



# Sustainable Beaumont

The City's Roadmap to Greenhouse Gas Reductions

CITY COUNCIL FINAL

OCTOBER 2015





# Sustainable Beaumont: The City's Roadmap to Greenhouse Gas Reductions

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## Acronyms and Abbreviations

AB	Assembly Bill
ABAU	Adjusted Business-As-Usual
ARB	California Air Resources Board
BAU	Business-As-Usual
CALGreen	California's Green Building Standard Code
Plan	Climate Action Plan
°C	degrees Centigrade
CALGreen	California's Green Building Standard Code
CalRecycle	California Department of Resources Recycling and Recovery
CAS	Climate Adaptation Strategy
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CH <sub>4</sub>	Methane
CIP	capital improvement program
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> e	carbon dioxide equivalent
EE	energy efficiency
EIR	environmental impact report
EO	Executive Order
USEPA	U.S. Environmental Protection Agency
°F	degrees Fahrenheit
FHFA	Federal Housing Finance Agency
GHG	greenhouse gas
GWP	global warming potential
HERO	Home Energy Renovation Opportunity
HVAC	Heating, venting, and air conditioning
IFT	Emissions Inventory, Forecasting, and Targets
IPCC	Intergovernmental Panel on Climate Change
kW	kilowatts
kWh	kilowatt hours
LCFS	Low Carbon Fuel Standard
LED	light-emitting diode
LEED	Leadership in Energy & Environmental Design
MPO	metropolitan planning organization
MT	metric tons
MTCO <sub>2</sub> e	metric tons of carbon dioxide equivalent
N <sub>2</sub> O	nitrous oxide
OBF	On-Bill Financing
OPR	California Office of Planning and Research
PACE	Property Assessed Clean Energy
PPA	Power Purchase Agreement

## ACRONYMS AND ABBREVIATIONS



ppb	parts per billion
ppm	parts per million
RECO	Residential Energy Conservation Ordinance
RTP	Regional Transportation Plan
SB	Senate Bill
SCAG	Southern California Association of Governments
SCE	Southern California Edison
SCG	Southern California Gas Company
SCS	Sustainable Communities Strategy
VMT	vehicle miles traveled

## Executive Summary

The City of Beaumont (City) is committed to providing a more livable, equitable, and economically vibrant community through the incorporation of energy efficiency features and reduction of greenhouse gas (GHG) emissions. By using energy more efficiently, Beaumont will keep dollars in the local economy, create jobs, and improve the community's quality of life. The efforts toward increasing energy efficiency described in this report would be done in coordination with the City's other planning land use decisions. Through the Sustainable Beaumont Plan, the City has established goals and policies that incorporate environmental responsibility into its daily management of its community and municipal operations.

### Inventories

The first step in completing the Plan was to update the City's GHG emissions inventory. In 2014, the City completed an update of the City's 2012 emissions inventories. The results of the inventories are shown in Figure ES-1.

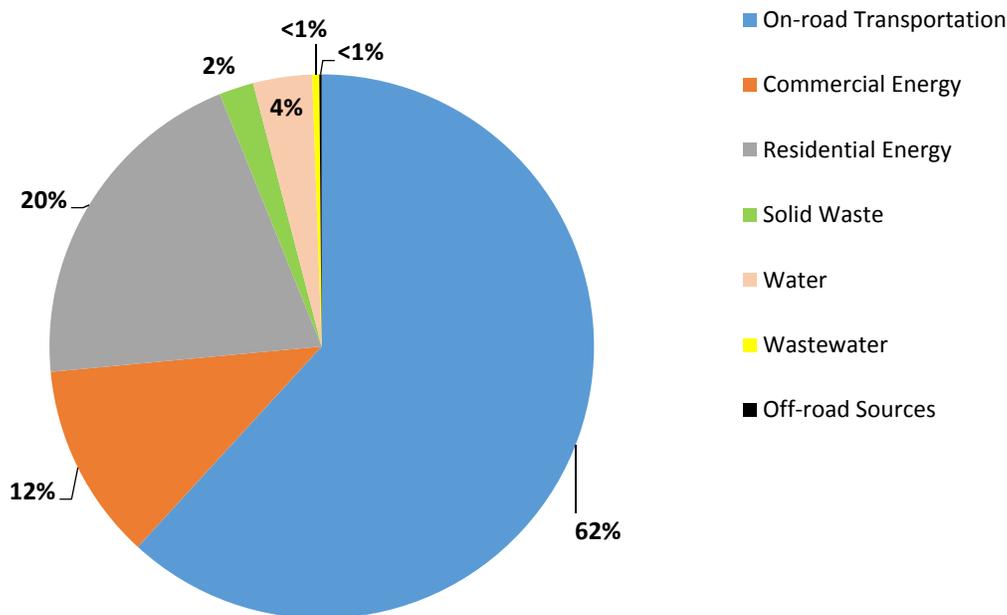


FIGURE ES-1. Community Greenhouse Gas Emissions for 2012



Emissions in 2005 were 75,810 MT CO<sub>2</sub> and declined nearly 10% by 2012, to 68,435 MT CO<sub>2</sub>e. Sector-level emissions for 2012 are shown in Table ES-1.

**TABLE ES-1. Community GHG Emissions by Sector for 2005 and 2012**

Sector	2012 Activity Data	Unit	2012 GHG Emission (MT CO <sub>2</sub> e)	% of Total Emission
<b>On-road Transportation</b>	298,143,788	Vehicle Miles Traveled	170,157	62%
<b>Residential Electricity</b>	98,608,434	kWh	31,555	20%
<b>Residential Natural Gas</b>	4,615,641	therms	24,544	
<b>Commercial Electricity</b>	85,868,511	kWh	27,479	12%
<b>Commercial Natural Gas</b>	891,905	therms	4,743	
<b>Water<sup>1</sup></b>	3,404	MG	9,624	3%
<b>Solid Waste-Landfilled</b>	18,819	tons	4,630	2%
<b>Solid Waste-Green Waste</b>	5,141	tons	1,018	
<b>Wastewater</b>	40,876	Service Population	1,164	<1%
<b>Off-road<sup>2</sup></b>				
Lawn & Garden	1.77	% Households	13	<1%
Construction	4.95	% Building permits	345	
Industrial	0.57	% Manufacturing jobs	4	
Light Commercial	0.81	% Other jobs	4	
Recreation	1.95	Population weighted by income	12	
Agriculture	0.62	% Ag. Jobs	10	
<b>Total</b>	-	-	<b>275,302</b>	

1 Water usage data uses 2015 proxy since 2012 data were not available.

2 Off-road emissions are available at the county level through CARB's OFFROAD model. Emissions attributable to the City were derived using indicator data related to the off-road source. For example, the percentage of households in the City compared to total households in the county was used to attribute the same percentage of lawn & garden equipment emissions to the City. See Appendix B for more methodology details.

Similarly, the City's municipal operations were inventoried for 2012. Figure ES-2 shows the municipal emissions.

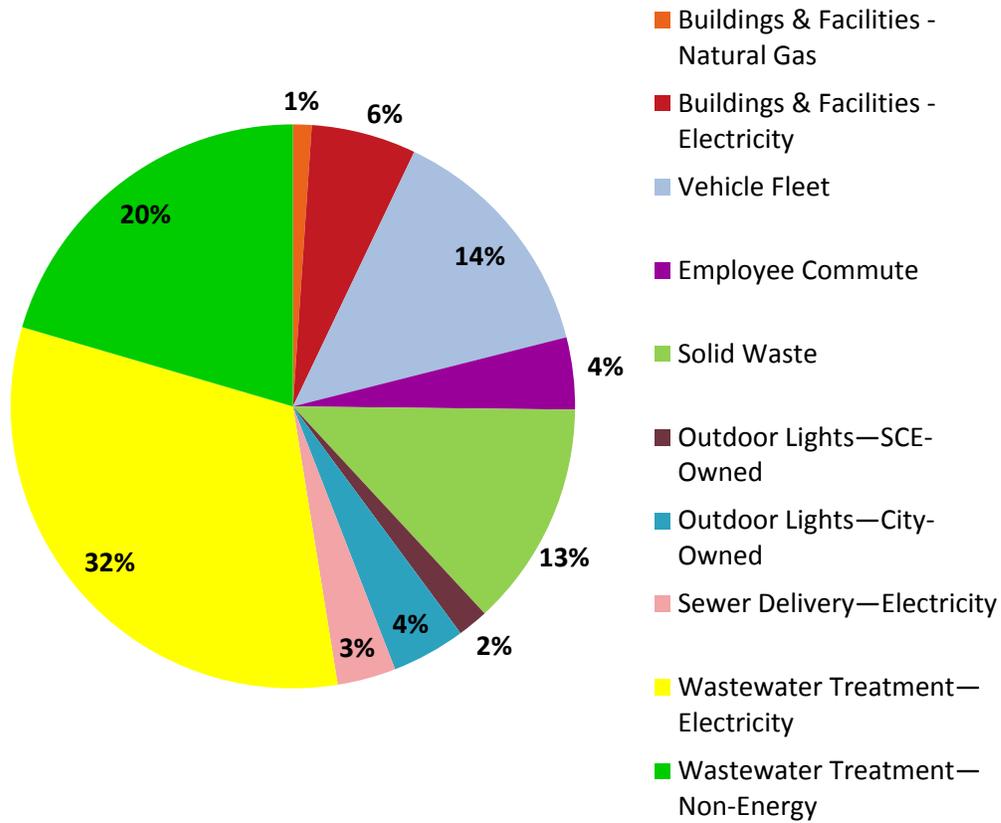


FIGURE ES-2. Municipal GHG Emissions by Sector for 2012

Municipal emissions are a subset of community emissions and account for less than 1% of community emissions. Sector-level details for 2012 are shown in Table ES-2.



TABLE ES-2. Municipal GHG Emissions by Sector for 2005 and 2012

Sector	2012 Activity Data	Unit	2012 GHG Emission (MT CO <sub>2</sub> e)	% of Total Emission
<b>Buildings and Facilities—Natural Gas</b>				
Amusement and Recreation	4,746	therms	25	1%
Executive Offices	5,481		29	
Transit	1,248		7	
General Government	391		2	
Police Protection	81		0.43	
Fire Department	578		3	
<b>Buildings and Facilities—Electricity</b>				
Amusement and Recreation	299,710	kWh	96	6%
Executive Offices	255,217		82	
General Government	41,405		13	
Police Protection	291,782		93	
Non-residential Building Operators	617		0.20	
Sewerage Systems	203,301		65	
Public Order and Safety	72,969		23	
<b>Employee Commute</b>				
Gas	453,087	vehicle miles traveled	219	4%
Diesel	27,459		37	
<b>Vehicle Fleet</b>				
Gas	80,078	gallons	703	14%
Diesel	8,972	gallons	92	
CNG	372	cubic feet	0.020	
Methanol	17,657	gallons	72	
<b>Outdoor Lights</b>				
City Owned	819,107	kWh	262	4%
SCE Owned	339,522		109	2%
<b>Solid Waste</b>	2961	tons	802	13%
<b>Sewer Delivery—Electricity</b>	650,706	kWh	208	3%
<b>Wastewater Treatment—Electricity</b>	6,216,669	kWh	1,989	32%
<b>Wastewater Treatment—Non-Energy</b>	42,826	service population	1,269	20%
<b>Total</b>	-	-	<b>6,201</b>	<b>100%</b>

## Forecasts and Target Setting

The next step in the process was to estimate future emissions in the City and establish GHG reduction targets. Consistent with the State's adopted AB 32 GHG reduction target, the City has set a goal to reduce emissions back to 1990 levels by the year 2020. This target was calculated as a 15 percent



decrease from 2005 levels, as recommended in the AB 32 Scoping Plan. A longer-term goal was established for 2035. The goal for 2030 is to reduce emission 41.7% below 2012 levels, which would put the City on a path toward the State’s long-term goal to reduce emissions 80% below 1990 levels by 2050 (Table ES-3).

**TABLE ES-3. Emission Reduction Targets for Community and Municipal Operations**

	<b>Community</b>
<b>2020 Target</b>	15% below 2012 levels
<b>2020 Emissions Goal (MT CO<sub>2</sub>e)</b>	234,007
<b>2030 Target</b>	41.7% below 2012 levels
<b>2030 Emissions Goal (MT CO<sub>2</sub>e)</b>	160,501

The City’s future emissions were estimated using demographic indicators such as population and jobs growth. Emissions for the City’s municipal operations were estimated using the number of staff anticipated in future years. Growth indicators used are shown by sector in Table ES-4.

**TABLEES-4. Growth Factors for 2012, 2020, and 2030**

Sector	Demographic Indicator	2012	2020	2030	% Change 2012-2020	% Change 2012-2030
Transportation – Gas	Daily Vehicle Miles Traveled	256,815,789	324,417,786	358,276,457	26.32%	39.51%
Transportation – Diesel	Daily Vehicle Miles Traveled	41,327,999	61,771,016	108,532,937	49.5%	162.61%
Solid Waste, Water, Wastewater, Off-Road Sources	Service Population (Population + Jobs)	43,680	65,100	81,616	49.04%	86.85%
NA <sup>1</sup>	Population	38,851	56,500	70,886	45.43%	82.46%
Residential Energy	Households	12,292	18,800	23,456	52.95%	90.82%
Commercial/ Industrial Energy	Jobs	4,829	8,600	10,730	78.09%	122.20%
Municipal Emissions <sup>2</sup>	Full-time-equivalent employees	157.5	187.5	187.5	19.05%	19.05%

Source: SCAG

1: Not Applicable. Population data are shown for informational purposes but are not used for forecasting any sector.

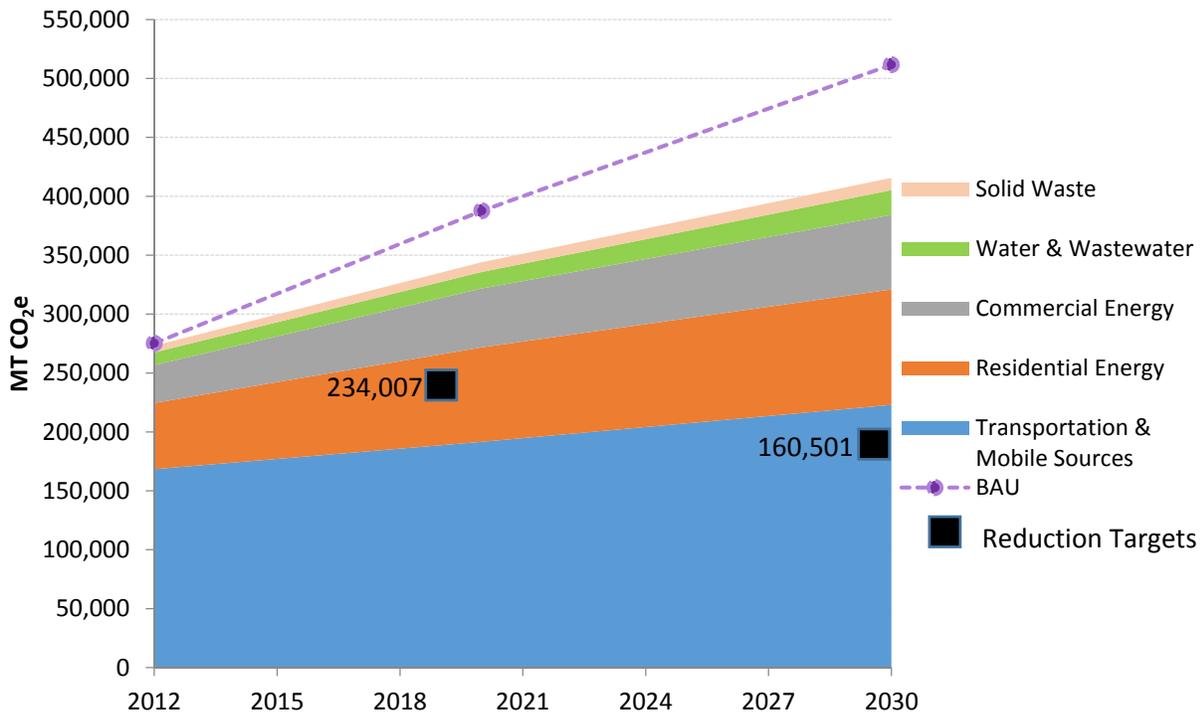
2: Except for Wastewater treatment, which will increase based on service population increase.



Future emissions estimates also included reductions that would happen with implementation of legislation adopted at the State level. That is, some level of emission reduction is anticipated within the City as a result of policies implemented at the State level, including:

- Low Carbon Fuel Standard.
- Assembly Bill (AB) 1493 and Advanced Clean Cars.
- California Building Code Title 24.
- Renewable Portfolio Standard.
- Senate Bill X7-7.

The resulting projected emissions are considered an “adjusted” business-as-usual (Adjusted BAU) forecast. Historic emissions, Adjusted BAU forecast, and 2020 and 2035 targets are shown in Figure ES-3 for the community and Figure ES-4 for municipal operations. For both the community and municipal operations, the Adjusted BAU forecasts indicate the 2020 emissions target will be met, but additional measures will be needed to meet the 2030 goal.



FIGUREES-3. Community Emissions Inventories, Projections, and Targets

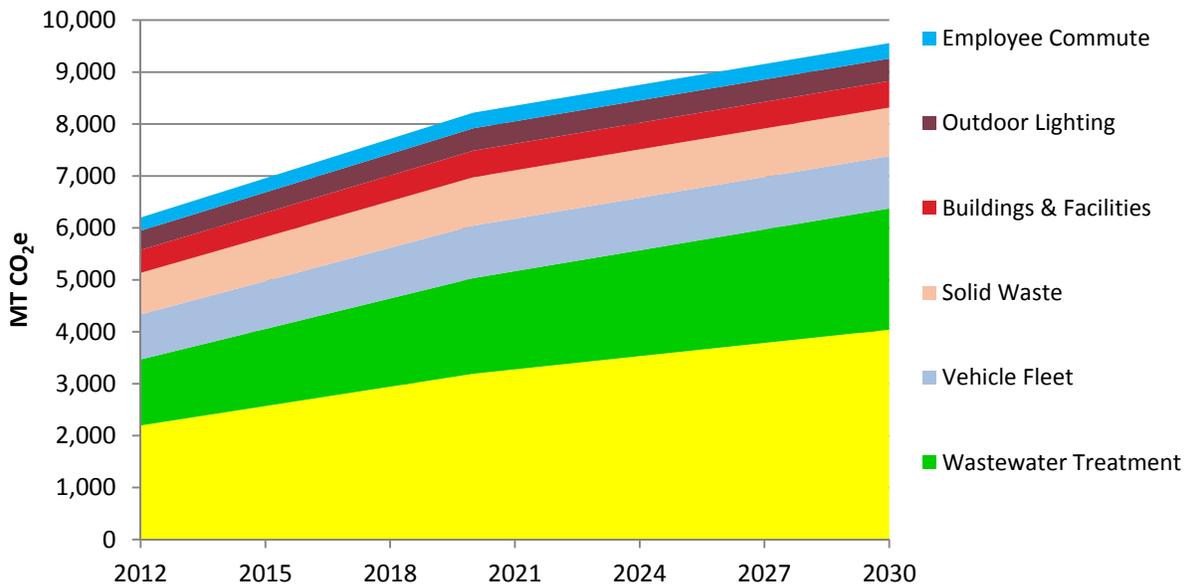


FIGURE ES-4. Municipal Emissions Inventories and Projections,

### Reduction Measures

The City has already demonstrated its commitment to conserve energy and reduce emissions through a variety of programs and policies. Programs to reduce emissions include implementing water efficient landscape ordinance and participation in multiple home financing programs that will allow home and business owners to obtain low-interest loans for implementing energy efficiency in their buildings. In order to reach the reduction target, the City would also implement the additional local reduction measures described in this report. These measures encourage energy efficiency and water conservation. Table ES-5 and ES-6 summarizes the measures that would be implemented to meet the community and municipal GHG reduction goals, respectively, for 2020 and 2030.

TABLE ES-5. Community GHG Reduction Strategies

	2020 MT CO <sub>2</sub> e Reduced	% Reduced from 2020	2030 MT CO <sub>2</sub> e Reduced	% Reduced from 2030
<b>Existing Residential</b>	2,163	>1%	6,489	1.3%
<b>New Residential</b>	10,991	2.8%	29,239	5.7%
<b>Existing Commercial</b>	1,807	>1%	5,421	1.0%
<b>New Commercial</b>	3,521	1.0%	10,562	2.0%
<b>Water Efficiency</b>	1,260	>1%	3,780	1.0%
<b>Transportation</b>	117,825	30.0%	175,480	34.3%
<b>Solid Waste</b>	7,655	2.0%	22,496	4.4%
<b>Total</b>	145,221	37%	253,466	49.5%

Totals may be off due to rounding.



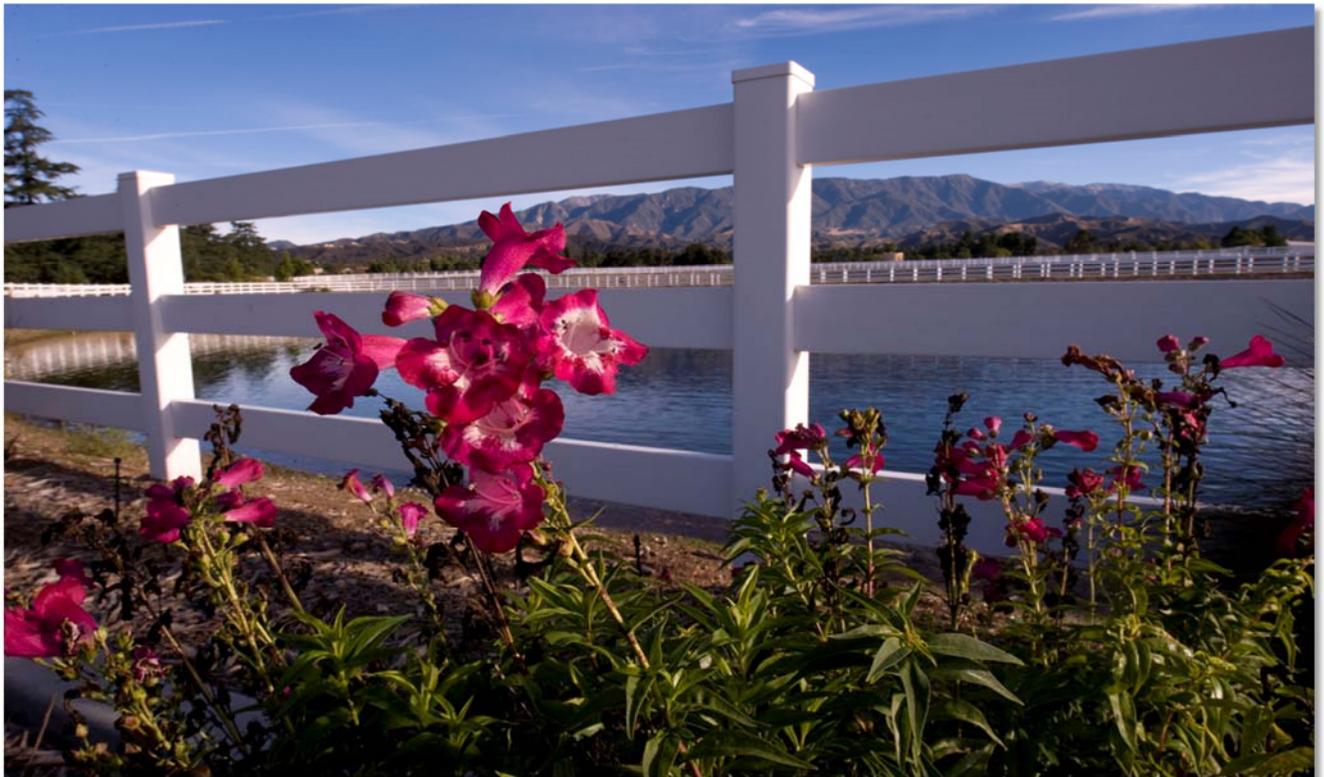
## Implementation

Finally, the EECAP in itself is not enough to meet the reduction goals. The EECAP must be implemented and the EECAP identifies the process for implementing and monitoring the strategies described. The six step process is summarized in Figure ES-5.



FIGURE ES-5. Process of Implementing the EECAP

Upon successful implementation of this EECAP, the City and its agency partners will demonstrate the potential economic, social, and environmental benefits of increasing energy efficiency and providing environmental stewardship within the community



## CHAPTER 1 Introduction

The City of Beaumont (City) is committed to planning sustainably for the future while ensuring a livable, equitable, and economically vibrant community. By using energy more efficiently, harnessing renewable energy to power buildings, recycling waste, and enhancing access to sustainable transportation modes, the City can keep dollars in its local economy, create new green jobs, and

### PURPOSE

The Sustainable Beaumont Plan has three primary purposes:

1. Present the City's plan for achieving sustainability by utilizing resources effectively and reducing greenhouse gas (GHG) emissions.
2. Solicit input from the community to identify the best opportunities for the community to reduce GHG emissions.
3. Identify how the City will effectively implement this Plan by promoting economic competitiveness, obtaining funding for program implementation, and tracking and monitoring the progress of Plan implementation over time.

improve community quality of life in addition to reducing greenhouse gas (GHG) emissions. To that end, the City has implemented a number of sustainability and conservation efforts and seeks to continue those efforts through local planning and partnerships. The Sustainable Beaumont Plan (Plan) integrates the City's past and current efforts with future efforts to grow and thrive sustainably.



## Climate Change Science

Climate change is a term used to describe large-scale shifts in patterns in earth's climate system, and is measured by alterations in wind patterns, storms, precipitation, and temperature. These changes are assessed using historical records of temperature changes occurring in the past. Although the climate has historically responded to natural drivers, recent climate change has been unequivocally linked to increasing concentrations of GHGs in earth's atmosphere.

Gases that trap heat in the atmosphere are called "greenhouse gases" because they transform the light of the sun into heat, similar to the glass walls of a greenhouse. Human-generated GHG emissions significantly contribute to the changes in the global climate, which have a number of physical and environmental effects. Effects associated with global climate change include sea level rise, increase in frequency and intensity of droughts, and increased temperature. In California, climate change effects also include increased risk of large wildfires, exacerbation of air quality problems, and an increase in extreme weather events. Increased GHG emissions are largely the result of increasing energy consumption, particularly through the combustion of fossil fuels.

The Intergovernmental Panel on Climate Change (IPCC) assesses scientific, technical, and socioeconomic information relevant to the understanding of climate change, its potential impacts, and options for adaptation and mitigation. The IPCC identifies six key GHG compounds: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), perfluorocarbons (PFC), sulfur hexafluoride (SF<sub>6</sub>), and hydrofluorocarbons (HFC). The first three (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O) are emitted by common activities, such as on-road travel, and are reported in this Plan as described further below.

Each GHG has a different capacity to trap heat as well as different atmospheric lifetimes. Therefore, the global warming potential (GWP) of each GHG is compared with a reference gas. Carbon dioxide is the reference gas used for GWP, and has a GWP of one. Methane's GWP of 21 indicates that methane has 21 times greater warming affect than CO<sub>2</sub> on a molecule per molecule basis.

GHG emissions are generally reported in metric tons (MT) of CO<sub>2</sub> equivalents (CO<sub>2</sub>e). A CO<sub>2</sub>e is calculated using the mass emissions of an individual GHG multiplied by its GWP. The calculation of the CO<sub>2</sub>e is a consistent methodology for comparing GHG emissions, since it normalizes various GHG emissions to a consistent reference gas.

**Carbon Dioxide (CO<sub>2</sub>)** is the most common anthropogenic GHG and accounts for more than 75 percent of all GHG emissions caused by humans. Its atmospheric lifetime of 50 to 200 years means that atmospheric concentrations of CO<sub>2</sub> will remain elevated for decades, even after mitigation efforts to reduce GHG concentrations are implemented. The primary sources of anthropogenic CO<sub>2</sub> in the atmosphere include the burning of fossil fuels (including motor vehicles), gas flaring, cement production, and land use changes (e.g., deforestation, oxidation of elemental carbon). CO<sub>2</sub> can be removed from the atmosphere by photosynthetic organisms (e.g., plants and certain bacteria).



Atmospheric CO<sub>2</sub> has increased from a preindustrial concentration of 280 parts per million (ppm) to 397 ppm in 2014.<sup>1</sup>

**Methane (CH<sub>4</sub>)**, the main component of natural gas, is the second most abundant GHG. CH<sub>4</sub> has a GWP of 25. Sources of anthropogenic emissions of CH<sub>4</sub> include combustion of natural gas, burning fossil fuels, landfill outgassing, certain agricultural practices, and mining coal. Certain land uses also function as both a source and sink for CH<sub>4</sub>. For example, the primary terrestrial source of CH<sub>4</sub> are wetlands, whereas undisturbed, aerobic soils act as a CH<sub>4</sub> sink (i.e., they remove CH<sub>4</sub> from the atmosphere). Atmospheric CH<sub>4</sub> has increased from a pre-industrial concentration of 715 parts per billion (ppb) to 1,820 ppb in 2014.<sup>2</sup>

**Nitrous Oxide (N<sub>2</sub>O)** is a powerful GHG, with a GWP of 298. Anthropogenic sources of N<sub>2</sub>O include combustion of fossil fuels, agricultural processes (e.g., fertilizer application), and nylon production. In the United States more than 70 percent of N<sub>2</sub>O emissions are related to agricultural soil management practices, particularly fertilizer application. N<sub>2</sub>O concentrations in the atmosphere have increased nearly 21 percent, from pre-industrial levels of 270 ppb to 326 ppb in 2014.<sup>3</sup>

## Benefits of the Plan

This Plan benefits the City in many direct and indirect ways.

- **Local Control**—This Plan allows the City to identify strategies to reduce resource consumption, costs, and GHG emissions in all economic sectors in a way that maintains local control over the issues and fits the character of the community. It may also position the City for funding to implement programs tied to climate goals.
- **Energy and Resource Efficiency**—This Plan identifies opportunities for the City to increase energy efficiency and lower GHG emissions in a manner that is most feasible in the community. Energy consumption can be reduced through increasing the efficiency of energy technologies, reducing absolute energy use (such as through activity management), and using alternative sustainable sources of energy. Energy efficiency also provides opportunities for cost-savings.
- **Improve Public Health**—Many of the GHG reduction strategies identified in this Plan also have local public health benefits. Benefits of the Plan include improvements to local air quality; creation of a more active community through implementing sustainable living practices; and a reduction in health risks, such as heat stroke, elevated by climate change impacts such as increased extreme heat days.

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<sup>1</sup> NOAA, Annual Greenhouse Gas Index (AGGI), <http://www.esrl.noaa.gov/gmd/aggi/aggi.fig2.png> (accessed March 19, 2015).

<sup>2</sup> NOAA, Annual Greenhouse Gas Index (AGGI), <http://www.esrl.noaa.gov/gmd/aggi/aggi.fig2.png> (accessed March 19, 2015).

<sup>3</sup> NOAA, Annual Greenhouse Gas Index (AGGI), <http://www.esrl.noaa.gov/gmd/aggi/aggi.fig2.png> (accessed March 19, 2015).



- **Demonstrate Consistency with State GHG Reduction Goals**—A GHG reduction plan may be used by a General Plan to demonstrate that the City is aligned with state goals for reducing GHG emissions to a level considered less than cumulatively considerable.
- **Meet California Environmental Quality Act (CEQA) Requirements**—California Environmental Quality Act (CEQA) requires impacts from GHG emissions to be reviewed. A qualified GHG reduction plan may be used in future development projects as the GHG analysis for their CEQA document, resulting in greater certainty for developers and cost-effectiveness for developers and City staff.

## Regulatory Setting

International agreements, federal, and state actions to stabilize GHG emissions and reduce impacts associated with climate change have been implemented beginning as early as 1988. The government agencies discussed below work jointly, as well as individually, to address GHG emissions through legislation, regulations, planning, policy-making, education, and a variety of programs.

### ***Federal***

#### **United States Environmental Protection Agency**

In 2007, the U.S. Supreme Court held that the United States Environmental Protection Agency (USEPA) has authority to regulate GHGs (*Massachusetts v. Environmental Protection Agency, Docket No. 05–1120*). As such, the U.S. Supreme Court ruled that the USEPA is allowed to regulate carbon dioxide and other GHGs as pollutants under Section 202(a)(1) of the federal Clean Air Act (CAA).

### ***State***

#### **California Air Resources Board**

The California Air Resources Board (ARB), a part of the California EPA (Cal/EPA) is responsible for the coordination and administration of both federal and state air pollution control and climate change programs within California. In this capacity, ARB conducts research, sets California ambient air quality standards (CAAQS), compiles emission inventories, develops suggested control measures, and provides oversight of local programs. ARB establishes emissions standards for motor vehicles sold in California, consumer products, and various types of commercial equipment.

#### **Executive Order S-3-05**

On June 1, 2005, California Governor Arnold Schwarzenegger announced Executive Order S-3-05, which contains following GHG emissions targets:

- By 2010, California shall reduce GHG emissions to 2000 levels
- By 2020, California shall reduce GHG emissions to 1990 levels
- By 2050, California shall reduce GHG emissions to 80 percent below 1990 levels



## **Executive Order B-30-15**

On April 29, 2015, California Governor Jerry Brown announced through Executive Order B 30 15, the following GHG emissions target:

- By 2030, California shall reduce GHG emissions to 40 percent below 1990 levels

The emission reduction target of 40 percent below 1990 levels by 2030 is an interim-year goal to make it possible to reach the ultimate goal of reducing emissions 80 percent under 1990 levels by 2050.

## **Assembly Bill 1493, Clean Car Standards**

Known as “Pavley I,” AB 1493 standards were the nation’s first GHG standards for automobiles. AB 1493 requires ARB to adopt vehicle standards that will lower GHG emissions from new light-duty autos to the maximum extent feasible. Additional strengthening of the Pavley standards (previously referred to as “Pavley II,” now referred to as the “Advanced Clean Cars” measure) has been proposed for vehicle model years 2017–2025. Together, the two standards are expected to increase average fuel economy to roughly 43 miles per gallon by 2020 (and more for years beyond 2020).

## **Assembly Bill 32 (AB 32), the California Global Warming Solutions Act of 2006**

AB 32 requires ARB to reduce statewide GHG emissions to 1990 level by 2020. As part of this legislation, ARB was required to prepare a “Scoping Plan” that demonstrates how the State will achieve this goal. The Scoping Plan was adopted in 2011 and in it, local governments were described as “essential partners” in meeting the statewide goal, recommending a GHG reduction level 15 percent below 2005–2008 levels by 2020.

## **Senate Bill 97 (SB 97)**

SB 97, enacted in 2007, amends the CEQA statute to clearly establish that GHG emissions and the effects of GHG emissions are appropriate subjects for CEQA analysis. The legislation directed the California Office of Planning and Research (OPR) to develop draft CEQA Guidelines “for the mitigation of GHG emissions or the effects of GHG emissions” and directed the Resources Agency to certify and adopt the State CEQA Guidelines.

CEQA Guidelines Section 15183.5, Tiering and Streamlining the Analysis of GHG Emissions, was added as part of the CEQA Guideline amendments that became effective in 2010. CEQA Guidelines Section 15183.5 describes the criteria needed in a GHG reduction plan that would allow for the tiering and streamlining of CEQA analysis for development projects. A plan for the reduction of GHG emissions must contain the following 5 components to be qualified for tiering CEQA documents:

- Quantify GHG emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area;
- Establish a level, based on substantial evidence, below which the contribution to GHG emissions from activities covered by the plan would not be cumulatively considerable;
- Identify and analyze the GHG emissions resulting from specific actions or categories of actions anticipated within the geographic area;



- Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;
- Establish a mechanism to monitor the plan’s progress toward achieving the level and to require amendment if the plan is not achieving specified levels;
- Be adopted in a public process following environmental review.

### **Executive Order S-1-07, Low Carbon Fuel Standard (LCFS)**

Executive Order S-01-07 mandates (1) that a statewide goal be established to reduce the carbon intensity of California’s transportation fuels by at least 10 percent by 2020, and (2) that an LCFS for transportation fuels be established in California. ARB developed the LCFS regulation pursuant to the authority under AB 32 and adopted it in 2009.

### **Executive Order S-13-08, The Climate Adaptation and Sea Level Rise Planning Directive**

Executive Order S-13-08 provides clear direction for how the state should plan for future climate impacts. Executive Order S-13-08 calls for the implementation of four key actions to reduce the vulnerability of California to climate change:

- Initiate California's first statewide Climate Adaptation Strategy (CAS) that will assess the state's expected climate change impacts, identify where California is most vulnerable, and recommend climate adaptation policies.
- Request that the National Academy of Sciences establish an expert panel to report on sea level rise impacts in California in order to inform state planning and development efforts.
- Issue interim guidance to state agencies for how to plan for sea level rise in designated coastal and floodplain areas for new and existing projects.
- Initiate studies on critical infrastructure and land-use policies vulnerable to sea level rise.

### **California Code of Regulations (CCR) Title 24, Part 6**

CCR Title 24, Part 6 (California’s Energy Efficiency Standards for Residential and Nonresidential Buildings) (Title 24), was established in 1978 to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. Although it was not originally intended to reduce GHG emissions, electricity production by fossil fuels and natural gas use result in GHG emissions and energy efficient buildings require less electricity and natural gas. Therefore, increased energy efficiency results in decreased GHG emissions.

The California Energy Commission (CEC) adopted 2008 Standards on April 23, 2008, in response to AB 32. The Standards were adopted to provide California with an adequate, reasonably priced, and environmentally sound supply of energy; to pursue California energy policy, which states that energy efficiency is the resource of first choice for meeting California's energy needs; to meet the West Coast Governors' Global Warming Initiative commitment to include aggressive energy efficiency measures



into updates of state building codes; and to meet the Executive Order in the Green Building Initiative to improve the energy efficiency of nonresidential buildings through aggressive standards.

### **Senate Bill 375, Sustainable Communities Strategy (SCS)**

SB 375 provides for a new planning process that coordinates land use planning, regional transportation plans, and funding priorities in order to help California meet the GHG reduction goals established in AB 32. SB 375 requires regional transportation plans, developed by metropolitan planning organizations (MPOs) to incorporate a sustainable communities strategy (SCS) in their regional transportation plans (RTPs). The goal of the SCS is to reduce regional vehicle miles traveled (VMT) through land use planning and consequent transportation patterns. SB 375 also includes provisions for streamlined CEQA review for some infill projects such as transit-oriented development.

### **CALGreen Building Code**

CCR Title 24, Part 11 (California's Green Building Standard Code) (CALGreen), was adopted in 2010 and went into effect January 1, 2011. CALGreen is the first statewide mandatory green building code and significantly raises the minimum environmental standards for construction of new buildings in California. The mandatory provisions in CALGreen will reduce the use of volatile organic compounds (VOC) emitting materials, strengthen water conservation, and require construction waste recycling.

### **SB x7-7**

SB x7-7 requires water suppliers to reduce urban per capita water consumption 20 percent from a baseline level by 2020.

### **Renewable Portfolio Standard**

The Renewable Portfolio Standard (RPS) requires energy providers to derive 33 percent of their electricity from qualified renewable sources by 2020. This is anticipated to lower emission factors (i.e., fewer GHG emissions per kilowatt-hour used) from utilities across the state; however, potential GHG reductions from this legislation were not applied to the electricity in Southern California Edison (SCE) service territory due to the uncertainty in SCE's generation sources after the closure of the San Onofre Nuclear Generating Station.<sup>4</sup>

## **Regional Setting**

### **Southern California Association of Governments**

Per SB 375, ARB set the following regional transportation greenhouse emissions reduction targets for SCAG:

- 8 percent reduction from the 2005 per capita amount by 2020
- 13 percent reduction from the 2005 per capita amount by 2035

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<sup>4</sup> See page 15 of the IFT report for additional details



SCAG subsequently adopted the 2012-2035 Regional Transportation Plan/Sustainable Communities Strategies (RTP/SCS) to help California meet its climate goals and the requirements of SB 375. The 2012-2035 RTP/SCS demonstrates a reduction in per capita transportation emissions of 9 percent by 2020 and 16 percent by 2035.

## City Setting

The City of Beaumont is located in northwestern Riverside County between Banning and Moreno Valley. The City is bisected by the Christopher Columbus Transcontinental Highway (Interstate 10) and is located north of San Jacinto and south of Cherry Valley. Approximately one-third of Beaumont has been designated to remain permanent open space.

The City of Beaumont is a community of approximately 42,481 residents located in the Inland Empire region. The City's population is diverse in age and about 42 percent Hispanic, 39 percent White, 9 percent Asian, 7 percent African American, and 3 percent other races/ethnicities. The City has nearly 14,461 households, of which 86 percent are single-family units, 10 percent are multifamily units, and 4 percent are mobile homes.

## Plan Structure

The remainder of this Plan includes the following chapters:

- **Chapter 2.** Summarizes the City's historic and future GHG emissions and the reduction targets the City has established.
- **Chapter 3.** Details the reduction strategies that will be implemented to meet the reduction targets identified in Chapter 2. Measures also include the potential energy savings and local co-benefits of the measures.
- **Chapter 4.** Discusses the City's outreach efforts and community involvement during the development of this Plan.
- **Chapter 5.** Includes the implementation of the measures, potential funding sources, and how the Plan will be monitored and updated over time.



## CHAPTER 2      **Energy and Emissions Inventory, Forecast, and Targets**

### **GHG Emissions Inventory**

GHG emissions inventories are the foundation of planning for future reductions. Establishing an inventory of emissions helps to identify and categorize the major sources of emissions produced over a single calendar year. Jurisdictions often prepare emissions inventories for the community and municipal operations. A community inventory includes GHG emissions that result from the activities by residents and businesses in the city and a municipal inventory includes GHG emissions that result from the activities performed as part of the government operations in the city and are a subset of the community inventory. The inventories identify the major sources of GHGs emissions caused by activities in sectors that are specific to community or municipal activities.

The City prepared community and municipal inventories for the year 2012. The 2012 inventory (for both community and municipal operations) is considered the baseline year. A baseline year is established as a starting point against which other inventories may be compared and targets may be set, and is generally the earliest year with a full emissions inventory. The sectors evaluated in each inventory are provided in Table 1. In addition, the City prepared a detailed *GHG Inventory*,



Forecasting, and Target-Setting (IFT) Report, included as Appendix A, which contains detailed methodology of the information summarized in this chapter.

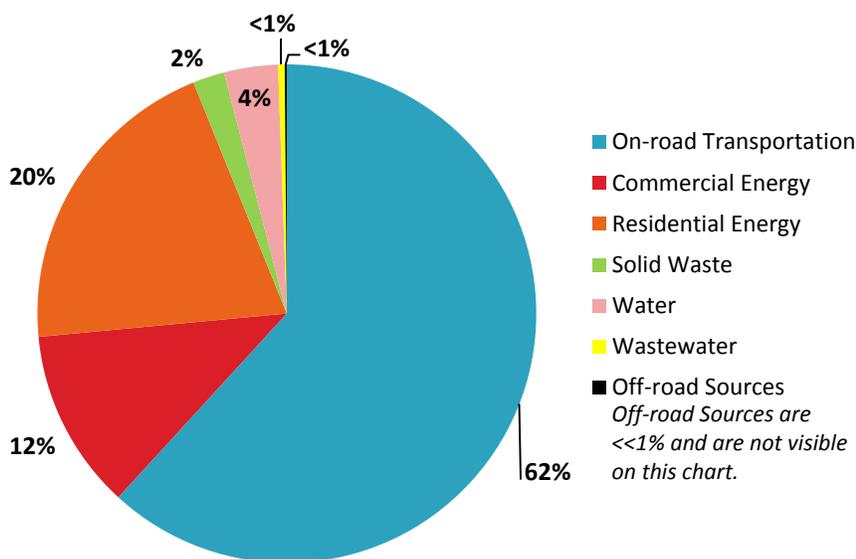
**TABLE 1 Community and Municipal Sectors Evaluated in the Inventories**

Community Sectors	Municipal Sectors
<ul style="list-style-type: none"> <li>■ Residential Energy</li> <li>■ Commercial/Industrial Energy</li> <li>■ On-Road Transportation</li> <li>■ Solid Waste</li> <li>■ Water</li> <li>■ Wastewater</li> <li>■ Off-road Sources</li> </ul>	<ul style="list-style-type: none"> <li>■ Building and Facilities Energy</li> <li>■ Outdoor Lights</li> <li>■ Water Pumping and Delivery</li> <li>■ Fleet and Equipment</li> <li>■ Employee Commute</li> <li>■ Solid Waste</li> </ul>

**2012 Community Emissions Summary**

The community inventory includes the GHG emissions that result from activities within the community the City serves. In 2012, the City produced 275,302 MTCO<sub>2</sub>e emissions.

As shown in Figure and Table 2, the On-Road Transportation sector accounted for the greatest percentage of emissions, contributing 62 percent (170,157 MTCO<sub>2</sub>e) of the City’s emissions. The Residential Energy sector was the second-largest contributor to emissions in 2012 (20 percent), producing 56,099 MTCO<sub>2</sub>e. The Commercial/Industrial Energy sector contributed 12 percent of emissions, and the remaining sectors (Water, Solid Waste, Wastewater, and Off-road Sources) accounted for less than 10 percent of total emissions.



**FIGURE 1 Community GHG Emissions by Sector for 2012**



**TABLE 2 Communitywide GHG Emissions by Sector for 2012**

Sector	Emissions (MTCO <sub>2</sub> e)	Percent of Inventory
On-Road Transportation	170,157	61.8 %
Residential Energy	56,099	20.4 %
Commercial Energy	32,222	11.7 %
Water	9,624	3.5 %
Solid Waste	5,648	2.1 %
Wastewater	1,164	0.4 %
Off-Road Sources	388	0.1 %
<b>Total</b>	<b>275,302</b>	<b>100.0 %</b>

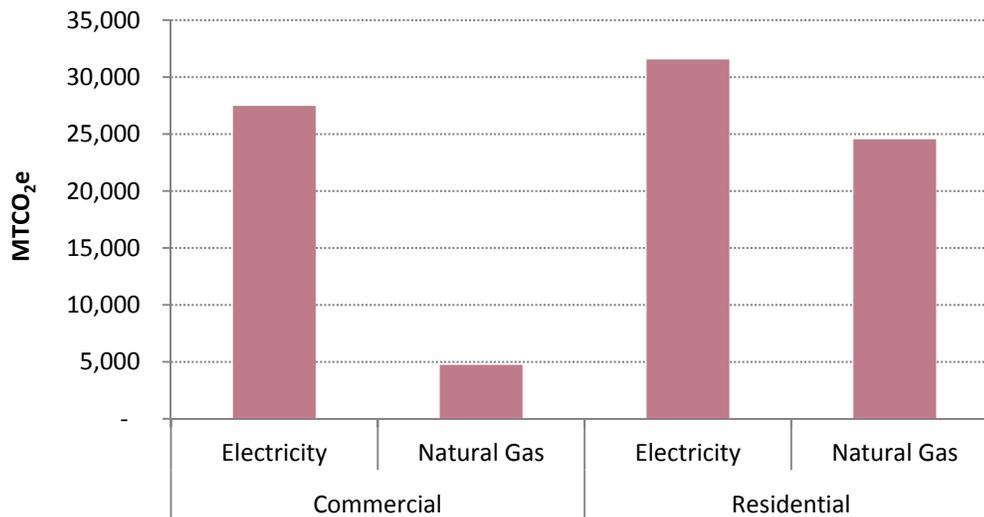
Acronyms:

MTCO<sub>2</sub>e = metric tons of carbon dioxide equivalent

Source: GHG Inventory, Forecasting, and Target-Setting (IFT) Report, included as Appendix A

### Community Emissions by Energy

Energy is an area over which local agencies often have the greatest opportunities for affecting change. Therefore, electricity and natural gas use remains a key area for reduction opportunities. Emissions from energy use account for 32 percent of total community emissions in 2012. Figure 2 shows electricity and natural gas emissions in 2012 for the Commercial and Residential sectors. Table 3 includes the activity data and GHG emissions for 2012.



**FIGURE 2 GHG Emissions for Community Electricity and Natural Gas, by Sector for 2012**



**TABLE 3 Community Activity Data and GHG Emissions for Energy in 2012**

Sector	Activity (kWh or therms)	Emissions (MTCO <sub>2</sub> e)	Percent of Total Sector Emissions
<b>Residential</b>			
Electricity	98,608,434	31,555	38%
Natural Gas	4,615,641	24,544	28%
<b>Commercial/Industrial</b>			
Electricity	85,868,511	27,479	31%
Natural Gas	891,905	4,743	5%
<b>Total (MTCO<sub>2</sub>e)</b>	—	<b>88,321</b>	<b>100%</b>

Acronyms:

kWh = kilowatt hours

MTCO<sub>2</sub>e = metric tons of carbon dioxide equivalent



### 2012 Municipal Emissions Summary

A municipal GHG emissions inventory is largely a subset of the community inventory, with the exception of some of the City’s Wastewater Treatment Plant emissions. The municipal inventory includes emissions from activities conducted as part of government operations in the City. While emissions from government operations are normally a fraction of the overall community emissions, the City has the most direct control over municipal emissions and the City can demonstrate leadership in the community by adopting and implementing energy and GHG reduction strategies.

Beaumont’s municipal emissions were 6,201 MTCO<sub>2</sub>e in 2012, which is 2.3 percent of total community emissions. The largest portion (56 percent) of municipal emissions is from wastewater-related emissions, which have three components, described in the box at right. As shown in Figure 3 and Table 4, the City’s Electricity use for the Wastewater Treatment Plant is the sector with the largest percentage of emissions in 2012 (32 percent), followed by Wastewater Treatment (20 percent), Vehicle Fleet (14 percent), and Solid Waste (13 percent). Buildings and Facilities, Outdoor Lights, and Employee Commute made up the remaining emissions.

**Wastewater-Related**

The City’s wastewater (WW) emissions include three components:

1. Emissions from electricity used to move water from the sewer system to the WW Treatment Plant.
2. Emissions from electricity used in the WW Treatment Plant for processing.
3. Emissions from the WW itself, emitted through the course of treatment (non-energy emissions).

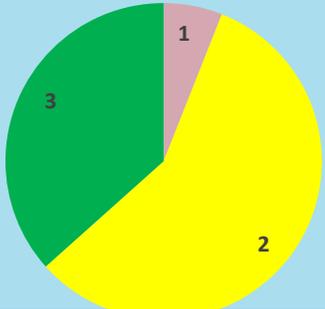
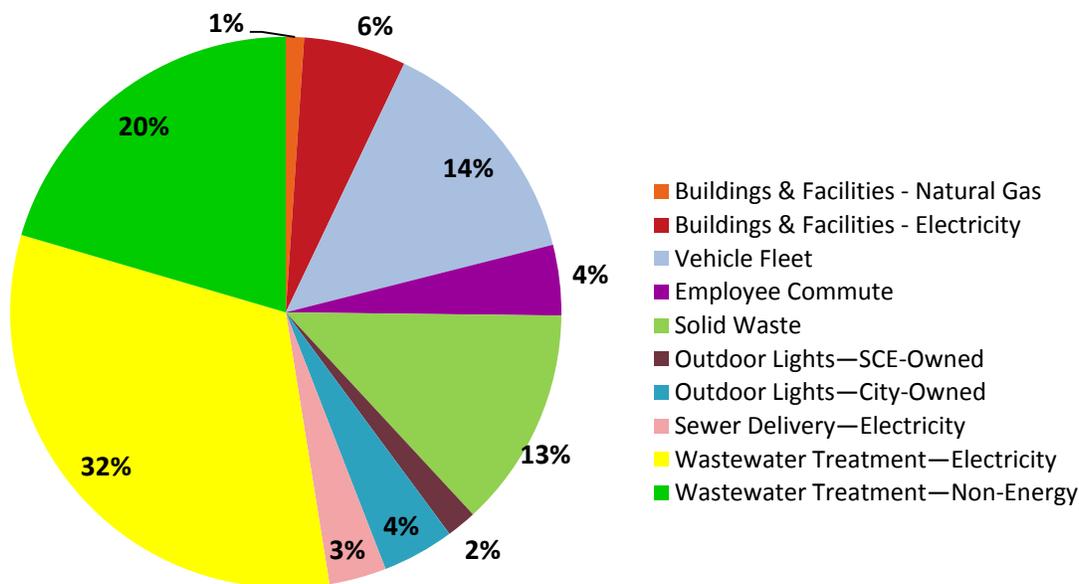



FIGURE 3 Municipal GHG Emissions by Sector for 2012



**TABLE 4 Municipal GHG Emissions by Sector for 2012**

Sector	Emissions (MTCO <sub>2</sub> e)	Percent of Inventory
Wastewater	3,466	55.9 %
Vehicle Fleet and Equipment	867	14.0 %
Solid Waste	802	12.9 %
Buildings and Facilities	439	7.1 %
Outdoor Lighting—City-Owned	262	4.2 %
Employee Commute	256	4.1 %
Outdoor Lighting—SCE-Owned	109	1.8 %
<b>Total</b>	<b>6,201</b>	<b>100.0 %</b>

Acronyms:

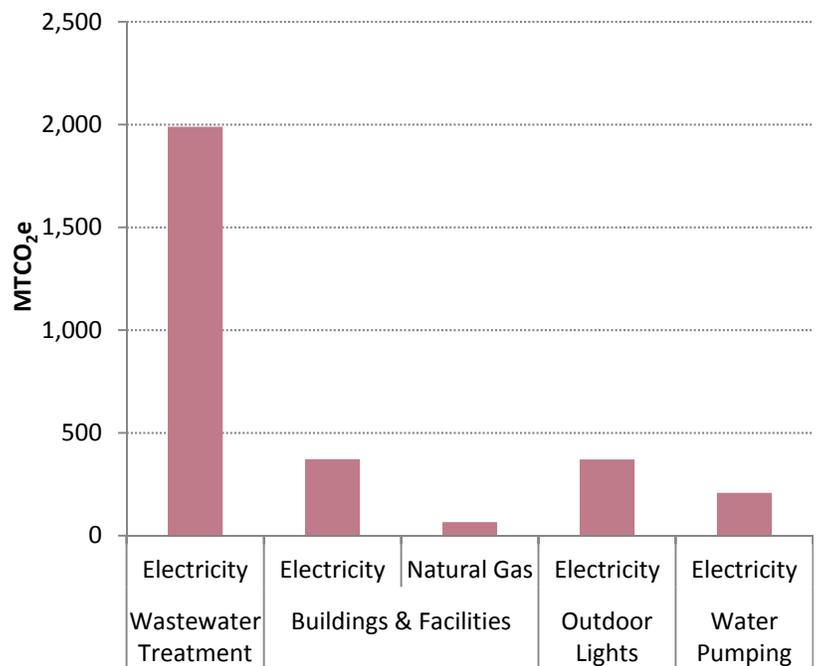
MTCO<sub>2</sub>e = metric tons of carbon dioxide equivalent

SCE = Southern California Edison

### Municipal Emissions by Energy

As with the community energy, municipal electricity and natural gas use remains a key area for reduction opportunities. Emissions from energy use account for 48.5 percent of total municipal emissions in 2012. Municipal energy use includes Wastewater Treatment, Buildings and Facilities (electricity and natural gas), Outdoor Lights, and Water Pumping.

**FIGURE 4** shows electricity and natural gas emissions in 2012 for the municipal energy sectors.



**FIGURE 4 GHG Emissions for Municipal Electricity and Natural Gas, by Sector**



## Inventory Forecast

Forecasting future GHG emissions allows the City to understand how emissions are expected to increase or decrease in the future. Major changes in growth or land uses may affect how to best plan to reduce emissions in the future. GHG emissions are forecast using two scenarios: a Business-as-Usual (BAU) and an Adjusted BAU scenario. The BAU scenario describes emissions based on projected growth in population and employment and does not consider policies that will reduce emissions in the future (that is, the policies and related efficiency levels in place in 2012 are assumed to remain constant through 2030). Projected growth is estimated using data from regional planning scenarios developed by SCAG and the City. Growth calculation and methods are detailed in the IFT Report located in Appendix A. In general, the City is expecting substantial growth for 2020 and 2030 as population, housing, and jobs are all expected to increase. This will also result in increases in total VMT. Information for City-level changes in Beaumont is considered highly uncertain; however, a reasonable estimate for municipal growth would be based on City staff increase, which is estimated to be 30 additional staff by 2020 and remain steady through 2030. Table 5 shows the growth projections used to develop the emissions forecasts.

**TABLE 5 Growth indicators for 2012, 2020, and 2030**

Sector	Demographic Indicator	2012	2020	2030
Transportation—Gas	Daily VMT	256,815,789	324,417,786	358,276,457
Transportation—Diesel	Daily VMT	41,327,999	61,771,016	108,532,937
Solid Waste, Water, Wastewater, Off Road Sources	Service population (residents + jobs)	43,680	65,100	81,616
NA <sup>a</sup>	Population	38,851	56,500	70,886
Residential Energy	Households	12,292	18,800	23,456
Commercial/Industrial Energy	Jobs	4,829	8,600	10,730
Municipal Jobs (Emissions)	Full-time-equivalent employees <sup>b</sup>	157.5	187.5	187.5

Notes and Acronyms:

NA = Not Applicable

VMT = vehicle miles traveled

a. Population data are shown for informational purposes but are not used for forecasting any sector.

b. Except for wastewater treatment, which will increase based on service population increase.

SOURCE: SCAG, 2015

The Adjusted BAU scenario describes emissions based on projected growth *and* considers policies that will achieve GHG reductions in the future. Policies, described in the Regulatory Setting section of Chapter 2, include State-adopted or approved legislation that will affect future emissions. By evaluating the two scenarios, the City can see the effect that existing policies may have on future emissions and be better able to determine how local measures can provide additional reductions.



Two future years are forecasted for each scenario: 2020 and 2030. The 2020 forecast year is consistent with the goals identified in AB 32, which identifies a statewide GHG reduction target by 2020. The 2030 forecast year will allow the City to develop long-term strategies to continue GHG reductions beyond 2020.

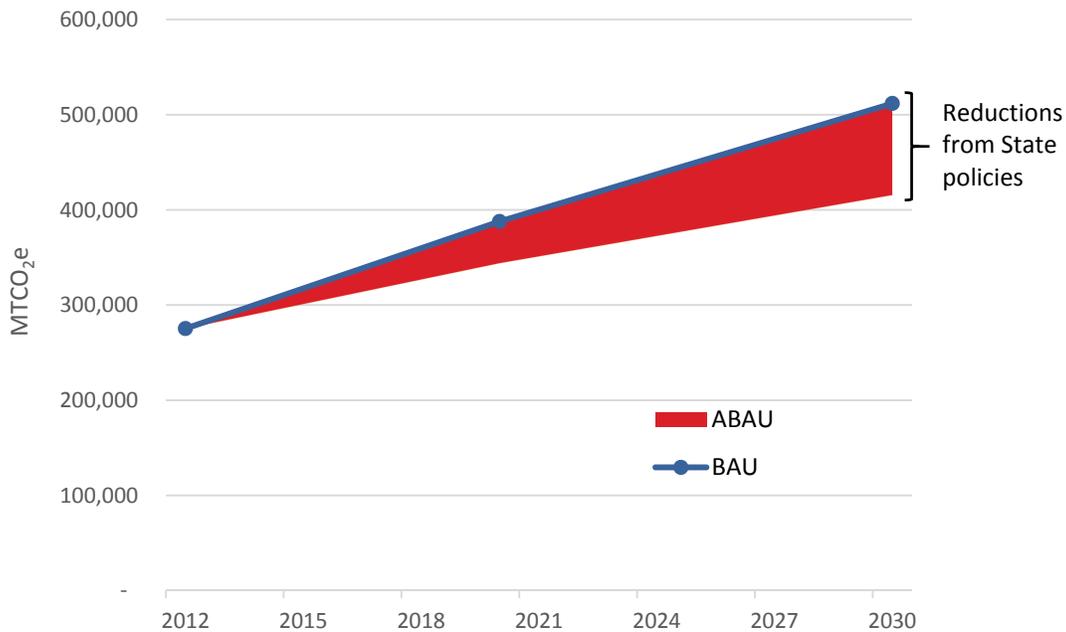
**Community Forecasts**

**Community Business-as-Usual Forecast**

The City’s BAU emissions in 2020 are estimated to be 387,767 MTCO<sub>2</sub>e, or a 41 percent increase from baseline (2012) emissions. By 2030, emissions are estimated to increase 86 percent from the baseline level to 511,751 MTCO<sub>2</sub>e (FIGURE 5).

**Community Adjusted Business-as-Usual Forecast**

The City’s Adjusted BAU emissions in 2020 are estimated to be 344,072 MTCO<sub>2</sub>e in 2020 and 415,640 MTCO<sub>2</sub>e in 2030 (FIGURE 5). This change represents a 25 percent reduction from 2012 by 2020 and 51 percent reduction by 2030.



**FIGURE 5 Community BAU and ABAU Emissions Forecast**



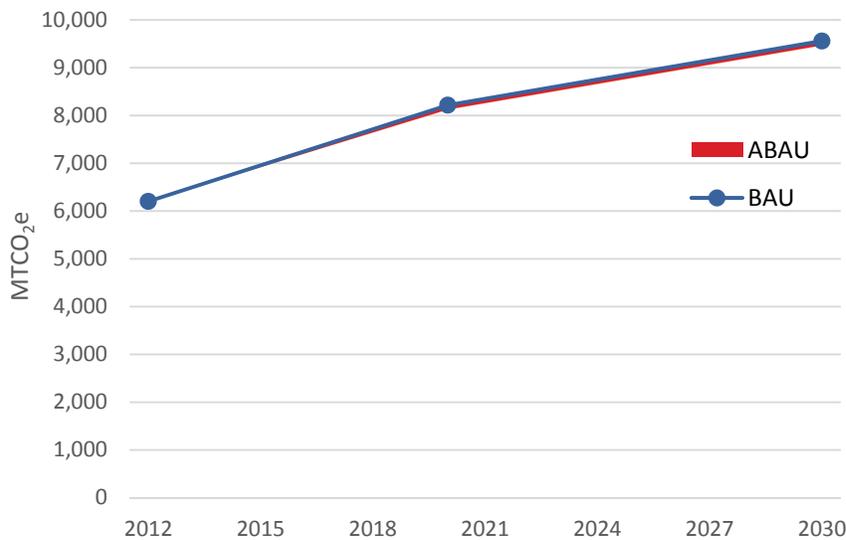
## Municipal Forecasts

### Municipal Business-as-Usual Forecast

The City is anticipating approximately 31 percent increase in emissions from city services by 2020 and 54 percent by 2030, relative to 2012 levels. Total emissions expected in 2020 are 8,217 MTCO<sub>2</sub>e and in 2030 are 9,558 MTCO<sub>2</sub>e (**FIGURE 6** Municipal BAU and Adjusted BAU Emissions).

### Municipal Adjusted Business-as-Usual Forecast

The City’s Municipal Adjusted BAU emissions in 2020 are estimated to be 8,125 MTCO<sub>2</sub>e, which is 31 percent below the 2012 baseline level (**FIGURE 6**). In 2030, emissions are expected to be 53 percent higher than in 2012 (9,466 MTCO<sub>2</sub>e).



**FIGURE 6 Municipal BAU and Adjusted BAU Emissions**

## Reduction Targets

The State has set goals for reducing GHG emissions by 2020 and 2050 through AB 32 and Executive Order (EO) S-3-05, respectively. The State has also provided guidance to local jurisdictions as “essential partners” in achieving the State’s goals by identifying a 2020 recommended reduction goal. That goal, stated in the AB 32 Scoping Plan, was for local governments to achieve a 15 percent reduction below 2005 levels by 2020, which aligns with the State’s goal of not exceeding 1990 emissions levels by 2020.<sup>5</sup>

Beyond 2020, AB 32 states that the emissions level in 2020 should be maintained post-2020 and Executive Order S-03-05 states that emissions should decline to 80 percent below 1990 levels by 2050.

<sup>5</sup> In an analysis, the State concluded that a 15% reduction in emissions from 2005 levels by 2020 would be equivalent to achieving 1990 emissions levels.



Neither the State Legislature nor the Governor has provided an interim target (between 2020 and 2050), nor has guidance been provided to local governments beyond the 2020 emission target recommendations. Several bills have been proposed in the Legislature that calls for additional guidance for emissions reductions after 2020; however, considerable uncertainty still exists around developing post-2020 reductions by local governments.

The City has established the following reduction targets that are consistent with current regulation.

### **Community Targets**

In 2020, the City would need to reduce 140,065 MTCO<sub>2e</sub> emissions below the Adjusted BAU scenario to meet the reduction target. In 2030, the City would need to reduce 255,139 MTCO<sub>2e</sub> emissions below the Adjusted BAU scenario to meet the State-aligned target (Table 6 and Figure 7).

**TABLE 6 State-Aligned GHG Reduction Targets for Community Emissions**

Sector	2012	2020	2030
BAU Emissions (MTCO <sub>2e</sub> )	275,302	387,767	511,751
Adjusted BAU Emissions (MTCO <sub>2e</sub> )	275,302	344,072	415,640
State-Aligned Target (% change from 2012)	-	15%	41.7
State-Aligned Emissions Goal (MTCO <sub>2e</sub> )	-	234,007	160,501
Reductions from Adjusted BAU needed to meet the Target (MTCO <sub>2e</sub> )	-	140,065	255,139

Acronyms:

BAU = Business as Usual

MTCO<sub>2e</sub> = metric tons of carbon dioxide equivalent

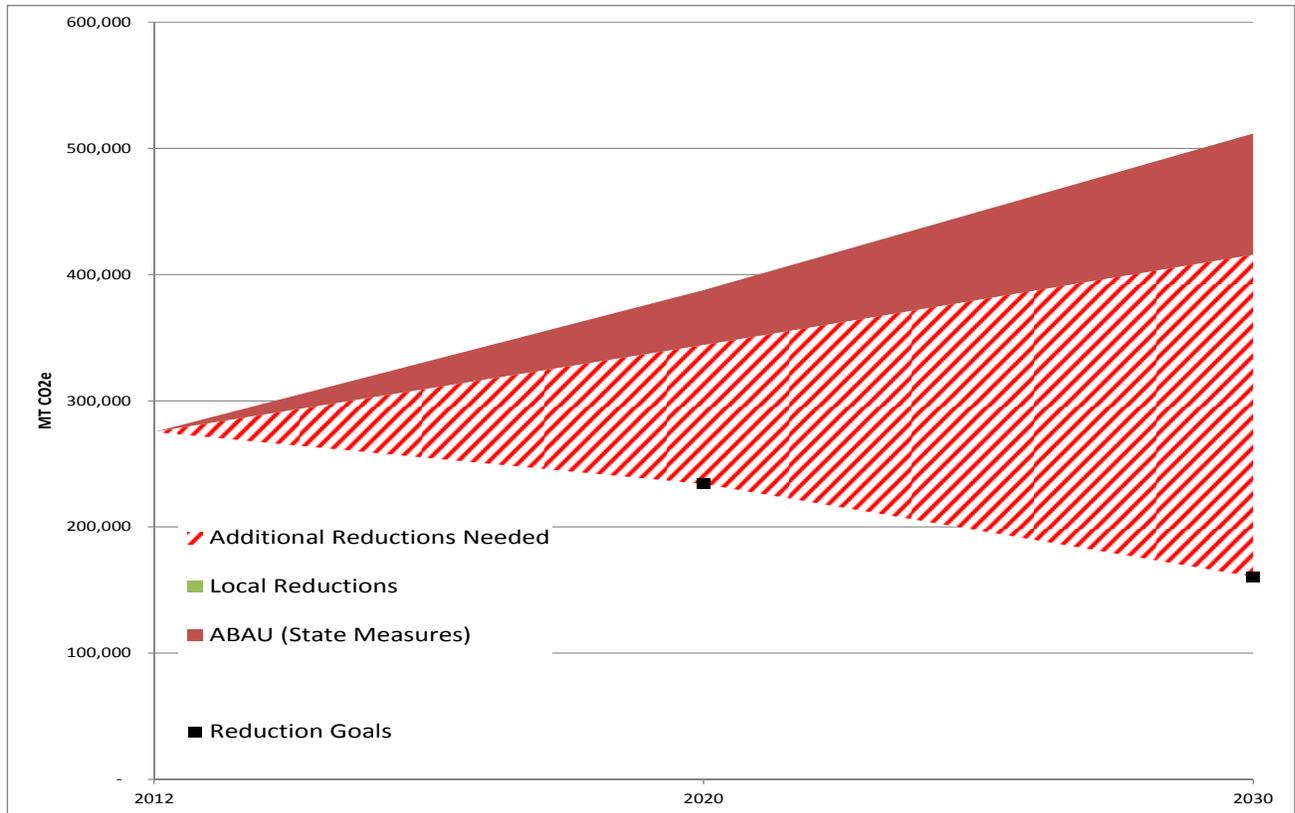


FIGURE 7 Community Emissions Inventories, Projections, and Targets

### Municipal Targets

To be aligned with the community goals, the City would need to reduce its emissions by 2,809 MTCO<sub>2</sub>e from the 2020 Adjusted BAU forecast to meet a 15 percent reduction goal below 2012 levels. The City will also need to implement measures to continue to achieve GHG reductions beyond 2020. By 2030, the City will need to reduce municipal operation emissions by 5,385 MTCO<sub>2</sub>e from an Adjusted BAU forecast to meet a 41.7 percent reduction goal below 2012 levels (Table 7 and

FIGURE 8).



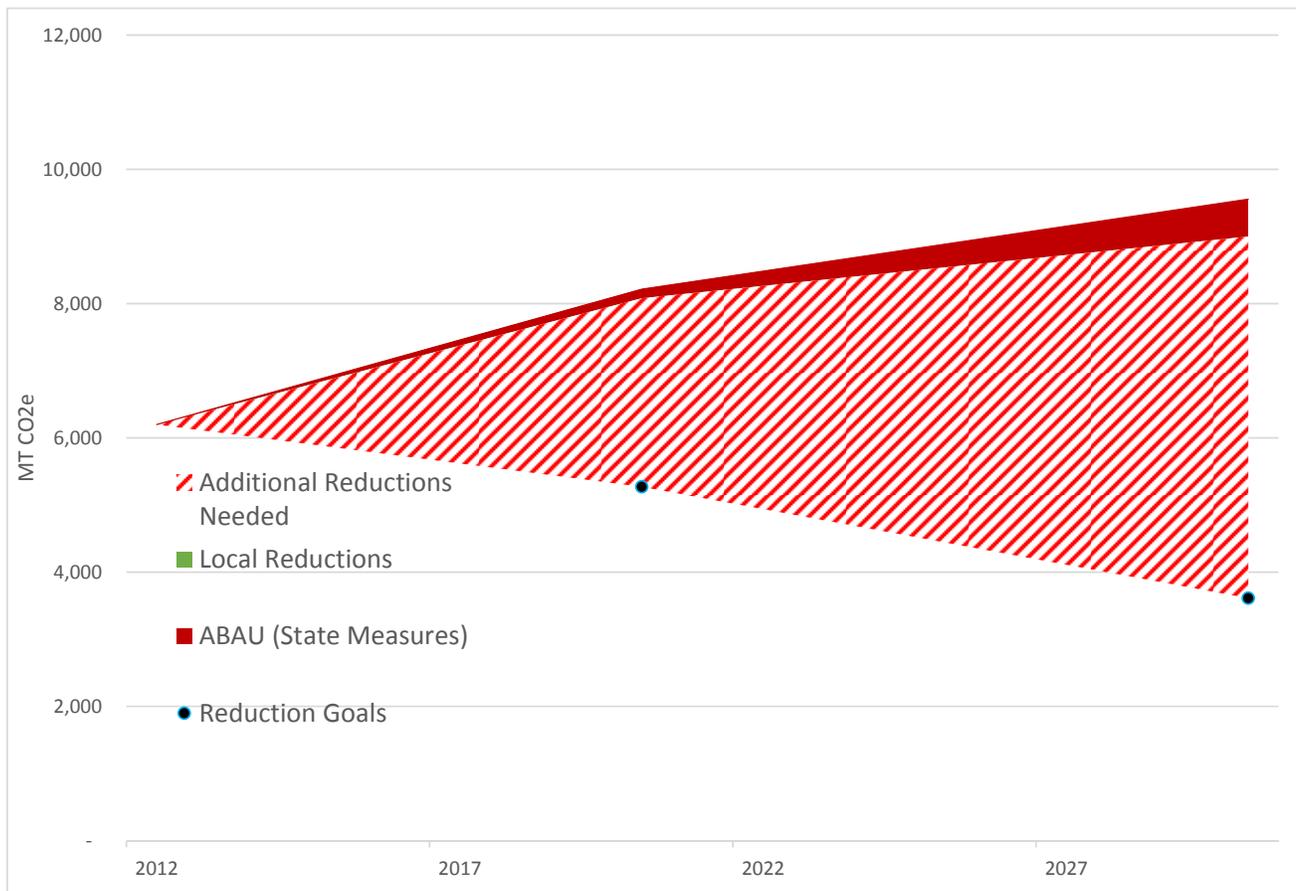
**TABLE 7 State-Aligned GHG Reduction Targets for Municipal Emissions**

Sector	2012	2020	2030
BAU Emissions (MTCO <sub>2</sub> e)	6,201	8,217	9,558
Adjusted BAU Emissions (MTCO <sub>2</sub> e)		8,080	9,000
State-Aligned Target (% change from 2012)		15%	41.7%
State-Aligned Emissions Goal (MTCO <sub>2</sub> e)		5,271	3,616
Reductions from Adjusted BAU needed to meet the Target (MTCO <sub>2</sub> e)		2,809	5,385

Acronyms:

BAU = Business as Usual

MTCO<sub>2</sub>e = metric tons of carbon dioxide equivalent



**FIGURE 8 Municipal Emissions Inventories, Projections, and Targets**



## CHAPTER 3 GHG Reduction Measures

This chapter details how the City will meet its GHG reduction targets by using goals, policies, and actions at the community and municipal levels. The goal describes the overarching objective related to increasing energy efficiency or decreasing energy consumption, such as increasing energy efficiency in residential building units. Within each goal, one or more policies are presented indicating the City’s commitment toward meeting the goal. Within each policy, one or more actions are presented that indicate the steps the City may take in achieving the policy. Each policy includes the energy and GHG reduction potential in 2020 and 2030. Actions are designed to include the steps needed to implement the policy. Actions may be added to or removed over time, depending on their relevancy, funding availability, and whether the actions are successful in supporting policies as they are monitored over time, but are considered essential to guiding staff in implementation. Actions include a performance indicator, implementation timeframe, department or agency responsible for implementation, and cost information, where applicable. In addition, this Plan will result in local benefits while reducing GHG emissions, called co-benefits. Co-benefits range from providing improved air quality and mobility to increased awareness about sustainability. Co-benefits are identified with each measure by an icon.



Local Co-benefits		
 Increased energy efficiency/reduced demand	 Water conservation	 Improved public health
 Improved air quality	 Increased renewable energy	 Increased nonmotorized transportation
 Sustainability education and awareness	 Enhanced land use/ community design	 Increased resiliency

### Existing Regional and Local Energy Efficiency Measures

Existing regional and local energy efficiency measures are briefly summarized here. Detailed descriptions are included in the Assessment and Planning Memorandum, located in the Appendix.

### Community Measures

This section summarizes the proposed reduction measures to be implemented by the City to reduce its GHG emissions of the community. The reduction measures are organized by source category (electricity, natural gas, and water).

#### ***Residential Land Uses***

Residential Energy includes electricity and natural gas consumption within households in the City. There are many opportunities to save energy from existing and future development, described in the goals and policies below.



**Goal 1: Increase Energy Efficiency in Existing Residential Units**

**MEASURE 1.1: ENERGY EFFICIENCY TRAINING, EDUCATION, AND RECOGNITION IN THE RESIDENTIAL SECTOR**

Opportunities for residents to improve energy efficiency in their homes range from changes to behavior that they can start today to physical modifications or improvements they can make to their homes. Education of both the public and municipal employees is at the core of attaining energy efficiency goals. While most of the other policies include an outreach component, creating a specific education policy will emphasize the critical role of education in achieving energy efficiency. An education policy will also provide City staff with a framework to educate community members about behavioral and technological changes that can increase energy efficiency.

**ACTIONS**

- Post links on website/social media and provide materials at public events
- Email list for e-mail blasts of new information or trainings
- Establish an annual Energy Efficiency Fair
- Create a resource center
- Hire/Designate Energy Advocate

1.1: EE Training, Education, and Recognition	
GHG Reduction Potential (2020)	
kWh Savings (2020)	Supporting Measure
Therms Savings (2020)	
Cost to City	None
Cost to Individuals	None
Co-Benefits	 





**MEASURE 1.2: INCREASE COMMUNITY PARTICIPATION IN EXISTING EE OPPORTUNITIES**

There are many energy efficiency opportunities that are low-cost for residents to initiate and result in cost savings over time. These opportunities are generally from existing programs, and both SCE and Southern California Gas Company (SCG) offer many rebates and other incentives to purchase energy efficient appliances, lighting and other low cost investments that facilitate energy efficiency. Through this policy, the City will work to increase residents’ participation in existing energy efficiency programs that are low-cost or even provide a financial benefit to the resident. As programs change over time, continued and up-to-date outreach is necessary. The actions below would provide a variety of channels for ongoing communication to the City’s residents.

**ACTIONS**

- Partner with WRCOG, SCAG, and Utilities for outreach events
- Staff outreach to HOAs and other housing groups



**1.2: Increase Existing EE Program**

**Participation**

<b>GHG Reduction Potential (2020)</b>	Estimated savings of 40 MTCO <sub>2e</sub>
<b>kWh Savings (2020)</b>	Estimated savings of 1,124.43 kWh
<b>Therms Savings (2020)</b>	Estimated savings of 66.29 therms
<b>Cost to City</b>	None
<b>Cost to Individuals</b>	None; Potential Cost Savings
<b>Co-Benefits</b>	



**MEASURE 1.3: PROMOTE OR ESTABLISH FREE OR REQUIRE HOME ENERGY EVALUATIONS**

Home energy evaluations are necessary to identify cost-effective opportunities for energy saving and for residents to take practical actions to achieve energy efficiency. Home energy evaluations can be established or promoted by a variety of existing programs.

**ACTIONS**

- Require third-party inspector to verify Title 24 or greater compliance to home upgrades (Alternative: Enhanced enforcement of Title 24 compliance)
- Promote energy audits such as through Energy Upgrade California
- Establish free "Energy Checkup" program



**1.3: Promote or Establish Free or Require Home Energy Evaluations**

<b>GHG Reduction Potential (2020)</b>	
<b>kWh Savings (2020)</b>	Supporting Measure
<b>Therms Savings (2020)</b>	
<b>Cost to City</b>	None
<b>Cost to Individuals</b>	None; Potential Cost Savings
<b>Co-Benefits</b>	



**MEASURE 1.4: ENCOURAGE AND PROMOTE RESIDENTIAL HOME ENERGY RENOVATIONS**

Buildings built before adoption of Title 24 are not energy efficient, and renovations would achieve higher energy efficiency. Many programs and incentives across the state or country help promote home energy renovations, including city-supervised funding, permit process improvements and city ordinance.

**ACTIONS**

- Promote Participation in:
  - o Independent and Voluntary EE Practices and Measures
  - o CPUC California Solar Initiative
  - o Energy Upgrade California Program
  - o Green Point Rating System
  - o Energy Star Certified Buildings
  - o LEED
- Promote Financing Programs for Home Upgrades such as HERO
- By 2030 consider establishing online Permitting to facilitate Upgrades
- Encourage a Point-of-Sale Energy rating system by requesting SCE energy audits at time of sale



**1.4: Encourage and Promote Residential Home Energy**

**Renovations**

<b>GHG Reduction Potential (2020)</b>	Estimate savings of 2,121 MTCO <sub>2</sub> e
<b>kWh Savings (2020)</b>	Estimated savings 5,587,631kWh
<b>Therms Savings (2020)</b>	Estimated savings 70,724 therms
<b>Cost to City</b>	Staff time administering programs
<b>Cost to Individuals</b>	Short-term cost varies with Potential long-term cost savings
<b>Co-Benefits</b>	



**Goal 2: Increase Energy Efficiency in New Residential Development**

**MEASURE 2.1: ENCOURAGE ENERGY EFFICIENCY STANDARDS EXCEEDING STATE REQUIREMENTS**

City planners have a unique opportunity to encourage/inform developers of new energy efficiency opportunities in new development. This policy will develop City staff to become resources in encouraging and implementing energy efficiency building measures beyond that required in current Title 24 Standards. This policy will also ensure that as Title 24 Standards are updated, City staff are well-informed and can implement updates quickly and effectively.

**ACTIONS**

- Educate City staff, developers, etc., on future Title 24 updates and the additional energy efficiency opportunities for new residential development
- Promote Tier 1, Tier 2, Green Building Ratings such as LEED, Build It Green/Green Point Rating System, or Energy Star certified buildings
- By 2030 consider establishing on-line permitting to facilitate upgrades
- Create an Energy award program for net-zero-net energy homes



**2.1: Increase EE in New Residential Development**

<b>GHG Reduction Potential (2020)</b>	Estimate savings of 8,166 MTCO <sub>2e</sub> )
<b>kWh Savings (2020)</b>	Estimated savings 7,309,154kWh)
<b>Therms Savings (2020)</b>	Estimated savings 1,096,053 therms)
<b>Cost to City</b>	Staff time administering programs
<b>Cost to Individuals</b>	Long-term Potential Cost Savings
<b>Co-Benefits</b>	



**Commercial Land Uses**

Commercial Energy includes electricity and natural gas consumption for businesses in the City. Opportunities to save energy from existing and future development are described in the goals and policies below.

**Goal 3: Increase Energy Efficiency in Existing Commercial Units**

**MEASURE 3.1: ENERGY EFFICIENCY TRAINING, EDUCATION, AND RECOGNITION IN COMMERCIAL SECTOR**

Education is at the core of attaining energy efficiency goals. Creating a specific education policy will emphasize the critical role of education in achieving energy efficiency. An education policy will also provide City staff with a framework to interact with and educate community members about behavioral and technological changes that can increase energy efficiency.

**ACTIONS**

- Post links on website/social media and provide materials at public events
- Email list for e-mail blasts of new information or trainings
- Establish an annual Energy Efficiency Fair
- Create a resource center
- Hire/Designate Energy Advocate



**3.1: EE Training, Education, and Recognition**

<b>GHG Reduction Potential (2020)</b>	
<b>kWh Savings (2020)</b>	Supporting Measure
<b>Therms Savings (2020)</b>	
<b>Cost to City</b>	None
<b>Cost to Individuals</b>	None; Potential Cost Savings
<b>Co-Benefits</b>	 



**MEASURE 3.2: INCREASE BUSINESS PARTICIPATION IN EXISTING ENERGY EFFICIENCY PROGRAMS**

There are many energy efficiency opportunities that are low-cost for businesses to initiate and result in cost-savings over time. Both SCE and SCG offer many rebates and other incentives to purchase energy efficient appliances, lighting and other low cost investments that facilitate energy efficiency. Through Policy 3.2, the City will work to increase businesses’ participation in existing energy efficiency programs that are low-cost or even provide a financial benefit to the business. Although these are considered “low-hanging fruit”, many businesses owners may be unaware that the opportunities exist.

**ACTIONS**

- Partner with Utilities for outreach events
- Staff outreach to business groups



**3.2: Increase Business Participation in**

**Existing EE Opportunities**

<b>GHG Reduction Potential (2020)</b>	Estimate savings 575 MTCO <sub>2</sub> e
<b>kWh Savings (2020)</b>	Estimated savings 1,568,033 kWh
<b>Therms Savings (2020)</b>	Estimated savings 13,820 therms
<b>Cost to City</b>	None
<b>Cost to Individuals</b>	Short-term costs varies with long-term cost savings
<b>Co-Benefits</b>	



**MEASURE 3.3: INCENTIVIZE NON-RESIDENTIAL ENERGY AUDITS**

Commercial energy audits are necessary to identify cost-effective opportunities for energy savings and for business owners to take practical actions to achieve energy efficiency. The audits can be established or promoted by various existing programs.

**ACTIONS**

- Use third-party inspector to verify Title 24 or greater compliance to upgrades
- Promote energy audits such as through Energy Upgrade California
- Require early adoption of AB 1103 for small buildings (5,000-10,000 square feet)



**3.3: Incentivize or Require Non-residential**

**Energy Audits**

<b>GHG Reduction Potential (2020)</b>	
<b>kWh Savings (2020)</b>	Supporting Measure
<b>Therms Savings (2020)</b>	
<b>Cost to City</b>	Staff time administering programs
<b>Cost to Individuals</b>	None; Potential Cost Savings
<b>Co-Benefits</b>	



**MEASURE 3.4: ESTABLISH, PROMOTE, INCENTIVIZE NON-RESIDENTIAL RETROFITS**

As most commercial buildings are built before the adoption of Title 24, most of the facilities and equipment are not energy efficient. Therefore, retrofits are necessary to achieve higher energy efficiency. Many programs and incentives across the state or country help promote non-residential energy retrofits, including city-supervised funding, permit process improvements and city ordinance.

**ACTIONS**

- Establish or Promote Participation in:
  - o Energy Upgrade California Program
  - o CSI California Solar Initiative
  - o Commercial HERO
  - o CaliforniaFIRST
  - o PG&E Rebates
  - o Loans through SAFE-BIDCO
- Promote Green Building Program such as Green Point Green Rating System
- By 2030 consider establishing online permitting to facilitate upgrades



**3.4: Establish, Promote, or Require**

**Commercial Energy Retrofits**

<b>GHG Reduction Potential (2020)</b>	Estimate savings of 1,232 MTCO <sub>2e</sub>
<b>kWh Savings (2020)</b>	Estimated savings 3,285,518kWh
<b>Therms Savings (2020)</b>	Estimated savings 34,115 therms
<b>Cost to City</b>	Staff time administering programs
<b>Cost to Individuals</b>	Short-term cost varies with Potential long-term cost savings
<b>Co-Benefits</b>	



### Goal 4: Increase Energy Efficiency in New Commercial Development

#### MEASURE 4.1: ENCOURAGE OR REQUIRE ENERGY EFFICIENCY STANDARDS EXCEEDING STATE REQUIREMENTS

City planners have a unique opportunity to encourage/inform developers of new energy efficiency opportunities in new development. This policy will develop City staff to be resources in encouraging and implementing energy efficiency beyond that required in current Title 24 Standards. This will also ensure that as Title 24 Standards are updated, City staff are well-informed and can implement updates quickly and effectively.

#### ACTIONS

- Educate City staff, developers, etc., on future Title 24 updates and the additional energy efficiency opportunities for new commercial development
- Promote Tier 1, Tier 2, Green Building Ratings such as LEED, Build It Green/Green Point Rating System, or Energy Star certified buildings
- By 2030 consider establishing on-line permitting to facilitate upgrades
- Create an Energy award program for net-zero-net energy homes



#### Exceeding Title 24

<b>GHG Reduction Potential (2020)</b>	Estimate savings of 3,521 MTCO <sub>2</sub> e
<b>kWh Savings (2020)</b>	Estimated savings 9,387,744kWh
<b>Therms Savings (2020)</b>	Estimated savings 97,509 therms
<b>Cost to City</b>	Staff time administering programs
<b>Cost to Individuals</b>	Short-term cost varies with Potential long-term cost savings
<b>Co-Benefits</b>	



## Water Efficiency

### Goal 5: Increase Energy Efficiency through Water Efficiency

#### MEASURE 5.1: SUPPORT WATER EFFICIENCY THROUGH ENHANCED IMPLEMENTATION OF SB X7-7

SB X7-7, or The Water Conservation Act of 2009, requires all water suppliers to increase water use efficiency. The legislation set an overall goal of reducing per capita urban water consumption by 20 percent from a baseline level by 2020. This goal can be met by taking a variety of actions, including targeted public outreach and promoting water efficiency measures such as low-irrigation landscaping.

#### ACTIONS

- Post links on website/social media and provide materials at public events
- Email list for e-mail blasts of new information or trainings
- Require low-irrigation landscaping



5.1: Support Enhanced Implementation of

#### SB X7-7

<b>GHG Reduction Potential (2020)</b>	Estimate savings of 1,259 MTCO <sub>2</sub> e
<b>kWh Savings (2020)</b>	Estimated savings 3,936,282kWh
<b>Therms Savings (2020)</b>	None
<b>Cost to City</b>	Staff time administering programs
<b>Cost to Individuals</b>	Small to none
<b>Co-Benefits</b>	



**MEASURE 5.2: EXCEED WATER EFFICIENCY STANDARDS**

In addition to SB X7-7, more actions are being studied or have been taken to exceed water efficiency standards. These efforts include education and outreach practices that could be combined with residential and commercial EECAP actions that emphasize the reuse of recycled/gray water and promote harvesting rainwater.

**ACTIONS**

- Staff time dedicated to work with HOAs, businesses, and other groups for outreach
- Allow recycled or grey water uses for non-municipal uses
- Work with Water District to increase recycled water potential
- Promote rainwater harvesting rebates and demonstrations



5.2: Exceed SB X7-7

<b>GHG Reduction Potential (2020)</b>	Estimate savings of 1 MTCO <sub>2</sub> e
<b>kWh Savings (2020)</b>	Estimated savings 4,152kWh
<b>Therms Savings (2020)</b>	None
<b>Cost to City</b>	Staff time administering programs
<b>Cost to Individuals</b>	None with small long-term savings
<b>Co-Benefits</b>	



**Advanced Goals and Policies**

**Goal 6: Decrease Energy Demand through Reducing Urban Heat Island Effect**

**MEASURE 6.1: TREE PLANTING FOR SHADING AND ENERGY EFFICIENCY**

Trees and vegetation lower surface and air temperatures by providing shade and through evapotranspiration, making vegetation a simple and effective way to reduce urban heat islands. Shaded surfaces may be 20–45°F (11–25°C) cooler than the peak temperatures of unshaded materials. In addition, evapotranspiration, alone or in combination with shading, can help reduce peak summer temperatures by 2–9°F (1–5°C). Trees and vegetation that directly shade buildings can reduce energy use by decreasing demand for air conditioning.

**ACTIONS**

- Encourage tree planting at plan check
- Work with community to develop a tree-planting group
- Develop a City tree planting program



<b>GHG Reduction Potential (2020)</b>	Estimate savings of 1 MTCO <sub>2e</sub>
<b>Kwh Savings (2020)</b>	None
<b>Therms Savings (2020)</b>	None
<b>Cost to City</b>	Minimal staff time administering program
<b>Cost to Individuals</b>	Minimal cost of trees that could be offset with grants and incentive programs
<b>Co-Benefits</b>	



**MEASURE 6.2: LIGHT-REFLECTING SURFACES FOR ENERGY EFFICIENCY**

Replacing surface areas with light-reflecting materials can decrease heat absorption and lower outside air temperature. Both roofs and pavements are ideal surfaces for taking advantage of this advanced technology.

Cool roof is built from materials with high thermal emittance and high solar reflectance—or albedo—to help reflect sunlight (and the associated energy) away from a building. These properties help roofs to absorb less heat and stay up to 50–60°F (28–33°C) cooler than conventional materials during peak summer weather. Cool roofs may be installed on low-slope roofs (such as the flat or gently sloping roofs typically found on commercial, industrial, and office buildings) or the steep-sloped roofs used in many residences and retail buildings.

Cool pavement is built from materials that reflect more solar energy, enhance water evaporation, or have been otherwise modified to remain cooler than conventional pavements. This pavement can be created with existing paving technologies as well as newer approaches such as the use of coatings, permeable paving, or grass paving. Cool pavements save energy by lowering the outside air temperature, allowing air conditioners to cool buildings with less energy, and reducing the need for electric street lighting at night.

**ACTIONS**

- City to consider promoting light reflective surfaces



**6.2 : Promote Light-Reflecting Surfaces**

<b>GHG Reduction Potential (2020)</b>	Estimate savings of 1 MTCO <sub>2</sub> e or higher depending upon participation
<b>Kwh Savings (2020)</b>	Varies with participation
<b>Therms Savings (2020)</b>	Varies with participation
<b>Cost to City</b>	None, staff already reviews plans during plan check
<b>Cost to Individual</b>	None
<b>Co-Benefits</b>	



**Transportation**

**Goal 7: Decrease GHG Emissions through Reducing Vehicle Miles Traveled**

**MEASURE 7.1: ENCOURAGE NON-MOTORIZED TRANSPORTATION OPTIONS**

Non-motorized transportation includes walking and bicycling, and variants such as small-wheeled transport, such as skates, skateboards, push scooters and hand carts, and wheelchair travel. These modes provide both recreation and transportation, and can help reduce VMT by changing people’s everyday transportation habits.

**ACTION**

- Create a "Bike to work day" or "car free zone day" and other sponsored events to promote biking and other non-motorized transportation



**7.1: Decrease GHG Emissions through**

**Reducing Vehicle Miles Traveled**

<b>GHG Reduction Potential (2020)</b>	Estimate reduction of 30 MTCO <sub>2e</sub>
<b>VMT Reduction (2020)</b>	Estimated savings of 65,652 VMT
<b>Cost to City</b>	None
<b>Cost to Individuals</b>	None
<b>Co-Benefits</b>	



**MEASURE 7.2: ENCOURAGE, PROMOTE, INCENTIVIZE OR EXPAND USE OF THE PASS TRANSIT SYSTEM OR OTHER TRANSIT SERVICES**

Pass Transit is the public transit agency serving the San Geronio Pass area, which includes the cities of Beaumont, Banning, Cherry Valley, and Cabazon. The Pass Transit system provides safe, reliable, affordable, friendly and environmentally responsible transportation. It is a convenient public transportation system for people living and working in the region to utilize instead of driving their private cars. Promotion of the use of Pass Transit as well as other transit services will reduce VMT dramatically.

**ACTIONS**

- Promote the use of Pass Transit Services or other transit networks
- Incentivize the use of Pass Transit or other transit services
- Expand the reach of Pass Transit or other transit services



**7.2: Encourage, Promote, Incentivize or**

**Expand Use of the Pass Transit system or other Transit Services**

<b>GHG Reduction Potential (2020)</b>	Estimate reduction of 295 MTCO <sub>2</sub> e
<b>VMT Reduction (2020)</b>	Estimated savings of 386,186 VMT
<b>Cost to City</b>	None
<b>Cost to Individuals</b>	None
<b>Co-Benefits</b>	



**MEASURE 7.3: CREATE BICYCLE MASTER PLAN TO EXPAND BIKE ROUTES AROUND CITY**

Bicycle-friendly roads are crucial to promote bicycle use as a transportation method. People tend to choose bicycle if bike routes are available to separate them from motor vehicles and their safety can be ensured. Thus developing a bicycle master plan and constructing more bike routes will encourage more bike rides and help reduce VMT.

**ACTION**

- Expand bike routes to improve bike transit



**7.3. Create Bicycle Master Plan to Expand**

**Bike Routes around City**

<b>GHG Reduction Potential (2020)</b>	Estimate reduction of 13 MTCO <sub>2</sub> e
<b>VMT Reduction (2020)</b>	Estimated savings of 29,543 VMT
<b>Cost to City</b>	None
<b>Cost to Individuals</b>	None
<b>Co-Benefits</b>	



**MEASURE 7.4: PROMOTE RIDE SHARING PROGRAMS WITHIN BUSINESSES**

Carpooling rate is as low as 4 percent for the City, and most people drive alone for work every day. Higher ride sharing rate means less VMT and GHG emissions, so encouraging carpool by providing incentive programs and necessary facilities can be helpful.

**ACTIONS**

- Promote ridesharing and facilitate air district incentives for ride sharing
- Require businesses of a certain size to have facilities (bike racks, showers, etc.)



**7.4: Promote Ride Sharing Programs within**

**Businesses**

<b>GHG Reduction Potential (2020)</b>	Estimate reduction of 147 MTCO <sub>2e</sub>
<b>VMT Reduction (2020)</b>	Estimated savings of 327,295 VMT
<b>Cost to City</b>	None
<b>Cost to Individuals</b>	None
<b>Co-Benefits</b>	



**MEASURE 7.5: ELECTRIFY THE FLEET**

Hybrid electric vehicles (HEVs), plug-in hybrid electric vehicles (PHEVs), and all-electric vehicles (EVs) typically produce lower emissions than conventional vehicles do. Any type of electrified vehicle emits less GHG than conventional vehicles by nearly 40 percent or more. However, over 95 percent of the people are still driving conventional gasoline or diesel vehicles. So programs to encourage use of alternative fuel vehicles are highly needed.

**ACTIONS**

- Promote incentive program at outreach meetings
- Promote neighborhood electric vehicles (NEV)
- Apply for grants to install e-charges at public facilities
- Work with Community groups and business to install e-charges
- Require or incentive new commercial development to install e-charges



**7.5: Electrify the Fleet**

<b>GHG Reduction Potential (2020)</b>	Estimated reductions of 501 MTCO <sub>2</sub> e
<b>VMT Reduction (2020)</b>	None
<b>Cost to City</b>	Grant funded: No cost to City
<b>Cost to Individuals</b>	Varies depending upon gasoline prices and electric prices
<b>Co-Benefits</b>	



**Solid Waste**

**Goal 8: Decrease GHG Emissions through Reducing Solid Waste Generation**

**MEASURE 8.1: REDUCE WASTE TO LANDFILLS**

According to 2008 Statewide Waste Characterization data, the commercial sector generates nearly three fourths of the solid waste in California. Furthermore, much of the commercial sector waste disposed in landfills is readily recyclable. Increasing the recovery of recyclable materials will directly reduce GHG emissions. In particular, recycled materials can reduce the GHG emissions from multiple phases of product production; including extraction of raw materials, preprocessing and manufacturing. The Mandatory Commercial Recycling Measure was adopted in 2012 and is designed to achieve a reduction in GHG emissions of 5 million MTCO<sub>2</sub>e. To achieve the measure’s objective, an additional 26 percent of solid waste will need to be recycled from the commercial sector by the year 2020 and beyond, so below actions are necessary to help the City achieve the goal.

**ACTIONS**

- Outreach to community to promote waste recycling and diversion
- Add additional recycling containers in public
- Implement Construction and Demolition (C&D) reduction Requirement



**8.1: Reduce Waste to Landfills**

<b>GHG Reduction Potential (2020)</b>	Estimated reductions of 7,499 MTCO <sub>2</sub> e
<b>Cost to City</b>	Staff time.
<b>Cost to Individuals</b>	None
<b>Co-Benefits</b>	



**Clean Energy**

**Goal 9: Decrease GHG Emissions through Increasing Clean Energy Use**

**MEASURE 9.1: PROMOTE CLEAN ENERGY**

Clean energy includes energy efficiency and clean energy supply options like highly efficient combined heat and power as well as renewable energy sources. By identifying, designing and implementing clean energy policy and technology solutions, we are delivering important environmental and economic benefits, including reducing GHG emissions. Besides regular outreach and incentive programs, Community Choice Aggregation is an important way to achieve high rate of clean energy utilization. Since it is an opt-out program, participation rates can be very high and therefore reduce GHG emissions greatly.

**ACTIONS**

- Outreach to community to promote incentives



**9.1: Promote Clean Energy**

<b>GHG Reduction Potential (2020)</b>	Promotion only, potential reduction unknown
<b>Cost to City</b>	None
<b>Cost to Individuals</b>	None
<b>Co-Benefits</b>	



**CEQA Screening Tables**

**Goal 10: Decrease GHG Emissions from New Development through Performance Standards**

MEASURE 10.1: SCREENING TABLES

City planners have a unique opportunity to provide developers a flexible way of demonstrating GHG reductions within new development by providing screening tables for developers to fill out during applications of new development projects. Screening tables are a menu of options of energy efficiency improvements, renewable energy options, water conservation measures, and other options that provide predictable GHG reductions. Each option within the Screening tables includes point values based upon the GHG reduction that option will provide to a development projects. Developers that choose options from the screening tables totaling 100 points or more will be determined to have provided a fair-share contribution of GHG reductions, and therefore, are considered consistent with the Climate Action Plan. This determination of consistency can be used in a CEQA climate change analysis of the development, which provides a legally defensible and streamlined CEQA process for the project.

**ACTIONS**

- Educate City staff, developers, etc., on how the screening tables work and advantages in using the screening tables
- Include screening tables in submittal packages for development projects and have developers fill out their choices of reduction measures within the screening tables to include in as a project’s conditions of approval.
- By 2030 consider establishing on-line permitting to facilitate program



**10.1 Screening Tables**

<b>GHG Reduction Potential (2020)</b>	Estimated reduction of 122,644 MTCO <sub>2</sub> e
<b>kWh savings (2020)</b>	Estimated savings of 150,778,845 kWh
<b>VMT reduction (2020)</b>	Estimated savings of 4,868,278 VMT
<b>Cost to City</b>	Staff time administering program
<b>Cost to Developers</b>	Potentially none, but Varies depending upon choices made in menu
<b>Co-Benefits</b>	



## Municipal Measures

City operations make up a small percentage of the total communitywide GHG emissions, and therefore, the majority of the GHG reductions would result from the measures that are applied to the communitywide energy usage. Nevertheless, the City can set an example for its residents by improving the energy efficiency and reducing GHG emissions at its own facilities. This section summarizes the proposed reduction measures to be implemented by the City to further reduce its GHG emissions associated with energy consumption and water use. The reduction measures are organized by source category (electricity, natural gas, and water).

### *Municipal Facility, Energy and Water*

#### **Goal M-1: Participate in Education, Outreach, and Planning Efforts for Energy Efficiency**

##### **MEASURE M-1.1: INCREASE ENERGY SAVINGS THROUGH THE SCE ENERGY LEADER PARTNERSHIP**

The SCE Energy Leader Partnership (ELP) Program is a framework that offers enhanced rebates and incentives to cities that achieve measurable energy savings, reduce peak-time electricity demand and plan for energy efficiency. The program has a tiered incentive structure with threshold criteria required to trigger advancement to the next level of participation. The City is currently at the Gold Level and is working to achieve the Platinum Level by the end of 2020 or later.



M-1.1: Increase Energy Savings through the

#### **SCE Energy Leader Partnership**

<b>GHG Reduction Potential (2020)</b>	
<b>kWh Savings (2020)</b>	Supporting Measure
<b>Therms Savings (2020)</b>	
<b>Cost to City</b>	None: potential savings due to lower pricing of electricity
<b>Co-Benefits</b>	 



**Goal M-2: Increase Energy Efficiency in Municipal Buildings**

**MEASURE M-2.1: CONDUCT MUNICIPAL ENERGY AUDIT**

Knowledge of building energy use is an effective way to determine energy inefficiencies and opportunities for retrofits and upgrades. Energy audits provide an improved understanding of energy use, reveal energy inefficiencies of the building or building energy appliances, and offer recommendations on how to improve or correct the energy inefficiencies through retrofits or upgrades. Therefore, energy audits should be conducted on a routine basis.



**M-2.1: Conduct Municipal Energy Audits**

<b>GHG Reduction Potential (2020)</b>	
<b>kWh Savings (2020)</b>	Supporting Measure
<b>Therms Savings (2020)</b>	
<b>Cost to City</b>	Grant funding available. Potential long-term savings to City
<b>Co-Benefits</b>	



**MEASURE M-2.3: DEMAND RESPONSE PROGRAMS**

Electricity is supplied to buildings immediately upon demand. During hours of peak demand, such as the late afternoon, the electricity grid is often put under a stress to supply the increased demand. Demand Response Programs offer incentives to electricity consumers to reduce their energy demand, or shift their demand to off-peak hours, in response to grid stress.



**M-2.3: Demand Response Programs**

<b>GHG Reduction Potential (2020)</b>	None
<b>kWh Savings (2020)</b>	None
<b>Therms Savings (2020)</b>	None
<b>Cost to City</b>	None, cost savings to City due to lower electric bills
<b>Co-Benefits</b>	



**MEASURE M-2.4: DIRECT INSTALL PROGRAM**

SCE offers a Direct Install Program to reduce energy costs and save money. The program is funded by the utility ratepayers and includes a free assessment of the building by a contractor and installation of free energy-efficient replacement equipment. Examples of the energy-efficient equipment includes: fluorescent lighting, LED signs, window film, and programmable thermostats. In 2014, five municipal buildings participated in this program and saved over \$23,300 as a result.



M-2.4: Direct Install Program

<b>GHG Reduction Potential (2020)</b>	11.44 MTCO <sub>2</sub> e
<b>kWh Savings (2020)</b>	35,774 kWh
<b>Therms Savings (2020)</b>	None
<b>Cost to City</b>	Grant funded, long term cost savings to the City
<b>Co-Benefits</b>	



**MEASURE M-2.5: PROCUREMENT POLICY FOR ENERGY EFFICIENT EQUIPMENT**

Energy efficient procurement policies can reduce government facility energy costs by about 5 to 10 percent.<sup>6</sup> As municipal appliances wear out, the City would replace them with Energy Star or energy efficient equipment. Energy Star offers an appliance calculator to estimate money and energy saved by purchasing its products.



M-2.5: Procurement Policy for Energy

**Efficient Equipment**

<b>GHG Reduction Potential (2020)</b>	21.96 MTCO <sub>2</sub> e
<b>kWh Savings (2020)</b>	58,250 kWh
<b>Therms Savings (2020)</b>	626 therms
<b>Cost to City</b>	Cost savings of \$11,938 annually
<b>Co-Benefits</b>	

<sup>6</sup> Lawrence Berkeley National Laboratory (LBNL), Potential Energy, Cost, and CO<sub>2</sub> Saving from Energy-Efficient Government Purchasing, 2002.



**MEASURE M-2.8: RECYCLED SOLID WASTE**

Emissions from solid waste are primarily in the form of fugitive emissions of methane from decomposition. Recycling can reduce emissions at the manufacturing stage, increase forest carbon storage, and avoid landfill methane emissions. The City could reduce GHG emissions by recycling more of their municipal solid waste.



<b>GHG Reduction Potential (2020)</b>	11 MTCO <sub>2</sub> e
<b>Cost to City</b>	None
<b>Co-Benefits</b>	



### MEASURE M-2.9: RECYCLED WATER

The City could use recycled water to irrigate city-owned landscapes. The Beaumont-Cherry Valley Water District (BCVWD) utilizes its water recycling facility, two million gallon (MG) recycled water storage tank, and recycled water transmission main loop to provide Beaumont with recycled water. The recycled water system serving Beaumont is a Tertiary Water (Title 22), used for irrigation. The City would need to work with the developers and BCVWD to utilize its existing infrastructure to pipe the recycled water through the City.



<b>GHG Reduction Potential (2020)</b>	173 MTCO <sub>2</sub> e
<b>kWh Savings (2020)</b>	541,100 kWh
<b>Cost to City</b>	None, already required by Title 22 and the RWQCB
<b>Cost to Individuals</b>	Unknown
<b>Co-Benefits</b>	



**Goal M-3: Increase Energy Efficiency in Community Buildings and Infrastructure**

**MEASURE M-3.1: TRAFFIC SIGNAL AND OUTDOOR LIGHTING RETROFITS**

Since 2001, SCE has offered its municipalities rebates on LED Traffic Signal Lamps. The program is part of a statewide effort to conserve energy and promote energy efficiency. Retrofitting a standard incandescent traffic signal with LED lamps using the SCE rebate can result in a payback of less than one year. Other outdoor lights (e.g. streetlights, park lighting, etc.) can also be retrofitted.



**M-3.1: Traffic Signal and Outdoor Lighting**

**Retrofits**

<b>GHG Reduction Potential (2020)</b>	Varies depending upon amount of LED lighting
<b>kWh Savings (2020)</b>	Varies depending upon amount of LED lighting
<b>Cost to City</b>	Staff time administering program
<b>Cost to Individuals</b>	\$4,800 per LED streetlight offset by grants and SCE incentive program*
<b>Co-Benefits</b>	

\*City requires development to install only LED streetlights in new development. Developer can submit for grants and SCE incentives to reduce cost.



**MEASURE M-3.3: PLANT TREES FOR SHADE AND CARBON SEQUESTRATION**

Trees and vegetation naturally help cool an environment by providing shade and evapotranspiration (the movement of water from the soil and plants to the air) and reduce GHG emissions by sequestering carbon dioxide (CO<sub>2</sub>). Trees planted near pavement can reduce surface temperatures of streets and parking lots, and trees planted strategically near windows or roofs of buildings can effectively reduce interior temperatures. The City could plant trees in City-owned spaces to reduce urban heat island effect and building energy use and increase carbon sequestration.



**M-3.3: Plant Trees for Shade and Carbon**

**Sequestration**

<b>GHG Reduction Potential (2020)</b>	Estimate savings of 1 MTCO <sub>2</sub> e
<b>kWh Savings (2020)</b>	None
<b>Therms Savings (2020)</b>	None
<b>Cost to City</b>	Minimal staff time administering program, tree costs offset with grant programs
<b>Cost to Individuals</b>	None
<b>Co-Benefits</b>	



**Goal M-4: On-Road Energy Efficiency Enhancements; Employee Commute and Vehicle Fleet**

**MEASURE M-4.1: INTRODUCE PASS TRANSIT BENEFITS**

Pass Transit is the public transit agency serving the San Geronio Pass area, which includes the cities of Beaumont, Banning, Cherry Valley, and Cabazon. The Pass Transit system provides safe, reliable, affordable, friendly and environmentally responsible transportation. It is a convenient public transportation system for people living and working in the region to utilize instead of driving their private cars. Promotion of the use of Pass Transit as well as other transit services will reduce VMT dramatically.



<b>GHG Reduction Potential (2020)</b>	Estimate savings of 5 MTCO <sub>2</sub> e
<b>VMT Savings (2020)</b>	27,019 VMT annually
<b>Cost to City</b>	None, Transit agency provides incentive
<b>Cost to Individuals</b>	None
<b>Co-Benefits</b>	



MEASURE M-4.2: ENCOURAGE OR INCENTIVIZE EMPLOYEE CARPOOLS

Carpooling rate is as low as 4 percent for government employees of the City, and most people drive alone for work every day. Higher carpooling rate means less VMT and GHG emissions, so encouraging carpool by providing incentive programs and necessary facilities can be helpful.



M-4.2: Encourage or Incentivize Employee

Carpools

GHG Reduction Potential (2020)	3.4 MTCO <sub>2</sub> e
VMT reduced (2020)	18,373 VMT
Cost to City	None
Cost to Individual	None
Co-Benefits	



**MEASURE M-4.3: ENCOURAGE OR INCENTIVIZE PURCHASE OF HYBRID OR ELECTRIC VEHICLES**

According to the employee commute survey, over 95 percent of government employees are driving conventional gasoline or diesel vehicles. Encouraging those employees to switch to any type of electrified vehicle will help reduce GHG for at least nearly 40 percent than conventional vehicles.



**M-4.3: Encourage or Incentivize Purchase of**

**Hybrid or Electric Vehicles**

<b>GHG Reduction Potential (2020)</b>	3.49 MTCO <sub>2</sub> e
<b>VMT Savings (2020)</b>	None
<b>Cost to City</b>	None
<b>Cost to Individual</b>	Average of \$30,000 per vehicle with approximately \$10,000 in incentives to offset costs.
<b>Co-Benefits</b>	



**MEASURE M-4.4: REPLACE OR SUPPLEMENT VEHICLE FLEET WITH HYBRID/ELECTRIC VEHICLES**

The City’s vehicle fleet take nearly 10 percent of total municipal GHG emissions. As hybrid or electric vehicles emits far less GHG than conventional cars, encouraging the replacement of conventional vehicle fleet can help reduce the City’s municipal GHG emissions greatly.



**M-4.4: Replace or Supplement Vehicle Fleet**

**with Hybrid/Electric Vehicles**

<b>GHG Reduction Potential (2020)</b>	3.49 MTCO <sub>2</sub> e
<b>VMT Savings (2020)</b>	None
<b>Cost to City</b>	Grant funding to offset costs
<b>Co-Benefits</b>	



**MEASURE M-4.5: INSTALL E-VEHICLE CHARGERS**

More e-vehicle chargers is an incentive for employees to purchase an alternative fuel vehicle and to replace conventional vehicle fleet with e-vehicles. The city can reduce GHG emissions indirectly through this policy.



**M-4.5: Install E-Vehicle Chargers**

<b>GHG Reduction Potential (2020)</b>	11.4 MTCO <sub>2</sub> e
<b>VMT Savings (2020)</b>	None
<b>Cost to City</b>	Grant Funded
<b>Co-Benefits</b>	



### Goal M-5: Reduce Energy Consumption in the Long Term

#### MEASURE M-5.1: ONGOING ACTIONS AND PROJECTED REDUCTIONS

Based on completed and planned energy efficiency projects between 2013 and 2020, the City is expected to reduce energy related emissions by approximately 3.2% annually. Assuming the City continues to achieve these annual reductions, it is projected that that the City could reduce energy related emissions by an additional 48% below the baseline level by 2035.



M-5.1: Ongoing Actions and Projected

#### Reductions

<b>GHG Reduction Potential (2020)</b>	2,808 MTCO <sub>2e</sub>
<b>kWh Savings (2020)</b>	1,365,189 kWh
<b>Therms Savings (2020)</b>	1,342 therms
<b>Cost to City</b>	Moderate installation costs offset with grants, long term savings
<b>Co-Benefits</b>	  



## Summary of Reductions

By implementing the statewide and local reduction measures described above, the City would reduce its community-wide GHG emissions by 48.2 percent compared to the 2020 BAU emissions. Statewide measures reduce the City's GHG emissions by 11.2 percent and the local measures reduce it further by 37 percent. **TABLE 8** and **TABLE 9** summarize the strategies and the potential GHG reductions for community and municipal operations, respectively.

**TABLE 8 Summary of Community GHG Reduction Strategies and Emission Reductions**

Goal and Policy	2020 Emission Reductions		2030 Emission Reductions	
	MTCO <sub>2</sub> e	% from BAU	MTCO <sub>2</sub> e	% from BAU
<b>Goal 1: Increase Energy Efficiency in Existing Residential Units</b>				
1.1: Energy Efficiency Education and Best Practices	-	-	-	-
1.2: Increase Community Participation in Existing Energy Efficiency Opportunities	40	>1%	121	>1%
1.3: Promote or Establish Free or Required Home Energy Evaluations	-	-		
1.4: Promote Residential Home Energy Renovations	2,123	>1%	6,368	1.2%
<b>Goal 2: Increase Energy Efficiency in New Residential Development</b>				
2.1: Encourage or Require Energy Efficiency Standards Exceeding State Requirements	8,166	2.1%	24,497	4.8%
<b>Goal 3: Increase Energy Efficiency in Existing Commercial Units</b>				
3.1: Energy Efficiency Training, Education, and Recognition in the Commercial Sector	-	-	-	-
3.2: Increase Business Participation in Existing Energy Efficiency Programs	575	>1%	1,725	>1%
3.3: Incentivize or Require Non-Residential Energy Audits	-	-	-	-
3.4: Establish, Promote, Incentivize or Require Non-Residential Retrofits.	1,232	>1%	3,696	>1%
<b>Goal 4: Increase Energy Efficiency in New Commercial Development</b>				
4.1: Encourage or Require Energy Efficiency Standards Exceeding State Requirements	3,521	1%	10,562	2%
<b>Goal 5: Increase Energy Efficiency through Water Efficiency</b>				



**TABLE 8 Summary of Community GHG Reduction Strategies and Emission Reductions**

Goal and Policy	2020 Emission Reductions		2030 Emission Reductions	
	MTCO <sub>2</sub> e	% from BAU	MTCO <sub>2</sub> e	% from BAU
5.1: Support Water Efficiency through Enhanced Implementation of SB X7-7	1,259	>1%	3,776	>1%
5.2: Exceed Water Efficiency Standards	1	>1%	4	>1%
<b>Goal 6: Decrease Energy Demand through Reducing Urban Heat Island Effect</b>				
6.1: Tree Planting for Shading and Energy Efficiency	1	>1%	4	>1%
6.2: Light-reflecting Surfaces for Energy Efficiency	-	-	-	-
<b>Goal 7: Decrease Greenhouse Gas Emissions through Reducing Vehicle Miles Traveled</b>				
7.1: Encourage Non-Motorized Transportation Options	30	>1%	89	>1%
7.2: Encourage, Promote, Incentivize or Expand the Use of Pass Transit System or other Transit Services	295	>1%	866	>1%
7.3: Create Bicycle Master Plan to Expand Bike Routes around the City	13	>1%	866	>1%
7.4: Promote Ride Sharing Programs within Businesses	147	>1%	441	>1%
7.5: Electrify the Fleet	501	>1%	1,504	>1%
<b>Goal 8: Decrease Greenhouse Gas Emissions through Reducing Solid Waste Generation</b>				
8.1: Reduce Waste to Landfills	7,499	1.9%	22,496	4.4%
<b>Goal 9: Decrease Greenhouse Gas Emissions through Increasing Clean Energy Use</b>				
9.1: Promote Clean Energy	-	-	-	-
<b>Goal 10: Decrease GHG Emissions of New Development through Application of CEQA Screening Tables</b>				
10.1: Energy Efficiency and Renewable Energy in new development	2,825	1%	4,742	1%
10.2: Encourage Solid Waste Reduction in new development	156	>1%	266	>1%
10.3: Encourage VMT Reduction in new development	116,839	30%	171,674	33.5%
<b>Total Community Measures</b>				
Total of all Policies listed above	145,221	37%	253,466	49.5%

Notes and Acronyms:

BAU = Business as Usual

MTCO<sub>2</sub>e = metric tons of carbon dioxide equivalent


**TABLE 9 Summary of Municipal GHG Reduction Strategies and Emission Reductions**

Goal and Policy	2020 Emission Reductions		2030 Emission Reductions	
	MTCO <sub>2</sub> e	% from BAU	MTCO <sub>2</sub> e	% from BAU
<b>Goal M-1: Participate in Education, Outreach, and Planning Efforts for Energy Efficiency</b>				
M-1.1: Increase Energy Savings through the SCE Energy Leader Partnership	-	-	-	-
<b>Goal M-2: Increase Energy Efficiency in Municipal Buildings</b>				
M-2.1: Conduct Municipal Energy Audit	-	-	-	-
M-2.2: Green Building Participation	-	-	-	-
M-2.3: Demand Response Programs	-	-	-	-
M-2.4: Direct Install Program	22.88	>1%	34.12	>1%
M-2.5: Procurement Policy for Energy Efficient Equipment	21.96	>1%	75.58	1%
M-2.8: Recycled Solid Waste	-	-	-	-
M-2.9: Recycled Water	-	-	-	-
<b>Goal M-3: Increase Energy Efficiency in Community Buildings and Infrastructure</b>				
M-3.1: Traffic Signal and Outdoor Lighting Retrofits	-	-	-	-
M-3.2: Upgrade or Incorporate Water-Conserving Landscape	-	-	-	-
M-3.3: Plant Trees for Shade and Carbon Sequestration	-	-	-	-
<b>Goal M-4: On-Road Energy Efficiency Enhancements; Employee Commute and Vehicle Fleet</b>				
M-4.1: Introduce Pass Transit Benefits	-	-	-	-
M-4.2: Encourage or Incentivize Employee Carpools	3.4	>1%	6.5	>1%
M-4.3: Encourage or Incentivize Purchase of Hybrid or Electric Vehicles	6.42	>1%	8.28	>1%
M-4.4: Replace or Supplement Vehicle Fleet with Hybrid/Electric Vehicles	22.4	>1%	76.5	1%
M-4.5: Install E-Vehicle Chargers	3.5	>1%	5.6	>1%
<b>Goal M-5: Reduce Energy Consumption in the Long Term</b>				
M-5.1: Ongoing Actions and Projected Reductions	276	>1%	2,808	29%
<b>Total Municipal Measures</b>				



**TABLE 9 Summary of Municipal GHG Reduction Strategies and Emission Reductions**

Goal and Policy	2020 Emission Reductions		2030 Emission Reductions	
	MTCO <sub>2</sub> e	% from BAU	MTCO <sub>2</sub> e	% from BAU
Total of all Policies listed above	325	4%	3,193	33.4%

Notes and Acronyms:

BAU = Business as Usual

MTCO<sub>2</sub>e = metric tons of carbon dioxide equivalent



### Comparison of Reductions to Targets

**TABLE 10** summarize the baseline 2012 emissions, the projected 2020 and 2030 emissions inventory, as well as the reduced 2020 and 2030 inventories after implementation of the reduction measures for community and municipal operations, respectively.

By 2020, the statewide and local measures together would reduce the City’s community GHG emissions from the 2020 BAU condition by approximately 48.2 percent or 189,916 MTCO<sub>2</sub>e (This reduction is equivalent to 27 percent decrease below the 2012 levels), which exceeds the 15 percent reduction target of the year 2020. Additional reductions through 2030 would result in reductions that meet the 2030 reduction target (41.7% below 2012 levels).

**TABLE 10 Community Emissions and Targets Comparison**

Parameter	BAU Emissions	2020 Emission Reductions		2030 Emission Reductions		Reduction Target Achieved?
	MTCO <sub>2</sub> e	MTCO <sub>2</sub> e	% from BAU	MTCO <sub>2</sub> e	% from BAU	
2020 Forecast	387,767	198,851	48.2%			YES
2030 Forecast	511,751			162,174	68.3%	YES

Notes and Acronyms:

BAU = Business as Usual

MTCO<sub>2</sub>e = metric tons of carbon dioxide equivalent



## CHAPTER 4 Community Outreach

The City recognizes that community involvement is integral to the success of the Plan and to overall GHG reduction for the region. Considering that several measures depend on the voluntary commitment, creativity, and participation of the community, it is essential that local stakeholders are encouraged to participate in the development process of the Plan.

### Public Workshops

Two public workshops were organized to inform the public of the Plan, educate them in the aspects of energy efficiency and emission reduction strategies, and elicit feedback on which strategies the City should implement. Presentations included background on the Plan, the City's 2012 GHG emissions inventory, and what emissions would be in 2020 and 2030 if the City did not develop a Plan. The presentations also included an





overview of the workshop activities and brief discussion of some of the reduction strategies that the attendees would vote on during the activities.

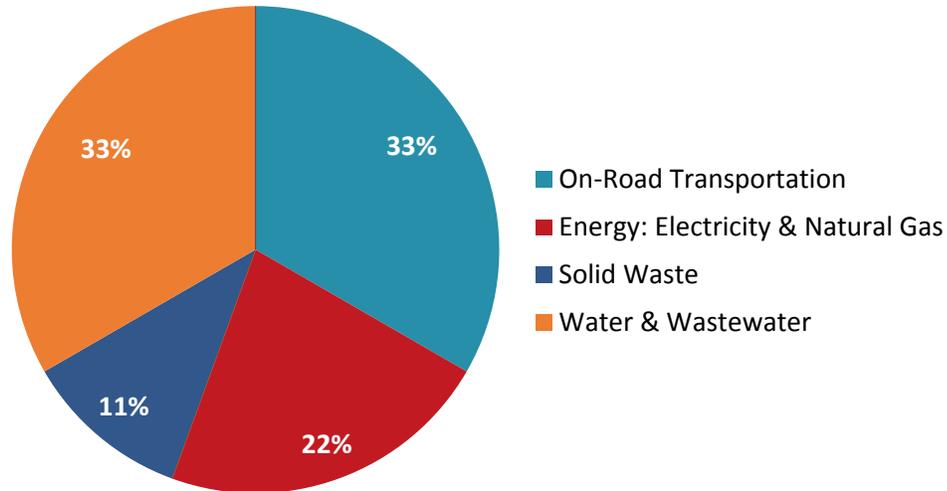


The attendees were asked to participate in an activity, which included

reviewing potential reduction measures and voting on their favorite measure by category. Categories included Transportation, Energy related to electricity and natural gas use, Energy related to the urban heat island effect, Water and Wastewater, Solid Waste, and Municipal Operations. Participants were then asked to vote on the category of emissions that was most important to them. Each strategy included information about the potential GHG reductions; cost to the City and the community; and co-benefits, such as local air quality and alternative transportation. The purpose of this activity was to determine which GHG reduction strategies were most feasible and implementable in the community and which sector (or category) of emissions each participant felt was most important. At the conclusion of the activity, the results were discussed and participants were asked to complete a survey of the event. The results of the activity and survey are below. Detailed results are provided in Appendix B.

### **Activity Results**

Feedback from these events provided the City with a better understanding of the concerns and priorities of the community. As shown in Figure 9, the community identified the On-Road Transportation and Water and Wastewater sectors as the most important sectors, each receiving 33 percent of the vote as the most important sector. The Energy sector (electricity and natural gas) received 22 percent of the vote, followed by Solid Waste (11 percent). The Municipal sector and Energy related emissions associated with the urban heat island effect were presented to the public; however, they were not selected as important sectors during these workshops.



**FIGURE 9 Most Important Sectors As Voted by the Community**

Within each sector, the public was presented with multiple GHG reduction measures and asked to select which measure was most important for each sector. The following GHG reduction measures were selected by the community.

**On-Road Transportation**

The majority (56 percent) of the public voted to expand electric charging infrastructure in key areas. The rest of the community was split (22 percent each) between expanding transit service (i.e., providing transit pass rebates, expanding service, and shade structures at bus stops) and neighborhood electric vehicles on low-speed roads. No participants chose outreach or promoting ridesharing as the most important transportation strategy in the City.

Transportation	
1. Outreach to encourage non-motorized option such as “bike to work day”, “safe routes to schools”, and expand bike and pedestrian routes	0%
2. Expand transit service by providing transit pass rebates or expanding service in Beaumont, shade structures at bus stops	22%
3. Promote ridesharing through mobile apps or requiring large businesses to have bike racks and showers	0%
4. Neighborhood electric vehicles on low-speed roads	22%
5. Expand electric charging infrastructure in key areas	56%

**Water and Wastewater**

The most popular measures, as voted by the community, were allowing grey water systems (46 percent) and expanding incentives for turf replacement (36 percent). Increasing recycled water



systems and public outreach were each selected by 9 percent of the community. Passing additional water restrictions was not chosen as the most important strategy by any participants.

Water and Wastewater	
1. Outreach through website, social media, HOA's and business groups	9%
2. Expand incentives for turf replacement	36%
3. Allow grey water systems	45%
4. Increase recycled water systems	9%
5. Pass additional water restriction	0%
Percentages may not add to 100% due to rounding.	

### Energy (Electricity and Natural Gas)

Half (50 percent) of the participants selected facilitating or requiring retrofits of existing homes as the most important strategy in this sector, and a quarter (25 percent) voted on conducting home energy audits to inform homeowners of potential energy saving opportunities. The remaining votes (25 percent) were split between requiring new homes to exceed current energy efficiency requirements and requiring new businesses to exceed current energy efficiency requirements. No participants chose exploration of a clean energy utility (community choice aggregation), conducting more outreach, or developing a green business award as the best strategy in this sector.

Energy: Electricity and Natural Gas	
1. Explore development of clean energy utility	0%
2. Outreach to residents and businesses through website, social media, fairs, and other events	0%
3. Conduct home energy audits to inform homeowners of potential energy saving opportunities	25%
4. Facilitate or require retrofits of existing homes	50%
5. Require new homes exceed current energy efficiency requirements through menu of options	13%
6. Create a Green Business Award program to highlight energy efficiency stars	0%
7. Require new buildings to exceed current energy efficiency requirements through menu of options	13%
Percentages may not add to 100% due to rounding.	

### Solid Waste

Half of the participants voted to increase recycling bins, and a quarter voted on more outreach to the community on the importance of recycling. The remaining votes (25 percent) were split adding green waste bins to the business community and require increased recycling for construction sites.



### Solid Waste

1. Outreach to community on importance of recycling	25%
2. Increase recycling bins	50%
3. Add green waste bins to commercial development	13%
4. Require increased recycling for construction sites	13%

Percentages may not add to 100% due to rounding.

### Energy (Urban Heat Island)

There was no clear consensus in this category. Of the participants, 30 percent selected requiring shade trees on new development (including parking lots) and another 30 percent chose promoting cool pavements on parking lots and at schools as the most important strategy. The other two strategies in this category, encouraging more tree planting and requiring cool roofs on new development, each received 20 percent of the vote.

### Energy: Urban Heat Island

1. City to encourage more tree planting	20%
2. Require shade trees on new development, including parking lots	30%
3. Require cool roofs on new development	20%
4. Promote cool pavements on parking lots, schools	30%

### Municipal

The most important strategy for the Municipal sector, as voted by 40 percent of the participants, was the implementation of more efficient wastewater treatment facilities. Of the participants, 20 percent voted for the City to replace turf with low-irrigation plants and another 20 percent voted for the City to replace outdoor lights with LED lights). The remaining 20 percent would like the City to increase participation in Edison's Energy Leader Partnership Program or provide incentives for commute alternatives (i.e., bus pass, carpool, and biking) (both measures received 10 percent of the vote). No participants voted on the following Municipal strategies as the most important for City operations: increase solar energy, require City buildings to exceed current energy standards, replace vehicle fleet with hybrid or electric vehicles, and increase recycling at City facilities.



Municipal Operations	
1. Increase solar energy	0%
2. Increase participation in Edison’s Energy Leader Partnership Program	10%
3. Require City buildings exceed current energy standards	0%
4. Replace outdoor lights with LED	20%
5. Provide incentives for alternative commute (bus pass, carpool, biking)	10%
6. Replace vehicle fleet with hybrid or electric vehicles	0%
7. Increase recycling at City facilities	0%
8. Replace turf with low-irrigation plants	20%
9. Implement more efficient wastewater treatment facilities	40%



## CHAPTER 5      **Plan Implementation**

This chapter describes implementation steps for the Plan to support achievement of the energy efficiency and GHG reduction goals for the community at large. Success in meeting the City’s energy efficiency and GHG emission reduction goals will depend on cooperation, innovation, and participation by the City and residents, businesses, and local government entities. This section outlines key steps that the City would follow for the implementation of this Plan.

Successful implementation of the Plan will require the following components. These are described in more detail the sections below.

- Administration and/or staffing
- Financing and budgeting
- Timelines for measure implementation
- Community outreach and education
- Monitoring, reporting, and adaptive management

The steps above are basic steps that any City might take or that other California communities have taken to implement a GHG reduction plan. These are suggested, not required, and are intended to guide a City in its implementation planning.



## Administration and Staffing

The success of this plan will require coordination with other regional agencies. The City will work with these agencies and designate staff to oversee the successful implementation and tracking of all selected GHG reduction strategies. The City will primarily be responsible for coordinating with contacts across departments to gather data, report on progress, track completed projects, and ensure that scheduling and funding of upcoming projects is discussed at key City meetings. The City may identify one or more staff to act as the Plan Implementation Administrator(s) to guide monitoring, reporting, and dissemination of information to the public. Where possible, the City may utilize assistants from programs such as CivicSpark, an AmeriCorps program designed to build capacity for local governments to address climate change.

The Administrator could have the following responsibilities:

- Secure long-term financing for the EE and GHG reduction measures (i.e., grant application primary contact).
- Coordinate Plan implementation related meetings.
- Serve as the external communication hub to local and regional climate action organizations including SCAG.
- Conduct public outreach to inform the community of the City's reduction planning efforts.
- Investigate methods to utilize existing resources and harness community support to better streamline implementation of the Plan.
- Monitor implementation of reduction measures and success of the Plan.
- Develop a protocol for monitoring the effectiveness of emissions reduction programs.
- Establish guidelines for reporting and documenting emissions reduction progress.
- Submit annual reports to the City council.
- Develop a protocol for utilizing the real-time information collected through the verification process to modify and revise existing reduction programs.
- Track state and federal legislation and its applicability to the City.

In general, the goal in implementing the Plan is not to create new administrative tasks or new staff positions necessarily, but rather to leverage existing programs and staff to the maximum extent feasible. Cities should seek to fold GHG planning and long-term reduction into their existing procedures, institutional organization, reporting and long-term planning.

## Financing and Budgeting

Implementation of the local GHG reduction measures may require investment for the capital improvements and other investments, and increased operations and maintenance costs. However, in some cases operating costs are anticipated to decrease, resulting in offsetting savings. This section presents a summary of funding and financing options (Table 11) available at the writing of this



document. Some funding sources are not necessarily directed towards a City, but to a larger regional agency such as SCAG, or a waste services provider serving multiple jurisdictions. The City should monitor private and public funding sources for new grant and rebate opportunities and to better understand how larger agencies are accessing funds that can be used for GHG reductions in their area. Leveraging financing sources is one of the most important roles a local government can play in helping the community to implement many of the GHG reduction measures.

**TABLE 11 Potential Funding Sources to Support GHG Reduction Measures**

Funding Source	Description
<b>State and Federal Funds</b>	
Federal Tax Credits for Energy Efficiency	<ul style="list-style-type: none"> <li>■ Tax credits for energy efficiency can be promoted to residents.</li> </ul>
Energy Efficient Mortgages (EEM)	<ul style="list-style-type: none"> <li>■ An EEM is a mortgage that credits a home’s energy efficiency in the mortgage itself.</li> <li>■ Residents can finance energy saving measures as part of a single mortgage.</li> <li>■ 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.</li> <li>■ EEMs are typically used to purchase a new home that is already energy efficient, such as an ENERGY STAR® qualified home.</li> </ul>
California Department of Resources Recycling and Recovery (CalRecycle)	<ul style="list-style-type: none"> <li>■ CalRecycle grant programs allow jurisdictions to assist public and private entities in management of waste streams.</li> <li>■ Incorporated cities and counties in California are eligible for funds.</li> <li>■ Program funds are intended to:               <ul style="list-style-type: none"> <li>◇ Reduce, reuse, and recycle all waste.</li> <li>◇ Encourage development of recycled-content products and markets.</li> <li>◇ Protect public health and safety and foster environmental sustainability.</li> </ul> </li> </ul>
California Air Resources Board (ARB)	<ul style="list-style-type: none"> <li>■ ARB offers several grants, incentives, and credits programs to reduce on-road and off-road transportation emissions. Residents, businesses, and fleet operators can receive funds or incentives depending on the program.</li> <li>■ The following programs can be utilized to fund local measures:               <ul style="list-style-type: none"> <li>◇ Air Quality Improvement Program (AB 118)</li> <li>◇ Carl Moyer Program—Voucher Incentive Program</li> <li>◇ Goods Movement Emission Reduction Program (Prop 1B Incentives)</li> <li>◇ Loan Incentives Program</li> <li>◇ Lower-Emission School Bus Program/School Bus Retrofit and Replacement Account (Prop 1B and EPA Incentives)</li> </ul> </li> </ul>



**TABLE 11 Potential Funding Sources to Support GHG Reduction Measures**

Funding Source	Description
Existing Capital Improvement Program	<ul style="list-style-type: none"> <li>■ State and federal funds would most likely continue to local governments, builders, and homeowners in the following forms:                             <ul style="list-style-type: none"> <li>◇ Grants</li> <li>◇ Transportation and transit funding</li> <li>◇ Tax credit and rebate programs</li> </ul> </li> <li>■ The Capital Improvement Program can be utilized for measures relating to traffic or transit.</li> </ul>
State Funding for Infrastructure	<ul style="list-style-type: none"> <li>■ The state’s Infill Infrastructure Grant Program may potentially be used to help fund measures that promote infill housing development.</li> <li>■ Grants can be used for gap funding for infrastructure improvements necessary for specific residential or mixed-use infill development projects.</li> </ul>
Transportation-Related Federal and State Funding	<ul style="list-style-type: none"> <li>■ For funding measures related to transit, bicycle, or pedestrian improvements, the following funding sources from SCAG may be utilized:                             <ul style="list-style-type: none"> <li>◇ Smart Growth Incentive Program</li> <li>◇ Active Transportation Grant Program</li> <li>◇ Job Access and Reverse Commute and New Freedom Programs</li> </ul> </li> </ul>
<b>Utility Rebates</b>	
	<ul style="list-style-type: none"> <li>■ SCE is one of the utilities participating in the California Solar initiative.</li> <li>■ A variety of rebates are available for existing and new homes.</li> <li>■ Photovoltaics, thermal technologies, and solar hot water projects are eligible.</li> <li>■ Single-family homes, commercial development, and affordable housing are eligible.</li> </ul>
Energy Upgrade California	<ul style="list-style-type: none"> <li>■ Program is intended for home energy upgrades.</li> <li>■ Funded by the American Recovery and Reinvestment Act, California utility ratepayers, and private contributions.</li> <li>■ Utilities administer the program, offering homeowners the choice of one of two upgrade packages—basic or advanced.</li> <li>■ Homeowners are connected to home energy professionals.</li> <li>■ Rebates, incentives, and financing are available.</li> <li>■ Homeowners can receive up to \$4,000 back on an upgrade through the local utility.</li> </ul>



**TABLE 11 Potential Funding Sources to Support GHG Reduction Measures**

Funding Source	Description
<b>Private Funding</b>	
	<ul style="list-style-type: none"> <li>■ Private equity can be used to finance energy improvements, with returns realized as future cost savings.</li> <li>■ Rent increases can fund retrofits in commercial buildings.</li> <li>■ Net energy cost savings can fund retrofits in households.</li> <li>■ 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.</li> <li>■ 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, HVAC, and LED streetlights are all eligible projects.</li> </ul>
<b>Other Funding Mechanisms for Implementation</b>	
	<ul style="list-style-type: none"> <li>■ Increased operating costs can be supported by grants 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.</li> </ul>
<b>Future Funding Options: Funding Mechanisms for Capital and/or Implementation Costs</b>	
New Development Impact Fees	<ul style="list-style-type: none"> <li>■ These types of fees may have some potential to provide funding, but such fees are best implemented when the real estate market and overall regional economic conditions are strong.</li> </ul>
General Obligation Bond	<ul style="list-style-type: none"> <li>■ A general obligation bond is a form of long-term borrowing and could be utilized to fund municipal improvements.</li> </ul>



**TABLE 11 Potential Funding Sources to Support GHG Reduction Measures**

Funding Source	Description
AB 811 Districts Property- Assessed Clean Energy (PACE)	<ul style="list-style-type: none"> <li>■ AB 811 is intended to help municipalities accomplish goals outlined in AB 32.</li> <li>■ 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.</li> <li>■ Four PACE programs currently offered in Beaumont include the Home Energy Renovation Opportunity (HERO) program, California FIRST, Fig Tree Financing, and Ygrene.</li> <li>■ 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.</li> <li>■ Financing is repaid through property tax bills.</li> <li>■ AB 811 and the PACE program are currently on hold for residential properties due to potential violation of standard FHFA federally guaranteed (Fannie Mae/Freddie Mac) residential mortgage contracts.</li> </ul>

Acronyms and Abbreviations:

- |  |  |
|--|--|
| AB = Assembly Bill   | ARB = California Air Resources Board           |
| CalRecycle = California Department of Resources Recycling and Recovery |  |
| EEM = Energy Efficient Mortgages                                       | EPA = federal Environmental Protection Agency  |
| FHFA = Federal Housing Finance Agency                                  | HERO = Home Energy Renovation Opportunity      |
| HVAC = heating, ventilation and air conditioning                       | LED = light emitting diodes                    |
| OBF = On-Bill Financing  | PACE = Property-Assessed Clean Energy          |
| PPA = Power Purchase Agreements  | SANBAG = San Bernardino Associated Governments |
| SCAG = Southern California Association of Governments                  | SCE = Southern California Edison               |
| SGC = Strategic Growth Council   |  |

In addition to pursuing the funding options above and monitoring the availability of others, the City should take the following steps in order to best inform decisions related to the cost of GHG reduction measures:

- **Perform and refine cost estimates**—Cost estimates for local reduction measures should be performed to identify the cost-effectiveness of each measure to inform and guide the implementation process. This analysis will likely be based on a variety of participation, per-unit, and other assumptions. As programs are developed, cost estimates should be refined and updated over time with more precise implementation-level data.
- **Integrate GHG reduction into existing City budget and CIP**—Certain capital improvements may need to be added to the City’s CIP and facility master plan programs, as well as those of the City utility enterprises and other public agencies that have control for project implementation. For CIPs completely under the City’s control, new projects would need to be assessed for consistency with the Plan.



- **Adopt or update ordinances and/or codes**—Some local reduction measures may require new or revised ordinances. Staff would need to coordinate these efforts in conjunction with planning departments, planning commissions, and City councils.
- **Pursue outside funding sources**—A range of funding from state and federal agencies has been identified. The City would need to pursue these (and other emerging) funding sources as a part of implementation efforts.
- **Implement and direct preferred City funding sources**—While City funding sources are limited, the City, when financially able, as a part of its budget process, could appropriate funding from general sources or make changes in its fee schedules, utility rates, and other sources as needed to support funding the implementation of the GHG reduction measures.
- **Create monitoring/tracking processes**—Local reduction measures will require program development, tracking, and/or monitoring.
- **Identify economic indicators to consider future funding options**—Economic recovery may occur rapidly or slowly. Whatever the timeframe, the City would need to determine the point at which certain additional funding sources may become feasible and/or favorable. Identification and monitoring of economic indicators and trends, such as home prices, energy prices cost per kWh on solar installations, unemployment rates, or real wage increases, can help the City decide when to further explore the potential for funding local reduction measures through different financing mechanisms.

## Timeline for Measure Implementation

After taking into account the reductions in energy and water usage and the GHG emissions resulting from statewide measures, the City will need to implement the local reduction measures to reach its reduction targets.

The City has developed an implementation schedule for the local reduction measures. Prioritization was based on the following factors:

- Cost effectiveness
- GHG reduction efficiency
- Availability of funding
- Level of City Control
- Ease of implementation
- Time to implement

To encourage implementation of all reduction measures, City staff would develop a Plan Implementation Timeline. Measure prioritization could be based on the following factors.

- **Cost/Funding**—How much does the measure cost? Is funding already in place for the measure?
- **Greenhouse Gas Reductions**—How effective is the measure at reducing GHG emissions?



- **Other Benefits**—For example, does the measure improve water quality or conserve resources? Would it create jobs or enhance community well-being?
- **Consistency with Existing Programs**—Does the measure complement or extend existing programs?
- **Impact on the Community**—What are the advantages and disadvantages of the measure to the community as a whole?
- **Speed of Implementation**—How quickly can the measure be implemented and when would the City begin to see benefits?
- **Implementation Effort**—How difficult will it be to develop and implement the program?

A qualitative appraisal of implementation effort for the City is also provided. Measures can be categorized based on the convention of low, medium, or high, with low-level measures requiring the least level of effort by the City and being the most likely to be pursued immediately (i.e., the low-hanging fruit). Sample criteria are shown in Table 12.

**TABLE 12 Implementation Matrix**

Implementation Effort Level	Sample Criteria
Low	<ul style="list-style-type: none"> <li>■ Requires limited staff resources to develop.</li> <li>■ Existing programs in place to support implementation.</li> <li>■ Required internal and external coordination is limited.</li> <li>■ Required revisions to policy or code are limited.</li> </ul>
Medium	<ul style="list-style-type: none"> <li>■ Requires staff resources beyond typical daily level.</li> <li>■ Policy or code revisions necessary.</li> <li>■ Internal and external coordination (e.g., with stakeholders, other cities or agencies, or general public) is necessary.</li> </ul>
High	<ul style="list-style-type: none"> <li>■ Requires extensive staff time and resources.</li> <li>■ Requires development of completely new policies or programs and potential changes to the general plan.</li> <li>■ Robust outreach program required to alert residents and businesses of program requirements and eligibility.</li> <li>■ Requires regional cooperation and securing long-term funding.</li> </ul>

## Community Outreach and Education

The citizens and businesses in the City are integral to the success of the Plan and to overall GHG reduction for the region. Their involvement is essential, considering that several measures depend on the voluntary commitment, creativity, and participation of the community.



The City would educate stakeholders, such as businesses, business groups, residents, developers, and property owners, about the GHG reduction measures that require their participation, encourage participation in these programs, and alert them to program requirements, incentives, and/or rebate availability, depending on the measure. The City staff would schedule periodic meetings to facilitate formal community involvement in Plan implementation and adaptation over time. This could include focused meetings for a specific measure or program such as the PACE program and/or agenda items at City Council or other public meetings. These meetings would be targeted to particular stakeholder groups and provide information on Plan implementation progress as well as the implementation of a specific program or new policy. Alternatively, periodic written updates could be provided in City newsletters, SCAG's newsletter, on City websites, or through other media communications with the general public such as press releases and public service announcements. Stakeholders would be provided an opportunity to comment on potential improvements or changes to the Plan. The City would also sponsor periodic outreach events to directly inform and solicit the input, suggestions, and participation of the community at large.

### **Monitoring, Reporting, and Adaptive Management**

Regular monitoring is important to ensure programs are functioning as they were originally intended. Early identification of effective strategies and potential issues would enable the City to make informed decisions on future priorities, funding, and scheduling. Moreover, monitoring provides concrete data to document the City's progress in reducing GHG emissions. The City would be responsible for developing a protocol for monitoring the effectiveness of emissions reduction programs as well as for undertaking emissions inventory updates:

- **Update GHG Inventory**—The City would update inventory emissions prior to 2020 to ensure they meet their GHG reduction goals. This includes regular data collection in each of the primary inventory sectors (utility, regional VMT, waste, wastewater, and water), and comparing the inventory to the City's baseline GHG emissions in 2005. The City would consolidate information in a database or spreadsheet that can be used to evaluate the effectiveness of individual reduction measures.
- **Track State Progress**—The Plan will rely heavily on state-level measures. The City would be responsible for tracking the state's progress on implementing state-level programs. Close monitoring of the real gains being achieved by state programs would allow the City to adjust its Plan, if needed.
- **Track Completion of GHG Reduction Measures**—The City would keep track of measures implemented as scheduled in the Plan, including progress reports on each measure, funding, and savings. This will allow at least a rough attribution of gains when combined with regular GHG inventory updates.
- **Regular Progress Reports**—The City may report annually (or semi-annually or at other assigned intervals) to the City Council on Plan implementation progress. If annual reports, periodic inventories, or other information indicates that the GHG reduction measures are not as effective as originally anticipated, the Plan may need to be adjusted, amended, or supplemented.



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**APPENDIX A**

**City of Beaumont Greenhouse Gas Inventory,  
Forecasting, and Target-Setting Report**



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