2020
CLIMATE ACTION PLAN ANNUAL REPORT

CITY OF Encinitas

March 2022

Letter from the Sustainability Manager

I am pleased to present the 2020 Annual Report for the City's Climate Action Plan (CAP). This report covers critical steps toward implementing our CAP completed in 2020, in addition to ongoing project updates.

When the CAP was adopted in 2018, 19 measures were developed that would allow the City to achieve significant greenhouse gas (GHG) emissions reductions. The CAP was updated in 2020 in response to the completion of the City's Housing Element and Active Transportation Plan. Refinements were made to several CAP measures and one additional measure was added. There are now a total of 20 ambitious measures in the CAP. At present, 7 have been completed, 11 are currently in progress, and 2 are awaiting resources.

We acknowledge the importance of achieving the remainder of our CAP measures by 2030, and the City is committed to continuing to adapt as new climate-related needs arise. Climate change is a global issue and our City has always taken our individual role in this crisis seriously. We are dedicated to forward thinking, partnering with our neighbors, and developing opportunities to address climate change within our City.

The metrics found in this year's Annual Report represent the dedication that Encinitans and your local City have to our environment. Community support has made Encinitas an environmental leader in the region, and we are optimistic that we will be able to maintain this positive momentum going forward. Together let's continue to be "eco-focused" on combating climate change!

With gratitude,

Crystal Najera, Sustainability Manager

Table of Contents

Executive Summary

The City of Encinitas is actively engaged in addressing climate change and reducing greenhouse gas (GHG) emissions, evident through the adoption of a comprehensive Climate Action Plan (CAP) in 2018. Since then, the City has and will continue to commit to the implementation of the CAP's goals, strategies, and measures.

The City defines "sustainability" as the ability to meet our communities' current needs without compromising the needs of future generations. We acknowledge the importance of continually adapting to our changing climate, which requires placing an emphasis on projects that will serve Encinitans now and in the future. Beyond the CAP, the City will continue to support practices that benefit environmental, human, and economic well-being with the goal of encouraging and fostering equitable access to natural resources in addition to increasing public health and well-being.

It is important to note that in 2020, due to the COVID-19 pandemic, many City projects including some outlined in the CAP were put on hold as the City's response to public health needs became a top priority.

Although this affected some CAP projects, the City still made great strides in 2020 to stage the sidelined projects to be executed in 2021. As a result, this Annual Report highlights some key 2021 accomplishments, which were only made possible by preparatory work completed in 2020. The 2021 Annual Report will provide a more comprehensive breakdown of the City's CAP achievements that occurred in 2021.

2020

Executive Summary

Through the CAP, the City aims to achieve citywide GHG emissions reductions of 13% below 2012 levels by 2020 and 44% below 2012 levels by 2030. This equates to reducing emissions by 59,664 metric tons of carbon dioxide equivalent (MTCO2e) by 2020 and 201,941 MTCO2e by 2030 *(See Figure 1)*.

The City's 2018 CAP established 19 measures that each have numeric performance metrics and associated GHG emissions reduction estimates that, when combined, will enable the City to achieve its overall 2020 and 2030 targets. The City's CAP was updated in 2020 and now includes a total of 20 measures with the addition of MCET-2, Adopt a Municipal Employee Telecommute Policy.

Figure 1. Greenhouse Gas Emissions Reduction Targets

Executive Summary

To track and share implementation progress with the public, the CAP calls for annual monitoring and reporting, summarizing progress toward overall GHG reduction targets, and evaluating progress made on implementing each of the 20 measures. The third annual report includes data tracked through 2020 and notable City measures that occurred in 2020. One additional measure was completed in 2020. Therefore, of the 20 CAP measures, 7 have been completed, 11 are in progress, and 2 are awaiting resources.

While one completed measure may not seem like significant progress, what is notable is that 18 out of the City's 20 measures have been initiated. Most of the City's CAP measures are long-term projects or programs. They require funding, planning, and coordinated implementation to be achieved. All of the CAP measures are targeted to be completed by 2030 and initiating 18 of the 20 in the first three years shows the City's dedication to the CAP.

Executive Summary

Measures in progress include activities like the design and/or construction of several roundabouts to improve traffic flow, the creation of several new green building and energy efficiency requirements for development projects, the design and construction of several new pedestrian and biking facilities, and the development of a new organic waste collection program. *Chapter 3: CAP Implementation Progress by CAP Strategy* describes the progress made on all CAP measures in more detail.

Included in the 2020 Annual Report is the most recent GHG emissions inventory for the City, completed with support from the San Diego Association of Governments (SANDAG). Using the best and most currently available data and modeling technology, this inventory estimated citywide GHG emissions in the City of Encinitas to be 390,600 MTCO2e in 2016. This amount is 15% lower than emissions estimated in 2012, the baseline year.

SANDAG is anticipated to complete a new GHG inventory in 2022 which is expected to include 2020 data. More information regarding the City's latest GHG emissions inventory can be found in *Chapter 1: Greenhouse Gas Inventory*.

Executive Summary

The 2020 Annual Report evaluates whether the City is on track to meet the 2020 GHG emissions reduction target and provides an early look at the City's trend toward the 2030 emissions target. Since the latest GHG emissions inventory includes data up to the year 2016, the 2020 Annual Report is not able to directly determine whether the City has met its 2020 target. However, it is anticipated that the City will achieve this target since the GHG emissions inventory with 2016 data exceeded the City's 2020 emissions reduction target of 13% below 2012 levels.

The 2020 Annual Report also highlights the progress made on individual CAP measures and, where possible, data and graphs are presented to demonstrate progress. It is important to note that while the data presented may be used as an indicator of progress, multiple years of monitoring data is needed in order to develop long-term trends in GHG emissions that provide an accurate understanding of the overall impact of City efforts.

2020

Chapter 1: Greenhouse Gas Inventory

The community's contribution to global climate change can be accounted for by measuring the greenhouse gas (GHG) emissions generated within the City.

GHG inventories are conducted to determine the amount and sources of emissions produced in a community. Inventories play an essential role in the climate action planning process and allow the City to track progress on its ambitious climate goals.

Greenhouse Gas Inventory

The primary greenhouse gases (GHGs) emitted in the City of Encinitas include carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), sulfur hexafluoride (SF6), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs). Each GHG has varying levels of potency in the atmosphere, therefore, to simplify the discussion and comparison of emissions, the Climate Action Plan (CAP) uses a measurement referred to as carbon dioxide equivalent (CO2e), which is measured in metric tons (MT).

Completing GHG inventories is essential to achieving the main objective of the City's CAP, which is to meet targeted reductions in emissions by 2020 and 2030. GHG inventories are conducted periodically to provide a snapshot of emissions in a given year and help develop emissions trends over time. The City's baseline inventory completed for the 2018 CAP estimated GHG emissions from sources in Encinitas to be 459,000 metric tons of carbon dioxide equivalent (MTCO2e) in 2012.

In 2018, the Energy Policy Initiatives Center (EPIC) and the San Diego Association of Governments (SANDAG) completed GHG emissions inventories for the year 2016 for several cities in the San Diego region, including the City of Encinitas. Using the best and most currently available data and modeling methods, citywide GHG emissions in the City of Encinitas were determined to be 390,600 MTCO2e in 2016 which is 15% lower than emissions calculated in 2012, the City's baseline year.

The SANDAG greenhouse gas inventory for the City of Encinitas is provided on page 11 and is the most current available data *(See Figure 2)*. The City expects SANDAG to complete the next GHG inventory in 2022, which is anticipated to include 2020 emissions data at which time, the City will be able to definitively track its progress in meeting its GHG goals.

GHG emissions are calculated by multiplying activity data (e.g., kilowatt-hours of electricity, tons of solid waste) by an emission factor (e.g., pounds of CO2 per unit of electricity). Running these calculations involves, among other things, a sophisticated regional transportation model using citywide and regional data. Measuring emissions from transportation is one of the most challenging sectors to evaluate.

Greenhouse Gas Inventory

As climate science continues to advance and improve in this area, emissions calculation methodologies will vary from year to year, making direct comparisons difficult. Annual GHG inventories are best compared by evaluating the general trends in data over time.

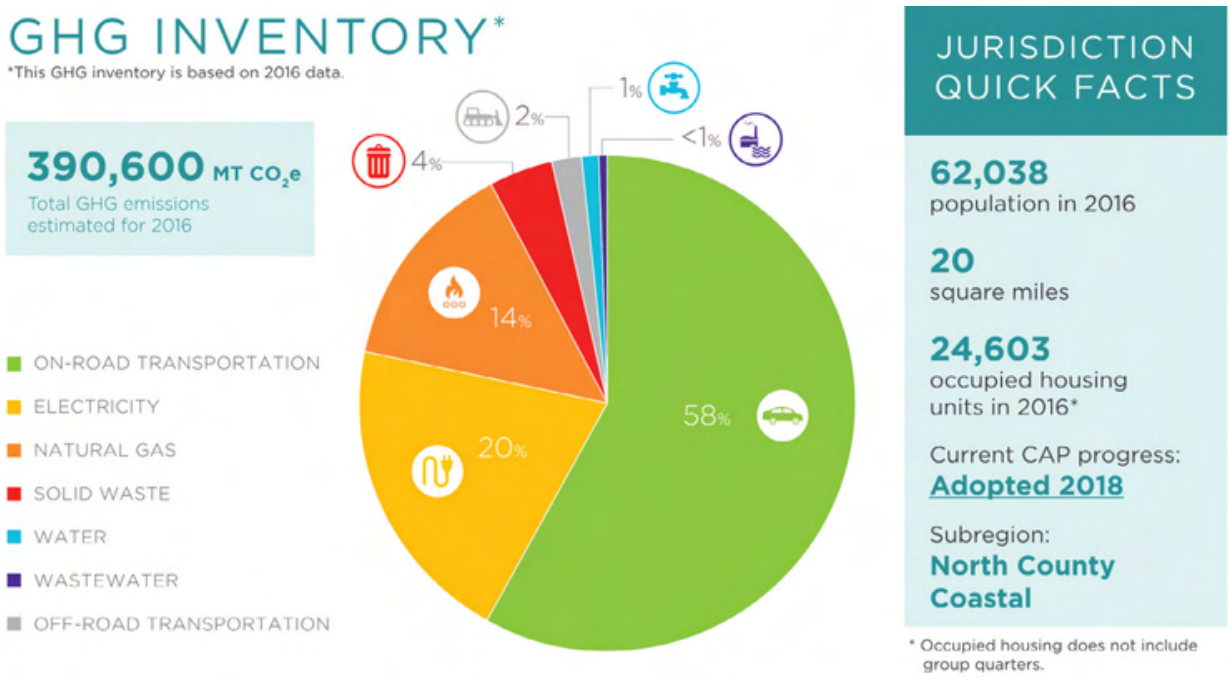


Figure 2. 2016 Greenhouse Gas Inventory Prepared by SANDAG

Greenhouse Gas Inventory

As seen in Figure 3, GHG emissions in the City have decreased since 2012. Emissions went down by 1% in 2013 and 15% in 2016 from the 2012 baseline level, which predates the CAP. As noted, the next GHG inventory is planned to be completed by SANDAG in 2022 and will provide additional data for continued trend analysis. With the adoption and subsequent implementation of the CAP actions and supporting measures, the City anticipates more significant reductions than what was seen in the time period between 2013-2016.

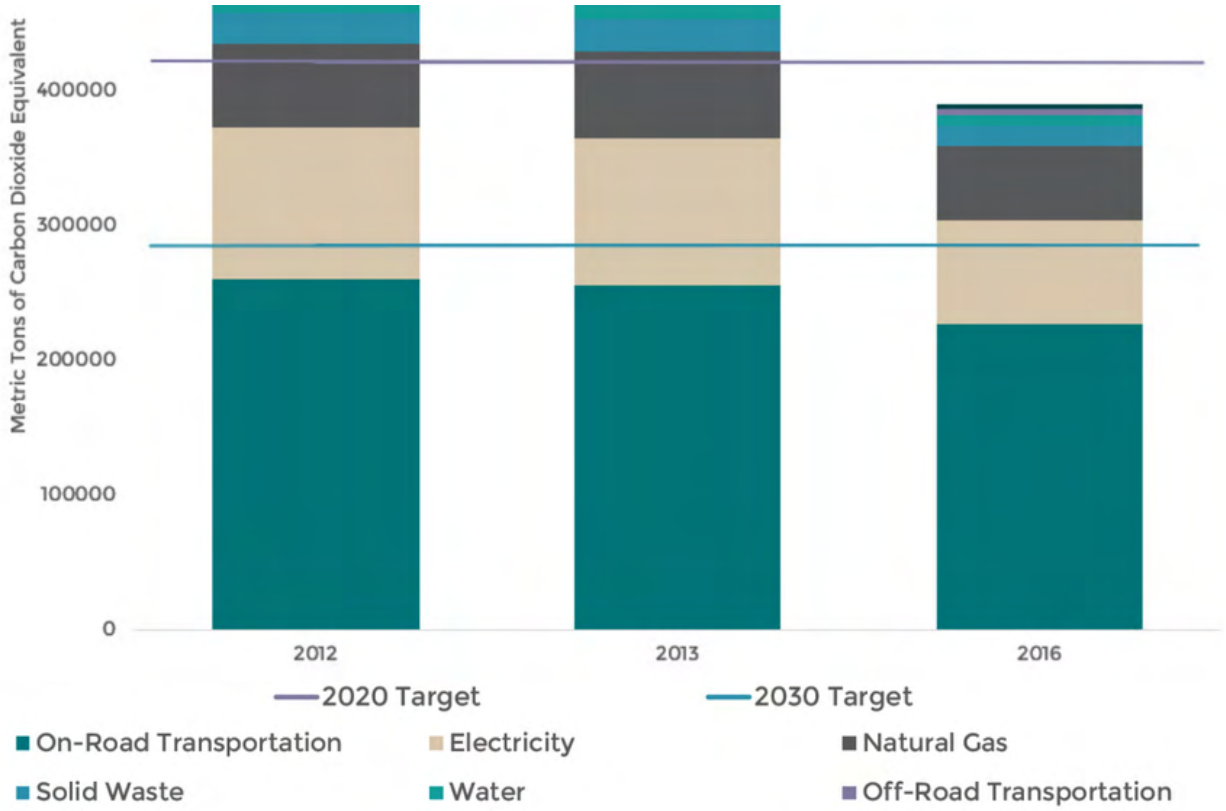
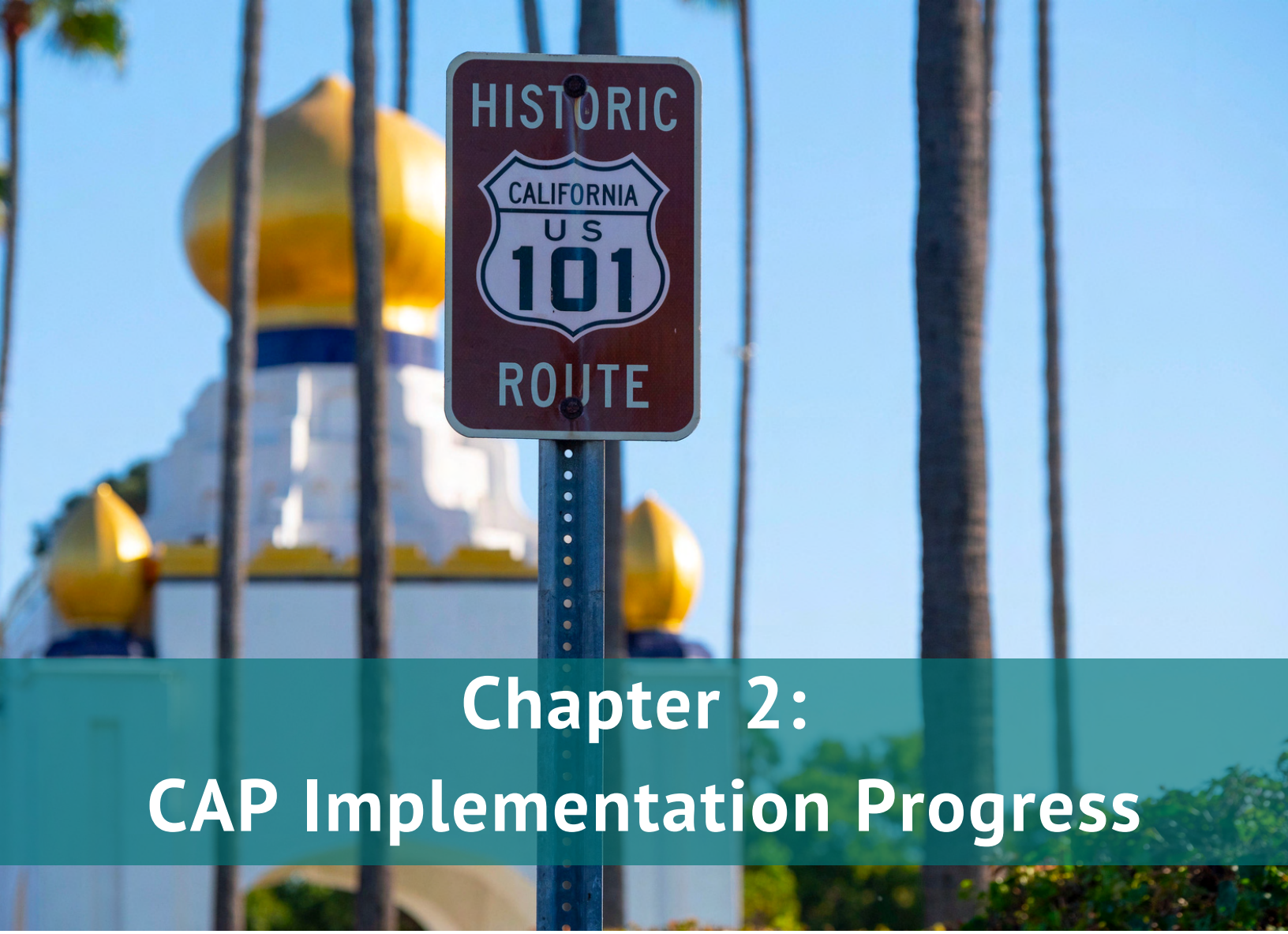


Figure 3. 2016 Greenhouse Gas Emissions Inventories by Year



Chapter 2: CAP Implementation Progress

When the Climate Action Plan (CAP) was updated in 2018, the City also developed a comprehensive CAP Implementation Plan which outlines how the City will implement CAP actions and monitor progress.

Implementation of certain actions requires the City to develop and implement new ordinances, programs, and projects, or modify existing ones. This involved careful consideration of the operational and capital resources needed, as well as timing, phasing, and monitoring of implementation.

CAP Implementation Progress Summary

In this section, the City's progress on each Climate Action Plan (CAP) measure is summarized with a brief description, the implementation timeline, the current status of implementation, and the co-benefits that will be realized when the action is implemented. Figure 4 and Table 1 *(see page 16)* provide a definition of the status icon and co-benefits that are found in the progress summary tables. The information found in the progress summary tables and subsequent overview of each of the CAP strategy sections represents progress tracked through 2020. In 2020, the City made significant progress implementing the following City CAP measures:

- ***BE-2 Require Decarbonization of New Residential Buildings:*** In 2020, this measure was revised to be more inclusive of various building electrification efforts. Measure BE-2 now requires the electrification of all new residential buildings, rather than simply the installation of solar water heaters in new single-family homes. The switch to the total decarbonization of new residential buildings was based on recommended direction from the City's Environmental Commission. This measure is "In-Progress."

- ***BE-4 Require Decarbonization of New Commercial Buildings:*** In 2020, this measure was also revised to be more inclusive of various building electrification efforts. Measure BE-4 now requires the electrification of all new commercial buildings, rather than simply the installation of solar water heaters in new commercial buildings. As with BE-2, the switch to the total decarbonization of new commercial buildings was based on recommended direction from the City's Environmental Commission. This measure is "In-Progress."

CAP Implementation Progress Summary

- *CET-1 Complete and Implement the Citywide Active Transportation Plan:* In 2018, the City completed and adopted an Active Transportation Plan (ATP). CET-1 has since been updated to reflect the completion of this plan. The City has already begun to design and install the bike and pedestrian projects proposed in the ATP. In 2020, the City installed 10.4 miles of new bike facilities. This measure is "Complete."

- *MCET-1 Adopt a Municipal Employee Telecommute Policy:* The City added this measure to the CAP in 2020. The policy is under development and is anticipated to be in place in 2022. This measure is "In-Progress."

- *CS-1 Develop and Implement an Urban Tree Planting Program:* Since 2012, the City has planted 843 net new trees in the public right of way and within City parks, far exceeding the 2020 target of 150 net new trees planted. This measure is "Complete."

CAP Implementation Progress Summary

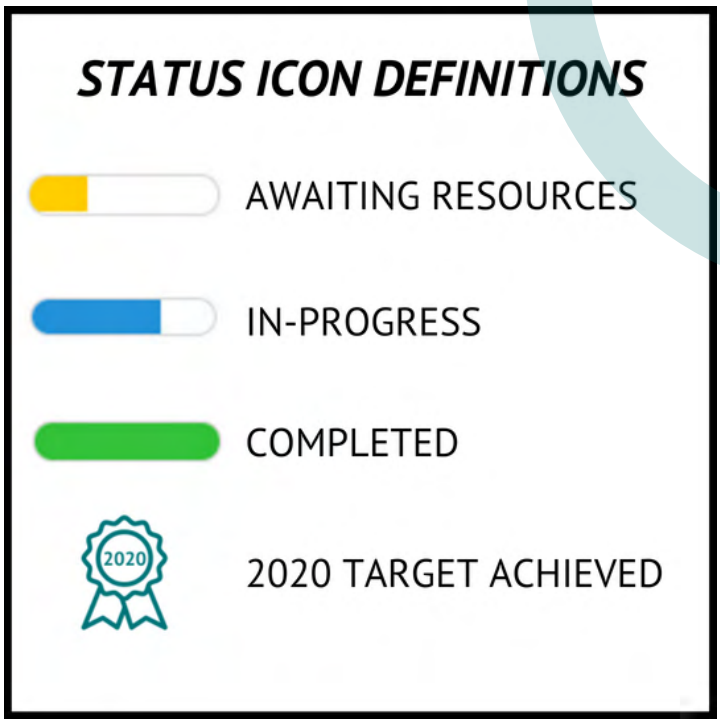


Figure 4. Definitions of Status Icons

Co-Benefits					
Air Quality	Cost Savings	Resilience	Water Quality	Public Health	Green Jobs

Table 1. Co-Benefits Legend

CAP Implementation Progress Summary

BUILDING EFFICIENCY

Goal 1.1 Reduce Building Energy Consumption

CAP Measure	Description	Timeline	Status	Co Benefits
BE-1	Adopt a Residential Energy Efficiency Ordinance Adopt an ordinance requiring all existing residential property owners conducting major renovations to implement energy efficiency retrofits. Follow this link to learn more about the residential energy efficiency ordinance.	Within 2 Years		
BE-2	Require Decarbonization of New Residential Buildings Adopt an ordinance requiring electrification of new residential buildings, including single family homes and low-rise multi-family homes. Follow this link to learn more about building decarbonization.	Within 2 Years		
BE-3	Adopt Higher Energy Efficiency Standards for Commercial Buildings Adopt an ordinance requiring 1) all new commercial buildings, including the commercial portion of mixed-use projects, and 2) commercial building additions of 1,000 square feet or greater or alterations with a permit value of at least $200,000 to meet the 2019 California Green Building Standards Code Nonresidential Tier 1 Voluntary Measures. Follow this link to learn more about higher energy efficiency standards.	Within 2 Years		
BE-4	Require Decarbonization of New Commercial Buildings Adopt an ordinance that requires all new commercial buildings, including the commercial portion of mixed-use projects, to install electric conduit and wiring sufficient to operate electrical appliances and require electric appliances to be installed. Follow this link to learn more about building decarbonization.	Within 2 Years		

Goal 1.2 Reduce Municipal Operation Energy Consumption

CAP Measure	Description	Timeline	Status	Co Benefits
MBE-1	Continue Implementation of Energy Efficient Projects in Municipal Facilities Reduce municipal energy use below 2012 baseline energy use. Follow this link to learn more about municipal energy efficiency projects.	Ongoing	2020	

CAP Implementation Progress Summary

RENEWABLE ENERGY

Goal 2.1 — Achieve 100% Renewable Electricity Supply in Homes and Businesses

CAP Measure	Description	Timeline	Status	Co Benefits
RE-1	Establish a Community Choice Energy Program Present to City Council for consideration a Community Choice Energy program that increases renewable electricity supply. Follow this link to learn more about Community Choice Energy.	Within 2 Years	2020	
RE-2	Require New Homes to install Solar Photovoltaic (PV) Systems Require: 1) New single-family homes to install at least 1.5 W solar per square feet or minimum 2 kW per home, and 2) New multi-family homes to install at least 1 W solar per square feet or minimum 1 kW per unit. Follow this link to learn more about residential solar PV requirements.	Ongoing	2020	
RE-3	Require Commercial Buildings to install Solar Photovoltaic Systems Adopt an ordinance requiring installation of solar photovoltaic systems on 1) all new commercial buildings, including the commercial portion of mixed-use projects, 2) commercial building additions that increase total roof area by at least 2,000 sq. ft. or alterations with a permit value of at least $1,000,000 that affect at least 75% of gross floor area, unless the installation is impracticable due to poor solar resources or other physical constraints, as approved Director of Development Services. Follow this link to learn more about commercial PV requirements.	Within 2 Years		

Goal 2.2 — Increase Renewable Electricity Supply in Municipal Operations

CAP Measure	Description	Timeline	Status	Co Benefits
MRE-1	Supply Municipal Facilities with Onsite Renewable Energy Supply municipal facilities with onsite renewable energy to achieve "Net Zero Electricity" municipal operations. Follow this link to learn more about municipal renewable energy.	Within 5 Years		

CAP Implementation Progress Summary

WATER EFFICIENCY

Goal 3.1 Reduce Citywide Potable Water Consumption

CAP Measure	Description	Timeline	Status	Co Benefits
WE-1	Regularly Conduct Water Rate Studies and Implement Approved Water Rates Implement approved water rates based on studies for San Dieguito Water District and Olivenhain Municipal Water District to promote water conservation. Follow this link to learn more about water rates.	Ongoing	2020	

CLEAN AND EFFICIENT TRANSPORTATION

Goal 4.1 Reduce Vehicle Miles Traveled

CAP Measure	Description	Timeline	Status	Co Benefits
CET-1	Complete and Implement the Citywide Active Transportation Plan Implement the bicycle and pedestrian projects in the Active Transportation Plan (ATP). In concert with the Housing Element housing site build-out, ATP projects are estimated to lead to a 9% shift in bicycle mode share and 8% shift in walk mode share within the vicinity of ATP projects. Follow this link to learn more about the Active Transportation Plan.	Within 10 years	2020	
CET-2	Implement a Local Shuttle System Implement service routes recommended in Encinitas Transit Feasibility Study, using CNG buses for these routes, or alternate shuttle system, as approved by City Council. Follow this link to learn more about the local shuttle system.	Within 5 Years		

CAP Implementation Progress Summary

Goal 4.2 Reduce On-road Fuel Use

CAP Measure	Description	Timeline	Status	Co Benefits
CET-3	Improve Traffic Flow Improve traffic flow by retiming traffic signals and installing roundabouts at intersections in the City. Follow this link to learn more about improving traffic flow.	Within 10 Years		

Goal 4.3 Increase Use of Alternative Fuels

CAP Measure	Description	Timeline	Status	Co Benefits
CET-4	Require Residential Electric Vehicle Charging Stations Require new residential units to install EVCS equipment. Single family units, install complete 40-Amp electrical circuit (EV Ready). Multi-Family units, install EVCS equipment at 15% of the total number of parking spaces. Follow this link to learn more about residential EV charging stations.	Ongoing	2020	
CET-5	Require Commercial Electric Vehicle Charging Stations Require installation of EVCS at 8% of the total number of parking spaces at all new commercial buildings, including the commercial portion of mixed-use projects, and commercial building modifications, alterations, and additions with square footage larger than 10,000 sq. ft. Follow this link to learn more about commercial electric vehicle charging stations.	Ongoing		
MCET-1	Transition to Zero Emission Vehicle (ZEV) Municipal Fleet Develop a municipal fleet replacement plan to 1) convert gasoline-fueled cars and light-duty trucks to Zero Emission Vehicles, including all-electric vehicles or other ZEV technology by 2030, and 2) convert to renewable diesel for all diesel-fueled heavy-duty trucks by 2020. Follow this link to learn more about the ZEV municipal fleet.	Ongoing	2020	
MCET-2	Adopt a Municipal Employee Telecommute Policy Develop a policy for City Council consideration to facilitate telecommuting by City employees, based on job function, with approval from supervisor and human resources	Within 2 Years		

CAP Implementation Progress Summary

REDUCE OFF-ROAD EQUIPMENT

Goal 5.1 Reduce Off-Road Fuel Use

CAP Measure	Description	Timeline	Status	Co Benefits
OR-1	Adopt a Leaf Blower Ordinance to Limit Use of 2-stroke Leaf Blowers Starting in 2018, prohibit 2-stroke leaf blowers and implement the phase-out of leaf blower emissions. Follow this link to learn more about leaf blower emissions.	Ongoing	2020	

ZERO WASTE

Goal 6.1 Divert Solid Waste

CAP Measure	Description	Timeline	Status	Co Benefits
ZW-1	Implement a Zero Waste Program Implement a Zero Waste Program to reduce waste disposal from residents and businesses in the community.Follow this link to learn more about the zero waste program.	Ongoing		

CAP Implementation Progress Summary

CARBON SEQUESTRATION

Goal 7.1 Increase Urban Tree Cover

CAP Measure	Description	Timeline	Status	Co Benefits
CS-1	Develop and Implement an Urban Tree Planting Program Develop and implement an Urban Tree Planting Program, including standards to right-size trees and minimize pruning and irrigation needs, to promote increased carbon sequestration by trees within the community. Follow this link to learn more about the Urban Tree Planting Program.	Ongoing	2020	

Chapter 3: Implementation Progress Summary by CAP Measure

The Climate Action Plan (CAP) includes the following categories that each of the City's 20 individual CAP measures fall under:

Building Efficiency, Renewable Energy, Water Efficiency, Clean and Efficient Transportation, Off-Road Equipment, Zero Waste, and Carbon Sequestration.

Building Efficiency

The Building Efficiency strategy of the City's Climate Action Plan (CAP) aims to cut back on emissions by increasing the energy efficiency of residential and commercial buildings and reducing energy use in municipal facilities. Much of the energy that powers, heats, and cools buildings in our community is generated through the burning of fossil fuels like natural gas, which releases greenhouse gases (GHG) and other harmful emissions into the atmosphere.

To reduce GHG emissions, the CAP aims to set higher energy efficiency standards for residential and commercial buildings in addition to installing energy efficiency measures at municipal facilities.

Implementation of the Building Efficiency strategy is estimated to reduce the City's GHG emissions by 941 metric tons of carbon dioxide equivalent (MTCO2e) by 2020 and 675 MTCO2e by 2030.

Building Efficiency

Green Building Ordinance

In 2020, an interim update of the City's Climate Action Plan (CAP) was completed in order to integrate the recently approved Housing Element and Active Transportation Plan (ATP). Both planning documents anticipate future community growth and development that could affect the City's greenhouse gas (GHG) emissions, making it necessary to account for these changes in the City's GHG emissions projection and associated mitigation measures. As a result, extensive revisions were made to all the building efficiency measures (BE-1 through BE-4), either to the goal itself, the performance metric, and/or the anticipated GHG emissions reduction target. Most notably, BE-2 and BE-4, which originally called for solar water heaters in new homes and businesses, were replaced with measures that call for electrification of all new homes and businesses. The updated CAP with these revised measures was adopted in November of 2020. Soon thereafter, in early 2021, the City got to work developing a comprehensive green building ordinance to effectively implement all the building efficiency measures (BE-1 through BE-4) at once. Although completed in 2021, these recent actions are noted herein for completeness.

The new green building ordinance (Ordinance 2021-13) was adopted on October 27, 2021 and incorporates requirements that address the following:

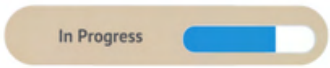
- Higher energy efficiency standards for residential and commercial buildings
- Installation of solar photovoltaic (PV) systems on commercial buildings
- Decarbonization of all new buildings

In total, Ordinance 2021-13 addresses 5 CAP measures, including 4 Building Efficiency measures, and 1 Renewable Energy measure. Ordinance development—including public outreach and receipt of input, consultation with stakeholders, cost effectiveness analysis, drafting of the building code amendments, and approval recommendation by the City's Environmental Commission—occurred between 2019 and 2021.

Building Efficiency

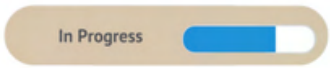
The ordinance is anticipated to take effect in the spring of 2022, after approval by the California Energy Commission. The following sections describe the new requirements in more detail as they relate to each CAP measure. Additional information can also be found on the City's website.

Measure BE-1: Adopt a Residential Energy Efficiency Ordinance



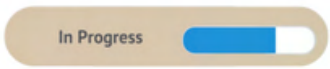
Adopted Ordinance 2021-13 requires residential remodels to install certain energy efficiency upgrades based on the age of the building. Various requirements include air duct sealing, cool roof, energy efficient lighting, energy efficient water heating, or minimum R-38 attic insulation. The greenhouse gas (GHG) reduction target for this measure will be achieved if approximately 250 homes undergo energy efficiency retrofits by 2030. Tracking progress toward this target will begin as soon as the ordinance becomes effective.

Measure BE-2: Require Decarbonization of New Residential Buildings



Adopted Ordinance 2021-13 requires all new residential buildings in Encinitas to be all-electric unless an exception applies. An all-electric building is defined as having no natural gas or propane plumbing, no gas meter connection, and only uses electricity as the source of energy for space and water heating, cooking appliances, and clothes drying appliances. If applicable, an all-electric building may include solar-thermal pool heating. The GHG reduction target for this measure will be achieved if 1,200 all-electric residential units are completed by 2030. Tracking progress toward this target will begin as soon as the ordinance becomes effective.

Measure BE-3: Adopt Higher Energy Efficiency Standards for Commercial Buildings

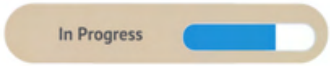


Adopted Ordinance 2021-13 requires certain non-residential additions and alterations to install energy efficiency upgrades if the project includes outdoor lighting.

Building Efficiency

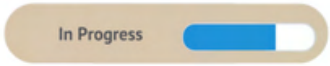
The various requirements include energy efficiency outdoor lighting, energy efficient service water heating or restaurants, sealed warehouse dock doors, and daylight design power adjustment devices. The GHG reduction target for this measure will be achieved if a total reduction of 1.4 million kilowatt hours (kWh) of electricity use and 5,000 therms of natural gas use is achieved by 2030. Tracking progress toward this target will begin as soon as the ordinance becomes effective.

Measure BE-4 Require Decarbonization of New Commercial Buildings



Adopted Ordinance 2021-13 requires all new non-residential buildings in Encinitas to be all-electric unless an exception applies. An all-electric building is defined as having no natural gas or propane plumbing, no gas meter connection, and only uses electricity as the source of energy for space and water heating, cooking appliances, and clothes drying appliances. If applicable, an all-electric building may include solar-thermal pool heating. The GHG reduction target for this measure will be achieved if a total reduction of 54,000 kilowatt hours (kWh) of electricity use and 500,000 therms of natural gas use is achieved by 2030. Tracking progress toward this target will begin as soon as the ordinance becomes effective.

Measure MBE-1: Continue Implementation of Energy Efficient Projects in Municipal Facilities



The City's Climate Action Plan (CAP) established a goal of reducing municipal energy consumption below 2012 baseline energy use by 7.5% by 2020 and 15% by 2030. Municipal facilities include City Hall, a Public Works facility, 2 libraries, the Community and Senior Center, 5 fire stations, and numerous parks.

Since 2012, the City has seen a 33% reduction in overall building energy use as a result of various energy efficiency upgrades, including more efficient lighting, upgrades to heating and air conditioning systems, and other projects. This reduction exceeds both the 2020 and 2030 CAP goals.

Building Efficiency

Major energy efficiency projects include the replacement of the Community and Senior Center building cooling system in 2015, which reduced energy consumption at that facility by 43%, and the Public Works facility LED lighting retrofit in 2016. The City continues to identify and implement energy efficiency upgrades as opportunities arise.

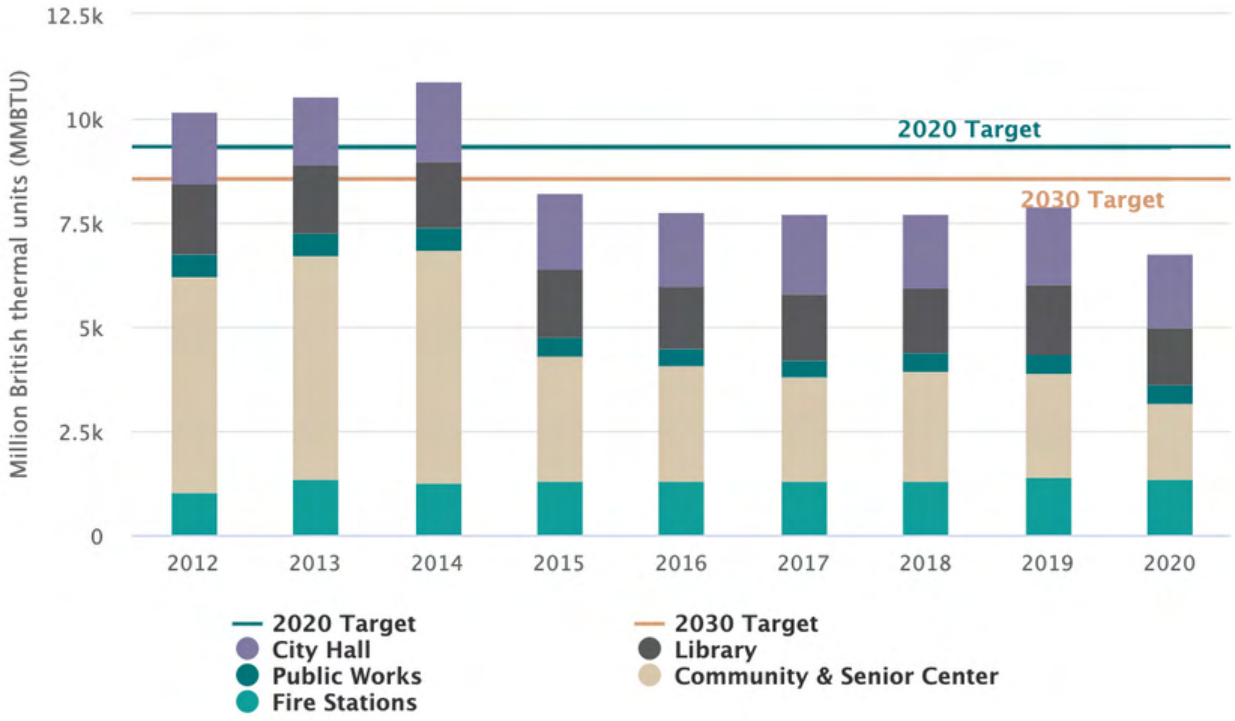


Figure 5. Municipal Facilities Energy Consumption

Renewable Energy

The Renewable Energy strategy in the City's Climate Action Plan (CAP) aims to increase supply and access to renewable energy for existing and new residences, commercial properties, and municipal facilities. Transitioning from fossil fuels to renewable energy sources like solar and wind will reduce pollution, including greenhouse gas (GHG) emissions.

To accomplish this, the City's CAP calls for the launch of a Community Choice Energy Program (CCE), the installation of solar panels on homes and businesses, and the addition of solar panels on municipal facilities, among other initiatives. Implementation of these measures is estimated to reduce the City's GHG emissions by 434 metric tons of carbon dioxide equivalent (MTCO2e) by 2020 and 20,935 MTCO2e by 2030.

Renewable Energy

Measure RE-1: Establish a Community Choice Energy Program

One of the key goals of the City's Climate Action Plan (CAP) is to launch a Community Choice Energy (CCE) program that serves 100% renewable electricity to customers by 2030. CCE programs are not-for-profit, locally controlled energy agencies that purchase electrical power on behalf of residents and businesses.

In 2019, after the completion of a Technical Feasibility Study, the City formed a CCE Joint Powers Authority along with the cities of San Diego, Chula Vista, La Mesa, and Imperial Beach. Now operating as San Diego Community Power (SDCP), the new agency began serving power to customers on March 1, 2021.

Service is being rolled out in the following phases:

- *Phase 1: March 1, 2021* - Municipal Customers
- *Phase 2: June 1, 2021* - Commercial Customers
- *Phase 3: April 1, 2022* - Residential and Solar Customers (Net Energy Metering)

As part of this roll-out, Encinitas City Council voted to establish SDCP's premium product, Power100, as the default electricity choice for all customers within the City of Encinitas. Power100 will provide 100% renewable electricity to customers at a cost that is only marginally more than San Diego Gas and Electric's (SDGE) current rates, which is 1 to 3% depending on the rate class. This action will enable the City to achieve its 100% renewable electricity goal well in advance of the 2030 target date.

To learn more about SDCP, follow this link to their website.

Renewable Energy

Measure RE-2: Require New Homes to Install Solar Photovoltaic (PV) Systems

In 2019, the City adopted an ordinance which incorporated new statewide residential solar requirements into its local building code. As of January 1, 2020, all new single-family and multi-family homes up to three stories in California are required to install a solar photovoltaic (PV) system large enough to meet the average annual electricity usage of the building. This supports the City's Climate Action Plan (CAP) goal to install 400 kilowatts (kW) and 1,000 kW of additional residential solar by 2020 and 2030 on new construction, respectively.

Over the past several years, many residents have voluntarily installed solar panels on their homes. Residential solar photovoltaic (PV) systems typically range in size from 5 to 20 kW per home. Together, with the new statewide residential solar mandate, between 2012 and 2020, a cumulative total of 25,596 kW of solar was installed on 3,924 homes in Encinitas. In 2020 alone, 4,123 kW of solar was installed on residential properties, which far exceeds the 2020 CAP target.

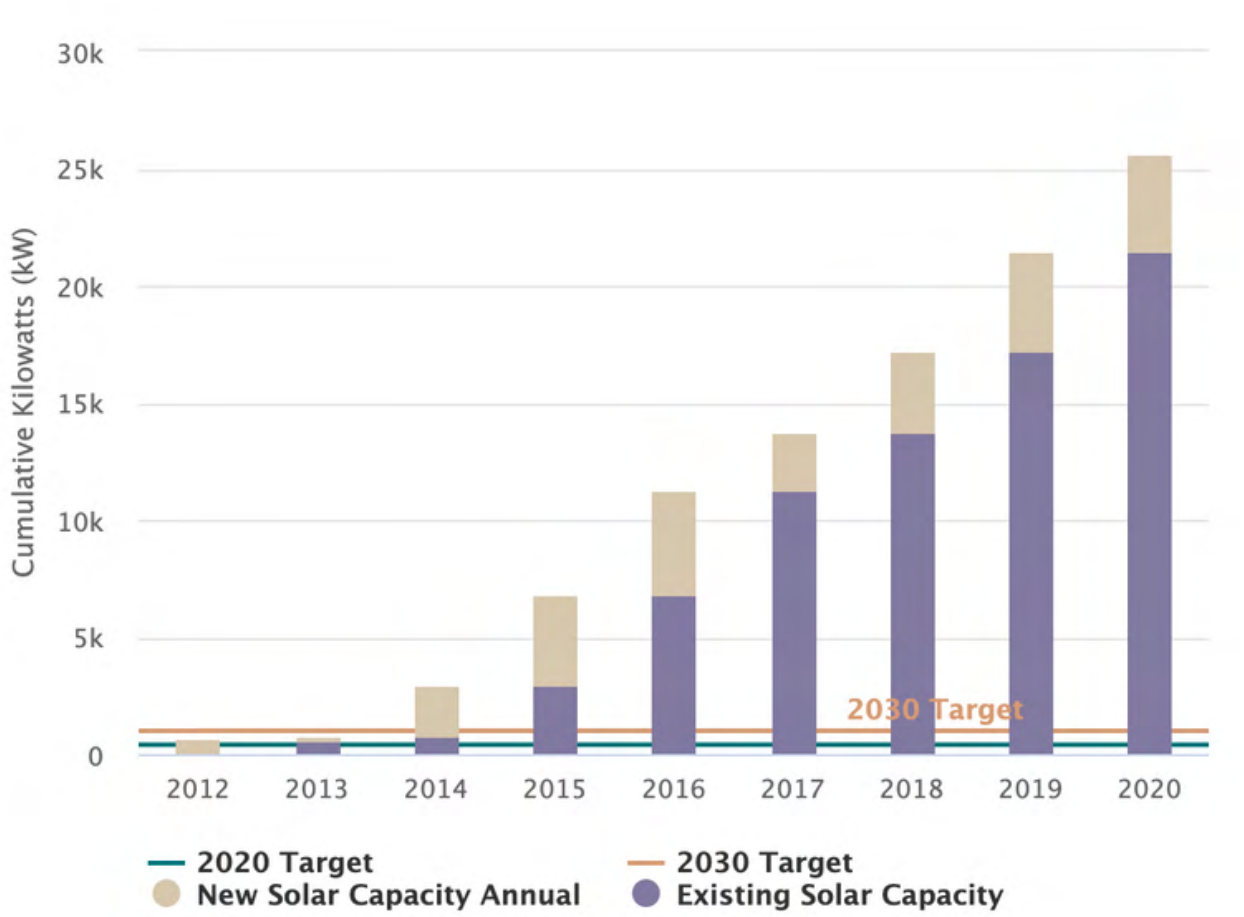
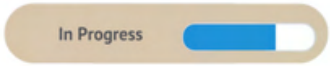


Figure 6. Residential Solar Photovoltaic (PV) Capacity

Renewable Energy

Measure RE-3: Require Commercial Buildings to Install Solar Photovoltaic (PV) Systems



To reduce greenhouse gas emissions (GHG) from commercial electricity use, the City adopted a new green building ordinance (Ordinance 2021-13) on October 27, 2021, which requires solar photovoltaic (PV) systems to be installed as part of all new commercial buildings and remodeled commercial buildings of a significant size. These requirements support the City's Climate Action Plan (CAP) goal to install 2.7 megawatts (MW) of commercial solar by 2030 on new and retrofit construction projects. Staff will begin tracking progress toward these targets once the ordinance is approved by the California Energy Commission in 2022.

The CAP calls for increasing solar PV capacity and energy efficiency for commercial buildings. To maintain consistency with the California Energy Code, the ordinance defines commercial buildings as non-residential buildings. In addition to commercial buildings like retail, office, and warehousing, the ordinance also applies to hotels, motels, and multi-family housing complexes more than three stories tall.

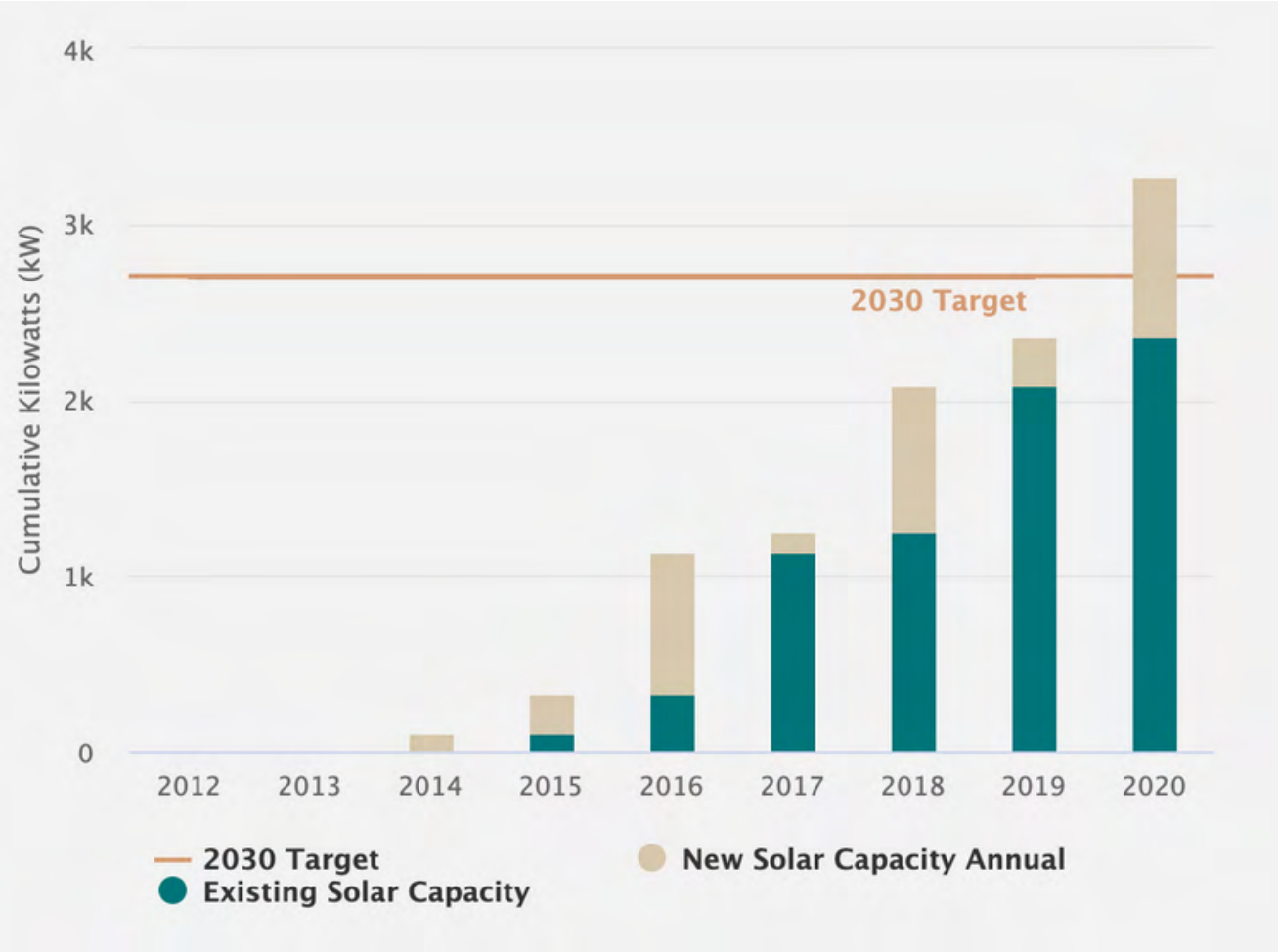


Figure 7. Commercial Solar Photovoltaic (PV) Capacity

Renewable Energy

Some commercial properties have already voluntarily installed solar panels. Between 2012 and 2020, a cumulative total of 3,271 kilowatt (kW) of solar was installed at 95 commercial properties in Encinitas.

Measure MRE-1: Supply Municipal Facilities with On-Site Renewable Energy

The City's Climate Action Plan (CAP) set an ambitious goal of supplying all municipal facilities with enough onsite renewable energy to achieve "Net Zero Electricity." This means that municipal buildings would generate as much electricity as they consume. The City aims to supply 50% of its municipal energy needs from renewable sources by 2020 and 100% by 2030.

In 2008, the City installed a 96 kilowatt (kW) solar photovoltaic (PV) system at City Hall. The system generates approximately 150 megawatt hours (MWh) of electricity each year, which is equivalent to about 7% of the City's total municipal building electricity use annually.

In 2019, the City hired an energy consultant to design and install solar PV systems for the Community and Senior Center, the Public Works building on Calle Magdalena, the Encinitas Public Library, and to add additional solar panels at City Hall as part of a "paid-through-savings" program. In total, the project is anticipated to increase the City's solar capacity to approximately 600 kW, which would be able to supply 48% of the City's total electricity use.

However, the implementation of a project of this magnitude required an upfront investment of $5-10 million in City resources, which was not available at that time. In 2020, this project was temporarily put on hold due to COVID-19 and other competing project needs. However, it is expected to be revisited as part of a future City budget cycle.

Renewable Energy

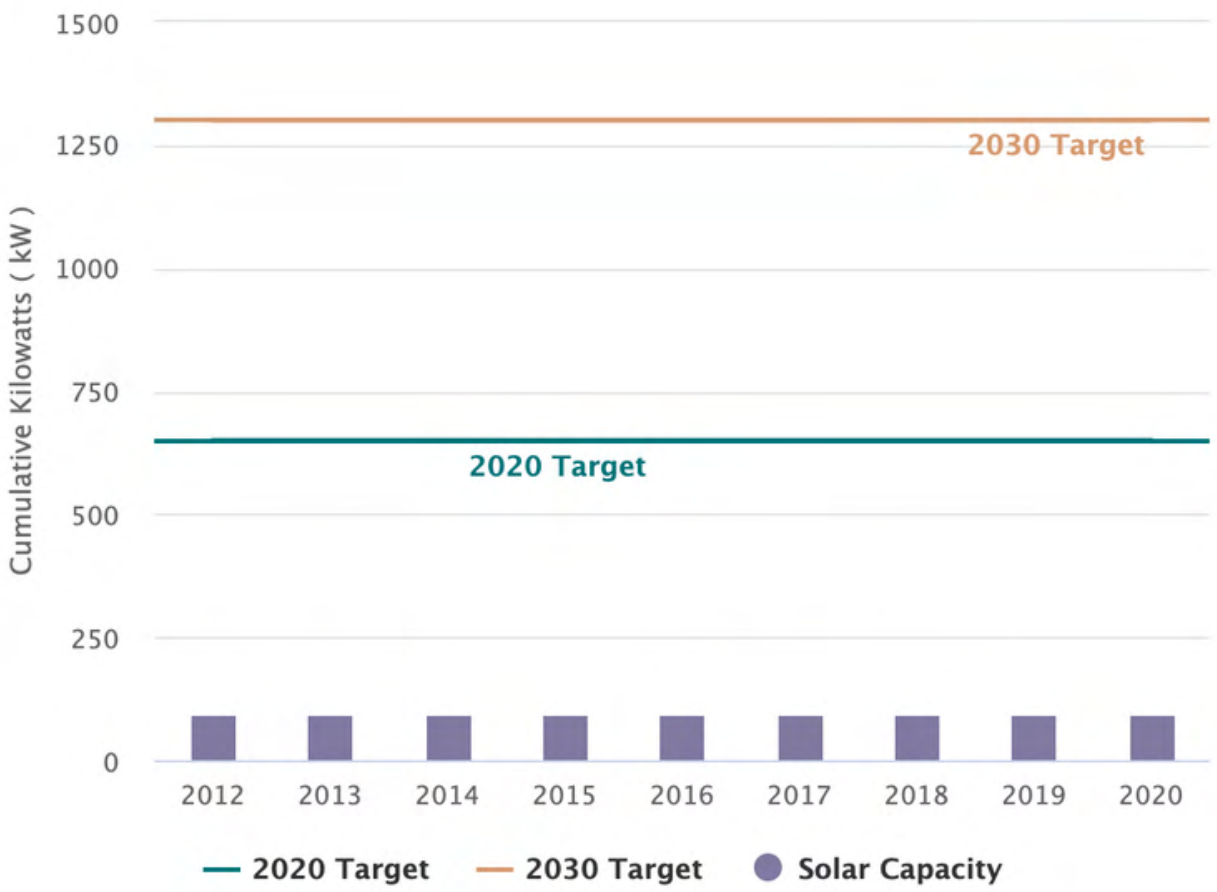


Figure 8. Municipal Solar Photovoltaic (PV) Capacity

Water Efficiency

The Water Efficiency strategy of the City's Climate Action Plan (CAP) aims to reduce greenhouse gas (GHG) emissions by encouraging the community to conserve water in their homes and businesses. Clean water is an essential but limited resource that is expected to be strained even further by projected drought conditions in a changing climate. We can reduce GHGs and enhance our resilience by ensuring we all use water in the most efficient ways possible.

Implementation of water conservation measures is estimated to reduce GHG emissions by 712 metric tons of carbon dioxide equivalent (MTCO2e) by 2020 and 795 MTCO2e by 2030.

Water Efficiency

Measure WE-1: Regularly Conduct Water Rate Studies and Implement Approved Water Rates

The City's Climate Action Plan (CAP) set a goal of reducing water consumption in Encinitas by approximately 5 gallons per capita per day (GPCD) by 2020 and another 2,400 acre-feet by 2030. This equates to a reduction of 258 million gallons by 2020 and 672 million gallons by 2030 from the CAP's 2012 baseline. The energy used to treat and deliver water creates greenhouse gas (GHG) emissions. Reducing water use thereby reduces energy use.

The City's two water districts—San Dieguito Water District (SDWD) and Olivenhain Municipal Water District (OMWD)—regularly conduct water rate studies and adjust rates based on the cost to supply water and the cost of operations. It is anticipated that future water rate structures will incentivize residents to reduce water use. Both water districts also offer various public education programs to encourage water conservation efforts.

The residential target for Encinitans is to reduce water use by an average of 5 gallons per day to meet the CAP's water reduction goals. For context, standard shower heads use 2.5 gallons of water per minute and older toilets use as much as 6 gallons per flush. Potential modifications to water consumption that may be undertaken include decreasing outdoor irrigation, taking shorter showers, or investing in WaterSense products, like low-flow shower heads and toilets.

According to the National Integrated Drought Information System, Encinitas experienced an abnormally dry year in 2020. When conditions require a decrease in water use, Encinitans do a great job. In 2020, average water use by SDWD customers was 126 gallons per capita per day (GPCD), which is a GPCD reduction of 18% from 2012. For OMWD customers, the average use was 129 GPCD, which is a GPCD reduction of 16% from 2012. *(Note: OMWD's service district also encompasses areas outside of the City of Encinitas.)* Both districts have consistently met the 2020 goal established in the CAP.

Water Efficiency

Our water use has varied over the years, but overall, Encinitas residents tend to use more than the average American. According to the United States Geological Survey (USGS), the national average water use was 82 GPCD in 2015. Encinitas' higher water use could be attributed to Southern California's dry climate and the increased need for landscape irrigation. Outdoor irrigation accounts for over 50% of total residential water use in San Diego County.

Note: GPCD values include all water rate classes (environment, agriculture, and urban) for SDWD and OMWD.

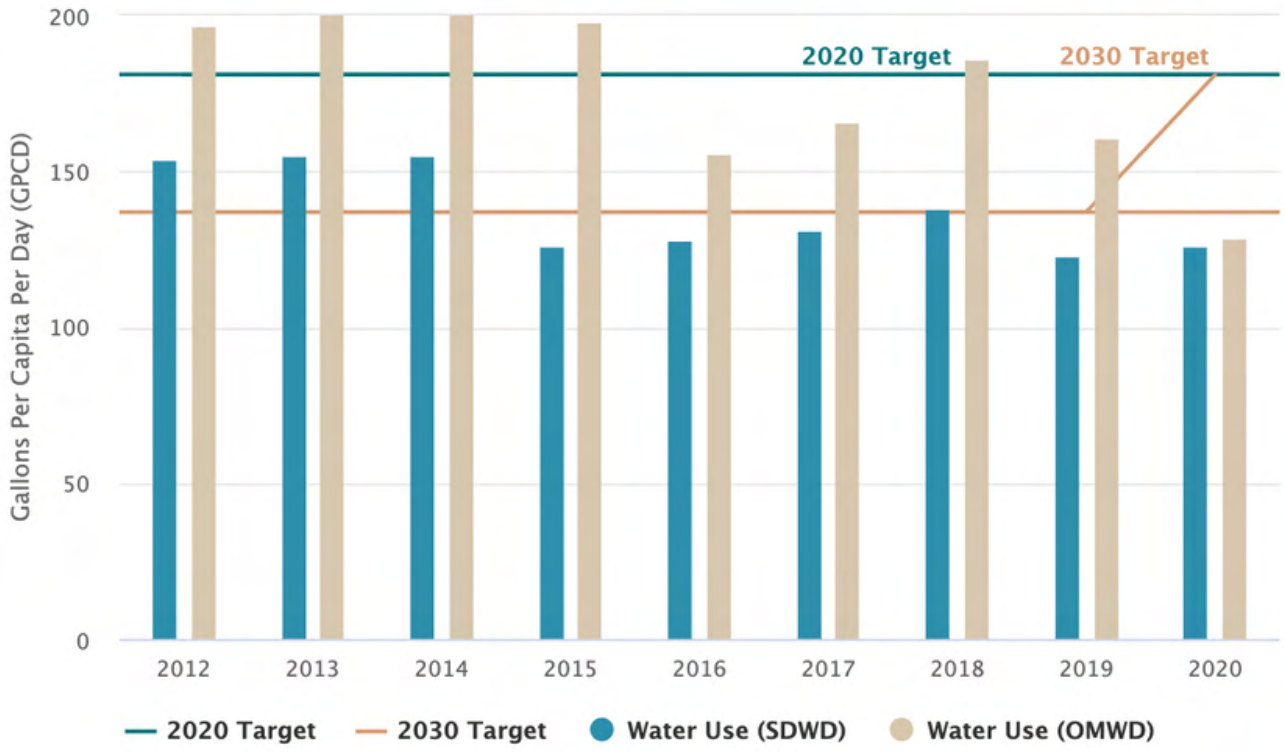


Figure 9. Encinitas Resident Water Consumption

Clean and Efficient Transportation

The Clean and Efficient Transportation strategy of the Climate Action Plan (CAP) leverages smart land use planning and other initiatives to encourage people to take transit, carpool, walk, or bike rather than drive alone. This strategy also includes initiatives meant to boost the use of electric and alternative fueled vehicles when driving is necessary. Achieving greenhouse gas (GHG) emission reductions from this strategy involves coordination with local and regional transportation and planning agencies, as well as residents and businesses.

Implementation of the Clean and Efficient Transportation strategy is estimated to reduce the City's greenhouse gas (GHG) emissions 4,481 metric tons of carbon dioxide equivalent (MTCO2e) by 2020 and 5,900 MTCO2e by 2030.

Clean and Efficient Transportation

Measure CET-1: Complete and Implement the Citywide Active Transportation Plan

The City's Climate Action Plan (CAP) established a goal of completing and implementing a citywide Active Transportation Plan (ATP). An ATP addresses local and regional bike and pedestrian travel by establishing proposed biking and walking facilities and improvements to multi-modal connections to public transit.

The City completed and adopted its ATP on August 22, 2018, meeting the 2020 goal. Implementation of cost-effective projects has and will continue to be initiated and major projects will be incorporated into the City's Capital Improvement Plan based on project priority. After the ATP was completed, the CAP was updated in 2020 to include targets to reduce vehicle miles traveled (VMT), encourage mode shift, and cut greenhouse gas (GHG) emissions. Completion of the proposed bicycle and pedestrian projects established in the ATP would reduce emissions by an estimated 254 metric tons of carbon dioxide equivalent (MTCO2e).

In 2020, the City installed 10.4 miles of new bike lanes. Since 2012, the City has installed a total of 15.5 miles of bike lanes. The largest bike improvement project in 2020 included the addition of 1.8 miles of protected bike lanes heading north and southbound on Highway 101 along the San Elijo Lagoon in Cardiff.

In 2020, the City installed 0.9 miles of pedestrian facilities including sidewalks, walkways, and crosswalks. Since 2012, the City has installed 19.1 miles of pedestrian facilities. One notable pedestrian project completed in 2020 included the installation of a 0.6-mile dirt path located alongside the sand dunes which were developed by the Cardiff Living Shoreline project.

Clean and Efficient Transportation

Figure 10. New and Existing Bike Facilities

Note: In 2012, 2013, 2014, and 2018, the City did not track data on bike facility improvements. Although not represented in this chart, bike facility improvement projects were still completed during these years. In 2019, it was reported that the City installed 4 miles of new bike facilities. However, that data has been reevaluated and adjusted to reflect the correct mileage of 4.1 miles.

Clean and Efficient Transportation

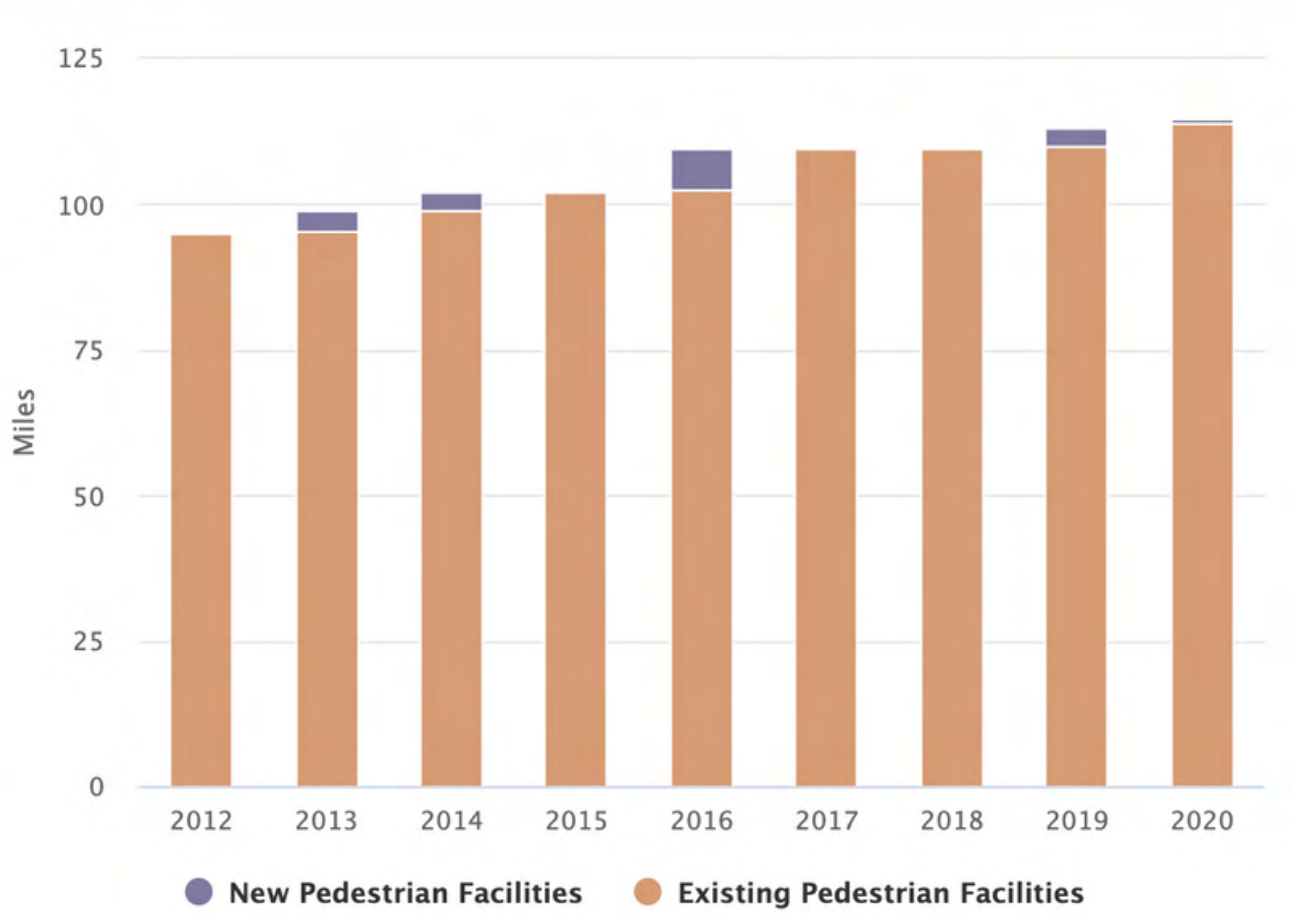


Figure 11. New and Existing Pedestrian Facilities

Note: In 2019 it was reported that the City installed 2.75 miles of new pedestrian facilities. However, that data has been reevaluated and adjusted to reflect the correct mileage of 3.2 miles.

Clean and Efficient Transportation

Measure CET-2: Implement a Local Shuttle System

The City's Climate Action Plan (CAP) estimated that adding new local transit options could save 365,000 vehicle miles traveled (VMT) in 2020 and 875,000 VMT in 2030. This would result in an estimated greenhouse gas (GHG) emissions reduction of approximately 130 metric tons of carbon dioxide equivalent (MTCO2e) and 178 MTCO2e, respectively.

In 2014, the City completed a Transit Feasibility Study that recommended implementing new local transit routes to serve the Highway 101 corridor, education facilities in the city, and the Encinitas COASTER station. Since the adoption of the CAP, the City has been exploring potentially viable public transit options, including rideshare programs that may be served by microtransit electric vehicles. Microtransit is an on-demand transportation system that provides an alternative to traditional route-based transit like buses and trains. Microtransit includes more flexible transportation modes like mini-shuttles, neighborhood electric vehicles, and shared ride hailing technology like Uber and Lyft.

In 2020, the City actively collaborated with regional partners such as the San Diego Association of Governments (SANDAG), the North County Transit District (NCTD), and neighboring jurisdictions—including the cities of Solana Beach, Carlsbad, Del Mar, and Oceanside—in an attempt to develop a sub-regional or local public transportation system related to this CAP measure. The partners assessed options including shared neighborhood electric vehicle (NEV) rideshare programs, such as City of San Diego's Free Ride Everywhere Downtown program, and more traditional programs such as shuttle buses providing service to and from transit centers to employment centers. In 2020, the City also actively searched for grants and other outside funding to support this measures. The City will continue these collaboration and investigative efforts as CAP implementation continues.

Clean and Efficient Transportation

Related to this measure, from 2018 through 2020, the City worked to launch a local bikeshare program. In 2018, the City entered into a Memorandum of Understanding with several North County coastal cities to develop a bikeshare program. In 2019, the City adopted Ordinance 2019-02 allowing for the formation and operation of a pilot bikeshare program by a City-selected vendor. Soon thereafter the City entered into a license agreement with a vendor to operate a pilot bikeshare program. Ultimately, due to COVID-19 and other circumstances, the vendor was unable to meet contract obligations and the agreement was terminated on September 21, 2020.

In 2021, the City secured a partnership with an alternate vendor, BCycle, one of the largest and longest standing bike share companies in the United States. In coordination with the City, BCycle launched their pilot bikeshare program in early 2022. BCycle plans to install up to 500 docking stations for 250 electric bikes (e-bikes) throughout the City. An increase in access to an affordable and clean transportation alternative such as BCycle's shared e-bikes will encourage locals and tourists alike to avoid driving vehicles and opt for zero emission shared bicycle transportation. BCycle's bikeshare program will further aid the City in achieving its GHG reduction goals outlined in the CAP.

Measure CET-3: Improve Traffic Flow

Vehicle fuel usage is another way to measure how transportation impacts the climate. Reducing road congestion and improving traffic flow can lead to reductions in vehicle fuel use and greenhouse gas (GHG) emissions. The City's Climate Action Plan (CAP) identified two ways to reduce fuels use:

- Retiming traffic signals
- Installing roundabouts

Efficient signal timing and roundabouts reduce vehicle stops and starts, improve vehicle stacking time, and reduce idle time, which collectively contributes to reduced fuel use and reduced greenhouse gas (GHG) emissions.

Clean and Efficient Transportation

By 2020, the CAP aimed to retime 60 traffic signals and install 3 roundabouts. By 2030, the CAP proposes the installation of an additional 4 roundabouts to improve traffic flow. These actions would reduce GHG emissions by approximately 3,671 metric tons of carbon dioxide equivalent (MTCO2e) in 2020 and 1,241 MTCO2e in 2030.

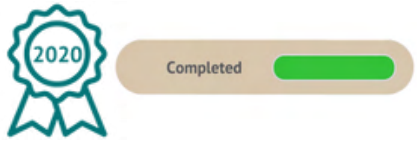
In 2020, the design and construction of several roundabouts was underway. A roundabout on North Coast Highway 101 (101) and El Portal was under construction as part of the first phase of the Leucadia Streetscape project. Three additional roundabouts for Leucadia Streetscape were in design for the following intersections: North Coast Highway 101 and Jupiter Street, North Coast Highway 101 and Grandview Street, and North Coast Highway 101 and Bishops Gate Road. More information on these roundabouts can be found on the Leucadia Streetscape project webpage. Additionally, engineering design was completed for the roundabout at Leucadia Boulevard and Hygeia Avenue, and this project is now awaiting construction funding. There is also a roundabout in design for the intersection of Birmingham Drive and Newcastle Avenue, which is also awaiting construction funding. Between 2018 and 2020, the City retimed 14 traffic signals to improve traffic flow and pedestrian crossings.

Since the goals for on-road fuel use were established in the CAP in 2018, the City has shifted its focus to installing mobility infrastructure to promote the use of active transportation and reduce on-road fuel use, rather than adjusting traffic signal timing.

Although the 2020 goals for traffic signal retiming were not met and installation of roundabouts are still in process, the continued effort and commitment by the City in these areas represents our interest in prioritizing mobility improvements throughout the City to reduce GHG emissions.

Clean and Efficient Transportation

Measure CET-4: Require Residential Electric Vehicle (EV) Charging Stations



To increase electric vehicle (EV) adoption by residents, the City's Climate Action Plan (CAP) proposed enacting local building codes that will require new single-family homes to install electrical equipment capable of handling an EV charger, making the home "EV Ready." New multi-family homes are also required to install EV charging stations (EVCS) at 15% of the parking spaces in the complex. In November 2019, City Council adopted an ordinance enacting these new regulations, effective January 1, 2020.

As a result of these new codes, the CAP estimated that 65 EVCS will be installed by 2020 and 370 EVCS will be installed by 2030 at new residential developments. Meeting these goals will decrease greenhouse gas (GHG) emissions by approximately 185 metric tons of carbon dioxide equivalent (MTCO2e) by 2020 and 260 MTCO2e by 2030.

According to the City's building permit data, no new single family or multi-family residential buildings were issued permits in 2020. All building permits issued in 2020 consisted of single-family remodels or other building permit types. Therefore, the electric vehicle ordinance did not trigger any charging station or related electrical installation. However, many homeowners voluntarily installed EV charging stations at existing homes throughout Encinitas. Irrespective of the new EVCS ordinance, in 2020, 9 EVCSs were installed at single family residences voluntarily, according to building permit records.

In total, 149 EVCSs were permitted and installed at residential properties between 2012 to 2020. Anecdotally, it is known that many EV owners install home charging stations without seeking permits from the City or directly plug into existing 110-volt wall sockets if their EV charging needs are not significant. It is assumed that many more EVCS have been installed in the City than what has been reported according to the City's permit records.

Clean and Efficient Transportation

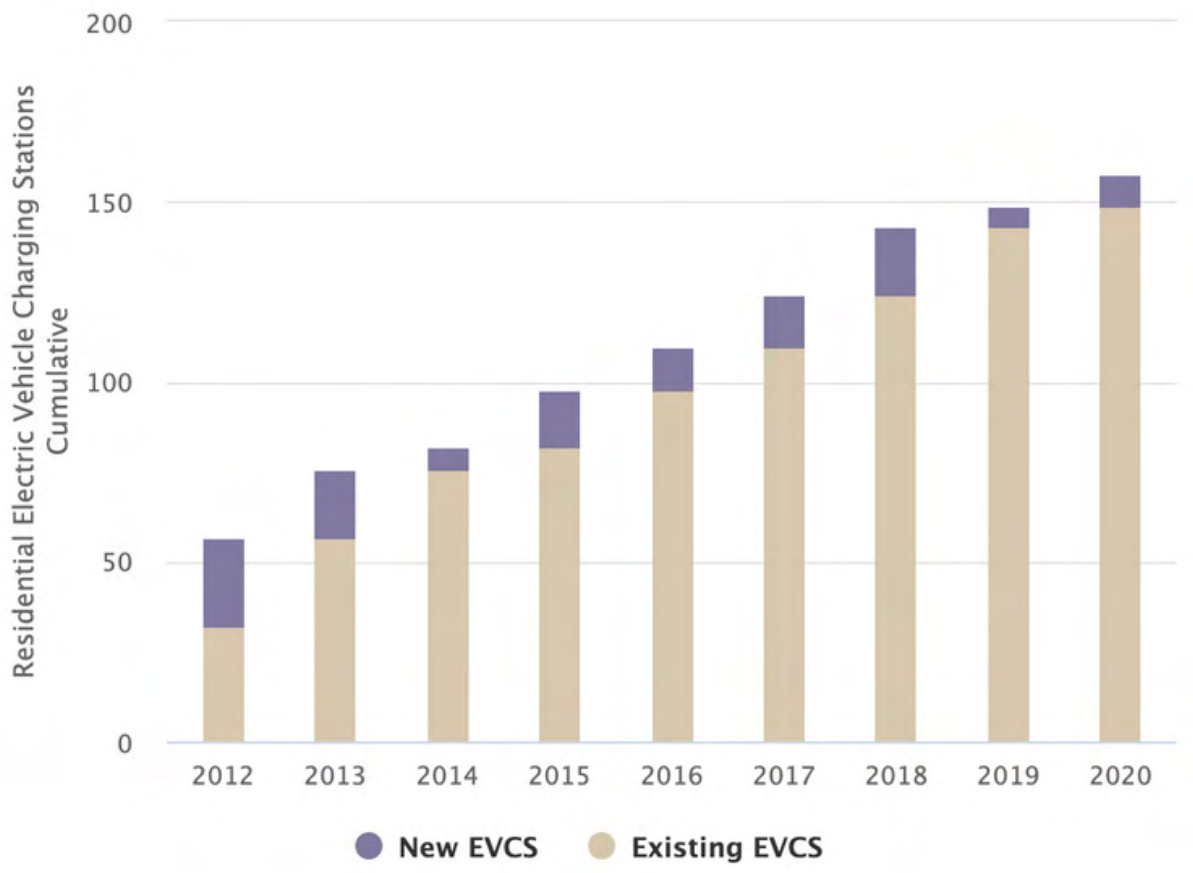


Figure 12. Residential Electric Vehicle Charging Stations (EVCS)

Note: In 2019 it was reported that 161 EVCS were installed at residential properties from 2012-2019. However, that data has been reevaluated and adjusted to reflect the correct number of 143. In 2019 it was reported that the City installed 37 new residential EV charging stations (EVCS). However, that data has been reevaluated and adjusted to reflect the correct number, which is 6 residential EVCS.

Clean and Efficient Transportation

Measure CET-5: Require Commercial Electric Vehicle (EV) Charging Stations

To increase electric vehicle (EV) adoption by residents, the City's Climate Action Plan (CAP) proposed enacting local building codes requiring the installation of EV charging stations at 8% of the total number of parking spaces at commercial developments. This new requirement would apply to all new commercial developments (including the commercial portion of mixed-use projects) and commercial building modifications, alterations, and additions that are 10,000 square feet or greater. In November 2019, City Council considered and adopted an ordinance enacting these new regulations, effective January 1, 2020.

As a result of these new codes, the CAP estimated that 150 electric vehicle charging stations (EVCS) will be installed by 2020 and 490 EVCS will be installed by 2030 at new commercial developments. Meeting these goals will decrease greenhouse gas (GHG) emissions by approximately 440 metric tons of carbon dioxide equivalent (MTCO2e) by 2020 and 3,582 MTCO2e by 2030.

Since the adoption of the new requirements, zero commercial EVCS were installed in 2020. However, as of February 15, 2022, the total number of publicly available charging stations in Encinitas is 14. This number was determined based on information available from Plugshare, ChargeHub, and energy.gov, in addition to local knowledge of City staff. It is important to note that not all commercial charging stations may be available 24/7 and that some require users to be customers. For example, the EV chargers located at BMW Encinitas may only be used by BMW vehicle owners.

Follow this link to PlugShare to see a station location map and to get more information about each publicly available charging station.

Clean and Efficient Transportation

While the ordinance is in place and being enforced, it is evident that this new requirement may not transpire into the number of EVCS anticipated by the CAP. To supplement this ordinance, the City is in the process of developing an Electric Vehicle Charging Station Master Plan that will identify ideal locations for charging stations and outline additional measures the City can implement to promote EVCS installation at commercial locations. The City is also seeking grants, funding, and other opportunities to support EVCS installation. For example, the City is coordinating the installation of 5 public DC Fast charging stations in the lower lot of the Civic Center at Vulcan Avenue and E Street. This is a project that was formerly managed by a private entity, but was recently taken over by the City. It is anticipated that these charging stations will be installed and available for public use in 2022.

Measure MCET-1: Transition to Zero Emission Municipal Fleet

The City's Climate Action Plan (CAP) set a goal of transitioning the City's municipal fleet to "zero emission" or alternative fuels by 2030. Examples of zero emission vehicles (ZEVs) include battery electric vehicles and fuel cell vehicles. Other low-emission vehicles like hybrids, plug-in hybrids, and compressed natural gas vehicles also contribute to reduced greenhouse gas (GHG) emissions.

In February 2018, the City drafted a ZEV Fleet Conversion Plan to achieve the CAP goal. According to the plan, the City will convert all light-duty vehicles to electric vehicles and all heavy-duty vehicles to renewable diesel. The City's CAP estimated that this action would reduce fleet fuel use by 10% by 2020 and 30% by 2030, which reduces GHG emissions by 55 metric tons of carbon dioxide equivalent (MTCO2e) and 384 MTCO2e, respectively.

Clean and Efficient Transportation

In 2020, the City's municipal fleet included 7 battery-electric vehicles, 1 plug-in hybrids, and 13 hybrid vehicles, with 21 clean fleet vehicles in total. EVs make up 52% of the light duty fleet—the portion of the fleet that commonly have EV alternatives available in the market. In accordance with the ZEV Fleet Conversion Plan, City vehicles are annually evaluated and vehicle replacements are budgeted and scheduled as needed. Whenever possible, EVs are selected as replacement vehicles in the light-duty class.

In 2018, to support the transition to electric vehicles, the City installed 10 EV charging stations at the Public Works Yard through San Diego Gas and Electric's (SDGE) "Power Your Drive" program. More charging stations are planned for installation at City Hall, the Community and Senior Center, and the library. Five Level 2 charging stations for fleet use will be installed as part of the City Hall renovation project which is anticipated to be complete in 2022. In 2019, the City conducted a fleet assessment to evaluate vehicle use and right-size the fleet based on department need. Based on this assessment, the City is transitioning to the use of more pooled vehicles rather than vehicles dedicated to specific departments, resulting in fewer vehicles needed in the overall City fleet.

Since 2012, due to the transition to EVs and right-sizing the fleet, total gasoline use by City vehicles has decreased by 40%, far exceeding the 2020 goal and making great strides towards a zero-emission light duty fleet by 2030.

In 2020, the City continued receiving deliveries of renewable diesel fuel for municipal fleet use. Renewable diesel is made from products that would otherwise be wasted, such as natural fats, vegetable oils, and greases, as opposed to conventional diesel which is derived from extracted petroleum. Renewable diesel is chemically similar to conventional diesel but generates fewer emissions and other harmful substances when burned.

Clean and Efficient Transportation

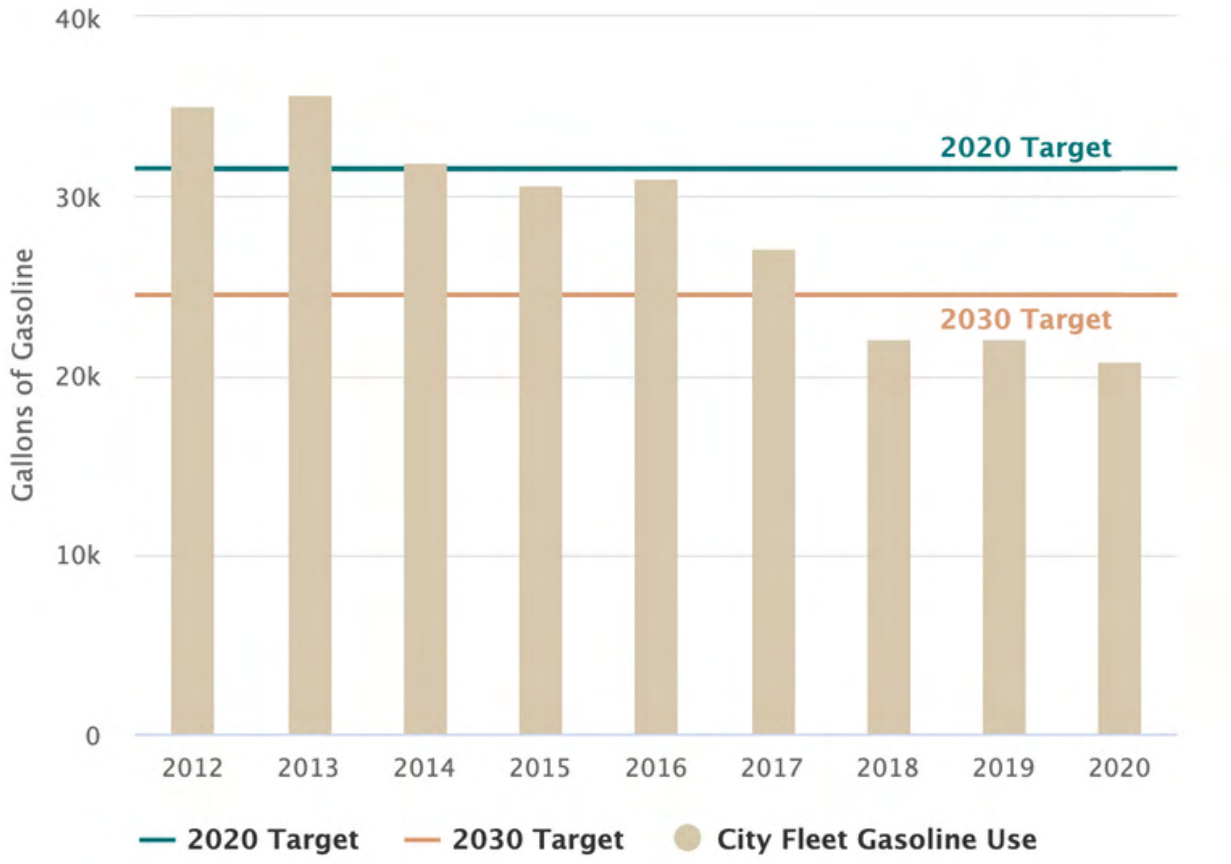


Figure 13. Municipal Gasoline Consumption

Clean and Efficient Transportation

All City fleet diesel-fueled vehicles—including pickups, dump trucks, fire trucks, and stationary generators—are now fueled by renewable diesel. The City tracks diesel use and, since 2012, there has been a 98% decrease in use of conventional diesel fuel, mainly due to an increase in use of renewable diesel. The City's overall renewable diesel consumption has increased by 278% since 2012.

The switch to renewable diesel in 2018 enabled the City to far exceed both the 2020 and 2030 CAP goals for renewable diesel several years early.

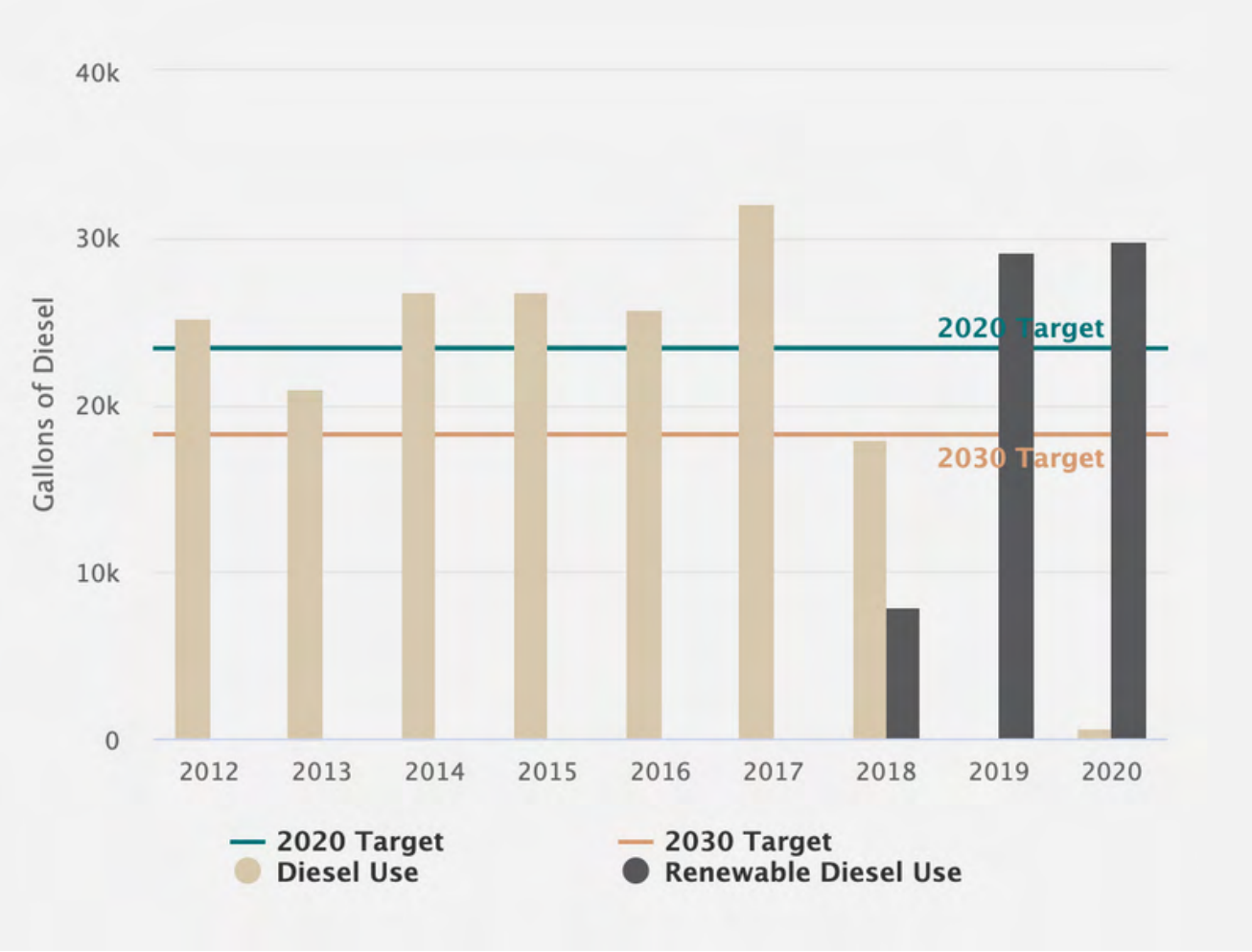
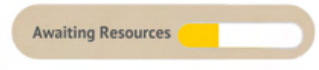


Figure 14. Municipal Diesel Consumption

Clean and Efficient Transportation

Measure MCET-2: Adopt a Municipal Employee Telecommute Policy



When the City's CAP was updated in 2020, this measure was added, making it the CAP's 20th measure. The future policy will facilitate telecommuting by City employees based on job function and management approval. The implementation of this measure will assist in decreasing the City's overall greenhouse gas (GHG) emissions by reducing the number of vehicle miles traveled by City employees. Tracking progress toward this target will begin as soon as the policy becomes effective.

Reduce Off-Road Equipment

The Off-Road Equipment strategy of the City's Climate Action Plan (CAP) aims to cut back on emissions by prohibiting the use of gas-powered two-stroke leaf blowers. Transitioning away from fossil fuel powered landscape equipment will decrease greenhouse gas (GHG) emissions, reduce noise from yard care activities, reduce air particulates and debris, and prevent many other harmful emissions from polluting the air.

Implementation of this strategy is estimated to reduce the City's GHG emissions by 128 metric tons of carbon dioxide equivalent (MTCO2e) by 2020 and 142 MTCO2e by 2030.

Reduce Off-Road Equipment

Measure OR-1: Adopt a Leaf Blower Ordinance to Limit Use of 2-stroke Leaf Blowers

The City's Climate Action Plan (CAP) set a goal to reduce greenhouse gas (GHG) emissions by phasing out the use of gas-powered two-stroke engine leaf blowers throughout the City of Encinitas. According to the California Air Resources Board, two-stroke leaf blowers are among the top four most used types of off-road equipment.

The CAP estimated that 20% of the emissions from lawn and garden equipment could be attributed to two-stroke leaf blowers. In addition to GHG emissions, two-stroke engine leaf blowers also emit several other harmful air pollutants, as a portion of the fuel does not undergo complete combustion during operation. The CAP estimated that phasing out the use of gas-powered two-stroke leaf blowers would reduce the City's GHG emissions by approximately 128 carbon dioxide equivalent (MTCO2e) by 2020 and 142 MTCO2e by 2030.

Alternatives to gas-powered leaf blowers include electric and battery powered leaf blowers, human-powered equipment, and preventing the need for equipment altogether through smart landscaping and planning. These alternative options not only generate less noise, but also produce little to no harmful air pollutants.

In August 2019 City Council adopted Ordinance 2019-06, which prohibits the use or operation of any leaf blower powered by a gasoline combustion engine (two-stroke or four-stroke) within City limits.

Additionally, the ordinance regulates the allowed hours of operation of all leaf blowers and prohibits leaf blowers from depositing waste (leaves, debris, etc.) onto a neighboring property, street, sidewalk, gutter, or storm drain. The ordinance went into full effect on January 20, 2020. Any violations of this ordinance may be reported by submitting a Code Enforcement Complaint using this online form.

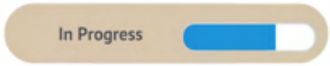
Zero Waste

The Zero Waste strategy in the City's Climate Action Plan (CAP) aims to reduce the amount of waste sent to local landfills. Methane—a greenhouse gas (GHG) that is about 25 times more potent than carbon dioxide—is emitted when waste (primarily organic material) decomposes in landfills. Successful implementation of this strategy depends on the expansion of recycling and composting programs, in addition to participation from City residents and businesses to reduce waste and increase diversion.

Implementation of the Zero Waste strategy is estimated to reduce the City's GHG emissions by 2,830 metric tons of carbon dioxide equivalent (MTCO2e) by 2020 and 9,216 MTCO2e by 2030.

Zero Waste

Measure ZW-1: Implement a Zero Waste Program



Senate Bill (SB) 1383 is a statewide law which mandates organics recycling and edible food recovery for certain businesses in order to reduce methane emissions and other short-lived climate pollutants. In 2020, in compliance with SB 1383, City staff developed an organic waste recycling program. Preparations included drafting and adopting an ordinance (Ordinance 2021-15) requiring the recycling of organic waste, in coordination with the City's contracted waste collector, EDCO. The City's curbside organic waste recycling program was launched in the summer of 2021.

The City's Climate Action Plan (CAP) set a goal of reducing greenhouse gas (GHG) emissions from landfills by implementing a Zero Waste Program that promotes waste prevention, recycling, and diversion of organic waste. To achieve this goal, the City works closely with EDCO. EDCO leverages green technologies, such as a state-of-the-art Resource Recovery Facility, that properly sorts the City's co-mingled recycling waste. Most recently, in 2021, EDCO began collecting and processing food waste for recycling.

In early 2021, EDCO completed construction of an anaerobic digestion (AD) facility to serve the San Diego region, including Encinitas residents. The AD facility uses microorganisms to break down material into digestate and renewable natural gas (RNG) in an air-tight environment that eliminates the release of methane. Digestate is rich in nutrients and can be further processed into fertilizer for crops. RNG can be used to fuel trucks or for energy, displacing the need for fossil fuels.

In June 2021, curbside organics recycling became available to Encinitas residents in single-family homes through EDCO's new program. Food scraps and green waste are now collected and processed at EDCO's AD facility. Organics recycling services for multifamily properties and businesses will be rolled out at a later date. See the City's Trash and Recycling webpage to learn more about the program.

Zero Waste

The City's Climate Action Plan (CAP) aims to divert 65% of Encinitas' solid waste from the landfill by 2020 and 80% of total solid waste by 2030. This is equivalent to reducing our waste generation rates to 5.3 pounds per person per day (lbs/person/day) by 2020 and 3 lbs/person/day by 2030. In 2020, the average Encinitan generated 5.7 lbs/person/day, which did not meet the 2020 goal.

If both goals are achieved, the CAP estimated this would result in a greenhouse gas (GHG) reduction of approximately 2,830 metric tons of carbon dioxide equivalent (MTCO2e) and 9,216 MTCO2e, respectively. According to CalRecycle, the amount of waste generated by the City of Encinitas has fluctuated between 5.6 and 6.1 lbs/person/day since 2012.

The City also supports at-home management of organics waste through educational workshops and subsidies to purchase compost and worm bins. Residents can learn more about composting resources on the City's website.

The City's Zero Waste Program also features numerous workshops, educational programs, and other services to support waste reduction in partnership with local organizations such as the Solana Center for Environmental Innovation, I Love a Clean San Diego, BCK Programs, and several Encinitas schools. Some of the many City-funded initiatives include a compost bin subsidy program and an annual Zero Waste Fair. To learn more about the City's Zero Waste programs, visit the City's website.

Zero Waste

Figure 15. Encinitas Waste Generation

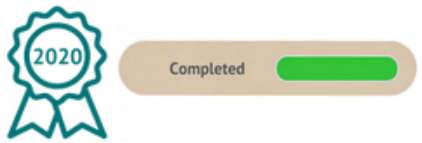
Carbon Sequestration

The Carbon Sequestration strategy in the City's Climate Action Plan (CAP) aims to facilitate the process of removing carbon dioxide (CO2), a greenhouse gas (GHG), from the atmosphere through natural or artificial means. This is referred to as carbon sequestration. Trees, algae, and other vegetation are referred to as "carbon sinks" because they naturally take in atmospheric CO2 through their respiration processes. An important way our community can improve its carbon sequestration potential is by increasing the number of trees planted and by maintaining a healthy urban tree canopy.

Implementation of the Carbon Sequestration strategy is estimated to reduce the City's GHG emissions by five metric tons of carbon dioxide equivalent (MTCO2e) by 2020 and 66 MTCO2e by 2030.

Carbon Sequestration

Measure CS-1: Develop and Implement an Urban Tree Planting Program



Measure CS-1 directs the City to develop an Urban Tree Planting Program, which includes standards to right-size trees and minimize pruning and irrigation needs, and to promote increased carbon sequestration by trees within the community. Through the Urban Tree Planting Program, the City's Climate Action Plan (CAP) set a goal of planting 150 net new City trees by 2020 and 100 net new City trees annually after that, for a total of 1,150 net new trees planted by 2030.

We recognize the City's urban forest as one of our greatest natural resources. City leaders and staff have made our trees a priority and they are dedicated to the continued planting, protection, and maintenance of Encinitas' urban forest. The departments of Public Works and Parks and Recreation have an established Urban Forest Management Program (UFMP) which closely follows the City's UFMP Administrative Manual and incorporates the City's Urban Tree Panting Program. In 2018, the City hired a City Arborist to support the implementation of the UFMP and oversee the care of the City's trees.

The City of Encinitas actively maintains a thriving urban forest of City-owned and maintained trees. City trees include trees in the public right of way, typically along streets and sidewalks, and trees within City parks. New trees are continually being added to the City's urban forest and established City trees are maintained regularly. In addition to carbon sequestration, trees provide many benefits to our community such as improving water quality, reducing stormwater runoff, regulating temperature, reducing energy use in buildings, cleaning the air, enhancing property values, supporting human health, and providing wildlife habitat.

In 2020, the City planted a total of 196 net new trees. Between 2012 and 2020, the City planted a total of 843 net new trees, averaging about 94 new trees planted per year. At the end of 2020, the City's urban forest included 21,504 City trees in the public right of way and in City parks.

Carbon Sequestration

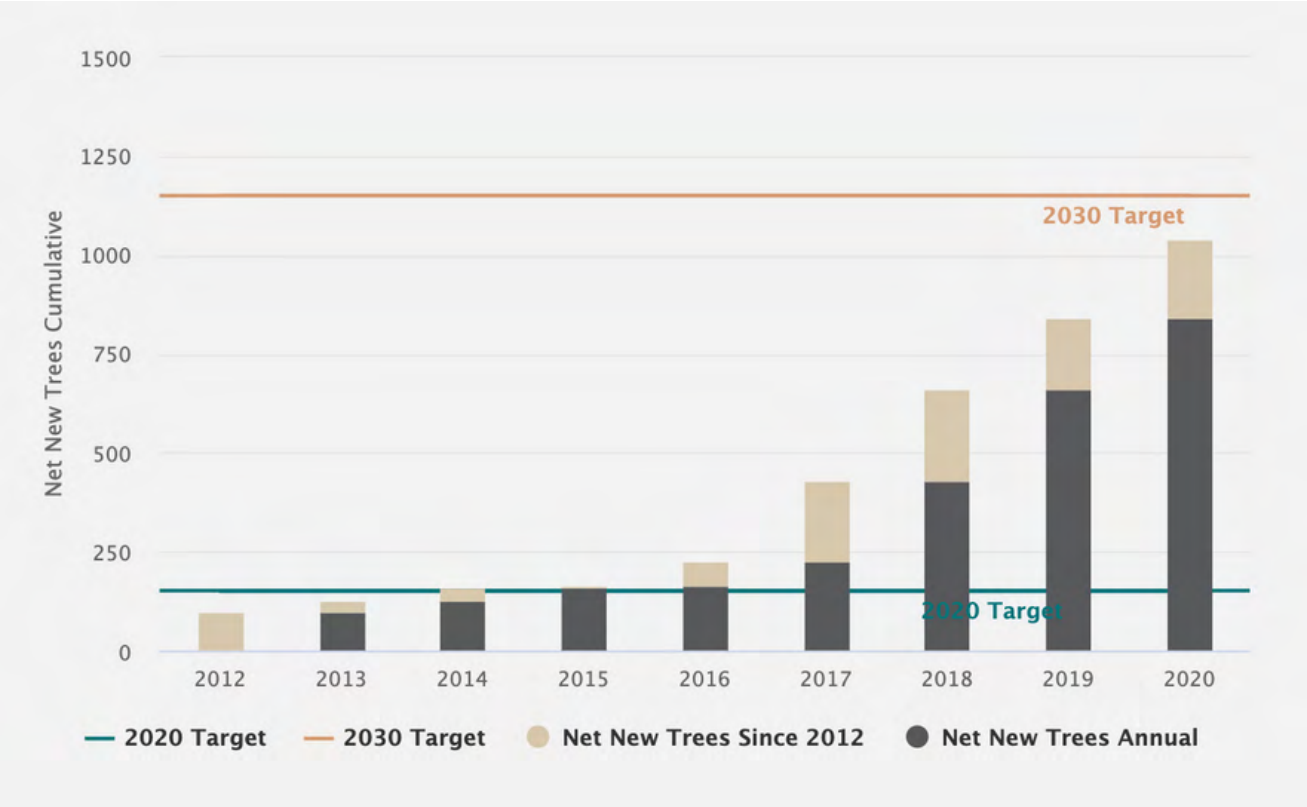


Figure 15. Cumulative Trees Planted Since 2012

Chapter 4: Social Equity & Green Jobs

To successfully implement the Climate Action Plan (CAP), economic and equity factors must be taken into consideration. Low-income, minority, and other disadvantaged communities are expected to be most impacted by climate change. Therefore, the City's CAP included the consideration of socially equitable climate adaptation, equitable implementation of mitigation measures, and a focus on an increase in green jobs.

The following section provides information related to programs and projects the City has implemented that address social equity and green jobs.

Social Equity & Green Jobs

To further support the CAP, in July 2021, the City formed a new department called the Infrastructure and Sustainability Department. Within this department is a new Sustainability Division. The focus of this division is to implement the measures outlined in the City's CAP while also ensuring the City remains resilient and adapts to future anticipated climate changes, which includes prioritizing social equity and green jobs.

Social Equity

The impacts of climate change will affect members of the community in different ways and to varying degrees. Addressing equity in the implementation of greenhouse gas (GHG) reducing actions ensures the just distribution of the benefits of climate adaption and mitigation efforts. Social equity is a broad subject that reaches beyond the capacity of the Climate Action Plan (CAP); therefore, the City continues to address equity in a holistic manner through the City's General Plan and across multiple departments. The following section summarizes the City's progress on addressing social equity through various well-established programs, in addition to new programs and initiatives.

Equitable Housing

The City continues to address equity in community planning for future housing and though existing housing programs. Ongoing programs include the City's Section 8 Housing Program and Community Development Block Grant Program. Since 1995 the City of Encinitas Housing Authority (EHA) has operated a Section 8 Rental Assistance Program. The Section 8 Program offers financial rental assistance to very low-income Encinitas households through a voucher-based program. The program is very popular with an ongoing waitlist. Additionally, the City has managed a Community Development Block Grant (CDBG) program since 2011. The CDBG program facilitates the administration of federal funding for housing related projects to create a suitable living environment, to provide decent housing, or to create economic opportunities for low-to-moderate-income households and communities.

Social Equity & Green Jobs

Equitable Housing

The City's Housing Element identifies existing and projected housing needs in order to preserve, improve, and develop housing for all economic segments of the community, in addition to demonstrating how the City will accommodate its fair share of regional housing needs. The City's most recent Housing Element identified 17 sites suitable for new housing for very low and low-income households. In 2020, property owners of these selected sites began designing proposed plans for the new low-income housing developments. In December of 2020, the City's Planning Commission approved the first development proposal for one of the 17 Housing Element sites, Fox Point Farms. Fox Point Farms will be a farming-focused community of 250 homes located off of Leucadia Boulevard. This project will feature 40 affordable housing units, in addition to 5.5 acres of farmland and an onsite restaurant. This innovative community is one of the first of its kind. Development permit requests for the remaining Housing Element sites are anticipated to be submitted to the City soon.

Equitable Energy

In 2019, City Council authorized the formation of a Community Choice Energy Program, called San Diego Community Power (SDCP) along with four other member cities: San Diego, Chula Vista, Imperial Beach, and La Mesa. The new agency offers advantages over the incumbent utility, including less carbon intensive energy procured for customers over time at competitive prices and oversight by local jurisdictions instead of private shareholders. SDCP also has the option to reinvest profits into expanding carbon-free service options and customer programs. For example, SDCP plans to develop customer programs that directly benefit low-income and disadvantaged communities. In 2020, SDCP established its Community Advisory Committee (CAC) whose purpose is to advise the SDCP Board of Directors on the operation of its program. Committee members are representatives of SDCP's five member cities and its diverse citizenry.

Social Equity & Green Jobs

The CAC's Fiscal Year 2021-22 work plan included the following areas which promote social equity: prioritization of equitable outcomes, development of an equitable and inclusive workforce policy, and providing the SDCP Board with input on community outreach as it relates to electricity rates and community solar for disadvantaged communities.

Economic Development and Green Jobs

The City fosters a need for green jobs in our local community and around the region through the implementation of the City's Climate Action Plan (CAP) and through the implementation of other various programs and partnerships. As the City continues to complete CAP measures and track progress, the creation of green jobs will be more closely analyzed. The following section provides some examples of the City's work that supports and promotes economic development, which includes green jobs.

Green Jobs

Development and completion of many of the CAP measures will create a need for more green jobs in Encinitas. For example, once the new building ordinances are in place establishing requirements for energy efficiency and renewable energy, new workers will be needed in the development and construction industry who have technical knowledge and skills in solar photovoltaic (PV) systems, electric vehicles, and energy efficiency. Similarly, the City's Water Efficient Landscape Regulations (EMC 23.26) and the water districts' on-going water conservation programs foster a need for businesses specialized in green landscape design and installation.

The City's Economic Development Program directly supports the growth of green jobs through targeted workshops, trainings, and support to the City's four economic development organizations: Cardiff 101, Encinitas 101, Leucadia 101, and the Encinitas Chamber of Commerce. These organizations are the heart of the City's business community and are encouraged to participate in implementation of the CAP. The City also encourages organizations and businesses that practice and promote sustainable habits and business models.

Social Equity & Green Jobs

Many of the City's restaurants, non-profits, shops, service providers, and lodging locations are leading by example, setting green standards, and paving the way for others in Encinitas to do the same.

Green Jobs

In June of 2020, in cooperation with COVID-19 guidelines and restrictions, the City authorized outdoor dining and retail space within the public right of way and designated parking areas. The additional space allocated for outdoor dining and shopping allowed local businesses to better serve patrons in accordance with COVID-19 regulations. With greater accessibility to restaurants and shops, Encinitas residents and tourists were able to continue to support local businesses in a safe and healthy manner. This project was partially funded by San Diego Association of Governments (SANDAG) and is anticipated to stay in effect until COVID-19 measures like social distancing are no longer necessary.

In 2021, the City entered into an agreement with BCycle—one of the largest and longest standing bikeshare companies in the United States—to manage a bikeshare program for the City of Encinitas. The majority of the planning and preparation for the City's BCycle launch occurred in 2020. The bikes were officially made available for public use in January of 2022. The launch of BCycle bikeshare directly adds several green jobs to the region and promotes affordable alternative transportation, both of which are goals outlined in the City's CAP. A bike may be rented for as little as $7 for a half hour. Passes may also be purchased on a monthly or annual basis for a cost of $30 or $150, respectively. The bikeshare program also plans to offer a discounted annual pass for qualifying low-income residents and visitors as part of a partnership incentive program with SANDAG.

Chapter 5: Climate Resilience & Coastal Adaptation

With the Pacific Ocean as our backyard, it is paramount that the City prioritizes projects and policies that promote coastal resilience and adaptation. The City recognizes the importance of protecting our 6 miles of coastline, which includes the people, plants, and animals that rely on the resources that the coast provides. The following chapter outlines the projects and programs the City implements to adapt to future climate change, making our City more resilient to its impacts.

Climate Resilience & Coastal Adaptation

The City is part of a collaborative coastal storm damage reduction project with the U.S. Army Corps of Engineers and the City of Solana Beach. The goal of the project is to reduce storm and sea level rise-related coastal damage and erosion by adding sand along 7,800 feet of coastline. In 2020, the project began the pre-construction, engineering, and design phase. The project requires baseline conditions of the shoreline environment to be monitored, so future improvements can be documented and tracked. Funding is comprised of local, state, and federal sources and was previously delayed due to outstanding circumstances, including COVID-19. In early 2022, the U.S. Army Corps of Engineers received $30 million on behalf of the City of Encinitas and the City of Solana Beach from the Bipartisan Infrastructure Bill to begin construction in late 2023-early 2024.

Encinitas is home to Swami's State Marine Conservation Area (SMCA), a state marine protected area (MPA) that spans from approximately Moonlight Beach to South Cardiff State Beach and 3 miles of ocean westward from our beaches. The Swami's SMCA was established in 2012, and the effects of establishing the preserve are currently being evaluated by the California Department of Fish and Game through the 2022 Decadal Management Review. The only allowable forms of fishing in this MPA are recreational fishing (hook and line) from shore and spearfishing for white seabass and pelagic finfish. Fishing from boats is prohibited. The prevalence of healthy reefs in the Swami's SMCA are ideal for recreation but are unfortunately also a draw for poachers. To advance its priority of environmental stewardship, the City installed a marine monitoring (M2) radar in November 2020 on top of the Marine Safety Center at Moonlight Beach in partnership with the designer of the radar program, Protected Seas, and WILDCOAST, an international environmental non-profit organization. M2 is a low-powered, high frequency marine radar coupled with specially designed software to track boat activity and illegal fishing in nearshore waters. The M2 monitoring is ongoing and has provided data that is critical to both management and enforcement of fishing restrictions in the Swami's SMCA.

Climate Resilience & Coastal Adaptation

The Cardiff State Beach Living Shoreline Project, substantially completed in 2019, created a coastal dune with repurposed buried rock revetment and cobblestone, 30,000 cubic yards of sand dredged from the San Elijo Lagoon inlet, native seeds, and volunteer-based management. The Cardiff State Beach Living Shoreline Project is the first of its kind in Southern California to test coastal dunes as a nature-based solution to beach erosion and flood protection of a vulnerable coastal asset. This project has also created healthy and safe habitats for a variety of species, including the endangered western snowy plover. In March 2021, the City accepted a national award from the American Shore and Beach Preservation Association (ASBPA) for the Best Restored Beach of 2020.

In 2020, the Beacon's Coastal Bluff Restoration Project was designed, permitted, reviewed, and approved by City Council. The primary objective of the project was to stabilize surface soils by planting native vegetation to protect the access trail, whilst increasing coastal bluff habitat. The approximate 1.2-acre coastal bluff area largely sustained non-native species or bare ground prior to the project. With the installation of adapted native species—such as bladderpod, boxthorn, and sea dahlia—the coastal bluff provides rare habitat for coastal species and beautifies the trail. The restoration program also includes a pilot project which uses washed up kelp to encourage natural dune formation in addition to utilizing citizen scientists to increase engagement with beach and bluff stewardship. The restoration program was approved by the Planning Commission in February of 2021 and work began in the fall of 2021.

In 2017, CalTrans and San Diego Association of Governments (SANDAG) initiated construction of the North Coast Corridor (NCC) Project in the cities of Solana Beach, Encinitas, and Carlsbad. Build NCC is part of a comprehensive set of transportation, environmental, and coastal access projects that includes the widening of Interstate-5 and the freeway bridge over San Elijo Lagoon, installation of High Occupancy Vehicle lanes, double tracking the railway line, development of bike corridors and pedestrian trails, and habitat restoration within the San Elijo Lagoon.

Climate Resilience & Coastal Adaptation

As part of the project, beach sand replenishment at Cardiff State Beach occurred in 2018, reusing the sediment that was removed during the San Elijo Lagoon Restoration Project. Though the San Elijo Lagoon Restoration Project was substantially completed in 2019, the final sediment used to support construction of the Interstate-5 freeway bridge still needed to be removed and repurposed. In 2020, the City initiated discussions with Caltrans and SANDAG, in addition to the permitting agencies, to complete the Restoration Project with a second sand nourishment project to Cardiff State Beach and Moonlight State Beach. In 2021, initiation of the removal of the remaining sediment, totaling 70,000 cubic yards of beach-quality Torrey Sandstone material, began. The material is slated to be dredged and piped to Cardiff State Beach or hauled to Moonlight State Beach.

Funding for this effort is being provided by Build NCC, with the City providing financial assistance from the coastal fund. The project is anticipated to be completed in the spring of 2022.

The Conference of the Parties (COP) organizes the world's most significant summit on climate change, which is attended by countries that signed the United Nations Framework Convention on Climate Change (UNFCCC)—a treaty that was implemented in 1994 with the primary goal to lessen human interference on the global climate. The City was invited by COP to participate as a panelist in a roundtable discussion about nature-based solutions for coastal protection. At Blue Tech Week in November 2020, the City participated in a panelist discussion alongside scientists, politicians, and other industry leaders.

As the City continues to plan for the future, other climate resilience projects—including those with a focus on coastal and community adaptation—will continue to be remain at the forefront of the City's projects, policies, and programs.

Looking Ahead

With 11 Climate Action Plan (CAP) measures in progress and 2 awaiting resources, City staff will continue working diligently to achieve the greenhouse gas (GHG) reduction targets set in the CAP. The CAP Implementation Plan calls for measures to be completed within varying timelines depending on complexity and cost.

Looking ahead, City staff will focus on executing the following activities:

- Continue to support San Diego Community Power (SDCP) in its effort to begin serving power to customers by 2021 and into 2022.
- Revamp the City's Green Building Incentive Program to be more accessible to residents with existing homes in the City of Encinitas.
- Continue to install bike and pedestrian facilities to enhance mobility throughout the community.
- Develop a municipal employee alternative commute policy.
- Develop a curbside organics recycling program for the community.
- Launch a community bike share program.
- Continue to maintain a healthy urban tree canopy and plant new trees in the City's urban forest.
- Adopt building code amendments related to energy efficiency, all-electric buildings, and renewable energy.
- Support City projects relevant to the CAP including the construction of the Hygeia Avenue roundabout, the El Portal Street undercrossing, Leucadia Streetscape, and coastal preservation projects.

2021

Conclusion

The 2020 Climate Action Plan (CAP) Annual Monitoring Report (Annual Report) summarizes the City's progress toward overall greenhouse gas (GHG) reduction targets and evaluates progress made on implementing each of the 20 measures established in the CAP. This Annual Report covers progress made since implementation began in early 2018, and includes data tracked through the end of 2020.

Of the 20 CAP Measures, 7 have been completed, 11 are in progress, and 2 are awaiting resources. Moving forward, staff will produce reports annually, presenting the most recent data. Staff will continue to work and coordinate with consultants, San Diego Association of Governments (SANDAG), and other regional entities and business partners to further CAP implementation and continue to lower GHG emissions. Currently, the City is on-track with CAP implementation and expects to meet its citywide GHG emissions reduction targets of 13% below 2012 levels by 2020 and 44% below 2012 levels by 2030.

In Encinitas, some of the implications of climate change are already evident and will increasingly become a challenge that the community must address. Encinitas faces rising sea levels, increased drought risk, and increased vulnerability of bluffs and beaches, in addition to other changes that pose a threat to the coast and community we call home. Apart from mitigating GHG emissions, the City also strives to strengthen the community's resiliency against climate change. The climate challenge poses a unique opportunity to develop a more sustainable, healthy, and equitable Encinitas community driven by the strategies outlined in the CAP. The City—with support from community members, local businesses, and regional partners—will continue to pursue emissions reductions goals and improve the well-being of Encinitas residents now and into the future.

Addendum - May 25, 2022

The following changes were made to the 2020 Climate Action Plan Annual Report on May 25, 2022:

On pages 32 and 34 in the Renewable Energy section, the “Residential Solar Photovoltaic (PV) Capacity” graph and the “Commercial Solar Photovoltaic (PV) Capacity” graph were revised to present the data in a different format. The data did not change.

On page 63 in the Carbon Sequestration section, the “Cumulative Trees Planted Since 2012” graph was revised to present the data in a different format. The data did not change.

Addendum - June 21, 2022

The following changes were made to the 2020 Climate Action Plan Annual Report on June 21, 2022:

On pages 38 and 39 of the Water Efficiency section, the reported San Dieguito Water District gallons per capita per day (GPCD) was adjusted from 133 GPCD to 126 GPCD to reflect a modification to the data. The accompanying graph or Figure 9 titled “Encinitas Resident Water Consumption” was also adjusted to reflect this change.

Addendum - August 02, 2022

The following changes were made to the 2020 Climate Action Plan Annual Report on August, 02 2022:

On page 51, in the Clean and Efficient Transportation section, the reported number of clean vehicles in the municipal fleet was changed from 16 to 21 to reflect a correction to the data. The percentage of electric vehicles that make up the light duty fleet was also adjusted from 30% to 52%.