May 2020

CITY OF EL CAJON

Sustainability Initiative

Policies to Reduce Greenhouse Gas Emissions

PREPARED BY:
The City of El Cajon

IN CONSULTATION WITH:
Ascent Environmental, Inc.
Energy Policy Initiatives Center

CITY OF EL CAJON SUSTAINABILITY INITIATIVE

POLICIES TO REDUCE GREENHOUSE GAS EMISSIONS

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May 2020

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LIST OF ABBREVIATIONS

AB	Assembly Bill
BAU	business-as-usual
BEV	battery electric vehicles
CAA	Clean Air Act
CAFE	Corporate Average Fuel Economy
CALGreen	California Green Building Standards Code
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCA	Community Choice Aggregation
CCI	California Climate Investments
CDBG	Community Development Block Grant
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFC	chlorofluorocarbon
CH_4	methane
City	City of El Cajon
CO_2	carbon dioxide
CVUSD	Cajon Valley Union School District
DOC	Department of Conservation
EEM	Energy Efficient Mortgages
EO	Executive Order
EPIC	Energy Policy Initiatives Center
EV	electric vehicle
EVCS	electric vehicle charging stations
F-gases	Fluorinated gases
FCEV	fuel-cell electric vehicles
GHG	greenhouse gas
GUHSD	Grossmont Union High School District
GWP	global warming potential
HERO	Home Energy Renovation Opportunity
HFC	hydrofluorocarbon
HPS	high pressure sodium
HUD	U.S. Department of Housing and Urban Development

IPCC	Intergovernmental Panel on Climate Change
kW	kilowatt
kWh	kilowatt hour
LED	light-emitting diode
Metro JPA	Metro Wastewater Joint Powers Authority
MGD	million gallons per day
MPOs	Metropolitan Planning Organizations
$MTCO_2e$	metric tons of carbon dioxide equivalent
MTS	Metropolitan Transit System
MW	megawatts
N_2O	nitrous oxide
NewcomersSD	Newcomers Support and Development
O_3	ozone
OBF	On-Bill Financing
OPR	Office of Planning and Research
PACE	Property Assessed Clean Energy
PFC	perfluorocarbon
PHEV	plug-in electric hybrids
PPA	Power Purchase Agreements
PV	photovoltaic
RPS	Renewables Portfolio Standard
RTP	Regional Transportation Plan
SANDAG	San Diego Association of Governments
SB	Senate Bill
SCS	Sustainable Communities Strategy
SDG&E	San Diego Gas and Electric
SF_6	Sulfur hexafluoride
SGC	Strategic Growth Council
SLCP	Short-lived climate pollutant
TDM	Transportation Demand Management
TDSP	Transit District Specific Plan
VMT	vehicle miles traveled

EL CAJON
The Valley of Opportunity
Incorporated 1912

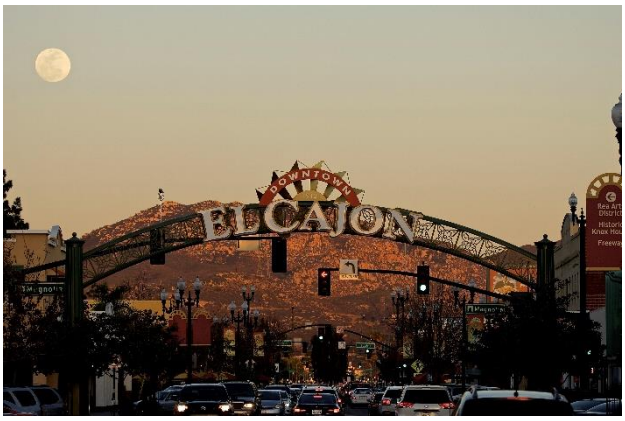
Executive Summary

EXECUTIVE SUMMARY

Climate change is a global issue—members of society, including local governments, play a critical role in reducing Greenhouse Gas (GHG) emissions in their communities. This Sustainability Initiative (SI) provides the City of El Cajon (City) with a comprehensive framework to address the challenges of climate change by reducing GHG emissions locally, finding ways to better manage natural resources, building resiliency over time, and creating community-wide change. The City is committed to being a responsible steward by reducing GHG emissions at the community level. The SI puts in place a number of locally-based strategies, measures, and actions to reduce community-wide GHG emissions.

The SI aims to establish GHG emissions reduction targets that are in line with State goals and identify achievable actions to reduce GHG emissions based on a baseline year of 2012.

Scientific evidence shows that the Earth's climate is experiencing a warming trend. The warming, as the results of GHGs in the atmosphere, is known as global climate change. As California continues to experience historic trends of rising average temperatures, warmer storms, and higher sea levels, there is evidence that the effects of global climate change are already occurring and that reductions in GHG emissions are needed to prevent the most catastrophic effects of climate change.



Source: City of El Cajon

The State has also taken several steps to reduce GHG emissions and respond to the threat of global climate change. In 2006, the California Global Warming Solutions Act (Assembly Bill [AB] 32) established the State's first target to reduce GHG emissions, which created a goal of lowering emissions to 1990 levels by 2020. According to the California Air Resources Board (CARB), California has been making steady progress and is currently on track to achieve the 2020 target. In 2016, Senate Bill (SB) 32 was signed into law, which codified into statute the mid-term GHG reduction target of 40 percent below 1990 levels by 2030, established by Executive Order (EO) B-30-15. The new 2030 target places California on a trajectory towards meeting its longer-term goal, which is to bring emissions down to 80 percent below 1990 levels by 2050.

Recent City efforts to reduce GHG emissions, reduce energy costs, and improve energy resilience:

- Solar energy generation
- Electric Vehicle (EV) charging stations
- Water-efficient landscaping
- Street-light light-emitting diode (LED) retrofits

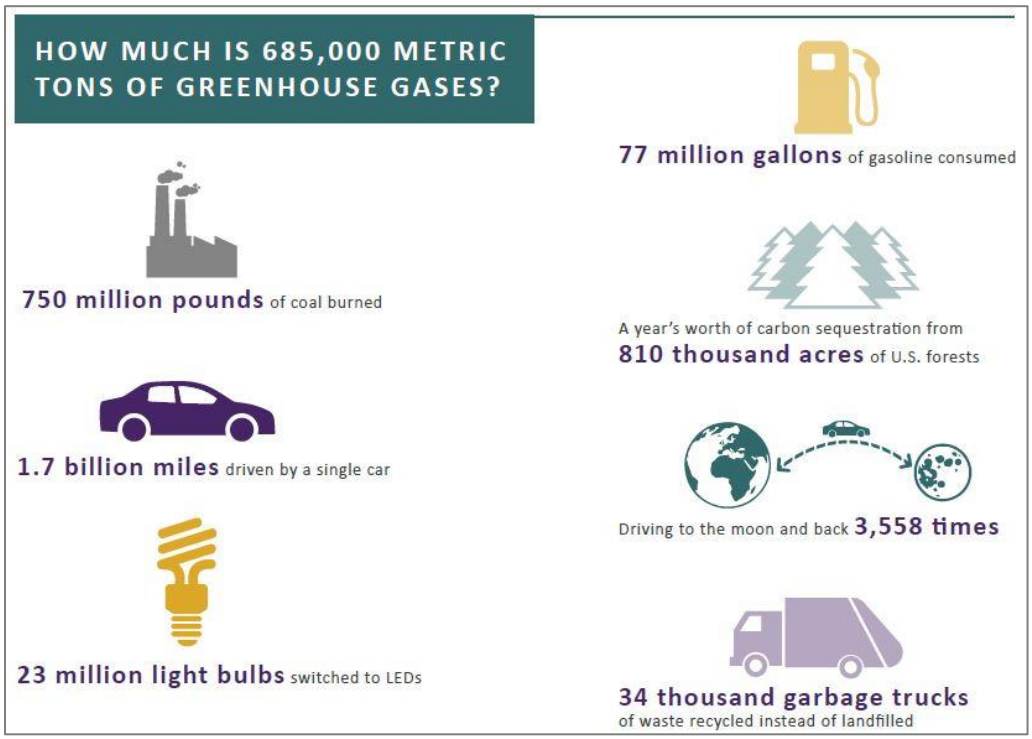
Over the last decade, the City has taken steps to address climate change by reducing GHG emissions, both in the City's operations as well as activities in the broader community. This SI is based on a community GHG emissions inventory starting in 2012, which is also known as the baseline year. The City has already begun experiencing reductions to citywide GHG emissions and is on track to meet and exceed its 2020 GHG reduction goal. Additional efforts are required to meet future reduction goals. It is the City's intent to assist in reducing GHG emissions on a regional scale by partnering with other local and regional agencies to formulate reduction strategies that meet the broader community's needs.

Baseline GHG Inventory

2012 Citywide Emissions sources included:

1. On-Road Transportation (52%)
2. Electricity (31%)
3. Natural Gas (13%)
4. Off-Road Transportation (3%)
5. Solid Waste (2%)
6. Water (1%)

A GHG inventory is a snapshot of the emissions associated with a community's various activities in a given year. A baseline GHG emissions inventory was prepared for 2012; the inventory is consistent with guidance in CARB's 2017 Climate Change Scoping Plan (2017 Scoping Plan) and uses the same base year as SANDAG's Series 13 Regional Growth Forecast. In 2012, community activities in the City accounted for 685,000 metric tons of carbon dioxide equivalent ($MTCO_2e$), which, as shown in Figure ES-2, is equivalent to driving 1.7 billion miles or burning 750 million pounds of coal. On-road transportation sources (e.g., vehicular gasoline and diesel consumption) and energy sources (e.g., electricity and natural gas consumption in buildings) accounted for a majority (52 and 44 percent, respectively) of the citywide baseline emissions. The 2012 baseline was used to set targets for emissions reductions based on State goals. The baseline inventory is described in detail in Chapter 2.



Source: Ascent Environmental 2019

Figure ES-1 Community-Wide Greenhouse Gas Generation Equivalency

Projections and Reduction Goals

Citywide emissions projections were modeled based on a continuation of current trends in activity, population and job growth, and already adopted legislative actions that could affect future emission sources. This is referred to as Business As Usual (BAU). The City would experience a decrease in emissions through 2020 based on trend data starting in 2012. This decrease is primarily due to increases in vehicle efficiency as older vehicles in the region get replaced, increased amounts of energy generated in the City by photovoltaic (PV) systems (solar panels), and water efficiency efforts resulting in reduced city-wide water consumption. GHG emissions would increase after 2020 through 2030 based on emissions projections because of continued population and job growth in the City, but would not increase to a level greater than the 2012 baseline. City emissions would be 14 percent below 2012 baseline emissions in 2020, and 13 percent below 2012 baseline emissions in 2030 based on projections.

City emissions are projected to decrease through 2020; after 2020 emissions will begin to increase unless further action is taken by the City.

Federal and State actions that are planned to take place in the future would further reduce the City's projected emissions when applied across the various GHG emissions sectors. The City's emissions would be 19 percent below 2012 baseline emissions in 2020 and 37 percent below 2012 baseline emissions in 2030 when the effect of these future Federal and State actions are accounted for in the model. This is represented as the legislatively-adjusted BAU.

Consistent with CARB's recommendations for community-wide targets, reduction goals were derived using a mass emissions approach. These goals, to be achieved through the implementation of the SI, are to reduce citywide GHG emissions by four percent below 2012 levels by 2020 and by 42 percent below 2012 levels by 2030.

A summary of the projections and goals is shown below in Table ES-1. Further descriptions of the methodology used for calculating each projection and City reductions is provided in Chapter 2.

Table ES-1 GHG Emissions Projections and Goals

Projection	2012 Baseline Emissions ($MTCO_2e$)	2020		2030	
		Total Emissions ($MTCO_2e$)	Change from 2012 Baseline (%)	Total Emissions ($MTCO_2e$)	Change from 2012 Baseline (%)
BAU	685,000	586,000	-14	593,000	-13
Legislatively-Adjusted BAU	--	558,000	-19	430,000	-37
Based on Reduction Goals	--	659,000	-4	397,000	-40

Notes: BAU = Business-as-usual; GHG = greenhouse gas; $MTCO_2e$ = metric tons of carbon dioxide equivalent

Source: EPIC 2018.

Reduction Strategies, Measures, and Actions

The City would meet its 2020 emissions reduction goal by continuing current actions and through the implementation of federal and State legislative actions. However, to meet the City's 2030 reduction goal, additional City actions are needed. The SI identifies numerous strategies, measures, and actions to reduce GHG emissions citywide from a variety of emissions sources. In total, the City will implement eight strategies, listed below in Table ES-2, with measures and actions associated with each.

Table ES-2 Summary of Greenhouse Gas Reduction Strategies

Strategy	Description
Strategy 1	Increase the Use of Zero-Emission/Alternative Fuel Vehicles
Strategy 2	Reduce Fuel Use
Strategy 3	Reduce Vehicle Miles Traveled
Strategy 4	Increase Building Energy Efficiency
Strategy 5	Increase Renewable and Zero-Carbon Energy
Strategy 6	Increase Water Efficiency
Strategy 7	Reduce and Recycle Solid Waste
Strategy 8	Carbon Sequestration

Notes: Source: EPIC 2018.

Co-benefits, which are additional positive benefits that result from reduction of GHGs and strategies, are identified in the SI.

Detailed measures and actions were identified within each strategy by assessing the feasibility of implementation, expanding existing programs or policies, considering community feedback, and the potential for co-benefits such as improved air quality and community resiliency through more locally-sourced energy. Where strategies represent the high-level plans implemented to achieve reductions in each emissions category, measures provide objectives that the City will strive to achieve under each strategy. Actions identified within each measure provide direct and measurable emissions reductions through implementation of specific programs, policies, or projects. Some of the major actions resulting in the greatest citywide emissions reductions include:

Action T-2.2: Incentivize the Installation of Electric Vehicle Charging Stations and Action T-2.3: Increase Clean Air Vehicle Preferential Parking Spaces. Together, these two actions would result in the installation of over 200 new electric vehicle (EV) charging stations at commercial and residential developments and reduce the parking required citywide. These actions would result in an overall emissions reduction of 1,200 $MTCO_2e$ by 2030.

Action T-4.1: Increase Renewable and Alternative Fuel in Construction Equipment. This action would reduce construction emissions by 10 percent, resulting in an emissions reduction of 1,300 $MTCO_2e$ by 2030.

Action RE-1.1: Incentivize Photovoltaic Installation on Commercial Buildings and Action RE-1.2: Install Photovoltaic Systems at School Sites. These actions will increase electricity generated through renewable sources for commercial and education buildings citywide and reduce local consumption of electricity generated by non-renewable/imported sources. Together, these actions would result in a reduction of 2,300 $MTCO_2e$ by 2030.

Action RE-2.1: Conduct Research and Present to City Council Options to Increase Renewable and Zero-Carbon Electricity. The City will initiate research on methods to increase the supply of renewable and zero-carbon electricity to 80 percent, resulting in an emissions reduction of 14,900 $MTCO_2e$ by 2030.

Action SW-1.1: Implement Solid Waste Reduction and Recycling Targets. The City will achieve and maintain a 75 percent waste diversion rate by 2030, resulting in a reduction of 7,800 $MTCO_2e$.

A detailed description of each of the eight strategies, 15 measures, and 28 actions, along with their associated potential GHG emissions reductions, is included in Chapter 3.

Implementation and Monitoring

Implementation and monitoring mechanisms are identified in the SI to ensure that all strategies, measures, and actions are implemented, and reduction goals achieved. Implementation will require ongoing management, oversight, and collaboration, ensuring that actions translate to on-the-ground results and reductions in GHG emissions. Successful implementation requires investment, long-term commitment, and widespread participation of the community.

Monitoring actions and measures is an important part of ensuring the success in meeting the City's 2030 goal. The City will monitor progress towards the 2030 goal by participating in SANDAG's biennial update of the local GHG inventory. City staff will provide periodic updates to the City Council on implementation and will update the SI as needed to ensure actions remain implementable, adjusting actions based on changing conditions or demands, and incorporating new technology.

Ongoing partnerships between community residents, businesses, property owners, the City, and other agencies and organizations in the region are essential for successful implementation. On a community-wide level, individuals and businesses can play an important role in reducing GHG emissions by changing habits to consume less energy, producing less waste, or driving less. A detailed description of the City's implementation and monitoring efforts and the importance of continued community engagement is outlined in Chapter 4.

CHAPTER 2

Greenhouse Gas Emissions Inventory, Projections, and Targets

This chapter summarizes the accounting of greenhouse gas (GHG) emissions from activities within the City of El Cajon (City). It includes a discussion of the primary sources and annual levels of GHG emissions for the 2012 baseline year, describes the likely trends and projections if emissions are not reduced for the years 2020 and 2030, and sets a path forward to reduce emissions by establishing targets for the years 2020 and 2030.

2.1 Purpose of a Greenhouse Gas Emissions Inventory

Preparing a GHG emissions inventory is an important first step in the planning process and in reducing local contributions to global GHG emissions. A GHG inventory is a snapshot of the emissions associated with a community's various activities in a given year. It also provides a baseline that is used to project emissions trends and to develop reduction targets that are consistent with State mandates. The inventory serves as the foundation for the strategies, measures, and actions outlined in this Sustainability Initiative (SI) that the City will implement to reduce GHG emissions and meet targets for the years 2020 and 2030.

What is the purpose of developing a GHG emissions inventory?

- To assist in projecting emissions into the future;
- To develop reduction targets the City will strive to meet; and
- To guide the development, evaluation, and implementation strategies to achieve these targets.

Assembly Bill (AB) 32, Senate Bill (SB) 32, and Executive Orders (EOs) B-30-15 and S-3-05 use 1990 levels as a benchmark to identify statewide reduction targets. Because the City's 1990 emissions level are not available, proportional reduction targets for the City's SI were developed and an inventory baseline prepared for 2012. This is consistent with guidance provided by California Air and Resources Board's (CARB's) 2017 Climate Change Scoping Plan (2017 Scoping Plan) and is the same base year as the San Diego Association of Governments' (SANDAG's) Series 13 Regional Growth Forecast.

After the SI is adopted, SANDAG will prepare updated GHG emissions inventories that will be compared to the 2012 baseline inventory and be used to track emissions reduction progress from measure implementation. The GHG emissions inventory plays a role in ensuring that targets are met. Chapter 4 outlines the implementation strategy for the SI.

Source: City of El Cajon

2.2 Baseline Inventory

When developing an inventory, it is important to understand the sources and amounts of GHG emissions generated from activities within the City. The 2012 GHG emissions inventory provides an estimate of a defined set of gases (e.g., carbon dioxide [CO_2], methane [CH_4], nitrous oxide [N_2O]) that contribute to climate change. The inventory includes GHGs that are generated from a defined set of sectors that can be readily monitored and reduced through City actions.

The City's 2012 baseline inventory of GHG emissions is broken down into seven sectors, shown in Table 2-1 in order of total contribution to citywide GHG emissions.

Source: Evgeny Yorobe Photography

Table 2-1 City of El Cajon Emissions Sectors

Emissions Sector	Description
On-Road Transportation	On-road transportation emissions associated with gasoline and diesel consumption from motor vehicles on local and regional road ways.
Electricity	Building energy use emissions associated with electricity in residential and non-residential buildings.
Natural Gas	Building energy use emissions associated with combustion of natural gas in residential and non-residential buildings.
Off-Road Transportation	Off-road transportation emissions associated with gasoline and diesel fuel use for from recreational vehicles, construction equipment, and residential and commercial equipment.
Solid Waste	Waste emissions associated with waste generated by residents and businesses of the City and disposal of mixed and organic waste in landfills.
Water	Emissions associated with the water supplied, conveyed, treated and distributed to residents and businesses within the City.
Wastewater	Wastewater treatment fugitive and process emissions consisting of GHGs from combustion of anaerobic digestor gas and operational fossil fuels.

Notes: GHG = greenhouse gas

Source: EPIC 2018.

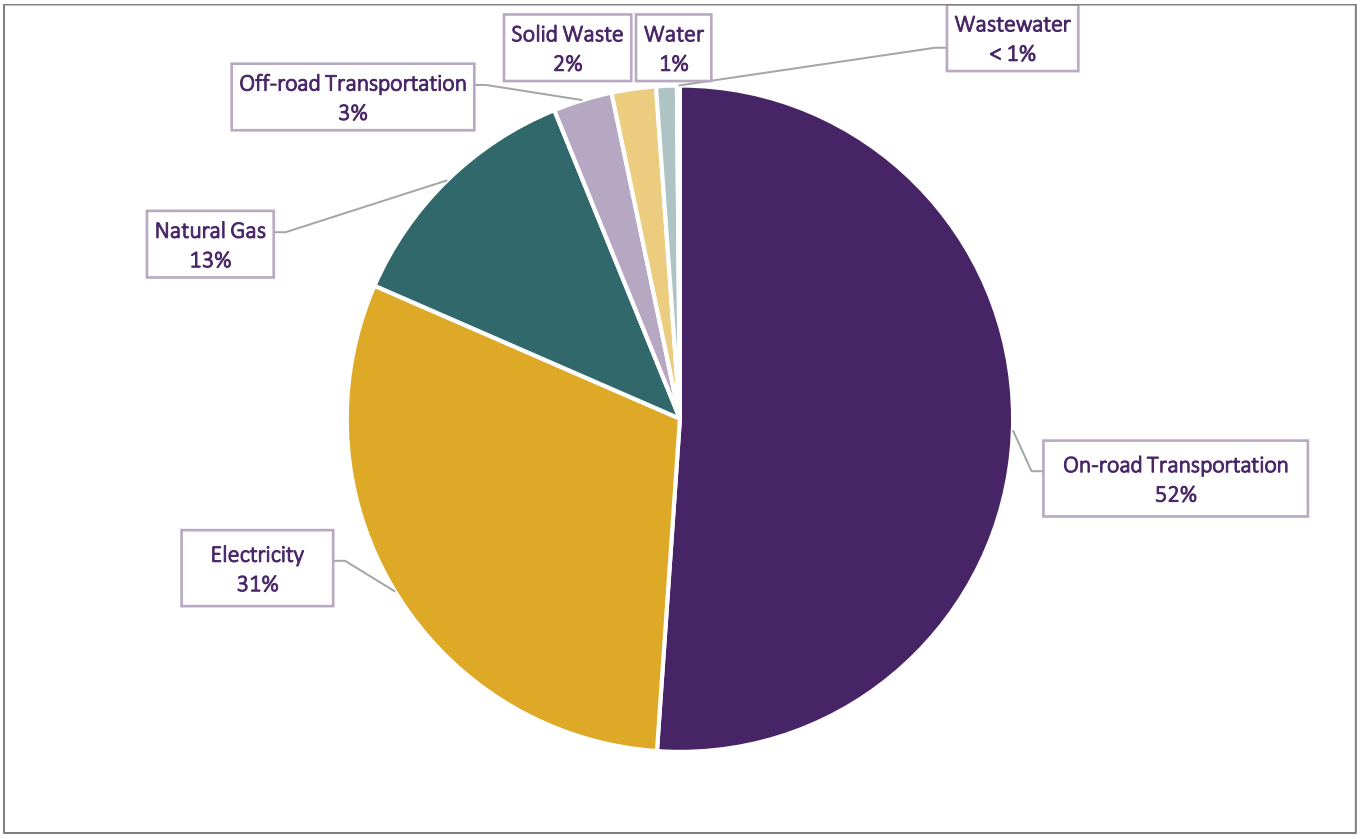
Reducing GHG emissions requires partnerships and individual efforts to achieve success. This is because residents, businesses, and organizations in the City make daily choices that produce GHG emissions that extend beyond the influence of the City and this SI. While the measures included in the SI are focused primarily on the City's ability to reduce inventoried emissions, individuals have the ability to reduce their own GHG emissions from other actions. Climate-friendly, individual choices can include buying locally-grown food or locally-manufactured products, bicycling or walking as an alternative to driving, and reducing the amount of water used in homes. The combination of these actions and the efforts taken by the City significantly reduce the local carbon footprint.

2.2.1 2012 Baseline Emissions

The baseline inventory measures the total of emissions from three primary GHGs, CO_2, CH_4, and N_2O. These gases are converted to the same base measure of CO_2 to report emissions in terms of carbon dioxide equivalent (CO_2e). This entails multiplying non-CO_2 gases by their global warming potential (GWP). This conversion allows consideration of all the gases in comparable terms and makes it easier to communicate how various sources and types of GHG emissions contribute to global warming. A metric ton of CO_2e ($MTCO_2e$) is the standard measurement of the amount of GHG emissions produced and released into the atmosphere.

CO_2e is measured by translating each GHG to an equivalent volume of CO_2 using its relative global warming potential (Intergovernmental Panel on Climate Change [IPCC] 2007).

Figure 2-1 shows a breakdown of the City's 2012 baseline GHG emissions by sector. In 2012, community activities in the City accounted for 685,000 $MTCO_2e$. The main contributor to GHG emissions in the City is the On-Road Transportation sector which accounts for 52 percent of the total emissions in 2012. On-road transportation activities are primarily related to vehicular gasoline and diesel consumption. Emissions associated with this sector were calculated based on estimated vehicle miles traveled (VMT) for all vehicles traveling to/from and within the City. Emissions associated with the electricity and natural gas sectors also account for a relatively significant portion of the City's emissions, making up an additional 44 percent of the City's inventory in 2012. Emissions calculations for the electricity and natural gas sectors include electricity and natural gas used for water heating and cooling, and non-renewable building energy consumption.



Source: EPIC 2018

Figure 2-1: GHG Emissions Inventory for the City of El Cajon in 2012 by Emissions Sector

The City's 685,000 $MTCO_2e$ is equivalent to the emissions generated by the average passenger vehicle driving 1.7 billion miles or burning nearly 4,000 railcars worth of coal (U.S. Environmental Protection Agency, 2018).

Table 2-2 shows the breakdown of the City's GHG emissions in 2012 by sector. Additional details related to the specific emission sectors, data sources, assumptions, and methodology can be found in Appendix A.

The City's 2012 emissions are equal to the emissions from burning 77 million gallons of gasoline.

Table 2-2 2012 City of El Cajon Greenhouse Gas Inventory

Emissions Sector	$MTCO_2e$	Percent (%)
On-Road Transportation	357,000	52
Electricity	200,000	29
Natural Gas	86,000	13
Off-Road Transportation	20,000	3
Solid Waste	15,000	2
Water	7,000	1
Wastewater	1,000	<1
Total	**685,000**	**100**

Notes: Columns may not add to totals due to rounding.
$MTCO_2e$ = metric tons of carbon dioxide equivalent
Source: EPIC 2018.

2.3 Emission Projections

Estimates of future emissions levels are based on a continuation of current trends in activity, population and job growth, and relevant legislative actions that have already been adopted. Projections provide insights into the scale of local reductions needed to achieve GHG emissions reduction targets, as well as the local affects legislative actions will have on emissions.

Source: City of El Cajon

The SI uses two projections, referred to as the "business-as-usual" (BAU) and Legislatively-Adjusted BAU. The BAU projection assumes no additional efforts (including this SI), beyond what have already been adopted, will be made to reduce GHG emissions in the future. Legislatively-Adjusted BAU projections provide a reduction from the BAU projection accounting for Federal and State actions that are planned to take place in the future. Both projections assume that population, housing, employment, and transportation activities will grow over time, based on current demographic trends in the City.

Details on projections and the activity data used to estimate each sector can be found in Appendix A.

2.3.1 Demographic Trends

GHG emission projections were estimated for 2020 and 2030 using City-specific demographic data and vehicle activity projections from the SANDAG Series 13 Regional Growth Forecast. From 2012, the City is anticipated to experience moderate population growth, growing by a total of two percent by 2020. This moderate growth would continue and by 2030, the City's population is estimated to grow by seven percent (SANDAG 2017). The City is also expected to experience similar growth in employment over the same period, with a majority of the growth occurring in the commercial jobs sector. The total number of jobs in the City is expected to grow by eight percent by 2020 and by 14 percent by 2030, with an expected number of total jobs in the City to be nearly 44,000 by 2030 (SANDAG 2013). The BAU emissions projections assume activities within the City would continue producing GHG emissions at a similar rate and that these projected demographic trends would continue. A detailed description of the underlying SANDAG data and how emissions were estimated and projected can be found in Appendix A.

> From 2012 levels, population in the City is expected to increase by 2% by 2020 and 7% by 2030.

2.3.2 Business as Usual Projections

The BAU projections assumes no additional efforts, beyond what have already been adopted, will be made to reduce GHG emissions in the future. Citywide emissions projections were modeled based on a continuation of current trends in activity, and population and job growth. The BAU emission projections are shown in Table 2-3.

Source: City of El Cajon

Since 2012, the City experienced an overall reduction in citywide annual GHG emssions. Based on these projections, the City's GHG emissions would continue to decline under BAU conditions until 2020, despite the general growth in population and employment. This observed decrease in BAU emissions could reflect existing community and regional choices that result in fewer emissions, including use of improved regionwide renewable energy portfolios, decreased residential and commercial water usage, and improved vehicle standards and turnover of vehicle fleets.

Legislative Adjustments

The Legislatively-Adjusted BAU accounts for a variety of approved legislative actions that will further reduce BAU emissions from the City. It accounts for the implementation of these legislative actions by estimating the impacts of these actions on the various GHG emissions producing sectors in the SI and adjusting emissions levels accordingly. While these projections include Federal and State actions, they do not include local government actions such as the implementation of GHG emissions reduction measures identified in this SI. The legislative actions applied to estimate the Legislatively-Adjusted BAU include:

Source: City of El Cajon

- California Renewable Portfolio Standard
- California Solar Programs, Policies, and 2019 Mandates
- California Energy Efficiency Programs

- California 2019 Building Energy Efficiency Standards
- Federal and California Vehicle Efficiency Standards

The legislative actions listed above will help to lower GHG emissions in the City, as shown in Table 2-3. By 2020, total emissions will decrease by 19 percent below 2012 levels. By 2030, total emissions will decrease by 37 percent below 2012 levels. The overall decrease in emissions is primarily due to Federal and State legislation in place in 2012.

Table 2-3 City of El Cajon Emissions Projections ($MTCO_2e$/year)

Emissions Sector	2012	2020		2030	
		BAU	Legislatively-Adjusted BAU	BAU	Legislatively-Adjusted BAU
On-Road Transportation	357,000	316,000	305,000	306,000	241,000
Electricity	200,000	150,000	135,000	158,000	69,000
Natural Gas	86,000	79,000	77,000	83,000	74,000
Off-Road Transportation	20,000	18,000	18,000	22,000	22,000
Solid Waste	15,000	17,000	17,000	18,000	18,000
Water	7,000	5,000	5,000	6,000	6,000
Wastewater	1,000	1,000	1,000	1,000	1,000
Total	**685,000**	**586,000**	**558,000**	**593,000**	**430,000**
Percent change from 2012 (%)	--	-14%	-19%	-13%	-37%

Notes: Columns may not add to totals due to rounding.

BAU = business as usual; GHG = greenhouse gas emissions; $MTCO_2e$ = metric tons of carbon dioxide equivalent

Source: EPIC 2018.

A detailed description and analysis of how specific legislative reductions are included in the City's projections can be found in Appendices A and B.

2.4 Reductions Targets

As directed by AB 32, SB 32, and EOs B-30-15 and S-3-05, the State aims to reduce statewide GHG emissions to:

- 1990 levels by 2020,
- 40 percent below 1990 levels by 2030, and
- 80 percent below 1990 levels by 2050.

To determine an equivalent reduction target at the local level, CARB's 2017 Scoping Plan recommends community-wide GHG reduction goals for local plans that will help the State achieve its 2030 target and longer-term 2050 goal. CARB recommends that local governments evaluate and adopt robust and quantitative locally-appropriate goals that align with the statewide per capita targets and the State's sustainable development objectives to develop plans to achieve local goals. (CARB 2017). These State goals consist of reducing emissions to six (6) $MTCO_2e$ per capita and two (2) $MTCO_2e$ per capita by 2030 and 2050, respectively.

However, because the statewide per capita targets are based on the statewide GHG emissions inventory that includes all emissions sectors in the State (and not all emissions sectors apply to all jurisdictions), CARB also states that it is appropriate for local jurisdictions to derive evidence-based local per capita goals based on local emissions sectors and population projections that are consistent with the framework used to develop the statewide per capita targets. The plan clarifies that an evidence-based local per capita goal, or some other metric that the local jurisdiction deems appropriate (e.g., mass emissions per service population), could be used (CARB 2017). Keeping the Scoping Plan recommendations in mind, reduction targets were derived using a mass emissions approach.

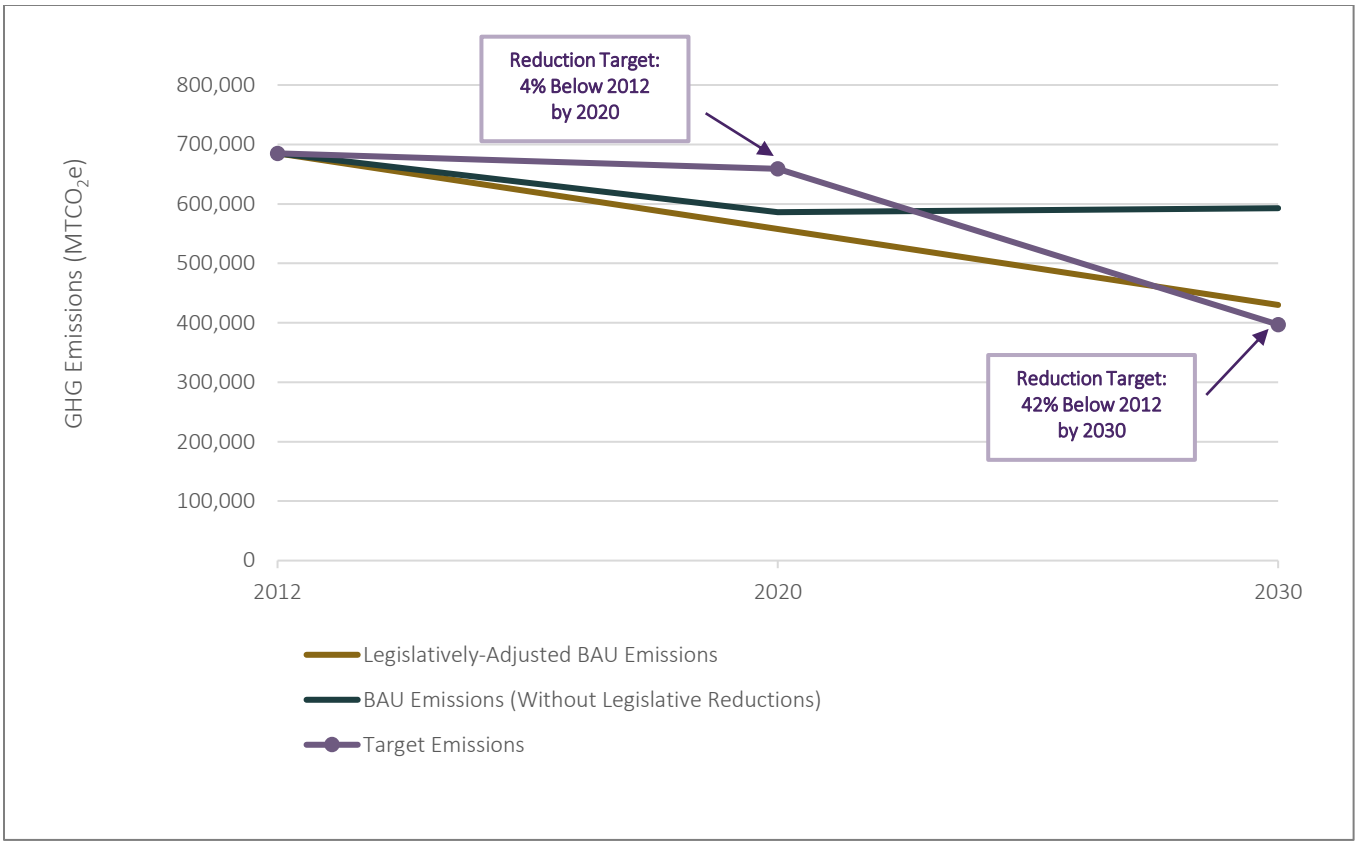
Source: City of El Cajon

Statewide per capita targets are based on the statewide mass reduction targets (i.e., 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050). Because the State has GHG inventories each year from 2000 through 2015, a percentage reduction can be derived from any inventory year and for any target year. These same State percentage reductions can then be applied to local inventories to derive reduction targets for local jurisdictions that would be consistent with the statewide approach. Thus, consistent with CARB's recommendations for community-wide targets, the following adjusted mass emissions reduction targets should be achieved in the City:

- 4 percent below 2012 levels by 2020.
- 42 percent below 2012 levels by 2030.

The City has set a 2030 target based upon the trajectory necessary to meet the Statewide 2050 goal. The City's targets would require GHG emissions to be reduced to 659,000 $MTCO_2e$ by 2020 and 397,000 $MTCO_2e$ by 2030.

As shown in Figure 2-2, based on the current demographic trends and adjustments to BAU projections from legislative actions, the City would meet it's 2020 target without any additional local actions aimed to reduce GHG emissions. Under the Legislatively-Adjusted BAU, the City's GHG emissions would be 101,000 $MTCO_2e$ below its 2020 target.



Note: $MTCO_2e$ = metric tons of carbon dioxide equivalent
Source: EPIC 2019

Figure 2-2: BAU and Legislatively-Adjusted BAU Projections and Targets Without Actions

However, Federal and State legislative actions; however, would not be adequate to achieve the City's 2030 GHG reduction goals. While these legislative actions would account for the majority of the reductions needed to achieve this goal, the City would need to implement additional local actions to achieve further reductions. This additional reduction needed at the local level to meet the reduction targets for each year is referred to as the "local gap." To close the local gap, the City would need to implement local actions that would result in a reduction of approximately 33,000 $MTCO_2e$ by 2030.

This SI primarily focuses on reducing emissions by 2020 and 2030, consistent with State mandates. While setting goals beyond 2030 is important to provide long-term objectives, it is difficult to establish targets beyond a 15-year time frame for which defensible reduction assumptions can be made. This is primarily because of uncertainty around future technological advances and future changes in State and Federal law beyond 2030. As climate change science and policy continues to advance, the City may be able to apply new strategies to assist in the State's long-term 2050 GHG emissions reduction goal as outlined in Chapter 4. Moreover, new Federal and State regulations could further reduce emissions that are currently being captured by local measures and actions.

The City uses the mass emissions approach to determine reduction targets, which is consistent with CARB's recommendations outlined in the 2017 Scoping Plan.

A detailed description of the calculations and estimates for these emissions and targets is provided in Appendix B.

CHAPTER 3

Greenhouse Gas Reduction Strategies, Measures, and Actions

This chapter presents the strategies, measures, and actions that the City of El Cajon (City) aims to implement to achieve its greenhouse gas (GHG) reduction targets. Accounting for legislative actions taken by the Federal and State governments, the Sustainability Initiative (SI) focuses on locally-based measures and actions the City can implement to reduce GHG emissions in various emissions sectors.

The City's SI includes eight strategies, organized under four emissions categories that serve as the foundation for identifying and addressing ways in which the City will reduce citywide GHG emissions. Within each strategy is a series of measures, actions, and supporting measures that define the activities, programs, policies, and projects the City will, when feasible, implement to reduce GHG emissions. These actions and measures mainly focus on community-scale reductions, but also include municipal operations. Through partnerships with and among the community, businesses, and other organizations, these measures could provide net benefits, such as an improved environment, cost savings, conserved resources, and greater quality of life.

Strategies are organized under four GHG emissions categories:

1. Transportation
2. Energy
3. Waste and Water
4. Carbon Sequestration

The SI accounts for existing plans, programs, directives, and activities that the City has already undertaken to reduce GHG emissions by acknowledging these efforts and, in some cases, building or expanding on them.

3.1 Summary of Greenhouse Gas Reduction Strategies

Source: City of El Cajon

As described in Chapter 2, the City has established a 2020 GHG emissions reduction target (four percent below 2012 levels) and a 2030 target (42 percent below 2012 levels) to reduce annual emissions levels, consistent with State goals. If community emissions in the City were to continue to grow under business-as-usual (BAU) projections, the City would still successfully meet its 2020 target. Under BAU projections, the City is anticipated to generate 586,000 metric tons of carbon dioxide equivalent ($MTCO_2e$) in 2020, which would be 73,000 $MTCO_2e$ less than the 2020 target. However, continuing BAU conditions would not result in the City meeting its 2030 target, as it is anticipated the City would require a reduction of an additional 196,000 $MTCO_2e$ to achieve the 2030 target. Under the Legislatively-Adjusted BAU, the City exceeds the 2020 targets by an additional 28,000 $MTCO_2e$, but would still not meet its targets for 2030. Table 3-1 below shows the GHG reductions attributable to the measures and actions in this SI and how the anticipated reductions will help the City close the gap of 33,000 $MTCO_2e$ to meet its 2030 target. Because the City is exceeding the 2020 target under both projections, reduction measures and actions in the SI are focused on meeting the 2030 target.

Detailed calculations and descriptions of the calculation methodologies are provided in Appendix B.

Table 3-1 Effect of Plan Measures and Legislative Reductions on City of El Cajon Emissions and Target ($MTCO_2e$)	
Emissions	2030
BAU Emissions Projection	**593,000**
Legislative Reductions	163,000
Legislatively-Adjusted BAU Emissions Projection (BAU Projection – Legislative Reductions)	**430,000**
2030 Target Emissions	**397,000**
Reductions from Transportation Measures	5,000
Reductions from Energy Measures	20,000
Reductions from Waste and Water Measures	8,000
Reductions from Carbon Sequestration Measures	100
Total Reductions from Measures	**33,000**
City of El Cajon Emissions with SI (Legislatively-Adjusted BAU – SI Reductions)	**397,000**

Notes: Numbers are rounded to the nearest thousand, so values and totals may not equal the values summed in other tables or figures.
BAU = business-as-usual; SI = Sustainability Initiative; GHG = greenhouse gas emissions; $MTCO_2e$ = metric tons of carbon dioxide equivalent
Source: EPIC 2019

3.2 Detailed Strategies, Measures, and Actions

The SI actions were developed using a GHG reduction strategy framework that was based on a combination of factors. These include:

- The feasibility of the action to be implemented by the City.
- Existing programs, policies, activities, or projects that can be expanded or proposed policies yet to be adopted.
- Feedback from the community and other stakeholders.
- Technological innovations.

Source: City of El Cajon

The reduction strategy framework consists of strategies, measures, actions, target years, goals, and supporting measures, which are defined below in Table 3-2.

Table 3-2 Greenhouse Gas Reduction Strategy Framework

Category	Description
Strategy	High level plans the City will, when feasible, implement to achieve GHG reductions in one of the four emissions category. Each emissions category may have one or more associated strategies. The framework includes eight overall strategies.
Measure	The general objective that the City will strive to achieve to address the defined strategy. Each strategy may have one or more measures.
City Action (Action)	Programs, policies, or projects the City will, when feasible, implement that will cause a direct and measurable reduction in GHG emissions.
Goal	Metric by which achievement of the specified action will be measured for 2030.
GHG Reduction Potential in 2030	Estimated reduction in local GHG emissions if the performance metric is met. The year 2030 corresponds to the emissions target set by the City (and in line with State mandates). Because the City would achieve 2020 targets without implementation of SI measures and actions, the GHG reduction potential is presented for the year 2030.
Supporting Measure	Programs, policies, or projects the City will aim to implement that could not be quantified, but will have an indirect effect on GHG emissions reductions and could be quantified in future SI updates.

Notes: SI = Sustainability Initiative; City = City of El Cajon; GHG = greenhouse gas

Source: Ascent Environmental 2019

To help meet designated targets, the SI proposes 28 actions under 15 measures, all within the eight strategies outlined previously, along with supporting measures for each strategy. A description of the emissions category is followed by separate tables describing each strategy, its measures, actions, goals, GHG reduction potential, and supporting measures.

Additional detail and calculations can be found in Appendix B. Chapter 4 further describes how City measures and actions will be implemented.

3.2.1 Transportation

Internal combustion from on-road transportation is the largest contributor to the City's GHG emissions. Emissions from on-road transportation sources accounted for 52 percent of the City's total emissions in 2012. Off-road transportation sources are also included in this emissions category, which accounts for usage of construction equipment, recreational vehicles, and residential and commercial equipment. Legislative reductions, mainly from improvements in Federal and State vehicle fuel efficiency standards, will contribute to reducing transportation emissions. While these legislative reductions apply to the fuel efficiency of vehicle operations, the State relies on local and regional agencies to implement strategies that affect the frequency or distance of vehicle travel. These strategies include reducing the use of

Source: City of El Cajon

gasoline or diesel-powered vehicles and equipment, increasing the efficiency and effectiveness of alternative fuel vehicles, and reducing local vehicle miles traveled (VMT).

Strategy 1: Increase Use of Zero-Emission or Alternative Fuel Vehicles

The focus of this strategy is to reduce the use of gasoline and diesel-powered vehicles and equipment and increase the use of zero-emission or alternative fuel vehicles citywide. This reduction is achieved by increasing the purchasing and use of zero-emission and alternative fuel vehicles. Emissions reductions from this strategy rely on coordination with local agencies and participation from residents and businesses. This strategy includes two measures and five actions that would reduce the City's emissions by approximately 1,600 $MTCO_2e$ by 2030. Table 3-3 outlines the framework for this strategy.

Co-Benefits of Strategy 1:
- Improved Air Quality
- Improved Public Health

Table 3-3 Strategy 1: Increase Use of Zero-Emission/Alternative Fuel Vehicles

Measure T-1: Transition to a More Fuel-Efficient Municipal Vehicle Fleet	
City Action T-1.1: Develop a Fleet Management Program	
Develop a fleet management program to guide the replacement of non-public safety vehicles to alternative-fuel vehicles.	
Goal	**GHG Reduction Potential in 2030 ($MTCO_2e$)**
Reduce 3,000 gallons of municipal fleet gasoline use in 2030.	25
Measure T-2: Increase Electric Vehicle and Electric Vehicle Charging Infrastructure Citywide	
City Action T-2.1: Install Municipal Electric Vehicle Charging Stations	
Continue to install EV charging stations at City Hall parking lots and Public Works yard for municipal fleet and City employee use.	
Goal	**GHG Reduction Potential in 2030 ($MTCO_2e$)**
Install 16 EV charging stations at City facilities by 2020.	306
Install an additional 10 EV charging stations at City facilities by 2030.	
City Action T-2.2: Incentivize the Installation of Electric Vehicle Charging Stations	
Incentivize the installation of EV charging stations at new multi-family and commercial developments through reduced fees and expedited permitting.	
Goal	**GHG Reduction Potential in 2030 ($MTCO_2e$)**
Install 128 new EV charging stations at commercial developments and 79 new EV charging stations at multi-family developments by 2030.	1,231
City Action T-2.3: Increase Clean Air Vehicle Preferential Parking Spaces	
Amend the zoning code to increase preferential parking spaces for clean air vehicle parking.	
Goal	**GHG Reduction Potential in 2030 ($MTCO_2e$)**
Lower the parking space threshold required in 2016 CALGreen by 20 percent by 2030.	Amount reflected in T-2.2
City Action T-2.4: Convert School Bus Fleet to Electric	
Support the CVUSD and GUHSD in their efforts to convert the bus fleet to electric buses.	

Table 3-3 Strategy 1: Increase Use of Zero-Emission/Alternative Fuel Vehicles	
Goal	GHG Reduction Potential in 2030 ($MTCO_2e$)
Convert 12 diesel buses to electric buses by 2030.	59

Supporting Measures for Strategy 1:

- Continue to use a waste hauler that uses fuel-efficient or alternative fuel waste trucks.
- Convert hand tools used by City maintenance staff from gasoline to electric.
- Evaluate new clean energy multi-purpose Public Works equipment for replacement of older, inefficient equipment.
- Partner with SDG&E's Power Your Drive for EV infrastructure installation.
- Continue efforts with SDG&E's Power Your Drive to provide options for City employees to utilize alternative fuel or clean air vehicles for work.
- Pursue grant funding to install publicly available EV charging stations at City facilities.
- Continue to require EV charger pre-wiring per CALGreen in new developments.
- Collaborate with school districts (e.g., CVUSD, GUHSD) to increase school bus use through education, programs, and new routes.

Notes: CALGreen = California Green Building Standards Code; City = City of El Cajon; EV = electric vehicle; GHG = greenhouse gas; $MTCO_2e$ = metric tons of carbon dioxide equivalent; SDG&E = San Diego Gas and Electric

Source: EPIC 2019

Strategy 2: Reduce Fuel Use

This strategy provides measures and actions that go beyond changing fuel types to reduce fuel consumption citywide. Under this strategy, on-road transportation fuel consumption would be reduced by improving traffic flow and increasing the efficiency of the existing transportation network. Off-road vehicle and equipment fuel consumption would be reduced through the use of renewable or alternative fuel equipment. Emissions reductions in this strategy would be achieved through interagency participation to implement projects in the City's right-of-way, and working with developers and fleet owners to phase out old, fossil fuel reliant equipment. This strategy includes two measures and three actions that would reduce the City's emissions by approximately 2,200 $MTCO_2e$ by 2030. Table 3-4 outlines the framework for this strategy.

Co-Benefits of Strategy 2:
- Improved Air Quality
- Reduced Energy Use
- Improved Public Health
- Reduced Traffic Congestion
- Enhanced Safety
- Enhanced Community Character

Table 3-4 Strategy 2: Reduce Fuel Use

Measure T-3: Use Transportation System Management to Reduce Fuel Use

City Action T-3.1: Synchronize Traffic Lights

Continue efforts to synchronize traffic lights in priority areas and pursue grants to develop a citywide traffic signal synchronization plan.

Goal	GHG Reduction Potential in 2030 ($MTCO_2e$)
Synchronize traffic lights at 30 intersections by 2030.	387

City Action T-3.2: Install Roundabouts

Install roundabouts on El Cajon Boulevard as identified in the TDSP.

Goal	GHG Reduction Potential in 2030 ($MTCO_2e$)
Install three roundabouts by 2030.	304

Measure T-4: Reduce Fuel Use in Construction Equipment

City Action T-4.1: Increase Renewable and Alternative Fuel Use in Construction Equipment

Increase the use of renewable and alternative fuel use in construction equipment.

Goal	GHG Reduction Potential in 2030 ($MTCO_2e$)
Require new projects to reduce construction emissions by 10 percent by 2030.	1,334

Supporting Measures for Strategy 2:

- Pursue grants for citywide synchronization plan and for installation of the remaining two roundabouts identified in the TDSP.
- Refer to the Active Transportation Plan to evaluate other potential locations for roundabouts.

Notes: $MTCO_2e$ = metric tons of carbon dioxide equivalent; GHG = greenhouse gas; TDSP = Transit District Specific Plan

Source: EPIC 2019

Strategy 3: Reduce Vehicle Miles Traveled

In support of legislative actions at the State level, this strategy aims to reduce the total VMT locally by increasing non-vehicular modes of travel, encouraging smart growth development in areas already served by transit, and reducing parking in key areas. Emissions reductions from this strategy rely on coordination with, and participation from local and regional transportation and planning agencies, residents, and businesses. Implementation of the three measures and six actions identified in this strategy would reduce the City's GHG emissions by approximately 1,800 by 2030. Table 3-5 outlines the framework for this strategy.

Co-Benefits of Strategy 3:
- Improved Air Quality
- Reduced Energy Use
- Improved Public Health
- Reduced Traffic Congestion
- Improved Access to Low-Cost Transportation Options
- Enhanced Safety
- Enhanced Community Character

Table 3-5 Strategy 3: Reduce Vehicle Miles Traveled

Goal	GHG Reduction Potential in 2030 ($MTCO_2e$)
Measure T-5: Increase Alternative Modes of Travel	
City Action T-5.1: Increase Alternative Modes of Travel Through Transportation Demand Management	
Require new non-residential development to develop a TDM Plan.	
Increase use of alternative modes from employee commuting by nine percent at new non-residential developments through 2030.	232
Measure T-6: Encourage Active Transportation	
City Action T-6.1: Complete an Active Transportation Plan	
Complete an Active Transportation Plan that includes a sidewalk master plan and an updated Bicycle Master Plan.	
Install or convert eight additional miles of bike lanes to Class II or better by 2030.	236
Measure T-7: Reduce Household Vehicle Miles Traveled Through Smart Growth Development	
City Action T-7.1: Increase Residential Dwelling Units in Transit Oriented Development Areas	
Coordinate with MTS on the development of the MTS Parking Lot with residential uses at the El Cajon Transit Center.	
Complete the development of the MTS parking lot into 126 dwelling units by 2030.	190
City Action T-7.2: Encourage Development in Mixed-Use Residential Overlay Areas	
Allow for parking reductions, or deviations from development standards, for developments in the Mixed-Use Residential Overlay Areas.	
Reduce parking in projects built in Mixed-Use Overlay Areas by an average of 40 percent through 2030.	605
City Action T-7.3: Implement the Transit District Specific Plan	
Implement the TDSP by actively marketing and encouraging development in the Plan's proposed area, including new housing projects within the area.	

Table 3-5 Strategy 3: Reduce Vehicle Miles Traveled	
Goal	**GHG Reduction Potential in 2030 ($MTCO_2e$)**
Move towards full buildout of the TDSP by 2030, with full buildout expected in 2035.	528
City Action T-7.4: Transition to an Online Submittal Permitting System	
Transition to an online submittal permitting system, where all permits are processed online, reducing the need to drive to obtain permits.	
Goal	**GHG Reduction Potential in 2030 ($MTCO_2e$)**
Completely transition to an online-submittal permitting system by 2030.	10

Supporting Measures for Strategy 3:

- Identify employers to connect to vanpools and carpools through SANDAG's iCommute Program.
- Pursue grant funding to complete the Johnson Avenue multi-use path.
- Complete the Washington Avenue Road Diet Project.
- Amend the Zoning Code to expand the range of permitted home-based businesses to allow for low-impact businesses that may have limited customers or employers.
- Continue efforts with SANDAG's iCommute to provide alternative options for City employees to reduce VMT. Encourage the use of transit, walking, or biking.
- Implement City policy on complete streets.

Notes: City = City of El Cajon; GHG = greenhouse gas; MOU = memorandum of understanding; $MTCO_2e$ = metric tons of carbon dioxide equivalent; MTS = Metropolitan Transit System; SANDAG = San Diego Association of Governments; SDG&E = San Diego Gas and Electric; TDM = Transportation Demand Management; TDSP = Transit District Specific Plan; VMT = Vehicle Miles Traveled

Source: EPIC 2019

3.2.2 Energy

Energy consumption in the City includes electricity and natural gas consumption, which accounted for 44 percent of the City's total emissions in 2012. Emissions reductions from the energy category are divided into two strategies: Increase Building Energy Efficiency; and Increase Renewable and Zero-Carbon Energy. The success of these strategies relies on coordination with local utilities and organizations; participation from the community, and administration of new or revised local policies and programs.

Source: City of El Cajon

Strategy 4: Increase Building Energy Efficiency

The energy (electricity and natural gas) used in buildings accounts for the majority of GHG emissions in the Electricity and Natural Gas category. Although legislative reductions related to State actions will help reduce emissions associated with building energy, additional reductions can help to increase building efficiency in the City. Under this strategy emissions are reduced by incentivizing residential and commercial units to be more energy efficient. This strategy includes three measures, each aimed at a separate land use within the City (i.e., residential, commercial, and civic), and five actions. Implementation of this strategy would reduce the City's emissions by approximately 400 $MTCO_2e$ by 2030. Table 3-6 outlines the framework for this strategy.

Co-Benefits of Strategy 4:
- Improved Air Quality
- Reduced Energy Use
- Improved Public Health
- Enhanced Safety
- Reduced Heat Island Effect
- Enhanced Community Character
- Increased Local Green Jobs
- Improved Resiliency to Climate Change Impacts

Table 3-6 Strategy 4: Increase Building Energy Efficiency

Measure BE-1: Increase Residential Building Efficiency	
City Action BE-1.1: Require Energy Audits for Additions to Existing Residential Units	
Require a whole home energy audit for residential additions over 500 square feet and incentivize energy retrofits through reduced fees and expedited permitting.	
Goal	**GHG Reduction Potential in 2030 ($MTCO_2e$)**
Complete energy audits on an average of 25 homes per year through 2030.	29
City Action BE-1.2: Continue the Critical Home Repair Program and Home Rehabilitation Loans	
Continue Habitat for Humanity's Critical Home Repair Program and other programs for single-family and mobile home rehabilitation loans that fund energy efficiency improvements.	
Goal	**GHG Reduction Potential in 2030 ($MTCO_2e$)**
Complete retrofits on an average of six homes annually through 2030.	43
Measure BE-2: Increase Commercial Building Efficiency	
City Action BE-2.1: Require Energy Audits of Non-Residential Additions and Improvements	
Require a whole building energy audit for non-residential additions and tenant improvements valued at over $80,000 or over 1,800 square feet and incentivize energy retrofits through reduced fees and expedited permitting.	
Goal	**GHG Reduction Potential in 2030 ($MTCO_2e$)**
Complete 40 energy audit projects annually through 2030.	254
Measure BE-3: Increase Municipal Operation Energy Efficiency	
City Action BE-3.1: Continue Energy Efficiency Projects in Municipal Facilities	
Continue to implement lighting and other retrofit measures at municipal facilities, as recommended by SANDAG's Energy Roadmap program.	

Table 3-6 Strategy 4: Increase Building Energy Efficiency	
Goal	**GHG Reduction Potential in 2030 ($MTCO_2e$)**
Reduce electricity use by 100,000 kWh at City facilities through lighting and other retrofits by 2030.	17
City Action BE-3.2: Retrofit High Pressure Sodium Street Lights	
Retrofit City-owned HPS street lights with LED street lights.	
Goal	**GHG Reduction Potential in 2030 ($MTCO_2e$)**
Complete all City-owned street lights retrofits by 2020.	72

Supporting Measures for Strategy 4:

- Encourage energy efficiency improvements through rebates or incentives.
- Explore the development of an offset program to finance energy retrofits for existing residential properties.
- Provide information to the public on energy efficiency improvements made available through energy audits.
- The City will make every reasonable effort to prioritize programs for funding that improves energy efficiency or increase renewable energy production.
- Evaluate municipal facilities and operations for additional energy savings opportunities through SANDAG's Energy Roadmap program.

Notes: City = City of El Cajon; GHG = greenhouse gas; HPS = high pressure sodium; kWh = kilowatt-hour; LED = low-emitting diode; $MTCO_2e$ = metric tons of carbon dioxide equivalent; SANDAG = San Diego Association of Governments

Source: EPIC 2019

Strategy 5: Increase Renewable and Zero-Carbon Energy

Transitioning from fossil fuels to renewable energy for electricity generation will reduce emissions and provide a more sustainable source of electricity. Under this strategy, emissions are reduced by streamlining access to renewable energy; increasing the supply of renewable energy for residential, commercial, and municipal operations within the City; and increasing the amount of onsite renewable energy at existing and new residential and non-residential development. Implementation of the two measures and three actions under this strategy would reduce the City's emissions by approximately 19,300 $MTCO_2e$ by 2030. Strategy 5 accounts for 60 percent of the City's 2030 reduction goal. Table 3-7 outlines the framework for this strategy.

Co-Benefits of Strategy 5:
- Improved Air Quality
- Reduced Energy Use
- Improved Public Health
- Enhanced Community Character
- Increase Local Green Jobs
- Improved Resiliency to Climate Impacts

Table 3-7 Strategy 5: Increase Renewable and Zero-Carbon Energy

Measure RE-1: Increase Behind-the-Meter Renewable Electricity Supply	
City Action RE-1.1: Incentivize Photovoltaic Installation on Commercial Buildings	
Incentivize, through an energy audit program, PV installation on existing commercial buildings by providing reduced fees and expedited permitting.	
Goal	**GHG Reduction Potential in 2030 ($MTCO_2e$)**
Install eight MW behind-the-meter PV at existing commercial buildings citywide by 2030.	2,299
City Action RE-1.2: Install Photovoltaic Systems at School Sites	
Support the school districts' efforts to install PV systems at school sites.	
Goal	**GHG Reduction Potential in 2030 ($MTCO_2e$)**
Install seven MW behind-the-meter PV at school sites within the City by 2030.	2,149
Measure RE-2: Increase Grid Renewable and Zero-Carbon Electricity	
City Action RE-2.1: Conduct Research and Present to City Council Options to Increase Renewable and Zero-Carbon Electricity	
Research methods to increase grid-supply of renewable and zero-carbon electricity.	
Goal	**GHG Reduction Potential in 2030 ($MTCO_2e$)**
Aim to achieve 80 percent renewable and zero-carbon electricity supply by 2030.	14,924

Supporting Measures for Strategy 5:

- Continue to support State and local utility efforts to increase renewable sources of electricity.
- Encourage lower-income home owner participation in local solar programs.
- Encourage large commercial or industrial buildings to install solar.
- Create solar partnerships with large building owners (e.g., Parkway Plaza).
- Evaluate solar at City facilities, including the potential for a micro grid at the Public Works yard.

Notes: City = City of El Cajon; GHG = greenhouse gas; $MTCO_2e$ = metric tons of carbon dioxide equivalent; MW = Megawatts; PV = photovoltaic

Source: EPIC 2019

3.2.3 Waste and Water

GHG emissions are produced through the energy used to pump, transport, and treat water and wastewater. GHG emissions are also generated through the transport of solid waste and off-gassing at landfills. In total, waste and water accounted for three percent of the City's total emissions in 2012. Though reductions achieved through waste and water strategies are minimal compared to other strategies, they are needed to address serious impacts of climate change by reducing water consumption, recycling wastewater, and changing behavioral patterns of solid waste generation. Beyond providing emissions reductions, these strategies provide the City with sustainable practices that will allow it to better adapt to the changing climate.

Source: City of El Cajon

Strategy 6: Increase Water Efficiency

Water consumption reductions under this strategy would result from more efficient water use strategies in existing and new uses. The measures and actions identified in this strategy would provide residents, businesses, and municipal operators effective ways to reduce water consumption. This strategy achieves emissions reductions by reducing the energy needed to supply, treat, and deliver water. The implementation of the one measure and two actions under this strategy would reduce the City's GHG emissions by approximately 200 $MTCO_2e$ by 2030. Table 3-8 outlines the framework for this strategy.

Co-Benefits of Strategy 6:
- Reduced Energy Use
- Improved Water Quality
- Enhanced Community Character
- Increased Local Green Jobs
- Improved Resiliency to Climate Impacts

Table 3-8 Strategy 6: Increase Water Efficiency

Measure WE-1: Increase Outdoor Water Efficiency	
City Action WE-1.1: Require Covers on New Pools	
Amend the Municipal Code to require covers on new residential swimming pools.	
Goal	**GHG Reduction Potential in 2030 ($MTCO_2e$)**
Cover 19 new swimming pools annually through 2030.	2
City Action WE-1.2: Require Weather-Based Irrigation Systems	
Require installation of weather-based irrigation controllers for all projects submitting landscape plans.	
Goal	**GHG Reduction Potential in 2030 ($MTCO_2e$)**
Complete 10 projects annually that include weather-based irrigation controllers through 2030.	172

Supporting Measures for Strategy 6:
- Continue to support Helix Water District's efforts to incentivize water conservation through rebates and free water audits.
- Identify water efficiency opportunities by conducting a water audit of City facilities.
- Continue to assess feasibility of the implementation of the East County Advanced Water Purification Program through a continued partnership with Padre Dam Municipal Water District, Helix Water District, and the County of San Diego.

Notes: City = City of El Cajon; GHG = greenhouse gas; $MTCO_2e$ = metric tons of carbon dioxide equivalent

Source: EPIC 2019

Strategy 7: Reduce and Recycle Solid Waste

GHG emissions are generated by solid waste through the transport to landfills and subsequent off-gassing associated with solid waste decomposition. Under this strategy, the City would reduce the amount of solid waste deposited at landfills by diverting it to other waste streams such as recycling or composting. This diversion would also provide recycled solid waste materials for reuse in other products. The implementation of the one measure and one action under this strategy would reduce the City's GHG emissions by approximately 7,800 by 2030. This strategy would also support the City in meeting regional and State diversion goals. Table 3-9 outlines the framework for this strategy.

Co-Benefits of Strategy 7:
- Improved Air Quality
- Improved Public Health
- Enhanced Community Character
- Increased Local Green Jobs
- Improved Resiliency to Climate Change Impacts

Table 3-9 Strategy 7: Reduce and Recycle Solid Waste

Measure SW-1: Reduce Solid Waste and Increase Recycling	
City Action SW-1.1: Implement Solid Waste Reduction and Recycling Targets	
Implement targets for citywide solid waste reduction and recycling goals.	
Goal	**GHG Reduction Potential in 2030 ($MTCO_2e$)**
Achieve and maintain 75 percent waste diversion (equivalent to 3.7 pounds of waste to landfills per capita) by and after 2020.	7,832

Supporting Measures for Strategy 7:
- Provide education outreach on the various recycling options (e.g., textiles, paper, plastic, metals, and glass).
- Continue working with the City's waste hauler on educational outreach efforts for recycling.
- Develop a program for organic diversion and recycling.
- Support the efforts of the Padre Dam Water District to include organics in their Solids Handling and Energy Recovery Facilities to use organic waste to produce energy through on-site co-generation.

Notes: GHG = greenhouse gas; $MTCO_2e$ = metric tons of carbon dioxide equivalent
Source: EPIC 2019

3.2.4 Carbon Sequestration

Carbon sequestration refers to the process of removing atmospheric carbon dioxide (CO_2) through artificial or natural processes and occurs daily through the natural respiration of vegetation and trees. Carbon sequestration potential is lost when natural carbon sinks (e.g., trees) are cut down or removed. Conversely, a community can enhance or improve its carbon sequestration potential by increasing the volume and rate of planting trees and nurturing an urban canopy.

Source: City of El Cajon

Additionally, trees and vegetation can provide shade and cooling through transpiration and evaporation processes, which reduce the temperature of the environment around them. Well-shaded streets and parking areas can reduce the heat-island effect of higher air and structure temperatures in an urban setting. Trees and vegetation also reduce GHG emissions through sequestration by decreasing the concentration of CO_2 in the atmosphere.

Strategy 8: Carbon Sequestration

As part of the natural carbon cycle, photosynthesis in plants takes CO_2 in the atmosphere and converts it into oxygen and carbon-based plant matter, storing the carbon captured from the atmosphere. Trees are significant sources of carbon storage and sequestration because of their size and longevity and provide essential habitat for local fauna. This strategy focuses on the preservation and expansion of tree growth in the City to increase the amount of carbon sequestered in hopes of offsetting CO_2 emissions generated by other sources to the extent feasible. Increased carbon sequestration and new tree plantings will also improve air quality through the capture of air pollutants, water quality through reduced erosion, biological resources by providing additional habitat and improved water quality, and community and public health through the provision of shade and positive impacts on mental health. Implementation of the one measure and three actions through this strategy would reduce the City's emissions by approximately 100 $MTCO_2e$ by 2030. Table 3-10 outlines the framework for this strategy.

Co-Benefits of Strategy 8:
- Improved Air Quality
- Increased Natural Habitat
- Improved Public Health
- Improved Water Quality
- Reduced Heat Island Effect
- Enhanced Community Character
- Increased Local Green Jobs
- Improved Resiliency to Climate Impacts

Table 3-10 Strategy 8: Carbon Sequestration

Measure CS-1: Increase Urban Tree Planting

City Action CS-1.1: Increase Shaded Landscape Area

Continue to require development projects to plant a minimum of one tree per 600 square feet of required landscape area.

Goal	GHG Reduction Potential in 2030 ($MTCO_2e$)
Plant 100 shade trees annually in development project landscaped areas through 2030.	46

City Action CS-1.2: Increase Tree Shade in Surface Parking Lots

Update the landscape ordinance to require a minimum of one shade tree per five parking spaces in surface parking lots for all new developments.

Goal	GHG Reduction Potential in 2030 ($MTCO_2e$)
Plant 40 new shade trees annually in surface parking lots of new developments through 2030.	14

City Action CS-1.3: Increase Street Trees

Require all new developments to plant one street tree for every 30 linear feet of street frontage.

Goal	GHG Reduction Potential in 2030 ($MTCO_2e$)
Plant 110 street trees annually at new developments through 2030.	39

Supporting Measures for Strategy 8:

- Install new street trees in street capital improvement projects, where feasible, and where redesign or reconstruction of the street is proposed.
- Continue the urban forestry program to maintain the City's tree inventory.
- Pursue grant opportunities to fund street planting along pedestrian corridors to provide sequestration and beautification benefits.
- Develop a tree preservation or replanting ordinance intended to preserve large canopy shade trees.

Notes: City = City of El Cajon; GHG = greenhouse gas; $MTCO_2e$ = metric tons of carbon dioxide equivalent

Source: EPIC 2019

CHAPTER 4

Implementation and Monitoring

4.1 Introduction

To achieve the greenhouse gas (GHG) emissions reductions strategies described in Chapter 3, measures should be continuously assessed and monitored to ensure that: (1) the measures are effective; (2) the Sustainability Initiative (SI) is on track to achieve its GHG reduction targets; and (3) beneficial community outcomes are attained. This chapter outlines how the City of El Cajon (City) plans to implement and monitor the strategies, measures, and actions over time to reduce GHGs and adapt to climate change. The rate of implementation will depend on staffing and budgetary considerations. Due to the current economic conditions and uncertainty, any measures with implications for a reduction in revenue or increased costs to community members will be assessed critically and will need to demonstrate significant public benefit or cost savings over time.

4.2 Implementation Strategy

Ensuring that the measures translate to on-the-ground results and reductions in GHG emissions is critical to the success of the SI. Successful implementation involves public and private investment, long-term commitment, and the widespread participation of the community. The City will continue to monitor and update strategies and actions to ensure they can be successfully implemented on-the-ground.

The implementation strategy identified in this chapter will serve as the first step in determining implementation priorities to achieve GHG reduction targets. This includes categorizing basic implementation components, which consists of sorting actions into implementation categories, determining which departments will be responsible for implementation actions, and establishing a general timeframe for implementation.

4.2.1 Implementation Priority

Following the adoption of the SI, the City will begin implementation of the identified strategies, measures, and actions. To effectively implement these actions to achieve the goals, the City will establish implementation priorities, which will depend on a variety of factors including cost, amount of staff resources needed, and ease of implementation. These priorities are subject to staffing and funding availability.

Source: City of El Cajon

Implementation Categories

The City will implement strategies and measures through various types of policies, programs, and activities that can be grouped into categories. The categories identified for implementation efforts include: Municipal Operations; Ordinances and Codes; Planning; Incentives; Partnerships; and Education and Outreach. Not all actions fall within a single category, as many require a combination of categories to ensure successful implementation. For example, increasing energy audits for existing homes (Action BE-1.1) will involve incentive opportunities to assist homeowners in completing these audits, but would also have an education and outreach component to ensure residents know these opportunities are available. Detailed descriptions of each category are listed in Table 4-1.

Table 4-1 Implementation Categories

Category	Description
Municipal Operations	Many measures require specific City actions to update municipal operations to increase efficiency. This includes energy efficiency upgrades to municipal facilities (Action BE-3.1), converting the City's vehicle fleet to alternative fuel or EVs (Action T-1.1), and replacing City-owned HPS streetlights with LED lights (Action BE-3.2). Other actions that relate to the City's municipal operations include expediting processes and changing City administrative processes to promote and incentivize installation of EV charging stations in new multi-family and commercial construction (Action T-2.2) and the installation of PV systems at existing commercial buildings (Action RE-1.1). The City also plans to transition to an entirely online permitting system (Action T-7.4).
Ordinances and Codes	Several measures in the SI would be implemented through new and existing City ordinances, such as requiring commercial additions and tenant improvements meeting a certain threshold to prepare home energy audits (Action BE-1.1) and new commercial development to develop TDM plans (Action T-5.1). Similarly, certain measures would be implemented through existing and amended regulations as part of the City's Municipal Code, such as existing requirements for the installation of weather based irrigation systems, modifications to the zoning code to increase the number of preferential parking spaces for clean air vehicles (Action T-2.3), or an update the landscape ordinance to increase tree shade in new surface parking lots (Action CS-1.2).
Planning	The SI identifies measures that are more programmatic in nature and that require visioning and a larger planning effort to realize GHG reductions. Implementation or development of a variety of planning documents include completing an Active Transportation Plan (Action T-6.1), and implementing a number of actions identified in the TDSP (Actions T-2.3 and T-7.3).
Incentives	Identifying mechanisms for funding and allocating resources will help ensure successful implementation. These strategies are implemented by the City to provide community residents, business owners, and developers with opportunities and incentives to contribute to citywide GHG reductions, including: home-rehabilitation loans for energy efficiency retrofits (Action BE-1.2); development incentives for action support such as parking reductions (Action T-7.2); or reduced fees to install PV systems (Action RE-1.1).
Partnerships	Interagency coordination and partnerships with other organizations is critical to ensuring implementation of certain measures. This includes collaboration with MTS to convert parking areas near transit centers to residential uses (Action T-7.1), and with other governments, school districts, transportation agencies, and waste haulers in the region.
Education and Outreach	Education and outreach efforts about the objectives of the SI will help create support for the SI and involve the community in its implementation. These efforts could increase participation and awareness and could include informing residents and businesses of incentives available through the implementation of other SI actions.

Notes: SI = Sustainability Initiative; Plan; City = City of El Cajon; EV = Electric Vehicle; GHG = greenhouse gas; HPS = High-Pressure Sodium; LED = light emitting diode; MTS = San Diego Metropolitan Transportation System; PV = photovoltaic; TDM = Transportation Demand Management; TDSP = Transit District Specific Plan

Source: Ascent Environmental 2019.

Implementation Responsibility

Initial implementation of local measures will be a coordinated effort of City departments and local/regional agencies. Internal City departments such as the City Manager's Office, Community Development, and Public Works will play a key role in the implementation of the SI.

The responsible department will take the lead in planning, implementing, and tracking specific actions identified. Some actions involve the City assisting and supporting other local or regional agencies, such as the local school districts or the San Diego Metropolitan Transportation System (MTS), in action implementation. Other actions have multiple departments or agencies identified as responsible departments which would involve intra-departmental collaboration.

Source: City of El Cajon

Implementation Timeframe

The timeframe for implementation varies between actions. For some action implementation has already begun, while others will need to be developed. The timing for which actions can be developed can vary from a couple years to a longer term-effort. There will be actions that can be prioritized and implemented because they require a small level of effort, and others that also need to be prioritized because they would require more effort and would take longer to implement. Generally, timeframes associated with each action can be broken into four categories: short-term, mid-term, long-term, and ongoing. These categories are further defined below in Table 4-2.

Source: City of El Cajon

Table 4-2 Implementation Timeframe

Implementation Timeframe	Defintion
Short-Term	Begin implementation within the next three years
Mid-Term	Begin implementation within the next five years
Long-Term	Begin implementation within the next seven years
Ongoing	Implementation is already occurring

Source: Ascent Environmental 2019.

Implementation Strategy Matrix

The implementation strategy matrix, outlined below in Table 4-3, provides the summary of the initial prioritization and categorization of the measures and actions and lists the responsible department or agency and planned timeframe for implementation.

Table 4-3 Implementation Strategy Matrix

Action	Title	Category	Responsible Department/ Agency	Implementation Timeframe
Strategy 1: Increase Use of Zero-Emission or Alternative Fuel Vehicles				
Measure T-1: Transition to a More Fuel-Efficient Municipal Vehicle Fleet				
T-1.1	Develop a Fleet Management Program	Municipal Operations; Planning	PW	Mid-Term
Measure T-2: Increase EVs and EV Charging Infrastructure Citywide				
T-2.1	Install Municipal EV Charging Stations	Municipal Operations	PW	Short-Term
T-2.2	Incentivize the Installation of EV Charging Stations	Incentives; Ordinances and Codes	CD	Short-Term
T-2.3	Increase Clean Air Vehicle Preferential Parking Spaces	Ordinances and Codes; Incentives	CD	Short-Term
T-2.4	Convert School Bus Fleet to Electric	Partnerships; Incentives	CVUSD; GUHSD	Mid-Term
Strategy 2: Reduce Fuel Use				
Measure T-3: Use Transportation Systems Management to Reduce Fuel Use				
T-3.1	Synchronize Traffic Lights	Planning	PW	Long-Term
T-3.2	Install Roundabouts	Planning	PW	Long-Term
Measure T-4: Reduce Fuel Use in Construction Vehicles and Equipment				
T-4.1	Increase Renewable and Alternative Fuel in Construction Equipment	Ordinances and Codes	CD; PW	Mid-Term
Strategy 3: Reduce Vehicle Miles Traveled				
Measure T-5: Increase Alternative Models of Travel				
T-5.1	Increase Alternative Modes of Travel through TDM	Ordinances and Codes; Planning	CM; CD	Short-Term
Measure T-6: Encourage Active Transportation				
T-6.1	Complete an Active Transportation Plan	Planning; Education and Outreach	CM; CD; PW	Short-Term
Measure T-7: Reduce Household Vehicle Miles Traveled Through Smart Growth Development				
T-7.1	Increase Residential Dwelling Units in Transit Oriented Development Areas	Partnerships; Planning	CD	Ongoing
T-7.2	Encourage Development of Mixed-Use Residential Overlay Areas	Ordinances and Codes; Planning	CM; CD	Ongoing

Table 4-3 Implementation Strategy Matrix

Action	Title	Category	Responsible Department/ Agency	Implementation Timeframe
T-7.3	Implement the TDSP	Planning; Education and Outreach	CM; CD; PW	Ongoing
T-7.4	Transition to an Online Submittal Permitting System	Municipal Operations	IT	Short-Term
Strategy 4: Increase Building Energy Efficiency				
Measure BE-1: Increase Residential Building Efficiency				
BE-1.1	Require Energy Audits for Additions to Existing Residential Units	Incentives; Ordinances and Codes	CD	Short-Term
BE-1.2	Continue the Critical Home Repair Program and Home Rehabilitation Loans	Incentives; Education and Outreach	CM	Ongoing
Measure BE-2: Increase Commercial Building Efficiency				
BE-2.1	Require Energy Audits of Non-Residential Additions and Improvements	Incentives; Ordinances and Codes	CD	Short-Term
Measure BE-3: Increase Municipal Operations Energy Efficiency				
BE-3.1	Continue Energy Efficiency Projects at Municipal Facilities	Municipal Operations; Education and Outreach	PW	Ongoing
BE-3.2	Retrofit High Pressure Sodium Street Lights	Municipal Operations	PW	Ongoing
Strategy 5: Increase Renewable and Zero-Carbon Energy				
Measure RE-1: Increase Behind-the-meter Renewable Electricity				
RE-1.1	Incentivize Photovoltaic Installation on Commercial Buildings	Incentives; Municipal Operations	CM	Long-Term
RE-1.2	Install Photovoltaic Systems at School Sites	Partnerships; Incentives	CVUSD; GUHSD	Mid-Term
Measure RE-2: Increase Grid Renewable and Zero-Carbon Electricity				
RE-2.1	Conduct Research and Present to Council Options to Increase Renewable and Zero-Carbon Electricity	Education and Outreach; Partnerships	CM	Long-Term
Strategy 6: Increase Water Efficiency				
Measure WE-1: Increase Outdoor Water Efficiency				
WE-1.1	Require Covers for New Pools	Ordinances and Codes	CD	Short-Term
WE-1.2	Require Weather Based Irrigation Systems	Ordinances and Codes	CD	Ongoing

Table 4-3 Implementation Strategy Matrix

Action	Title	Category	Responsible Department/ Agency	Implementation Timeframe
Strategy 7: Reduce and Recycle Solid Waste				
Measure SW-1: Reduce Solid Waste and Increase Recycling				
SW-1.1	Solid Waste Reduction and Recycling	Education and Outreach, Partnerships	CD; PW	Short-Term
Strategy 8: Carbon Sequestration				
Measure CS-1: Increase Urban Tree Planting				
CS-1.1	Increase Shaded Landscape Area	Ordinances and Codes	CD; PW	Short-Term
CS-1.2	Increase Tree Shade in Surface Parking Lots	Ordinances and Codes	CD; PW	Short-Term
CS-1.3	Increase Street Trees	Ordinances and Codes	CD; PW	Short-Term

Notes: CD = Community Development Department; CM = City Manager's Office; CVUSD = Cajon Valley Union School District; EV = Electric Vehicle; IT = Information Technology Department; GUHSD = Grossmont Union High School District; PW = Public Works Department; TDM = Transportation Demand Management; TDSP = Transit District Specific Plan

Source: Ascent Environmental 2019.

4.3 Monitoring and Updates

The SI lays out a long-term strategy to reduce GHG emissions and to improve the sustainability of the community. The SI will be monitored over time to assess progress on the implementation of the identified strategies and actions.

Upon adoption, the City will begin to implement measures and actions. Periodically, City staff will present a summary of progress to date to the City Council. Through the climate planning services offered via its Roadmap Program, the San Diego Association of Governments (SANDAG) is updating GHG emissions inventories for local jurisdictions every two years, beginning with the 2016 baseline year. City staff will also evaluate the GHG emissions reduction measures' cost, effectiveness, and benefits of each individual measure. By evaluating whether the implementation of a measure is on track to achieve its reduction potential, the City can identify successful measures and re-evaluate or replace under-performing ones.

Source: City of El Cajon

A monitoring report will also be prepared on a regular basis. This report will provide updates on implementation progress, the GHG reductions achieved to date, and other important milestones. As technologies and markets change and the City implements the actions, these new inventories and monitoring reports will be used to track progress and identify actions that need to be improved, adjusted, or removed. The report will also serve to inform the public about progress on measures and actions being implemented, as well as overall progress towards the City's GHG reduction targets.

4.4 Ongoing Engagement

Source: City of El Cajon

The City is committed to continuing outreach efforts through implementation and monitoring. Effective and long-term climate action in the City can only be achieved through efforts that continue to change the way individuals interact with the environment.

Many actions identified in Chapter 3 require increased community awareness and participation in existing programs, or connecting the community with new information, tools, funding, incentives, or resources.

4.5 Funding Sources

The City will incur minor costs to implement some of the measures outlined in the SI. These include initial start-up and ongoing administration, which will be absorbed within existing department budgets. While some measures will only require funding from public entities, others would result in minor increased costs for businesses, new construction, and residents. However, most measures provide substantial cost-savings in the long-term.

The City will be diligent in cost-effective implementation by leveraging strategic funding opportunities and partnerships. Success of the SI will require capital improvements, investments, and increased operations and maintenance efficiencies. The summary of funding and financing options are summarized in Table 4-4. Funding options are included from a variety of sources including the City, regional agencies such as SANDAG, or San Diego Gas & Electric (SDG&E). The City will monitor private and public funding sources for new grant and rebate opportunities. Leveraging funding opportunities would facilitate successful implementation of the GHG reduction measures.

The State's Climate Change Funding Wizard provides updates for funding available to cities, residents, and businesses to decrease GHG emissions in improve local resiliency.

Table 4-4 Potential Funding Sources to Support GHG Reduction Measures

Funding Source	Description
For City Operations	

California Department of Resources Recycling and Recovery (CalRecycle)	▪ CalRecycle grant programs allow jurisdictions to assist public and private entities in management of waste streams.
	▪ Incorporated cities and counties in California are eligible for funds.
	▪ Program funds are intended to:
	  ▪ Reduce, reuse, and recycle all waste.
	  ▪ Encourage development of recycled-content products and markets.
	  ▪ Protect public health and safety and foster environmental sustainability.

California Air Resources Board (CARB)	▪ CARB offers several grants, incentives, and credit programs to reduce on-road and off-road transportation emissions. Residents, businesses, and fleet operators can receive funds or incentives depending on the program.

Table 4-4 Potential Funding Sources to Support GHG Reduction Measures

Funding Source	Description
	▪ The following programs can be utilized to fund local measures: ▪ Air Quality Improvement Program (Assembly Bill [AB] 118) ▪ Loan Incentives Program ▪ California Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project
Transportation-Related Federal and State Funding	▪ For funding measures related to transit, bicycle, or pedestrian improvements, the following funding sources from the San Diego Association of Governments (SANDAG) may be utilized: ▪ Smart Growth Incentive Program ▪ Active Transportation Grant Program ▪ Job Access and Reverse Commute and New Freedom Programs ▪ Specialized Transportation Grant Program
New Development Impact Fees	▪ These types of fees may have some potential to provide funding for proposed programs and projects, but such fees are best implemented when the real estate market and overall regional economic conditions are strong.
General Obligation Bond	▪ A general obligation bond is a form of long-term borrowing and could be utilized to fund municipal improvements.
Other Funding Mechanisms for Implementation	▪ Grants may be available from the Strategic Growth Council (SGC) or the State Department of Conservation (DOC) to fund sustainable community planning, natural resource conservation, and development, and adoption.
For Community Operations	
San Diego Gas & Electric (SDG&E)	▪ SDG&E is one of the utilities participating in the Go Solar initiative. ▪ A variety of rebates are available for existing and new homes. ▪ Photovoltaics (PV), thermal technologies, and solar hot water projects are eligible. ▪ Single-family homes, commercial development, and affordable housing are eligible.
Property-Assessed Clean Energy (PACE)	▪ The PACE finance program is intended to finance energy and water improvements within a home or business through a land-secured loan, and funds are repaid through property assessments. ▪ Municipalities are authorized to designate areas where property owners can enter into contractual assessments to receive long-term, low-interest loans for energy and water efficiency improvements, and renewable energy installation on their property. ▪ Financing is repaid through property tax bills. ▪ Home Energy Renovation Opportunity (HERO; a PACE program) programs are available in jurisdictions throughout the County, including El Cajon. The HERO program assists residents in financing residential energy efficiency and solar retrofits.
Clean Vehicle Rebate Program	▪ Individual, fleet operators, local government entities, and businesses can apply for rebates for purchases of plug-in electric hybrids (PHEVs), battery electric vehicles (BEVs), fuel-cell electric vehicles (FCEVs), and other non-highway, motorcycle and commercial BEVs.
Energy Upgrade California	▪ Program is intended for home energy upgrades. ▪ Funded by the American Recovery and Reinvestment Act, California utility ratepayers, and private contributions.

Table 4-4 Potential Funding Sources to Support GHG Reduction Measures

Funding Source	Description
	▪ Utilities administer the program, offering homeowners the choice of one of two upgrade packages—basic or advanced. ▪ Homeowners are connected to home energy professionals. ▪ Rebates, incentives, and financing are available. ▪ Homeowners can receive up to $4,000 back on an upgrade through the local utility.
Federal Tax Credits for Energy Efficiency	▪ Tax credits for energy efficiency can be promoted to residents.
Energy Efficient Mortgages (EEM)	▪ An EEM is a mortgage that credits a home's energy efficiency in the mortgage itself. ▪ Residents can finance energy saving measures as part of a single mortgage. ▪ To verify a home's energy efficiency, an EEM typically requires a home energy rating of the house by a home energy rater before financing is approved. ▪ EEMs typically are used to purchase a new home that is already energy efficient, such as an ENERGY STAR® qualified home.
Private Funding	▪ Private equity can be used to finance energy improvements, with returns realized as future cost savings. ▪ Rent increases can fund retrofits in commercial buildings. ▪ Net energy cost savings can fund retrofits in households. ▪ Power Purchase Agreements (PPA) involve a private company that purchases, installs, and maintains a renewable energy technology through a contract that typically lasts 15 years. After 15 years, the company would uninstall the technology or sign a new contract. ▪ On-Bill Financing (OBF) can be promoted to businesses for energy-efficiency retrofits. Funding from OBF is a no-interest loan that is paid back through the monthly utility bill. Lighting, refrigeration, heating, ventilation, and air conditioning, and light-emitting diode streetlights are all eligible projects.
Community Choice Aggregation (CCA) Revenue	▪ Revenue generated by a CCA program may be used to fund or incentivize GHG reduction measures.
Housing Rehabilitation Loan Programs	▪ Critical Home Repair Program through Habitat for Humanity provides home improvements for low-income homeowners to improve home efficiency, safety, and accessibility. ▪ The U.S. Department of Housing and Urban Development (HUD) Community Development Block Grant (CDBG) program provides communities with resources to address redevelopment needs, specifically for home rehabilitation. ▪ HUD also administers the HOME program, providing grants to improve affordable housing opportunities and conditions.
General Funding and Staff Capacity	
CivicSpark Program	▪ Supports sustainability-focused research, planning, and implementation projects throughout California by providing public agencies and other organizations with capacity building support and community engagement ▪ Provides volunteer engagement through AmeriCorps fellows to provide added staff capacity for eleven months

Table 4-4 Potential Funding Sources to Support GHG Reduction Measures

Funding Source	Description
California Climate Investments (CCI)	▪ CCI is the statewide initiative that provides funds from the Cap-and-Trade program for GHG reducing projects and programs. ▪ Funds can support a variety of projects including affordable housing, renewable energy, public transportation, zero-emission vehicles, environmental restoration, sustainable agriculture, recycling, and more. ▪ Numerous State programs listed above are funded by CCI; however, the program continues to evolve and is updated by the State periodically to include new or modified programs.

Source: Ascent Environmental 2019.