

Climate Action Plan Update, 2019

The City of Solana Beach is committed to active implementation of its Climate Action Plan (CAP) adopted on July 12, 2017. The CAP states that every two years starting in 2019, City staff will prepare a report for City Council that reviews the status and progress of measures identified in the CAP. In the past two and a half years, City Council, City staff, the Climate Action Commission, and Solana Beach residents have taken significant actions to reduce greenhouse gas (GHG) emissions with promising results. In addition, City Council has included additional CAP measures into its 2019-2020 Council Work Plan to ensure the City stays on track to meet California's ambitious GHG reduction goals.

Summary

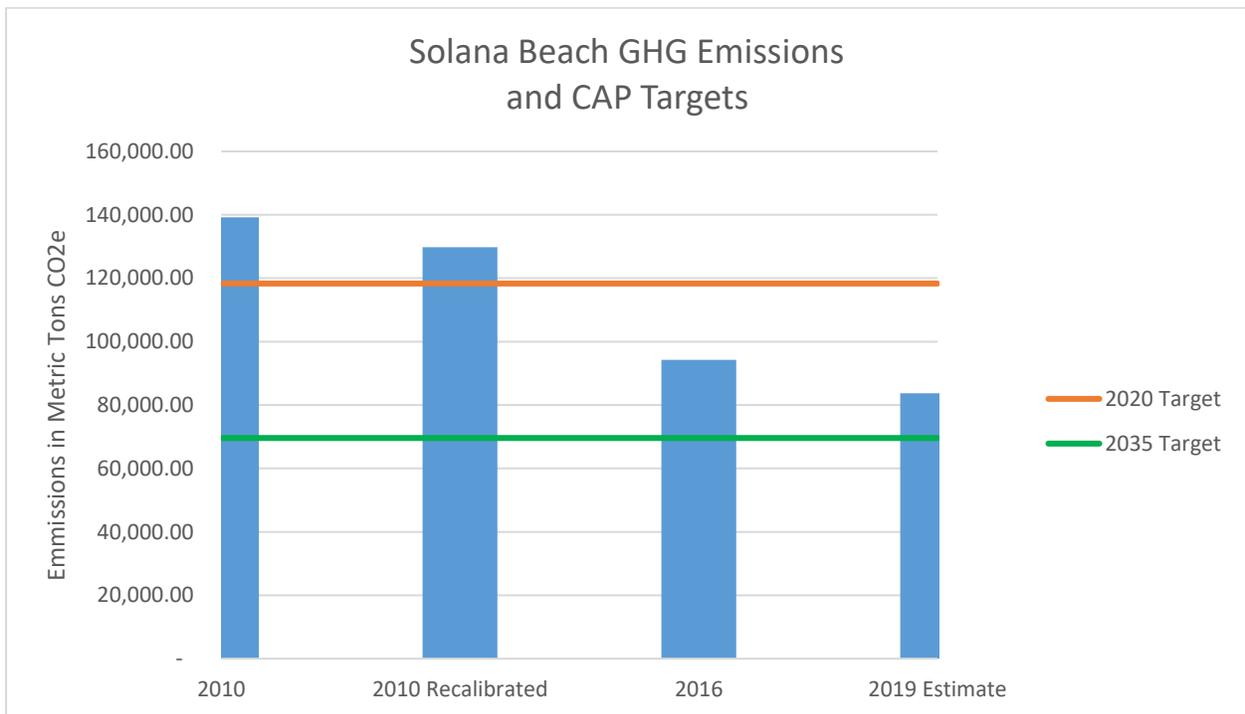
The United Nations issued a 2018 National Climate Assessment, which concluded that global GHG emissions have risen steadily for the past decade, however, local activity in Solana Beach runs counter to this global trend. According to the latest GHG Inventory completed by SANDAG in conjunction with the Energy Policy Initiatives Center (EPIC), which is a nonprofit academic and research center of the USD School of Law, **emissions in the City have dropped below the 2020 target set in the CAP and are trending toward the 2035 goal.**

EPIC completed the inventory based on data available during the 2016 calendar year, so it is important to note that the reductions just mentioned occurred before the City adopted its CAP in 2017 and before the City established Solana Energy Alliance (SEA).

SEA was the first Community Choice Aggregation (CCA) program in the San Diego region. Since its establishment in 2018, SEA has provided the Solana Beach community with additional green energy options that contribute further to GHG reductions and those estimated benefits are included in the 2019 emissions figure below.

Based on the 2010 inventory, in line with the ambitious State GHG reduction goals, the City's CAP set the following emissions reductions targets represented as horizontal lines on the graph below:

- Reaching 15 percent below 2010 levels by 2020 or a reduction of 20,882 MT CO₂e
- Reaching 50 percent below 2010 levels by 2035 or a reduction of 69,608 MT CO₂e



The inventory results look especially promising. However, some further analysis is required since the methods used to develop the 2010 inventory have been updated and modified for the 2016 inventory, such that a direct comparison between these years is not advisable unless the 2010 data is recalibrated using 2016 methodology (recalibrated data is represented in the first column of numbers in the chart below). Although direct comparisons between years may not be precise, it is still possible to observe general trends in the data.

The latest GHG inventory shows a downward trend in GHG emissions and related activities when compared to the inventory completed in 2010. Overall, from 2010-2016:

- ↓ Emissions due to **transportation** decreased;
- ↓ Consumption of **electricity** decreased and the percentage of renewable content increased;
- ↓ The consumption of **natural gas** decreased; and
- ↓ **Wastewater** produced decreased.

Water consumption and the production of solid waste were the two areas that fared a little worse in 2016 with slight increases.

Emissions Category	Recalibrated 2010 (metric tons CO ₂ e)	2016 (metric tons CO ₂ e)	Reductions	Percentage Change
On-Road Transportation	82,193	56,600	25,593	-31%
Electricity	27,182	20,000	7,182	-26%
Natural Gas	15,504	13,100	2,404	-16%
Solid Waste	3,095	3,200	(105)	3%
Water	831	900	(69)	8%
Wastewater	693	600	93	-13%
Total Emissions	129,498	94,400	35,098	Total Reductions

Measure Progress Highlights. Since the 2016 inventory was completed, the City has implemented several measures identified in the CAP that should result in further GHG reductions when the 2018 GHG inventory is completed by SANDAG and EPIC.

An ongoing highlight is the City’s pioneering role with CCA’s in the San Diego region. Following Solana Beach’s lead, other San Diego cities have organized to establish two new regional CCA’s. Solana Beach has been part of this effort and has become part of a North County-based Joint Powers Authority (JPA) CCA known as the Clean Energy Alliance (CEA) comprised of the cities of Solana Beach, Carlsbad and Del Mar.

The City also approved an ambitious single-use plastics ordinance in furtherance of the CAP’s zero-waste measures. The bulk of the ordinance will go into effect on November 1, 2020 and eliminates the sale and distribution of many single-use plastic items like

utensils, straws, and toothpicks; and it eliminates the sale and distribution of plastic bottles on City property. Moreover, restaurants will no longer be able to include food service ware accessories automatically with food orders unless requested by a customer. This should eliminate superfluous condiment packets, utensils, and napkins, among other items, from entering the waste stream and help decrease the amount of solid waste generated.

Planned Actions. The Council has prioritized the following CAP measures into its FY2019-2020 Work Plan:

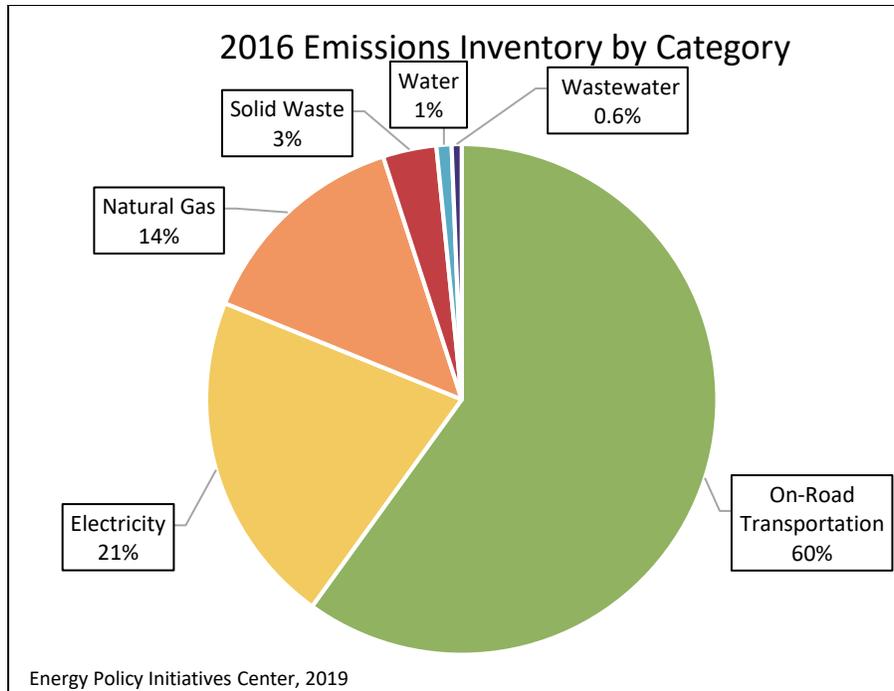
1. Explore implementation of clean energy building code updates/regulations;
2. Increase recycled water infrastructure;
3. Increase and facilitate the use of electric vehicles (EVs) by improving EV infrastructure and exploring incentives;
4. Implement urban tree policies to promote the use of trees to achieve sustainability goals including carbon sequestration; and
5. Implement and monitor the City's new single-use plastics ordinance that will go into effect November 1, 2020.

Revised Adaptation Plan and Climate Justice. In addition to progress on our CAP measures, another noteworthy CAP accomplishment is that the City is amending Chapter 4 of its Climate Action Plan to address vulnerabilities caused by climate change as well as to address climate justice, which the original plan did not address specifically. This revised chapter will serve as the City's Adaptation Plan and includes strategies to address:

- Extreme heat;
- Variable water supplies;
- Increased wildfire risk;
- Coastal erosion and sea level rise;
- Flooding,
- Increased energy system demands;
- Threats to public health and safety;
- Coastal habitat; and
- Climate justice.

This revised Adaptation Plan lists strategies that Council may prioritize and implement in future years.

Challenges Ahead. While the City has made significant gains to reduce GHG emissions, it will be a challenge to accomplish further reductions to achieve the 2035 emissions targets. This is, in large part, because the greatest source of emissions in Solana Beach comes from the transportation sector, which is consistent with California as a whole.



Local jurisdictions have limited authority to regulate the transportation sector directly, so instead of regulations, local governments can focus on actions to incentivize alternative modes of transportation. Residents might feel more impetus to change their method of transportation if the City creates streets and sidewalks that encourage safe biking and walking or if the City ensures a widely available EV charging network and provides favorable parking to encourage the use of electric vehicles. In addition, the City can help educate residents about rideshare and vanpool opportunities. Even if the City builds more bike and pedestrian options or encourages vanpooling, it is not a guarantee that residents will shift to these alternative modes of transportation.

The City is pursuing these sorts of measures nonetheless. However, the best transportation improvements will come from a collaborative regional approach and the City looks forward to collaborating with the rest of the region to facilitate alternative modes of transportation.

A note on Equity and Green Jobs. After adopting SEA, EPIC provided an informal estimate that the CCA would result in an additional reduction of 10,260 MT CO_{2e}. This equates to about 22 percent of the City’s total reduction goals for the electricity sector. This significant shift toward clean energy contributes toward the growth and stability of green sector jobs. It also shifts energy production away from more polluting forms of energy production that disproportionately impact lower-income communities. In addition, the CAP’s revised Chapter 4 includes strategies to address equity issues moving forward.

What Residents Can Do

Transportation:

- *Reduce trips you make alone in your vehicle.*
- *Use public transportation, bike, or walk to your destination.*
- *Carpool or vanpool to work.*
- *Purchase an electric or other clean-burning fuel vehicle.*

Electricity and Natural Gas

- *Conduct an energy audit of your home and perform energy efficiency upgrades.*
- *Install a photovoltaic system to power your home.*
- *Electrify your home by eliminating the use of natural gas.*
- *Install a solar hot water heating system at home.*

Waste and Water

- *Conserve water and install water efficiency upgrades.*
- *Install rainwater capture devices like cisterns on your property.*
- *Actively recycle, compost, and reduce waste overall by choosing reusable products whenever possible.*

Carbon Sequestration

- *Plant trees—preferably ones that are drought tolerant, native, fire safe, and/or offer habitat for native species.*
- *Maintain and care for trees already existing on your property.*

Progress Reported by Measure

The City of Solana Beach CAP is organized in the following manner:

- CAP Implementation is first organized by four **strategies**: 1) Transportation, 2) Renewable Energy and Buildings, 3) Waste and Water, and 4) Carbon Sequestration (Urban Tree Planting);
- Each strategy contains GHG-reducing **measures**. There are 25 measures identified in our CAP.

There are two ways a City can measure its progress toward climate action goals:

1. **Emissions** - by estimating actual GHG emissions impacts; or
2. **Activities** - by monitoring the City's progress on measures or activities expected to reduce GHG emissions.

This section will focus on progress on the 25 measures identified in the four different strategy areas and whether or not any actions have been taken toward implementing those measures. All measures are initiated in the City Manager's office at Council's direction and in coordination with other Departments.

COLOR	DESCRIPTION
	No Significant Progress Made
	Significant Progress Made

Strategy 1: Transportation

Our Transportation strategy contains 11 different measures. If they were all implemented our CAP estimates total GHG reductions of 19,632 MTCOC2e/year.

MEASURE DESCRIPTION	GHG Reductions (MTCO2e/year)
Measure T-1: Increase the Vehicle Miles Traveled by Electric Vehicles and Alternative Fuel Vehicles to 30 percent.	17,495
Performance Measures: <ul style="list-style-type: none"> • Number of public EV chargers = 29 • Number of zero emissions vehicles as a percentage of total vehicles = 2.5 % 	
T-1.1: Support public and private sector provisions of alternative fueling stations in the City and adjacent cities.	*Adopted Ordinance 480 to provide an expedited, streamlined EV charging station permitting process.
T-1.2 Require EV charging stations and EV charger-ready wiring in commercial/multi-family and residential structures.	*Adopted 2019 California Green Building Standards Code which requires EV charging for new construction *Reviewing further reach codes for potential implementation

T-1.3 Collaborate with SANDAG to increase EVs in the region.	* Continued on-going collaboration with SANDAG and other North Coastal Cities through the North County Energy Advisory Coalition (NCEAC) to identify opportunities to promote EV charging infrastructure in the region.
T-1.4 Provide incentives for the City's residents to increase use of EVs.	* Ordinance 480 effective October 2017 * Continued employee Commuter Incentive Program that rewards employees who carpool or take alternative modes of transportation to work, including driving zero emission vehicles as defined by CARB's Clean Vehicle Rebate Project *Collaborated with SDG&E to promote the Power Your Drive to local multi-family properties in the City * Encourage and oftentimes require commercial and mixed-use development projects to install/convert regular parking spaces to EV spaces during project approval stage *Considering adopting voluntary building code standard to require increased EV parking spaces over the numbers required by the State
T-1.5 Explore grant funding for EV chargers	* Collaborated with SDG&E to promote the Power Your Drive to local multi-family properties in the City *Monitoring grant opportunities through the California Electric Vehicle Infrastructure Project (CALeVIP).
T-1.6 Advocate for an EV car sharing fleet network to serve the City.	*Passed a Shared Mobility Ordinance (Ordinance 495) to set the groundwork for a shared mobility pilot program *Bike share vendor may include EV car fleet option
T-1.7 Explore barriers for EV charging for garage-free homes; install charging infrastructure integrated into streetlights; support use of electric bikes.	*City is working with other North Coastal Cities to develop and launch a bike share program. A vendor was chosen and launch was anticipated in the summer of 2019, however issues with bike supply due to China tariff issues has delayed launch. New expected launch date of Summer 2020

MEASURE DESCRIPTION	GHG Reductions (MTCO2e/year)
Measure T-2: Increase commuting by vanpools to 20% of labor force	608
Performance Measures:	
<ul style="list-style-type: none"> Number of SANDAG vanpools to or from City = 0 	

T-2.1: Collaborate with SANDAG to identify the longest commute distances and associated employers to add vanpooling.	No action.
T-2.2 Collaborate with SANDAG on successfully implementing its North Coast TDM Plan (SANDAG 2013) and connect the City's employers and residents to travel-planning resources.	No action.
T-2.3 Review KPIs in SANDAG's TDM Implementation Plan (SANDAG 2012) at least once annually.	Unavailable.
T-2.4 Explore modifying the Solana Beach Municipal Code parking standard requirements to incentivize provision of parking stalls for carpool or vanpool vehicles as a credit toward parking requirements.	No action.
T-2.5 Advocate for Interstate 5 high-occupancy vehicle lanes at least to and from City on-ramps and off-ramps.	*Advocated. HOV lanes constructed in the center lanes of I-5.

MEASURE DESCRIPTION	GHG Reductions (MTCO2e/year)
Measure T-3: Reduce average commuter trip distance by 1 mile	464
Performance Measures:	
<ul style="list-style-type: none"> No performance indicator identified 	
T-3.1: Improve land use and transportation planning to provide a well-connected transportation network. Higher-density and mixed-use neighborhoods with complete street design provide infrastructure for vehicles, bicycles, and pedestrians, allowing a shift from single-occupancy vehicles.	*Higher-density, mixed use projects under review by the City. *Staff currently managing Lomas Santa Fe (LSF) Improvement project that would make LSF more pedestrian and bicycle friendly. LSF is the largest East-West connector in the City
T-3.2 Concentrate commercial, mixed-use, and medium to high density residential development along transit corridors and near activity centers that can be served efficiently by public transit and alternative transportation modes (Policy LU-3.1).	*Projects in progress near transit including the Solana 101 and Solana Highlands projects.
T-3.3 Enable residents to reduce their commutes by allowing and encouraging the creation of live/work units for artists, craftspeople, and other professions, promoting home occupations and telecommuting, and supporting other means of achieving a jobs/housing balance (Policy LU-3.2).	No action.
T-3.4 Identify and prioritize infrastructure improvements needed to support increased	Ongoing.

use of alternatives to private vehicle travel, including transit, bicycle, and pedestrian modes (Policy LU-3.3).	
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MEASURE DESCRIPTION	GHG Reductions (MTCO2e/year)
Measure T-4: Increase commuting by mass transit to 10% of labor force	429
Performance Measures:	
<ul style="list-style-type: none"> Passengers on and off transit per weekday-Bus: 675 (FY16), 541 (FY17) Passengers on and off transit per weekday-Coaster 496 (FY16) 	
T-4.1: Advocate for funding of bus enhancements (i.e., Express [limited stops]) or BRT on the 101 Coast Highway.	No action.
T-4.2 Advocate to NCTD and SANDAG to improve transit service and promote east-west shuttle on Lomas Santa Fe Drive. Support measures that prioritize mass transit over automobile projects.	*Expressed support of 5 Big Moves vision by SANDAG *Bike Share Program EV Shuttle
T-4.3 Collaborate with SANDAG on successfully implementing its North Coast TDM Plan and connect the City's employers and residents to travel-planning resources.	No action.
T-4.4 Improve connectivity (by public transit, bicycle infrastructure, and pedestrian walkways) to the Solana Beach train station for access to commuter rail.	Ongoing projects throughout City including the LSF Improvement Project.
T-4.5 Implement the General Plan's Circulation Element for a "Complete Streets" approach in designing streets, which considers every transportation mode and user for applicable arterial streets and incorporates multi-modal design and principles in all projects.	*Circulation Element implemented *Comprehensive Active Transportation Strategy (CATS) Implementation

MEASURE DESCRIPTION	GHG Reductions (MTCO2e/year)
Measure T-5: Increase preferred parking for EVs and AFVs to 20% of eligible parking spots.	325
Performance Measures:	
<ul style="list-style-type: none"> Data not available at the time of report 	
T-5.1: Identify eligible on-street parking spots and spots in City-owned lots for conversion to preferred parking for EVs and AFVs.	*Ongoing. Electrify America Program.
T-5.2 Explore modifying the Solana Beach Municipal Code parking standard	*Under consideration and review as part of the process in reviewing which California Green

requirements to incentivize parking stalls for EVs and charging stations as a credit toward parking requirements.	Building voluntary measures and/or reach codes to adopt.
T-5.3 Install dedicated stalls for EV parking and charging stations at City facilities.	*Four chargers installed at City Hall. Electrify America Program consideration at the Train Station.
T-5.4 Conduct outreach and education for the City's businesses and commercial property owners to encourage the conversion of private parking spaces to EV and AFV preferred parking.	No action.

MEASURE DESCRIPTION	GHG Reductions (MTCO ₂ e/year)
Measure T-6: Retime four traffic signals.	144
Performance Measures:	
<ul style="list-style-type: none"> Number of signals retimed = 0 	
T-6.1: Conduct a traffic study to identify candidate traffic lights along arterials that could be retimed.	*Signals in City are timed except for ones maintained by CalTrans
T-6.2 Retime identified traffic signals to reduce delays and vehicle idling.	*Signals along Lomas Santa Fe may be retimed as part of the Lomas Santa Fe Improvement project.

MEASURE DESCRIPTION	GHG Reductions (MTCO ₂ e/year)
Measure T-7: Promote telecommuting to achieve 10% participation.	86
Performance Measures:	
<ul style="list-style-type: none"> No performance indicator identified 	
T-7.1: Collaborate with SANDAG on successfully implementing its North Coast TDM Plan (SANDAG 2013) and connect the City's employers and residents to travel-planning resources.	No action.
T-7.2 Review KPIs in SANDAG's TDM Implementation Plan at least once annually.	Not available.
T-7.3 Work with local office-based businesses to encourage telecommuting. Telecommuting should not impede on normal business practices and may not be suitable for businesses that require physical employee presence, such as retail storefronts and warehouses.	No action.
T-7.4 Conduct educational outreach to residents and businesses to disseminate information about resources, such as	No action.

SANDAG's iCommute program, to reduce commuter trips.	
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MEASURE DESCRIPTION	GHG Reductions (MTCO2e/year)
Measure T-8: Convert municipal gasoline-fueled vehicle fleet to EVs to achieve 50% gasoline reduction.	56
Performance Measures: <ul style="list-style-type: none"> Number of City AFV passenger vehicles = 3 of 3 Number of AFV pick-up or fire vehicles = 0 	
T-8.1: Replace the City's municipal fleet with EVs and AFVs to achieve the 50 percent reduction in gasoline consumption from current levels.	*All three of the City municipal cars are Hybrid vehicles. Public Works, Code Enforcement, Parks & Recreation, Fire, and Lifeguard trucks are still gasoline.
T-8.2 Adopt a clean vehicle purchasing policy for new fleet vehicles.	*Researching potential policies now.

MEASURE DESCRIPTION	GHG Reductions (MTCO2e/year)
Measure T-9: Increase commuting by walking to 5% of labor force.	16
Performance Measures: <ul style="list-style-type: none"> No performance indicator measure available 	
T-9.1: Implement the General Plan's Circulation Element for a "Complete Streets" approach in designing streets, which considers every transportation mode and user for applicable arterial streets and incorporates multi-modal design and principles in all projects.	*Complete. *Comprehensive Active Transportation Strategy (CATS) Implementation
T-9.2 Implement the General Plan's Circulation Element and develop and implement a Pedestrian Master Plan that would comprehensively review and plan for pedestrian improvements and identify mobility linkages to promote walkability and safety for pedestrians..	*Complete. *Comprehensive Active Transportation Strategy (CATS) Implementation

MEASURE DESCRIPTION	GHG Reductions (MTCO2e/year)
Measure T-10: Increase commuting by bicycling by achieving approximately 17 bike lane miles.	11
Performance Measures: <ul style="list-style-type: none"> 2 (Class 1 Bicycle Path) 7 (Class 2 Bicycle Lane) 2 (Class 3 Bicycle Route) 11 (Total) 	

T-10.1: Implement the General Plan's Circulation Element and continue to update and implement the City's Bicycle Transportation Plan that identifies optimal bicycle routes to optimal destinations in the City, connects the regional bicycle path network, and prioritizes effective bicycle path routes for implementation.	*Complete. *Comprehensive Active Transportation Strategy (CATS) Implementation
T-10.2 Adopt and implement the Comprehensive Active Transportation Strategy that provides the foundation for improved bicycle and pedestrian facilities within the City and connections to adjacent jurisdictions and greater regional networks over the next 15 years.	*Complete. *Comprehensive Active Transportation Strategy (CATS) Implementation
T-10.3 Make existing bike lanes more user-friendly.	*Ongoing as projects are completed
T-10.4 Increase the number of publicly available bike parking spaces in the City.	*Ongoing as part of development and implementation of bike-share program.

MEASURE DESCRIPTION	GHG Reductions (MTCO2e/year)
Measure T-11: Promote alternative work schedule (4days/week) to achieve participation from 1% of labor force.	9
The City has an alternative work schedule, but performance data for other City employers is not available at the time of this report.	
T-11.1: Identify employers in the City that could be candidates for alternative work schedules.	No action.
T-11.2 Collaborate with SANDAG to encourage alternative work schedules for the City's employers.	No action.
T-11.3 Conduct surveys for City residents to identify opportunities for alternative work schedules for commuters that work outside the City.	No action.
T-11.4 Collaborate with SANDAG on successfully implementing its North Coast TDM Plan and connect the City's employers and residents to travel-planning resources.	No action.
T-11.5 Review KPIs in SANDAG's TDM Implementation Plan at least once annually.	Not available.
T-11.6 Conduct educational outreach to residents and businesses to disseminate information about resources such as SANDAG's iCommute program to reduce commuter trips.	No action.

Strategy 2: Electricity and Natural Gas Measures

Our Electricity and Natural Gas strategy contains 8 different measures. If they were all implemented our CAP estimates total GHG reductions of 21,214 MT CO₂e/year. Here are some of the highlighted actions taken to date to implement these measures:

MEASURE DESCRIPTION	GHG Reductions (MTCO ₂ e/year)
Measure E-1: Implement a Community Choice Aggregation program, and provide 100 renewable energy by 2035.	10,466
CCA Implemented. 50% renewable and 75% carbon-free energy in 2019	
E-1.1: Continue with implementation of a CCA to achieve the 100 percent renewable energy goal, based on the technical analysis conducted previously.	*CCA implemented only including Solana Beach initially *50% renewable and 75% carbon free
E-1.2 Explore opportunities to collaborate with other cities in the region for a regional CCA for San Diego County.	*Complete. Creating a regional CCA with Carlsbad and Del Mar called the Clean Energy Alliance (CEA)
E-1.3 Explore opportunities to source renewable energy – whether via CCA or otherwise – from our region.	*Complete. Being done through CCA
E-1.4 Support statewide energy decarbonization, renewable energy, and similar initiatives and consider supporting the State call for federal carbon fee and dividend legislation, pending Council consideration and approval.	No action.

MEASURE DESCRIPTION	GHG Reductions (MTCO ₂ e/year)
Measure E-2: Achieve 10.8 MW residential rooftop solar photovoltaic systems.	5,858
Citywide PV capacity - all systems 2.6 MW (2016) 3.4 MW (2017) 4.0 MW (2018)	
E-2.1: Work with SDG&E and local non-profit organizations, or through the City's CCA, to reach 100 percent of households annually with targeted educational and marketing materials (e.g., website or e-blast).	No action.
E-2.2 Continue to provide expedited permitting incentives for installation of rooftop solar PV systems on residential buildings.	*SBMC 15.52 provides an expedited, streamlined solar permitting process.

E-2.3 Conduct educational outreach to residents about incentives available for installation of PV systems.	No action.
E-2.4 Explore the development of an ordinance requiring installation of solar PV systems for major remodel/renovation projects.	*In process as part of the reach code process to require solar PV for major remodel/renovation projects.

MEASURE DESCRIPTION	GHG Reductions (MTCO2e/year)
Measure E-3: Achieve 2 MW commercial rooftop solar photovoltaic systems.	1085
Citywide PV capacity - all systems 2.6 MW (2016) 3.4 MW (2017) 4.0 MW (2018)	
T-3.1: Work with SDG&E, or through a CCA, to reach 100 percent of businesses and schools annually with targeted educational and marketing materials (e.g., website or e-blast).	*All public schools with Solana Beach have installed solar photovoltaic systems.
T-3.2 Continue to provide expedited permitting incentives for installation of rooftop solar PV systems on commercial buildings.	*SBMC 15.52 provides an expedited, streamlined solar permitting process.
T-3.3 Conduct educational outreach to local businesses about incentives available for installation of PV systems.	No action.
T-3.4 Through the City's CCA, support the development of community solar projects that benefit all residents, including lower-income communities.	*In process of developing new JPA for CCA and projects may be identified by JPA.
T-3.5 Explore the development of a mandatory ordinance requiring "solar ready" or the installation of solar PV systems for new commercial development and major remodel/renovation projects, pending Council consideration and approval.	*In process of researching the feasibility to pursue a reach code to require solar PV on commercial development and major remodel/renovation projects.
T-3.6 Establish policies, programs, and ordinances that promote the siting of new onsite PV generation and energy storage, pending Council consideration and approval.	No action.

MEASURE DESCRIPTION	GHG Reductions (MTCO2e/year)
Measure E-4: Install solar hot water heating at 20 percent of existing commercial spaces.	2,811
Performance Measures:	

Data not available at the time of report	
E-4.1: Work with SDG&E, or through a CCA, to reach 100 percent of businesses annually with targeted educational and marketing materials (e.g., website or e-blast).	No action.
E-4.2 Promote the installation of SHWs by publicizing incentives, rebates, and financing options, such as PACE financing, CSIs, or CSI-Thermal Program, for existing commercial buildings by posting on the City's website or e-blast.	No action.
E-4.3 Explore the development of a mandatory ordinance requiring installation of SHWs for major remodel/renovation projects.	*In the process of researching the feasibility of a solar hot water heating reach code for major remodel/renovation projects.

MEASURE DESCRIPTION	GHG Reductions (MTCO2e/year)
Measure E-5: Install solar hot water heating at 25 percent of new homes and home retrofits.	539
Performance Measures: Data not available at the time of report	
E-5.1: Work with SDG&E, or through a CCA, to reach 100 percent of households annually with targeted educational and marketing materials (e.g., website or e-blast).	No action.
E-5.2 Promote the installation of SHWs by publicizing incentives, rebates, and financing options, such as PACE financing, CSI, or CSI-Thermal Program, for existing residential buildings by posting on the City's website or e-blast.	No action.
E-5.3 Explore the development of an ordinance requiring installation of SHWs for new homes and major remodel/renovation projects.	*In the process of researching the feasibility of a solar hot water heating reach code for major remodel/renovation projects.

MEASURE DESCRIPTION	GHG Reductions (MTCO2e/year)
Measure E-6: Reduce in non-space/water heating residential natural gas use by 15%.	359
Performance Measures: Data not available at the time of report	
E-6.1: Provide incentives to reduce 15 percent of non-space/water heating natural gas use, such as dryers, ovens, and cooktops, for new and existing residential buildings by 2035.	*Exploring electrification building code measures.

E-6.2 Provide expedited permitting incentives for replacement of natural gas space and water heaters.	No action.
E-6.3 Explore the development of an ordinance requiring non-natural gas appliances in new residential development.	*Researching electrification building code measures.

MEASURE DESCRIPTION	GHG Reductions (MTCO2e/year)
Measure E-7: Promote residential energy efficiency retrofits to achieve 15% reduction.	59
Performance Measures: Data not available at the time of report	
E-7.1: Provide incentives to reduce 15 percent of non-space/water heating natural gas use, such as dryers, ovens, and cooktops, for new and existing residential buildings by 2035.	*Researching electrification building code measures.
E-7.2 Provide expedited permitting incentives for replacement of natural gas space and water heaters.	No action.

MEASURE DESCRIPTION	GHG Reductions (MTCO2e/year)
Measure E-8: Promote commercial energy efficiency retrofits to achieve 15% reduction.	37
Performance Measures: Data not available at the time of report	
E-8.1: Work with SDG&E, or through a CCA, to reach 100 percent of businesses annually with targeted educational and marketing materials (e.g., website or e-blast).	No action.
E-8.2 Publicize incentives, rebates, and financing options, such as PACE Financing, CSI, or CSI-Thermal Program, for existing commercial buildings by posting on the City's website or e-blast.	No action.
E-8.3 Increase use of solar technology on municipal-owned buildings.	No action.
E-8.4 Develop a ZNE policy for municipal-owned buildings.	*Exploring development of RFP to perform updated analysis
E-8.5 Prepare and adopt an energy efficiency and reduction plan for municipal facilities.	No action.
E-8.6 Explore City government carbon accountability at the departmental level.	No action.

Strategy 3: Waste and Water Measures

Our Electricity and Natural Gas strategy contains 5 different measures. If they were all implemented our CAP estimates total GHG reductions of 4,184 MTCOC2e/year.

MEASURE DESCRIPTION	GHG Reductions (MTCO2e/year)
Measure W-1: Divert 90% of waste from landfills and capture 85% of landfill gas emissions.	3,389
Performance Measures: Data not available at the time of report	
W-1.1: Adopt a policy that requires all City-sponsored events (and City-funded non-profit events) to be zero-waste (e.g., use recyclable and compostable materials and provide corresponding waste receptacles), and promote zero-waste events to community organizations and businesses.	*Adopted single-use plastics ordinance to ensure materials are recyclable and compostable, but have not mandated zero-waste events.
W-1.2 Adopt a policy that requires a minimum of 75 percent of construction and demolition waste be recycled or re-used.	*Adopting CA voluntary measure to increase requirement to 65%. Lemon Grove facility generally achieves a 68% diversion rate for mixed C&D. San Marcos facility which gets a cleaner C&D mix achieves an 89% diversion rate.
W-1.3 Develop an Organics Diversion Program to eliminate organic waste from landfills.	*Will take effect when EDCO's anerobic digester goes online *Actions planned as part of AB 1383 compliance
W-1.4 Start and implement a pilot education program on organics recycling.	No action.
W-1.5 Develop a food waste prevention plan for restaurants in the City and collaborate with other municipalities to develop a regional plan.	*Provided info to map food waste generation into a regional GIS system in collaboration with the San Diego Food System Alliance and GIS students at San Marcos.
W-1.6 Explore City government carbon accountability at the departmental level.	No action.
W-1.6 Provide public education to promote textile recycling (e.g., mattresses, carpets, clothing, and other textiles).	No action.
W-1.7 Advocate to the agencies that own and operate landfills serving the City to encourage increased methane capture at the landfills.	*EDCO installing anaerobic digester to capture methane to power their trash trucks.
W-1.8 Explore creation of regional compost facility with other municipalities.	No action.
W-1.9 Expand opportunities for food production and neighborhood-scale distribution, including community gardens, especially for low-income communities.	No action.

W-1.10 Develop and implement a City Green Purchasing Plan and set targets to reduce carbon emissions associated with purchased goods and services.	No action.
W-1.11 Explore and support development of local and regional biogas resources, including anaerobic digestion of food scraps.	*EDCO installing anaerobic digester to capture methane to power their trash trucks.

MEASURE DESCRIPTION:	GHG Reductions (MTCO2e/year)
Measure W-2: Implementation of existing water rate and billing structure.	407
Complete	
W-2.1: Implementation of existing water rate and billing structure.	*No City actions, as reductions are already occurring under existing rate structure.

MEASURE DESCRIPTION	GHG Reductions (MTCO2e/year)
Measure W-3: Expand recycled water program to reduce potable water consumption by 10%.	292
Performance Measures: Data not available at the time of report	
W-3.1: Expand the current recycled water program and purple pipe infrastructure.	* In the 2019-2020 Work Plan

MEASURE DESCRIPTION	GHG Reductions (MTCO2e/year)
Measure W-4: Capture 100 percent of emissions from wastewater treatment	66
Performance Measures: Data not available at the time of report	
W-4.1: Advocate to the San Elijo Wastewater Treatment Plant for 100 percent methane capture.	No action.

MEASURE DESCRIPTION	GHG Reductions (MTCO2e/year)
Measure W-5: Water conservation	66
Performance Measures: No performance indicator identified	

W-5.1: Implement PACE Programs in the City and continue to assess other efficiency financing tools for possible use in the community.	No action.
W-5.2: Educate property owners about eligibility for PACE financing.	No action.
W-5.3: Actively promote water efficiency rebate programs offered by San Diego County Water Authority and Metropolitan Water District.	*Links on website.
W-5.4: Maintain a water waste reporting public education and enforcement program to repair leaks and decrease over-irrigation.	*Link to reporting form on website and app available to report water waste.
W-5.5: Promote programs/resources to help customers convert to more water-efficient landscaping.	*Link on the Community Development page of the City website.
W-5.6: Encourage greywater use for landscaping.	No action.
W-5.7: Provide incentives for installation of rainwater catchment systems on roofs to use rainwater generated.	No action.
W-5.8: Work with the Santa Fe Irrigation District to track per capita water consumption in the City separately.	No action.
W-5.9: Support water rate structures that provide incentives to conserve and reuse water, including greywater use.	*Water rates set by SFID.
W-5.10: Continue to implement the City's outdoor landscaping ordinance.	*Ongoing

Strategy 4: Carbon Sequestration (Urban Tree Planting)

Our Carbon Sequestration strategy contains only one measure, which is to have 30 percent of the developed areas covered by an urban tree canopy by 2035. If implemented our CAP estimates total GHG reductions of 986 MTCOC2e/year. Currently, our City's tree canopy covers 22 percent of the area.

MEASURE DESCRIPTION	GHG Reductions (MTCO2e/year)
Measure U-1: The City will achieve 30 percent of developed areas covered by urban tree canopy (Urban Tree Planting Program).	986

Performance Measures: Data not available at the time of report	
U-1.1: Implement the Urban Tree Planting Program to achieve the City's goal to cover 2,107 acres of developed areas with urban tree canopy by 2035. The program would require new development to plant trees to achieve an equivalent canopy coverage. Furthermore, the City would plant trees at City-owned properties and public areas to achieve the same canopy coverage. Public areas would cover open space, streets, and parking lots.	*Incorporated into 2019-2020 work plan
U-1.2: Educate and encourage residents and businesses to maintain and care for existing trees and plant new trees.	*Agreement with Lumbercycle to assess the eco-benefits of municipal trees and identify list of trees to plant to increase eco-benefits
U-1.3: Continue to research and monitor developments of Blue Carbon for sequestration.	No action.