenhouse gas emissions reduction targets, the project team analyzed and developed potential measures to be included in the updated Climate Action Plan using the following guidelines:

- Leverage existing city efforts to defray additional costs and staff time as much as possible
- Include successful and applicable measures from the previous Climate Action Plan, as well as greenhouse gas emissions reduction strategies included in state guidance documents
- Incorporate input from city staff across all departments so the measures can be implemented
- Use public input so the measures reflect community priorities
- Create reportable measures so the Climate Action Plan update process is transparent

The project team ultimately identified 22 potential measures, including 34 primary actions and 66 supporting actions, that are proposed for the Climate Action Plan update.

The measures are:

- Wastewater system improvements
- Water system improvements
- Renewable energy at municipal facilities
- Community choice energy
- Nonresidential building energy efficiency and renewable energy
- Residential building energy efficiency and renewable energy
- Building energy benchmarking
- Decarbonize existing buildings
- Solid waste and organic waste diversion
- Traffic calming and optimization
- Transportation demand management ordinance
- Safe Routes to School
- Bikeway system improvements
- Pedestrian system improvements
- Local transportation improvements
- Municipal transportation demand management program
- Increase public zero emission infrastructure
- Zero emission city fleet
- Parking management strategies

- Convert gas-powered leaf blowers
- Increase renewable or alternative fuel construction equipment
- Community forest management

The specific actions detailed in Exhibit 3, include the following information for each measure:

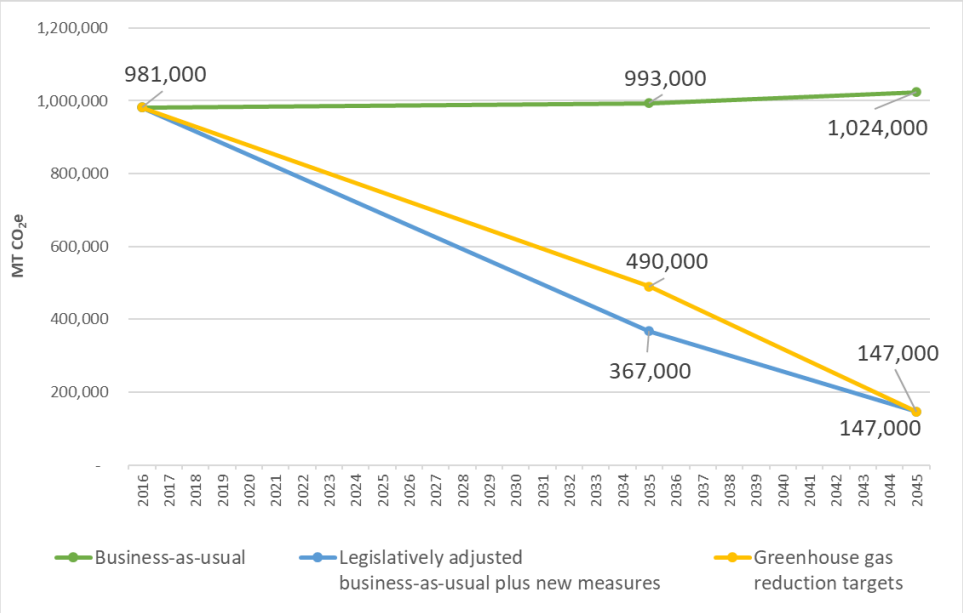
- Title - Short description of the measure (listed above)
- Number - An abbreviated, numerical reference for the measure
- Strategy - The greenhouse gas emissions source of the measure
- Primary action(s) - How the measure will reduce greenhouse gas emissions
- Supporting action(s) - Activities that supports reducing emissions but do not have sufficient data to report as a primary action
- Emissions reduced (2035 and 2045) - How much greenhouse gas emissions the measure will reduce by target year
- Performance metric(s) - What the measure needs to complete
- Monitoring data - How the measure will be tracked and reported
- Responsible department(s) - Which city department will implement the measure
- Co-benefits - Positive external impacts of the measure beyond reducing greenhouse gas emissions
- Timeframe - How long the measure will take to implement
- Equity considerations - How the measure could be implemented equitably

When combined with the federal and state measures within the legislatively adjusted business-as-usual projection, the potential measures proposed for the update of the Climate Action Plan are projected to enable the city to precisely meet its 2045 reduction target.

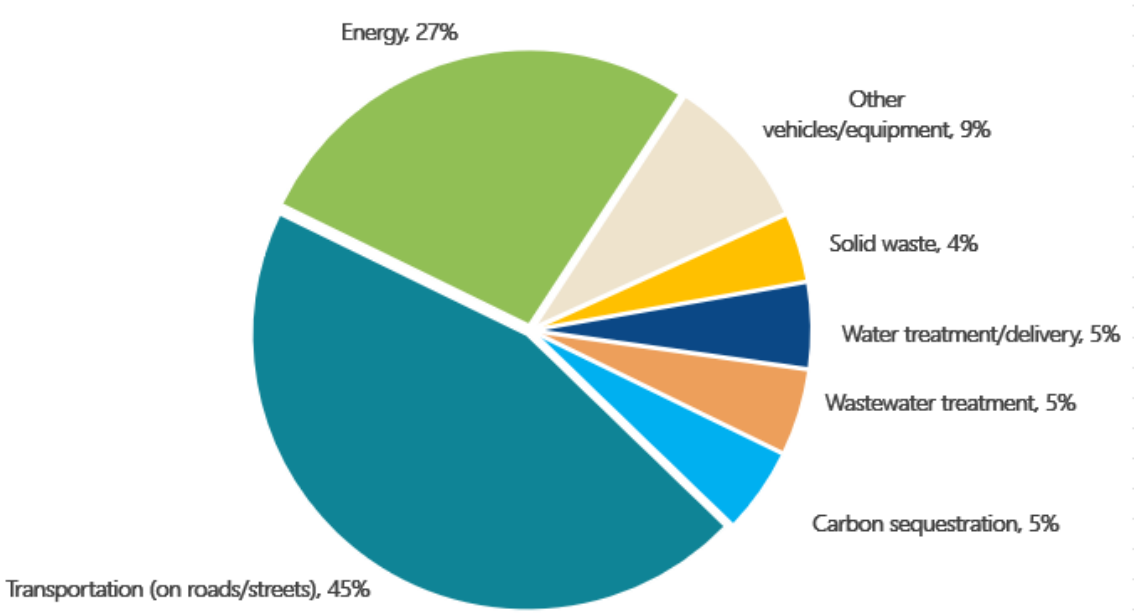
It is important to note that if one measure is relaxed, others would need to be made more stringent to meet the target, and if a measure is removed, other measures would then need to be revised or added.

The chart below shows how the new measures will result in Carlsbad's emissions reductions meeting the 2045 target.

The chart below shows the percentage of the proposed measures by strategy.



And the chart below shows the percentage of 2045 greenhouse gas emissions reductions each strategy is projected to achieve.



Note: Totals may not equal 100% due to rounding.

Possible climate equity study grant

The harmful impacts of climate change are disproportionately experienced by vulnerable populations, historically underserved communities and people of color, as the Governor's Office of Planning and Research has reported. Assessments of climate equity need to be added to the Climate Action Plan, to ensure the benefits and opportunities of the proposed measures are distributed equitably throughout Carlsbad. While the list of the proposed measures provided in Exhibit 3 includes equity considerations, these need to be considered further before the update is adopted.

A climate equity analysis, prepared in partnership with community-based organizations, containing localized environmental, socioeconomic and public health indicators would help city staff implement the Climate Action Plan equitably and ensure that related policies and programs target the populations that would be disproportionately impacted.

In August 2023, the San Diego Regional Climate Collaborative, a network for public agencies to advance climate change solutions, applied for a grant from the California Governor's Office of Planning and Research's Regional Resilience Grant Program to pay for a climate equity index for Carlsbad and other North County cities. The city submitted a letter of support for this proposal. If the grant is awarded, this work would be done for the city at no cost and would fill a critical gap by providing climate equity data, specific for Carlsbad and funding for robust stakeholder outreach and involvement and would be used as a companion document when implementing the updated Climate Action Plan.

Community Engagement

The city asked the public to help shape the Climate Action Plan Update in early 2022 by providing input on environmental sustainability needs and priorities. This public input was used to develop the list of potential measures to reduce greenhouse gas emissions in the Climate Action Plan Update. The public input received is summarized in Exhibit 4.

Three themes emerged from that public input:

1. Take bold actions to minimize contributions to climate change
2. Consider a range of actions to help reduce greenhouse gas emissions, prioritizing reductions from transportation and energy
3. Promote equity and public awareness to improve quality of life for everyone and encourage people to drive climate action individually

Starting in October, staff began holding meetings with stakeholders to discuss the proposed measures and get feedback, as well as sharing a lay-person's summary of the measures through an online survey where community members can weigh in. To help raise awareness of the Climate Action Plan update, city staff are also visiting local events, community centers, and parks to discuss the proposed measures and invite feedback. The opportunity to give input on the potential measures is being promoted through the city's communication channels, including e-newsletters, social media, a news release and direct emails to interested stakeholders, including those who previously provided feedback.

These efforts are expected to conclude at the end of November. All feedback received will be compiled into a public input summary report and included as an appendix in the updated Climate Action Plan.

Fiscal Analysis

Once the potential Climate Action Plan measures have been refined to incorporate any input from the public and the City Council, the project team will conduct an analysis of the cost of implementing each measure. This implementation cost analysis will provide information on the budgetary impact of implementing the updated Climate Action Plan, such as staffing needs and other potential costs.

The analysis will consider existing versus new or expanded programs, funded versus unfunded costs, costs by department, costs by Climate Action Plan measure, and costs over time. The implementation cost analysis will be included as an appendix to the Climate Action Plan update and presented to the City Council when the update is considered for adoption.

It is anticipated that the Climate Action Plan update will include a number of the measure that must be implemented over the coming years related to program development, creation of ordinances, and additional implementation and monitoring. Many of these programs will be implemented through use of various departmental budgets (i.e., staff resources), while others will require other funding sources (e.g., grants, bonds, etc.) or will require new staffing or staffing reassignments. Because of the nature of a long-range planning program such as the Climate Action Plan update, actual resource needs have not been specifically identified at this time. However, staff will ensure that all available external funding sources are pursued to the extent feasible.

Next Steps

The next steps for the Climate Action Plan update are to:

- Continue the second phase of public engagement to get feedback on the potential Climate Action Plan measures, concluding in November 2023
- Refine potential Climate Action Plan measures, as appropriate
- Develop the draft Climate Action Plan update, the implementation cost analysis, and a draft CEQA document
- Share the formal draft Climate Action Plan Update, related appendices and CEQA document with the community
- Present the final Climate Action Plan update to the Planning Commission, and then to the City Council

The final Climate Action Plan update is estimated to be presented to the City Council in mid-2024.

Environmental Evaluation

The action to receive a report and provide input does not require environmental review because it does not constitute a project within the meaning of the California Environmental Quality Act under Public Resources Code Section 21065, because it has no potential to cause either a direct physical change in the environment.

The direction provided by the City Council on this item is not binding, and any possible future actions, if any, would be subject to City Council approval along with a separate environmental determination.

Exhibits

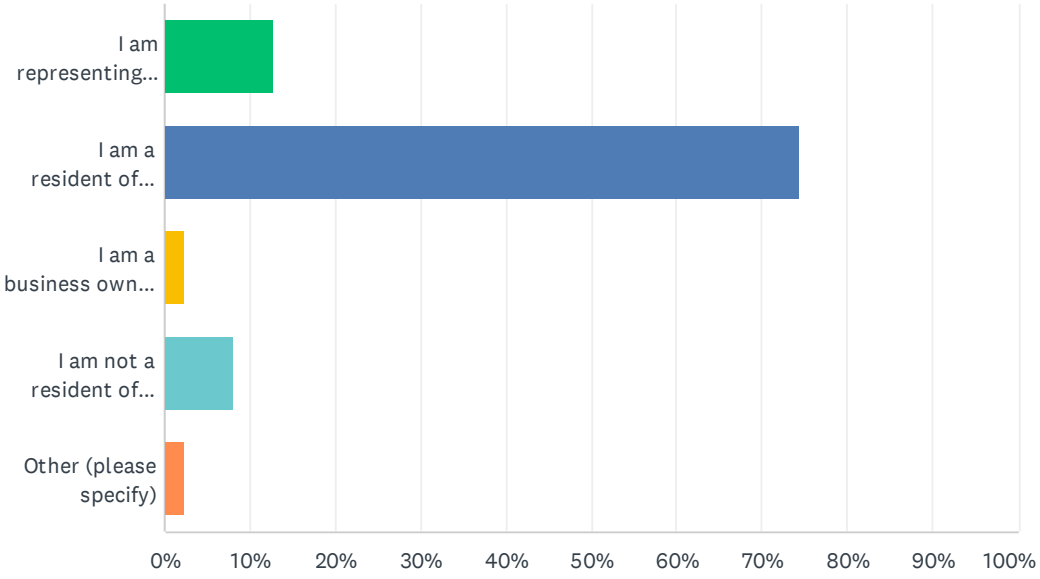
1. City Council memorandum - Status of the Climate Action Plan Update - June 8, 2023
2. Methods for Estimating Greenhouse Gas Emissions and Emissions Reductions in the Carlsbad Climate Action Plan Update – Draft
3. Potential measures proposed for Climate Action Plan update
4. Summary of Phase I public engagement for Climate Action Plan Update

Appendix K – Online Survey Results (Phase II)

The online survey questions and a summary of responses are included in subsequent pages.

Q1 Please tell us about yourself:

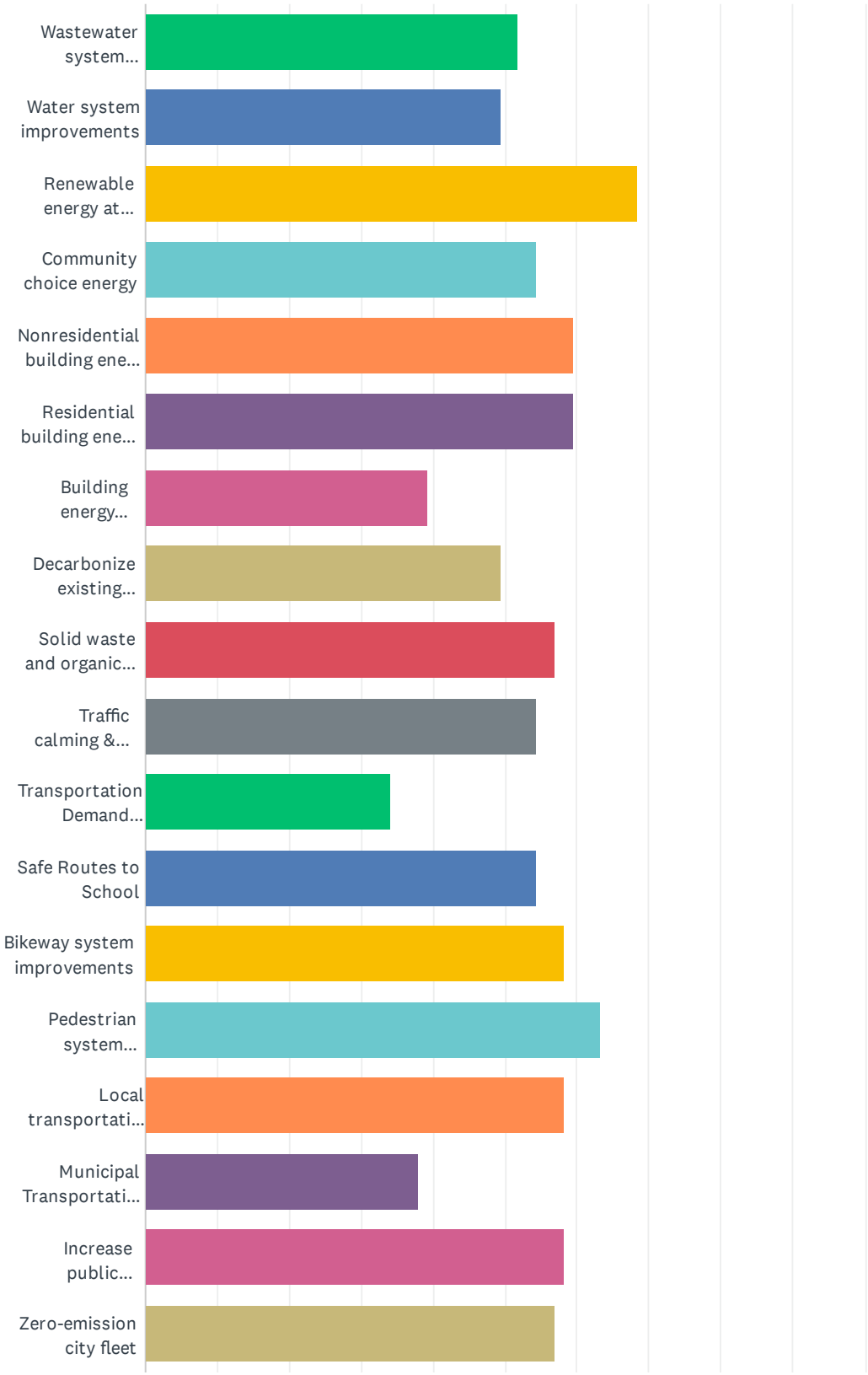
Answered: 86 Skipped: 0

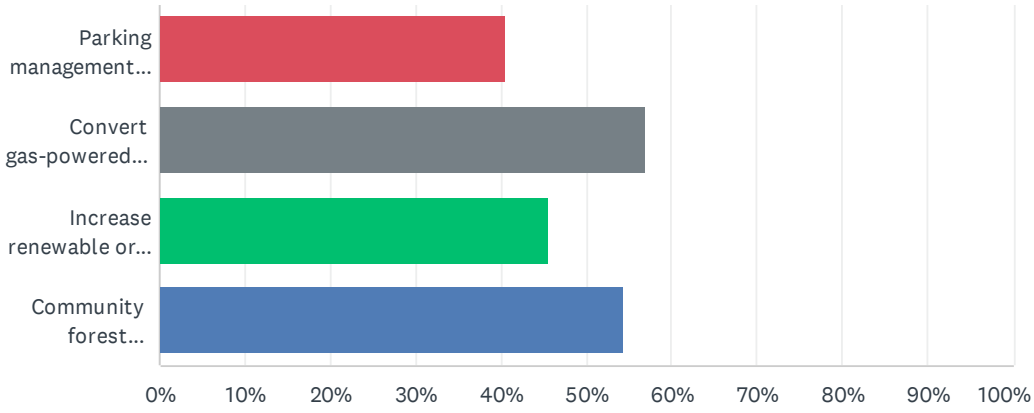


ANSWER CHOICES	RESPONSES	
I am representing an organization	12.79%	11
I am a resident of Carlsbad	74.42%	64
I am a business owner in Carlsbad	2.33%	2
I am not a resident of Carlsbad, but I'm interested in climate issues	8.14%	7
Other (please specify)	2.33%	2
TOTAL		86

Q2 Which proposed actions do you support, and why? Select all that apply:

Answered: 79 Skipped: 7

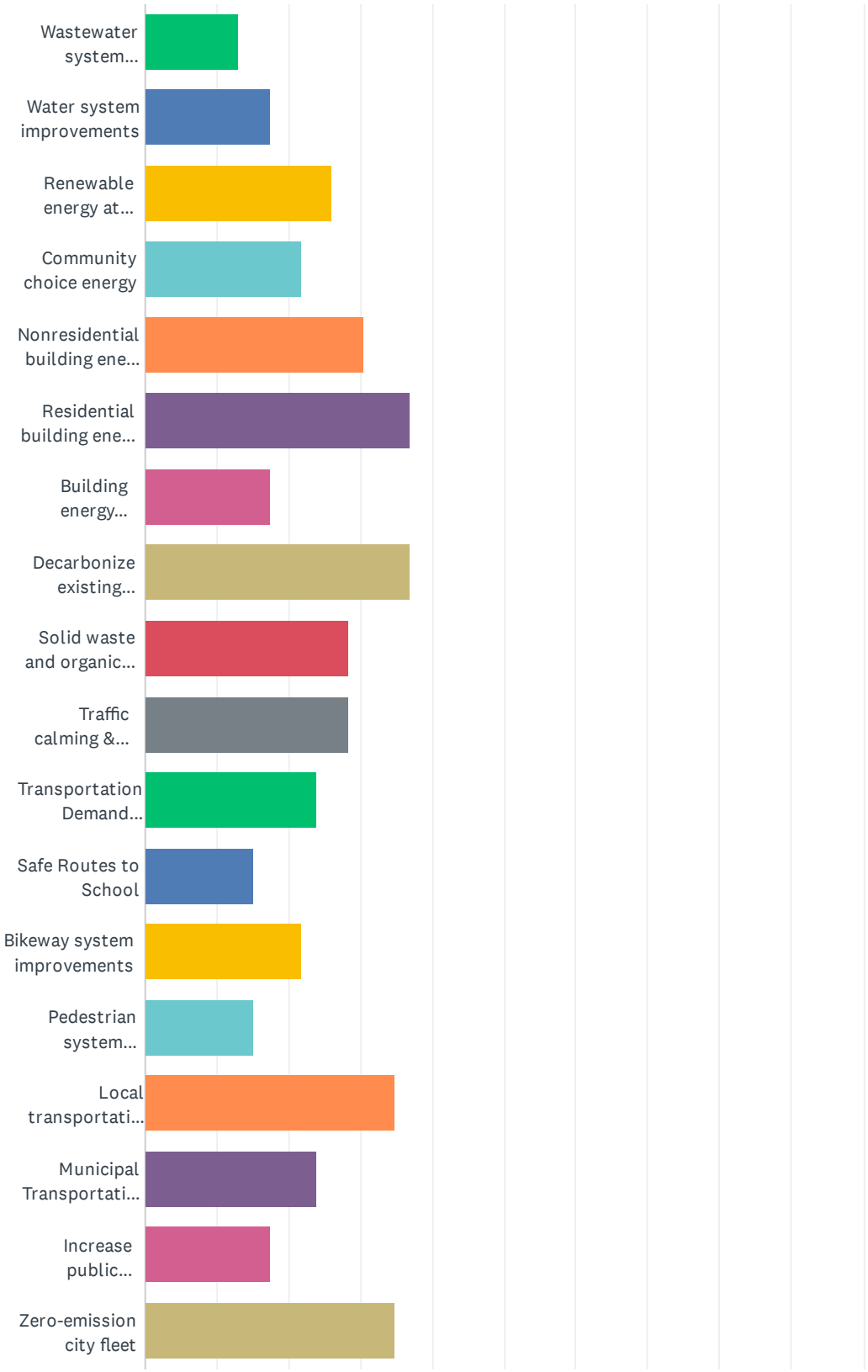




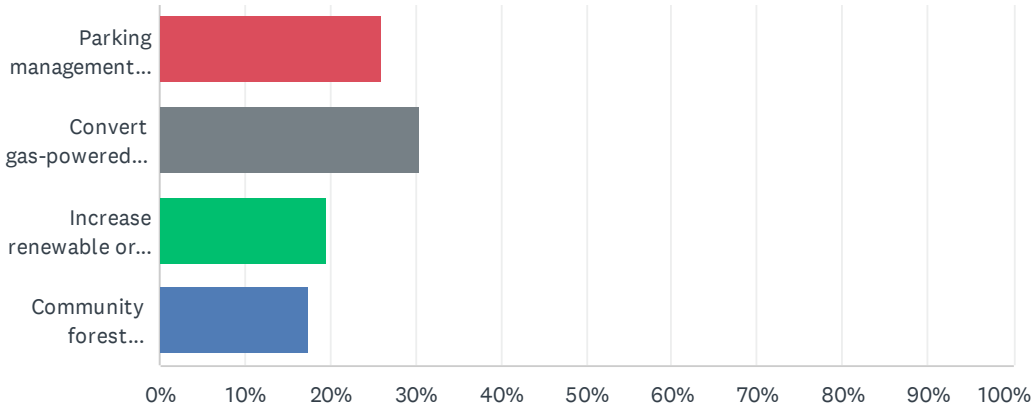
ANSWER CHOICES	RESPONSES	
Wastewater system improvements	51.90%	41
Water system improvements	49.37%	39
Renewable energy at municipal facilities	68.35%	54
Community choice energy	54.43%	43
Nonresidential building energy efficiency and renewable energy	59.49%	47
Residential building energy efficiency and renewable energy	59.49%	47
Building energy benchmarking	39.24%	31
Decarbonize existing buildings	49.37%	39
Solid waste and organic waste diversion	56.96%	45
Traffic calming & operation	54.43%	43
Transportation Demand Management ordinance	34.18%	27
Safe Routes to School	54.43%	43
Bikeway system improvements	58.23%	46
Pedestrian system improvements	63.29%	50
Local transportation improvements	58.23%	46
Municipal Transportation Demand Management program	37.97%	30
Increase public zero-emission infrastructure	58.23%	46
Zero-emission city fleet	56.96%	45
Parking management strategies	40.51%	32
Convert gas-powered leaf blowers	56.96%	45
Increase renewable or alternative fuel construction equipment	45.57%	36
Community forest management	54.43%	43
Total Respondents: 79		

Q3 Do you have concerns about any of the proposed actions. If so, what are those concerns? Select all that apply:

Answered: 46 Skipped: 40



Climate Action Plan Update



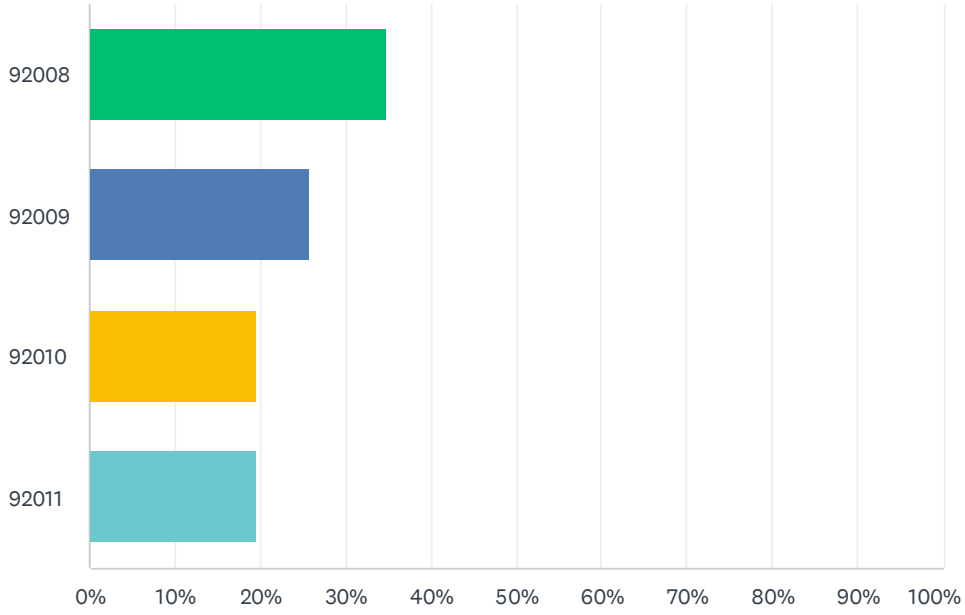
ANSWER CHOICES	RESPONSES	
Wastewater system improvements	13.04%	6
Water system improvements	17.39%	8
Renewable energy at municipal facilities	26.09%	12
Community choice energy	21.74%	10
Nonresidential building energy efficiency and renewable energy	30.43%	14
Residential building energy efficiency and renewable energy	36.96%	17
Building energy benchmarking	17.39%	8
Decarbonize existing buildings	36.96%	17
Solid waste and organic waste diversion	28.26%	13
Traffic calming & operation	28.26%	13
Transportation Demand Management ordinance	23.91%	11
Safe Routes to School	15.22%	7
Bikeway system improvements	21.74%	10
Pedestrian system improvements	15.22%	7
Local transportation improvements	34.78%	16
Municipal Transportation Demand Management program	23.91%	11
Increase public zero-emission infrastructure	17.39%	8
Zero-emission city fleet	34.78%	16
Parking management strategies	26.09%	12
Convert gas-powered leaf blowers	30.43%	14
Increase renewable or alternative fuel construction equipment	19.57%	9
Community forest management	17.39%	8
Total Respondents: 46		

Q4 What organization are you representing? (if applicable)

Answered: 9 Skipped: 77

Q5 Which ZIP Code do you live in if you are a Carlsbad resident?

Answered: 66 Skipped: 20



ANSWER CHOICES	RESPONSES	
92008	34.85%	23
92009	25.76%	17
92010	19.70%	13
92011	19.70%	13
TOTAL		66

Q6 What business do you own? (if applicable)

Answered: 12 Skipped: 74

Q7 Would you like to receive updates on the City of Carlsbad's Climate Action Plan? If so, please provide your email address:

Answered: 40 Skipped: 46

Appendix L – Community Events and "Pop-Up" Tabling Attended by City Staff (Phase II)

The table below documents the community events and "pop-up" tabling that were attended by city staff and the capacity in which city staff participated as part of the Climate Action Plan Update.

Table A-4. Community Events and "Pop-Up" Tabling Attended by City Staff Climate Action Plan Update

Date	Time	Location	District	Type of Event	Host / Partner
October 18, 2023	2:30-4:30 pm	Village	1	Farmers market	"Host - Carlsbad Village Association Partner - tabled with Library and Cultural Arts"
October 21, 2023	10 am - 12 pm	Dove Library	3	Fix-it clinic	City-sponsored event
October 22, 2023	9:15 am - 12 pm	Stagecoach Park & Community Center	4	Tabling	N/A
October 24, 2023	9:45 - 11:45 am	Dove Library	3	Tabling	N/A
October 24, 2023	3:15 - 5:15 pm	Alga Norte Aquatic Center	2	Tabling	N/A
October 28, 2023	2-6 pm	Village	1	Halloween in the Village	"Host - Carlsbad Village Association Partner - tabled with Library and Cultural Arts"
October 31, 2023	3:45-5:45 pm	Pine Community Center	1	Tabling	N/A
November 1, 2023	10:15 am - 12 pm	Poinsettia Park	3	Tabling	N/A
November 2, 2023	1:30-3 pm	Senior Center	1	Tabling	N/A
November 3, 2023	10:15 am - 12 pm	La Costa Canyon Park	4	Tabling	N/A
November 4, 2023	9 am - 1	Farmers	2	Compost and	Republic Services

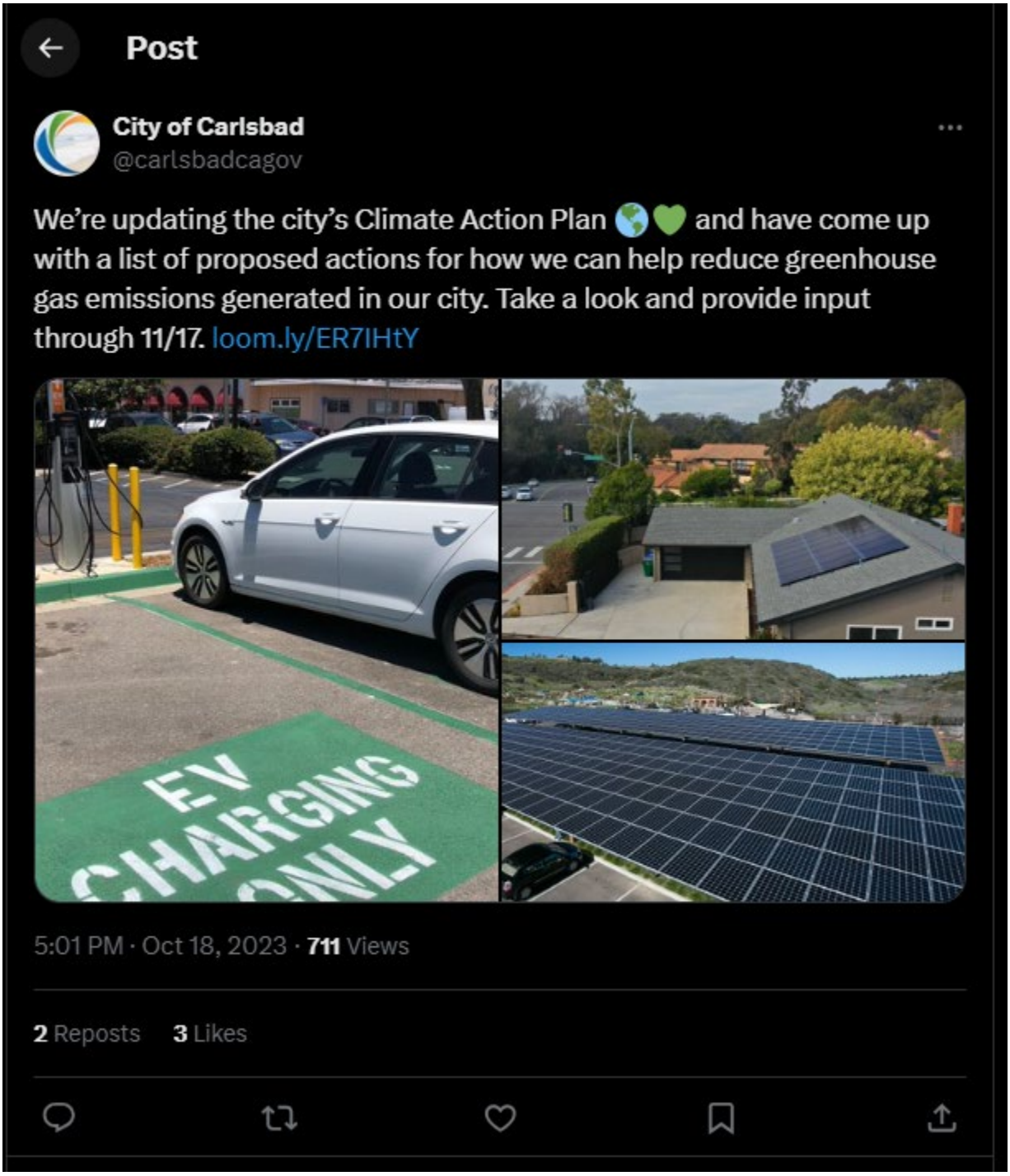
	pm	Building		mulch giveaway	
November 5, 2023	8 am - 4 pm	Village	1	Carlsbad Village Street Faire	Carlsbad Chamber of Commerce
November 15, 2023	4-5 pm	Village	1	Farmers market	"Host - Carlsbad Village Association Partner - tabled with Library and Cultural Arts"
November 17, 2023	10-11:30 am	Library Learning Center	1	Tabling	N/A

Appendix M – Media and Marketing Content (Phase II)

The following includes social media posts, newsletters and newspaper articles that promoted awareness of the Climate Action Plan Update.

City of Carlsbad – Facebook: https://www.facebook.com/cityofcarlsbad/posts/pfbid032SCkQJZz6w3RifAWvKLbH79o1QPbLURVaTxjRuTCsWXmN74CPv6JtkPpS5MLKXBtl – Oct. 18, 2023

City of Carlsbad – X (Twitter): https://twitter.com/carlsbadcagov/status/1714793857357910256– Oct. 18, 2023



City of Carlsbad – Instagram: https://www.instagram.com/p/Cyjz2YaAl5k/– Oct. 18, 2023

Instagram

Log In Sign Up

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Carlsbad, California

carlsbadcagov We're updating the city's Climate Action Plan 🌎💚 and have come up with a list of proposed actions for how we can help reduce greenhouse gas emissions generated in our city. Click the link in the bio and provide input through 11/17. #Carlsbad #GetInvolved #SustainableCarlsbad

21w

usaf_01 The first action should be to recognize that EVs cause more damage to the environment than combustion engines

21w 10 likes Reply

hollywoodangelbowl 💚

21w Reply

90 likes

October 18, 2023

Log in to like or comment.

City of Carlsbad – Facebook:
https://www.facebook.com/cityofcarlsbad/posts/pfbid027Eaee8HfwrhDLWaRnjS6WM4nSf2T3eFrJzRVjNqhmBLdsmhg8D6tz2VcfnfqV92Ml– Oct. 19, 2023

City of Carlsbad
October 19, 2023 ·

A big weekend for high school football here in Carlsbad, and if you're headed to the game, please remember to drive safely and be on the lookout for bicyclists and people crossing the street.
Other news this week includes:

- How we can keep reducing greenhouse gas emissions
- Carlsbad Behind the Scenes: Catching up with code enforcement officials
- New medical cannabis delivery law
- 5 ways to mark Arts and Humanities Month in Carlsbad
- San Diego Startup Week returns to Carlsbad
- Imagine a day without water
- Celebrating Red Ribbon Week in Carlsbad
- What's on the docket for your next City Council meeting

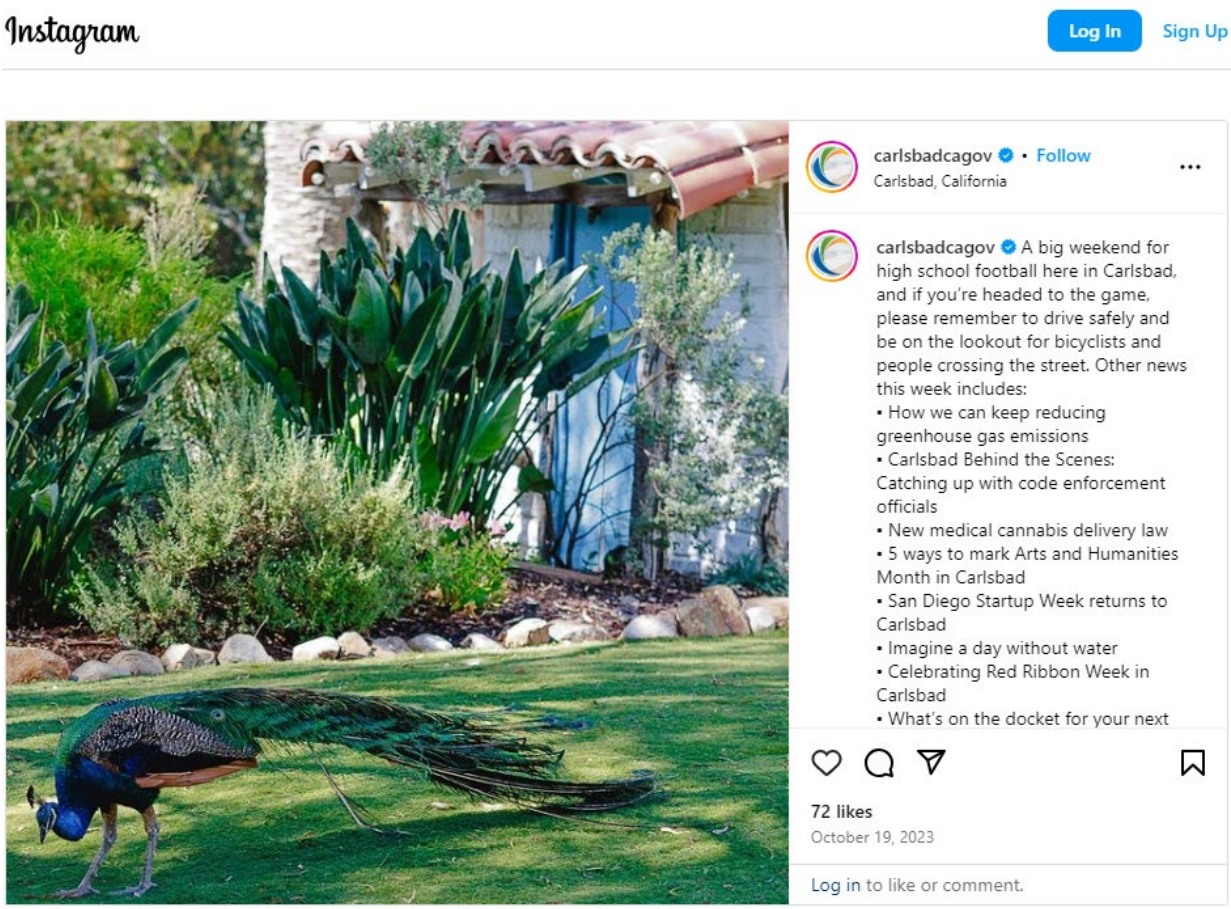
👉 https://conta.cc/3FJ01CZ

11 2 comments

Like Comment

City of Carlsbad – X (Twitter): https://x.com/carlsbadcagov/status/1715194896624009491?s=20– Oct. 19, 2023

City of Carlsbad – Instagram:
https://www.instagram.com/p/CymqLtygmjj/?utm_source=ig_web_copy_link– Oct. 19, 2023



City of Carlsbad – Facebook:
https://www.facebook.com/cityofcarlsbad/posts/pfbid02v7hDi9gLVeMEL438SWX9xYdYfqWvwcgYMWVnPMeXFVDKNYHRZQ8Q8nizA9CnrMRZl– Nov. 3, 2023

City of Carlsbad
November 3, 2023 ·

The next City Council meeting will take place Tuesday, Nov. 7, starting at 5 p.m. Topics to be discussed include:

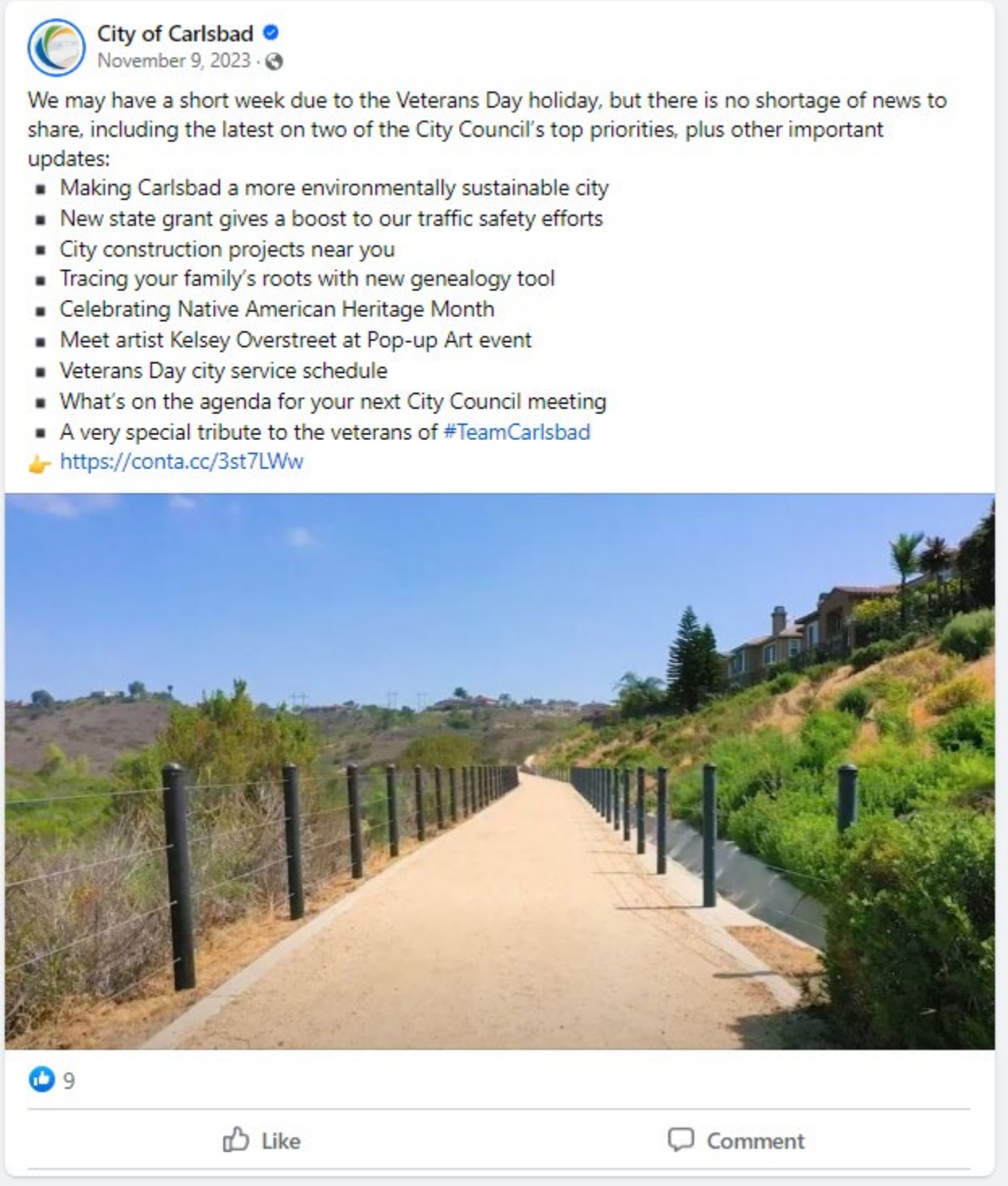
- Assigning city staff to negotiate for the possible purchase of a 16-unit apartment building at 945 Chestnut Ave. that is slated for affordable housing
- Extending the term of a $1.5 million loan awarded to a developer building 42 apartments affordable to families with lower incomes so that sewer-related issues can be resolved before construction begins
- Accepting a $20,000 federal grant that the Police Department will use for active shooter response training and equipment for police investigators
- An ordinance to install stop signs in all directions at the intersection of Madison Street and Oak Avenue in the Village
- Potential ways to reduce greenhouse gas emissions to meet state targets, as part of an update of the city's Climate Action Plan
- A proposed policy related to City Council travel

If you would like to provide input, you can email council@carlsbadca.gov before the meeting or come in person and fill out a request to speak. All the details in the link https://loom.ly/-yu_HdU

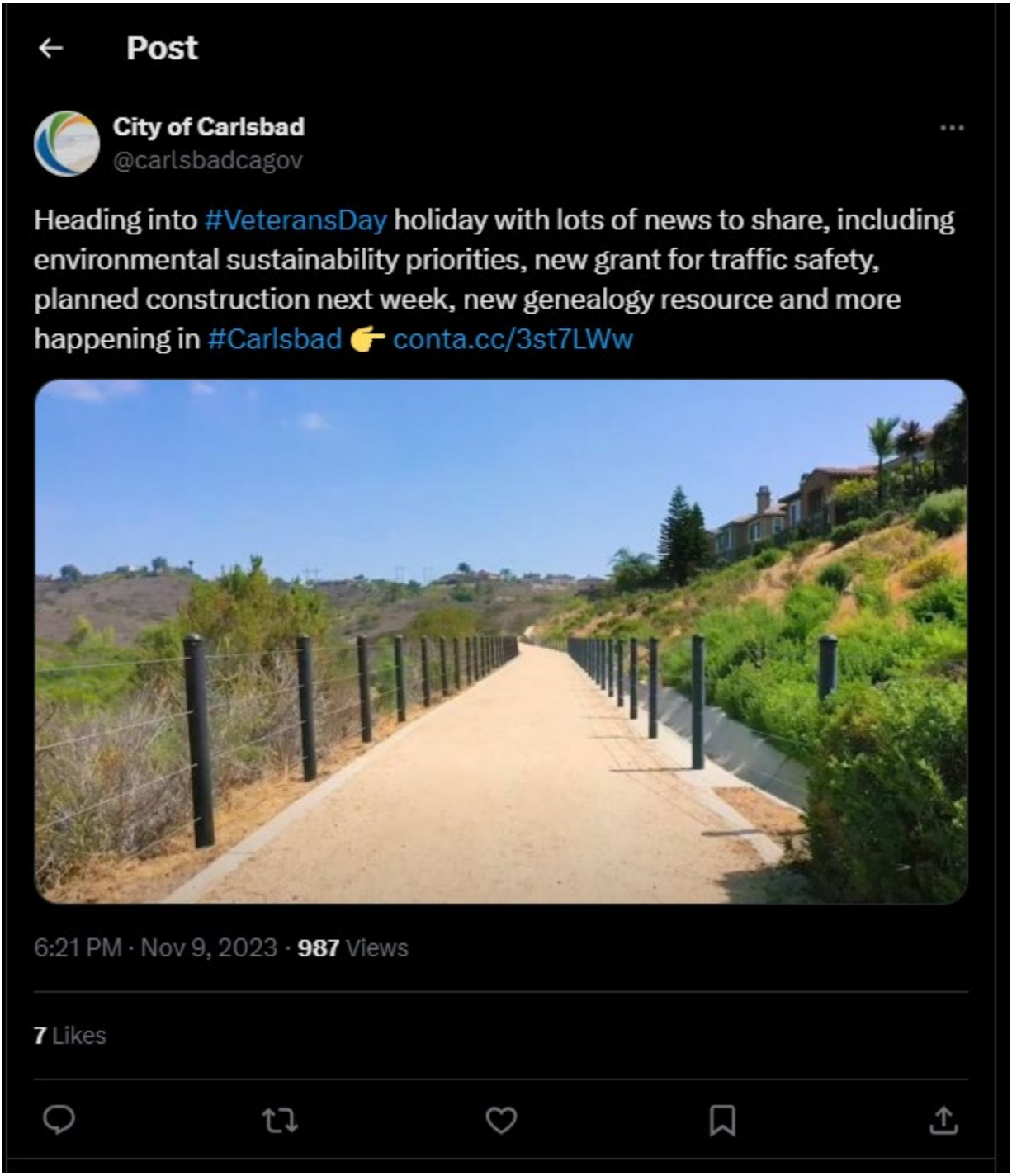
5 1 comment

City of Carlsbad – X (Twitter): https://x.com/carlsbadcagov/status/1720569338166427830?s=20 – Nov. 3, 2023

City of Carlsbad – Facebook:
https://www.facebook.com/cityofcarlsbad/posts/pfbid02fi8LSJZZhXHCLKaZNgx1i9oaYHGfZ4rshTkWgK17ETDaQr5fgK7BLFf7YPRVz3Aol – Nov. 9, 2023



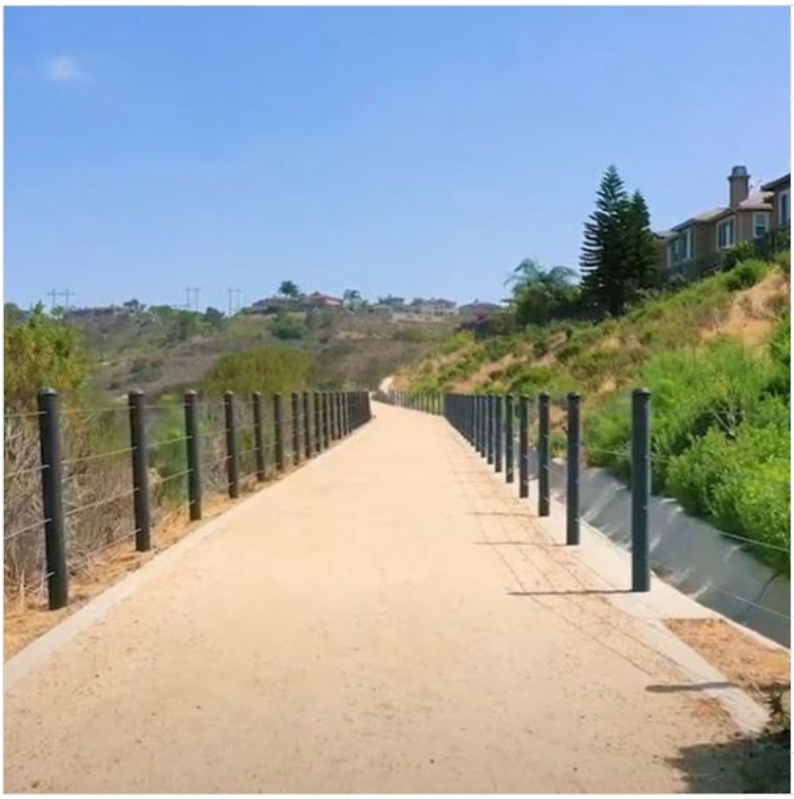
City of Carlsbad – X (Twitter): https://x.com/carlsbadcagov/status/1722801516455563310?s=20 – Nov. 9, 2023



City of Carlsbad – Instagram: https://www.instagram.com/p/CzctRyOA_-1/?utm_source=ig_web_copy_link – Nov. 9, 2023

Instagram

Log In Sign Up



carlsbadcagov • Follow
Carlsbad, California

carlsbadcagov We may have a short week due to the Veterans Day holiday, but there is no shortage of news to share, including the latest on two of the City Council's top priorities, plus other important updates:
• Making Carlsbad a more environmentally sustainable city
• New state grant gives a boost to our traffic safety efforts
• City construction projects near you
• Tracing your family's roots with new genealogy tool
• Celebrating Native American Heritage Month
• Meet artist Kelsey Overstreet at Pop-up Art event
• Veterans Day city service schedule
• What's on the agenda for your next City Council meeting
• A very special tribute to the veterans

93 likes
November 9, 2023

Log in to like or comment.

City of Carlsbad: Proposed actions to reduce greenhouse gas emissions ready for review – Oct. 18, 2023

Proposed actions to reduce greenhouse gas emissions ready for review

The city is updating its Climate Action Plan to advance the community's goal of promoting a sustainable environment and align with updated statewide targets to reduce greenhouse gas emissions. State targets have been updated since the city first adopted the Climate Action Plan in 2015, and the city has more current information about the amount of greenhouse gas emissions generated by different sources in Carlsbad.

City staff developed a list of proposed actions to reduce greenhouse gas emissions for the updated Climate Action Plan. You can learn more about the proposed actions and provide your input until Nov. 17.

Background
To support California's ambitious emissions reduction goals, the City of Carlsbad was one of the first cities in the county to adopt a Climate Action Plan in 2015 that outlined strategies and policies to reduce greenhouse gas emissions in a measurable way.

Climate action plans are comprehensive roadmaps that outline the specific activities that a government agency will undertake to reduce greenhouse gas emissions. Climate action plans generally focus on those activities that can achieve the relatively greatest emission reductions most cost-effectively. These plans typically include:

- Specific city-sponsored initiatives and actions that the city controls directly, such as operations at city buildings and the types of cars in the city's fleet.
- Policies to direct, guide or influence actions of third parties, such as a requirement to recycle food scraps and energy efficiency standards for new building construction.

In early 2022, the city asked the public to shape the Climate Action Plan Update by providing input on environmental sustainability needs and priorities. This public input was used to help develop a list of proposed actions to reduce greenhouse gas emissions. A summary of the proposed actions is available on the city's website.

Provide your input by Nov. 17. Join the mailing list to be notified of project updates.

City of Carlsbad: City Manager's Update – Oct. 19, 2023

How can we keep reducing greenhouse gas emissions

Our beautiful natural environment is one of the things our residents love most about Carlsbad. That's why it's no surprise that protecting the environment is one of the main goals of the City Council's 5-Year Strategic Plan.

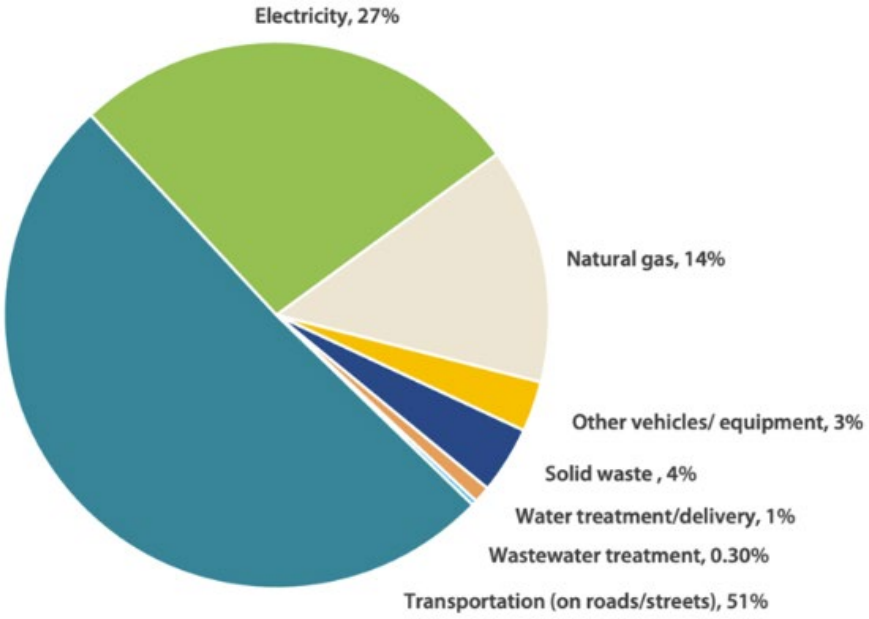
This week, city staff released a list of actions being considered to further reduce greenhouse gas emissions, part of a comprehensive update to the city's Climate Action Plan. Carlsbad is proud to be one of the first cities in the region to develop a Climate Action Plan with measurable goals, back in 2015.

City of Carlsbad: City Manager's Update – Nov. 9, 2023

Making Carlsbad a more environmentally sustainable city

We've been talking a lot about the importance of reducing speeding, which is the number one cause of injury collisions in Carlsbad. Aside from improving traffic safety, reducing speeding also lowers greenhouse gas emissions from cars, which are by far the largest source of GHGs in Carlsbad.

Sources of GHGs in Carlsbad



Energy Policy Initiatives Center, University of San Diego, 2023

San Diego Union-Tribune: Update underway for Carlsbad's climate action plan – Nov. 9, 2023

CARLSBAD

Update underway for Carlsbad's climate action plan

Carlsbad is updating its climate action plan to reduce greenhouse gas emissions. (Luis Sinco/Los Angeles Times)

BY PHIL DIEHL

NOV. 9, 2023 3:33 PM PT

CARLSBAD — Zero-emission city vehicles, improved bicycle and pedestrian routes, and better transportation management systems are among measures proposed for Carlsbad's updated climate action plan.

Carlsbad's goal is to reduce its greenhouse gas emissions from 2016 levels by 50 percent in 2035 and 85 percent in 2045, said Senior Program Manager Katie Hentrich in a presentation Tuesday to the City Council.

MOST READ LOCAL STORIES ›

1 Chula Vista bars official facing criminal charges from serving on any committees. She's seeking re-election.
Dec. 6, 2023

2 Two eight-story apartment buildings proposed for last two vacant blocks near Oceanside pier
June 4, 2023

3 Chula Vista and Republic Services reach agreement over costs associated with trash strike
July 3, 2022

Appendix N – Additional Comments (Phase II)

Includes all additional comments that were received.

From:	mike_bullock@earthlink.net
To:	Katie Hentrich; Council Internet Email; council@oceansideca.org
Cc:	"Michele Cyr"; "Tom Lichterman"; "Hope Nelson"; "Bill Fowler"; "Pete Penseyres"; "Esmeralda Gonzalez Jimenez"; "Chih-Wu Chang"; "David Hall"; "Diana Aguirre"; "Jan Neff-Sinclair"; "Jane Marshall"; "Joan Bullock"; "Luke Tesluk"; "Mary Meyers"; "Shirley Anderson"; "Vince Loughney"; "Russ Cunningham"; "Steve Birdlebough"; becollins92@gmail.com; "Sierra Conscom Ron Askeland"
Subject:	Additional Information on Carlsbad"s Responsibility in Updating Their Climate Action Plan
Date:	Sunday, November 12, 2023 6:30:30 PM
Attachments:	image002.png image008.png image009.png image011.png

---

Katie Hentrich, Senior Program Manager
katie.hentrich@carlsbadca.gov, 442-339-2623

Senior Program Manager Hentrich,

Initial Statement

The people that are getting a copy of this email may not agree with my comments. I am copying them only because I think they might be interested in climate change and what is happening in Carlsbad. I have not gotten their permission to send them a copy of this email.

I have reviewed the video of the meeting. I have downloaded the staff report, which consists of many documents that, taken together, provide various forms of information about what is apparently being considered to amend the current CAP.

Additional Information

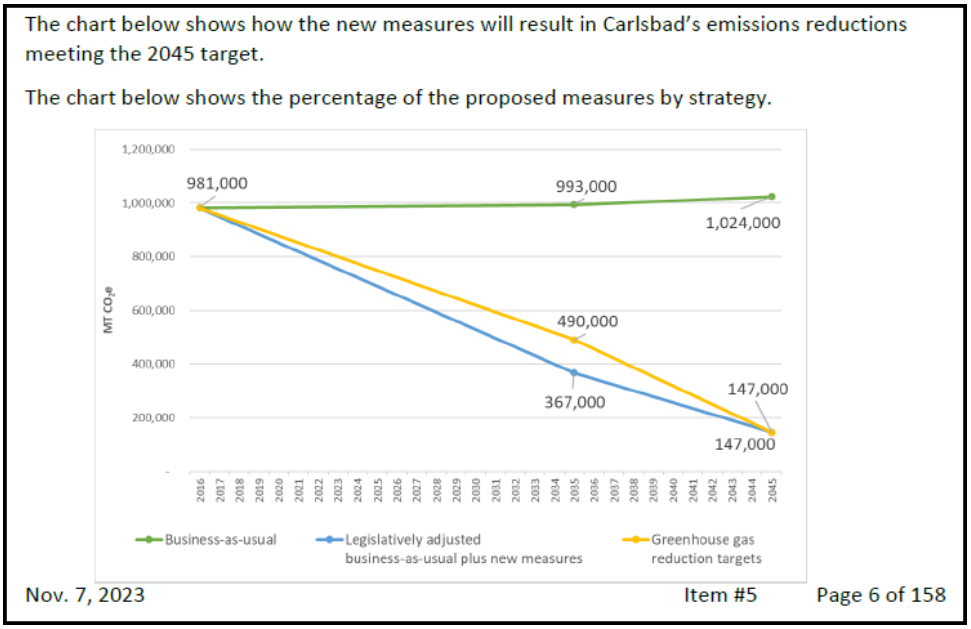
I have now read the entire Staff Report, including the additional documents, inspiring these additional statements.

In my email below I compute that the official CA Plan to achieve the 2030 CA mandate, which is 40% below 1990 (about the same as in 2019) level, would mean a value of 540,000 MT, by 2030.

Specifically, here is what I wrote, as shown below:

> ***Note that the SB 32, CA 2030 mandate, which uses the 1990 reference year emission level, is using the level of emissions that is about the same level as the 2019 value (shown in the yellow line and the blue line), which is, as shown, 900,000 Metric Tons (MT). (The 2019 value being nearly the same as the 1990 value is not shown by the plot, but it is a fact.)***
>
> ***40% below that (either the 1990 level or the 2019 level) is required by the CA mandate (SB 32), for the year of 2030 and that would be 540,000 MT. Clearly, the plot shown in the Carlsbad report is inconsistent with the official work of CA, which is the CARB Scoping Plan. To be consistent, it would need to show a plot achieving 540,000 MT by 2030. Carlsbad needed to understand the significance of the 2022 Scoping Plan and incorporate its work quickly into its plans for revision.***

Looking further down in the report, I see this:



The blue line comes close to 540,000 MT in 2030. For me, this is good news. However, showing this plot does not indicate how the Carlsbad CAP Update will achieve that 2030 value. Still, it is encouraging to me to see this plot because the blue line, for 2030, is close to the CA Climate Mandate for 2030. It should be noted, however, that there is an effort going on in the CA legislature to

increase the 40% value to 55%. This shows that the Carlsbad CAP will need robust measures that can be adjusted as needed to get a larger driving reduction. Please don't blame CA for the increase. The need to increase the reduction is driven by climate science.

TDM (Transportation Demand Management)

The heart of the current TMD in both the Oceanside and the Carlsbad CAP is the idea that companies in the City would submit TDM plans that would be approved by the City and then implemented by the companies. The TDM measures would reduce driving. The TDM plans would be company measures to reduce SOV (single occupancy vehicle) commuting.

The measure with the most potential is to correctly manage car parking, for the equal benefit of both drivers and non-drivers. There are serious problems, for both cities, with how they are working on TDM, as follows:

1. The requirement for a TDM Plan would only be applied to new companies or companies that needed a new permit. This would be a very small percentage of employers. The net VMT reduction would therefore not be significant, unless the TDM practice became widespread, by choice.

2. Neither Oceanside nor Carlsbad mentions in their CAP that they themselves are significant employers and therefore they could create TDM Plans. (Perhaps they don't realize this or perhaps they have, but they have chosen to keep quiet and hope that no one in the public notices this oversight.)

Both problems could be solved if the City admitted that they had employees and then proceeded to implement a managed car parking system, using a vendor that will not charge the employer (the City) and will create a car-parking system that is favored by a super majority of both drivers and non-drivers. This provides an implementation strategy. Both cities need to start the implementation (RFP Process) immediately, because conforming to the CARB Scoping Plan means that there can be very little so-called "free" parking, by 2030. As I have mentioned, the ACE Parking CEQ is anxious to submit a proposal to do this car parking system. (I can document this fact, upon request.) The vendor will have the ability to implement the same system at all kinds of locations, as shown in my car parking paper. They will be motivated to do that. Just as the Uber system has spread to most providers of ride purchase, the provider of a good car parking system will attempt to do all parking. The private sector gives us the best chance of rapid change. The problem is that governments are very resistant to change, regardless of what they might say. I wrote the paper that defined the "all purpose" car parking system in response to Oceanside Councilman Jerry Kerns giving me a disk showing me an Oceanside Transit Center proposal that had housing, retail, and employment, as well as the existing train and bus service. He understood that the parking should be shared but he did not know how that could be done. He asked me what should be done. This was back in 2008. Although Councilman Kern did not know how the parking could be managed, he thought that I might, as a systems engineer, be able to figure out how the parking system should be defined. The paper that resulted caused me to be placed on an Urban Planning Panel at the Air and Waste Management Association convention, in 2010, in Calgary, Canada.

What 5 Measures?

As I looked at the video of the November 7th, I saw the words "5 Measures Added". However, reading the Staff Report, I never saw what those 5 measures were. I did see this:

Next Steps

The next steps for the Climate Action Plan update are to:

- Continue the second phase of public engagement to get feedback on the potential Climate Action Plan measures, concluding in November 2023
- Refine potential Climate Action Plan measures, as appropriate
- Develop the draft Climate Action Plan update, the implementation cost analysis, and a draft CEQA document
- Share the formal draft Climate Action Plan Update, related appendices and CEQA document with the community
- Present the final Climate Action Plan update to the Planning Commission, and then to the City Council

The final Climate Action Plan update is estimated to be presented to the City Council in mid-2024.

Were the "5 Measures" these "5 Actions?" As I show in my email below, there is a long list of poorly defined measures that appears, but that list cannot be the "5 Measures".

Measures to Reduce Driving and Their Conformity to Official CA Policy

In the Carlsbad November 7th Staff Report, I see this critically important list of promising but poorly defined measures:

Table 20 Summary of 2035 and 2045 GHG Emissions Reductions from Measures in Carlsbad CAP

CAP Strategies	Federal and State Regulations and CAP Measures	Emissions Reduction ($MT CO_2e$)	
		2035	2045
Transportation	T-1 Traffic Calming & Optimization	1,334	746
	T-2 Transportation Demand Management Ordinance	3,254	4,589
	T-3 Safe Routes to School	70	39
	T-4 Bikeway System Improvements	566	324
	T-5 Pedestrian System Improvements	547	307
	T-6 Local Transportation Improvements	N/A	N/A
	T-7 Municipal Transportation Demand Management Program	92	51
	T-8 Increase Public Zero Emission Vehicle Infrastructure	Supporting California Advanced Clean Car II	
	T-9 Zero Emission City Fleet	1,059	592
	T-10 Parking Management Strategies	4,653	7,821
	OR-1 Convert Gas-Powered Leaf Blowers	396	386
	OR-2 Increase Renewable or Alternative Fuel in Construction Equipment	4,698	15,081

The measures that have the potential to bring the Carlsbad CAP into compliance with the official CA Plan (the CARB Scoping Plan of late 2022) that is designed to achieve the official CA Climate Mandate of 2030 (SB 32) are T-2 and T-10. Ignoring OR-1 and OR-2, which do not belong on the Transportation list, results in T-2 and T-10 being nearly 70% of the Transportation total. This shows the importance of car parking, since the most powerful TDM measure is operating the employee car parking for the equal financial gain of all the employees, regardless of whether they chose to drive a car to work. Since non-drivers will not pay to park, the system be a way that employees can get paid extra, for each time they get to work without driving. With an “Add-In” amount added into the earnings of those employees that drive every day, they system can be operated so that no one loses money. As stated above, the ACE Parking CEO wants to provide this solution.

Please read Appendix E of the CARB Scoping Plan and realize the there can be no more “free” parking in Carlsbad, by 2030. TDM and “Parking Management Strategies” can be designed to bring the new CAP into compliance with the official CA Plan to achieve the official CA mandate, for 2030. I have looked at Carlsbad’s work so far on Parking Management. It is far off the mark. It will not lead to what is needed. Regarding parking management, Carlsbad needs to start over. The proper way forward is simpler than the path you are on. Please allow me to help you define that solution in a Requirements Document that will support a fair RFP process. Your employees deserve a system that is economically fair and environmentally sound.

Closing Comments (Same as in the Email below)

I think we should meet to go over this material. I would be happy to help in any way. Carlsbad has an opportunity to be a climate leader.
I could send you the Scoping Plan and its Appendix E. I could send you my reports and the files I use to present the reports. We could also meet so that you can give me your concerns with this message.

Highest regards,

Mike Bullock
1800 Bayberry Drive
Oceanside, CA 92054
760 421 9482

California Democratic Party Delegate, 76th Assembly District (author of 2 adopted resolutions and 5 Platform changes)
Former Elected (now Associate) Member of the San Diego County Democratic Party Central Committee (author of 5 adopted resolutions)

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Author, ***A Climate-Killing Regional Transportation Plan Winds Up in Court: Background and Remedies***
Co-author, ***A Plan to Efficiently and Conveniently Unbundle Car Parking Cost***

Quotes from the Secretary General of the UN:

1. We have a Code Red Climate Emergency.
2. We are solidly on a path to an unlivable planet.
3. We are driving towards Climate Hell with our foot on the accelerator.
4. We are dangerously close to the point of no return.

From: mike_bullock@earthlink.net <mike_bullock@earthlink.net>
Sent: Saturday, November 11, 2023 6:48 PM

To: 'katie.hentrich@carlsbadca.gov' <katie.hentrich@carlsbadca.gov>; 'council@carlsbadca.gov' <council@carlsbadca.gov>; 'council@oceansideca.org' <council@oceansideca.org>
Cc: 'Michele Cyr' <michele.cyr@sbcglobal.net>; 'Tom Lichterman' <tlichterman@cox.net>; 'Hope Nelson' <hopefromthehood@gmail.com>; 'Bill Fowler' <wwfowler@gmail.com>; 'Pete Penseyres' <cyclovet11@yahoo.com>; 'Esmeralda Gonzalez Jimenez' <EGonzalez@oceansideca.org>; 'Chih-Wu Chang' <chihwu.chang@gmail.com>; 'David Hall' <dqhall44@gmail.com>; 'Diana Aguirre' <dra805@gmail.com>; 'Jan Neff-Sinclair' <jan.neff@ymail.com>; 'Jane Marshall' <jmarshall@bps.net>; 'Joan Bullock' <joan_bullock@earthlink.net>; 'Luke Tesluk' <luke.tesluk@gmail.com>; 'Mary Meyers' <m_e_meyers@yahoo.com>; 'Shirley Anderson' <sander1575@aol.com>; 'Vince Loughney' <loughnvj@yahoo.com>; 'Russ Cunningham' <RCunningham@oceansideca.org>; 'Steve Birdlebough' <scbaffirm@gmail.com>; 'becollins92@gmail.com' <becollins92@gmail.com>; 'Sierra Conscom Ron Askeland' <Ron.Askeland@gmail.com>
Subject: Carlsbad's Responsibility in Updating Their Climate Action Plan

Katie Hentrich, Senior Program Manager
katie.hentrich@carlsbadca.gov, 442-339-2623

Senior Program Manager Hentrich,

The people that are getting a copy of this email may not agree with my comments. I am copying them only because I think they might be interested in climate change and what is happening in Carlsbad. I have not gotten their permission to send them a copy of this email.

I have reviewed the video of the meeting. I have downloaded the staff report showing what is being proposed to amend the current CAP.

First off, It disappoints me greatly that the year 2035 is used, in contradiction with the state mandate and climate science. SB 32 established that the first California (CA) mandate is for the year of 2030. NOT 2035. Five years matter. They are critical. There is no state mandate for 2035. Anyone interested in climate change would notice that the articles in newspapers and magazines that are about COP26, COP27, COP28, and so one (the UN's work on avoiding human extinction) speak only of getting larger GHG reduction commitments for 2030. Not 2035. It is extremely dangerous to focus on any year other than 2030.

Based on the Carlsbad City Council meeting of Nov. 7, 2023, no one at the City of Carlsbad seems to understand that our CA mandate is for 2030. If humans don't get their emissions sufficiently low by 2030, we are in danger of having our climate destabilize, resulting in mass starvation and our eventual extinction. This is very serious.

Quotes from the Secretary General of the UN:

1. We have a Code Red Climate Emergency.
2. We are solidly on a path to an unlivable planet.
3. We are driving towards Climate Hell with our foot on the accelerator.
4. We are dangerously close to the point of no return.

This link will establish that the CA mandate is for 2030:

https://en.wikipedia.org/wiki/California_Senate_Bill_32#:~:text=SB-32%20requires%20CARB%20to%20reduce%20greenhouse%20gas%20emissions,most%20cost-efficient%20way%20to%20reduce%20greenhouse%20gas%20emissions..

It says (with added highlights):

The **California Global Warming Solutions Act of 2016: emissions limit**, or **SB-32**, is a California Senate bill expanding upon AB-32 to reduce greenhouse gas (GHG) emissions. The lead author is Senator Fran Pavley and the principal co-author is Assemblymember Eduardo Garcia. SB-32 was signed into law on September 8, 2016, by Governor Edmund Gerald "Jerry" Brown Jr.[1] SB-32 sets into law the mandated reduction target in GHG emissions as written into Executive Order B-30-15.

The Senate bill requires that there be a reduction in GHG emissions to 40% below the 1990 levels by 2030.

Here is the report being discussed:

> **Meeting Date:** Nov. 7, 2023
> **To:** Mayor and City Council
> **From:** Scott Chadwick, City Manager
> **Staff Contact:** Katie Hentrich, Senior Program Manager
> katie.hentrich@carlsbadca.gov, 442-339-2623
> **Subject:** Potential Measures to Reduce Greenhouse Gas Emissions for the Climate Action Plan Update
> **Districts:** All
> **Recommended Action**
> Receive a report on potential measures to reduce greenhouse gas emissions for the draft Climate Action Plan update and provide feedback to staff as desired.

All the talk about 2035 was contradicted in the City report that says this (emphasis added):

> **State targets**
> California's Legislature has set the following greenhouse gas reduction targets:
> • **2030** - Senate Bill 32 (2016) requires the California Air Resources Board to ensure the

state's greenhouse gas emissions are reduced to 40% below 1990 levels by 2030.
• **2045** - Assembly Bill 1279 (2022) requires the Air Resources Board to ensure emissions are reduced to 85% below 1990 levels by 2045.

Thanks to the work that was started in 2011 by AG Harris (now VP Harris), Carlsbad cannot ignore the CA Climate Mandates nor the official plan to achieve the CA Climate Mandates, which is the 2022 CARB Scoping Plan. Therefore, Carlsbad must have, for example, nearly all car parking managed (not "free") by 2030. Difficult? Not as difficult as mass starvation. The fact is that the only way to have economic equity and fairness, for car parking, is to have managed parking. "Free" is not managed. By the way, "managed' will be more convenient for drivers than "free" as well as being equitable and environmentally sound. Regardless, it is required because it is in the official CA Plan, the CARB Scoping Plan.

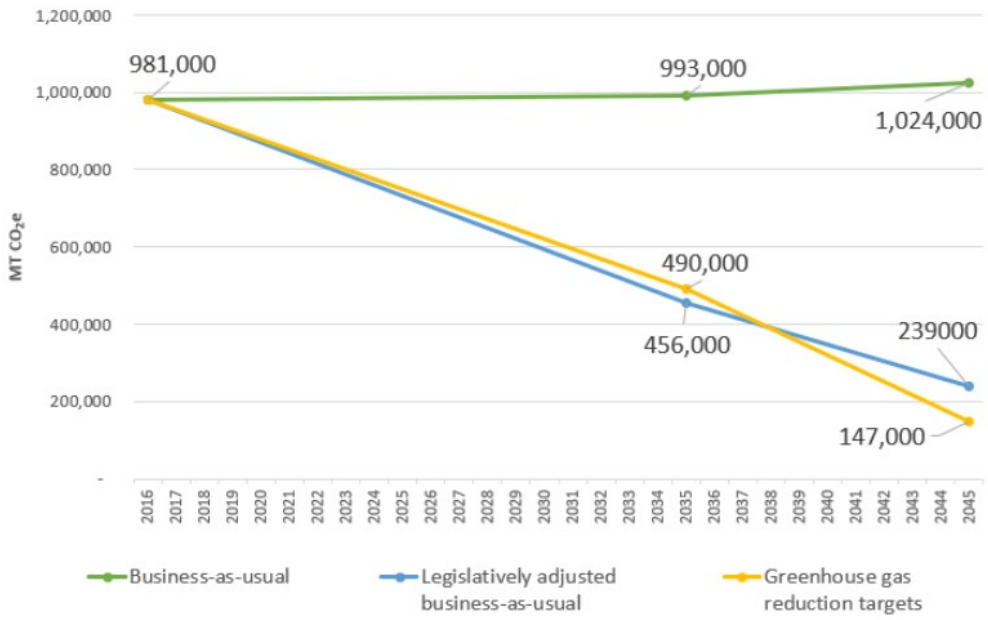
I can show you how to do this ("managed parking") if you are interested.

The Carlsbad Staff report also says this:

> ***2035 being chosen because that is the year that Carlsbad's General Plan anticipates the city will be fully developed or built-out.***

That is not an adequate excuse to ignore CA's 2030 mandate. The climate scientists are giving us climate-stabilization requirements for the years of 2030 and 2045. The UN's "Committee of Parties (COP)" focuses on 2030. Not achieving the 2030 climate stabilization requirement equates to probable human extinction. Climate science and the state of California (CA), have more weight than the idea that Carlsbad might be "built out" by 2035. It is not an exaggeration to say that taking our focus away from the year of 2030 is suicidal. We have a code red climate emergency, and we cannot afford to be intellectually lazy.

On page 4 of the Carlsbad Report this plot is shown:



This plot does not conform to the California Air Resources Board (CARB) Scoping Plan of December 2022. Read its Appendix E. It says we must reduce driving by 25% with respect to 2018 and to do that we need:

- To double transit service by 2030 with respect to 2018 (Carlsbad has very little control here)
- To replace "free" parking, by 2030 (Carlsbad has full control here)
- To have a fully functional Road Use Charge (RUC), by 2030. (Carlsbad has no control, since a RUC would be a CA policy. However, Carlsbad has voted at SANDAG to ignore CARB's findings, thus caving into the political demagoguery that is used to vilify replacing the very regressive CA gas tax, that has no future due to the electrification of cars, with a means-based Road Use Charge that can be constructed with the features that are needed to make it fair and environmentally sound.)

Note that the SB 32, CA 2030 mandate, which uses the 1990 reference year emission level, is using the level of emissions that is about the same level as the 2019 value (shown in the yellow line and the blue line), which is, as shown, 900,000 Metric Tons (MT). (The 2019 value being nearly the same as the 1990 value is not shown by the plot, but it is a fact.)

40% below that (either the 1990 level or the 2019 level) is required by the CA mandate (SB 32), for the year of 2030 and that would be 540,000 MT. Clearly, the plot shown in the Carlsbad report is inconsistent with the official work of CA, which is the CARB Scoping Plan. To be consistent, it would need to show a plot achieving 540,000 MT by 2030. Carlsbad needed to understand the significance of the 2022 Scoping Plan and incorporate its work quickly into its plans for revision.

After decades of incorrect math, CARB finally got their math correct. However, they do not show their math. I have done the same

math (it has been peer reviewed several times by the Air and Waste Management Association), allowing me to sit on AWMA's urban planning panels. Based on my calculations (available upon request), I know that CARB's math is correct.

The CARB Scoping Plan of late 2022 is the official state plan for achieving the CA 2030 mandate and it shows that CA (Note: Carlsbad is in CA.) must have no "free" parking, by 2030. Do you have a plan to make that happen, by 2030? I fear you have no strategy to make that happen, by 2030. Please read the CARB Scoping Plan and bring Carlsbad into compliance with the law. I speak here of the law, as it has been shown by the AG Harris work that commenced with her letter to SANDAG in 2011. (I can show you that letter.) A detail here is that failure to conform to the CA Plan to achieve the CA 2030 mandate would make the CEQA significance threshold be exceeded in the CAP's EIR. AG Harris stated that the CA climate mandates are about climate stabilization and that climate stabilization is the objective of CEQA. At the November 7th meeting, your City Attorney sounded very unworried about the legal issues surrounding the significance threshold of a non-conforming CAP Update. Physics will not be kind to us if we ignore the concept of a significance threshold and of climate destabilization. Climate destabilization is an environmental impact that is extremely negative and unacceptable, since it will almost certainly leave only microbiology forms of life on our planet.

On page 5 the report shows 22 proposed measures, without any detail whatsoever. Here they are (emphasis added):

> The measures are:
> - Wastewater system improvements
> - Water system improvements
> - Renewable energy at municipal facilities
> - Community choice energy
> - Nonresidential building energy efficiency and renewable energy
> - Residential building energy efficiency and renewable energy
> - Building energy benchmarking
> - Decarbonize existing buildings
> - Solid waste and organic waste diversion
> - Traffic calming and optimization
> - Transportation demand management ordinance
> - Safe Routes to School
> - Bikeway system improvements
> - Pedestrian system improvements
> - Local transportation improvements
> - Municipal transportation demand management program
> - Increase public zero emission infrastructure
> - Zero emission city fleet
> - Parking management strategies

The final measure, "Parking Management Strategies" conforms to the CARB Scoping Plan, which clearly indicates that we can have no "free" parking by 2030. The listed measure is not a commitment. The problem is also that it is very late to not have the specific measure, and to have the strategy to implement the specific measure fully described. How would this be accomplished? I have been describing this measure for over 10 years and one of the recipients of my work has been Carlsbad. I have been ignored. However, I can't give up. I have 5 grandchildren.

I could show you the papers I have written on the car parking system that is needed. However, I will paste in words from another email, that shows many of the car parking features that are needed and some ideas about how this could be implemented:

> Here's how the Scoping Plan gets the large (25%) needed driving reduction:
>
> 1. Double transit service, with respect to 2019 levels, by 2030,
> 2. A RUC, fully implemented by 2030,
> 3. Priced Parking, fully implemented by 2030.
>
> "Priced Parking" needs refinement, if we want to be politically astute, with an attention to details. And we have no time for generalities. It is time for details.
>
> To steer developers to compliance, we should proceed in this way, after asserting the legal requirement:
>
> 1. We should recommend ***managed parking*** and point out that so-called "free parking" is not free, because such a scheme lowers wages, increases rent, and increases the cost of many items, including food. And that instead of "free parking" we need managed parking, with these features:
> 2. Parking should be managed so that it earns money for those for whom the parking is built or for those who are losing money because the parking is being provided. Opening an account, for easy deposit, would be encouraged. Employees would get an "add-in" payment, if that is needed, so they break even. The data needed to compute earnings would also be collected automatically. For example, employees might be required to carry a FOB, when the go to work. If a train system has car parking, it

would be helpful to have all riders carry a FOB, which would also make it easy to automatically charge the fare, beside pay the car parking earnings.

3. All parking is shared. That means that it is available to everyone with a license plate, so they can be billed. Opening an account that associates the license plate with an account would be encouraged, for the easy flow of money.
4. Parking is value priced, with the exception being on-street, when the occupancy is lower than an agreed-upon threshold, like, for example, 50%. When occupancy is below the threshold, the parking could be free.
5. Parking pricing includes congestion pricing to keep the occupancy rate from exceeding an agreed-upon value.
6. Parking is fully automated, so there is no more to do than for so-called “free” parking.
7. Data collection to support the earnings calculations is also fully automated, such as being at a work site.
8. The entire system is provided (designed, installed, and operated) by a vendor, selected in an RFP (Request for Proposal) process.
9. The best place to have the first system is at a place of employment, noting that a municipal government is an employer, and that the system should not cost the employer any money. (ACE Parking, for example, is willing to do the system at no cost. They would take small percentage of the revenue, leaving earnings, for those for whom the parking is built.)
10. The vendor would be skilled a monetizing unused parking and monetizing data.
11. Privacy would be protected, as it should likewise be specified for a Road Use Charge.
12. The vendor would be skilled at providing solar canopies, providing charging stations, and buying and selling electricity.

I have explained this system to the CEO of ACE Parking. He wants to supply the solution. He will submit a proposal. That is documented in a file I have, available upon request.

I have presented this at many technical conferences, so it is peer reviewed. The next Conference is here: . https://web.cvent.com/event/413d9419-4773-496c-8591-8879904f60bc/websitePage:ce1aee6f-c63f-4a65-a485-f1627b3da134 I may change the name to “Managed Parking”, a name I got from Toll Brothers. Toll Brothers has not ruled out “Managing” (as they say) the parking at the Oceanside Transit Center.

What this does not show is the various algorithms that compute the earnings. One important fact about the algorithms is that they do not use whether the owner drove. Therefore, it can be shown that drivers are not being treated worse than non-drivers. The email message below was written in response to my reading the UT’s description of the meeting.

Closing Comments

I think we should meet to go over this material. I would be happy to help in any way. Carlsbad has an opportunity to be a climate leader.
I could send you the Scoping Plan and its Appendix E. I could send you my reports and the files I use to present the reports. We could also meet so that you can give me your concerns with this message.

Highest regards,

Mike Bullock
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6. We are solidly on a path to an unlivable planet.
7. We are driving towards Climate Hell with our foot on the accelerator.

8. We are dangerously close to the point of no return.

From: mike_bullock@earthlink.net <mike_bullock@earthlink.net>
Sent: Friday, November 10, 2023 7:10 PM
To: 'Hope Nelson' <hopefromthehood@gmail.com>; 'Teresa Acosta'; 'Bill Fowler' <wwfowler@gmail.com>; 'Pete Penseyres' <cyclovet11@yahoo.com>
Cc: 'Michele Cyr' <michele.cyr@sbcglobal.net>; 'Tom Lichterman' <tlichterman@cox.net>
Subject: Carlsbad working to update climate plan

Reality: ***This year 'virtually certain' to be warmest in 125,000 years, EU scientists say***

There does not seem to be enough concern in Carlsbad. What about our younger residents? Our children are at high risk.

Here is the article:

> ***Carlsbad working to update Climate Plan***
>
> *City wants to reduce emissions by 85% from 2016 to 2045* ***(Bullock note: this is not enough, and it obscures the fact that our first climate stabilization requirement is for the year 2030.)***
>
> *By Phil Diehl*
>
> *CARLSBAD*
>
> *Zero-emission city vehicles, improved bicycle and pedestrian routes, and better transportation management systems* [Maybe there is some hope here. I will need to try to find out.] *are among measures proposed for Carlsbad's updated climate action plan.*
>
> *Carlsbad's goal is to reduce its greenhouse gas emissions from 2016 levels by 50 percent in 2035* [Bullock note: 2035 is the wrong date. (The 50% is about right, for 2030.) 2030 is correct and has been for over 10 years. CA's SB 32 Climate Mandate for the year is 2030. How to achieve that is in the CARB Scoping Plan. That Plan is the official CA Plan. Carlsbad may think it can ignore the CA climate mandates. However, AG Harris established otherwise, starting that effort back in 2011. Carlsbad thinks CA doesn't matter. Or else they are out of touch with CA and with Climate Science.] *and 85 percent in 2045, said Senior Program Manager Katie Hentrich in a presentation Tuesday to the City Council.*
>
> *"Several of the proposed measures* ***will take many years*** *to design and implement* [I could give them the car parking strategy and plan right now. The CARB Scoping Plan makes it clear that "free parking" does not comply with the official CA Plan. Do they know? Besides getting rid of bad car parking systems, we need a RUC, which is not Carlsbad's responsibility, although they vote against it at SANDAG, AND we must double transit service with respect to 2019, by 2030, which is also not Carlsbad's responsibility. However, increased transit service will not be cost effective if parking is not fixed. The bottom line in both Carlsbad and Oceanside is that Democrats seem to be failing humanity.]*," Hentrich said, though many of the suggestions are expansions or continuations of programs the city already has underway. Bicycle and pedestrian routes, for example have been expanded in recent years.*
>
> *Carlsbad's climate action plan is 8 years old, "and in the world of climate change that is pretty outdated," she said. Evidence is mounting rapidly to show the dramatic effects of human activities on the warming planet.*
>
> *About a dozen speakers addressed the City Council on the issue; most of them supported the update. The final version is expected to go to the council for approval in mid-2024.*
>
> *"There is a climate emergency," said resident Vanessa Forsythe, who encouraged the city to act quickly and equitably. Measures need to be fair to people of all incomes, races and classes, said Forsythe and other speakers.*
>
> *Not everyone was in support. One resident, Mike Borrello, said, "There is no climate emergency," adding that the city can't afford the measures, and that it's "all nonsense."*
>
> *State goals for greenhouse gas reduction are another example of Sacramento's overreach, said Borrello, who has spoken before on other issues such as affordable housing mandates.*
>
> *"I'm a taxpayer, and I won't consent to this stuff," Borrello said.*
>
> *Most other residents and City Council members praised Hentrich and the city staff for their work on the issue. Some urged the city to do more.*
>
> *"Please also consider an anti-idling measure," said resident Paige DeCino. Idling vehicles are a significant and easily targeted source of greenhouse gas emissions. She also encouraged the city to speed up its transition to electric police cars.*
>
> *Others asked the city to stop the use of gasoline-powered leaf blowers, prohibit synthetic turf on athletic fields and cease the use of leaded aviation fuel at McClellan-Palomar Airport, though some of the suggestions were outside the city's authority. The airport, for example, is owned by San Diego County and overseen by the Federal Aviation Administration.*

Councilmembers Carolyn Luna and Melanie Burkholder asked about the costs of the measures, which are not detailed in the proposal presented Tuesday. Hentrich said a cost analysis is being prepared.

"That's a concern," Luna said. "Carlsbad is balancing so many things. I'm looking forward to the fiscal analysis, that's what I'm going to focus on."

The timing of the measures' implementation was another issue raised by the council, and Hentrich said annual progress reports will be presented.

Mayor Keith Blackburn said he's been a slow convert to the importance of climate issues, but that whenever he talks to high school students it's one of the first things they bring up.

"I ask only that everything be balanced," Blackburn said. "Get it done affordably and balanced with the city's other priorities."

He also praised Hentrich's work and said she's been called the city's "environmental Clark Kent," a reference to the comic book hero Superman's alter ego.

philip.diehl@sduniontribune.com

Not very encouraging. The year 2035 is incorrect. The correct year is 2030. The later year (2045) is dangerous because it takes away attention that should be devoted, 100%, to the 2030 CA Mandate.

Here is the article:

http://enewspaper.sandiegouniontribune.com/infinity/article_share.aspx?guid=c5b45992-6ddf-4391-aebe-56922e33e9c2

The speakers from the public that understand we have a crisis are off the mark in that they don't seem to know that there is a CA Mandate and a CA Plan. There is one denier.

Maybe its better than I suspect, just reading the article.

Mike

From: katrina olson
To: Katie Hentrich
Cc: Brooke Wedner; Wendy Mihalic
Subject: CAP feedback
Date: Friday, November 10, 2023 11:56:29 AM

Hello Katie,
I responded using your survey but I had a few other thoughts that did not fit into that format. So here goes:

1. **Targets**- would urge bolder targets. Zero carbon by 2035 not 85% by 2045,

2. **Education**- people are sort of willing but they don't know what to do. Make this a public campaign with marketing attached to it. Use your marketing staff or hire someone/intern etc.
-General education- on carlsbad web page- "what can I do to help with climate change"- with individual actions- links to rebates, information (Encinitas web page has this also. Use social media for this also- Facebook, twitter, instagram (dedicate a student/intern/employee/volunteer etc to this.
-Individualized feedback from Carlsbad about energy usage compared to peers
Businesses
Residents- send personalized emails, mail or home visits
- Consider outreach to high users with progress reports (maybe you already do this?)
- Public accolades to businesses or individuals who make energy favorable changes- schools, government, developers/builders that they can use for their own marketing, etc.
-Community Choice Energy- people still don't understand what that is- need to provide education and reassurance
- regular email blasts to Carlsbad public (residential and business) about climate-related news

3. **Public facing Dashboard** with updated implementation goals/targets and measurements- see Encinitas web page. Could be part of the Education component.
https://www.encinitasenvironment.org/dashboard

4. **Transportation**
-This is by far the most important GHG reducing opportunity, but seems to be the most difficult. It has to be harder for us to drive, or easier to do something else. Or use EV's which not everyone can afford. Change rules for golf carts and encourage use of golf carts/ e-bikes for errands- work with neighborhood stores to have bike racks, recognition of customers who use bikes/golf carts etc.
-Accelerate Traffic calming measures- roundabouts/ less lanes for driving etc. make people hate driving even more. And use police to enforce speed limits, red lights etc,
- (I know that speed limit is set by the state on roads based on average speeds but that is a flawed concept- there must be some loopholes..Currently I am afraid to ride my bike because the traffic is so scary. So I drive-even short distances)
- City planning- People won't want to drive if they live close to where they shop/hang out/eat etc. encourage/incentivize neighborhood pocket shopping areas
- So many of our roads are 8 lanes- so biking or walking across is problematic- could you

include some pedestrian/bike bridges in city/traffic planning?

5, **Funding**
Include in report funding sources for the needed changes. Do you have a grant writer or accountant assigned to this? Increase tax rate to include a climate tax? The public is concerned about the costs (rightfully so), so we need to reassured or convinced that the associated costs will be reasonable and fair. Also to find a way to emphasize fair transition for workers who will be impacted- opportunities for "green jobs", training etc could be included in your plan.

6. **Collaboration** with other cities. Rather than reinvent the wheel- ex. could you collaborate with Encinitas and others- ex work together or pay them for their web content? (Or just copy it).

7. **Be a good example** /walk the walk- convert to all electric vehicles, electric infrastructure in all city buildings and infrastructure by 2035. Use that in Carlsbad marketing.

8. **Trees**- this seems relatively easy and inexpensive. Get neighbors and businesses to adopt a tree. Make it part of a community plan. Developers need to include trees in their plans.

9. **No gas-powered lawn equipment**- leaf blowers, lawnmowers. Advertise and support incentives to convert to electric. Those of us who hire landscape companies should pay special tax?? to support the transition.

Thanks,
Katrina Olson
SanDiego350
231-730-8566

From:	mike_bullock@earthlink.net
To:	Katie Hentrich; Council Internet Email; council@oceansideca.org
Cc:	"Michele Cyr"; "Tom Lichterman"; "Hope Nelson"; "Bill Fowler"; "Pete Penseyres"; "Esmeralda Gonzalez Jimenez"; "Chih-Wu Chang"; "David Hall"; "Diana Aguirre"; "Jan Neff-Sinclair"; "Jane Marshall"; "Joan Bullock"; "Luke Tesluk"; "Mary Meyers"; "Shirley Anderson"; "Vince Loughney"; "Russ Cunningham"; "Steve Birdlebough"; becollins92@gmail.com; "Sierra Conscom Ron Askeland"
Subject:	Carlsbad"s Responsibility in Updating Their Climate Action Plan
Date:	Saturday, November 11, 2023 6:48:25 PM
Attachments:	image004.png

Katie Hentrich, Senior Program Manager
katie.hentrich@carlsbadca.gov, 442-339-2623

Senior Program Manager Hentrich,

The people that are getting a copy of this email may not agree with my comments. I am copying them only because I think they might be interested in climate change and what is happening in Carlsbad. I have not gotten their permission to send them a copy of this email.

I have reviewed the video of the meeting. I have downloaded the staff report showing what is being proposed to amend the current CAP.

First off, It disappoints me greatly that the year 2035 is used, in contradiction with the state mandate and climate science. SB 32 established that the first California (CA) mandate is for the year of 2030. NOT 2035. Five years matter. They are critical. There is no state mandate for 2035. Anyone interested in climate change would notice that the articles in newspapers and magazines that are about COP26, COP27, COP28, and so one (the UN's work on avoiding human extinction) speak only of getting larger GHG reduction commitments for 2030. Not 2035. It is extremely dangerous to focus on any year other than 2030.

Based on the Carlsbad City Council meeting of Nov. 7, 2023, no one at the City of Carlsbad seems to understand that our CA mandate is for 2030. If humans don't get their emissions sufficiently low by 2030, we are in danger of having our climate destabilize, resulting in mass starvation and our eventual extinction. This is very serious.

Quotes from the Secretary General of the UN:

1. We have a Code Red Climate Emergency.
2. We are solidly on a path to an unlivable planet.
3. We are driving towards Climate Hell with our foot on the accelerator.
4. We are dangerously close to the point of no return.

This link will establish that the CA mandate is for 2030:

https://en.wikipedia.org/wiki/California_Senate_Bill_32#:~:text=SB-32%20requires%20CARB%20to%20reduce%20greenhouse%20gas%20emissions,most%20cost-efficient%20way%20to%20reduce%20greenhouse%20gas%20emissions..

It says (with added highlights):

The **California Global Warming Solutions Act of 2016: emissions limit**, or **SB-32**, is a California Senate bill expanding upon AB-32 to reduce greenhouse gas (GHG) emissions. The lead author is Senator Fran Pavley and the principal co-author is Assemblymember Eduardo Garcia. SB-32 was signed into law on September 8, 2016, by Governor Edmund Gerald "Jerry" Brown Jr.[1] SB-32 sets into law the mandated reduction target in GHG emissions as written into Executive Order B-30-15.

The Senate bill requires that there be a reduction in GHG emissions to 40% below the 1990 levels by 2030.

Here is the report being discussed:

Meeting Date: Nov. 7, 2023
To: Mayor and City Council
From: Scott Chadwick, City Manager
Staff Contact: Katie Hentrich, Senior Program Manager

katie.hentrich@carlsbadca.gov, 442-339-2623
Subject: Potential Measures to Reduce Greenhouse Gas Emissions for the Climate Action Plan Update
Districts: All
Recommended Action
Receive a report on potential measures to reduce greenhouse gas emissions for the draft Climate Action Plan update and provide feedback to staff as desired.

All the talk about 2035 was contradicted in the City report that says this (emphasis added):

> **State targets**
> California's Legislature has set the following greenhouse gas reduction targets:
> • **2030** - Senate Bill 32 (2016) requires the California Air Resources Board to ensure the state's greenhouse gas emissions are reduced to 40% below 1990 levels by 2030.
> • **2045** - Assembly Bill 1279 (2022) requires the Air Resources Board to ensure emissions are reduced to 85% below 1990 levels by 2045.

Thanks to the work that was started in 2011 by AG Harris (now VP Harris), Carlsbad cannot ignore the CA Climate Mandates nor the official plan to achieve the CA Climate Mandates, which is the 2022 CARB Scoping Plan. Therefore, Carlsbad must have, for example, nearly all car parking managed (not "free") by 2030. Difficult? Not as difficult as mass starvation. The fact is that the only way to have economic equity and fairness, for car parking, is to have managed parking. "Free" is not managed. By the way, "managed' will be more convenient for drivers than "free" as well as being equitable and environmentally sound. Regardless, it is required because it is in the official CA Plan, the CARB Scoping Plan.

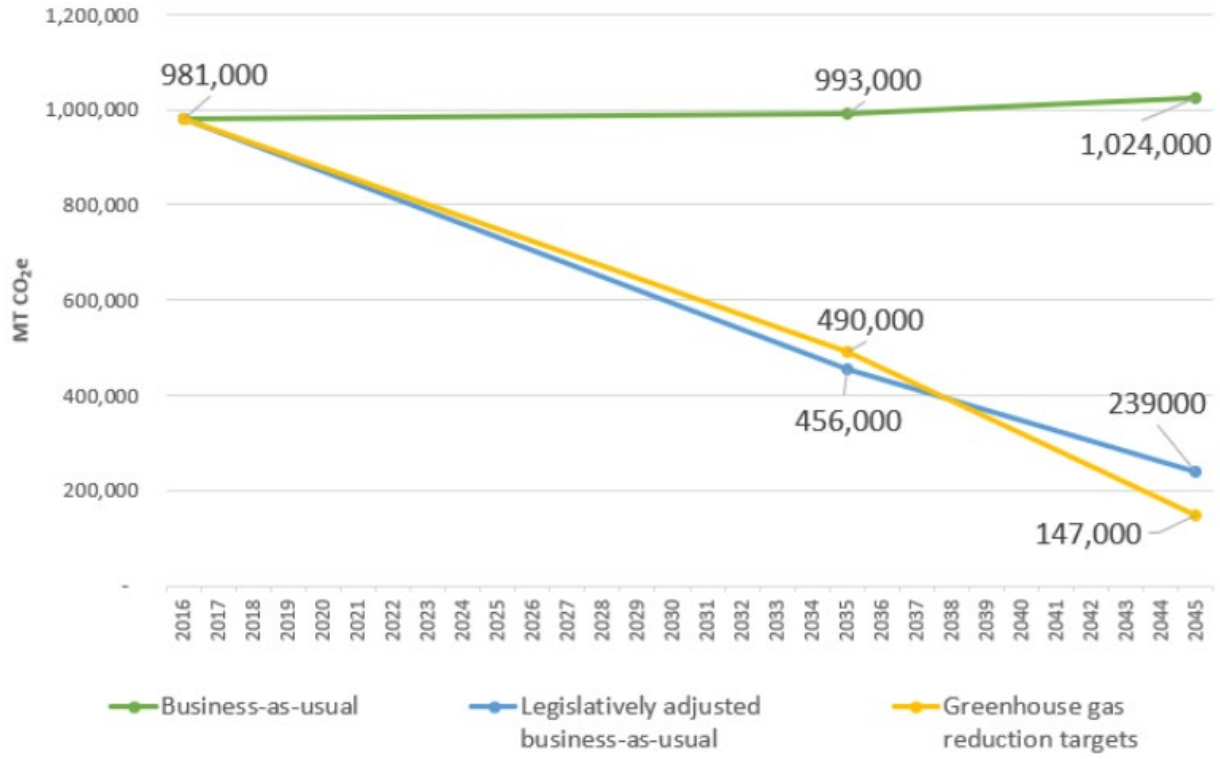
I can show you how to do this ("managed parking") if you are interested.

The Carlsbad Staff report also says this:

> ***2035 being chosen because that is the year that Carlsbad's General Plan anticipates the city will be fully developed or built-out.***

That is not an adequate excuse to ignore CA's 2030 mandate. The climate scientists are giving us climate-stabilization requirements for the years of 2030 and 2045. The UN's "Committee of Parties (COP)" focuses on 2030. Not achieving the 2030 climate stabilization requirement equates to probable human extinction. Climate science and the state of California (CA), have more weight than the idea that Carlsbad might be "built out" by 2035. It is not an exaggeration to say that taking our focus away from the year of 2030 is suicidal. We have a code red climate emergency, and we cannot afford to be intellectually lazy.

On page 4 of the Carlsbad Report this plot is shown:



This plot does not conform to the California Air Resources Board (CARB) Scoping Plan of December 2022. Read its Appendix E. It says we must reduce driving by 25% with respect to 2018 and to do that we need:

- To double transit service by 2030 with respect to 2018 (Carlsbad has very little control here)
- To replace “free” parking, by 2030 (Carlsbad has full control here)
- To have a fully functional Road Use Charge (RUC), by 2030. (Carlsbad has no control, since a RUC would be a CA policy. However, Carlsbad has voted at SANDAG to ignore CARB’s findings, thus caving into the political demagoguery that is used to vilify replacing the very regressive CA gas tax, that has no future due to the electrification of cars, with a means-based Road Use Charge that can be constructed with the features that are needed to make it fair and environmentally sound.)

Note that the SB 32, CA 2030 mandate, which uses the 1990 reference year emission level, is using the level of emissions that is about the same level as the 2019 value (shown in the yellow line and the blue line), which is, as shown, 900,000 Metric Tons (MT). (The 2019 value being nearly the same as the 1990 value is not shown by the plot, but it is a fact.)

40% below that (either the 1990 level or the 2019 level) is required by the CA mandate (SB 32), for the year of 2030 and that would be 540,000 MT. Clearly, the plot shown in the Carlsbad report is inconsistent with the official work of CA, which is the CARB Scoping Plan. To be consistent, it would need to show a plot achieving 540,000 MT by 2030. Carlsbad needed to understand the significance of the 2022 Scoping Plan and incorporate its work quickly into its plans for revision.

After decades of incorrect math, CARB finally got their math correct. However, they do not show their math. I have done the same math (it has been peer reviewed several times by the Air and Waste Management Association), allowing me to sit on AWMA’s urban planning panels. Based on my calculations (available upon request), I know that CARB’s math is correct.

The CARB Scoping Plan of late 2022 is the official state plan for achieving the CA 2030 mandate and it shows that CA (Note: Carlsbad is in CA.) must have no “free” parking, by 2030. Do you have a plan to make that happen, by 2030? I fear you have no strategy to make that happen, by 2030. Please read the CARB Scoping Plan and bring Carlsbad into compliance with the law. I speak here of the law, as it has been shown by the AG Harris work that commenced with her letter to SANDAG in 2011. (I can show you that letter.) A

detail here is that failure to conform to the CA Plan to achieve the CA 2030 mandate would make the CEQA significance threshold be exceeded in the CAP's EIR. AG Harris stated that the CA climate mandates are about climate stabilization and that climate stabilization is the objective of CEQA. At the November 7th meeting, your City Attorney sounded very unworried about the legal issues surrounding the significance threshold of a non-conforming CAP Update. Physics will not be kind to us if we ignore the concept of a significance threshold and of climate destabilization. Climate destabilization is an environmental impact that is extremely negative and unacceptable, since it will almost certainly leave only microbiology forms of life on our planet.

On page 5 the report shows 22 proposed measures, without any detail whatsoever. Here they are (emphasis added):

> The measures are:
> - Wastewater system improvements
> - Water system improvements
> - Renewable energy at municipal facilities
> - Community choice energy
> - Nonresidential building energy efficiency and renewable energy
> - Residential building energy efficiency and renewable energy
> - Building energy benchmarking
> - Decarbonize existing buildings
> - Solid waste and organic waste diversion
> - Traffic calming and optimization
> - Transportation demand management ordinance
> - Safe Routes to School
> - Bikeway system improvements
> - Pedestrian system improvements
> - Local transportation improvements
> - Municipal transportation demand management program
> - Increase public zero emission infrastructure
> - Zero emission city fleet
> - Parking management strategies

The final measure, "Parking Management Strategies" conforms to the CARB Scoping Plan, which clearly indicates that we can have no "free" parking by 2030. The listed measure is not a commitment. The problem is also that it is very late to not have the specific measure, and to have the strategy to implement the specific measure fully described. How would this be accomplished? I have been describing this measure for over 10 years and one of the recipients of my work has been Carlsbad. I have been ignored. However, I can't give up. I have 5 grandchildren.

I could show you the papers I have written on the car parking system that is needed. However, I will paste in words from another email, that shows many of the car parking features that are needed and some ideas about how this could be implemented:

> Here's how the Scoping Plan gets the large (25%) needed driving reduction:
>
> 1. Double transit service, with respect to 2019 levels, by 2030,
> 2. A RUC, fully implemented by 2030,
> 3. Priced Parking, fully implemented by 2030.
>
> "Priced Parking" needs refinement, if we want to be politically astute, with an attention to details. And we have no time for generalities. It is time for details.
>
> To steer developers to compliance, we should proceed in this way, after asserting the

legal requirement:

1. We should recommend *managed parking* and point out that so-called “free parking” is not free, because such a scheme lowers wages, increases rent, and increases the cost of many items, including food. And that instead of “free parking” we need managed parking, with these features:
2. Parking should be managed so that it earns money for those for whom the parking is built or for those who are losing money because the parking is being provided. Opening an account, for easy deposit, would be encouraged. Employees would get an “add-in” payment, if that is needed, so they break even. The data needed to compute earnings would also be collected automatically. For example, employees might be required to carry a FOB, when the go to work. If a train system has car parking, it would be helpful to have all riders carry a FOB, which would also make it easy to automatically charge the fare, beside pay the car parking earnings.
3. All parking is shared. That means that it is available to everyone with a license plate, so they can be billed. Opening an account that associates the license plate with an account would be encouraged, for the easy flow of money.
4. Parking is value priced, with the exception being on-street, when the occupancy is lower than an agreed-upon threshold, like, for example, 50%. When occupancy is below the threshold, the parking could be free.
5. Parking pricing includes congestion pricing to keep the occupancy rate from exceeding an agreed-upon value.
6. Parking is fully automated, so there is no more to do than for so-called “free” parking.
7. Data collection to support the earnings calculations is also fully automated, such as being at a work site.
8. The entire system is provided (designed, installed, and operated) by a vendor, selected in an RFP (Request for Proposal) process.
9. The best place to have the first system is at a place of employment, noting that a municipal government is an employer, and that the system should not cost the employer any money. (ACE Parking, for example, is willing to do the system at no cost. They would take small percentage of the revenue, leaving earnings, for those for whom the parking is built.)
10. The vendor would be skilled a monetizing unused parking and monetizing data.
11. Privacy would be protected, as it should likewise be specified for a Road Use Charge.
12. The vendor would be skilled at providing solar canopies, providing charging stations, and buying and selling electricity.

I have explained this system to the CEO of ACE Parking. He wants to supply the solution. He will submit a proposal. That is documented in a file I have, available upon request.

I have presented this at many technical conferences, so it is peer reviewed. The next Conference is here: . https://web.cvent.com/event/413d9419-4773-496c-8591-

8879904f60bc/websitePage:ce1aee6f-c63f-4a65-a485-f1627b3da134 I may change the name to “Managed Parking”, a name I got from Toll Brothers. Toll Brothers has not ruled out “Managing” (as they say) the parking at the Oceanside Transit Center.

What this does not show is the various algorithms that compute the earnings. One important fact about the algorithms is that they do not use whether the owner drove. Therefore, it can be shown that drivers are not being treated worse than non-drivers. The email message below was written in response to my reading the UT’s description of the meeting.

Closing Comments

I think we should meet to go over this material. I would be happy to help in any way. Carlsbad has an opportunity to be a climate leader.
I could send you the Scoping Plan and its Appendix E. I could send you my reports and the files I use to present the reports. We could also meet so that you can give me your concerns with this message.

Highest regards,

Mike Bullock
1800 Bayberry Drive
Oceanside, CA 92054
760 421 9482

California Democratic Party Delegate, 76th Assembly District (author of 2 adopted resolutions and 5 Platform changes)
Former Elected (now Associate) Member of the San Diego County Democratic Party Central Committee (author of 5 adopted resolutions)

Final title before leaving Aerospace: ***Senior Staff Systems Engineer***

Air and Waste Management Association published and presented papers:
Author, ***The Development of California Light-Duty Vehicle (LDV) Requirements to Support Climate Stabilization: Fleet-Emission Rates & Per-Capita Driving***
Author, ***A Climate-Killing Regional Transportation Plan Winds Up in Court: Background and Remedies***
Co-author, ***A Plan to Efficiently and Conveniently Unbundle Car Parking Cost***

Quotes from the Secretary General of the UN:

5. We have a Code Red Climate Emergency.
6. We are solidly on a path to an unlivable planet.
7. We are driving towards Climate Hell with our foot on the accelerator.
8. We are dangerously close to the point of no return.

From: mike_bullock@earthlink.net <mike_bullock@earthlink.net>
Sent: Friday, November 10, 2023 7:10 PM
To: 'Hope Nelson' <hopefromthehood@gmail.com>; 'Teresa Acosta'; 'Bill Fowler' <wwfowler@gmail.com>; 'Pete Penseyres' <cyclovet11@yahoo.com>
Cc: 'Michele Cyr' <michele.cyr@sbcglobal.net>; 'Tom Lichterman' <tlichterman@cox.net>
Subject: Carlsbad working to update climate plan

Reality: ***This year 'virtually certain' to be warmest in 125,000 years, EU scientists say***

There does not seem to be enough concern in Carlsbad. What about our younger residents? Our children are at high risk.

Here is the article:

Carlsbad working to update Climate Plan

City wants to reduce emissions by 85% from 2016 to 2045 ***(Bullock note: this is not enough, and it obscures the fact that our first climate stabilization requirement is for the year 2030.)***

By Phil Diehl

CARLSBAD

Zero-emission city vehicles, improved bicycle and pedestrian routes, and better transportation management systems [Maybe there is some hope here. I will need to try to find out.] *are among measures proposed for Carlsbad's updated climate action plan.*

Carlsbad's goal is to reduce its greenhouse gas emissions from 2016 levels by 50 percent in 2035 [Bullock note: 2035 is the wrong date. (The 50% is about right, for 2030.) 2030 is correct and has been for over 10 years. CA's SB 32 Climate Mandate for the year is 2030. How to achieve that is in the CARB Scoping Plan. That Plan is the official CA Plan. Carlsbad may think it can ignore the CA climate mandates. However, AG Harris established otherwise, starting that effort back in 2011. Carlsbad thinks CA doesn't matter. Or else they are out of touch with CA and with Climate Science.] *and 85 percent in 2045, said Senior Program Manager Katie Hentrich in a presentation Tuesday to the City Council.*

"Several of the proposed measures ***will take many years*** *to design and implement* [I could give them the car parking strategy and plan right now. The CARB Scoping Plan makes it clear that "free parking" does not comply with the official CA Plan. Do they know? Besides getting rid of bad car parking systems, we need a RUC, which is not Carlsbad's responsibility, although they vote against it at SANDAG, AND we must double transit service with respect to 2019, by 2030, which is also not Carlsbad's responsibility. However, increased transit service will not be cost effective if parking is not fixed. The bottom line in both Carlsbad and Oceanside is that Democrats seem to be failing humanity.] *," Hentrich said, though many of the suggestions are expansions or continuations of programs the city already has underway. Bicycle and pedestrian routes, for example have been expanded in recent years.*

Carlsbad's climate action plan is 8 years old, "and in the world of climate change that is pretty outdated," she said. Evidence is mounting rapidly to show the dramatic effects of human activities on the warming planet.

About a dozen speakers addressed the City Council on the issue; most of them supported the update. The final version is expected to go to the council for approval in mid-2024.

"There is a climate emergency," said resident Vanessa Forsythe, who encouraged the city to act quickly and equitably. Measures need to be fair to people of all incomes, races and classes, said Forsythe and other speakers.

Not everyone was in support. One resident, Mike Borrello, said, "There is no climate emergency," adding that the city can't afford the measures, and that it's "all nonsense."

State goals for greenhouse gas reduction are another example of Sacramento's overreach, said Borrello, who has spoken before on other issues such as affordable housing mandates.

"I'm a taxpayer, and I won't consent to this stuff," Borrello said.

Most other residents and City Council members praised Hentrich and the city staff for their work on the issue. Some urged the city to do more.

"Please also consider an anti-idling measure," said resident Paige DeCino. Idling vehicles are a significant and easily targeted source of greenhouse gas emissions. She also encouraged the city to speed up its transition to electric police cars.

Others asked the city to stop the use of gasoline-powered leaf blowers, prohibit synthetic turf on athletic fields and cease the use of leaded aviation fuel at McClellan-Palomar Airport, though some of the suggestions were outside the city's authority. The airport, for example, is owned by San Diego County and overseen by the Federal Aviation Administration.

Councilmembers Carolyn Luna and Melanie Burkholder asked about the costs of the measures, which are not detailed in the proposal presented Tuesday. Hentrich said a cost analysis is being prepared.

"That's a concern," Luna said. "Carlsbad is balancing so many things. I'm looking forward to the fiscal analysis, that's what I'm going to focus on."

The timing of the measures' implementation was another issue raised by the council, and Hentrich said annual progress reports will be presented.

Mayor Keith Blackburn said he's been a slow convert to the importance of climate issues, but that whenever he talks to high school students it's one of the first things they bring up.

"I ask only that everything be balanced," Blackburn said. "Get it done affordably and balanced with the city's other priorities."

He also praised Hentrich's work and said she's been called the city's "environmental Clark Kent," a reference to the comic book hero Superman's alter ego.

philip.diehl@sduniontribune.com

Not very encouraging. The year 2035 is incorrect. The correct year is 2030. The later year (2045) is dangerous because it takes away attention that should be devoted, 100%, to the 2030 CA Mandate.

Here is the article:

http://enewspaper.sandiegouniontribune.com/infinity/article_share.aspx?guid=c5b45992-6ddf-4391-aebe-56922e33e9c2

The speakers from the public that understand we have a crisis are off the mark in that they don't seem to know that there is a CA Mandate and a CA Plan. There is one denier.

Maybe its better than I suspect, just reading the article.

Mike

From:	Paige DeCino
To:	Keith Blackburn; Melanie Burkholder; Carolyn Luna; Priya Bhat-Patel; Teresa Acosta
Cc:	Katie Hentrich
Subject:	Followup to Nov. 7 council meeting
Date:	Thursday, November 9, 2023 2:44:38 PM

Mayor and Council Members,

During the Q&A session after Katie Hentrich's presentation on Nov. 7, there were some issues brought up that we'd like to respond to.

- While businesses haven't been contacted about electrification, it is possible to phase it in by stipulating the purchase of new electric appliances at the end-of-life for existing (or with remodels) appliances so as to not mandate the replacement of functioning units. This lessens the financial impact to the business owner. To be most effective it needs to be enacted soon so the owners can plan accordingly.

- Along similar lines, as Encinitas did for leaf blowers, give the landscapers plenty of lead time (say 2 years) so they can begin replacing gas leaf blowers at their end of life.

- In regards to rooftop solar for businesses, CEA is partnering with Participate.Energy to install solar plus battery without any credit approval called Solar Plus. Tesla panels and battery will be installed, owned and maintained by Tesla for 25 years at no cost to the business (or homeowner) and the customer will get a discounted, flat kwh rate from CEA. The result is lower rates to the customer and lower GHG emissions to the city with no cost to the city. Over 25 years, the projected savings is $12,000-$26,000 to each customer.

- CEA is also implementing a pilot feed-in-tariff program (community solar) to incentivize local, small scale renewable energy projects. These projects will increase local electricity without the need for major grid additions or upgrades.

- As suggested by some, it is imperative that intermediate benchmarks/timelines be included in the CAP to monitor progress to avoid missing any targets at the last minute. Also, start times for implementation need to be included alongside with the benchmarks.

- As mentioned during the meeting, changing behaviors is improved. Better community outreach on Carlsbad's website would help. On the home page add an Environmental Sustainability bubble to directly link to that existing webpage and on that webpage create a CAP dashboard with information residents and businesses can learn about how to move to a cleaner energy future.

Thank you for your consideration.

Best regards,

Paige DeCino/Mike McMahon/Mary Hassing/Barbara Diamond/Lynda Daniels

Paige

From: Augustin Dao
To: Katie Hentrich
Subject: Re: Provide input on the Carlsbad Climate Action Plan Update
Date: Wednesday, November 8, 2023 11:40:22 AM

Hi,

I wanted to congratulate our Climate Clark Kent on a job well done last night!

I've already submitted my survey, and I'm so happy to see that equity is plastered all over the plan. Not only do we need to help those disproportionately advantaged and who need the extra help to transition to a sustainable future because they've been discounted so often in the past, but hopefully we was compensate for our disproportionate contributions to warming as an affluent community as well.

I also wanted to let you know after that public comment about K-12 education from MIT or the UC's that MiraCosta has an Introduction to Climate Change course (PHSN 108) that is based upon the curriculum created by the UC's. I don't know if you want to promote that or just have it as a resource if anyone wants to learn more, but the course is free to take for all high school students who are dual enrolled, as are all of the other classes (including GEOG 108: Environmental Sustainability and Society), and the Promise Grant provides California residents with 2 free years of college as well.

Best,
Augustin Dao

On Wed, Nov 8, 2023 at 8:21 AM Katie Hentrich <Katie.Hentrich@carlsbadca.gov> wrote:

> Good morning,
>
> I wanted to send a reminder about providing input on actions proposed for the city's Climate Action Plan Update. If you are interested in providing input, you can learn more about the proposed actions here (English / español) and provide your input through this survey (English / español). **Please note that the survey will be open through Friday, November 17.**
>
> I'd like to also offer my time to go over any questions or comments you may have. If you'd like to meet or have a larger group you would like me to share this information with, please let me know and we can set something up.
>
> If you have already completed the survey and/or scheduled a meeting with me, please ignore this message and thank you very much for your time.
>
> Please do not hesitate to reach out if there are any questions. **Do you need an interpreter or any other assistance in order to participate?** Please call me at 442-339-2623. **¿Necesitas un intérprete o cualquier otra asistencia para participar?** Comunícate al 442-339-2623.
>
> Thank you very much for your consideration and participation,

Katie Hentrich

she | her | hers

Climate Action Plan Administrator

Environmental Sustainability

City of Carlsbad

1635 Faraday Ave.

Carlsbad, CA 92008

www.carlsbadca.gov

442-339-2623 | katie.hentrich@carlsbadca.gov

Appendix E

Implementation Cost Analysis

Climate Action Plan Update
Implementation Cost Analysis

A Preliminary Estimate of the Budget Impact and Level of Effort to Implement Proposed CAP Update Activities in the First Five Years

May 2024

Prepared for the City of Carlsbad

Prepared by the Energy Policy Initiatives Center

Disclaimer

The Energy Policy Initiatives Center prepared this report for the City of Carlsbad. This report represents Energy Policy Initiatives Center's professional judgment based on the data and information available at the time Energy Policy Initiatives Center prepared this report. Energy Policy Initiatives Center relies on data and information from third parties who provide it with no guarantees such as of completeness, accuracy or timeliness. Energy Policy Initiatives Center makes no representations or warranties, whether expressed or implied, and assumes no legal liability for the use of the information in this report; nor does any party represent that the uses of this information will not infringe upon privately owned rights. Readers of the report are advised that Energy Policy Initiatives Center may periodically update this report or data, information, findings, and opinions and that they assume all liabilities incurred by them, or third parties, as a result of their reliance on the report, data, information, findings and opinions contained in the report.

About EPIC

The Energy Policy Initiatives Center is a non-profit research center of the USD School of Law that studies energy policy issues affecting California and the San Diego region. Energy Policy Initiatives Center's mission is to increase awareness and understanding of energy- and climate-related policy issues by conducting research and analysis to inform decision makers and educating law students.

For more information, please visit the Energy Policy Initiatives Center website at www.sandiego.edu/epic.

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1 INTRODUCTION

This report summarizes the findings of the City of Carlsbad (Carlsbad) Climate Action Plan (CAP) Update Implementation Cost Analysis conducted by the Energy Policy Initiatives Center (EPIC) at the University of San Diego. The analysis estimates costs and level of effort to implement the activities needed to achieve the greenhouse gas (GHG) emission reduction targets included in the CAP Update. The two goals of this analysis are to estimate (1) the total cost to Carlsbad and level of effort to implement CAP Update measures over the first five fiscal years of CAP Update implementation (FY 2024–25 to FY 2028–29), (2) the cost and level of effort associated with activities that would not have occurred without adoption of the CAP Update.

While the analysis for this report evaluated costs for the first five fiscal years, CAP Update measures could have associated costs beyond this time frame. Cost and level of effort estimates in this report represent those anticipated to be incurred by Carlsbad to implement quantified CAP Update measures, including costs to develop and execute projects and programs, develop and adopt ordinances, and conduct education and outreach activities. Costs associated with CAP Update coordination and reporting, including costs to assess the performance of CAP Update measures annually, complete regular GHG inventory updates, coordinate implementation and performance-tracking activities among departments, and prepare comprehensive updates to the CAP are also included here. Cost results for capital projects shown here do not include any energy bill savings that might result over time from installing solar photovoltaics or installing energy-efficient equipment at city facilities. Also, costs and benefits borne by Carlsbad residents and businesses are *not* considered in this report.

1.1 Organization of Report

The overall process used to estimate implementation costs is presented in Section 2. Section 3 summarizes the results of the CAP Update Implementation Cost Analysis. Section 4 summarizes the level of effort from implementing CAP Update measures. Section 5 briefly discusses the limitations of the analysis.

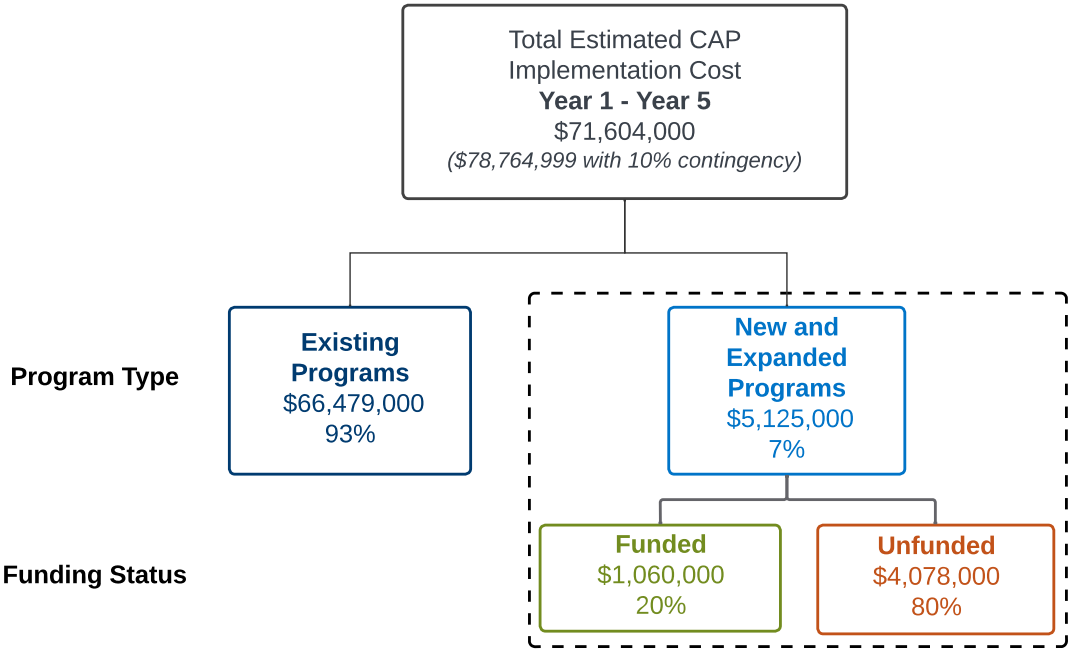
1.2 Key Findings

Key findings of the CAP Implementation Cost Analysis are presented below.

New and Expanded Program Costs would be $5.1 Million in the First Five Years

Based on data provided by Carlsbad staff, the total estimated cost to implement CAP Update measures over the first five years would be $71.6 million (Figure 1). Most of these costs, about $66 million (93%), are associated with existing programs that would have happened regardless of CAP Update adoption. The remaining $5.1 million (7%) would be the cost for new and expanded programs that would happen because of the CAP Update. About $4.1 million (80%) of the new and expanded program costs are currently unfunded.

Figure 1 Total CAP Update Implementation Costs Summary Diagram (Year 1-5)



Three CAP Update Measures Account for Nearly Three-Quarters of New and Expanded Program Costs

E-1 (Renewable Energy at Municipal Facilities) would cost $2.4 million to implement over five years (47% of total new and expanded costs). WD-1 (Solid Organic Waste Diversion) would cost $817,000 (16%). T-6 (Local Transportation Improvements) would cost $536,000 (10%) to implement.

Three Departments Account for about 80% of New and Expanded Program Costs

The Fleet and Facilities Department would have the highest costs over the five-year period with about $2.5 million (49% of new and expanded costs), primarily for E-1.3 (Eliminate Natural Gas Use from City Facilities) and T-9 (Zero Emission City Fleet); the Environmental Sustainability Department would have costs of about $817,000, primarily for CAP Coordination and Reporting and E-5 (Building Energy Benchmarking); and the Transportation Department would have costs of $620,000, primarily for T-6 (Local Transportation Improvements).

A Relatively Small Level of Effort Would be Required by Most Staff

The level of effort across 10 departments to implement new and expanded activities associated with 25 CAP Update measures and over 100 related implementation and supporting actions would be between 4,825 and 6,748 hours annually during the first five years. The level of effort required for new and expanded activities in the first five years would be distributed across 41 positions in 10 departments implementing 25 measures. On average, 81% of staff would have a level of effort less than about 208 hours per year, 17% of positions would have a level of effort between 208 and 624 hours per year, and about 2% of staff would see a level of effort more than 624 hours per year. Given the estimated level of effort presented here, accommodating new CAP Update-related activities could include reassignment and reprioritization of responsibilities.

2 CAP UPDATE IMPLEMENTATION COST ANALYSIS OVERVIEW

This report estimates staffing costs anticipated during the first five fiscal years of CAP Update implementation—FY 2024-25 to FY 2028-29. The costs and level of effort presented are estimates based on input and discussions with Carlsbad staff that would participate in anticipated implementation tasks included in the draft CAP Update. To account for changes in CAP Update implementation activities, cost and level of effort, the estimates included here can be updated in the future in concert with regular CAP Update monitoring efforts. This would provide sufficient time to better understand how implementation activities may occur and allow for synchronization with the Carlsbad budget process.

The following sections summarize the process used to estimate CAP Update implementation costs and the overall framework used to identify and evaluate costs.

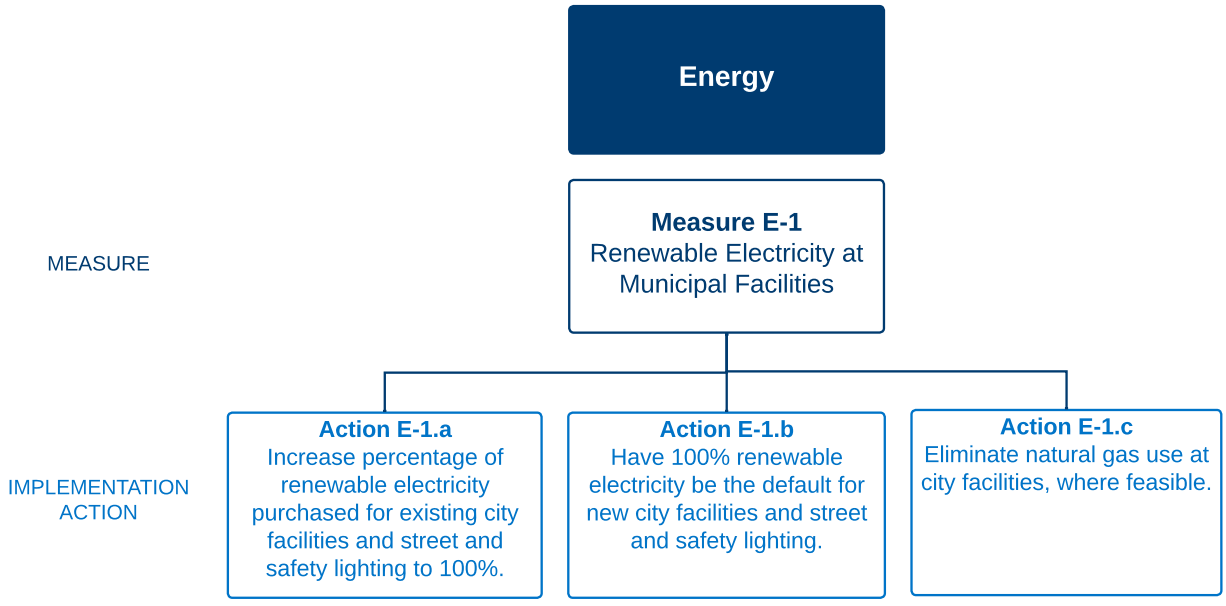
2.1 Process to Estimate CAP Update Implementation Costs

The general steps in the process to estimate CAP Update implementation costs were to: (1) determine the actions required to implement CAP Update activities; (2) define workload associated with these tasks; and (3) estimate staffing levels and associated costs.

2.1.1 Identify Implementation Actions

The Carlsbad CAP Update includes implementation actions that represent the expected workload to implement CAP Update activities. The CAP Update comprises of measures that include specific programs, policy actions and associated actions that will be implemented to reduce GHG emissions. Figure 2 illustrates the relationship between the CAP Update measures and implementation actions. The CAP Update includes 25 measures and over 100 implementation and supporting actions. Only measures with quantified GHG reductions are included here. This analysis also considers CAP coordination and reporting as its own measure with related actions.

Figure 2 Structure of CAP Update Strategies, Measures, and Actions



2.1.2 Establish Preliminary Cost Estimates

Once the implementation and supporting actions were developed, Carlsbad staff estimated staffing effort (in hours) and non-staffing costs like capital, professional services (e.g., consultants), and others that would be required to implement CAP Update activities. To facilitate and standardize the collection of implementation cost data provided by Carlsbad staff across several departments, EPIC created a data collection template. Carlsbad staff conducted meetings with staff to further discuss cost estimates and cost data collection.

The cost and level of effort estimates presented here reflect the staffing costs to implement the activities in the CAP Update as of May 2024. They are based on assumptions of the work effort needed to implement the CAP Update implementation and supporting actions. If the CAP Update measures change over time, implementation costs could be different from those reported here and would need to be adjusted.

2.1.3 Quality Assurance and Quality Control (QA/QC)

Quality control and data validation occurred at several stages. Primary validation occurred after total estimated costs and level of effort were collected. EPIC and Carlsbad staff performed an internal quality control check, updated key Carlsbad staff, and reviewed costs with staff. Based on this initial review, some cost components were updated to create consistency across all departments and to create a complete data set. Carlsbad staff also conducted a detailed consistency check to ensure internal cost reporting consistency. EPIC conducted a final review of all costs prior to inclusion in this report.

2.2 CAP Implementation Costs Evaluated

In general, two broad types of costs, including level of effort, can be considered in CAP Update implementation cost estimates: those incurred to implement programs and activities related to CAP Update measures (e.g., education and outreach, policy development, conducting retrofits on city facilities), and those related to overall CAP Update coordination and reporting (including updating the GHG emissions inventory, monitoring and reporting on progress, and updating the CAP document). Data on activities to implement CAP Update measures are needed to monitor and report CAP Update progress. Also, coordination among departments can identify effective methods to implement CAP Update measures.

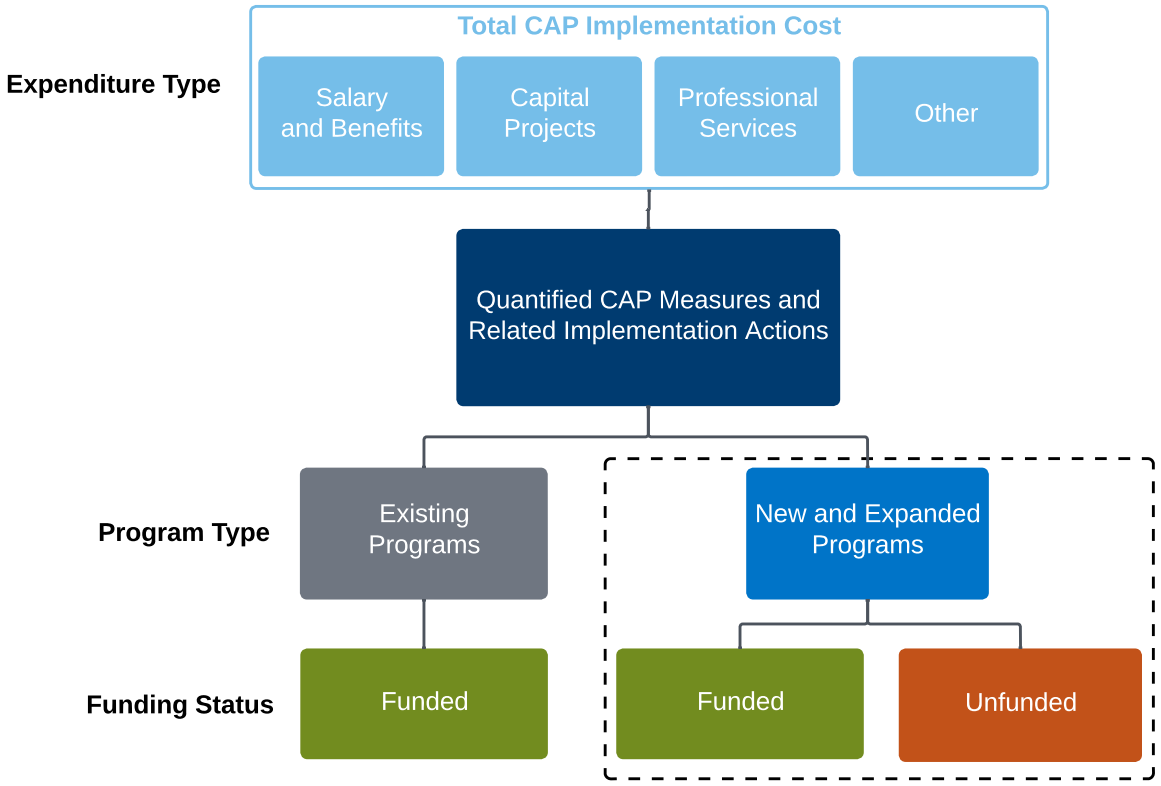
2.2.1 Framework for Evaluating CAP Update Costs

The overall goal of the CAP Update Implementation Cost Analysis is to develop a preliminary estimate of the total cost and level of effort (measured in hours) to implement quantified GHG reduction measures over the first five fiscal years. Carlsbad also wanted to evaluate costs based on Program Status (e.g., existing versus new and expanded programs) to determine the estimated costs associated with new and expanded programs that would not have occurred without the CAP Update, and evaluate costs based on funding status (e.g., funded versus unfunded) to determine which activities require additional financial resources to implement and potential funding sources for those activities.

Figure 3 illustrates this cost analysis framework. Total implementation costs comprise salary and benefits, capital, professional services, and other costs like supplies and materials. Activities that directly implement CAP Update measures can be divided into existing and new and expanded

programs. For purposes of this analysis, existing programs are those that are already being implemented, or are already planned, and would have occurred without CAP Update adoption. New and expanded programs are those that currently do not exist or the expanded portion of existing programs that would not have occurred without CAP Update adoption. Based on the analysis conducted for this report, all existing programs have identified funding sources (i.e., funded) but new and expanded programs can be funded or unfunded. Costs associated with new and expanded activities represent the costs to implement CAP Update measures.

Figure 3 Framework for Evaluating CAP Update Implementation Costs



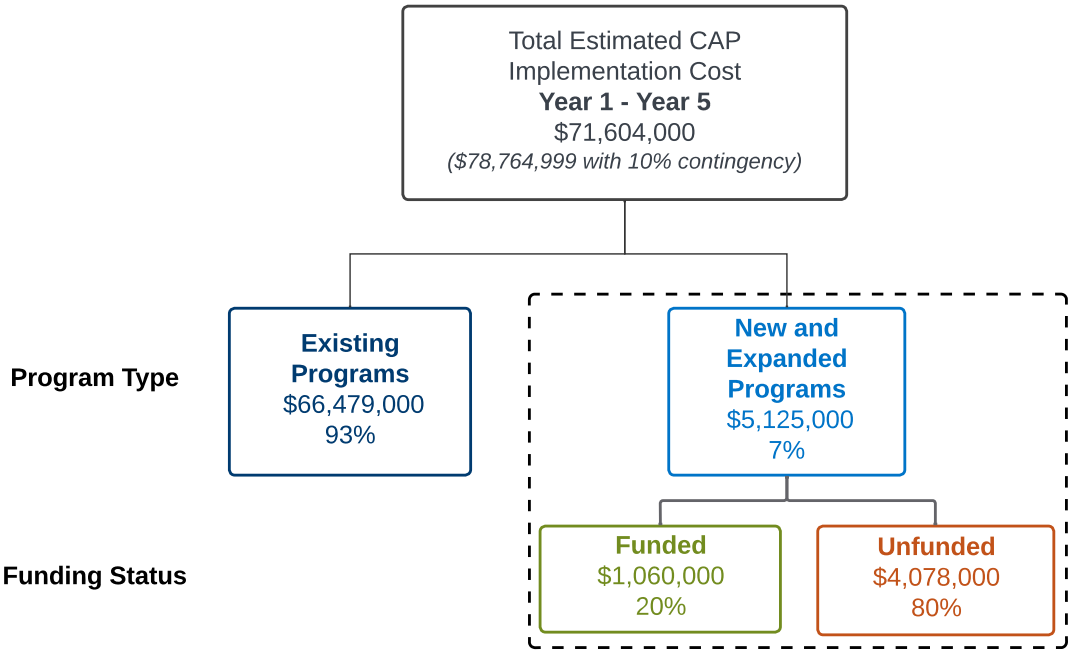
3 RESULTS – CAP UPDATE IMPLEMENTATION COSTS

This section presents the results of the Carlsbad CAP Update Implementation Cost Analysis and answers the question: **What are the costs to Carlsbad to implement the CAP Update activities over the first five fiscal years?** It presents an overall summary of results for the first five fiscal years and summarizes both total and new and expanded cost results by expenditure category, Carlsbad CAP Update measure, department, and staff position.

3.1 Total CAP Update Implementation Costs

Based on data provided by Carlsbad staff, the total estimated cost to implement quantified CAP Update measures over the first five-year fiscal year or FY period (FY 2024-25 to FY 2028–29) is $71.6 million (Figure 4). With a 10% contingency, the total cost would be $78.6 million. Most of these costs, about $66 million (93%), are associated with existing programs that are ongoing or currently planned. New and expanded programs, which represent costs that would not have occurred without CAP Update adoption, account for $5.1 million (7%). Of this subset of costs, about 80% of new and expanded program costs ($4.1 million), are currently unfunded.

Figure 4 Total CAP Update Implementation Costs Summary Diagram (Year 1-5)



The annual costs to implement CAP Update activities fluctuate over the first five-year period, ranging from $26 million in year one to $7 million in year five (Figure 5). The higher costs in the first two years are associated with significant existing project costs, including CAP Update measure W-2 Water System Improvements, W-1 Wastewater System Improvements, and E-1 Renewable Energy at Municipal Facilities. Of the total annual costs, about $820,000 to $1.2 million are associated with new and expanded programs (orange bar), the costs due to CAP Update implementation. Of this subset, the unfunded portion ranges from about $628,000 (76% of annual costs) to $1 million (82% of annual costs).

Figure 5 Annual CAP Update Implementation Costs by Program Status

	Year 1	Year 2	Year 3	Year 4	Year 5
New/Expanded	$820,000	$864,000	$1,036,000	$1,238,000	$1,167,000
Existing	$24,954,000	$19,651,000	$9,884,000	$5,937,000	$6,053,000
Total	$25,775,000	$20,514,000	$10,920,000	$7,175,000	$7,220,000

3.2 Costs by Measure for New and Expanded Programs

This section summarizes the estimated costs to implement new and expanded CAP activities associated with each quantified GHG reduction measure included in the May 2024 CAP. As noted in Section 2 above, the CAP Update has six main strategies, which comprise 25 measures, 41 implementation actions, and 73 supporting efforts. A measure focused on coordination and reporting on the CAP (CCR1) is not included as a measure in the CAP Update but is included in the results presented here.

Table 1 (below) shows annual implementation costs for CAP Update measures. Note that the colors in the table show the range of costs. Higher costs are in darker blue, lower costs are in lighter blue. Most tables presented in this report use this "heat map" approach to help easily identify cost ranges.

Three measures account for nearly three-quarters of estimated new and expanded CAP Update implementation costs (Table 1). E-1 (Renewable Energy at Municipal Facilities) would cost $2.4 million to implement over five years (47% of total new and expanded costs). WD-1 (Solid and Organic Waste Diversion) would cost $817,000 (16%). T-6 Local Transportation Improvements would cost $536,000 (10%) to implement. The cost results reported here represent upfront costs and do not consider any potential cost savings that might result from those measures. For example, ongoing utility cost reductions could result from adding photovoltaic projects to municipal facilities. Those cost reductions are not included here.

Table 1 Annual New and Expanded CAP Update Implementation Costs by Measure

Measure	Year 1	Year 2	Year 3	Year 4	Year 5	Total	% of Total
E-1 Renewable Energy at Municipal Facilities	$ 426,000	$ 469,000	$ 481,000	$ 505,000	$ 515,000	$2,396,000	47%
WD-1 Solid and Organic Waste Diversion	$ 109,000	$ 118,000	$ 141,000	$ 183,000	$ 266,000	$817,000	16%
T-6 Local Transportation Improvements	$ 97,000	$ 102,000	$ 107,000	$ 112,000	$ 118,000	$536,000	10%
CAP Coordination and Reporting	$ 4,000	$ 5,000	$ 5,000	$ 228,000	$ 30,000	$272,000	5%
E-5 Building Energy Benchmarking	$ -	$ -	$ 133,000	$ 19,000	$ 17,000	$170,000	3%
T-8 Increase Public Zero Emission Infrastructure	$ 27,000	$ 28,000	$ 28,000	$ 30,000	$ 31,000	$144,000	3%
E-3.2 Nonresidential Building Energy Efficiency and Renewable Energy - Updated Reach Code	$ 38,000	$ 34,000	$ 17,000	$ 17,000	$ 18,000	$124,000	2%
OR-1 Convert Gas-Powered Leaf Blowers	$ 44,000	$ 35,000	$ 11,000	$ 12,000	$ 12,000	$115,000	2%
T-9 Zero Emission City Fleet	$ 23,000	$ 23,000	$ 21,000	$ 22,000	$ 24,000	$113,000	2%
OR-2 Increase Renewable or Alternative Fuel Construction Equipment	$ -	$ -	$ 41,000	$ 32,000	$ 35,000	$108,000	2%
E-6 Decarbonize Existing Buildings	$ 4,000	$ 5,000	$ 5,000	$ 43,000	$ 44,000	$101,000	2%
E-4.2 Residential Building Energy Efficiency and Renewable Energy - Updated Reach Code	$ 30,000	$ 24,000	$ 8,000	$ 9,000	$ 9,000	$79,000	2%
CS-1 Community Forest Management	$ 8,000	$ 9,000	$ 25,000	$ 10,000	$ 11,000	$64,000	1%
T-2 Transportation Demand Management Ordinance	$ 6,000	$ 9,000	$ 8,000	$ 8,000	$ 31,000	$62,000	1%
E-2 Community Choice Energy	$ 3,000	$ 3,000	$ 3,000	$ 6,000	$ 3,000	$18,000	0%
E-4.1 Residential Building Energy Efficiency and Renewable Energy - Existing Reach Code	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$5,000	0%
CS-2 Ban and Remove Artifical Turf	$ -	$ -	$ -	$ 2,000	$ 2,000	$3,000	0%
Total	**$ 820,000**	**$ 864,000**	**$1,036,000**	**$1,238,000**	**$1,167,000**	**$5,125,000**	**100%**

3.3 Costs by Department for New and Expanded Programs

Three departments account for 80% of new and expanded CAP Update implementation costs. The Fleet and Facilities Department would have the highest costs over the five-year period with about $2.5 million, about 49% of these costs (Table 2). These costs would range from $446,000 to $536,000 per year over the first five-year period, with costs generally rising over that time. These costs are primarily for E-1.3 (Eliminate Natural Gas Use from City Facilities) and T-9 (Zero Emission City Fleet). The Environmental Sustainability Department would have costs of about $817,000, primarily for CAP Coordination and Reporting and E-5 (Building Energy Benchmarking). The Transportation Department would have costs of $620,000, primarily for T-6 (Local Transportation Improvements).

Table 2 Annual New and Expanded CAP Update Implementation Costs by Department

Department	Year 1	Year 2	Year 3	Year 4	Year 5	Total	% of Total
Fleet & Facilities	$ 446,000	$ 488,000	$ 500,000	$ 518,000	$ 536,000	$2,488,000	49%
Environmental Sustainability	$ 112,000	$ 123,000	$ 224,000	$ 354,000	$ 158,000	$ 971,000	19%
Transportation	$ 112,000	$ 118,000	$ 124,000	$ 130,000	$ 136,000	$ 620,000	12%
Community Development	$ 75,000	$ 71,000	$ 58,000	$ 66,000	$ 94,000	$ 363,000	7%
Construction Management & Inspection	$ 8,000	$ 16,000	$ 45,000	$ 83,000	$ 161,000	$ 312,000	6%
Communication & Engagement	$ 46,000	$ 30,000	$ 50,000	$ 58,000	$ 60,000	$ 244,000	5%
Parks & Recreation	$ 8,000	$ 9,000	$ 25,000	$ 10,000	$ 10,000	$ 63,000	1%
Intergovernmental Affairs	$ 7,000	$ 7,000	$ 8,000	$ 19,000	$ 10,000	$ 51,000	1%
Finance	$ 5,000	$ 1,000	$ 2,000	$ 2,000	$ 2,000	$ 12,000	0%
Total	**$ 820,000**	**$ 864,000**	**$1,036,000**	**$1,238,000**	**$1,167,000**	**$5,125,000**	**100%**

3.4 Cost by Expenditure Category for New and Expanded Programs

Expenditure categories in this analysis include capital, personnel (salary and benefits), and professional services (e.g., consultants). An inflation factor of 3% was applied to all non-personnel costs in years two through five to account for potential change in costs.

- Personnel – This category represents salaries and wages, vacancy savings, retirement benefits, health insurance, and other personnel costs (e.g., workers comp, Medicare) associated with CAP Update implementation. This category would account for about 54% of new and expanded costs over the first five years. Hourly rates used are specific to each department and include an annual increase of 5% over the five-year period.
- Maintenance and Operations – This category, which represents about 46% of new and expanded costs, includes all other program expenses (outside of personnel, capital, and transfers). This category sometimes includes one-time appropriations for special projects.
- Capital Outlay – The costs for new and expanded programs do not include capital outlay, as this expenditure category primarily relates to existing programs.

Total personnel expenditures during the first five years of CAP Update implementation would account for about $439,000 to $731,000 annually (Table 3). Maintenance and Operations expenditures would vary over this period from a low of $382,000 in year one to a high of $640,000 in year four.

Table 3 CAP Update Implementation Costs by Expenditure Type for New and Expanded Programs

Expenditure Type	Year 1	Year 2	Year 3	Year 4	Year 5	Total	% of Total
Personnel	$ 439,000	$ 486,000	$ 509,000	$ 598,000	$ 731,000	$2,762,000	54%
Maintenance & Operations	$ 382,000	$ 378,000	$ 527,000	$ 640,000	$ 436,000	$2,363,000	46%
Total	**$ 820,000**	**$ 864,000**	**$1,036,000**	**$1,238,000**	**$1,167,000**	**$5,125,000**	**100%**

3.4.1 Personnel Costs by Department for New and Expanded Programs

Table 4 shows annual new and expanded personnel costs by department. Three departments represent about two-thirds of these costs: Environmental Sustainability (23%), Transportation (22%), and Fleet and Facilities (21%). The single highest personnel cost would be in the Construction Management and Inspection Department in Year 5 ($161,000).

Table 4 Annual Personnel Costs by Department for New and Expanded Programs

Department	Year 1	Year 2	Year 3	Year 4	Year 5	Total	% of Total
Environmental Sustainability	$ 112,000	$ 123,000	$ 118,000	$ 135,000	$ 158,000	$ 646,000	23%
Transportation	$ 112,000	$ 118,000	$ 124,000	$ 130,000	$ 136,000	$ 620,000	22%
Fleet & Facilities	$ 86,000	$ 117,000	$ 118,000	$ 124,000	$ 131,000	$ 577,000	21%
Community Development	$ 74,000	$ 69,000	$ 56,000	$ 64,000	$ 91,000	$ 353,000	13%
Construction Management & Inspection	$ 8,000	$ 16,000	$ 45,000	$ 83,000	$ 161,000	$ 312,000	11%
Communication & Engagement	$ 26,000	$ 25,000	$ 28,000	$ 31,000	$ 33,000	$ 144,000	5%
Intergovernmental Affairs	$ 7,000	$ 7,000	$ 8,000	$ 19,000	$ 10,000	$ 51,000	2%
Parks & Recreation	$ 8,000	$ 9,000	$ 9,000	$ 10,000	$ 10,000	$ 47,000	2%
Finance	$ 5,000	$ 1,000	$ 2,000	$ 2,000	$ 2,000	$ 12,000	0%
Total	**$ 439,000**	**$ 486,000**	**$ 509,000**	**$ 598,000**	**$ 731,000**	**$2,762,000**	**100%**

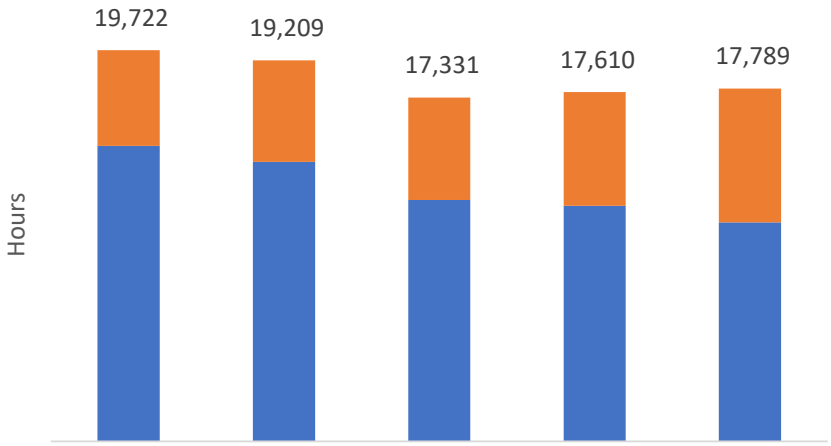
4 RESULTS – LEVEL OF EFFORT

This section presents the results of the Carlsbad CAP Update Implementation Cost Analysis and answers the question: **What level of effort is needed to Carlsbad to implement the CAP Update over the first five fiscal years?** It presents an overall summary of staffing costs for the first five fiscal years and summarizes results by Carlsbad department, staff position, and CAP Update measure.

4.1 Overall Level of Effort

Total estimated level of effort across all departments and staff positions to implement all CAP Update measures and actions would be between 17,331 and 19,722 hours annually during the first five years (Figure 6).[1] Like CAP Update implementation costs, most of the required level of effort would be associated with existing programs. The portion of effort associated with new and expanded programs (orange bars) would be between 4,825 and 6,748 hours annually. This does not mean there is a need to hire new positions; the level of effort required for new and expanded activities in the first five years would be distributed across 41 positions in 10 departments implementing 25 measures. On average 81% of staff would have a level of effort less than about 208 hours per year, 17% of positions would have a level of effort between 208 and 624 hours per year, and about 2% of staff would see a level of effort more than 624 hours per year.[2] Accommodating new CAP Update-related activities could include reassignment and reprioritization of responsibilities.

Figure 6 Annual Level of Effort (Hours)[3]



	Year 1	Year 2	Year 3	Year 4	Year 5
New/Expanded	4,825	5,126	5,162	5,741	6,748
Existing	14,897	14,083	12,169	11,869	11,041
Total Hours	19,722	19,209	17,331	17,610	17,789

[1] For reference, 2,080 hours is considered full-time.
[2] Percentages do not sum to 100% due to rounding.
[3] For reference, 2,080 hours is considered full-time.

4.2 Level of Effort by Department for New and Expanded Programs

This analysis estimated the level of effort for each department that will participate in CAP Update implementation to illustrate how the workload would be distributed across the Carlsbad organizational structure. The Environmental Sustainability Department would have the highest level of effort with between 1,301 to 1,583 hours per year in the first five years of CAP Update implementation (Table 5). The Fleet and Facilities (997 hour per year) and Transportation Departments (about 1,000 hours per year) would have the next highest level of effort in the first five years.

Table 5 Annual Level of Effort Impact by Department (Hours)[4]

Department	Year 1	Year 2	Year 3	Year 4	Year 5
Environmental Sustainability	1,349	1,415	1,301	1,414	1,583
Fleet & Facilities	1,020	1,312	1,250	1,250	1,250
Transportation	997	997	997	997	997
Community Development	751	698	588	598	826
Construction Management & Inspection	88	173	465	810	1,500
Communication & Engagement	378	341	371	392	392
Parks & Recreation	104	-	-	-	-
Intergovernmental Affairs	70	70	70	160	80
Finance	68	16	16	16	16
Total Hours	**4,825**	**5,126**	**5,162**	**5,741**	**6,748**

4.3 Level of Effort by Measure for New and Expanded Programs

WD-1 (Solid and Organic Waste Diversion) would require the highest level of effort to implement among new and expanded programs, from 1,324 hours in year one to 2,564 hours in year five. E-1 (Renewable Energy at Municipal Facilities) would require the next highest level of effort, between 798 and 1,118 hours per year over the first five years. T-6 (Local Transportation Improvements) would require 835 hours annually. Table 6 summarizes these results.

[4] For reference, 2,080 hours is considered full-time.

Table 6 Annual Level of Effort by CAP Update Measure for New and Expanded Programs (Hours)[5]

Measure	Year 1	Year 2	Year 3	Year 4	Year 5
WD-1 Solid and Organic Waste Diversion	1,324	1,357	1,529	1,874	2,564
E-1 Renewable Energy at Municipal Facilities	798	1,110	1,058	1,118	1,058
T-6 Local Transportation Improvements	835	835	835	835	835
T-8 Increase Public Zero Emission Infrastructure	273	278	262	262	262
E-3.2 Nonresidential Building Energy Efficiency and Renewable Energy - Updated Reach Code	416	353	170	170	170
T-9 Zero Emission City Fleet	249	235	212	212	212
OR-1 Convert Gas-Powered Leaf Blowers	269	362	162	162	162
OR-2 Increase Renewable or Alternative Fuel Construction Equipment	-	-	-	-	-
E-4.2 Residential Building Energy Efficiency and Renewable Energy - Updated Reach Code	-	-	100	100	100
E-6 Decarbonize Existing Buildings	59	62	61	263	260
CAP Coordination and Reporting	50	50	50	100	305
CS-1 Community Forest Management	104	104	104	109	109
T-2 Transportation Demand Management Ordinance	52	68	60	58	266
E-5 Building Energy Benchmarking	-	-	135	123	90
E-2 Community Choice Energy	41	41	41	61	41
E-4.1 Residential Building Energy Efficiency and Renewable Energy - Existing Reach Code	11	10	10	10	10
CS-2 Ban and Remove Artifical Turf	-	-	-	15	15
Total Hours	**4,825**	**5,126**	**5,162**	**5,741**	**6,748**

[5] For reference, 2,080 hours is considered full-time.

5 LIMITATIONS

There are inherent limitations with any data analysis that result in a degree of uncertainty. This implementation cost and level of effort analysis uses the best information, data, and methods available at the time. Nonetheless, the following limitations should be considered.

5.1 Preliminary Estimate

The cost and level of effort results presented are preliminary estimates. Because there is limited information about the specific tasks that would be required to implement the CAP measures, the estimates included are based on Carlsbad staff's assumptions about the work to be performed. Over time, the specific tasks required to implement CAP Update measures will become clearer and considerations for how to coordinate and sequence activities can be made, which may also affect the ultimate cost and staffing required to implement the CAP Update.

5.2 CAP Time Horizon

This analysis evaluated Carlsbad's cost and level of effort for the first five years of CAP Update implementation through FY 2028–29. While the CAP Update has an implementation horizon of up to 2045 this report does not estimate costs between FY 2029-30 and 2045. This could cause misinterpretation of some findings. For example, certain CAP Update measures will be implemented and have costs beyond the scope of this initial cost analysis, but only the cost during the first five fiscal years of CAP Update implementation are captured here. To account for future costs, cost estimates could be updated through the CAP Update monitoring process.

5.3 Cost Savings not Considered

This report estimates the costs to Carlsbad to implement the measures included in the CAP Update. It does not consider any potential cost savings that might result from those measures. For example, rooftop solar and energy-efficiency retrofits have an upfront cost but could result in a net savings over the project lifetime. A benefit-cost analysis would be required to estimate the net savings or costs that would accrue to the City of Carlsbad (for municipal projects), and residents, and businesses located within the city.

5.4 GHG Emissions

This report does not consider the GHG emissions associated with CAP Update measures. It is common for cost analyses to normalize cost across GHG emission reductions in a CAP; this method would divide costs by GHG emissions to derive a cost per ton of carbon-dioxide equivalent (CO_2e) reduced. It is not possible to derive such values from the cost information included in this report because there is no way to correlate the amount of GHG emissions reductions that would occur due to the specific staffing expenditures estimated for this effort. For example, it would not be accurate to divide costs for the first five fiscal years by the total GHG emissions reductions for 2030 because there could be additional costs associated with achieving those reductions.

5.5 Overlap between Existing and Expanded Programs

This analysis attempted to separate out existing programs that would have happened regardless of CAP adoption from the expanded portion of existing programs and new programs that are needed to implement actions included in the CAP Update. In some cases, it is possible that previous

existing efforts either were not completed or did not achieve the targets the previous CAP and that costs and staffing needed to achieve the unmet portion of related activity are categorized as an expanded program. While we acknowledge this potential overlap, it may not be possible in all cases to separate out all existing costs from expanded and new costs.

Appendix F

CAP Update Consistency Checklist

Development Services
Planning Division
1635 Faraday Avenue
(442) 339-2610
www.carlsbadca.gov

CLIMATE ACTION PLAN UPDATE CONSISTENCY CHECKLIST P-30

PURPOSE

In October 2024, the City of Carlsbad adopted a Climate Action Plan (CAP) Update that outlines actions that the city will undertake to achieve its proportional share of state greenhouse gas (GHG) emissions reductions. This 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 Update are achieved. Implementation of these measures will ensure that new development is consistent with the CAP Update's assumption for relevant CAP Update strategies toward achieving the identified greenhouse gas (GHG) reduction targets. In this manner, a project's incremental contribution to a cumulative GHG emissions effect may be determined not to be cumulatively considerable if it complies with the requirements of the CAP Update, in accordance with CEQA Guidelines Sections 15064(h)(3), 15130(d), and 15183(b).

This checklist is intended to assist project applicants in identifying CAP Update ordinance and consistency requirements and demonstrate how their project fulfills those requirements. This checklist is to be completed and included in applications for new development projects that require discretionary review. The specific applicable requirements outlined in the checklist shall be required as conditions of project approval for CAP Update compliant projects with streamlined GHG emissions assessments. This checklist (i.e. Form P-30) is complementary to the checklist provided in Form B-50, which is specific to building permits and required for building permit applications.

APPLICATION SUBMITTAL REQUIREMENTS

- The completed checklist must be included in the project submittal package or building permit application. Application submittal procedures can be found on the City of Carlsbad website. This checklist is designed to assist the applicant in identifying the minimum CAP Update-related requirements specific to their project. However, it may be necessary to supplement the completed checklist with supporting materials, calculations or certifications, to demonstrate full compliance with CAP Update requirements. For example, projects that propose or require a performance approach to comply with energy-related measures will need to attach to this checklist separate calculations and documentation as specified by the ordinances.

- If an item in the checklist is deemed to be not applicable to a project, or is less than the minimum required by ordinance, an explanation must be provided to the satisfaction of the Planning Division or building official.

- The requirements in the checklist will be included in the project's conditions of approval or issuance of building permit.

- Details on CAP Update ordinance requirements are available on the city's website.

STEP 1: LAND USE CONSISTENCY

The first step in determining CAP Update consistency for discretionary development is to assess the project's consistency with the growth projections used in the development of the CAP Update. This section allows the city to determine a project's consistency with the land use assumptions used in the CAP Update. Projects found not to be consistent with the CAP Update's land use assumptions will be subject to a project-specific analysis of GHG emissions' impact on the environment in accordance with the requirements of the California Environmental Quality Act (CEQA). This may result in GHG-reducing mitigation measures applied as a condition of project approval in addition to compliance with the CAP Update ordinance and consistency requirements identified in Step 2 of this checklist.

STEP 1	**Land Use Consistency**	
Checklist Item (Check the appropriate box and provide an explanation and supporting documentation for your answer)	**Yes**	**No**
A. Is the proposed project consistent with the existing General Plan land use and/or Housing Element, and specific/master plan or zoning designations? OR, If the proposed project is not consistent with the existing land use plan and zoning designations, does the project include a land use plan and/or specific plan, master plan or zoning designation amendment that would result in an equivalent or less GHG-intensive project when compared to the existing designations?	☐	☐

If **"Yes"**, proceed to Step 2 of the checklist. For the second option under Question A above, provide estimated project-related GHG emissions under both existing and proposed designation(s) for comparison. GHG emissions must be estimated in accordance with the City of Carlsbad Guidance to Demonstrating Consistency with the Climate Action Plan.

If **"No"**, the project's GHG impact is potentially significant and must be analyzed in accordance with CEQA. Applicant must prepare a Self-developed GHG emissions reduction program in accordance with the City of Carlsbad Guidance to Demonstrating Consistency with the Climate Action Plan to demonstrate how it would offset the increase in emissions over the existing designations. The project must incorporate each of the applicable measures identified in Step 2 to mitigate cumulative GHG emissions impacts unless the decision maker finds that a measure is infeasible in accordance with California Environmental Quality Act Guidelines Section 15091. Mitigation in lieu of or in addition to the measures in Step 2 may be required, depending on the results of the project-specific GHG impact analysis. Proceed and complete a project-specific Self-developed GHG emissions reduction program and Step 2 of the Checklist.

STEP 2: CAP UPDATE ORDINANCE COMPLIANCE REQUIREMENTS

Completion of this checklist will document a project's compliance with CAP Update ordinances, and in turn, demonstrate consistency with the applicable measures and actions of the CAP Update. The compliance requirements in this Step 2 apply to development projects that require a building permit. All other development projects shall implement all emissions-related mitigation measures from the General Plan Update EIR and the Housing Element Update EIR.

Application Information			
Project No./Name:			
Property Address/APN:			
Applicant Name/Co.:			
Applicant Address:			
Contact Phone:		Contact Email:	

Contact information of person completing this checklist (if different than above):

Name:		Contact Phone:	
Company name/address:		Contact Email:	

Use the table below to determine which sections of the Ordinance Compliance checklist are applicable to your project. If your project includes alterations or additions to an existing building, please contact the Carlsbad Building Division for assistance in estimating building permit valuation, by phone at 760-602-2719 or by email at building@carlsbadca.gov.

Estimated Building Permit Valuation (BPV): $_____

Construction Type	Complete Section(s)	Notes:
☐ Residential		
☐ New construction	1C, 2A, 3A, 4A and 6A	
☐ Alterations:		
☐ BPV < $60,000	N/A	All residential alterations
☐ BPV ≥ $60,000 ☐ Electrical service panel upgrade	1A and 4A 4A	1-2 family dwellings and townhouses with attached garages only
☐ BPV ≥ $200,000	1A and 4A	Multi-family dwellings only where interior finishes are removed and significant site work and upgrades to structural and mechanical, electrical, and/or plumbing systems are proposed
☐ BPV ≥ $1,000,000	2B	Multi-family dwellings only where ≥$1,000,000 BPV AND affecting ≥75% existing floor area
☐ Nonresidential		
☐ New construction (pre-January 1, 2026)	1B, 2B, 3B, 4B, 5 and 6A	

☐ New construction (post January 1, 2026)	1B, 1D, 2B, 3B, 4B, 5 and 6A	
☐ Alterations:		
☐ BPV ≥ $200,000 or additions ≥ 1,000 square feet	1B, 5	
☐ BPV ≥ $1,000,000	1B, 2B and 5	Building alterations of ≥ 75% existing gross floor area
☐ ≥ 2,000 sq. ft. new roof addition	2B and 5	1B also applies if BPV ≥ $200,000

CAP Update Compliance

Checklist Item

Check the appropriate boxes, explain all not applicable and exception items, and provide supporting calculations and documentation as necessary.

1. Energy Efficiency

Please refer to Carlsbad Ordinance No. CS-437 for more information when completing this section.

A. ☐ **Residential addition or alteration ≥ $60,000 building permit valuation. See Ord. CS-437.**

☐ N/A _____

☐ Exception: Home energy score ≥ 7 (attach certification)

Year Built	Single-family Requirements	Multi-family Requirements
☐ Before 1978	Select one: ☐ Duct sealing ☐ Attic insulation ☐ Cool roof	☐ Attic insulation
☐ 1978 and later	Select one: ☐ Lighting package ☐ Water heating package	
☐ Between 1978 and 1990		Select one: ☐ Attic insulation ☐ Duct Sealing ☐ Cool roof
☐ 1991 and later		Select one: ☐ Lighting package ☐ Water heating package

B. ☐ **Nonresidential* new construction or alterations ≥ $200,000 building permit valuation, or additions ≥ 1,000 square feet. See CALGreen Appendix A5, as amended in CS-437.**

☐ N/A _____

A5.203.1.1.1

☐ Outdoor lighting: .90 Allowed Outdoor Lighting Power ☐ N/A _____

A5.203.1.1.2

☐ Restaurant service water heating (comply with California Energy Code Section 140.5, as amended) ☐ N/A _____

A5.203.1.2.1

Choose one as applicable: ☐ .95 Energy budget ☐ .90 Energy budget ☐ N/A _____

A5.211.1.**

☐ On-site renewable energy ☐ N/A _____

A5.211.3**

☐ Green power (if offered by local utility provider, 50% minimum renewable sources) ☐ N/A _____

A5.212.1

☐ Elevators and escalators ☐ N/A _____

A5.213.1

☐ Steel framing ☐ N/A _____

* Includes hotels/motels and high-rise residential buildings

** For alterations ≥ $1,000,000 BPV and affecting > 75% existing gross floor area, or alterations that add 2,000 square feet of new roof addition: comply with California Energy Code section 120.10 instead.

C. ☐ **Residential new construction (post January 1, 2026, only)** Would the project comply with the updated energy performance-based requirements for new residential buildings in the city's updated reach code, if adopted and effective?	☐ Yes _____ ☐ No _____ ☐ N/A _____
D. ☐ **Nonresidential new construction (post January 1, 2026, only)** Would the project comply with the updated energy performance-based requirements for new nonresidential buildings in the city's updated reach code, if adopted and effective?	☐ Yes _____ ☐ No _____ ☐ N/A _____

Check N/A only if the project does not include corresponding building types and/or the updated reach code has not been adopted yet (estimated adoption year 2025).

☐ Residential new construction. Refer to Carlsbad Ordinance No. CS-437 for requirements, which amends Section 150.1(c) of the CEC for single-family residential; and Section 170.2(d) of the CEC for multi-family requirements. Note: if project includes installation of an electric heat pump water heater pursuant to Carlsbad ordinance CS-447, increase system size by .3kWdc if PV offset option is selected.

2. Photovoltaic Systems

Floor Plan ID (use additional sheets if necessary)	CFA	#d.u.	Calculated kWdc*	Exception
				☐ _____
				☐ _____
				☐ _____
				☐ _____
		Total System Size:	_____ kWdc	

kWdc = (CFAx.572) / 1,000 + (1.15 x #d.u.)

*Formula calculation where CFA = conditional floor area, #du = number of dwellings per plan type

If proposed system size is less than calculated size, please explain.

A. ☐ **Nonresidential and hotel/motel new construction; or major alterations to nonresidential, hotel/motels, and multi-family residential ≥$1,000,000 BPV and affecting ≥75% existing floor area, or addition that increases roof area by ≥2,000 square feet. Please refer to Carlsbad Ordinance CS-437 when completing this section.***

Choose one of the following methods:

☐ **Gross Floor Area (GFA) Method**

GFA: _____ Min. System Size: _____ kWdc

☐ If < 10,000s.f. Enter: 5 kWdc

☐ If ≥ 10,000s.f. calculate: 15 kWdc x (GFA/10,000) **

**Round building size factor to nearest tenth, and round system size to nearest whole number.

☐ **Time- Dependent Valuation Method**

Annual TDV Energy use:*** _____ x .80= Min. system size: _____kWdc

***Attach calculation documentation using modeling software approved by the California Energy Commission.

* New CEC standards also require battery storage systems meeting the requirements if Reference Joint Appendix JA12 of the CEC.

3. Water Heating

A. ☐ **Residential new construction**

Please refer to Carlsbad Ordinance CS-437 when completing this section.

☐ For systems serving **individual dwelling units** and achieving 60% of energy needed from on-site solar or recovered energy, choose one:

- ☐ Single 240-volt heat pump water heater AND compact hot water distribution AND Drain water heat recovery (low-rise residential only)
- ☐ Single 240-volt heat pump water heater AND PV system .3 kWdc larger than required.
- ☐ Heat pump water heater meeting NEEA Advanced Water Heating Specification Tier 3 or higher.
- ☐ Solar water heating system with electric backup that is either .60 solar savings fraction of 40 s.f. solar collectors.
- ☐ Gas or propane system with a solar water heating system and recirculation system

☐ Exception: _____

☐ For systems serving **multiple dwelling units** and achieving 60% of energy needed from on-site solar or recovered energy, install a central water-heating system with all of the following:

- ☐ Recirculation system
- ☐ Solar water heating system that is either:
  - ☐ .20 solar savings fraction
  - ☐ .15 solar savings fraction, plus drain water heat recovery
- ☐ Exception:

B. ☐ **Nonresidential new construction**

Please refer to Carlsbad Ordinance CS-437 when completing this section.

☐ Water heating system derives at least 40% of its energy from one of the following (attach documentation):

☐ Solar-thermal ☐ Photovoltaics ☐ Recovered energy

☐ Water heating system is (choose one):
- ☐ Heat pump water heater
- ☐ Electric resistance water heater(s)
- ☐ Solar water heating system with .40 solar savings fraction

☐ Exception: _____

4. Electric Vehicle Charging

A. ☐ Residential - New construction and major alterations*

Please refer to Carlsbad Ordinance CS-437 when completing this section.

☐ One and two-family residential dwelling alterations with no electrical panel upgrade (No EV space required)

☐ ADU (no EV space required when no additional parking facilities are added)

☐ One and two-family residential dwelling or townhouse with attached garage:

☐ One EVSE ready parking space required ☐ Exception :_____

☐ Multi-family residential: ☐ Exception :_____

Total Parking Spaces Proposed for New Construction	EVSE Spaces			
	Capable (10% of proposed)	Ready (25% of proposed)	Installed (5% of proposed)	Total
Total Proposed or Altered Spaces (Major Alterations)**	Capable (10% of proposed)	---	---	Total

Calculations: Total EVSE spaces = .10 x Total parking (rounded up to nearest whole number)
EVSE Installed = Total EVSE Spaces x .50 (rounded up to nearest whole number)
EVSE other= Total EVSE spaces – EVSE Installed
(EVSE other may be "Capable," "Ready" or "Installed.")

*Major alterations are: (1) for one and two-family dwellings and townhouses with attached garages, alterations have a building permit valuation ≥ $60,000 or include an electrical service panel upgrade; (2) for multifamily dwellings (three units or more without attached garages), alterations have a building permit valuation ≥ $200,000, interior finishes are removed and significant site work and upgrades to structural and mechanical, electrical, and/or plumbing systems are proposed.

**When new parking facilities are added, or electrical systems or lighting to existing parking facilities are added or altered and the work requires a building permit, 10% of the total number of parking spaces or altered shall be EV Capable. This is NOT a CAP Update checklist requirement, but is included to coordinate CEC compliance early in the planning process

B. ☐ Nonresidential new construction (includes hotels/motels) ☐ Exception :_____

Total Parking Spaces Proposed	EVSE Spaces			
	Capable	Ready	Installed	Total

Calculation: Refer to the table below:

Total Number of Parking Spaces provided	Number of required EV Spaces (Capable)	Number of required EVSE Installed Spaces
☐ 0-9	1	1

☐	10-25	4	1
☐	26-50	8	2
☐	51-75	13	3
☐	76-100	17	5
☐	101-150	25	6
☐	151-200	35	9
☐	201 and over	20 percent of total	25 percent of EV Capable

5. ☐ Transportation Demand Management (TDM)

A. List each proposed nonresidential use and gross floor area (GFA) allocated to each use.
B. Employee ADT/1,000 square feet is selected from the City of Carlsbad Employee ADT Table.

Use	GFA	Employee ADT/1,000 S.F.	Total Employee ADT
		Total	_____

If total employee ADT is greater than or equal to 110 employee ADT, a TDM plan is required.

***NOTE:** Notwithstanding the 110 employee ADT threshold above, General Plan Mobility Element Policy 3-P.11 requires new development that adds vehicle traffic to vehicle LOS-exempt street facilities to implement TDM and transportation system management strategies. Please consult with City of Carlsbad Land Development Engineering (LDE) staff to determine whether this policy applies to your project.

TDM plan required: Yes ☐ No ☐

LDE Staff Verification: ☐_____(staff initials)

6. Construction Equipment

A. ☐ **All Construction**

Will the project reduce 50% of emissions from project construction activities through use of electric-powered or alternatively-fueled construction equipment, if requirements are adopted and effective?

☐ Yes _____
☐ No _____
☐ N/A _____

Check N/A only if the project does not include any construction activities and/or the alternative-fuel construction equipment ordinance has not been adopted yet (estimated adoption year 2035). A preliminary plan must be submitted to city staff showing anticipated construction equipment use and a quantified roadmap to reduce emissions.