

# INGLEWOOD ENERGY AND CLIMATE ACTION PLAN

CITY OF INGLEWOOD, CALIFORNIA

MARCH 2013



# **INGLEWOOD ENERGY AND CLIMATE ACTION PLAN**

**CITY OF INGLEWOOD, CALIFORNIA**

MARCH 25, 2013

## ACKNOWLEDGEMENTS

### *City Council*

James T. Butts, Jr., Mayor  
Mike Stevens, District 1  
Judy Dunlap, District 2  
Eloy Morales, Jr., District 3  
Ralph Franklin, District 4

### *Planning Commission*

George W. Dotson, Chairperson  
Larry Springs  
Richard Heath  
Aide Trejo  
Terry Coleman

### *Planning Division*

Linda Tatum, AICP, Acting Director of the  
Economic and Community Development  
Department  
Mindala Wilcox, AICP, Senior Planner  
Laura Zingg, Planner  
Arturo Salazar, Assistant Planner

### *Businesses and Community Organizations*

Centinela Hospital  
Hollywood Park Land Company  
Social Justice Learning Institute  
Southern California Gas Company

### *City Departments*

Public Works  
Parks, Recreation and Library Services  
Building Division  
Community Development Block Grant  
Division  
Parking and Outsource Services  
Residential Sound Insulation  
Human Resources

### *Citizen Participants*

Christina Adolphus  
Steven Brand  
Elizabeth Carbonaro  
Veronica Chavez  
Ricardo Romero Chavez  
Deborah Hartnett  
Alice L. Jones  
Maria Lambers  
N. Aida Mansurini  
Gerard McCallum  
Richard Purdy  
Velma C. Slaughter  
Diane Sombrano  
Derek Steele  
Elga Stevens  
Maxine Toler  
Jim Vaughn  
Maria Vazquez  
Bill Widener

## CONSULTANT TEAM

### *Raimi + Associates, Inc.*

Matthew Burris, AICP, LEED AP, Project  
Manager  
Eric Yurkovich, Senior Planner  
3850 Vine Street, Suite 140  
Riverside, CA 92507  
[www.raimiassociates.com](http://www.raimiassociates.com)

### *South Bay Cities Council of Governments*

20285 S. Western Avenue, Suite 100  
Torrance, CA 90501

### *Iteris, Inc*

Sean Daly, AICP, PTP, Senior  
Transportation Planner  
400 Oceangate, Suite 480  
Long Beach, CA 90802  
[www.iteris.com](http://www.iteris.com)

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# EXECUTIVE SUMMARY

Greenhouse gas (GHG) emissions from manmade sources continue to receive increasing attention worldwide over concern that they contribute to global climate change. Since 2005, California has taken several policy steps towards reducing GHG emissions including the following:

- **Global Warming Solutions Act (2005):** Also known as Assembly Bill 32, this law established a long term, statewide reduction target reducing statewide emissions by fifteen percent below current levels by 2020, based on what is considered to be the international GHG reduction standard, 80 percent reduction below the 1990 GHG levels by 2050.
- **Senate Bill 375 (2008):** In support of AB 32, established reduction targets for transportation sources, at 8 percent per capita by 2020 and 13 percent per capita reduction by 2035. Implemented at the regional level.

While the Global Warming Solutions Act established greenhouse gas reduction targets for the state as a whole, SB 375 established targets/requirements for each Metropolitan Planning Organization (MPO) in California. The Los Angeles region MPO, the Southern California Association of Governments (SCAG), has begun the process of developing a plan that coordinates transportation and land use, including allocation of regional housing needs. This plan will facilitate the SCAG region's attainment of statewide targets set by SB 375.

To date, none of the climate change legislation adopted in California requires reduction targets or other requirements for local jurisdictions. However, state and regional officials anticipate that subsequent legislation will establish GHG reduction requirements at the local level. This among other factors has prompted many local jurisdictions to proactively prepare Climate Action Plans (CAPs) which provide a roadmap to reduce GHG emissions throughout a community.

While most cities that have undertaken this effort have been preparing CAPs, Inglewood is relatively unique in that the draft plan includes analysis of both energy and greenhouse gas emissions, making it an Energy Climate Action Plan (ECAP). Grant funding awarded to the City made this more comprehensive analysis possible.

An ECAP provides an excellent opportunity for environmental stewardship within the community. Based upon communications from residents, the City Council, and the Planning Commission, there is strong community support for the City to take an active role in promoting energy conservation and environmentally friendly initiatives. In addition to improving the environment, there are numerous co-benefits to reducing energy consumption and GHG emissions through the strategies laid out in the ECAP including the following:

- Energy independence
- Cost savings for energy not used
- Water saved
- Improved air quality

- Improved access to fresh fruits and vegetables
- Increased physical activity and recreational opportunities
- Health benefits from improved air quality and increased physical activity

The Inglewood ECAP is a roadmap for achieving community-wide energy and greenhouse gas emissions reductions that encourages the City to grow more sustainably. The ECAP includes the following:

- **Inventory:** Expands the City's 1990, 2005, and 2007 greenhouse gas inventory to include an inventory of 2010 emissions and a (2010) inventory of electricity and natural gas consumed.
- **Reduction Target/Goal:** Establishes a 2020 emissions reduction target of fifteen percent (15%) below 2005 levels and a 2035 emissions reduction goal of thirty-two and a half percent (32.5%) below 2005 levels.
- **Reduction Strategies:** Develops energy and greenhouse gas emissions reduction strategies with particular attention to budget neutral measures that will reduce Inglewood's energy consumption and GHG emissions in order to meet voluntary statewide emissions targets outlined in the California Climate Action Scoping Plan and Executive Order S-03-05.
- **Implementation Program:** Identifies the timeline for implementing each strategy, relative cost, and any additional analysis and/or legislative action needed.
- **Streamlined CEQA Review:** Serves as a tiering document for the streamlined review of project-level GHG emissions under the California Environmental Quality Act for proposed developers within the City.

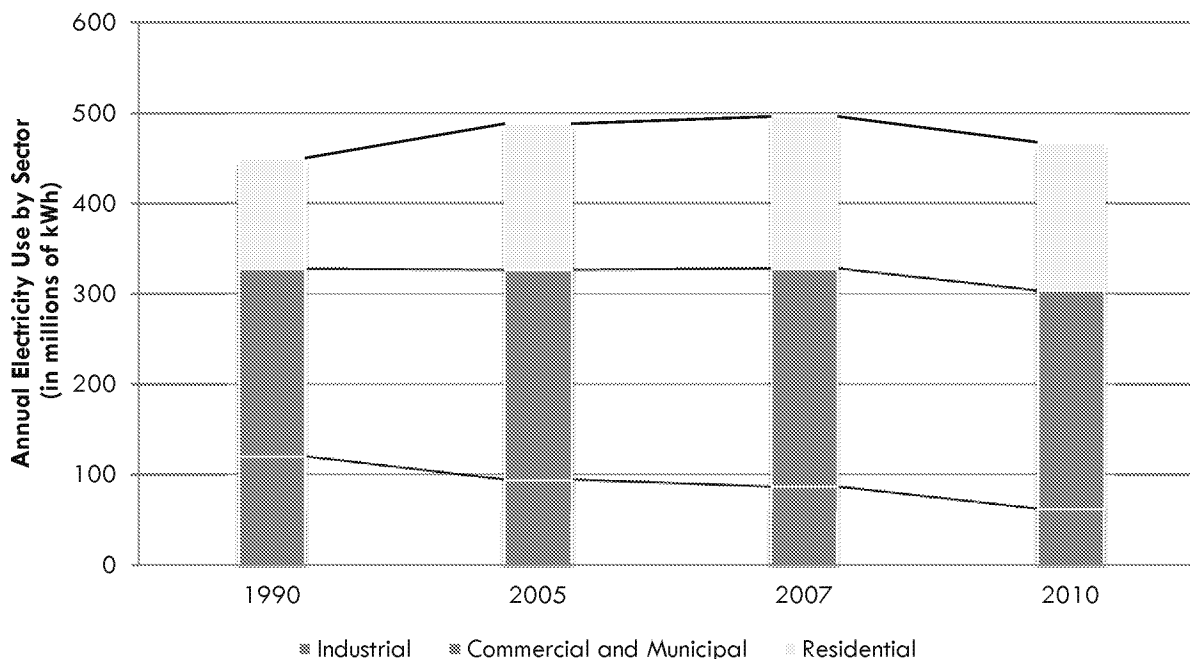
## ENERGY AND GREENHOUSE GAS EMISSIONS INVENTORIES

The 2010 Inventory provides a snapshot of energy use and emissions throughout the community. It quantifies the amount of electricity and natural gas consumed as well as emissions from municipal operations and the community as a whole. The inventory quantifies energy consumed in the City by residential, commercial/municipal, and industrial activities. For emissions, the inventory quantifies both direct emissions from the on-site combustion of fuels and the combustion of fuel in vehicles as well as indirect emissions associated with community electricity consumption, solid waste, and water consumed. The inventory also includes a business-as-usual (BAU) forecast of greenhouse gas emissions in 2020 and 2035. The BAU forecast estimates how projected trends in energy use, driving habits, population growth, and employment expansion will affect future emissions, providing a worst-case scenario for emissions growth.

In 2010, Inglewood used less electricity and natural gas than in 2005. Between 2005 and 2010, electricity use fell from 488 million kWh to 468 million kWh, a four and two-tenths percent (4.2%) decline. Industrial electricity use declined by approximately 32 million kWh, a thirty-four percent (34%) reduction, while commercial electricity use *increased* by 9.5 million

kWh (4%) and residential electricity use rose by approximately 2.3 million kWh (1%). Figure 1 shows the change in community electricity use.<sup>1</sup>

FIGURE 1: CHANGE IN COMMUNITY ELECTRICITY USE (1990-2010)



Overall natural gas use fell by approximately 540,000 therms between 2005 and 2010, an approximately two and six-tenths percent (2.6%) decline. Residential natural gas use fell by over 714,000 therms (5%), and commercial natural gas use declined by over 161,000 three percent (3%). Despite declines in residential and commercial natural gas use, industrial natural gas use *increased* by 335,000 therms.

In 2010, total greenhouse gas emissions in Inglewood were 594,273 metric tons of carbon dioxide equivalent (MT CO<sub>2</sub>e), as shown in Table 1. Based on Inglewood's population, this amounts to 5.35 MT CO<sub>2</sub>e per capita or 4.11 MT CO<sub>2</sub>e per service population as shown in Table 1. As a point of comparison, California's per capita emissions rate in 2009 was 12.3 MT CO<sub>2</sub>e; however, one reason this figure may be higher than in Inglewood is the substantial amounts of industrial agricultural activity that occurs statewide. Inglewood's per capita emissions is comparable to other South Bay cities with similar proportions of sector emissions. For example, in 2007, per capita emissions in Hawthorne were 4.7 MT CO<sub>2</sub>e and in Gardena, 7.3 MT CO<sub>2</sub>e.

<sup>1</sup>Total electricity and natural gas use for 2010 was drawn from the Electricity Use Report provided by Southern California Edison and a Natural Gas Use Report provided by the SoCal Gas Company. The electricity report included information about commercial, residential, street lighting, and traffic control electricity use. The natural gas report included information for commercial, industrial, municipal, single family residential, and multifamily residential. Data for 1990, 2005, and 2007 was extracted from the 2011 City of Inglewood Community Greenhouse Gas Emissions Inventory Report prepared in conjunction with the South Bay Cities Council of Governments.

TABLE 1: COMMUNITY GHG EMISSIONS BY SECTOR (EXISTING AND PROJECTED)<sup>2</sup>

	1990	2005	2007	2010	2020	2035
COMMUNITY-WIDE GREENHOUSE GAS EMISSIONS (MT CO <sub>2</sub> E)						
Transportation	361,061	320,254	311,853	322,042	327,998	337,532
Residential	107,924	124,872	123,062	122,429	134,843	156,574
Commercial & Municipal	87,880	97,176	99,458	95,261	106,041	124,749
Industrial	42,514	34,940	31,272	26,100	26,376	26,830
Solid Waste	27,668	19,855	16,841	16,448	16,782	17,555
Water	15,068	13,813	13,272	11,993	14,707	15,044
Total Emissions	642,115	610,910	595,758	594,273	626,748	678,283
POPULATION, EMPLOYMENT, AND PER CAPITA AND PER SERVICE AREA EMISSIONS <sup>3</sup>						
Population	109,602	112,417	111,428	109,673	111,900	117,056
Employment	30,800	32,683	33,656	31,303	35,000	36,700
Service Area Population (pop + emp)	140,402	145,100	145,084	140,976	146,900	153,756
Emissions per Capita (MT CO <sub>2</sub> e/Pop)	5.86	5.43	5.35	5.42	5.60	5.79
Emissions per Service Population (MT CO <sub>2</sub> e/SP)	4.57	4.21	4.11	4.22	4.27	4.41

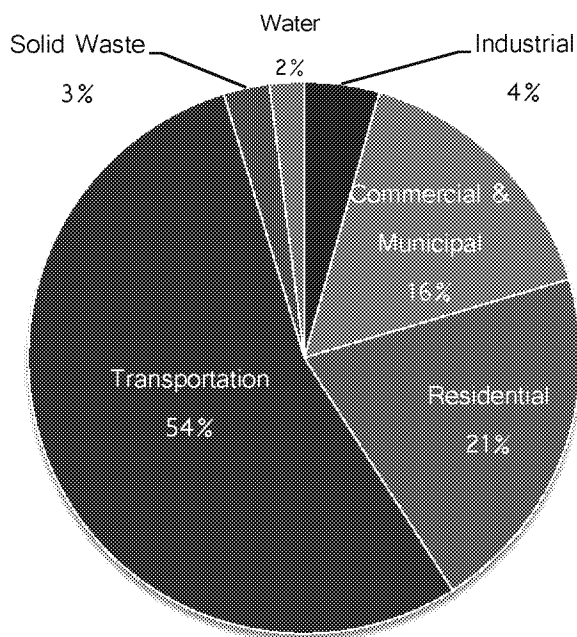
GHG emissions in Inglewood are expected to rise significantly if no reduction strategies are implemented. Inglewood's greenhouse gas emissions are projected to increase fourteen percent (14%) from 594,273 MT CO<sub>2</sub>e in 2010 to 678,283 MT CO<sub>2</sub>e in 2035. Per capita emissions are expected to rise eight percent (8%) to 5.79 MT CO<sub>2</sub>e and per service area population emissions are expected to increase seven percent (7%) to 4.41 MT CO<sub>2</sub>e.

In 2010, the transportation sector emitted fifty-four percent (54%) of Inglewood's greenhouse gas emissions, the largest quantity of any sector. The residential sector was the second largest producer of greenhouse gases, contributing twenty-one percent (21%) of the community total. The remainder of the emissions came from the commercial (16%), industrial (4%), solid waste (3%), and water (2%) sectors. Figure 2 show the greenhouse gas emissions by sector in 2010.

<sup>2</sup> Community-wide greenhouse gas emissions for 1990, 2005, and 2007 were provided by the South Bay Cities Council of Governments as part of the City of Inglewood Community Greenhouse Gas Emissions Inventory (2011). Raimi + Associates added an estimate of Scope 3 water sector emissions to the inventories for 2005 and 2007. Raimi + Associates also worked with the South Bay Cities Council of Governments to develop greenhouse gas emission estimates for 2010, 2020, and 2035. For more information on the inventories, see Chapter 2 and Appendix E.

<sup>3</sup> Future population and employment is based on the SCAG regional growth forecast for 2012.

FIGURE 2: COMMUNITY GREENHOUSE GAS EMISSIONS BY SECTOR (2010)



## GREENHOUSE GAS REDUCTION TARGET

This ECAP establishes a greenhouse gas emissions reduction target of fifteen percent (15%) below 2005 emission levels by 2020 and an emissions reduction goal of thirty-two and a half percent (32.5%) by 2035. The 2020 target is related to the recommendation of the California Air Resources Board and the California Climate Change Scoping Plan, which suggests local governments establish a fifteen percent (15%) reduction below 2005 levels.<sup>4</sup> This target places the City on a pathway towards California's long-term emissions reduction target, which is an ambitious goal to reduce greenhouse emissions by eighty percent (80%) below 1990 levels in 2050.<sup>5</sup> The City anticipates the need to continue reducing emissions beyond 2020, but also recognizes that additional state and federal actions will be needed to achieve an eighty percent (80%) target by 2050. As such, this ECAP establishes an aspirational goal to reduce emissions thirty-two and a half percent 32.5% below current levels by 2035 and will continue to evaluate different strategies to further reduce emissions by 2035.<sup>6</sup> The City acknowledges that the state could seek to codify reductions of a greater percentage by 2035.

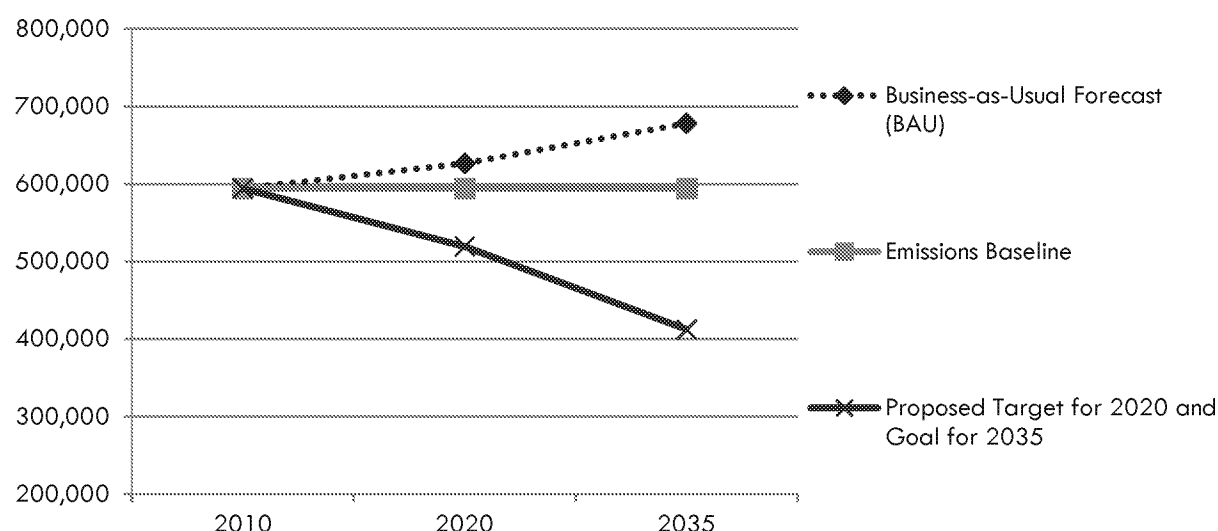
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<sup>4</sup> California Air Resources Board. 2008. *Climate Change Scoping Plan*. Retrieved from <http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm>

<sup>5</sup> Governor of the State of California. 2005. *Executive Order S-3-05*. Retrieved from <http://www.dot.ca.gov/hq/energy/ExecOrderS-3-05.htm>

<sup>6</sup> Fifty-three percent represents a straight line calculation between the 2010 emissions and the state's recommendation to reduce emissions 80% below 1990 levels by 2050.

FIGURE 3: COMPARISON OF EMISSIONS TARGET/GOAL TO BAU FORECAST



The 2010 inventory established that emissions totaled 594,273 MT CO<sub>2</sub>e. Population and employment growth, increased per capita energy use, and a rebounding economy are expected to increase city-wide emissions to 626,748 MT CO<sub>2</sub>e in 2020, an overall increase of seven percent (7%). As shown in Table 2, to achieve the fifteen percent (15%) reduction target from the 2005 baseline, the City would need to develop and implement strategies that reduce emissions by 107,475 MT CO<sub>2</sub>e in 2020. Given projected trends, this reduction lowers 2020 emissions to approximately seventeen percent (17%) below 2020 business-as-usual levels (levels anticipated for 2020 in the absence of any local, state, or federal interventions). To achieve a thirty-two and a half percent (32.5%) goal by 2035, Inglewood would need to reduce emissions by 265,919 MT CO<sub>2</sub>e from the BAU in 2035, thirty-nine percent (39%) below 2020 business-as-usual levels.

TABLE 2: GREENHOUSE GAS REDUCTIONS AND PROPOSED TARGETS

	2020 MTCO <sub>2</sub> E	2020 MTCO <sub>2</sub> E/SP	2035 MTCO <sub>2</sub> E	2035 MTCO <sub>2</sub> E/SP
Projected BAU Emissions	626,748	4.27	678,283	4.41
Proposed Greenhouse Gas Target for 2020 and Goal for 2035 (Percentage Below 2005 Emissions)	15%		32.5%	
Proposed Greenhouse Gas Target for 2020 and Goal for 2035	519,273	3.53	412,364	2.68
Percentage Below BAU Emissions	17%		39%	
Reduction From BAU Required to Meet City Target	-107,475	-0.73	-265,919	-1.73

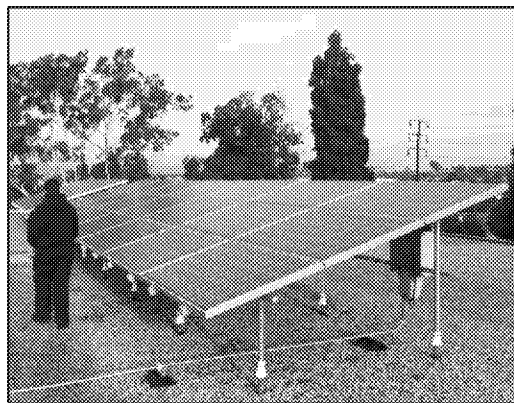
## ENERGY AND CLIMATE ACTION STRATEGIES

This ECAP includes five energy and greenhouse gas reduction strategies to address the challenge of climate change. These strategies are a proven set of measures based on existing

available technologies. This approach will provide the City with an efficient and cost-effective pathway for implementing energy use and emissions reduction policies. Each strategy includes state policies that will help move the City towards its 2020 reduction target and 2035 goal. These state policies do not require additional actions by the City; rather, state policies and local actions are mutually-supportive, helping both achieve short- and long-term energy use and greenhouse gas reductions. The ECAP also includes an additional strategy to help the City begin to prepare for the potential impacts of climate change.

#### **Strategy 1: Lead by Example**

During the last decade, the City has taken steps to reduce energy and water use, lower vehicle fuel consumption, minimize employee commuting, and divert solid waste from landfills. Lead by Example and its associated actions builds on previous projects by developing an institutional framework for the City to continue energy and water conservation efforts, to accelerate vehicle replacement, to make green purchases, and to provide the information and technical assistance for residents and businesses to implement energy efficiency measures. Actions to reduce greenhouse gas emissions from Inglewood's municipal operations are expected to reduce emissions by 1,594 MT CO<sub>2</sub>e per year in 2020 and 2,419 MT CO<sub>2</sub>e by 2035.



*Solar Panels at Roger's Park (Inglewood, CA)*

#### **Strategy 2: Increase Energy Efficiency**

The energy consumed by buildings in Inglewood is the source of approximately forty percent (40%) of Inglewood's emissions and are a primary target of the ECAP. This strategy facilitates increased energy efficiency in homes and businesses. The combination of state and local energy use and greenhouse gas emissions reduction strategies are expected to reduce energy consumption by 3.3 million kWh and 167,000 therms. Emissions are expected to go down by 1,908 MT CO<sub>2</sub>e per year (0.01 MT CO<sub>2</sub>e per service population) in 2020 and 9,146 MT CO<sub>2</sub>e per year in 2035 (0.1 MT CO<sub>2</sub>e per service population).

#### **Strategy 3: Support Renewable Energy Generation**

This strategy includes actions that will help homes and businesses in Inglewood increase renewable energy production by identifying and removing barriers, educating consumers, and pursuing tools that facilitate clean energy financing. Since 2007, Inglewood residents generated 70.2 kW of electricity and businesses contribute an additional 585.4 MW of electricity. State and local actions are expected to lower greenhouse gas emissions by 43,177 MT CO<sub>2</sub>e per year (0.3 MT CO<sub>2</sub>e per service population) in 2020 and 60,747 MT CO<sub>2</sub>e per year in 2035 (0.4 MT CO<sub>2</sub>e per service population).

#### **Strategy 4: Improve Transportation Options**

The transportation strategy covers a broad range of activities that aim to reduce vehicle miles travelled, improve mobility, and enhance vehicle fuel efficiency. Specific implementation measures involve changing land use development patterns, adopting a new perspective on community design, promoting alternative modes of travel, and revising antiquated parking standards. State, regional, and local strategies are projected to reduce emissions by 83,001

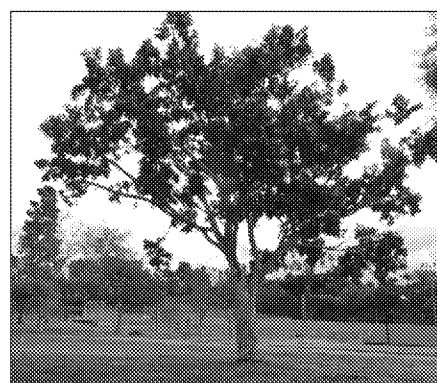
MT CO<sub>2</sub>e per year (0.57 MT CO<sub>2</sub>e per service population) in 2020 and 104,554 MT CO<sub>2</sub>e (0.7 MT CO<sub>2</sub>e per service population) in 2035.

#### **Strategy 5: Reduce Water Consumption and Waste**

Water consumption and solid waste generation produce only a small percentage of Inglewood's emissions, but the specific actions outlined in the ECAP can result in significant reductions in energy use, reductions in emissions, and increased co-benefits. This strategy includes water conservation, recycling, and local food actions. Strategies to reduce water consumption and waste have the potential to reduce energy consumption by 2 million kWh and to reduce emissions by 1,281 MT CO<sub>2</sub>e per year (0.01 MT CO<sub>2</sub>e per service population) in 2020 and 2,156 MT CO<sub>2</sub>e (0.01 MT CO<sub>2</sub>e per service population) by 2035. The most significant co-benefits are saving money, adapting to climate change, and diverting waste from landfills.

#### **Strategy 6: Adapt to the Potential Impacts of Climate Change**

Adaptive actions describe a pathway for the City of Inglewood to minimize the potential health consequences of climate change on their citizens. Climate change is expected to result in permanently higher average temperatures, more prolonged heat waves, and other environmental changes. Some examples of heat adaptation measures would include planting more trees to decrease the heat island effect and conducting a vulnerability assessment to identify those groups and individuals most vulnerable to higher temperatures. Many of these actions overlap with greenhouse gas mitigation measures or have already been undertaken by the City.



*Park and Tree (Inglewood, CA)*

## **GREENHOUSE GAS REDUCTION POTENTIAL**

Through a combination of federal, state, and city-level actions, Inglewood can anticipate emissions reductions of 130,942 MT CO<sub>2</sub>e per year from the business-as-usual scenario in 2020. State-level actions, such as the Pavley Clean Cars legislation, the Low Carbon Fuel Standard, the Renewables Portfolio Standard, and Title 24 upgrades are expected to reduce emissions by 121,139 MT CO<sub>2</sub>e per year by 2020. Local measures are projected to reduce emissions by 9,803 MT CO<sub>2</sub>e. This combination of state and local action would place the City nineteen percent (19%) below 2005 emission levels in 2020, meeting the City's proposed 2020 greenhouse gas emissions reduction target. Table 3 shows the emissions reduction associated with each strategy in 2020. Given projected trends, this reduction lowers 2020 emissions to approximately seventeen percent (17%) below 2020 business-as-usual levels (levels anticipated for 2020 in the absence of any local, state, or federal interventions).

The Inglewood ECAP 2020 target is related to the recommendation of the California Air Resources Board and the California Climate Change Scoping Plan, which suggests local governments establish a fifteen percent (15%) reduction below 2005 levels.<sup>7</sup> This target places the City on a pathway towards California's long-term emissions reduction target, which

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<sup>7</sup> California Air Resources Board. 2008. *Climate Change Scoping Plan*. Retrieved from <http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm>



is an ambitious goal to reduce greenhouse emissions by eighty percent (80%) below 1990 levels in 2050.<sup>8</sup>

The City anticipates the need to continue reducing emissions beyond 2020, but also recognizes that additional state and federal actions will be needed to achieve an eight percent (80%) target by 2050. To achieve a thirty-two and a half percent (32.5%) goal by 2035, Inglewood would need to reduce emissions by 265,919 MT CO<sub>2</sub>e from the BAU in 2035, thirty-nine percent (39%) below 2020 business-as-usual levels. As such, Inglewood proposes to establish an aspirational goal to work towards to further reduce emissions thirty-two and a half percent (32.5%) below current levels by 2035.

Achieving a long-term goal to reduce emissions thirty-two and one-half percent (32.5%) below current levels by 2035 will require the City to continue evaluating new strategies and implementation actions that take purposeful steps beyond the actions outlined in this ECAP. This could include more aggressive implementation of actions within the ECAP and/or the pursuit of different strategies and actions. The suite of options available to Inglewood will continue to evolve over time as more jurisdictions identify cost-effective, community-level solutions to reduce emissions, as businesses deploy less carbon intensive technologies, and as individuals change their behavior.

TABLE 3: GREENHOUSE GAS REDUCTION TARGET ANALYSIS OF ECAP STRATEGIES

	2020 REDUCTION POTENTIAL MTCO <sub>2</sub> E	2020 REDUCTION POTENTIAL (MTCO <sub>2</sub> E/SP)	2035 REDUCTION POTENTIAL MTCO <sub>2</sub> E	2035 REDUCTION POTENTIAL (MTCO <sub>2</sub> E/SP)
Lead by Example	1,575	0.01	2,392	0.02
Increase Energy Efficiency	1,908	0.01	9,146	0.06
Support Renewable Energy	43,177	0.29	60,747	0.40
Improve Transportation Options	83,001	0.57	104,554	0.68
Reduce Consumption and Waste	1,281	0.01	2,156	0.01
Total Reductions from Building Strategies	130,942	0.89	178,996	1.16
Projected BAU Emissions	626,748	4.27	678,283	4.41
Adjusted BAU with ECAP Measures	495,806	3.38	499,288	3.25
Proposed Greenhouse Gas Emissions Target/Goal	519,273	3.53	412,364	2.68
Reduction Beyond Target (2020) and Emissions Gap (2035)	23,467	0.16	-86,924	-0.57

## ECAP IMPLEMENTATION

In order for the City to meet its low carbon goals, the implementation section provides guidance for City actions and programs that will help mitigate municipal and community-wide greenhouse gas emissions and prepare for adaptation to a changing climate. Each measure

<sup>8</sup> Governor of the State of California. 2005. *Executive Order S-3-05*. Retrieved from <http://www.dot.ca.gov/hq/energy/ExecOrderS-3-05.htm>

includes information about the relative cost of the measure, the department responsible for each measure, and the implementation time frame.

Implementation of many of the measures will be effective upon adoption of the ECAP. However, those actions that have a potential associated cost to the City, residents, or businesses will be evaluated in more detail before implementation.

# 1 | INTRODUCTION

In the next century, climate change will not only impact our natural environment, but also threaten the health and economic vitality of communities across California and the country. The extent to which society is impacted by climate change is dependent on our actions today. By curbing greenhouse gas emissions and adapting our communities to the already changing environment, we can significantly reduce the damages incurred from climate change. Local governments in particular are in a unique position to become climate leaders by initiating city-wide policies, incentives, and education programs to deploy the energy technologies that we already have to run our economy cleanly and efficiently.

## PURPOSE

Recognizing the important role that cities will play in the transition to a low-carbon economy, Inglewood has prepared this Energy and Climate Action Plan (ECAP) as a roadmap for achieving community-wide energy consumption and greenhouse gas emissions reductions. Inglewood's ECAP is a proactive step toward addressing the climate challenge to protect our children and grandchildren before climate change becomes irreversible. The ECAP includes a quantitative inventory and analysis of energy use and emissions, starting with a 2005 baseline year through to a projection of emissions for 2020 and 2035.

Inglewood's ECAP is designed to provide clear policy guidance to the City staff and decision-makers on how to reduce greenhouse gas emissions. It identifies a pathway to reduce emissions within a range of voluntary, state-level emissions reduction targets. This path includes strategies for improving connectivity and land use patterns, transportation modes and systems, incorporating energy efficiency standards, increasing the City's renewable energy supply, and devising adaptation measures.

### **The Relationship between Energy and GHG Emissions**

*Energy is used for heating and cooling, transportation, manufacturing, and producing food, and the most common sources of energy are fossil fuels like oil, gasoline, natural gas, and coal. Fossil fuels are burned or oxidized to create energy, and this burning releases waste gases, which includes everything from vehicle tailpipe emissions to smoke rising from a chimney. One of the waste gases produced is carbon dioxide, CO<sub>2</sub>, a key contributor to the greenhouse effect and global warming (see page 2 for more information). Globally, the use of fossil fuels to produce energy is the main source of greenhouse gas emissions from human activities, contributing two-thirds of the total greenhouse gas emissions. Several categories of reducing energy-related greenhouse gas emissions are explored in this ECAP, including improving energy efficiency, switching to emission-free and less carbon intensive sources of energy, and capturing and storing emissions.*

## PREPARATION OF THE ECAP

In 2011, the South Bay Cities Council of Governments completed a 2005 community inventory of GHG emissions for each Los Angeles South Bay City and the Inglewood ECAP was produced with this inventory as its initial foundation. In the ECAP, the 2005 inventory was supplemented by inventories of the 2007 and 2010 GHG emissions to track emissions trends

and the addition of emissions associated with water consumption. Data on electricity and natural gas was included to identify energy consumption trends as well. Data used in the energy and emissions inventories came from utility providers.

## PUBLIC PARTICIPATION

The City encouraged the participation of residents, businesses, utilities, and other stakeholders in the development of the ECAP. Two community meetings were held during the development of the ECAP to solicit input on the plan. The meetings were advertised using a variety of methods including water bill inserts, distribution to block club groups, and announcements at City Council meetings.



*Inglewood ECAP Workshop*

The first meeting, held March 8, 2012, solicited public input on the goals of the plan and potential reduction targets. Participants also provided suggestions on potential strategies to be considered for the plan. The second meeting, held June 14, 2012, solicited public input on the proposed target and a comprehensive list of proposed reduction strategies. Participants provided many additional ideas for reduction strategies to be considered for the ECAP.

In addition to these community meetings, overview reports were presented to the Planning Commission in December 2011 and to the City Council in December 2012. On February 6, 2013, the Planning Commission held a public hearing on the document and recommended it for City Council adoption. On March, 19, 2013, the City Council held a public hearing and adopted the ECAP pursuant to Resolution No. 13-14.

## HOW THE ECAP IS USED

The Inglewood ECAP is a roadmap for achieving community-wide energy and greenhouse gas emissions reductions that encourages the City to grow more sustainably. It is a tool that the City will use to bring about reduced energy consumption and reduced production of GHG emissions, communitywide. The reduction strategies and measures will be implemented based on the timeframe identified in the Implementation Chapter.

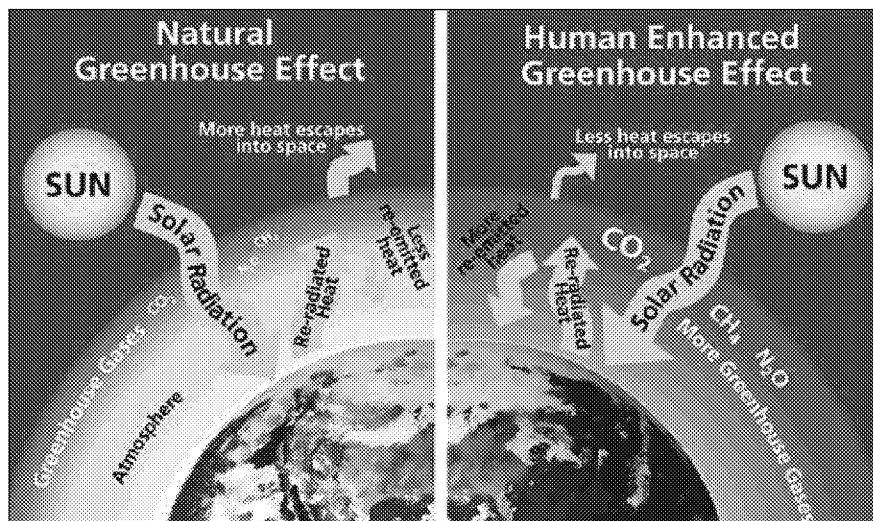
Implementation of the proposed ECAP will entail a number of staff work efforts including code amendments, general plan amendments, dedicated staff time towards launching and monitoring specific programs, staff coordination with utility companies to launch relevant programs, and the preparation and submittal of grant applications in order to acquire resources to implement the remaining programs. ECAP programs and actions will be included in departmental work plans along with current assignments. Implementation of new programs will be dependent, in part, on the availability of staff resources.

## 2 | WHAT IS CLIMATE CHANGE?

During the past several decades, an extensive and scrutinized body of scientific evidence has demonstrated that human activity is altering the Earth's climate by increasing the concentration of greenhouse gases in the atmosphere. While there will always be some uncertainty in understanding a system as complex as Earth, the scientific evidence has been carefully examined and withstood serious evaluation and debate. As a result of this inquiry, there is a recognition that climate change poses significant risks for, and may already be affecting, human and natural systems, including coastal infrastructure, human health, energy sources, agriculture, and freshwater resources.<sup>9</sup>

Greenhouse gases, such as carbon dioxide, ozone, methane, and nitrous oxide, have always been present in the Earth's atmosphere, keeping surface temperatures warm enough to sustain human, plant, and animal life. Greenhouse gases absorb heat radiated from the Earth's surface and then radiate the energy back toward the surface, a process called the "greenhouse effect," which is shown in Figure 4. Without the greenhouse effect, it is estimated that the Earth's average surface temperature would be approximately 60°F colder.

FIGURE 4: THE GREENHOUSE EFFECT<sup>10</sup>



*Solar radiation or light passes through the atmosphere without being absorbed, strikes the Earth, and is absorbed or re-radiated as heat. Some of the re-radiated heat is absorbed by greenhouse gases and re-emitted toward the surface, while some of the heat escapes into space. Human activities that emit additional greenhouse gases to the atmosphere increase the amount of heat that gets absorbed before escaping to space, enhancing the greenhouse effect, and amplifying the warming of the earth.*

Human activities, such as the combustion of fossil fuels, industrial processes, and land use changes, have increased the amount of greenhouse gases in the atmosphere, intensified the

<sup>9</sup> National Research Council, 2010. *Advancing the Science of Climate Change*. Washington, DC: The National Academies Press.

<sup>10</sup> National Parks Service, 2013. What is Climate Change? Image by Will Elder, NPS.

greenhouse effect, and caused changes to the Earth's climate. Since the Industrial Revolution, greenhouse gas concentrations have risen forty percent (40%) in the Earth's atmosphere and are at a level unequaled during the last 800,000 years.

The six most important greenhouse gases are carbon dioxide, methane, nitrous oxide (N<sub>2</sub>O), sulfur hexafluoride, hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs).<sup>11</sup> These gases are regulated under the Kyoto Protocol. Since carbon dioxide is the most abundant of these greenhouse gases, greenhouse gas emissions are converted to metric tons of carbon dioxide equivalent (CO<sub>2</sub>e) units. Each greenhouse gas has a different potential for trapping heat in the Earth's atmosphere, which is called the global warming potential (see in Table 4). Gases such as methane and nitrous oxide are more potent than carbon dioxide at trapping heat and have higher global warming potential. For instance, methane has twenty-one times more heat trapping potential than carbon dioxide does.

TABLE 4 : GREENHOUSE GASES<sup>12</sup>

GAS	ACTIVITY	ATMOSPHERIC LIFETIME (YEARS)	GLOBAL WARMING POTENTIAL
<b>Carbon Dioxide</b>	Combustion	50 - 200	1
<b>Methane</b>	Combustion, Anaerobic Decomposition of Organic Waste (Landfills, Wastewater), Fuel Handling	12	21
<b>Nitrous Oxide</b>	Combustion, Wastewater Treatment	120	310
<b>HFC-23</b>	Leaked Refrigerants, Fire Suppressants	264	11,700
<b>HFC-134a</b>	Leaked Refrigerants, Fire Suppressants	14.6	1,300
<b>HFC-152a</b>	Leaked Refrigerants, Fire Suppressants	1.5	140
<b>PFC: Tetrafluoromethane (CF<sub>4</sub>)</b>	Aluminum Production, Semiconductor Manufacturing, HVAC equipment,	50,000	6,500
<b>PFC: Hexafluoroethane (C<sub>2</sub>F<sub>6</sub>)</b>	Aluminum Production, Semiconductor Manufacturing, HVAC equipment,	10,000	9,200
<b>Sulfur Hexafluoride</b>	Transmission and Distribution of Power	3,200	23,900

Higher concentrations of greenhouse gases trap additional energy in the atmosphere, resulting in more rapid warming. The warming of the climate system can currently be observed in increases in global average air and ocean temperatures, melting of snow and ice, and rising sea levels. During the last century, the global average temperature rose 1.4°F with significant variation across the planet.<sup>13</sup> In California, average temperatures rose 2.1°F between 1915 and 2000.

Although climate change and global warming are often used interchangeably, warmer temperatures are only one component of climate change. Climate is an average of weather over time, and weather includes temperature, rainfall, winds, flooding, heat waves, and other seasonal patterns. A simple way to remember the difference between weather and climate is:

<sup>11</sup> California Health & Safety Code § 38505(g) recognizes the six listed gases as greenhouse gases.

<sup>12</sup> California Air Resources Board, et al. 2010. Local Government Operations Protocol: For the quantification and reporting of greenhouse gas emission inventories. Version 1.1.

<sup>13</sup> Thomas R. Karl, Jerry M. Melillo, and Thomas C. Peterson (eds.), 2009. Global Climate Change Impacts in the United States. Cambridge University Press.

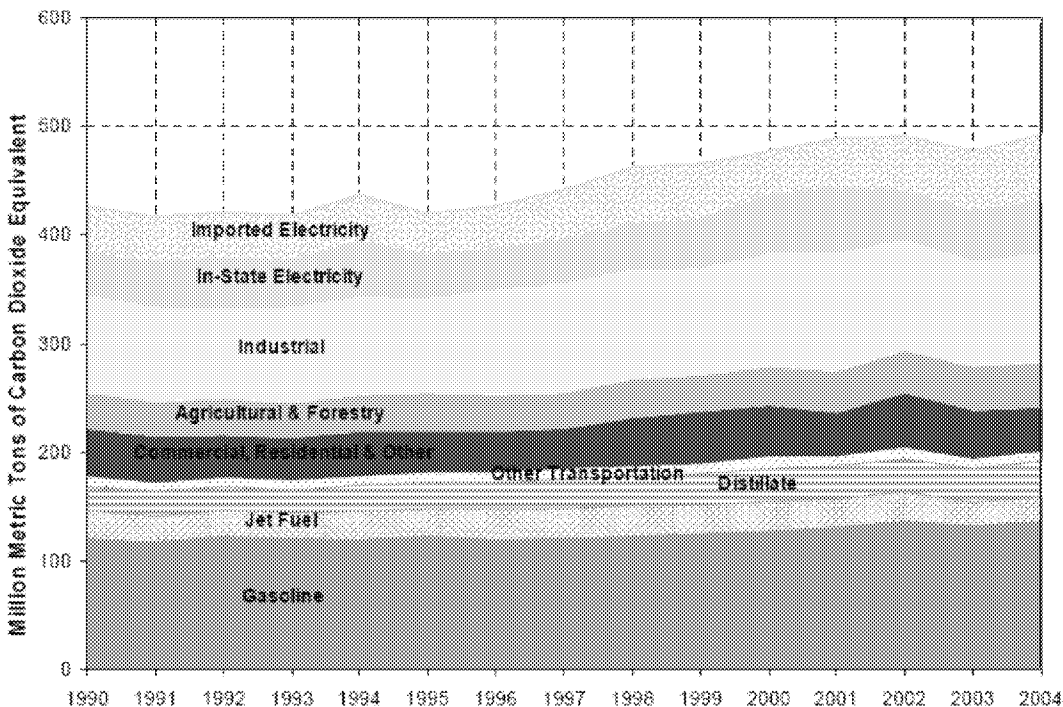
weather affects whether you bring an umbrella today, and climate influences whether you own an umbrella.<sup>14</sup>

Climate change describes the long-term shift in global and regional weather patterns. This includes average annual temperatures *and* the timing and amount of local precipitation, the frequency and intensity of extreme weather events, sea level changes, and other aspects of weather. Depending on the extent of these changes, climate change may result in significant social, economic, and environmental consequences for residents and businesses in Inglewood.

## CALIFORNIA'S CONTRIBUTION TO CLIMATE CHANGE

California contributes significantly to anthropogenic greenhouse gas emissions. As reported by the California Energy Commission (CEC), California contributes one and four-tenths percent (1.4%) of global and six and two-tenths percent (6.2%) of national GHG emissions.<sup>15</sup> As shown, the transportation sector is the largest source of California's greenhouse gas emissions, responsible for forty-one percent (41%) of the State's total emissions.

FIGURE 5: CALIFORNIA'S GROSS GREENHOUSE GAS EMISSIONS TRENDS<sup>16</sup>



<sup>14</sup> Pew Center on Global Climate Change. 2011. *Climate Change 101: Science and Impacts*.

<sup>15</sup> California Energy Commission (CEC), 2006. *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004*. CEC-600-2006-013, October 2006. Available at [http://www.arb.ca.gov/cc/ccei/inventory/tables/rpt\\_inventory\\_ipcc\\_sum\\_2007-11-19.pdf](http://www.arb.ca.gov/cc/ccei/inventory/tables/rpt_inventory_ipcc_sum_2007-11-19.pdf).

<sup>16</sup> California Energy Commission. 2006. *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004*. Available at [http://www.arb.ca.gov/cc/ccei/inventory/tables/rpt\\_inventory\\_ipcc\\_sum\\_2007-11-19.pdf](http://www.arb.ca.gov/cc/ccei/inventory/tables/rpt_inventory_ipcc_sum_2007-11-19.pdf)

# PROJECTIONS OF FUTURE CLIMATE

In California, studies predict that conditions will become hotter and drier, with decreased snow levels and accelerating rates of sea-level rise.<sup>17</sup> California should also expect an increase in the intensity of extreme weather events, such as heat waves, droughts, and floods. California's extreme warm temperatures, which have historically occurred in July and August, will most likely extend into June and September.<sup>18</sup> Inglewood will likely experience very similar impacts.

## TEMPERATURE

Climate change will continue to increase temperatures across the globe and within California. Scientists predict that over the next century, global temperatures will increase between 2.5°F and 10.4°F, depending upon the amount of future emissions and how the earth responds to those emissions.<sup>19</sup> For California, the average annual temperature is expected to rise 1.8°F to 5.4°F by 2050 and 3.6°F to 9°F by the end of the century.<sup>20</sup> For the Inglewood area, scientists expect average temperatures to increase between 3.4°F and 5.8°F as shown in Figure 6. Along with changes to average annual temperature, climate change is expected to alter seasonal temperatures. Average July temperatures could increase by as much as 8°F.<sup>21</sup>

### Climate Change Modeling, Downscaling, and Scenarios

Scientists' understanding of the fundamental processes responsible for global climate change has improved over the past decade, and predictive capabilities are advancing. Scientists use atmosphere-ocean general circulation models to simulate the physical processes in the atmosphere, ocean, and land surface, using general circulation models to understand the response of the global climate system to rising greenhouse gas concentrations. These models produce information about temperature, precipitation, cloud cover, humidity, and other variables at a large-scale. These global models, however, produce data that are not precise at the regional and local scale. Therefore, scientists "downscale" model data by incorporating local historic data and adjusting for specific topographic characteristics to understand how climate variables will change in the future.

General circulation models use scenarios that explore future development and greenhouse gas emissions. These scenarios are grouped into families according to a similar storyline that describe the factors driving greenhouse gas emissions. These factors include population growth, technological dispersion, energy sources, ecological factors, and economic growth.

In general, more than one scenario is used to capture the range of future greenhouse gas emissions and uncertainty in the assumptions about population growth, economic development, and technological deployment. This report uses A2 (higher emissions) and B1 (lower emissions) scenario data in the following discussion. It should be noted that these are not the highest or lowest emissions scenarios.

<sup>17</sup> Moser, Susanne, Guido Franco, Sarah Pittiglio, Wendy Chou and Dan Cayan. 2008. The Future is Now: An Update on Climate Change Science Impacts and Response Options for California. 2008 Climate Change Impacts Assessment Project – Second Biennial Science Report to the California Climate Action Team, CEC-500-2008-071.

<sup>18</sup> California Climate Action Team. 2009. *Draft Biennial Climate Action Report*. Available at <http://www.energy.ca.gov/2009publications/CAT-1000-2009-003/CAT-1000-2009-003-D.PDF>.

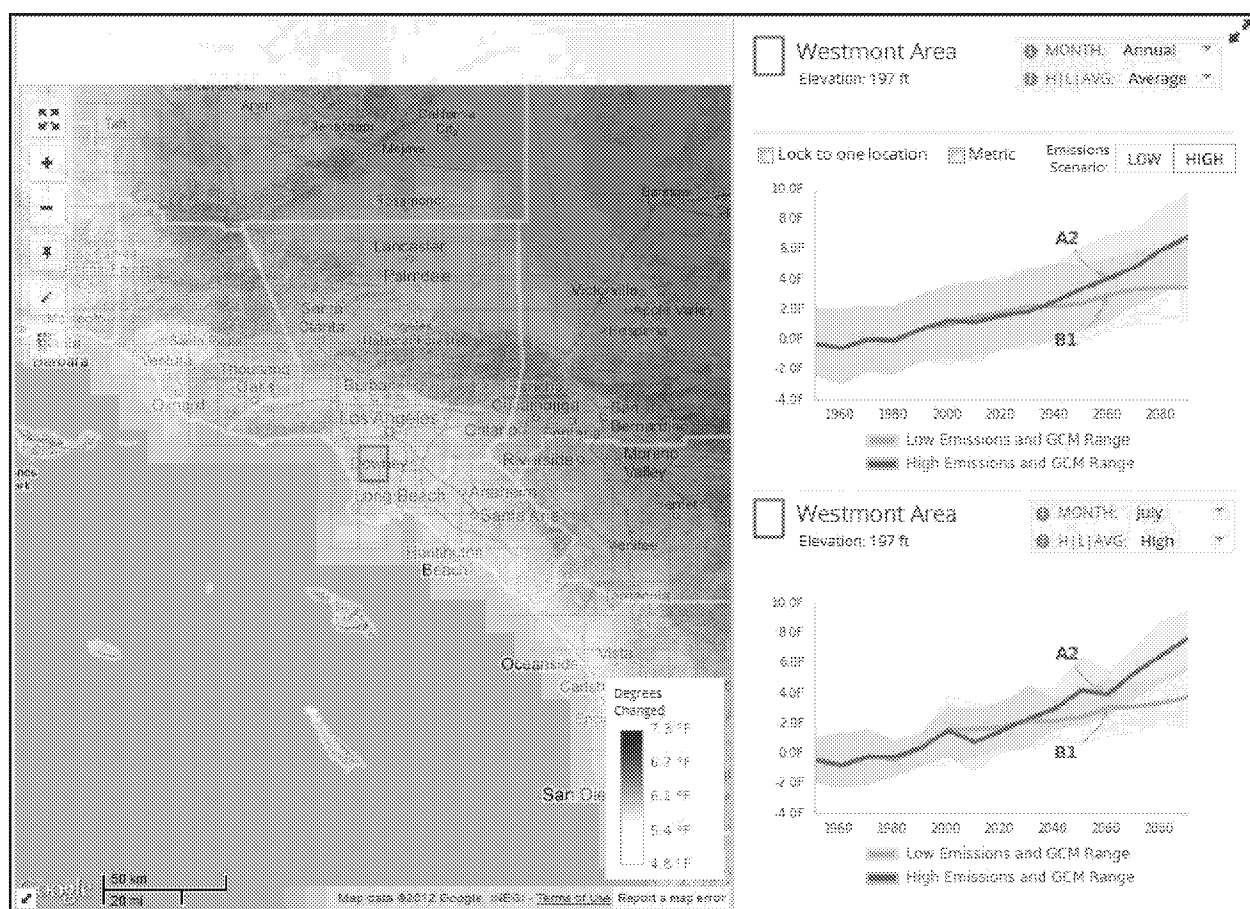
<sup>19</sup> Intergovernmental Panel on Climate Change. 2007. *Climate Change 2007: Mitigation of Climate Change*.

<sup>20</sup> California Natural Resources Agency. 2009. *California Climate Adaptation Strategy*.

<sup>21</sup> Scripps Institution of Oceanography. 2009. Projected Temperatures Data Set. Received from <http://cal-adapt.org/temperature/century/>.



FIGURE 6: TEMPERATURE: DEGREES OF CHANGE MAP (1960-2080)<sup>22</sup>



Along with changes to average annual temperature, climate change will alter seasonal temperatures. Average July temperatures could increase by as much as 8.0°F.<sup>23</sup>

These long-term temperature increases will be experienced along with short-term variation (daily, annual, and multi-year) in temperature related to Earth system changes such as El Niño, La Niña, or volcanic eruptions. As a result, temperatures for a single day or year may be higher or lower than the long-term average.<sup>24</sup>

## PRECIPITATION

Research suggests that in California, climate change is likely to decrease annual precipitation amounts by more than fifteen percent (15%) by the end of the 21<sup>st</sup> century.<sup>25</sup> In Inglewood,

<sup>22</sup> Scripps Institution of Oceanography. 2009. Projected Temperatures Data Set. Received from <http://cal-adapt.org/temperature/century/>.

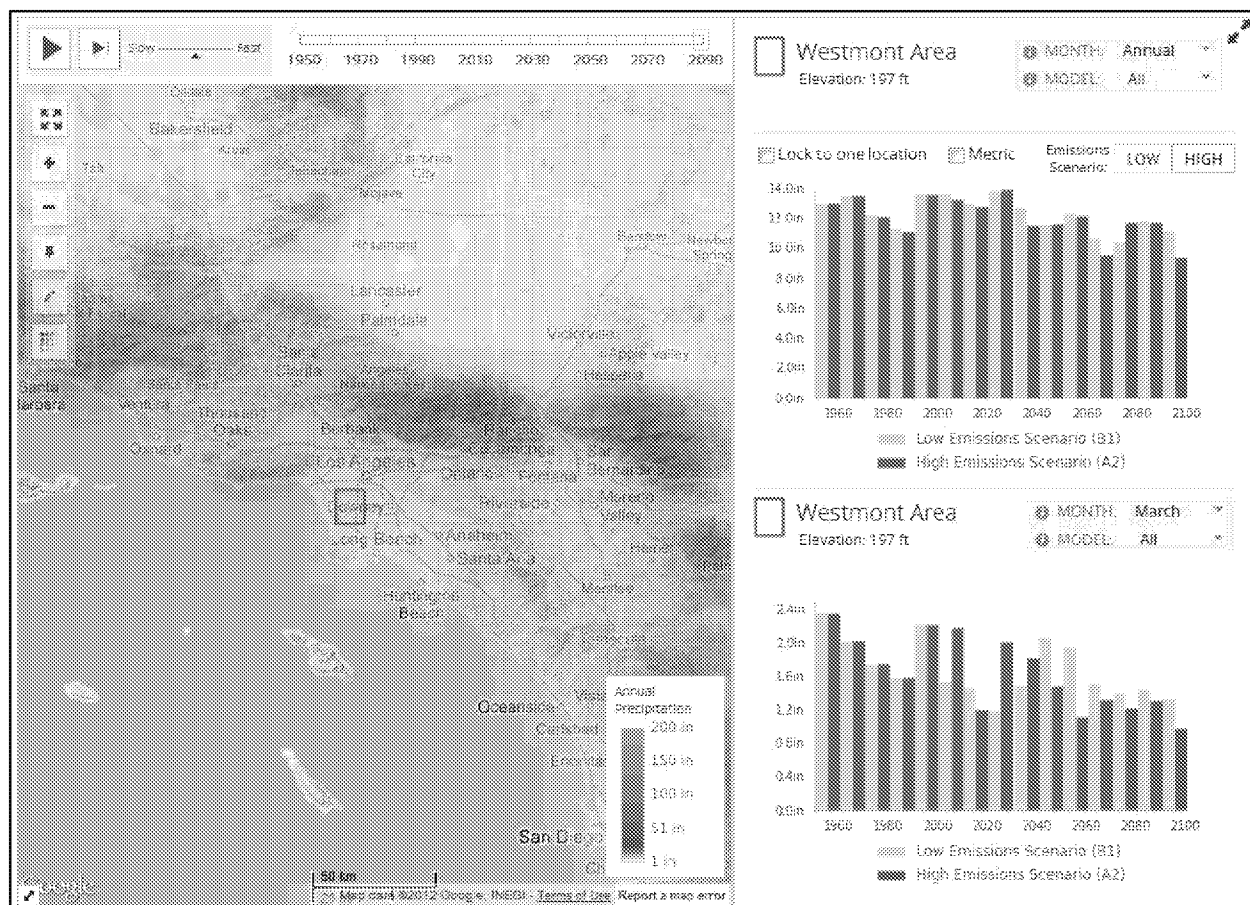
<sup>23</sup> Scripps Institution of Oceanography. 2009. Projected Temperatures Data Set. Received from <http://cal-adapt.org/temperature/century/>.

<sup>24</sup> National Aeronautics and Space Administration. 2005. What's the difference between weather and climate? Retrieved from [http://www.nasa.gov/mission\\_pages/noaa-n/climate/climate\\_weather.html](http://www.nasa.gov/mission_pages/noaa-n/climate/climate_weather.html).

<sup>25</sup> California Climate Action Team, "Draft Biennial Climate Action Report" March 2009. Available at <http://www.energy.ca.gov/2009publications/CAT-1000-2009-003/CAT-1000-2009-003-D.PDF>.

precipitation is expected to decline over the next century, falling from around twelve inches per year to less than ten inches per year as shown in Figure 7. Seasonal precipitation will change more significantly with March and April receiving less rainfall than in the past. As a result of the seasonal change, Inglewood will likely experience longer periods of drought, as the summer dry season extends earlier into the spring and later into the fall.<sup>26</sup>

FIGURE 7: PRECIPITATION: DECADEAL AVERAGES MAP (1960-2100)<sup>27</sup>



## EXTREME WEATHER EVENTS AND STORMS

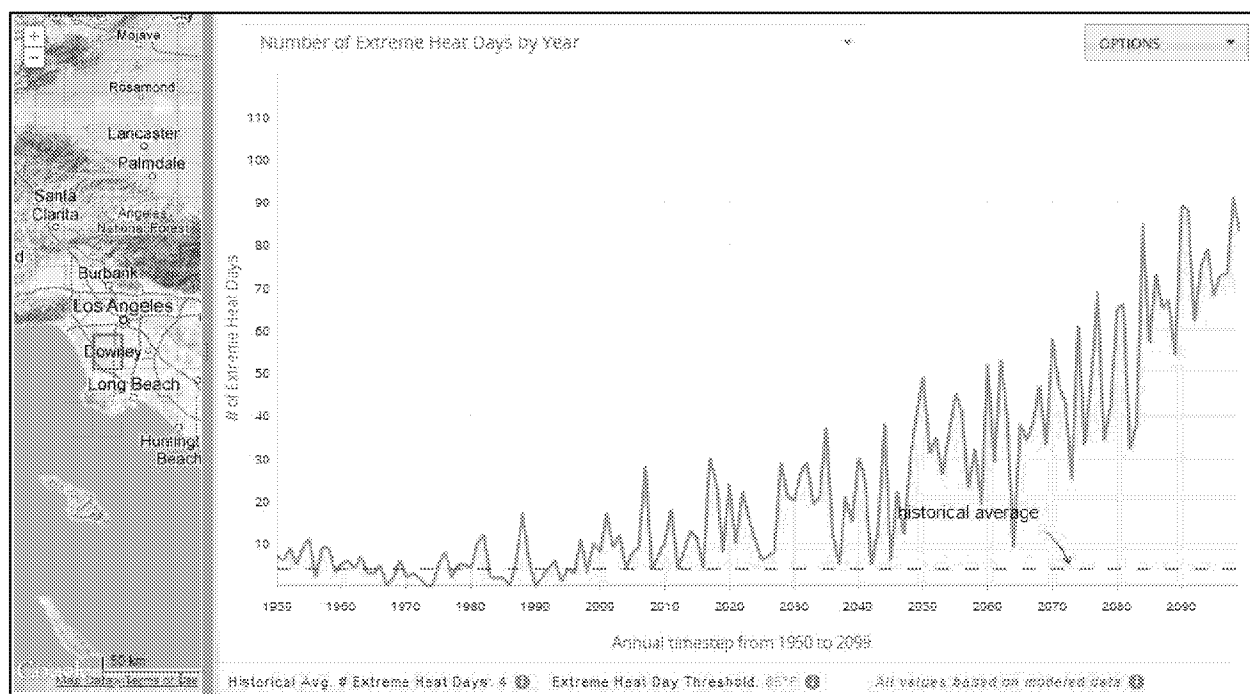
California will likely experience changes in heat waves, storms, and extreme weather events due to climate change. For example, heat waves are likely to become more frequent by the end of the century and storm surges and flooding in coastal storms are likely to impact the coast more severely. In addition, California's wet year and drought year cycles, which are connected to the El Niño Southern Oscillation cycles, are likely to become more intense. These changes can have significant impacts on both property and human health and safety as discussed in the following section.

<sup>26</sup> Scripps Institution of Oceanography. 2009. Projected Precipitation Data Set. Received from <http://cal-adapt.org/precip/decadal/>.

<sup>27</sup> Scripps Institution of Oceanography. 2009. Projected Precipitation Data Set. Received from <http://cal-adapt.org/precip/decadal/>.

In Inglewood, the frequency, intensity, and duration of heat waves and droughts are expected to increase in the future. Inglewood is likely to see a significant increase in the number of days when temperature exceeds the extreme heat threshold of 85°F. Between 1950 and 2011, the average number of extreme heat days was four. As shown in Figure 8, by 2050, the number of extreme heat days could increase to more than forty per year, and by the end of the century, the number of extreme heat days could exceed eighty per year. Warmer days will also be accompanied by warmer nights, which could have a significant, negative effect on public health.

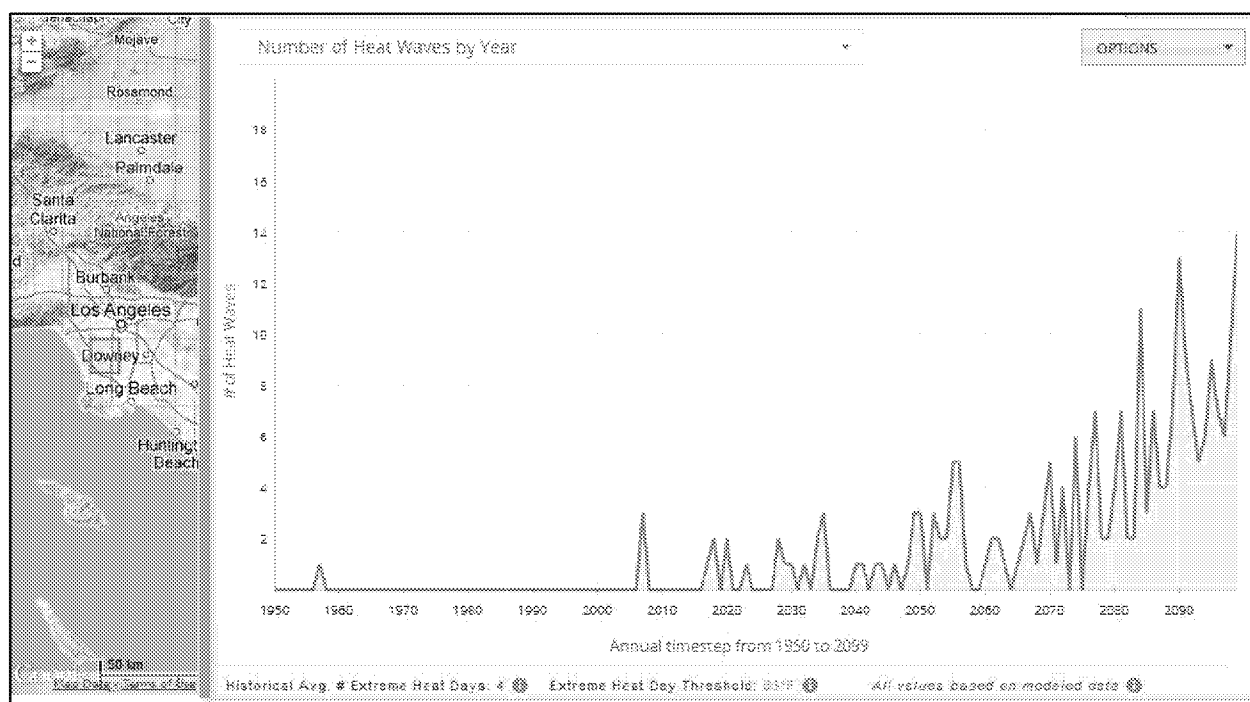
FIGURE 8: NUMBER OF EXTREME HEAT DAYS BY YEAR<sup>28</sup>



Between 1950 and 2005, the Inglewood area experienced only one, five-day heat wave, where temperatures exceeded the extreme heat threshold of 85°F. In 2007, there were three five-day heat waves. As average temperatures and extreme heat days continue to increase, it is expected that five-day heat waves will also increase. By mid-century, the number of heat waves could reach five per year, potentially exceeding ten per year by the end of the century as shown in Figure 8.

<sup>28</sup> Scripps Institution of Oceanography. 2009. Projected Daily Temperature Data Set. Received from <http://cal-adapt.org/temperature/heat/>.

FIGURE 9: NUMBER OF HEAT WAVES BY YEAR<sup>29</sup>



## IMPACTS OF CLIMATE CHANGE IN INGLEWOOD

Inglewood and other communities in Southern California will face significant challenges associated with rising temperatures, changes in precipitation patterns, and extreme weather. As indicated in the prior sections, many of the phenomena and impacts are already being observed. These climate changes will affect a number of sectors within the region, resulting in significant social and economic consequences across the region. This section describes the likely impacts of climate change to the following sectors: public health, water resources, and economic systems.

The Summary of Climate Change Phenomena by Sector table (Table 5) outlines key climate change phenomena described in the previous chapter and their associated impacts and consequences by sector for Inglewood. Many of the impacts and consequences will be felt across multiple sectors. This summary focuses on climate change impacts to sectors within the purview of the City and does not include those impacts to all sectors.

<sup>29</sup> Scripps Institution of Oceanography. 2009. Projected Daily Temperature Data Set. Received from <http://cal-adapt.org/temperature/heat/>.

TABLE 5: SUMMARY OF CLIMATE CHANGE PHENOMENA, IMPACTS, AND CONSEQUENCES BY SECTOR<sup>30</sup>

CLIMATE CHANGE PHENOMENA	SECTOR AFFECTED	ASSOCIATED IMPACTS	ASSOCIATED CONSEQUENCES
Temperature and extreme heat events	Public Health	Heat-related: heat waves and urban heat island Wildfires	Illnesses, injuries, and loss of life Decline in air quality
	Water Resources	Drought	Decline in quantity and quality of freshwater Increased water demand
	Economy	Drought Heat-related	Energy disruption Economic gains/losses
Precipitation and extreme precipitation events	Public Health	Flooding Drought	Illnesses, injuries, and loss of life
	Water Resources	Flooding Drought Nonpoint source pollution	Illnesses, injuries, and loss of life Decline in quality of freshwater Economic losses
	Economy	Flooding Drought	Loss of agricultural productivity Destruction and damage to property Economic gains/losses

## PUBLIC HEALTH

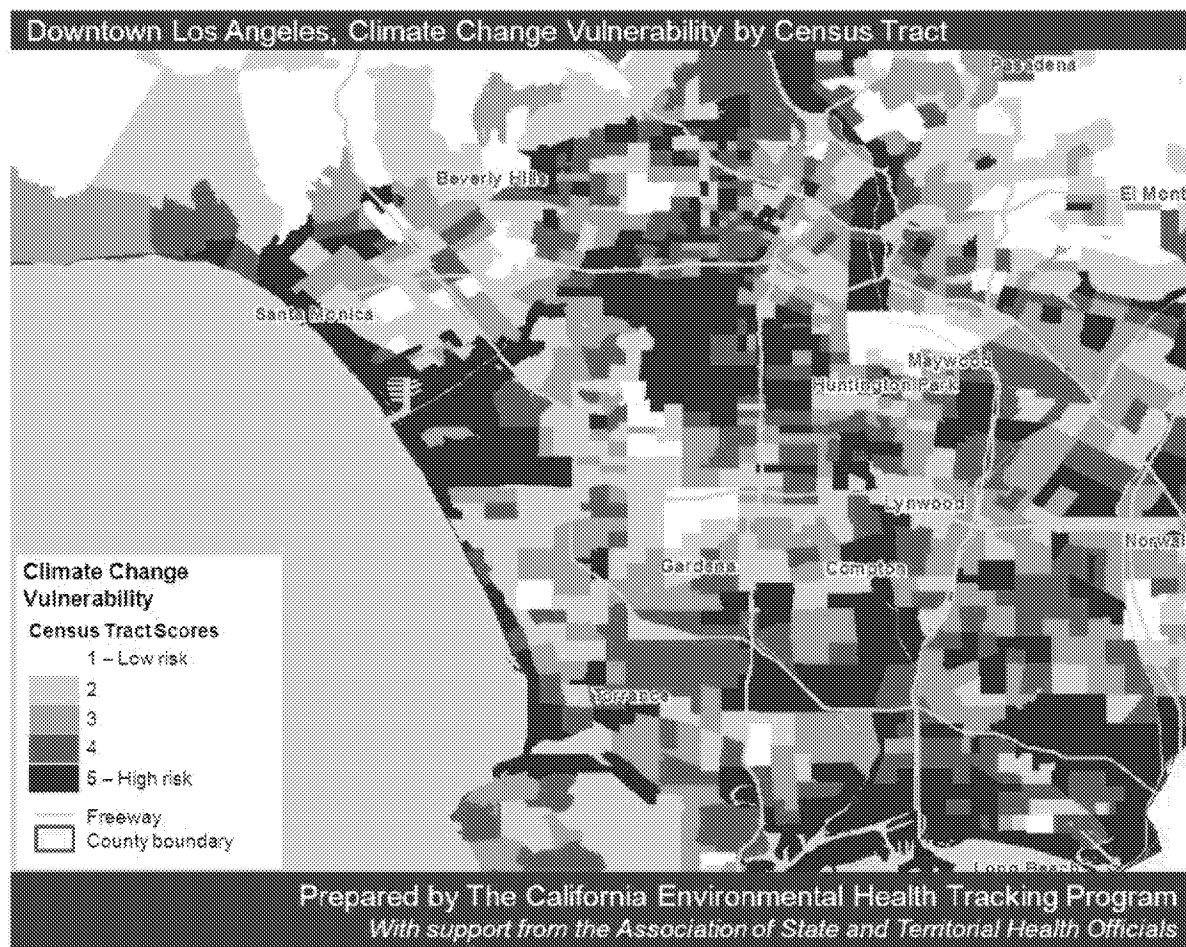
Climate change is expected to affect the health and welfare of people and communities around California and within Inglewood. Climate-related impacts related to heat, drought, and wildfires could have particularly significant health effects within Inglewood. It is expected that climate change will have differential effects on different subpopulations within the region, where biological sensitivity, socioeconomic factors, and geography will contribute to the heightened risk for climate-sensitive health outcomes. Vulnerable populations include children, pregnant women, older adults, low-income communities, people with chronic diseases and mobility/cognitive constraints, and outdoor workers. Other socioeconomic factors include income, the prices of goods and services, access to vaccines, exposure to pesticides, diet, lifestyles, social networks, and other factors.<sup>31</sup>

The California Environmental Health Tracking Program examined climate change vulnerability among communities in Los Angeles to identify areas most likely to experience substantial climate change impacts (see Figure 10). The vulnerability assessment draws on data from a variety of sources and includes information about air conditioning ownership; tree canopy and impervious surfaces; transit and household car access; elderly living alone; flood risk; wildfire risk; and sea level rise.

<sup>30</sup> Adapted from the National Oceanic and Atmospheric Administration's *Adapting to Climate Change: A Planning Guide for State Coastal Managers*. 2010.

<sup>31</sup> U.S. Climate Change Science Program. 2008. *Analyses of the Effects of Global Change on Human Health and Welfare and Human Systems*. U.S. Environmental Protection Agency, Washington, DC, USA.

FIGURE 10: CLIMATE CHANGE VULNERABILITY BY CENSUS TRACT FOR LOS ANGELES<sup>32</sup>



In Los Angeles County, areas of the highest risk were found along coastal areas, in part because of risks due to sea level rise. Areas in Inglewood ranged from low- to high-risk depending on the Census tract. The assessment also found clear differences in racial and income disparities. African Americans and Latinos were more likely to live in high-risk areas compared to Whites, and low income households were more likely to live in areas of greater climate change vulnerability.<sup>33</sup>

## HEAT-RELATED

As discussed earlier, along with seasonal warming, California and Inglewood are likely to experience a larger number of extreme heat days, warm nights, and more prolonged periods of hot weather. Periods of increased high temperatures or extended high temperatures can lead to increased heat-related mortality, cardiovascular-cause mortality, respiratory mortality, heart

<sup>32</sup> California Environmental Health Tracking Program. 2012. Community Vulnerabilities to Climate Change. Received from [http://www.ehib.org/page.jsp?page\\_key=703](http://www.ehib.org/page.jsp?page_key=703)

<sup>33</sup> California Environmental Health Tracking Program. 2012. Community Vulnerabilities to Climate Change. Received from [http://www.ehib.org/page.jsp?page\\_key=703](http://www.ehib.org/page.jsp?page_key=703)

attacks, and other causes of mortality.<sup>34</sup> Emergency medical services and hospital visits also increase during heat waves.<sup>35</sup>

California experienced a similar heat wave during July 2006, which broke temperature records around the state over a ten-day period and caused at least 140 deaths. During the heat wave, hospital and emergency department visits increased statewide from the baseline conditions, resulting in an estimated 16,166 excess emergency department visits and 1,182 excess hospitalizations. Risk ratios for heat-related illness increased significantly during the heat wave for the South Coast region, which includes Inglewood. In addition, the heat wave also elevated risk ratios for electrolyte imbalance, acute renal failure, and nephritis.<sup>36</sup> In particular, heat-related illnesses impacted people over 65 and Latino/Hispanic persons, which could relate to existing chronic diseases in elderly populations and occupational exposures among outdoor workers.<sup>37</sup>

Along with heat-related illness, changes in temperature are expected to worsen air quality by increasing ozone and particulate matter concentrations. Currently, Los Angeles County is ranked as the fourth most polluted county by short-term particle pollution (24-hour PM<sub>2.5</sub>), the third most polluted by year-round particulate pollution (Annual PM<sub>2.5</sub>), and the most ozone-polluted county in the country. Los Angeles County received an F grade for High Ozone Days 2008-2010 with 185 orange days (unhealthy for sensitive populations), 41 red days (unhealthy), and 6 purple days (very unhealthy).<sup>38</sup>

Not only will climate change slow California's progress toward attainment of health-based air quality standards and increase pollution control costs, it will increase the risk of incidences of asthma, allergies, chronic obstructive pulmonary disease, other cardiovascular and respiratory diseases, skin cancer, and cataracts.<sup>39</sup>

## WILDFIRES

Many ecosystems in California are naturally fire dependent, and therefore, these same forests are prone to wildfire. As California is likely to experience increased temperatures and reduced precipitation, these factors will likely lead to more frequent and intense wildfires and longer fire seasons.<sup>40</sup> For Inglewood, an increase in wildfires will not increase the direct injuries and deaths from fire, but it will likely worsen air quality and negatively impact public health in the Los Angeles basin. The increase in area burned will likely exacerbate eye and respiratory illness, worsening asthma, allergies, chronic obstructive pulmonary disease, and other cardiovascular and respiratory diseases.

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<sup>34</sup> U.S. Climate Change Science Program. 2008. Analyses of the Effects of Global Change on Human Health and Welfare and Human Systems. U.S. Environmental Protection Agency, Washington, DC, USA.

<sup>35</sup> Kovats, R.S., and Ebi, K.L. 2006. Heat waves and Public Health in Europe. *European Journal of Public Health* 16:592-599.

<sup>36</sup> A risk ratio is a measure of the risk of a certain event happening in one group compared to the risk of the same event happening in another group. National Institutes of Health. 2012.

<sup>37</sup> Knowlton, K., et al. (2009). The 2006 California Heat Wave: Impacts on Hospitalizations and Emergency Department Visits. *Environmental Health Perspectives: Volume 117, Number 1*.

<sup>38</sup> American Lung Association. (2012). State of the Air. Available at <http://www.stateoftheair.org/2012/assets/state-of-the-air2012.pdf>.

<sup>39</sup> California Climate Action Team, "Draft Biennial Climate Action Report" March 2009. Available at <http://www.energy.ca.gov/2009publications/CAT-1000-2009-003/CAT-1000-2009-003-D.PDF>.

<sup>40</sup> California Department of Forestry and Fire Protection. 2012. *CAL FIRE Climate Change Program*.

## WATER RESOURCES

Climate change is also expected to affect California's snowpack, precipitation, and consequently, water supply. There is some uncertainty as to how water supplies will be affected, but even the most conservative models anticipate less stable water supplies and potentially more competition for what are already over-drafted and over-allocated resources. Inglewood's primary sources of water are imported water, groundwater production, and recycled water. The imported water from the State Water Project and the Colorado River and local groundwater are likely to be affected by climate change.<sup>41</sup>

In 2010, between sixty percent (60%) and sixty-five percent (65%) of Inglewood's water supply was imported, and this water supply will be affected by climate change. An evaluation of climate scenarios on the State Water Project found a reduction in Sacramento Delta water exports by mid-century is likely. The analysis also found that reservoir storage is likely to decline.<sup>42</sup>

Another important factor to be considered in water supply planning is the occurrence of drought. During periods of drought, water availability decreases and water demand increases. Climate change is expected to increase the frequency and severity of droughts in the region as temperatures rise and precipitation and stream flow decline during the summer.<sup>43</sup>

Along with changes in water supply, demands for water will likely increase with warmer temperatures, higher evapotranspiration, and higher per capita income, straining existing water supplies. Average summer temperatures are a significant factor in water use and Inglewood's average summer temperature is expected to increase by as much as 8°F.<sup>44</sup> This will increase water demand landscape irrigation and urban water use.<sup>45</sup>

## ECONOMY

Each of the impacts of climate change discussed above is likely to impose substantial monetary costs to California. In fact, the California Climate Action Team estimates that climate change will cost California tens of billions of dollars annually. If greenhouse gas emissions begin to be reduced, however, these costs could be lowered.<sup>46</sup> Several potential impacts in the region include:

- Storms and heat waves can disrupt the supply of and increase the demand for energy in California, affecting productivity.
- Extreme heat events and worsening air quality will disproportionately affect low-income residents, particularly those that labor outside such as construction and outdoor workers.

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<sup>41</sup> City of Inglewood. 2012. Urban Water Management Plan.

<sup>42</sup> California Resources Agency and Department of Water Resources. 2010. *The State Water Project: Delivery Reliability Report*. Available at <http://baydeltaoffice.water.ca.gov/swpreliability/Reliability2010final092210.pdf>.

<sup>43</sup> California Department of Water Resources. 2008. *Managing an Uncertain Future: Climate Change Adaptation Strategies for California's Water*. Available at <http://www.water.ca.gov/climatechange/docs/ClimateChangeWhitePaper.pdf>.

<sup>44</sup> Scripps Institution of Oceanography. 2009. Projected Temperatures Data Set. Received from <http://cal-adapt.org/temperature/century/>.

<sup>45</sup> California Department of Water Resources. 2008. *Managing an Uncertain Future: Climate Change Adaptation Strategies for California's Water*. Available at <http://www.water.ca.gov/climatechange/docs/ClimateChangeWhitePaper.pdf>.

<sup>46</sup> California Climate Action Team. 2009. *Draft Biennial Climate Action Report*. Available at <http://www.energy.ca.gov/2009publications/CAT-1000-2009-003/CAT-1000-2009-003-D.PDF>.



# **BENEFITS OF CLIMATE ACTION PLANNING**

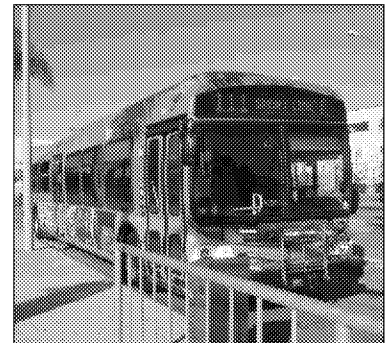
Careful planning is needed to manage the complex issue of climate change. Fortunately, climate action strategies are often associated with many other environmental, social, and economic benefits. While the Inglewood ECAP provides a roadmap for the City to achieve emissions reductions, it will also help the City and its residents in the following areas:

## **IMPROVED PUBLIC HEALTH AND AIR QUALITY**

Minimizing greenhouse gas emissions will reduce other harmful air pollutants, such as carbon monoxide, sulfur dioxide, and particulate matter, whereby benefiting the health and well-being of the community at large. Enabling alternative modes of transportation, such as walking and biking help people get more exercise and live healthier lives. For example, implementation of the Crenshaw Corridor Light Rail Service is expected to result in nearly half a million additional walking trips a year by 2020.

## **ENERGY SECURITY AND INDEPENDENCE**

Addressing transportation and land use planning by supporting infill development and promoting alternative modes of transportation will reduce demand for imported energy, especially fossil fuels. In addition, smarter building design and construction practices, including passive solar heating and cooling, building orientation, and renewable energy systems, will diminish the need for fossil-fuel based energy. It is estimated that ECAP implementation will reduce energy use in Inglewood by over 10 million kWh per year of electricity and by over 225,000 therms per year of natural gas in 2020.



*Metro Transit Service (Inglewood, CA)*

## **SAVE MONEY**

Reducing energy demand can help lower utility costs for individuals, households, and businesses. Investments in energy efficiency and renewable energy sources yield long-term operations and maintenance savings. Many of these actions have simple payback periods of less than five-years. It is estimated that ECAP implementation will reduce household costs for energy and water by nearly \$1.5 million in 2020.

## **STIMULATE ECONOMIC DEVELOPMENT**

Reinvestment in local buildings and infrastructure will provide new opportunities for skilled trades and a variety of professional services. Local knowledge institutions are well positioned to be incubators for emerging technologies and training grounds for the next generation's regional workforce.

## **CEQA TIERING**

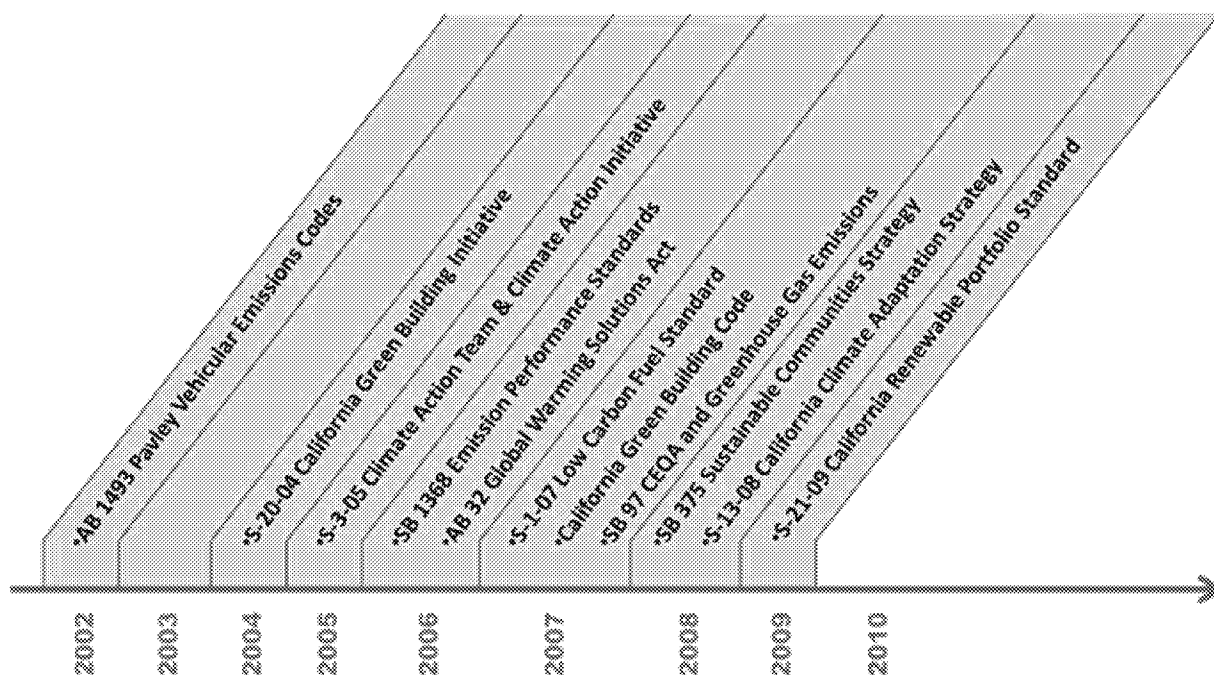
Analyzing and mitigating greenhouse gas at a programmatic level is part of a strategy to address the cumulative impacts of greenhouse gas emissions and to streamline environmental

regulatory procedures. The Inglewood ECAP presents a possible framework, which is in Appendix F, which could allow future development projects to reference the ECAP in order to tier and streamline the environmental review process.

## REGULATORY FRAMEWORK

During the past decade, the State of California made great strides in developing a regulatory framework to curb future greenhouse gas emissions and to adapt to the potential consequence of climate change, as shown by Figure 11. California adopted a series of policies, programs, and regulations that set targets for greenhouse emissions reductions and outlined strategic actions that enable government agencies, public institutions, and businesses to collaborate to achieve these reduction targets. There are several other California regulations and laws that directly affect local government efforts to reduce greenhouse gas emissions and to respond to the potential impacts of climate change. A detailed description of these regulations can be found in Appendix B.

FIGURE 11: TIMELINE OF CALIFORNIA CLIMATE CHANGE REGULATIONS

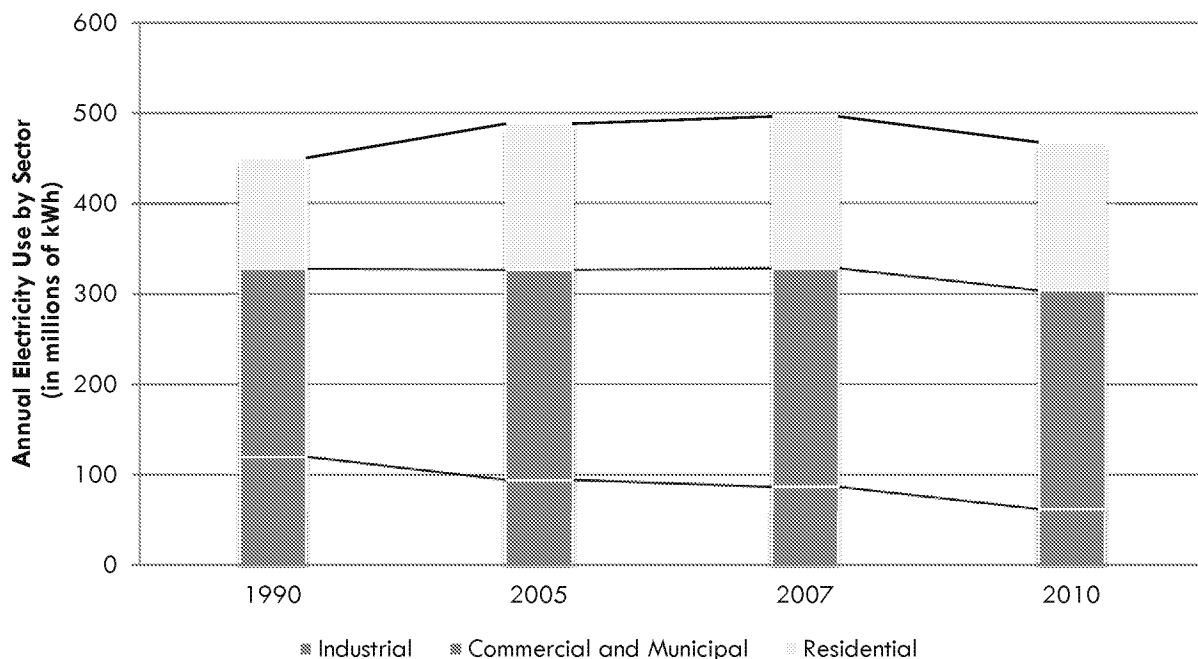


For more information on California's regulatory framework for climate change, please see Appendix B.

# 3 | ENERGY USE AND GREENHOUSE GAS EMISSIONS ESTIMATES

In 2010, Inglewood used less electricity and natural gas than in 2005. Between 2005 and 2010, electricity use fell from 488 million kWh to 468 million kWh, a four and two-tenths percent (4.2%) decline. Industrial electricity use declined by approximately 32 million kWh, a thirty-four percent (34%) reduction, while commercial electricity use *increased* by 9.5 million kWh (4%) and residential electricity use rose by approximately 2.3 million kWh (1%). Figure 12 shows the change in community electricity use.<sup>47</sup>

FIGURE 12: CHANGE IN COMMUNITY ELECTRICITY USE (1990-2010)



Overall natural gas use fell by approximately 540,000 therms between 2005 and 2010, an approximately two and six-tenths percent (2.6%) decline. Residential natural gas use fell by

<sup>47</sup> Total electricity and natural gas use for 2010 was drawn from the Electricity Use Report provided by Southern California Edison and a Natural Gas Use Report provided by the SoCal Gas Company. The electricity report included information about commercial, residential, street lighting, and traffic control electricity use. The natural gas report included information for commercial, industrial, municipal, single family residential, and multifamily residential. Data for 1990, 2005, and 2007 was extracted from the 2011 City of Inglewood Community Greenhouse Gas Emissions Inventory Report prepared in conjunction with the South Bay Cities Council of Governments.

over 714,000 therms (five percent)(5%), and commercial natural gas use declined by over 161,000 (three percent)(3%). Despite declines in residential and commercial natural gas use, industrial natural gas use *increased* by 335,000 therms.

Despite overall declines in electricity and natural gas use, per capita and per service electricity use declined by a smaller percentage than overall electricity use, while per capita and per service area natural gas use remained constant.<sup>48</sup> Electricity use per capita fell from 4,344 kWh per person to 4,266 kWh per person, a one and eight-tenths percent (1.8%) decline (as compared to a four and two-tenths percent (4.2%) overall decline in electricity use), while per service area electricity use declined by one and four-tenths percent (1.4%). Natural gas per person and per service population remained steady between 2005 and 2010 (as compared to a two and six-tenths percent (2.6%) overall decline in natural gas use). These percentages are significantly less than the overall decline in electricity and natural gas use. Table 6 shows the change in community electricity and natural gas use.

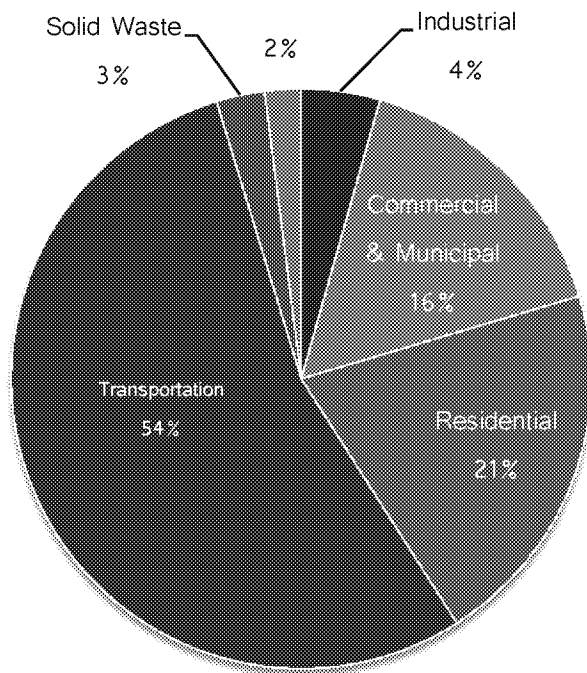
TABLE 6: COMMUNITY ELECTRICITY AND NATURAL GAS USE (1990-2010)

EMISSIONS SOURCE AND SECTOR	ENERGY USE			
	1990	2005	2007	2010
ELECTRICITY (KWH)				
Industrial	120,117,426	94,528,643	86,766,236	62,221,057
Commercial and Municipal	207,570,627	232,041,326	241,369,604	241,574,320
Residential	122,685,204	161,821,398	168,262,379	164,093,216
Electricity Subtotal	450,373,257	488,391,367	496,398,219	467,888,593
Electricity Use per Person	4,094	4,361	4,472	4,254
NATURAL GAS (THERMS)				
Industrial	1,055,022	1,130,569	1,125,574	1,466,178
Commercial and Municipal	4,666,275	5,000,412	5,635,603	4,839,417
Residential	13,281,915	14,860,275	14,028,911	14,146,063
Natural Gas Subtotal	19,003,212	20,991,256	20,790,088	20,451,658
POPULATION, EMPLOYMENT, AND PER CAPITA AND PER SERVICE AREA ENERGY USE				
Population	109,602	112,417	111,428	109,673
Employment	30,800	32,683	33,656	31,303
Service Area Population (pop + emp)	140,402	145,100	145,084	140,976
Electricity Use per Capita (kWh/Pop)	4,109	4,344	4,455	4,266
Electricity Use per Service Population (kWh/SP)	3,208	3,366	3,421	3,319
Natural Gas Use per Capita (Therms/Pop)	173	187	187	186
Natural Gas Use per Service Population (Therms/SP)	135	145	143	145

<sup>48</sup> Service population is defined as population (residents) plus employment.

In 2010, total greenhouse gas emissions in Inglewood were approximately 594,273 metric tons of CO<sub>2</sub>e (MTCO<sub>2</sub>e), three percent (3%) below the 2005 emissions total of 610,910 MTCO<sub>2</sub>e. This aggregate number accounts for direct emissions from the on-site combustion of fuels and the combustion of fuel in vehicles. This figure also includes all indirect emissions associated with community electricity consumption, and emissions from solid waste generated and water consumed in Inglewood. A detailed discussion of energy use and greenhouse gas emissions can be found in Appendix E.

FIGURE 13: COMMUNITY EMISSIONS SUMMARY BY SECTOR (2010)

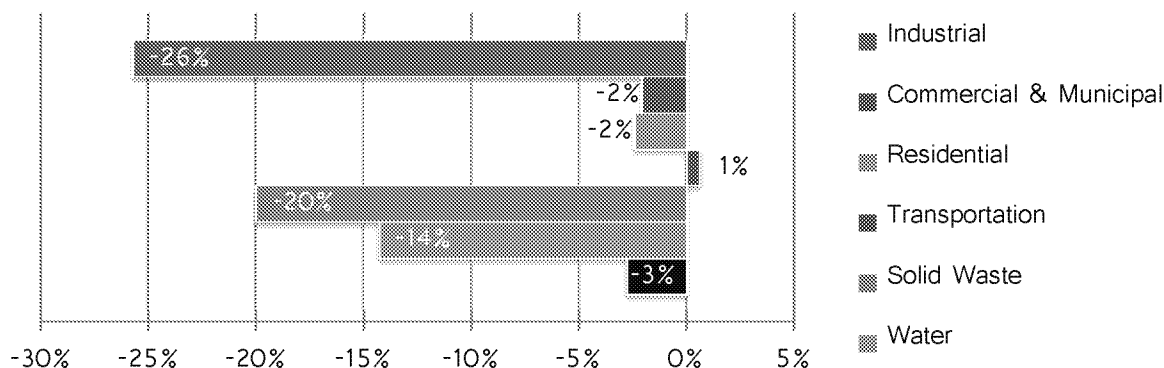


The transportation sector emitted fifty-four percent (54%) of Inglewood's greenhouse gas emissions, the largest quantity of any sector (see Figure 13). The residential sector was the second largest producer of greenhouse gases, contributing twenty-one percent (21%) of the community total. The remainder of the emissions came from the commercial and municipal (16%), industrial (4%), solid waste (3%), and water (2%) sectors.

Between 2005 and 2010, greenhouse gas emissions fell from the 2005 emissions total of 610,910 MTCO<sub>2</sub>e to 594,273 MTCO<sub>2</sub>e in 2010 (see Figure 14). Emissions declined twenty-six percent (26%) in the industrial sector, twenty percent (20%) in the solid waste sector, fourteen percent (14%) in water

sector, two percent (2%) in the residential sector, and two percent (2%) in the commercial and municipal sector. Emissions increased one percent (1%) in the transportation sector.

FIGURE 14: CHANGE IN COMMUNITY EMISSIONS (2005-2010)



In 2010, the combustion of gasoline and diesel fuel contributed the largest portion of greenhouse gas emissions by fuel source in Inglewood. Transportation sector fuels produced 322,042 MTCO<sub>2</sub>e of emissions or fifty-four percent (54%) of the community total. By source, electricity use resulted in the second largest emissions total community-wide. The consumption of electricity in buildings, facilities, water delivery, and infrastructure resulted in twenty-three percent (23%) of the greenhouse gas emissions. Natural gas combustion contributed eighteen percent (18%) of the emissions, and water and solid waste resulted in three percent (3%) and two percent (2%) of the emissions respectively.

TABLE 7 : COMMUNITY GHG EMISSIONS BY SECTOR (1990-2010)

	1990	2005	2007	2010
<b>COMMUNITY-WIDE GREENHOUSE GAS EMISSIONS<sup>49</sup></b>				
Transportation	361,061	320,254	311,853	322,042
Residential	107,924	124,872	123,062	122,429
Commercial & Municipal	87,880	97,176	99,458	95,261
Industrial	42,514	34,940	31,272	26,100
Solid Waste	27,668	19,855	16,841	16,448
Water	15,068	13,813	13,272	11,993
Total Emissions	642,115	610,910	595,758	594,273
<b>POPULATION, EMPLOYMENT, AND PER CAPITA AND PER SERVICE AREA EMISSIONS<sup>50</sup></b>				
Population	109,602	112,417	111,428	109,673
Employment	30,800	32,683	33,656	31,303
Service Area Population (pop + emp)	140,402	145,100	145,084	140,976
Emissions per Capita (MT CO <sub>2</sub> e/Pop)	5.86	5.43	5.35	5.42
Emissions per Service Population (MT CO <sub>2</sub> e/SP)	4.57	4.21	4.11	4.22

Emissions per person in Inglewood were 5.42 MTCO<sub>2</sub>e in 2010. 2010 per capita emissions were down from the 1990 emissions of 5.86 MTCO<sub>2</sub>e per person and 2005 emissions of 5.43 MTCO<sub>2</sub>e per person. Similar to person emissions, per service population emissions fell from 4.57 in 1990 to 4.22 in 2010.<sup>51</sup> However, emissions per service population were up between 2005 and 2010.

<sup>49</sup> Community-wide greenhouse gas for 1990, 2005, and 2007 were provided by the South Bay COG as part of the Inglewood Community Greenhouse Gas Emissions Inventory. Raimi + Associates added an estimate of Scope 3 water sector emissions to the inventories for 1990, 2005, and 2007. Raimi + Associates also worked with the South Bay Cities COG to develop greenhouse gas emission estimates for 2010, 2020, and 2035.

<sup>50</sup> Future population and employment is based on the SCAG regional growth forecast for 2012.

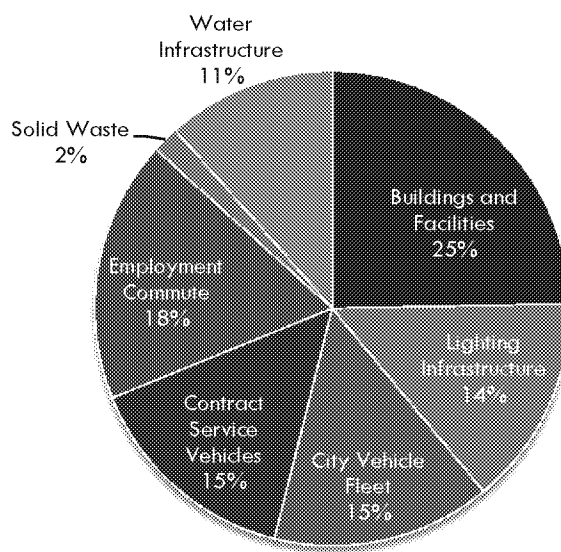
<sup>51</sup> Service population is defined as population (residents) plus employment (jobs).

# MUNICIPAL ENERGY USE AND EMISSIONS

While the community-wide inventory includes the energy consumption and associated emissions from Inglewood government operations, it is helpful to examine municipal operations independently. In 2007, government operations in Inglewood produced approximately 12,321 MTCO<sub>2</sub>e, eleven percent (11%) above the 2005 base year emissions of 11,108 MTCO<sub>2</sub>e. This roll-up figure includes emissions from municipal buildings and facilities, infrastructure, transportation, water delivery and treatment, and solid waste.

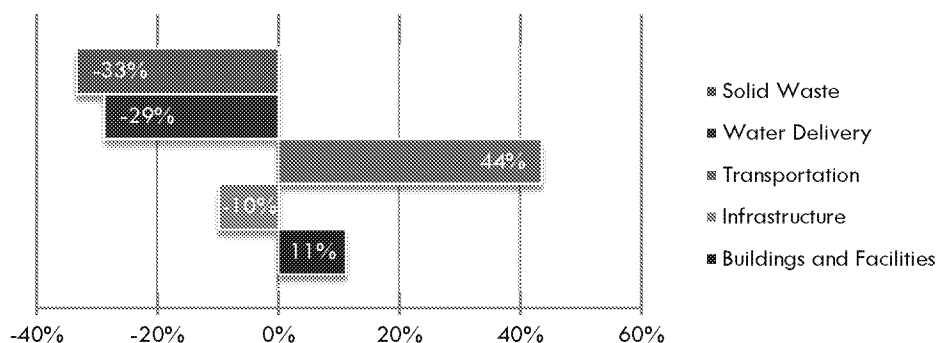
Transportation sector emissions accounted for nearly half of the greenhouse gas emissions from municipal operations. Operation of the city vehicle fleet, employee commuting, and contract services produced forty-eight percent (48%) of the emissions. Energy consumption for municipal buildings and facilities resulted in 2,710 MTCO<sub>2</sub>e of emissions, twenty-four percent (24%) of the total government operations emissions. The remainder of the emissions came from infrastructure (15%), water delivery and treatment (12%), and solid waste (2%) as shown in Figure 15.

FIGURE 15: GOVERNMENT OPERATIONS EMISSIONS SUMMARY BY SECTOR (2007)



Although total emissions from government operations increased from 11,108 MTCO<sub>2</sub>e in 2005 to 12,321 MTCO<sub>2</sub>e in 2007, not all sectors increased proportionally. Emissions from buildings and facilities and transportation increased over the two-year period. Transportation sector emissions increased forty-four percent (44%), while building and facility emissions grew eleven percent (11%). Between 2005 and 2007, emissions from infrastructure, water delivery and treatment, and solid waste all declined as shown in Figure 16.

FIGURE 16: CHANGE IN GOVERNMENT OPERATIONS EMISSIONS (2005-2007)



# COMMUNITY EMISSIONS FORECAST

How will projected trends in energy use, driving habits, population growth, and employment expansion affect future greenhouse gas emissions in Inglewood? To answer this question, a business-as-usual (BAU) forecast was developed for the City that estimates future emissions in 2020 and 2035 from six sectors: commercial and municipal; industrial; residential; transportation; solid waste; and water. The BAU projects emissions under existing conditions, and it does not include the effects of California regulatory efforts, such as Title 24 updates, the Renewables Portfolio Standards, and the Pavley Clean Car Standards on future greenhouse gas emissions.<sup>52</sup>

Despite a downward trend in greenhouse gas emissions between 2005 and 2010, emissions are expected to rise under a business-as-usual forecast. Inglewood's greenhouse gas emissions are projected to increase from 594,273 MTCO<sub>2</sub>e of emissions in 2010 to 678,283 MTCO<sub>2</sub>e of emissions in 2035, a fourteen percent (14%) increase.

TABLE 8: COMMUNITY GHG EMISSIONS BY SECTOR (EXISTING AND PROJECTED)

	1990	2005	2007	2010	2020	2035
COMMUNITY-WIDE GREENHOUSE GAS EMISSIONS <sup>53</sup>						
Transportation	361,061	320,254	311,853	322,042	327,998	337,532
Residential	107,924	124,872	123,062	122,429	134,843	156,574
Commercial & Municipal	87,880	97,176	99,458	95,261	106,041	124,749
Industrial	42,514	34,940	31,272	26,100	26,376	26,830
Solid Waste	27,668	19,855	16,841	16,448	16,782	17,555
Water	15,068	13,813	13,272	11,993	14,707	15,044
Total Emissions	642,115	610,910	595,758	594,273	626,748	678,283
POPULATION, EMPLOYMENT, AND PER CAPITA AND PER SERVICE AREA EMISSIONS <sup>54</sup>						
Population	109,602	112,417	111,428	109,673	111,900	117,056
Employment	30,800	32,683	33,656	31,303	35,000	36,700
Service Area Population (pop + emp)	140,402	145,100	145,084	140,976	146,900	153,756
Emissions per Capita (MT CO <sub>2</sub> e/Pop)	5.86	5.43	5.35	5.42	5.60	5.79
Emissions per Service Population (MT CO <sub>2</sub> e/SP)	4.57	4.21	4.11	4.22	4.27	4.41

<sup>52</sup> For more information on California's climate change policies, programs, and regulations, see Chapter 2: Regulatory Setting.

<sup>53</sup> Community-wide greenhouse gas for 1990, 2005, and 2007 were provided by the South Bay COG as part of the Inglewood Community Greenhouse Gas Emissions Inventory. Raimi + Associates added an estimate of Scope 3 water sector emissions to the inventories for 1990, 2005, and 2007. Raimi + Associates also worked with the South Bay Cities COG to develop greenhouse gas emission estimates for 2010, 2020, and 2035.

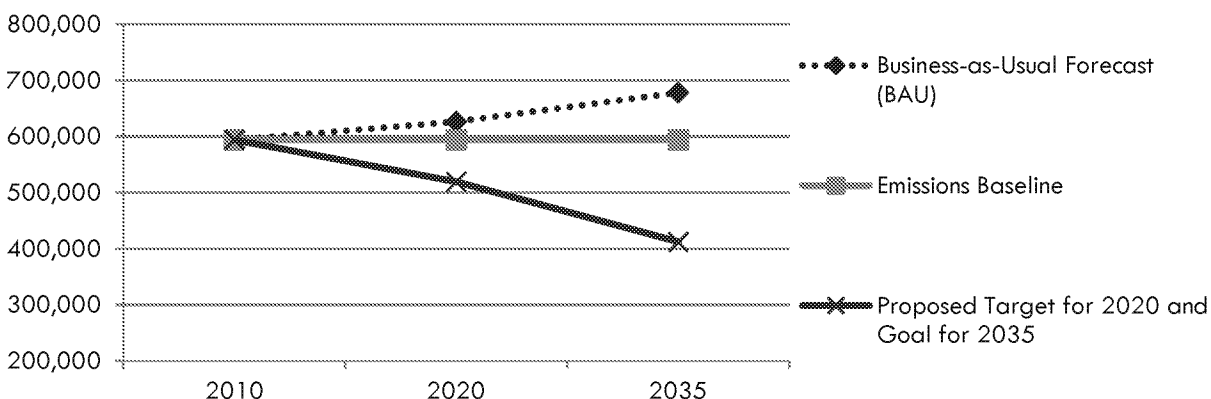
<sup>54</sup> Future population and employment is based on the SCAG regional growth forecast for 2012.



## GREENHOUSE GAS REDUCTION TARGET

The City of Inglewood proposes to set a greenhouse gas reduction target of fifteen percent (15%) below 2005 levels by 2020 and an emissions reduction goal of thirty-two and a half percent (32.5%) by 2035. The 2020 target is tied to the recommendation of the California Air Resources Board and the Climate Change Scoping Plan, which suggests that local governments work to reduce emissions by fifteen percent (15%) below current levels.<sup>55</sup> Inglewood's 2020 target aligns with this state recommendation and places the City on a course towards California's long-term emissions reduction target, which is an ambitious goal to reduce greenhouse emissions by eighty percent (80%) below 1990 levels in 2050.<sup>56</sup> The 2050 goal is the State's policy interpretation of the percent reduction necessary to stabilize global carbon dioxide levels, while still providing for economic growth. The City recognizes the need to continue reducing emissions beyond 2020, but also knows that additional state and federal actions will be needed to achieve an eighty percent (80%) target by 2050. As such, Inglewood proposes to establish an ambitious, interim goal to continue emissions. The City proposes to reduce emissions by thirty-two and a half percent (32.5%) below 2005 levels in 2035, acknowledging that the state could seek to codify reductions of a greater percentage by 2035.<sup>57</sup> Figure 17 shows the proposed greenhouse gas emissions reduction target for 2020 and reduction goal for 2035.

FIGURE 17: INGLEWOOD PROJECTED EMISSIONS AND PROPOSED EMISSIONS TARGETS



Along with California regulatory framework, the following criteria were used to establish the emissions reduction 2020 target and 2035 goal:

- Adequate to place the region on an emissions path that avoids the most significant changes to the regional climate;
- Provide co-benefits that improve the quality of life of the Inglewood residents, enhance the local economy, and make municipal operations more efficient;

<sup>55</sup> California Air Resources Board. 2008. *Climate Change Scoping Plan*. Retrieved from <http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm>

<sup>56</sup> Governor of the State of California. 2005. *Executive Order S-3-05*. Retrieved from <http://www.dot.ca.gov/hq/energy/ExecOrderS-3-05.htm>

<sup>57</sup> Fifty-three percent represents a straight line calculation between the 2010 emissions and the state's recommendation to reduce emissions 80% below 1990 levels by 2050.

- Feasible with existing resources and technology; and
- Uncertainty about federal and state actions beyond 2020.

The City of Inglewood inventory established that 2005 emissions totaled 610,910 MTCO<sub>2</sub>e, and fell to 594,273 MTCO<sub>2</sub>e in 2010. Population growth, increased per capita energy use, and a rebounding economy are expected to increase city-wide emissions to 626,748 MTCO<sub>2</sub>e, an overall increase of seven percent (7%) from 2010. As shown in Table 9, to achieve the fifteen percent (15%) reduction target from the 2005 baseline, the City would need to develop and implement strategies that reduce emissions by 107,475 MT CO<sub>2</sub>e in 2020. Given projected trends, this reduction lowers 2020 emissions to approximately seventeen percent (17%) below 2020 business-as-usual levels (levels anticipated for 2020 in the absence of any local, state, or federal interventions). To achieve a thirty-two and a half percent (32.5%) goal by 2035, Inglewood would need to reduce emissions by 265,919 MT CO<sub>2</sub>e from the BAU in 2035, thirty-nine percent (39%) below 2020 business-as-usual levels.

TABLE 9: GREENHOUSE GAS REDUCTIONS AND PROPOSED TARGETS

	2020 MTCO <sub>2</sub> E	2020 MTCO <sub>2</sub> E/SP	2035 MTCO <sub>2</sub> E	2035 MTCO <sub>2</sub> E/SP
PROPOSED TARGETS				
Projected BAU Emissions	626,748	4.27	678,283	4.41
Proposed Greenhouse Gas Target for 2020 and Goal for 2035 (Percentage Below 2005 Emissions)	15%		32.5%	
Proposed Greenhouse Gas Target for 2020 and Goal for 2035	519,273	3.53	412,364	2.68
Percentage Below BAU Emissions	17%		39%	
Reduction From BAU Required to Meet City Target	-107,475	-0.73	-265,919	-1.73

## 4 | INGLEWOOD ENERGY AND CLIMATE ACTION STRATEGIES

To balance future growth with its greenhouse gas reduction target and goal, Inglewood needs broad-based participation from businesses and residents. Everyone who lives, works, shops, or plays in the City contributes to the community's energy use and emissions, and everyone will need to be part of the solution. The following section presents five energy and greenhouse gas reduction strategies for the City of Inglewood that are applicable to every sector within the City. The ECAP also includes a strategy to help the City begin to adapt to the potential future impacts of climate change. This strategic framework will provide the City with an efficient pathway for implementing energy and emissions reduction policies.

The reduction strategies focus on actions within, or associated with activity in, the City that can result in a break from business-as-usual energy use and/or emissions. The strategies do not address the ownership of emissions or, in most cases, responsibility for specific emissions reductions. Rather, the ECAP views the City as a nexus for many different types of emissions that may ultimately be owned or controlled by a wide-range of stakeholders. Each strategy includes state policies that will help move the City towards its 2020 greenhouse gas target and 2035 goal. These state policies do not require additional actions by the City; rather, state policies and local actions are mutually-supportive, helping both achieve short- and long-term greenhouse gas reductions.

Dozens of energy use and greenhouse gas reduction actions were analyzed and reviewed with City staff and key stakeholders. After extensive input, approximately 50 reduction measures were selected for the ECAP and provide a roadmap to help Inglewood work towards the 2020 greenhouse gas reduction target and 2035 reduction goal. The measures recommended in this ECAP were evaluated and selected with the following criteria in mind:

- **Feasibility** - the extent to which the strategy is achievable based on current constraints;
- **Reduction Potential** - total anticipated greenhouse gas emissions reductions;
- **Jurisdictional Influence** - who has control over the measure's implementation and the means by which the measure will be implemented, such as a policy, code amendment, or incentive program;
- **Cost** - implementation costs for the City or the community; and
- **Additional Impacts** - other potential positive or negative effects not considered by other criteria.

### GOAL OF THE ECAP STRATEGIES

The ECAP includes six strategies that highlight the six distinct areas that this document targets to effectuate energy and GHG emissions reductions throughout the City. Each strategy is

supported by a number of more specific programs, actions, and measures that will be implemented by the City. The reduction actions and programs are those that the City has the authority and resources to implement in order to bring about a reduction in emissions or energy consumption.

### **STRATEGY 1: LEAD BY EXAMPLE**

The City of Inglewood has taken steps and will continue to be a leader in reducing energy and water use, lowering vehicle fuel consumption, minimizing employee commuting, and diverting solid waste from landfills. This strategy builds on previous projects and programs by developing an institutional framework for the City to continue energy and water conservation efforts, to accelerate vehicle replacement, to make green purchases, and to provide the information and technical assistance for residents and businesses to implement energy efficiency measures



*Alternative Fuel Vehicle Fleet (Inglewood, CA)*

### **STRATEGY 2: INCREASE ENERGY EFFICIENCY**

Residential and non-residential buildings produce approximately forty percent (40%) of Inglewood's emissions and are a primary target for the ECAP. This strategy facilitates energy efficiency in homes and businesses.

### **STRATEGY 3: SUPPORT RENEWABLE ENERGY GENERATION**

This strategy includes actions that will help homes and businesses in Inglewood increase renewable energy production by identifying and removing barriers, educating consumers, and pursuing tools that facilitate clean energy financing.

### **STRATEGY 4: IMPROVE TRANSPORTATION OPTIONS**

Inglewood's transportation strategy covers a broad range of activities that aim to reduce vehicle miles travelled, improve mobility, and enhance vehicle fuel efficiency. Specific implementation measures involve changing land uses, adopting a new perspective on community design, promoting alternative modes of travel, and revising antiquated parking standards.

### **STRATEGY 5: REDUCE CONSUMPTION AND WASTE**

Water consumption and solid waste generation produce only a small percentage of Inglewood's emissions, but the specific actions outlined in the ECAP can result in significant emissions reductions. This strategy includes water conservation, recycling, and local food actions.

## STRATEGY 6: ADAPT TO THE POTENTIAL IMPACTS OF CLIMATE CHANGE

Adaptive actions describe a pathway for the City of Inglewood to minimize the potential consequences of climate change on their citizens. Many of these actions overlap with greenhouse gas mitigation measures, and have already been undertaken by the City.

## GREENHOUSE GAS REDUCTION POTENTIAL

Through a combination of proposed federal, state, and city-level actions, Inglewood can anticipate emissions reductions of 130,942 MT CO<sub>2</sub>e per year from the business-as-usual scenario in 2020. State-level actions, such as the Pavley Clean Cars legislation, the Low Carbon Fuel Standard, the Renewables Portfolio Standard, and Title 24 upgrades are expected to reduce emissions by 121,139 MT CO<sub>2</sub>e per year by 2020. Local measures are projected to reduce emissions by 9,803 MT CO<sub>2</sub>e. This combination of state and local action would place the City nineteen percent (19%) below 2005 emission levels in 2020, meeting the City's proposed 2020 greenhouse gas emissions reduction target. Table 3 shows the emissions reduction by strategy in 2020.

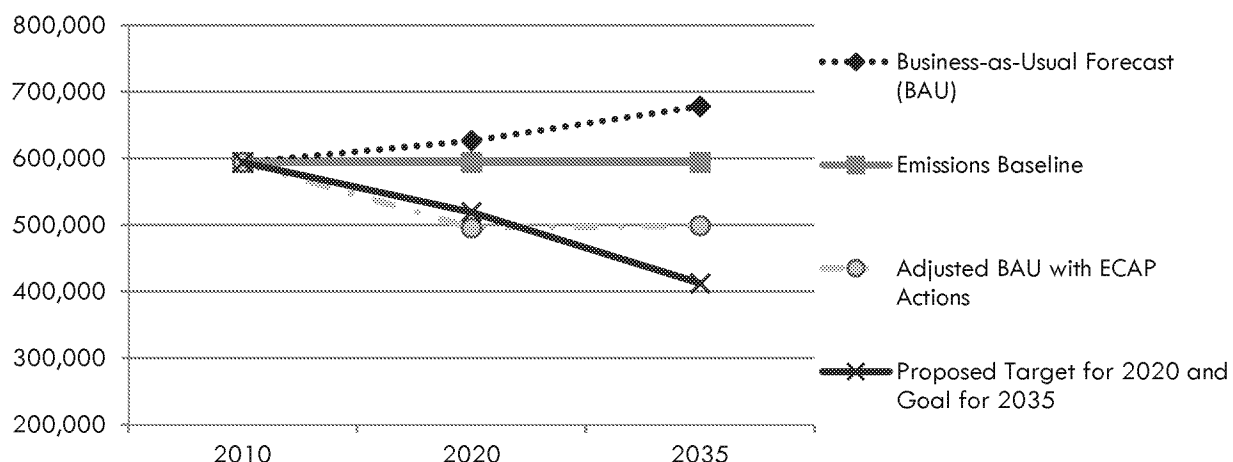
TABLE 10: GREENHOUSE GAS REDUCTION TARGET ANALYSIS

	2020 REDUCTION POTENTIAL MTCO <sub>2</sub> E	2020 REDUCTION POTENTIAL (MTCO <sub>2</sub> E/SP)	2035 REDUCTION POTENTIAL MTCO <sub>2</sub> E	2035 REDUCTION POTENTIAL (MTCO <sub>2</sub> E/SP)
ECAP STRATEGIES				
Lead by Example	1,575	0.01	2,392	0.02
Increase Energy Efficiency	1,908	0.01	9,146	0.06
Support Renewable Energy	43,177	0.29	60,747	0.40
Improve Transportation Options	83,001	0.57	104,554	0.68
Reduce Consumption and Waste	1,281	0.01	2,156	0.01
Total Reductions from Building Strategies	130,942	0.89	178,996	1.16
Projected BAU Emissions	626,748	4.27	678,283	4.41
Adjusted BAU with ECAP Measures	495,806	3.38	499,288	3.25
Proposed Greenhouse Gas Emissions Targets	519,273	3.53	412,364	2.68
Reduction Beyond Target (2020) and Emissions Gap (2035)	23,467	0.16	-86,924	-0.57

By 2035, the combination of state and local greenhouse gas emissions measures is likely to reduce emissions by 178,996 MTCO<sub>2</sub>e. State measures are expected to account for 160,002 MTCO<sub>2</sub>e with local actions resulting in additional emissions reductions. These actions put Inglewood eighteen percent (18%) below 2005 emission levels in 2035, but below the City's thirty-two and a half percent (32.5%) goal in 2035. This estimate does not account for additional future actions by the state, e.g. requiring utilities to provide additional renewable

energy or more stringent cars standards and will require the City to aggressively implement additional actions. Figure 18 shows the emissions reductions from the climate action strategies.

**FIGURE 18: INGLEWOOD PROJECTED EMISSIONS WITH ECAP STRATEGIES AND PROPOSED EMISSIONS TARGETS**



Achieving a long-term goal to reduce emissions thirty-two and one-half percent (32.5%) below current levels by 2035 will require the City to continue evaluating new strategies and implementation actions that take purposeful steps beyond the actions outlined in this ECAP. This could include more aggressive implementation of actions within the ECAP and/or the pursuit of different strategies and actions. The suite of options available to Inglewood will continue to evolve over time as more jurisdictions identify cost-effective, community-level solutions to reduce emissions, as businesses deploy less carbon intensive technologies, and as individuals change their behavior. Furthermore, federal and state regulations, such as Pavley II or an increase in the Renewables Portfolio Standard, will move the City closer towards this long-term emissions reduction goal.

The following illustrates one approach for the City to reduce emissions thirty-two and one-half percent (32.5%) below current levels by 2035. This list of implementation actions is intended to be illustrative, showing a possible pathway for the City to reach the goal and focusing on energy efficiency, renewable energy generation, and multi-modal transportation. These actions were selected because of the large proportion of emissions within the commercial, residential, and transportation sectors and the proven track record of success for these actions.

- Implement a commercial and industrial business energy conservation ordinance that requires energy upgrades at point of sale or during major renovations. The City would need seventy-five percent (75%) of businesses to reduce energy use by thirty percent (30%).
- Increase the proportion of renewable energy for non-residential buildings to fifty percent (50%).
- Implement a residential energy conservation ordinance that requires energy upgrades at point of sale or during major renovations. The City would need seventy-five percent (75%) of residential units to reduce energy use by fifteen percent (15%).

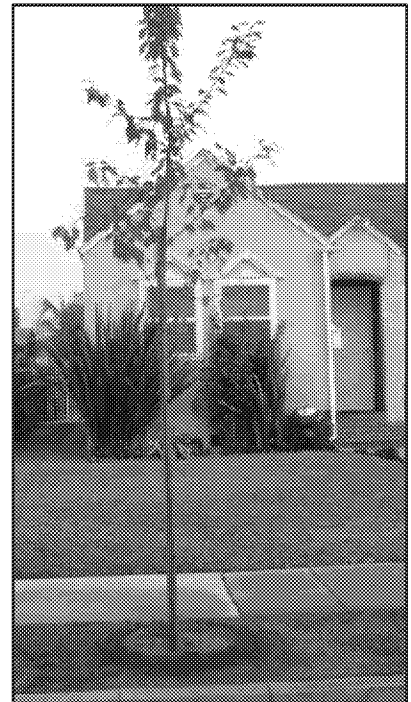
- Increase the proportion of renewable energy for residential buildings to twenty-five percent (25%).
- Increase the proportion of solar water heating on residential buildings to seven and one-half percent (7.5%).
- Create a neighborhood electric vehicle network
- Provide traffic calming measures City-wide
- Develop a mandatory commute reduction program that reduces VMT by four and one-half percent (4.5%)
- Provide ridesharing programs that reduces commute VMT by one percent (1%)
- Implement market pricing for on-street parking in TOD areas by 2020, fifty percent (50%) of City parking by 2035, and for City owned parking structures by 2035.

The combination of these actions would allow the City to achieve the 2035 reduction goal.

## ADDITIONAL BENEFITS

Along with avoiding climate change, these actions will offer other important benefits, from job creation to energy savings to cleaner air and water. Where possible these key benefits are identified and quantified for each individual action.

Furthermore many of the actions described in this plan are cost-effective and the improvements often pay for themselves within a short period of time. Energy efficiency measures, for example, may have payback periods of five-years or less. The energy upgrades at City Hall cost Inglewood \$52,290 in 2010, saving the City 58,869 kWh of electricity and \$6,978 annually. It is expected that the project will have a simple payback period of 7.5 years.

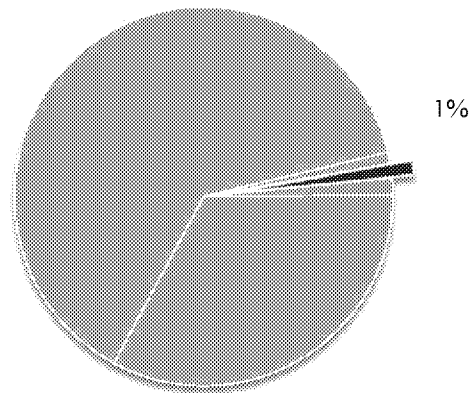


*Pear Tree Planting (Inglewood, CA)*

## STRATEGY 1: LEAD BY EXAMPLE

During the last decade, the City of Inglewood has taken steps to reduce energy and water use, lower vehicle fuel consumption, minimize employee commuting, and divert solid waste from landfills. City Hall lighting retrofits, street light upgrades, and the energy efficiency and solar installation at Roger's Park Recreational Facility have helped the City lower municipal energy use and costs. The City has also implemented an Alternative Vehicle Plan and ridesharing and vanpool programs, which will reduce fossil fuel consumption and vehicle miles respectively. Taken together, these actions highlight the leadership of Inglewood on making municipal operations more efficient and effective. Strategy 1: Lead by Example and its associated actions builds on previous projects by developing an institutional framework for the City to continue energy and water conservation efforts, to accelerate vehicle replacement, to make green purchases, and to provide the information and technical assistance for residents and businesses to implement energy efficiency measures.

Municipal actions represent 1% of Inglewood's emissions reduction in 2020 = 1,575 MT CO<sub>2</sub>e



## DEPARTMENTAL WORK PLANS

To demonstrate the City's commitment to lead by example, each Department and Agency should develop and carry out an integrated Work Plan that includes specific actions to reduce energy use and costs, conserve water, divert waste, and lower fleet petroleum fuel consumption. Each Work Plan will define three to five actions that the agency will implement by 2015. Each agency will identify a senior official who will oversee the work plan, coordinating activities with other City agencies through participation in quarterly, interagency meetings. As part of the interagency coordination, the City could define numeric goals for reductions in fuel consumption, energy and water use, and solid waste generation for municipal operations and set non-numeric goals for renewable energy generation.

## CLIMATE-READY DEVELOPMENT REVIEW PROCESS

One of the benefits of having a local ECAP is the ability to streamline the environmental review of projects. By providing an emissions inventory, emissions targets, and strategies for reducing greenhouse gas emissions, Inglewood has established a framework for evaluating and mitigating greenhouse gas emissions. Part of these emissions reductions will need to be achieved through better environmental performance of new development. The City will explore creating a climate-ready development review process that will explain the steps the City will take to evaluate and streamline new development proposals under this ECAP. For more information and the draft development review process, please see Appendix F.



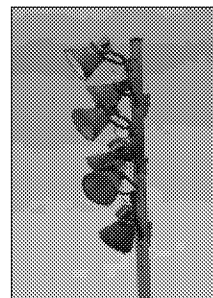
## BUILDING AND FACILITY ENERGY CONSERVATION

Over the past couple of years, the City has worked to reduce energy use and cost across municipal facilities and buildings, while planning for additional energy efficiency projects in the future. Inglewood proposes to continue energy conservation projects at City Hall, the City Service Center, Roger's Park Recreational Facility, and other City buildings and facilities. It is estimated that these energy efficiency projects will reduce building energy use by 1.1 kWh of electricity annually by 2020, lowering greenhouse gas emissions from municipal operations by over 300 MTCO<sub>2</sub>e.

As part of City efforts to lead by example, the City will continue to improve building and facility efficiency by monitoring building performance and identifying cost-effective actions to reduce energy use. These actions should be continually updated and incorporated into the department sustainability work plans. Along with energy efficiency upgrades, Inglewood will strive to reduce energy use and cost by improving operating standards in order to conserve energy and water use. Programs such as Energy Star provide guidelines for facility management, while LEED for Operations and Maintenance provides a checklist to assess the operation and maintenance of a building.

## REPLACE ALL CITY-OWNED LIGHTS AND TRAFFIC SIGNALS

In the last several years, the City has replaced traffic signals with LED lights, reducing energy use and associated greenhouse gas emissions by up to ninety percent (90%). It is estimated that these actions will lower energy uses by 700,000 kWh annually by 2020 and greenhouse gas emissions reductions by 153 MTCO<sub>2</sub>e. Similarly, the City is in the process of replacing 900 of the City's 2,400 streetlights with more efficient lighting. The project is expected to result in energy savings of approximately 900,000 kWh annually by 2020 and greenhouse gas reductions of 190 MTCO<sub>2</sub>e. By replacing the remaining 1,500 streetlights, the City could reduce emissions by an additional 317 MTCO<sub>2</sub>e.



*Rogers Park Lighting  
(Inglewood, CA)*

## ESTABLISH GREEN BUILDING CENTER

To support homes and businesses with energy retrofits and renewable energy production, the City of Inglewood proposes to explore establishing a Green Building Center to provide technical assistance about energy efficient equipment, lighting, and renewable energy generation, and to provide information on available rebates. The City would work with the South Bay Cities Council of Governments, Southern California Edison, The Gas Company, Energy Upgrade California, and other organizations to ensure that the existing programs reach a large number of homes and businesses within Inglewood. The Inglewood website would be updated to house information from the Green Building Center. Over time, the City would expand the Center as additional funding and staff resources become available.

Along with the Green Building Center, the City is developing the Roger's Park Solar Demonstration Project to increase awareness about energy efficiency and solar energy generation. Funded by a U.S. Department of Energy Energy Efficiency and Conservation Block Grant, the project will include a 21 kW solar panel system, a cool roof, and additional energy efficiency upgrades. The project is expected to generate over 34,000 kWh of electricity per year and reduce emissions by 53 MTCO<sub>2</sub>e.

## FLEET VEHICLE REPLACEMENT

In 2004, Inglewood adopted a six-year plan to convert fleet vehicles to alternative fuels. The plan identified and replaced 143 of the City's 513 vehicles.<sup>58</sup> The vehicle replacement lowered emissions by 236 MTCO<sub>2</sub>e. The City proposes to continue this pathway towards more efficient, alternative fuel vehicles by adding greenhouse gas and criteria pollutant emissions rates to the factors used in determining replacement of City vehicles. The new criteria will help the City prioritize vehicle purchases that lower petroleum use and curb greenhouse gas emissions from fuel combustion.



*Inglewood's Propane-Powered Aerial Bucket Trucks*

## EXPAND EMPLOYEE COMMUTE TRIP REDUCTION

The City of Inglewood proposes to expand the employee commute trip reduction program. The City already offers carpool assistance, ride-matching, and preferential carpool parking. At a minimum, the City proposes to consider a parking cash-out program for employees after the Crenshaw Rail Transit is complete as well as better end-trip facilities for bicyclists, such as a secure bike parking area. It is expected that these actions will reduce emissions by 57 MTCO<sub>2</sub>e in 2020.

## PLAN FOR ELECTRIC VEHICLE INFRASTRUCTURE

The Public Works Department is continuing to pursue electric vehicle infrastructure, such as charging stations, as well as adding additional electric vehicles to the fleet.

## SUPPORT SUSTAINABLE BUSINESSES AND SERVICES

With over one thousand employees and an operating budget of over \$200 million, the City of Inglewood can use their purchasing power to encourage businesses to offer goods and services with better environmental performance, and to purchase products from distributors and manufacturers with a high-level of social and environmental responsibility. Inglewood proposes to explore adopting an environmentally-preferable purchasing policy that guides the City's efforts to improve environmental performance for purchasing and contracting for municipal operations. At a minimum, the policy could require the City to buy environmentally-preferable products with little additional costs, phasing in a price leeway over time to enable the City to spend a set percentage over the cost of conventional products.

## INCREASE OPEN SPACE AND TREE PLANTINGS

Parks and trees not only enhance the appearance of a community, they raise property values for an entire neighborhood, lower home energy use and cost, reduce air and water pollution,

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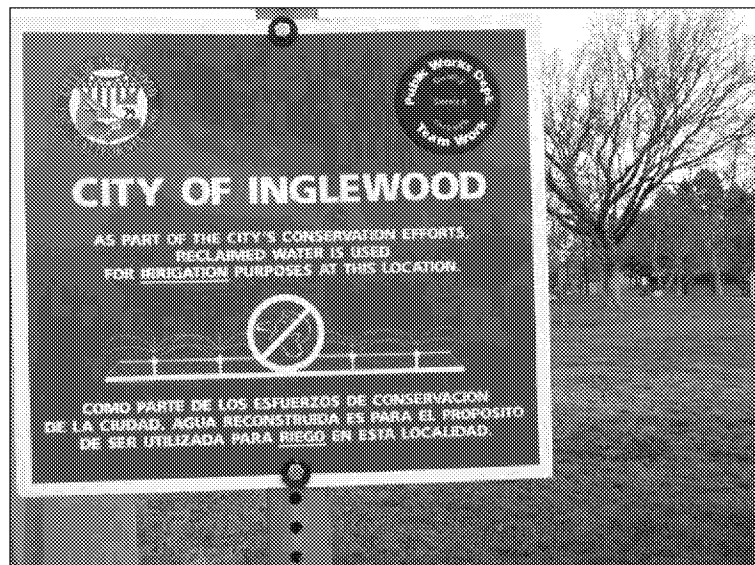
<sup>58</sup> City of Inglewood. 2004. *Six-Year Alternative Fuel Plan*. Retrieved from <http://www.cityofinglewood.org/pdfs/pw/AlternativeFuelPlan.pdf>.

minimize the heat island effect, and absorb greenhouse gases like carbon dioxide. As part of the vision for the Hollywood Park redevelopment, four parks totaling 25 acres will be completed. These community parks are expected to absorb 108 MTCO<sub>2</sub>e by 2020.

Along with more additional open space, Inglewood proposes to plant between 500 and 1,000 trees during the next several years, and the City expects to increase tree plantings over time. In general, tree plantings will focus on native and drought-resistant species. By planting 1,000 trees, Inglewood expects to sequester 355 MTCO<sub>2</sub>e.

## REDUCE WATER USE

The water sector uses energy to collect, convey, treat, and deliver water to users, and then it uses additional energy to collect, treat, and dispose of the resulting wastewater. This energy use yields both direct and indirect greenhouse gas emissions. In 2010, Inglewood used approximately 43 million gallons of recycled water (133 acre-feet) for municipal irrigation in places like Vincent, Ashwood, Center, Rogers, and Queen parks. The City expects to increase this amount to 67 million gallons of recycled water by 2020, lowering municipal greenhouse gas emissions by 115 MTCO<sub>2</sub>e and saving 20 million gallons of potable water.



*Recycled Water Use (Inglewood, CA)*

Along with recycled water, Inglewood is working to make outdoor irrigation more efficient. The City is in the process of replacing older, less-efficient irrigation equipment with more efficient versions, while planting more native and drought-resistant vegetation. These changes are expected to conserve water and reduce greenhouse gas emissions by approximately 27 MTCO<sub>2</sub>e.

TABLE 11: STRATEGY 1 - LEAD BY EXAMPLE

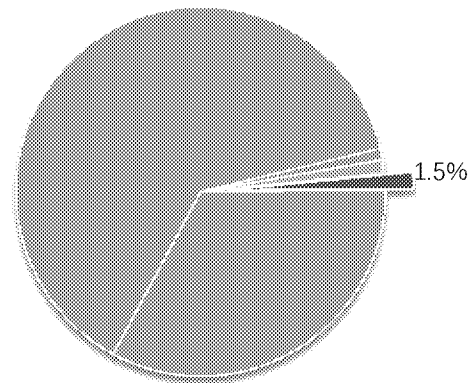
LOCAL ACTIONS	DESCRIPTION	GREENHOUSE GAS REDUCTION IN 2020, 2035 <sup>1</sup>	KEY CO-BENEFITS IN 2020 <sup>1</sup>
<b>Identify a Senior Official</b>	Identify a Senior Official from each City department or agency to carry out energy conservation and ghg reduction actions	Supportive measure, not quantified	
<b>Develop department energy reduction and climate action work programs</b>	By 2014, require all City departments or agencies to develop their own energy reduction and climate action work programs that define three to five actions that the agency will implement by 2015	Supportive measure, not quantified	Energy and water savings; cost savings
<b>Coordinate interdepartmental actions</b>	Coordinate energy conservation and greenhouse gas conservation efforts through participation in quarterly, interdepartmental meetings	Supportive measure, not quantified	Cost savings
<b>Define City and department goals</b>	Define numeric goals for reductions in fuel consumption, energy and water use, and solid waste generation for municipal operations and set non-numeric goals for renewable energy generation	Supportive measure, not quantified	
<b>Explore the creation of a climate-ready development review process</b>	The City will explore the creation of a climate-ready development review process to evaluate and streamline development review proposals under the ECAP	Supportive measure, not quantified	Energy and water savings;
<b>Continue building and facility energy upgrades</b>	Continually monitor building performance and identify cost-effective actions to reduce energy use	318 MTCO <sub>2e</sub> , 338 MTCO <sub>2e</sub>	1.2 million kWh reduced; \$100,000 savings
<b>Replace all City-owned lights</b>	Replace all City-owned street, park, and traffic lights with LED lights	334 MTCO <sub>2e</sub> , 659 MTCO <sub>2e</sub>	1.6 million kWh reduced; \$200,000 savings; adaptive
<b>Explore establishing a Green Building Center</b>	Explore establishing a Green Building Center that provides incentives, outreach, financing, and other forms of assistance to business-owners and residents	Supportive measure, not quantified	Energy reduced; consumer education
<b>Accelerate City vehicle fleet replacement</b>	Accelerate City vehicle fleet replacement by adding greenhouse gas and criteria pollutant emissions rates to the factors used to determine replacement of City vehicles	236 MTCO <sub>2e</sub> , 258 MTCO <sub>2e</sub>	Reduced petroleum consumption; fewer criteria pollutants; lower costs
<b>Continue commute trip reduction program</b>	Expand the commute trip reduction program for City employees	57 MTCO <sub>2e</sub> , 52 MTCO <sub>2e</sub>	Reduced petroleum consumption; fewer criteria pollutants; lower costs
<b>Continue planning for electric vehicle infrastructure</b>	Pursue electric vehicle infrastructure, such as charging stations, as well as adding new vehicles to the fleet	Supportive measure, not quantified	Reduced petroleum consumption; fewer criteria pollutants
<b>Explore adopting an environmentally-preferable purchasing policy</b>	Explore adopting an environmentally-preferable purchasing policy to purchase products from distributors and manufacturers with a high-level of social and environmental responsibility	Supportive measure, not quantified	Reduced lifecycle; operating; transportation emissions; lower waste
<b>Increase recycled water use</b>	Increase the amount of recycled water used to irrigate municipal parks and landscaping	115 MTCO <sub>2e</sub> , 115 MTCO <sub>2e</sub>	water savings; adaptive
<b>Accelerate water-efficient irrigation system deployment and native and drought-resistant vegetation planning</b>	Replace all conventional irrigation and sprinkler systems with water-efficient irrigation systems by 2025 and transition to native and drought-tolerate vegetation	27 MTCO <sub>2e</sub> , 61 MTCO <sub>2e</sub>	14 million gallons water savings; adaptive
<b>Increase open space and tree plantings</b>	Increase the amount of open space and number of shade tree plantings in Inglewood	484 MTCO <sub>2e</sub> , 904 MTCO <sub>2e</sub>	Reduced heat island; adaptive

<sup>1</sup>Greenhouse gas emissions reduction and co-benefits represent annual estimates for 2020. For more information on the calculation of greenhouse gases and co-benefits, see Appendix D.

## STRATEGY 2: INCREASE ENERGY EFFICIENCY

Inglewood is expected to grow slowly over the next several decades, so improving the performance of existing buildings is a key target of this ECAP. This strategy requires a concerted effort by government, utility companies, businesses, and individual homeowners to increase the energy efficiency of their homes and businesses. Increasing the efficiency of these buildings will result in significant savings for residents, businesses, and the City of Inglewood, and these savings can often cover the upfront costs of a building retrofit.

Energy efficiency actions represent 1.5% of Inglewood's emissions reduction in 2020 = 1,908 MT CO<sub>2</sub>e



### TITLE 24 UPDATES

California's Title 24 Building Energy Code is updated every three years, continually increasing energy and water standards and lowering greenhouse gas emissions. The 2013 Building Energy Efficiency Standards, which take effect on January 1, 2014, are twenty-five percent (25%) more efficient than previous standards for single family residential construction, fourteen percent (14%) more efficient for multifamily construction, and thirty percent (30%) more efficient for non-residential construction.<sup>59</sup> As a result of these standards, it is expected that greenhouse gas emissions will fall by 416 MTCO<sub>2</sub>e annually in 2020 and 1,203 MTCO<sub>2</sub>e annually in 2035.

### COMMERCIAL AND INDUSTRIAL BUILDING ENERGY EFFICIENCY

Inglewood commercial and industrial buildings range from government facilities, office buildings, industrial facilities, schools, and retail shops, and they produced an estimated 121,362 MTCO<sub>2</sub>e in 2010. The City is exploring enacting a commercial and industrial energy conservation ordinance that requires certain businesses to reduce energy use by twenty percent (20%) when a property is sold. Reducing energy consumption and associated emissions by twenty percent (20%) could produce modest greenhouse gas savings in 2020 (106 MTCO<sub>2</sub>e) but could reduce emissions by 2,311 MTCO<sub>2</sub>e as more businesses take advantage of the cost savings associated with reducing energy use. This package of actions includes exploration of point of sale energy use disclosures, energy audits, and energy efficiency upgrades.

As an example, Southern California Edison's SuperSavers Energy Solutions program paid one hundred percent (100%) of energy efficiency improvements for five businesses in Inglewood. Together, they will save a combined 150,000 kilowatt-hours of electricity (kWh), which

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<sup>59</sup> California Energy Commission. 2013. 2013 Energy Efficiency Standards.

translates to savings of approximately \$17,000 on their electric bills. These upgrades will also have the added benefit of lowering greenhouse gas emissions by over 40 MTCO<sub>2</sub>e annually.<sup>60</sup>

## RESIDENTIAL BUILDING ENERGY EFFICIENCY

In 2010, there were nearly 39,000 housing units in Inglewood. Single family dwellings comprised forty-four percent (44%) of the units, multifamily units represented fifty-one percent (51%) of the units, and duplexes and other units comprised the remaining five percent (5%). Eighty-seven percent of these housing units were constructed before California adopted energy conservation standards for new residential and non-residential units (Title 24 of the California Administrative Code).<sup>61</sup>

If nine percent (9%) of the housing units are retrofitted by 2020, greenhouse gas emissions would be reduced by 1,082 MTCO<sub>2</sub>e. Continued to 2035, the program could lower community emissions by 4,840 MTCO<sub>2</sub>e or more. This program could include an energy inspection and the installation of specific energy and water conservation features after purchasing a home. Conservation features could include ceiling insulation, weather stripping, water heater insulation, water conservation devices, and duct insulation.

Related to this strategy, a residential sound insulation program is already underway in the City. The program enables selected homeowners to upgrade doors, windows, and other features to reduce the presence of aircraft noise, inside the homes. In addition to providing sound insulation, these upgrades also result in energy savings and greenhouse gas reductions. As of 2009, 4,950 homes have been soundproofed with an additional 2,747 to be retrofitted by 2020 and 2,579 more by 2035.<sup>62</sup> These additional retrofits are expected to reduce greenhouse gas emissions by 236 MTCO<sub>2</sub>e in 2020 and 441 MTCO<sub>2</sub>e in 2035.

Since over half of the City's units are multifamily and sixty-three and a half percent (63.5%) of the units are renter-occupied, Inglewood needs to develop innovative programs to retrofit multifamily and renter-occupied housing units. Inglewood proposes to develop a multifamily housing retrofit program to encourage investment in housing retrofits. The City will explore a pilot project that uses outside funding to create a loan program for retrofits. The City will also pursue an energy retrofit program to support renter-occupied residential properties, allowing both tenants and landlords to share the costs and benefits of energy efficiency upgrades.

To further support Inglewood residents in making their homes more efficient, the City proposes to develop a weatherization and energy retrofit loan program for low-income homeowners. The City will allocate Housing and Urban Development (HUD) funds to energy improvements and apply for additional HUD funding to make energy improvements.

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<sup>60</sup> City of Inglewood. City of Inglewood Recognizes Five Businesses for Saving Energy. Retrieved from <http://www.cityofinglewood.org/agendastaffreports/08-03-04/CI-1.pdf>

<sup>61</sup> U.S. Census. 2012. American Community Survey.

<sup>62</sup> Los Angeles World Airports. 2009. Land Use Mitigation Program Los Angeles World Airports: A Status Report.

## INSTALL MORE ENERGY EFFICIENT LIGHTING

Street lighting and traffic controls use a significant amount of electricity in Inglewood. In 2007, lighting accounted for approximately eight percent (8%) of City-wide electricity use. As part of Inglewood's overall energy efficiency plan, changing light bulbs on streetlights could save up to forty percent (40%) of this electricity without making any changes to the operations of the lighting. This action would reduce greenhouse gas emissions by 317 MTCO<sub>2</sub>e.



*LED Park Lighting. Source: U.S. DOE*

TABLE 12: STRATEGY 2 – INCREASE ENERGY EFFICIENCY

LOCAL ACTIONS	DESCRIPTION	POTENTIAL GHG REDUCTION IN 2020, 2035 <sup>1</sup>	KEY CO-BENEFITS IN 2020 <sup>1</sup>
<b>Make commercial buildings more efficient</b>			
<b>Explore developing a commercial energy conservation ordinance</b>	Explore the development of a commercial energy conservation ordinance that requires point of sale energy audits and requires commercial businesses to implement energy efficiency measures when sold or transferred	106 MTCO <sub>2</sub> e, 2,311 MTCO <sub>2</sub> e	300,000 kWh reduced; 7,000 therms reduced; \$100,000 savings on energy; adaptive
<b>Explore requiring energy use disclosure</b>	Require businesses to disclose energy use at point of sale	Supportive measure, not quantified	Consumer education
<b>Identify energy efficiency upgrades for historic buildings</b>	Create a suite of energy efficiency upgrades for historic buildings	Supportive measure, not quantified	
<b>Increase the energy efficiency of residential buildings</b>			
<b>Explore developing a residential energy conservation ordinance</b>	Explore developing a residential energy conservation ordinance that requires point of sale energy audits and all single family and multifamily buildings to meet a list of energy efficiency measures when sold or transferred	1,082 MTCO <sub>2</sub> e, 4,840 MTCO <sub>2</sub> e	1,700,000 kWh reduced; 140,000 therms reduced; \$300,000 savings on energy; adaptive
<b>Explore development of a multifamily housing retrofit program</b>	Develop a multifamily housing retrofit program by creating a pilot project that uses outside funding to create a loan program to encourage investment in housing retrofits	Supportive measure, not quantified	Energy use and cost reduced; consumer education; adaptive
<b>Draft a model agreement for tenants and renters</b>	Draft a model agreement to share the costs and benefits of energy efficiency upgrades between tenants and renters	Supportive measure, not quantified	Energy use and cost reduced; consumer education
<b>Establish a weatherization and energy retrofit loan program for low-income homeowners</b>	Establish a weatherization and energy retrofit loan program for low-income homeowners	Supportive measure, not quantified	Energy use and cost reduced; consumer education; adaptive
<b>Continue Residential Sound Insulation Program</b>	Continue implementing the Residential Sound Insulation Program financed by LAX and LAWA	236 MTCO <sub>2</sub> e, 441 MTCO <sub>2</sub> e	600,000 kWh reduced, 20,000 therms reduced; \$100,000 savings on energy; adaptive; reduced noise
<b>Increase the energy efficient street and traffic lights</b>			
<b>Replace commercial lights with LED lights</b>	Work with businesses and Southern California Edison to replace all non-City-owned street and parking lot lights with LED lights	317 MTCO <sub>2</sub> e	700,000 kWh reduced; \$100,000 savings on energy; adaptive

STATE POLICIES & REGULATIONS <sup>2</sup>	DESCRIPTION	POTENTIAL GHG REDUCTION IN 2020, 2035 <sup>1</sup>	KEY CO-BENEFITS IN 2020 <sup>1</sup>
<b>State Action 1: Title 24 Updates</b>	California's Title 24 Building Energy Code is updated every three years, continually increasing energy standards	416 MTCO <sub>2</sub> e, 1,203 MTCO <sub>2</sub> e	kWh reduced; therms reduced

<sup>1</sup>Greenhouse gas emissions reduction and co-benefits represent annual estimates for 2020. For more information on the calculation of greenhouse gases and co-benefits, see Appendix D.

<sup>2</sup>State policies and regulations do not require additional actions by the City of Inglewood.

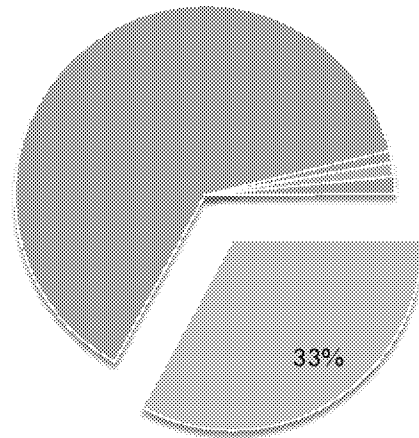


## STRATEGY 3: SUPPORT RENEWABLE ENERGY GENERATION

Even after increasing energy efficiency, energy needs to become cleaner in the future. California adopted a Renewables Portfolio Standard that requires investor-owned utilities, like Southern California Edison, to increase procurement from renewable energy resources to thirty-three percent (33%) of total procurement by 2020. Inglewood hopes to go beyond this goal by fostering electricity generation within the City. This strategy includes actions that will help homes and businesses in the community increase renewable energy production by identifying barriers, streamlining the permitting process, and adopting a Property Assessed Clean Energy (PACE) Program.

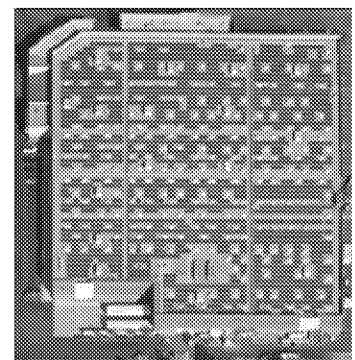
In 2012, over twenty percent (20%) of the energy purchased by Southern California Edison (SoCal Edison) came from a qualified renewable energy source, increasing from seventeen and six-tenths percent (17.6%) in 2005. By 2020, SoCal Edison expects to achieve the thirty-three percent (33%) renewable portfolio target. By adding renewable energy and reducing the carbon intensity of electricity from other energy sources i.e., switching from coal to natural gas, greenhouse gas emissions from SoCal Edison's electricity is expected to fall twenty-seven percent (27%) by 2020.<sup>63</sup> As a result, greenhouse gas emissions in Inglewood would decline by 42,421 MTCO<sub>2</sub>e.

Renewable energy actions represent 33% of Inglewood's emissions reduction in 2020 = 43,177 MT CO<sub>2</sub>e



### SOLAR REBATE PROGRAMS

The California Solar Initiative is the rebate program for customers of Southern California Edison. Since it was initiated in 2007, Inglewood residents generated 70.2 kW of electricity from solar installations, and businesses contributed an additional 585.4 MW of electricity. Solar panels on Costco generated enough electricity to support approximately one-half percent (0.5%) of the total commercial and municipal energy consumption within the City. This local generation of electricity has already resulted in approximately 400 MTCO<sub>2</sub>e fewer greenhouse gas emissions. Assuming conservative residential and commercial solar growth, it is expected that greenhouse gas emissions will decline by 825 MTCO<sub>2</sub>e in 2020 and 2,433 MTCO<sub>2</sub>e in 2035.

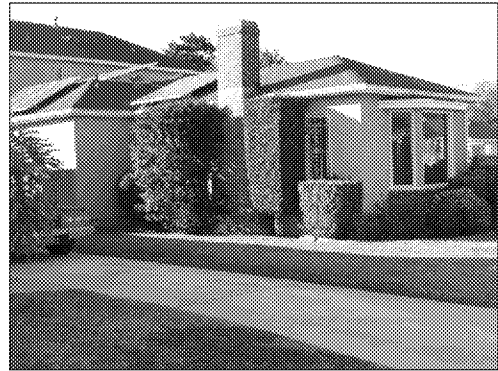


Costco (Inglewood, CA). Source: Google

<sup>63</sup> Energy and Environmental Economics. 2010. *Renewable Energy Standard Calculator*. Retrieved from [http://www.arb.ca.gov/research/econprog/econmodels/RES\\_Calculator/E3\\_RES\\_Calculator\\_Final.zip](http://www.arb.ca.gov/research/econprog/econmodels/RES_Calculator/E3_RES_Calculator_Final.zip).

## REMOVE BARRIERS TO RENEWABLE ENERGY GENERATION

Inglewood proposes a series of actions to aid the deployment of renewable energy generation. The City will conduct an obstacle analysis to understand barriers to implementing renewable energy systems on residential and non-residential structures. The analysis could be used to survey local residents and businesses about the barriers to renewable implementation, and provide clear recommendations on how to overcome specific obstacles identified within the City, including feasible, short-term steps Inglewood can take. These steps could include permitting, infrastructure planning, grid interconnection and net metering, financing, and workforce training and development.



*Residential Solar Panels (Inglewood, CA)*

In tandem with the obstacle analysis, Inglewood will begin to assess how it can improve the renewable permitting process. Allowing renewable energy permits to be provided “over the counter” as much as possible and training code officials about renewable energy permitting are actions the City can take to streamline the permitting process.

## IMPROVE RENEWABLE ENERGY AFFORDABILITY

While the cost of renewable energy generation continues to fall, solar panel installation remains a considerable investment for most homes and businesses. The City proposes to explore the adoption of a Property Assessed Clean Energy (PACE) Program to lower the barriers to renewable energy. Inglewood would define a special assessment district where property-owners can receive long-term, low-interest loans for renewable energy generation and energy efficiency improvements. Local governments can participate in a state-wide program called CaliforniaFIRST, or they can establish their own AB 811 programs.

Grants, rebates, and performance-based incentives (PBIs) can be used to make energy generation more affordable in Inglewood. As an example, utilities offer PBIs for systems equal to or greater than 30 kW through the California Solar Initiative. The PBI incentive is paid over a five-year period and is based on actual solar energy production. Costco in Inglewood is participating in a PBI.

## EDUCATE POTENTIAL CUSTOMERS

The Green Building Center could be a key implementation action to support renewable energy generation in Inglewood. Developing a customer assistance program as part of the Green Building Center will help residents and businesses better understand the process for solar installation as well as determining whether consumers decide to install solar energy systems. Assistance programs can be structured to provide site analysis by a trained professional, financial analysis, product and vendor information, and permitting process information.

The Roger’s Park Solar Demonstration Project will also be a focal point of Inglewood’s efforts to engage consumers about solar energy. The project can be used to highlight solar technologies, provide educational materials, and emphasize the benefits resulting from the project.

TABLE 13: STRATEGY 3 – SUPPORT RENEWABLE ENERGY GENERATION

LOCAL ACTIONS	DESCRIPTION	GREENHOUSE GAS REDUCTION IN 2020, 2035 <sup>1</sup>	KEY CO-BENEFITS IN 2020 <sup>1</sup>
<b>Remove barriers to renewable energy generation</b>			
<b>Obstacle analysis</b>	Complete an obstacle analysis to understand barriers to implementing photovoltaic systems on residential and non-residential structures	Supportive measure, not quantified	
<b>Streamline renewable energy installation</b>	Streamline residential renewable installation by training staff and providing permits “over the counter”	Supportive measure, not quantified	
<b>Make renewable energy generation more affordable</b>			
<b>Explore Property Assessed Clean Energy Program</b>	Explore the adoption of a Property Assessed Clean Energy (PACE) Program to offer loans for energy generation and efficiency projects for homes and businesses	Supportive measure, not quantified	
<b>Pursue grants, rebates, and other incentives</b>	Help businesses and residents identify grants, rebates, and other incentives to support renewable energy generation	Supportive measure, not quantified	
<b>Educate potential customers</b>			
<b>Explore establishing a Green Building Center</b>	Provide information to businesses and residents about incentives for renewable energy generation through the Green Building Center	Supportive measure, not quantified	Energy reduced; consumer education
<b>Highlight the Roger's Park Solar Demonstration Project</b>	Use the project to highlight solar technologies, provide educational materials, and emphasize the benefits of renewable energy	Supportive measure, quantified as part of Strategy 1: Lead by Example	

STATE POLICIES & REGULATIONS <sup>2</sup>	DESCRIPTION	GREENHOUSE GAS REDUCTION IN 2020, 2035 <sup>1</sup>	KEY CO-BENEFITS IN 2020 <sup>1</sup>
<b>State Action 1: Renewables Portfolio Standard</b>	Requires investor-owned utilities, such as Southern California Edison, to increase procurement from renewable energy resources to 33% of total procurement by 2020	42,421 MTCO <sub>2e</sub> , 58,665 MTCO <sub>2e</sub>	
<b>State Action 2: Solar Rebate Programs</b>	Incentivize residents and businesses with solar rebates, examples include the California Solar Initiative	775 MTCO <sub>2e</sub> , 2,137 MTCO <sub>2e</sub>	3.6 million kWh reduced; 3,600 therms

<sup>1</sup>Greenhouse gas emissions reduction and co-benefits represent annual estimates for 2020. For more information on the calculation of greenhouse gases and co-benefits, see Appendix D.

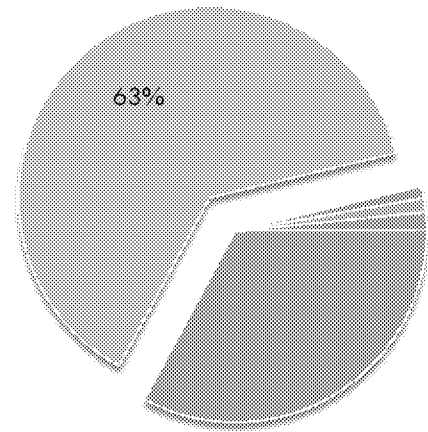
<sup>2</sup> State policies and regulations do not require additional actions by the City of Inglewood.

## STRATEGY 4: IMPROVE TRANSPORTATION OPTIONS AND MANAGE TRANSPORTATION DEMAND

Inglewood residents make trips to a variety of places each day. They commute to work, make a shopping trip, visit the doctor, or meet a friend for dinner. Each trip adds up, with over 1.5 million vehicle miles traveled (VMT) in the City each day, producing 322,042 MTCO<sub>2</sub>e from transportation-related emissions in 2010. As a percentage, this was over half of the City's greenhouse gas emissions.

Lowering transportation emissions requires making vehicles and their fuels cleaner, reducing the length of driving trips, managing the demand for travel, and providing alternatives such as walking, biking, and transit for travel. Addressing transportation emissions will have the added benefits of increasing walking and bicycling and improving the health of Inglewood residents. Strategy 4 builds on the planning, policy, and capital improvements already underway within the City to reduce VMT and improve the quality of life for residents and workers.

Transportation actions represent 63% of Inglewood's emissions reduction in 2020 = 83,001 MT CO<sub>2</sub>e



AB 1493 directed the ARB to set more stringent vehicle fuel economy standards for cars and light trucks that reduce greenhouse gas emissions. The standards would reduce emissions from passenger vehicles by approximately thirty percent (30%) in 2016. It is expected that the clean cars standards will reduce greenhouse emissions from transportation sources by 55,006 MTCO<sub>2</sub>e in 2020 and 76,261 MTCO<sub>2</sub>e in 2035. Low Carbon Fuel Standard requires that the carbon intensity of California's transportation fuels be reduced by at least ten percent (10%) by 2020. As a result of this standard, greenhouse gas emissions from transportation fuels are expected to decline by 23,297 MTCO<sub>2</sub>e in 2020.

### MAKE ROADWAYS MORE EFFICIENT

The City of Inglewood is already employing Intelligent Transportation Systems (ITS) information technology to better manage roadway performance and efficiency. The City completed their ITS Phase 3 project in 2010 and the ITS Phase 4 project is now under design. The project will implement improvements to smooth traffic flow, reduce idling, and manage speed. Strategies will include signalization improvements to reduce delay and incident management to increase response time to breakdowns and collisions. Intelligent Transportation Systems (ITS) will be used to provide real-time information regarding road conditions and directions, and speed management to reduce high free-flow speeds. These upgrades are expected to reduce vehicle miles traveled by 600,000 annually in 2020, and lower greenhouse gas emissions by 245 MTCO<sub>2</sub>e.



*Pedestrian-friendly Streetscape (Inglewood, CA)*

## PROVIDE SAFE MOBILITY FOR ALL USERS

Complete streets ensure more convenient options for people to travel from one place to another, and can increase physical activity, reduce congestion and greenhouse gas emissions, and enhance the safety of travelers. The City of Inglewood will continue to support multi-modal transportation by reconstructing streets for pedestrians, bicyclists, motorists and public transportation users of all ages and abilities as it is currently doing through its Capital Improvement Program. These policies and actions include focusing

on pedestrian visibility, improving the connections between neighborhoods and commercial areas, providing places to sit or gather, and including amenities that attract people of all ages and abilities. Street and sidewalk improvements in the Capital Improvement Program, such as those on Century, La Brea, La Cienega, Florence, and Van Ness, are expected to reduce greenhouse gas emissions by 515 MTCO<sub>2</sub>e in 2020 and 1.2 million vehicle trips.

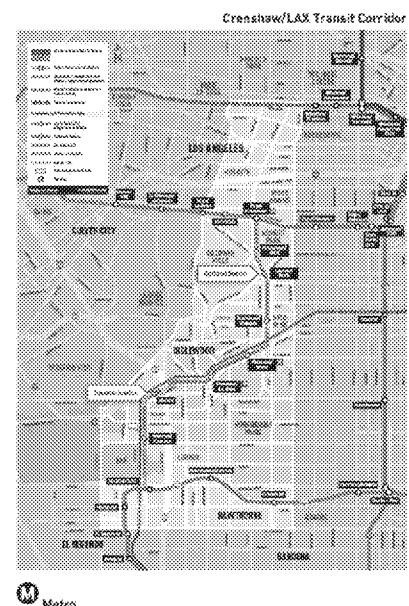
## INCREASE PARKING EFFICIENCY

The City of Inglewood proposes to explore a suite of actions aimed at managing on-street parking, reducing off-street parking requirements, and providing employees with a cash incentive for shifting from driving to non-automobile transportation. Taken together, these measures are expected to lower VMT by 5.4 million in 2020, reducing greenhouse gas emissions by 2,405 MTCO<sub>2</sub>e.

## IMPROVE TRANSIT

In 2018, the 8.5-mile Metro Crenshaw/LAX Transit Corridor Project will connect the existing Metro Exposition Line station at Crenshaw and Exposition Boulevards to Los Angeles International Airport, including two stops in Inglewood. The City proposes to prioritize transportation funding around the transit stations to encourage walking and bicycling and to calm traffic. It is estimated that the rail line will reduce VMT by nearly 2.2 million annually, while increasing walking trips by nearly half a million. As a result, greenhouse gas emissions are expected to decline by 969 MTCO<sub>2</sub>e.

Along with the rail project, the City proposes to expand and reconfigure local shuttle service and work with Metro to improve local transit stops. The I-Line has been a success, and the City will explore expansion of the shuttle system as well as reconfiguring the I-Line's



route to accommodate new development in the City. At the same time, Inglewood will work with Metro to improve the safety and cleanliness of transit stops, provide real-time service information, and alter the fare structure. Taken together, these measures will encourage non-automobile travel and reduce VMT and greenhouse gas emissions.

## IMPROVE BICYCLE FACILITIES

By walking and biking more, Inglewood residents will drive less, improve health, and achieve long-term greenhouse gas emissions. The City estimates biking trips will increase by approximately 300 daily riders by implementing the General Plan Proposed Bicycle Routes, requiring bicycle parking in new commercial and multifamily buildings, and encouraging additional end-of-trip facilities such as showers. It is expected that this package of bicycle improvements will reduce VMT by 1.2 million annually and greenhouse gas emissions by 524 MTCO<sub>2</sub>e in 2020.



*Bike Boulevard (Long Beach, CA). Source: Bikeable Communities*

## WORK WITH EMPLOYERS TO REDUCE COMMUTE TRIPS

In 2010, approximately seventy-six percent (76%) of Inglewood workers drove to work alone. Working with local employers, the City proposes a set of actions to reduce the number of daily commute trips, lowering vehicle miles traveled and greenhouse gas emissions. The suite of actions includes implementing a voluntary commute trip reduction program, encouraging telecommuting and alternative work schedules, implementing commute trip reduction marketing, implementing subsidized or discounted transit program, and providing employer-sponsored vanpool and shuttles. Owing to the difficulty of implementation these measures across many employers, these actions are expected to lower greenhouse gas emissions by only 29 MTCO<sub>2</sub>e in 2020.

## ENCOURAGE LAND USE INTENSIFICATION AND DIVERSITY

Increasing density and mixing land use types can decrease VMT since trips between uses are shorter and can be accomplished by walking, biking, or taking transit. The City of Inglewood proposes targeting future development in areas around transit stations, particularly the future Crenshaw/LAX Transit Rail Project. This will increase the number of potential transit riders and lower VMT. Similarly, income plays an important role in how workers travel to their place of employment. Below market rate housing, especially near transit stations, provides an opportunity for lower income households to live closer to job destinations. These measures are estimated to reduce greenhouse gas emissions by 7 MTCO<sub>2</sub>e in 2020; however, concentrating a significant increment of the City's projected growth in the Downtown area or near the Crenshaw rail transit would further reduce greenhouse gas emissions.

TABLE 14: STRATEGY 4 – IMPROVE TRANSPORTATION OPTIONS AND MANAGE TRANSPORTATION DEMAND

LOCAL ACTIONS	DESCRIPTION	GREENHOUSE GAS REDUCTION IN 2020, 2035 <sup>1</sup>	KEY CO-BENEFITS IN 2020 <sup>1</sup>
<b>Make roadways more efficient</b>			
<b>Continue implementation of Intelligent Transportation System Plan</b>	Improve traffic flow by using Intelligent Transportation System elements to reduce delay, increase incident response time, and provide real-time information	245 MTCO <sub>2e</sub> , 231 MTCO <sub>2e</sub>	600,000 fewer VMT; reduced fuel consumption; fewer criteria pollutants
<b>Continue to make street and sidewalk improvements to ensure a safe and convenient system for pedestrians</b>	Use the Capital Improvement Program to improve pedestrian safety and access through City-wide corridor improvements	515 MTCO <sub>2e</sub> , 474 MTCO <sub>2e</sub>	1.2 million fewer VMT; 1 million additional walk trips; reduced fuel consumption; fewer criteria pollutants
<b>Improve transit</b>			
<b>Crenshaw Corridor Light Rail Service</b>	Work with Metro to develop station areas in Inglewood for the Crenshaw Corridor Light Rail Service	969 MTCO <sub>2e</sub> , 892 MTCO <sub>2e</sub>	2.2 million fewer VMT; 500,000 additional walk trips; reduced fuel consumption; fewer criteria pollutants
<b>Provide and expand local shuttle service</b>	Provide and expand local shuttle services like the I-Line	3 MTCO <sub>2e</sub> 4 MTCO <sub>2e</sub>	8,000 fewer VMT; reduced fuel consumption; fewer criteria pollutants
<b>Prioritize transportation funding for pedestrians and cyclists around transit</b>	Prioritize transportation funding around transit stations to encourage walking and bicycling and to calm traffic	Supportive measure, not quantified	
<b>Improve transit stops</b>	Work with Metro to improve the safety and cleanliness of transit stops and provide real-time service information	Supportive measure, not quantified	
<b>Improve bicycle facilities</b>			
<b>Expand bike lanes</b>	Implement the General Plan proposed bicycle routes or equivalent	524 MTCO <sub>2e</sub> , 472 MTCO <sub>2e</sub>	1.2 million fewer VMT; 300 additional cyclists; reduced fuel consumption
<b>Increase bicycle parking</b>	Require new commercial developments and multifamily housing to provide secure bicycle parking	Supportive measure, not quantified	
<b>Provide end-of-trip facilities</b>	Encourage employers to provide end-of-trip facilities, including bike lockers, showers, and changing spaces	Supportive measure, not quantified	
<b>Make parking more efficient</b>			
<b>Explore implementing market rate pricing for on-street parking near transit</b>	Introduce market rate pricing for on-street parking within one quarter of a mile from Crenshaw Transit Corridor Stations	2,387 MTCO <sub>2e</sub> , 2,253 MTCO <sub>2e</sub>	5.4 million fewer VMT; reduced fuel consumption; fewer criteria pollutants
<b>Explore limiting parking for new development</b>	Establish parking maximums for new development within one-half mile of future rail or rapid bus stations	12 MTCO <sub>2e</sub> , 13 MTCO <sub>2e</sub>	14,000 fewer VMT; reduced fuel consumption; fewer criteria pollutants

LOCAL ACTIONS	DESCRIPTION	GREENHOUSE GAS REDUCTION IN 2020, 2035 <sup>1</sup>	KEY CO-BENEFITS IN 2020 <sup>1</sup>
<b>Explore unbundling parking</b>	Unbundle parking from residential property cost for new construction in the Downtown TOD overlay zone	6 MTCO <sub>2e</sub> , 7 MTCO <sub>2e</sub>	27,000 fewer VMT; reduced fuel consumption; fewer criteria pollutants
<b>Explore allowing parking cash out</b>	Allow parking cash out for City Hall and businesses within 1/2 of a mile from Crenshaw Transit Corridor Stations	7 MTCO <sub>2e</sub> , 14 MTCO <sub>2e</sub>	15,000 fewer VMT; reduced fuel consumption
<b>Explore expanding the residential parking permit program</b>	Explore expanding the existing residential area parking permit program within the City	Supportive measure, not quantified	
<b>Reduce commute trips</b>			
<b>Implement a voluntary commute trip reduction program</b>	Implement a voluntary commute trip reduction program that includes a ridesharing website	5 MTCO <sub>2e</sub> , 11 MTCO <sub>2e</sub>	12,000 fewer VMT; reduced fuel consumption; fewer criteria pollutants
<b>Encourage telecommuting and alternative work schedules</b>	Encourage employers to offer telecommuting and alternative work schedules to workers	2 MTCO <sub>2e</sub> , 3 MTCO <sub>2e</sub>	4,000 fewer VMT; reduced fuel consumption; fewer criteria pollutants
<b>Establish commute trip reduction marketing</b>	Coordinate with Metro, government agencies, and non-profits to implement region and city-wide commute trip reduction marketing	2 MTCO <sub>2e</sub> , 1 MTCO <sub>2e</sub>	4,000 fewer VMT; reduced fuel consumption; fewer criteria pollutants
<b>Encourage subsidized or discounted transit program</b>	Work with local employers encouraging them to implement subsidized or discounted transit program	7 MTCO <sub>2e</sub> , 14 MTCO <sub>2e</sub>	15,000 fewer VMT; reduced fuel consumption; fewer criteria pollutants
<b>Provide employer-sponsored vanpool and shuttles</b>	Encourage employers to provide vanpool and shuttles from major transit stations	7 MTCO <sub>2e</sub> , 14 MTCO <sub>2e</sub>	15,000 fewer VMT; reduced fuel consumption; fewer criteria pollutants
<b>Encourage land use intensification and diversity</b>			
<b>Target future development in areas around transit stations</b>	Target future development in areas around Crenshaw Rail transit stations	7 MTCO <sub>2e</sub> , 15 MTCO <sub>2e</sub>	15,000 fewer VMT; reduced fuel consumption; fewer criteria pollutants
<b>Encourage construction of affordable and market rate housing</b>	Encourage construction of affordable and market rate housing, particularly in areas around transit stations	0.2 MTCO <sub>2e</sub> , 2 MTCO <sub>2e</sub>	~1,000 fewer VMT; reduced fuel consumption; fewer criteria pollutants

STATE POLICIES & REGULATIONS <sup>2</sup>	DESCRIPTION	GREENHOUSE GAS REDUCTION IN 2020, 2035 <sup>1</sup>	KEY CO-BENEFITS IN 2020 <sup>1</sup>
<b>State Action 1: Clean Cars Standards (Pavley)</b>	Sets more stringent vehicle fuel economy standards for cars and light trucks that reduce greenhouse gas emissions	55,006 MTCO <sub>2e</sub> , 76,261 MTCO <sub>2e</sub>	Reduced fuel consumption; fewer criteria pollutants
<b>State Action 2: Low Carbon Fuel Standard</b>	Requires the carbon intensity of California's transportation fuels be reduced by 2020	23,297 MTCO <sub>2e</sub> , 23,873 MTCO <sub>2e</sub>	Fewer criteria pollutants

<sup>1</sup>Greenhouse gas emissions reduction and co-benefits represent annual estimates for 2020. For more information on the calculation of greenhouse gases and co-benefits, see Appendix D.

<sup>2</sup> State policies and regulations do not require additional actions by the City of Inglewood.



## STRATEGY 5: REDUCE CONSUMPTION AND WASTE

At its most basic level, climate change and greenhouse gas emissions are the result of the production, transportation, and consumption of goods and services. The increase in use of water, the generation of solid waste, and growth of food miles all contribute to emissions by Inglewood businesses and residents. To reduce consumption and waste, the City will require efforts from businesses and residents, resulting in significant savings for residents, businesses, and the City of Inglewood.

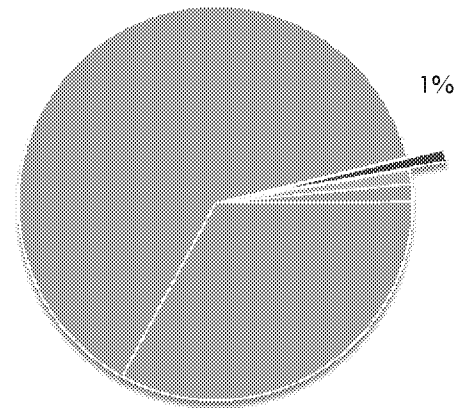
### USE LESS WATER

In 2010, businesses and residents in Inglewood used approximately 3,280 million gallons of potable water (10,069 acre-feet) and 222 million gallons of recycled water (683 acre-feet). As a result of the energy used to collect, convey, treat, and deliver water to users, and then the additional energy used to collect, treat, and dispose of the resulting wastewater, it is estimated that energy use for water processes resulted in 11,993 MTCO<sub>2</sub>e in 2010. Water use is projected to grow into the future, reaching 4,055 million gallons in 2020 and increasing greenhouse gas emissions.

To address growing water demands, the City proposes a series of actions to conserve water and reduce the energy used to process water and wastewater. The City is planning to increase the amount of groundwater used from thirty percent (30%) to forty-five percent (45%). This change would reduce emissions about as much as 759 MTCO<sub>2</sub>e, approximately 6% of the emissions from water processing. Seven percent of the water used in Inglewood is already recycled. The City seeks to expand the use of recycled water and gray water. By increasing the proportion of recycled water from seven percent (7%) to ten percent (10%) and gray water from zero percent (0%) to three percent (3%), approximately 275 MTCO<sub>2</sub>e fewer would be produced.

Along with transitioning water supply to local sources and increasing the use of recycled and gray water, the City proposes to continue and expand programs to conserve water use. Inglewood residents can already participate in the Social WaterSmart program, which include programs for turf removal, low-flow fixtures, and smart irrigation systems. Since 2009, over 120 homes in Inglewood have participated in the low-flow fixture program, resulting in water savings of 12 million gallons annually. Continuing this program will result in 12 MTCO<sub>2</sub>e fewer emissions by 2020.

Consumption and waste actions represent 1% of Inglewood's emissions reduction in 2020 = 1,281 MT CO<sub>2</sub>e



*West Basin Ocean Friendly Demonstration Garden Project established a drought-tolerant garden.*

Irrigation and turf removal program is expected to reduce emissions by 95 MTCO<sub>2</sub>e in 2020

## PRODUCE LESS WASTE

Between 1990 and 2010, the amount of solid waste generated by Inglewood businesses and residents fell by one third, declining from over 120,000 tons of solid waste in 1990 to 81,000 tons of waste in 2010. Recycling rates for homes and businesses have increased to forty-four percent (44%), while the construction recycling rate now exceeds fifty percent (50%). To further reduce waste, the City proposes continued solid waste reductions and higher waste diversion rates. Increasing the commercial and residential recycling rate to sixty-five percent (65%) would reduce greenhouse gas emissions by 74 MTCO<sub>2</sub>e, and increasing the construction waste recycling rate to seventy-five percent (75%) would reduce emissions by 66 MTCO<sub>2</sub>e.

Along with recycling programs, Inglewood will begin to explore green waste programs and becoming a zero waste community. A pilot restaurant cooking oil collection program is expected to begin in 2013.

## PROMOTE LOCAL FOOD PRODUCTION AND CONSUMPTION

The production, transportation, consumption, and disposal of food results in a significant amount of greenhouse gas emissions. The IPCC found that livestock production alone accounted for eighteen percent (18%) of the world's greenhouse gas emissions, a share larger than that of the transportation sector.<sup>64</sup> The City proposes a series of policies and actions to promote local food production and consumption. These include assisting Community Supported Agriculture (CSAs), starting a farmer's market, identifying locations for community gardens, creating edible school yards, promoting local gardening and composting, and supporting community kitchens. Taken together, these actions will help reduce food miles and energy used to produce food, resulting in fewer greenhouse gas emissions. These actions also have the added benefit of improving the health of Inglewood residents.



*Warren Lane Learning Garden (Inglewood, CA).*

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<sup>64</sup> Steinfeld H, Gerber P, Wassenaar T, Castel V, Rosales M, de Haan C. 2006. *Livestock's long shadow: Environmental issues and options*. Rome: Food and Agriculture Organization of the United Nations.

TABLE 15: STRATEGY 5 – REDUCE CONSUMPTION AND WASTE

LOCAL ACTIONS	DESCRIPTION	GREENHOUSE GAS REDUCTION IN 2020, 2035 <sup>1</sup>	KEY CO-BENEFITS IN 2020 <sup>1</sup>
<b>Use less water</b>			
<b>Increase locally sourced water</b>	Increase the amount of water gathered from local sources	759 MTCO <sub>2e</sub> , 776 MTCO <sub>2e</sub>	2 million kWh reduced, adaptive
<b>Increase recycled water use</b>	Accelerate the use of recycled water for irrigation and landscaping	136 MTCO <sub>2e</sub> , 370 MTCO <sub>2e</sub>	49 million gallons water saved; \$40,000 savings; adaptive
<b>Use gray water</b>	Adopt a community-wide ordinance that allows gray water “stub-outs” for residential properties and dual plumbing for indoor recycled water use for commercial and industrial development	140 MTCO <sub>2e</sub> , 428 MTCO <sub>2e</sub>	50 million gallons water saved; \$40,000 savings; adaptive
<b>Accelerate and expand low-flow water fixture programs</b>	Accelerate the installation of low-flow water fixtures in residential homes and expand the program to commercial businesses	12 MTCO <sub>2e</sub> , 31 MTCO <sub>2e</sub>	4 million gallons water saved; \$18,000 savings; adaptive
<b>Reduce water for landscaping</b>	Reduce landscaping water use by encouraging water-efficient irrigation systems, grass replacement, and planting native and drought-resistant trees and vegetation	95 MTCO <sub>2e</sub> , 237 MTCO <sub>2e</sub>	36 million gallons water saved; \$140,000 savings; adaptive
<b>Produce less waste</b>			
<b>Increase recycling rates</b>	Increase residential, commercial, and construction recycling above California minimums	140 MTCO <sub>2e</sub> , 313 MTCO <sub>2e</sub>	800 tons of waste diverted
<b>Start a green waste program</b>	Start a green waste program, including a commercial cooking oil recycling program	Supportive measure, not quantified	
<b>Zero waste education</b>	Work with local solid waste collection agency to educate the community about zero-waste programs	Supportive measure, not quantified	
<b>Promote local food production</b>			
<b>Assist Community Supported Agriculture</b>	Allow city facilities to be used as Community Supported Agriculture drop off sites	Supportive measure, not quantified	Adaptive
<b>Start a farmer’s market</b>	Start a certified farmer’s market in Inglewood	Supportive measure, not quantified	Adaptive
<b>Create community gardens</b>	Identify and prioritize locations to create community gardens throughout Inglewood	Supportive measure, not quantified	Adaptive
<b>Promote gardening and composting</b>	Provide resources and information regarding community gardening and composting to educate the general public on how to grow organic edible plants	Supportive measure, not quantified	
<b>Organize tool lending program and bounty exchange</b>	Work with community organizations and neighborhood groups to organize a garden-tool lending program and garden bounty exchange program	Supportive measure, not quantified	
<b>Create edible school yards</b>	Partner with schools and other organizations to create “edible school yards” and sustainable gardening programs at public and private schools	Supportive measure, not quantified	
<b>Support community kitchens</b>	Support the development of community commercial kitchens that allow residents to pursue micro-enterprise and small businesses	Supportive measure, not quantified	

<sup>1</sup>Greenhouse gas emissions reduction and co-benefits represent annual estimates for 2020. For more information on the calculation of greenhouse gases and co-benefits, see Appendix D.

## **STRATEGY 6: ADAPT TO THE POTENTIAL IMPACTS OF CLIMATE CHANGE**

While many governments like Inglewood are taking steps to reduce greenhouse gas emissions, there is recognition that mitigation efforts will not reduce emissions levels in the atmosphere quickly enough to avoid some of the projected impacts of climate change. With this understanding, many state, regional, and local governments have initiated efforts to adapt their communities to the impacts of climate change. This is considered Adaptation. Climate change and variability will aggravate existing vulnerabilities and add to the complexity of improving health outcomes. Many states and communities have recognized this fact and undertaken steps to incorporate climate change and associated impacts into planning and policy initiatives. This strategy begins to outline steps that the City can take now to reduce the potential impacts of climate change on the community.

### **INCORPORATE CLIMATE CHANGE CONSIDERATIONS**

The City proposes to explore incorporating increases in extreme heat days, heat waves, and other climate-related events into existing planning documents and decision-making frameworks. The City will coordinate with County and other local governments to refine the Emergency Operations Plan and Procedures for climate events likely to increase with climate change, incorporate increases in extreme heat days, prolonged heat waves, and higher intensity precipitation events into the Inglewood Local Hazard Mitigation Plan, and begin to define strategies to reduce climate vulnerability into all elements of the General Plan. The City will also consider integrating historic drought and future climate scenarios into the Urban Water Management Plan to understand the impacts of climate change on surface and ground water supply.

For each project, program, infrastructure investment, and land use decision, City staff and leaders should also “ask the climate question” to incorporate a climate dimension into planning and decision-making. What climate change impacts could affect the project and what steps can be taken to minimize these impacts?

### **INCREASE RESILIENCY TO IMPACTS OF CLIMATE CHANGE**

The impacts of climate change will not be evenly distributed across Inglewood as infants and children, the elderly, outdoor workers, asthmatics, individuals with limited English proficiency, special needs residents, and others will be more sensitive to climatic changes. The City proposes a series of actions that identifies populations vulnerable to climate change, monitors changes in the population overtime, and establishes communication networks and an outreach program for these groups. Since neighborhoods and populations that already experience social, economic, and environmental injustice will likely bear a larger proportion of the public health impacts of climate change. Inglewood will explore directing resources to these communities to address current inequities and build the adaptive capacity of these groups.

### **MAKE BUSINESSES AND WORKERS MORE RESILIENT TO CLIMATE CHANGE**

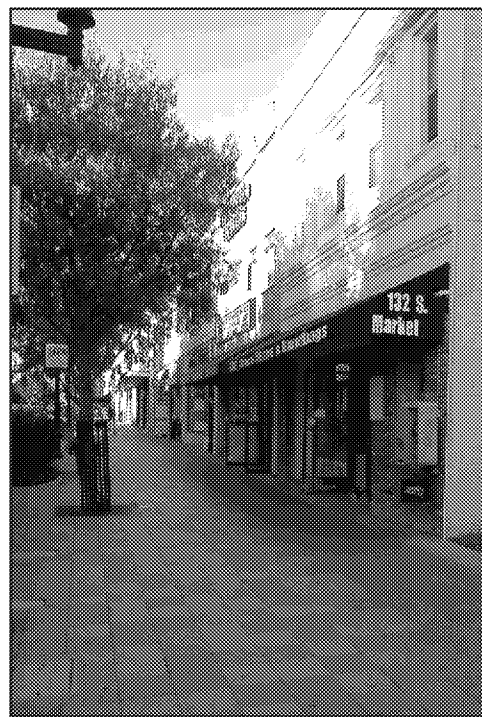
Storms and heat waves can disrupt the supply of and increase the demand for energy in California, and climate change is expected to increase the frequency, intensity, and duration of these extreme events. The City proposes to reduce electricity use by commercial and municipal

accounts, particularly during peak periods, to avoid electricity disruptions. This includes deployment of energy efficiency measures and working with Southern California Edison to distribute information to businesses about Demand Response Programs in order to reduce energy use during peak demand.

Extreme heat events and worsening air quality will also disproportionately affect low-income residents, particularly those that labor outside. To help protect these workers, Inglewood will explore ways to work with employers to educate outdoor workers about how to stay cool during extreme heat events. Along with heat-related illness, exhaust from transportation and industrial sources causes ground-level ozone which accumulates at high concentrations in the atmosphere during warm days. Unhealthy concentrations of pollutants can trigger and worsen public health problems such as asthma, chest pain, coughing, and other respiratory diseases. Inglewood will explore working with the Air Quality Management District and County Public Health Department to establish a process (and expand the number of platforms e.g., social media) to notify schools, community organizations, residents, and businesses.

## **ADDRESS HEALTH IMPACTS OF CLIMATE CHANGE**

Inglewood will likely experience a larger number of extreme heat days, warm nights, and more prolonged periods of hot weather. Periods of increased high temperatures or extended high temperatures can lead to increased heat-related mortality, cardiovascular-cause mortality, respiratory mortality, heart attacks, and other causes of mortality. Inglewood should work with Los Angeles County to expand access to the drop-in cooling centers for people vulnerable to high heat days. This set of actions includes organizing a transportation-assistance program and disseminating information about the health effects of heat. Similarly, the City will explore starting a heat island program to reduce the heat threats of higher temperatures in urbanized areas of Inglewood. This strategy could include street and neighborhood-scale measures such as tree planting and park expansion as well as building-specific actions such as cool roofs and light-colored paving.



*Street Trees (Inglewood, CA)*

TABLE 16: STRATEGY 6 – ADAPT TO THE POTENTIAL IMPACTS OF CLIMATE CHANGE

LOCAL ACTIONS	DESCRIPTION
<b>Incorporate climate change into existing planning and decision-making frameworks</b>	
<b>Ask the Climate Question</b>	For each project, program, infrastructure investment, and land use decision, City staff and leaders should “ask the climate question” to incorporate a climate dimension into planning and decision-making.
<b>Emergency Operations Plan and Procedures</b>	Coordinate with County and other local governments to refine the existing Emergency Operations Plan and Procedures for climate events likely to increase with climate change
<b>Local Hazard Mitigation</b>	Incorporate increases in extreme heat days, prolonged heat waves, and higher intensity precipitation events into the Inglewood Local Hazard Mitigation Plan.
<b>General Plan</b>	During the next General Plan update, begin to incorporate strategies to reduce climate vulnerability into all elements of the plan.
<b>Increase the resiliency of neighborhoods, populations, and individuals to the potential impacts of climate change</b>	
<b>Community vulnerability assessment</b>	Conduct a community-wide assessment of the potential health impacts of climate change on Inglewood residents, identifying the neighborhoods, groups, and individuals most vulnerable to climate change and specific opportunities for the city to reduce vulnerability among specific groups.
<b>Communication network and outreach program</b>	Develop an outreach program for vulnerable populations that provides information on the risks of climate change and actions that they can take to reduce their exposure to unhealthy conditions. Leverage the existing Community Emergency Response Team (CERT) and other social networks to distribute information.
<b>City website and social media</b>	Make emergency preparedness information more visible on the Inglewood website and use social media to make information more readily available.
<b>Emergency Preparedness Coordinator</b>	Fund a part-time or contract Emergency Preparedness Coordinator to oversee City-wide preparedness for both non-climate and climate-related events.
<b>Energy efficiency and water conservation</b>	Leverage existing programs that promote energy efficiency and water conservation to retrofit the homes of Inglewood’s most-vulnerable residents.
<b>Heat island</b>	Target urban heat island programs to increase resilience to climate change.
<b>Food security</b>	Improve access to healthy foods in low-income communities, increase food security, and promote sustainable local food systems to reduce food miles.
<b>Make businesses and workers more resilient to climate change</b>	
<b>Commercial energy demand</b>	Work with Southern California Edison to distribute information to businesses about Demand Response Programs in order to reduce energy use during peak demand.
<b>Municipal energy demand</b>	Enroll Inglewood in the SCE Demand Response Program to reduce energy use.
<b>Protect workers</b>	Work with employers to educate outdoor workers about how to stay cool during extreme heat events.
<b>Air quality notifications</b>	Work with the Air Quality Management District and County Public Health Department to establish a process (and expand the number of platforms e.g., social media) to notify schools, community organizations, residents, and businesses
<b>Address the potential health impacts of extreme temperatures and heat waves by expanding access to Cooling Centers and air conditioning and implementing a heat island program</b>	
<b>Transportation to Cooling Centers</b>	Organize a transportation-assistance program for individuals without access to vehicles.
<b>Heat warning systems</b>	Work with state and local organizations to develop a robust heat warning system.
<b>High heat day information</b>	Coordinate with the County Health Department to provide up-to-date information to residents about the health effects of heat and Cooling Center locations throughout the County.
<b>Air conditioning</b>	Seek to reduce exposure to extreme heat by targeting the distribution of energy-efficient, air conditioning in vulnerable populations.
<b>Light-colored, cool roofs</b>	Explore a cool roofs policy for new residential development with air conditioning that applies the voluntary standards established by CalGreen.
<b>Light-colored paving</b>	Evaluate on-going pilot programs for cool paving materials (examples include Chula Vista, Chicago) to determine whether the City should establish a cool paving policy.
<b>Vegetative cover and planting</b>	Promote the increase in vegetative cover and green roofs to cool the environment through shading and evapotranspiration.
<b>South and west side tree planting</b>	Explore requiring the planting of shade trees on the south and west facings sides of new residential and commercial development.

# 5 | IMPLEMENTATION

In order for Inglewood to meet its proposed greenhouse gas emissions target and goal, concerted efforts by many different parties will be necessary. For one, the City will need to continue to implement projects to directly improve municipal infrastructure and buildings. The City will also need to revise or create new incentives for resource conservation, retrofits to existing buildings, and other aspects of the built environment controlled by private citizens and corporations. Finally, the City will need to revise or create new regulations that require development projects to achieve higher levels of environmental performance. With these new and revised regulations and incentives, the private sector will implement the physical changes to the non-publically-owned components of the built environment. As a result, the City's emissions reduction target for 2020 and goal for 2035 will be achieved through three broad efforts:

- City actions and programs;
- Upgrades and retrofits to existing buildings; and
- More stringent standards for new development projects.

This chapter of the Inglewood ECAP provides the framework for addressing these efforts. The community-wide actions section provides an implementation program for City programs that will help mitigate greenhouse gas emissions and prepare for a changing climate. Additionally, this section includes those measures the City will undertake in order to help facilitate upgrades and retrofits to existing buildings.

## COMMUNITY-WIDE ACTIONS

As discussed above, the community-wide actions section provides an implementation program for City actions and programs that will help mitigate municipal and community-wide greenhouse gas emissions and prepare for adaptation to a changing climate. The actions are all organized under the six strategies presented in the ECAP. The implementation actions are organized into a matrix which will provide the City, community groups, individuals, and partner government agencies with a work plan to realize Inglewood's low carbon future. While the ECAP analyzes the benefits of state and federal programs as well, the following list of actions is limited to local actions and responsibilities.

## IMPLEMENTATION ACTIONS

In the matrix that follows, each implementation action includes the following information:

- **Current/Future** – Under each goal, the actions are classified as either a current (on-going) project that the City expects will continue and/or expand, or a future project that the City wants to pursue.
- **Implementation Action** – A short phrase to describe the action (almost like a title).
- **Description** – An actionable description of the implementation action. Some actions include endnote references to supportive background material or example projects.
- **Timeframe** – A broad timeframe that refers to when the action should be implemented. The timeframes are as follows:
  - Ongoing – Current/ongoing projects
  - Immediate – Within one year of ECAP adoption.
  - Short – Within 2 to 4 years of ECAP adoption.
  - Medium – Between approximately 5 and 7 years of ECAP adoption.
  - Long –10+ years after ECAP adoption.
- **Relative Cost** – The relative cost of each action. Please note that these cost estimates are qualitative and that no quantitative, statistically valid cost estimating was completed for the project. This information is based on the best professional judgment of City staff and the consultant team. The following are the symbols representing relative cost:
  - \$ = Low cost compared to other implementation actions. Examples include actions that can be completed with internal staff resources.
  - \$\$ = Medium cost relative to other implementation actions. Examples include detailed studies and reports.
  - \$\$\$ = High cost relative to other implementation actions. Examples included projects that require infrastructure changes.
- **Responsible Party** – An identification of the agency or department responsible for implementing the action.
- **Legislative Action** – Identifies the official approval required of the City Council for implementation, if applicable to the implementation action.



TABLE 17: INGLEWOOD ENERGY AND CLIMATE ACTION PLAN IMPLEMENTATION ACTIONS

IMPLEMENTATION ACTION		DESCRIPTION	TIMEFRAME	RELATIVE COST	RESPONSIBLE PARTY	LEGISLATIVE ACTIONS NEEDED
<b>Strategy 1 – Lead by Example</b>						
Future	Identify a Senior Official	Identify a Senior Official from each City department and agency to carry out energy conservation and greenhouse gas reduction actions	Immediate	\$	All	Adopt ECAP
	Develop department energy reduction and climate action work programs	By 2014, require all City departments and agencies to develop their own energy reduction and climate action work programs that define three to five actions that the agency will implement by 2015	Short	\$	All	Adopt ECAP
Future	Coordinate interdepartmental actions	Coordinate energy conservation and greenhouse gas conservation efforts through participation in quarterly, interagency meetings	Immediate	\$	All	Adopt ECAP
Future	Define City and department goals	Define numeric goals for reductions in fuel consumption, energy and water use, and solid waste generation for municipal operations and set non-numeric goals for renewable energy generation	Short	\$	All	Adopt ECAP
Future	Explore the creation of a climate-ready development review process	The City will explore the creation of a climate-ready development review process to evaluate and streamline development review proposals under the ECAP (example Appendix F)	Short	\$	Economic and Community Development	Adopt future ordinance
Curr	Continue building and facility energy upgrades	Continually monitor building performance and identify cost effective actions to reduce energy use.	Ongoing	\$\$\$	Public Works	Adopt ECAP
Curr	Replace all City-owned lights	Replace all City-owned street, park, and traffic lights with LED lights	Short	\$\$\$	Public Works	Adopt ECAP
Future	Explore establishing a Green Building Center	Explore establishing a Green Building Center that that provides incentives, outreach, financing, and other forms of assistance to business-owners and residents	Short	\$	Economic and Community Development	Adopt ECAP
Future	Accelerate City vehicle fleet replacement	Accelerate City vehicle fleet replacement by adding greenhouse gas and criteria pollutant emissions rates to the factors used to determine replacement of City vehicles	Short	\$\$\$	Public Works	Adopt ECAP
Curr	Continue commute trip reduction program	Expand the commute trip reduction program for City employees	Ongoing	\$	All	Adopt ECAP
Curren	Continue planning for electric vehicle infrastructure	Pursue electric vehicle infrastructure, such as charging stations, as well as adding new vehicles to the fleet	Ongoing	\$	Public Works	Adopt ECAP

TIMEFRAME. Ongoing: Current projects. Immediate: Within one year of ECAP adoption. Short: within 2 to 4 years of ECAP adoption. Medium: Within 5-7 years of ECAP adoption. Long: 10+ years after ECAP adoption.

COST. \$= Low cost compared to other implementation actions. \$\$=Medium cot relative to other implementation actions. \$\$\$=High cost relative to other implementation actions,

	IMPLEMENTATION ACTION	DESCRIPTION	TIMEFRAME	RELATIVE COST	RESPONSIBLE PARTY	LEGISLATIVE ACTIONS NEEDED
Future	Explore adopting an environmentally-preferable purchasing policy	Explore adopting an environmentally-preferable purchasing policy to purchase products from distributors and manufacturers with a high-level of social and environmental responsibility	Short	\$	Finance	Adopt future resolution
Current	Increase recycled water use	Increase the amount of recycled water used to irrigate municipal parks and landscaping	Ongoing	\$\$\$	Public Works, Parks & Rec	Adopt ECAP
Current	Accelerate water-efficient irrigation system deployment and native and drought-resistant vegetation planning	Replace all conventional irrigation and sprinkler systems with water-efficient irrigation systems by 2025 and transition to native and drought-tolerate vegetation	Ongoing	\$\$	Public Works, Parks & Rec	Adopt ECAP
Current	Increase open space and tree plantings	Increase the amount of open space and number of shade tree plantings in Inglewood	Ongoing	\$\$	Public Works, Parks & Rec	Adopt future resolution

IMPLEMENTATION ACTION		DESCRIPTION	TIMEFRAME	RELATIVE COST	RESPONSIBLE PARTY	LEGISLATIVE ACTIONS NEEDED
<b>Strategy 2 – Increase Energy Efficiency</b>						
<b>Make commercial buildings more efficient</b>						
Future	Explore developing a commercial energy conservation ordinance	Explore the development of a commercial energy conservation ordinance that requires point of sale energy audits and requires commercial businesses to implement energy efficiency measures when sold or transferred	Short	\$	Economic and Community Development	Adopt future Ordinance
	Require energy use disclosure	Require businesses to disclose energy use at point of sale	Medium	\$	Economic and Community Development	Adopt future Ordinance
	Identify energy efficiency upgrades for historic buildings	Create a suite of optional energy efficiency upgrades for historic building owners to consider	Medium	\$	Economic and Community Development	Adopt ECAP
<b>Increase the energy efficiency of residential buildings</b>						
Future	Explore developing a residential energy conservation ordinance	Explore developing a residential energy conservation ordinance that requires point of sale energy audits and all single family and multifamily buildings to meet a list of energy efficiency measures when sold or transferred	Short	\$	Economic and Community Development	Adopt future Ordinance
	Develop a multifamily housing retrofit program	Develop a multifamily housing retrofit program by creating a pilot project that uses outside funding to create a loan program to encourage investment in housing retrofits	Short	\$\$	Economic and Community Development	Adopt future resolution
	Draft a model agreement for tenants and renters	Draft a model agreement to share the costs and benefits of energy efficiency upgrades between tenants and renters	Medium	\$	Economic and Community Development	Adopt ECAP
	Establish a weatherization and energy retrofit loan program for low-income homeowners	Establish a weatherization and energy retrofit loan program for low-income homeowners	Medium	\$\$	Economic and Community Development	Adopt future resolution
	Continue Residential Sound Insulation Program	Continue implementing the Residential Sound Insulation Program financing by the LAX Land Use Mitigation Program	Ongoing	\$\$	Residential Sound Insulation	None-ongoing
<b>Increase the energy efficiency of street and traffic lights</b>						
Future	Replace street lights with more efficient technology	Work with Southern California Edison to replace all non-City-owned street lights with more efficient technology	Short	\$\$	Public Works	Adopt ECAP

TIMEFRAME. Ongoing: Current projects. Immediate: Within one year of ECAP adoption. Short: within 2 to 4 years of ECAP adoption. Medium: Within 5-7 years of ECAP adoption. Long: 10+ years after ECAP adoption.

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IMPLEMENTATION ACTION		DESCRIPTION	TIMEFRAME	RELATIVE COST	RESPONSIBLE PARTY	LEGISLATIVE ACTION
<b>Strategy 3 – Support Renewable Energy Generation</b>						
<b>Remove barriers to renewable energy generation</b>						
Future	Complete an obstacle analysis	Complete an obstacle analysis to understand barriers to implementing alternative energy systems on residential and non-residential structures	Short	\$	Economic and Community Development	Adopt ECAP
	Streamline residential solar installation	Streamline residential solar installation by providing permits “over the counter”	Short	\$	Economic and Community Development	Adopt ECAP
<b>Make renewable energy generation more affordable</b>						
Future	Explore the adoption of a Property Assessed Clean Energy Program	Explore the adoption of a Property Assessed Clean Energy (PACE) Program to offer loans for energy generation and efficiency projects for homes and businesses	Short	\$\$\$	Economic and Community Development	Adopt future Resolution
	Pursue grants, rebates, and other incentives	Help businesses and residents identify grants, rebates, and other incentives to support renewable energy generation	Short	\$	Economic and Community Development	Adopt ECAP
<b>Educate potential customers</b>						
Future	Explore establishing a Green Building Center	Provide information to businesses and residents about incentives for renewable energy generation through the Green Building Center	Medium	\$	Economic and Community Development	Adopt ECAP
	Highlight the Roger’s Park Solar Demonstration Project	Use the project to highlight solar technologies, provide educational materials, and emphasize the benefits of renewable energy	Short	\$\$	Economic and Community Development, Public Works	Adopt ECAP

TIMEFRAME. Ongoing: Current projects. Immediate: Within one year of ECAP adoption. Short: within 2 to 4 years of ECAP adoption. Medium: Within 5-7 years of ECAP adoption. Long: 10+ years after ECAP adoption.

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IMPLEMENTATION ACTION		DESCRIPTION	TIMEFRAME	RELATIVE COST	RESPONSIBLE PARTY	LEGISLATIVE ACTION
<b>Strategy 4: Improve Transportation Options And Manage Transportation Demand</b>						
<b>Make roadways more efficient</b>						
<b>Current</b>	Continue implementation of Intelligent Transportation System Plan	Improve traffic flow by using Intelligent Transportation System elements to reduce delay, increase incident response time, and provide real-time information	Ongoing	\$\$\$	Public Works	None-ongoing
	Continue to make street and sidewalk improvements to ensure a safe and convenient system for pedestrian	Use the Capital Improvement Program to improve pedestrian safety and access through City-wide corridor improvements	Ongoing	\$\$	Public Works	Adopt ECAP
<b>Improve transit</b>						
<b>Future</b>	Crenshaw Corridor Light Rail Service	Work with Metro to develop station areas in Inglewood for the Crenshaw Corridor Light Rail Service	Long	\$\$\$	Public Works	None-ongoing
	Provide, expand, and modify local shuttle service	Provide, expand, and modify as needed, local shuttle services like the I-Line	Medium	\$\$	Public Works	Adopt ECAP
<b>Future</b>	Prioritize transportation funding for pedestrians and cyclists around transit	Prioritize transportation funding around transit stations to encourage walking and bicycling and to calm traffic	Long	\$\$	Public Works	Adopt ECAP
	Improve transit stops	Work with Metro to improve the safety and cleanliness of transit stops and provide real-time service information	Medium	\$\$	Economic and Community Development, Public Works	Adopt ECAP
<b>Improve bicycle facilities</b>						
<b>Future</b>	Expand bike lanes	Implement the General Plan proposed bicycle routes	Long	\$\$	Public Works	Adopt ECAP
	Increase bicycle parking	Require new commercial and multifamily housing to provide secure bicycle parking in accordance with TDM requirements	Short	\$\$	Economic and Community Development	Adopt future ordinance
<b>Future</b>	Provide end-of-trip facilities	Encourage employers to provide end-of-trip facilities, including bike lockers, showers, and changing spaces	Short	\$	Economic and Community Development	Adopt future ordinance

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Manage parking efficiently						
Future	Implement market rate pricing for on-street parking near transit	Introduce market rate pricing for on-street parking within one quarter of a mile from Crenshaw Transit Corridor Stations	Medium	\$\$	Parking Services	Adopt future resolution
Future	Explore limiting parking for new development	Establish parking maximums for new development within one-half mile of future rail or rapid bus stations	Short	\$	Economic and Community Development	Adopt future ordinance
Future	Explore unbundled parking	Unbundle parking from residential property cost for new construction in the Downtown TOD overlay zone	Medium	\$	Economic and Community Development	Adopt future ordinance
Future	Explore allowing parking cash out	Allow parking cash out for City Hall and businesses within one-half of a mile from Crenshaw Transit Corridor Stations	Medium	\$	Economic and Community Development	Adopt future ordinance/resolution
Future	Explore expanding the residential parking permit program	Explore expanding the existing residential area parking permit program within the City	Medium	\$	Parking Services	Adopt future resolution
Reduce commute trips						
Future	Implement a voluntary commute trip reduction program	Implement a voluntary commute trip reduction program that includes a ridesharing website	Medium	\$	Economic and Community Development	Adopt ECAP
Future	Encourage telecommuting and alternative work schedules	Encourage employers to offer telecommuting and alternative work schedules to workers	Medium	\$	Economic and Community Development	Adopt future resolution
Future	Establish commute trip reduction marketing	Coordinate with Metro, government agencies, and non-profits to implement region and city-wide commute trip reduction marketing	Medium	\$\$	Economic and Community Development	Adopt ECAP
Future	Encourage subsidized or discounted transit program	Work with local employers and/or Metro to encourage subsidized or discounted transit program	Medium	\$	Economic and Community Development	Adopt future resolution
Future	Encourage employer-sponsored vanpool and shuttles	Encourage employers to provide vanpool and shuttles from major transit station	Medium	\$	Economic and Community Development	Adopt future resolution
Encourage land use intensification and diversity						
Future	Target future development for areas around transit stations	Target future development for areas around Crenshaw Rail transit stations	Long	\$	Economic and Community Development	Adopt future ordinance
Future	Build affordable and market rate housing	Build affordable and market rate housing, particularly in areas around transit stations	Long	\$	Economic and Community Development	Adopt future ordinance

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IMPLEMENTATION ACTION		DESCRIPTION	TIMEFRAME	RELATIVE COST	RESPONSIBLE PARTY	LEGISLATIVE ACTION
<b>Strategy 5: Reduce Consumption and Waste</b>						
<b>Use less water</b>						
Future	Increase locally sourced water	Increase the amount of water gathered from local sources	Medium	\$\$	Public Works	None-ongoing
	Increase recycled water use	Accelerate the use of recycled water for irrigation and landscaping	Medium	\$\$	Public Works	Adopt ECAP
Future	Explore the use of gray water	Adopt a community-wide ordinance that allows gray water “stub-outs” for residential properties and dual plumbing for indoor recycled water use	Long	\$	Public Works	Adopt future Ordinance
Current	Accelerate and expand low-flow water fixture programs	Accelerate the installation of low-flow water fixtures in residential homes and expand the program to commercial businesses	Ongoing	\$	Public Works	Adopt ECAP
Current	Reduce water for landscaping	Reduce landscaping water use by encouraging water-efficient irrigation, grass replacement, and planting native and drought-resistant trees and vegetation	Ongoing	\$	Public Works	Adopt ECAP
<b>Produce less waste</b>						
Current	Increase recycling rates	Increase residential, commercial, and construction recycling above California minimums	Ongoing	\$\$	Public Works	Adopt ECAP
Future	Start a green waste program	Start a green waste program, including a commercial cooking oil recycling program	Short	\$\$	Public Works	Adopt future Resolution
Future	Zero waste education	Work with local solid waste collection agency to educate the community about zero-waste programs	Medium	\$	Public Works	Adopt future resolution

TIMEFRAME. Ongoing: Current projects. Immediate: Within one year of ECAP adoption. Short: within 2 to 4 years of ECAP adoption. Medium: Within 5-7 years of ECAP adoption. Long: 10+ years after ECAP adoption.

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	IMPLEMENTATION ACTION	DESCRIPTION	TIMEFRAME	RELATIVE COST	RESPONSIBLE PARTY	LEGISLATIVE ACTION
	<b>Promote local food production</b>					
Future	Assist Community Supported Agriculture	Allow city facilities to be used as Community Supported Agriculture drop off sites or other actions	Medium	\$	Economic and Community Development	Adopt future Resolution
Future	Start a farmer's market	Start a certified farmer's market in Inglewood	Medium	\$\$	Economic and Community Development	Adopt future Ordinance
Future	Create community gardens	Identify and prioritize locations to create community gardens throughout Inglewood	Short	\$	Economic and Community Development	Adopt future Resolution/ Ordinance
Future	Promote gardening and composting	Provide resources and information regarding community gardening and composting to educate the general public on how to grow organic edible plants	Short	\$	Economic and Community Development	Adopt ECAP
Future	Organize tool lending program and bounty exchange	Work with community organizations and neighborhood groups to organize a garden-tool lending program and garden bounty exchange program	Short	\$	Economic and Community Development	Adopt future Resolution
Future	Create edible school yards	Partner with schools and other organizations to create "edible school yards" and sustainable gardening programs at public and private schools	Short	\$	Economic and Community Development	Adopt ECAP
Future	Support community kitchens	Support the development of community commercial kitchens that allow residents to pursue micro-enterprise and small businesses	Medium	\$	Economic and Community Development	Adopt future Resolution

**TIMEFRAME.** Ongoing: Current projects. Immediate: Within one year of ECAP adoption. Short: within 2 to 4 years of ECAP adoption. Medium: Within 5-7 years of ECAP adoption. Long: 10+ years after ECAP adoption.

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# APPENDICES

**APPENDIX A: GLOSSARY**

**APPENDIX B: REGULATORY FRAMEWORK**

**APPENDIX C: SUMMARY OF COMMUNITY OUTREACH**

**APPENDIX D: ASSUMPTIONS IN GREENHOUSE GAS EMISSIONS ANALYSIS**

**APPENDIX E: GREENHOUSE GAS EMISSIONS INVENTORY**

**APPENDIX F: CLIMATE-READY DEVELOPMENT REVIEW PROCESS**

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# APPENDIX A: GLOSSARY

**AB** – Assembly Bill

**Absolute Emissions** – The total quantity of emissions, not expressed in relative terms or as a ratio – in contrast to measures such as Emissions Intensity and CO<sub>2</sub>e.

**Air Resources Board (ARB)** – California’s Legislature established the Air Resources Board (ARB) in 1967 to attain and maintain healthy air quality, conduct research into the causes of and solutions to air pollution, and to systematically attack the serious problems caused by motor vehicles.

**Alternative Planning Strategies (APS)** – If California’s ARB determines that a region’s Sustainable Communities Strategy will not achieve the GHG emissions reduction targets (related to SB 375), a Metropolitan Planning Organization (MPO) must prepare an Alternative Planning Strategy (APS), separate from the RTP, identifying alternative development patterns, transportation projects or transportation policies needed to achieve the targets.

**Baseline** – An imaginary line or standard by which things are measured or compared, e.g., “the established baseline for the budget.” For the reduction targets, Inglewood’s baseline year is 2005.

**Business-as-usual (BAU)** – The scenario in which policies to reduce emissions are not enacted. The business-as-usual scenario assumes growth will occur following existing policies and regulations.

**Break from BAU** – The difference between the business-as-usual and the outcome of a proposed development scenario.

**California Climate Action Registry (CCAR)** - A private non-profit organization originally formed by the State of California. The California Registry serves as a voluntary greenhouse gas (GHG) registry to protect and promote early actions to reduce GHG emissions by organizations.

**California Energy Commission (CEC)** – The CEC is California’s primary energy policy and planning agency. It is responsible for promoting energy efficiency and renewable energy.

**California Environmental Quality Act (CEQA)** – Adopted in 1970 and incorporated in the Public Resources Code §§21000-21177. Its basic purposes are to: inform governmental decision makers and the public about the potential significant environmental effects of proposed activities; identify ways that environmental damage can be avoided or significantly reduced; require changes in projects through the use of alternatives or mitigation measures when feasible; and disclose to the public the reasons why a project was approved if significant environmental effects are involved.

**Energy / Climate Action Plan (ECAP)** – A planning document developed for or by a governmental body aimed to reduce greenhouse gas emissions within its jurisdiction. An ECAP typically provides an inventory, sets benchmark goals, and provides policymakers with a set of recommendations.

**Corporate Average Fuel Economy (CAFE)** – CAFE are a set of federal regulations intended to improve the fuel economy of cars and light trucks in the US. It sets a minimum sales-weighted average fuel economy, in miles-per-gallon, of cars and trucks with a gross vehicle weight rating of 8,500 pounds or less.

**Carbon Budget** – Is the sum of the total quantity of GHGs that can be emitted by a sector or organization

**Carbon Intensity** – Carbon intensity of a given activity sector (or energy supply) defined as the amount of carbon emitted per unit.

**CH<sub>4</sub>** - Methane, a greenhouse gas.

**City** – “City” refers to buildings, land, and other such items within the geographic boundary of the City of Inglewood. City is comprised of the “community” and “municipal” portions.

**CO<sub>2</sub>** – Carbon Dioxide, a greenhouse gas.

**CO<sub>2</sub>e** – The universal unit of measurement used to indicate the global warming potential (GWP) of each, or a combination of greenhouse gases. It is used to evaluate the impacts of releasing (or avoiding the release of) different greenhouse gases.

**CO<sub>2</sub>e per-capita** – The ratio of carbon-equivalent emissions to population.

**Community** –“Community” refers to buildings, land, or other such items not owned or operated by the City of Inglewood.

**DU** – Dwelling Unit

**EIR** – Environmental Impact Report

**Embodied Energy** – The amount of energy consumed over the lifecycle of a material – including energy used in the manufacturing or extraction, delivery, and the disposal or recycling of the material.

**Emissions Intensity** – The ratio of greenhouse gas emissions to a unit of relevant measurement. It measures the polluting level of a given activity.

**Environmental Protection Agency (EPA)** – An agency of the federal government with the mission to protect human health and the environment by writing and enforcing regulations.

**General Reporting Protocol (GRP)** – A collection of procedures and guidelines for calculating and reporting GHG emissions from a number of general and industry-specific categories. It was developed and is maintained by CCAR.

**GHG** – Greenhouse gas.

**GHG Intensity** – See “Emissions Intensity.”

**Greenhouse Gas Inventory** – An accounting of the amount of greenhouse gases discharged into that atmosphere, usually within a given jurisdiction.

**Global Warming Potential (GWP)** – The index used to translate the level of emissions of various gases into a common measure in order to compare the relative radiative forcing of different gases without directly calculating the changes in atmospheric concentrations. GWPs are calculated as the ratio of the radiative forcing that would result from the emissions of one kilogram of a greenhouse gas to that from emission of one kilogram of carbon dioxide over a period of time (usually 100 years).

**ICLEI (Local Governments for Sustainability)** – An international association of local governments and local government organizations that have made a commitment to sustainable development.

**IPCC** – Intergovernmental Panel on Climate Change

**Kilowatt (kW)** – One thousand watts.

**Kilowatt-hour (kWh)** – One thousand watt-hours.

**Leadership in Energy and Environmental Design (LEED)** – a family of green building rating systems maintained by the US Green Building Council (USGBC). This includes (among others) LEED-NC, or LEED for New Construction; LEED-EB, LEED for Existing Buildings; and LEED-CS, LEED for Core and Shell.

**Low Carbon Fuel Standard (LCFS)** – The LCFS is a rule enacted by California in 2007 to reduce the carbon intensity of transportation fuels, as compared with traditional gasoline and diesel. Criteria were set by the Air Resources Board in April 2009, but the rule will not take effect until 2011.

**Megawatt-hour (MWh)** – One million watt-hours.

**Metropolitan Planning Organization (MPO)** – The body that carries out and puts forth Regional Transportation Plans. They were created by the 1962 Federal-Aid Highway Act and are required for any urban area with a population greater than 50,000.

**MTCO<sub>2</sub>e** – Metric Tons Carbon Dioxide Equivalent

**MMTCO<sub>2</sub>e** – Million Metric Tons Carbon Dioxide Equivalent

**Municipal** – “Municipal” refers to buildings, land, or other such items owned and operated by the City of Inglewood

**N<sub>2</sub>O** – Nitrous Oxide, a greenhouse gas.

**Office of Planning and Research (OPR)** – Encompassing five main units, (The State Clearinghouse, The Legislative Unit, The Policy and Research Unit, The Office of Small Business Advocate, Advisory for Military Affairs, the OPR is tasked to develop draft CEQA guidelines “for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions. The OPR plays a critical role in the Governor’s Administration, providing legislative and policy research support for the Governor’s office.

**PV** – A photovoltaic is an array of cells containing material that converts solar radiation into electricity.

**Reclaimed/Recycled Water** – Wastewater that has been treated to remove impurities, and then allowed to recharge an aquifer. This is typically done by using the reclaimed water for irrigation. Typically, reclaimed water is intended only for non-potable uses such as landscaping maintenance.

**Regional Transportation Plan (RTP)** – A Regional Transportation Plan is a long-term blueprint of a region's transportation system (related to SB 375).

**Renewables Portfolio Standard (RPS)** – State of California regulation requiring that publicly-owned utilities produce thirty-three percent (33%) of their electricity using renewable energy sources. Three California publicly-owned utilities are Southern California Edison (SCE), San Diego Gas & Electric (SDG&E), and Pacific Gas & Electric (PG&E)

**SB** – Senate Bill

**Southern California Edison (SCE)** – California publicly-owned utility providing electricity to large areas of Southern California, including the city of Inglewood.

**Service Population** – A measure of the total number of residents and employees (jobs) in a jurisdiction.

**SF** – Square feet.

**Sustainable Communities Strategy (SCS)** – As part of their Regional Transportation Plans (RTPs), Metropolitan Planning Organizations (MPOs) will have to prepare an SCS that demonstrates how regional GHG targets will be met (related to SB 375).

**TCRP** – Transportation Cooperative Research Program

**TDM** – Transportation Demand Management

**Therm** – A unit of heat equivalent to 100,000 British thermal units or  $1.055 \times 10^8$  joules

**Title-24** – Title-24 is the portion of the California Energy Code that regulates building envelopes and building energy efficiency.

**TMA** – Transportation Management Agency

**TOD** – Transit Oriented Development

**TRB** – Transportation Research Board

**ULI** – Urban Land Institute

**United States Green Building Council (USGBC)** – A non-profit trade organization headquartered in Washington, DC, dedicated to promoting green building practices.

**VMT** – Vehicle Miles Traveled

**Watt** – A unit of power, or a rate of electrical flow; it is equal to one joule of energy per second. It is used typically to describe electricity capacity or peak consumption. When expressed over a length of time (as in a watt-hour), it is a unit of energy.

**Zero Net Energy (ZNE)** – An entity that produces as much energy as it consumes. This often refers to a building, or group of buildings.

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# APPENDIX B: REGULATORY FRAMEWORK

During the past decade, the State of California made great strides in developing a regulatory framework to curb future greenhouse gas emissions and to adapt to the consequences of climate change. California adopted a series of policies, programs, and regulations that set targets for greenhouse emissions reductions and outlined strategic actions that enable government agencies, public institutions, and businesses to collaborate to achieve these reduction targets. The following section describes a number of the key state-level initiatives.

## **GLOBAL WARMING SOLUTIONS ACT – AB 32 (2006)**

In 2005 the governor signed Executive Order S-3-05, which set targets for the state to reduce its greenhouse gas emissions to 1990 levels by 2020 and eighty percent (80%) below 1990 levels by 2050. The state assembly followed by passing Assembly Bill 32 (AB 32), the Global Warming Solutions Act. AB 32 directs the California Air Resources Board (ARB) to develop the rules and regulations necessary to achieve the greenhouse gas emissions reduction targets. In 2008, the ARB approved the California Climate Change Scoping Plan (Scoping Plan), which contains the primary strategies California will use to reduce the greenhouse gas emissions that cause climate change. The Scoping Plan outlines a combination of policies, programs, and practices needed to reduce statewide emissions by 15 percent below current levels (the equivalent of 1990 levels) by 2020. Given projected trends, this would be approximately 30 percent below business-as-usual levels anticipated for 2020. Effectively, the Scoping Plan establishes a statewide carbon budget that will allow the State to grow while still meeting its emissions reduction targets. The Scoping Plan strategies include energy efficiency measures, regional transportation-related greenhouse gas emissions targets, a renewable portfolio standard, a cap-and-trade program, a light duty vehicle greenhouse gas standard, and a low carbon fuel standard.

The Scoping Plan recognizes the essential partnership between state, regional, and local governments to reduce greenhouse gas emissions. Local governments have authority over activities that produce both direct and indirect greenhouse gas emissions through land use planning and zoning, general permitting, local ordinances, and municipal operations. Therefore, many of the strategies outlined in the Scoping Plan need local governments to take action. The Scoping Plan also encourages local governments to inventory greenhouse gas emissions, adopt greenhouse gas emissions reduction targets, and develop local action plans to lower emissions. The continued re-inventory of Inglewood's greenhouse gas emissions will continue to serve these purposes.

## **SUSTAINABLE COMMUNITIES STRATEGY – SB 375 (2008)**

In California, the transportation sector produces between thirty-five percent (35%) and forty percent (40%) of the state's greenhouse gas emissions, and the Scoping Plan includes a number of measures for the sector. In 2008 California adopted Senate Bill 375 (SB 375), the Sustainable Communities Strategy. SB 375 attempts to integrate regional land use,

transportation, and housing planning in order to reduce greenhouse gas emissions from cars and trucks. SB 375 directs the ARB to set regional greenhouse gas reductions targets for cars and trucks, to assign each metropolitan planning organization (MPO) a target, and to require each MPO to create a plan (a Sustainable Community Strategy) to achieve that target. The law provides relief from specific California Environmental Quality Act (CEQA) requirements for infill development projects that are consistent with the Sustainable Community Strategy. SB 375 provides one method for local governments to achieve regional transportation-related greenhouse gas emissions targets described in the Scoping Plan.

The Southern California Association of Governments (SCAG) is the largest MPO in California, representing six counties and over 180 cities, including Inglewood. SCAG completed their SCS in 2012, tailoring the strategies to meet the needs of individual communities. The regional SCS describes the goals and benefits of the SCS, the process used to create the SCS, SCS requirements, and next steps. SCS strategies are organized into land use strategies, transportation supply management, transportation demand management, vehicle technology, and other areas. The SCS builds on local strategies that communities have pursued over the past decade. This portfolio of strategies was combined with regional and subregional transportation projects to provide a roadmap for local governments to reduce emissions. If implemented, the SCS estimates that strategies and transportation projects would reduce greenhouse gas emissions per capita from the 2005 benchmark.

### **PAVLEY VEHICULAR EMISSIONS CODES – AB 1493 (2002)**

AB 1493 directed the ARB to set more stringent vehicle fuel economy standards for cars and light trucks that reduce greenhouse gas emissions. The Pavley bill required approval from the federal government, and in 2009, the U.S. Environmental Protection Agency granted California a waiver that enabled the state to enforce stricter tailpipe emissions limits on new passenger vehicles. In 2010, the U.S. EPA and the Department of Transportation's National Highway Safety Administration announced new vehicle greenhouse gas emissions standards and corporate average fuel economy standards that reinforced California's standard. The standards would reduce emissions from passenger vehicles by approximately thirty percent (30%) in 2016, aiding local government efforts to reduce greenhouse gas emissions.

### **CALIFORNIA RENEWABLE PORTFOLIO STANDARD – SENATE BILLS 1078 (2002) AND 107 (2006) AND EXECUTIVE ORDER S-21-09**

EO S-21-09 directed the ARB to adopt regulations increasing California's Renewable Portfolio Standard (RPS) to thirty-three percent (33%) by 2020. These rules apply to investor-owned utilities, such as Southern California Edison. These standards will reduce greenhouse gas emissions from electricity purchased by local governments.<sup>65</sup> The California Air Resources Board's (CARB) Adopted Scoping Plan makes it clear that implementation of the Renewable Portfolio Standard (RPS) is a foundational element of California's emissions reduction plan. In 2002, Senate Bill 1078 established the California RPS program, requiring twenty percent (20%) renewable energy by 2017. In 2006, Senate Bill 107 advanced the twenty percent (20%) deadline to 2010, a goal which was expanded to thirty-three percent (33%) by 2020 in the 2005 Energy Action Plan II. On September 15, 2009, Governor Arnold Schwarzenegger signed Executive Order S-21-09 directing the California Air Resources Board (CARB) to adopt regulations increasing RPS to thirty-three percent (33%) by 2020.

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<sup>65</sup> SCE Renewable Energy. <http://www.sce.com/PowerandEnvironment/renewables/>

## **EMISSION PERFORMANCE STANDARDS – SENATE BILL 1368 (2006)**

Signed in 2006, SB 1368 limits the ability of California's utilities to make long-term investments in carbon-intensive electricity generation. The bill enables utilities to make capital investments in baseload power plants if their emissions are as low as or lower than emissions from a new, combined-cycle natural gas power plant. The bill makes certain that the standards will not degrade the reliability of California's energy services.

## **CALIFORNIA GREEN BUILDING CODE – (2007)**

The California Building Standards Commission and other state agencies developed green building standards for residential, commercial, and public building construction. The "CALGreen Code" is the first statewide green building standards code in the United States. The code attempts to achieve reductions in greenhouse gas emissions and water and energy use.<sup>66</sup>

## **LOW CARBON FUEL STANDARD – EXECUTIVE ORDER S-1-07 (2007)**

EO S-1-07 established a Low Carbon Fuel Standard (LCFS) for transportation fuels in California, which the ARB included in the Scoping Plan. The EO requires that the carbon intensity of California's transportation fuels be reduced at least ten percent (10%) by 2020.<sup>67</sup> ARB expects the LCFS to achieve the minimum ten percent (10%) reduction goal; however, many of the early action items outlined in the Scoping Plan work in tandem with one another. To avoid the potential for double-counting emissions reductions associated with AB 1493, the Scoping Plan has modified the aggregate transportation sector reduction expected from the LCFS to six and seven-tenths percent (6.7%) for 2020.<sup>68</sup>

## **CEQA AND GREENHOUSE GAS EMISSIONS – SB 97 (2007)**

SB 97 provides that greenhouse gas emissions and their effects are subject to CEQA. Local governments are required to determine whether a project's climate-related impacts are significant, and if so, to mitigate those effects. The Office of Planning and Research (OPR) created CEQA guidelines to help local governments reduce greenhouse gas emissions and address their impacts.

## **PROPERTY ASSESSED CLEAN ENERGY – AB 811**

AB 811 allows local governments to define areas where property owners can receive long-term, low-interest loans for energy and water efficiency improvements. Improvements financed through AB 811 are fixed to the property and repaid through property tax bills. Local governments can participate in a state-wide program called CaliforniaFIRST, or they can establish their own AB 811 programs, called Property Assessed Clean Energy (PACE) programs.

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<sup>66</sup> California Building Standards Commission. "CALGreen." Retrieved on May 21, 2010 from <http://www.bsc.ca.gov/CALGreen/default.htm>.

<sup>67</sup> California Low Carbon Fuel Standard. Retrieved from <http://www.arb.ca.gov/fuels/lcfs/lcfs.htm>.

<sup>68</sup> Scoping Plan. <http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm>

## **CALIFORNIA CLIMATE ADAPTATION STRATEGY – EXECUTIVE ORDER S-13-08 (2008)**

The EO directed the California Natural Resources Agency to lead a statewide effort to develop a climate adaptation strategy. Published in 2009, the statewide plan describes climate trends and the potential impacts of climate change on key sectors, and it outlines short- and long-term actions that state and local governments can take to address future climate impacts.<sup>69</sup>

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<sup>69</sup> California Department of Natural Resources, 2009. *California Climate Adaptation Strategy*.  
[http://resources.ca.gov/climate\\_adaptation/statewide\\_adaptation/californias\\_adaptation\\_strategy.html](http://resources.ca.gov/climate_adaptation/statewide_adaptation/californias_adaptation_strategy.html)

# APPENDIX C: SUMMARY OF WORKSHOP RESULTS

The City held two community stakeholder meetings during the preparation of the ECAP to solicit input on the scope, direction, and overall approach of the ECAP. The first meeting was held on March 8, 2012 and sought input on the primary purpose of the ECAP and the broad goals of the ECAP. The second meeting was held on June 18, 2012 and queried the community on the reduction target and types of strategies that should be included in the ECAP. The following summarizes the participants' input received by the City during these meetings.

## COMMUNITY WORKSHOP #1

Community Workshop 1 queried participants about the overarching goals they would like to see established through the ECAP. The following section lists the participants of the meeting.

### ENERGY CLIMATE ACTION PLAN COMMUNITY MEETING PARTICIPANTS

NAME		AFFILIATION
JEREMY	HYDE	SBCCOG
MARILYN	LYON	SBCCOG
GRACE	FARWELL-GRANGER	SBCCOG
MIKE	HARRIEL	SO CAL GAS
BILL	WIDENER	
STEVEN	BRAND	Centinela Hospital
JIM	VAUGHN	
DEREK L.	STEELE	Social Justice Learning Institute
VELMA C.	SLAUGHTER	
ELGA	STEVENS	
LINDA	TATUM	City of Inglewood
MAXINE	TOLER	Social Justice Learning Institute
GERARD	MCCALLUM	Hollywood Park Land Company
AMY	VULIN	SO CAL GAS
LAURA	ZINGG	City of Inglewood
MINDY	WILCOX	City of Inglewood
ARTURO	SALAZAR	City of Inglewood

The following list provides a summary of their input, which were used to guide the development of the ECAP. Each participant was given 3 dots to vote on the list created by the audience and the results of that vote are shown here.

## ECAP COMMUNITY WORKSHOP #1 INPUT

VOTES		AUDIENCE PROVIDED ECAP GOALS
	1	Include information on how to get grants.
● ●	2	One source (central information hub) for energy info.
● ●	3	Make traffic flow better and more efficiently.
● ● ● ● ●	4	<u>Bike</u> lanes throughout city; especially main streets / parks - to retail hubs & connected:
		a) to destinations
		b) safe
● ● ● ● ● ●	5	Increase canopy coverage (Trees). Include education about vegetation options:
		a) Benefits to Council Education and Resident Involvement.
● ● ● ● ●	6	Enhance Earth Day, other Annual Events. Make it a major Citywide thing.
● ● ● ●	7	<u>Inform Everyone In The City of future meetings.</u> Door to Door, Condo Associations, Children @ Schools - A Flyer
		To let people know what's available. Use Digital Boards for some Public Notifications:
		a) Hollywood Park
		b) Forum
●	8	Making sure City applies more Grant Funding.
●	9	Internet and Cable Access limited - (Put information in Utility Bill).
● ●	10	Convert Residents to Native/Drought tolerant Landscaping, Edible Landscaping, Artificial Turf.
	11	Waste Reduction Education Program.
		a) Include Composting
		b) Reuseable

Note 1: The comments above were compiled from audience members in response to a request for their input on goals for the ECAP.

Note 2: Text in red added by MW for clarification purposes.

## COMMUNITY WORKSHOP #2

Community Workshop 2 queried participants about the types of strategies and actions that they would like to see implemented in Inglewood. The following section lists the notes from the meeting, which were used to guide and prioritize actions within the ECAP. The italicized text is what was suggested at the meeting, in addition to those actions suggested by staff. Each “O” represents a vote in support of that reduction strategy.

### TRANSPORTATION (FIFTY-FOUR PERCENT (54%) OF CURRENT COMMUNITY EMISSIONS)

- Transit oriented development at stations and elsewhere
- Bike infrastructure and connectivity (OOOOO)
- Publicize van pool/carpooling opportunities
- Online building permit system (O)
- Increase density around stations and potentially other areas
- Traffic flow improvements (OOO)
- Electric vehicle parking and other alternative fuels
- Require bike parking in residential projects
- Car sharing program at stations
- Reduce parking minimums around train stations
- Demand based parking pricing
- Other: Diagonal crosswalks/ Pedestrian scramble (OOO)
- Other: Radio station-Inglewood specific real time traffic report
- Other: Solar street light signals (OOOOO)
- Other: Online real time parking availability information
- Other: Use available plazas and sidewalks for commercial kiosks (OOOOOOOOOOO)
- Other: Farmers Market (OOOOOO)
- Other: Senior citizen car sharing
- Other: Increase walk-score (OO)
- Other: Infrastructure for electric cars (O)
- Other: Employee transit benefits
- Other: Bike safety education for motorists and bicyclists

### SOLID WASTE (THREE PERCENT (3%) OF CURRENT COMMUNITY EMISSIONS)

- Increase residential recycling
- Implement residential composting
- Increase commercial recycling
- Implement restaurant composting
- Zero waste education: including student field trips to dump and education on vegetarian diet-promote vegetarian meal at least 1 day a week (OOOOOO)
- Increase construction demolition material recycling
- Other: Local recycling and compost facility with incentive program (OOOOO)
- Other: Reuse trash i.e. (biodegradable plastic bags)
- Other: 1 bin system versus 3, sorted at a facility
- Other: “Grades of green” putting lunches in a reusable containers (OOO)

## RESIDENTIAL (TWENTY-ONE PERCENT (21%) OF CURRENT COMMUNITY EMISSIONS)

- Support on-site renewable energy (obstacle analysis, loans) (OOOOOO)
- Central source for energy/water efficiency information (O)
- Residential sound insulation program
- Green building incentives or requirements-*greater publicity*
- Require point of sale energy efficiency audits
- Require individual utility meters for multi-family units
- New construction to exceed baseline efficiency by ten to twenty percent (10-20%)
- Online green building center (*location? City's website.*)
- Require efficiency upgrades during major renovations or additions(OOOOO)
- Other: Require and educate on tankless water heaters (OOOOO)

## COMM./IND./MUNI. (TWENTY PERCENT (20%) OF COMMUNITY EMISSIONS)

- Central source for energy/water efficiency information
- Support reuse of existing non-residential buildings (O)
- Support on-site renewable energy
- Green building incentives or requirements
- Require point of sale energy efficiency audits
- Other: Require tankless water heaters (O)

## WATER (TWO PERCENT (2%) OF COMMUNITY EMISSIONS)

- Increase use of recycled water
- Central source for energy/water efficiency information
- Water conservation strategy
- Water efficient landscaping (OOO)
- Water efficient irrigation
- Other: OC hands on drought tolerant garden outdoor workshop (OO)
- Other: "lawn to garden" plaques/awards for replacing lawn with drought tolerant (O)
- Other: Use rain-water catchment devices/rooftop gardening
- Other: Use recycled material for concrete pavers
- Other: Add recycled water lines as capital improvement are being done (OOOO)
- Other: Water only during specific times of the day and penalties for non-compliance (OO)

## OPEN SPACE/LANDSCAPING

- Water efficient landscaping (OOOOO)
- Continue/increase tree planting (OOOOO)
- Increase open space area
- Policies to support local agriculture/community gardens (OOOOOOOOOOOOOOOOOO)
- Other: *Farmers Market* (OOOOOOOOOO)
- Other: Use vacant lots for community gardens (OO)

## REDUCTION TARGETS

- Lower target than state recommended



- Exceed State recommended target (fifteen percent (15%) by 2020 and thirty-two and a half percent (32.5%) by 2035) but stay budget neutral (OO)
- Higher/more aggressive Target than state recommended (OOO)

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# APPENDIX D: ASSUMPTIONS IN GREENHOUSE GAS EMISSIONS ANALYSIS

The following section describes the key assumptions used to calculate greenhouse gas reductions. When feasible, the potential reduction value of each measure has been quantified using industry standard methods developed by the California Air Pollution Control Officers Association (CAPCOA) and outlined in the report *Quantifying Greenhouse Gas Mitigation Measures*.<sup>70</sup> The report describes approaches for quantifying greenhouse gas reductions from a specified list of mitigation measures. This list does not include measures that were not quantified.

Since no local strategies were quantified for Strategy 3, a section for the assumptions from Strategy 3 was not incorporated into this appendix. State strategies, however, were quantified for renewable energy generation and included at the conclusion of this section.

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<sup>70</sup> For additional information about CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures* report, please visit <http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf>

# STRATEGY 1: LEAD BY EXAMPLE

## CONTINUE BUILDING AND FACILITY ENERGY UPGRADES

Description: Continually monitor building performance and identify cost-effective actions to reduce energy use. This measure includes the following projects: Service Center lighting retrofits, Service Center air compressor upgrade, Rogers Park Community Center energy enhancements, City Hall Lighting Retrofit, and Parking Structure 1 lighting retrofit, and future tankless water heater installation at the Police Station, Library, and City Hall. Several of these projects have been completed, but since they were completed after 2010 (the year of the most recent inventory), they were included in the reductions analysis.

Sector & Subsector		Municipal – buildings and facilities			
Reduction Percent		Varies	Source: CAPCOA and other sources		
Currently Implemented by the Sector in 2010		0%	Source: City of Inglewood		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Electricity Savings in 2020 (kWh)	Electricity Cost Savings in 2020 (2010 \$)
100%	100%	-318	-338	-1,157,453	-\$132,722

## REPLACE ALL CITY-OWNED LIGHTS

Description: Replace all City-owned street, park, and traffic lights with LED lights. The City currently has 2,400 street lights on major and minor streets. The analysis assumes the City will finish upgrading 900 street lights by 2020, and upgrade the remainder by 2035 (1,500).

Sector & Subsector		Municipal infrastructure (lighting)			
Reduction Percent		40% streetlights and 90% traffic controls	Source: CAPCOA LE-1, LE-2, and the City of Inglewood for the traffic lights		
Currently Implemented by the Sector in 2010		0%	Source: City of Inglewood		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Electricity Savings in 2020 (kWh)	Electricity Cost Savings in 2020 (2010 \$)
100% traffic controls 38% street lights	100% traffic controls 100% street lights	-334	-659	-1,584,146	\$195,072

## ACCELERATE CITY VEHICLE FLEET REPLACEMENT

Description: Accelerate City vehicle fleet replacement by adding greenhouse gas and criteria pollutant emissions rates to the factors used to determine replacement of City vehicles. The measure assumes full implementation of the Alternative Fuel Vehicle Plan, replacing 143 vehicles with alt fuel vehicles.

Sector & Subsector		Municipal – transportation			
Reduction Percent		15%	Source: CAPCOA VT-2		
Currently Implemented by the Sector in 2010		25%	Source: City of Inglewood Alternative Fuel Vehicle Plan		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)		
40%	40%	-236	-258		

## CONTINUE COMMUTE TRIP REDUCTION PROGRAM

Description: Expand the commute trip reduction program for City employees by encouraging telework / alternative work schedule program. The City already has an alternative work schedule (9 days - 80 hours) but no telecommute option.

Sector & Subsector		Municipal - transportation			
Reduction Percent		3.9%	Source: CAPCOA TRT-6		
Currently Implemented by the Sector in 2010		0%	Source: City of Inglewood		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	VMT Reduction in 2020	
100%	100%	-57	-52	-128,584	

## INCREASE RECYCLED WATER USE

Description: Increase the amount of recycled water used to irrigate municipal parks and landscaping. Recycled water is already used at five of ten city parks (Vincent, Ashwood, Center, Rogers, and Queen).

Sector & Subsector		Water – all municipal landscaping water			
Reduction Percent		81%	Source: CAPCOA WSW-1		
Currently Implemented by the Sector in 2010		50%	Source: City of Inglewood, Urban Water Management Plan		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Potable Water Savings in 2020 (gallons)	
100%	100%	-115	-115	-20,649,835	

## ACCELERATE WATER-EFFICIENT IRRIGATION SYSTEM DEPLOYMENT AND NATIVE AND DROUGHT-RESISTANT VEGETATION PLANNING

Description: Replace all conventional irrigation and sprinkler systems with water-efficient irrigation systems by 2025 and transition to native and drought-tolerate vegetation

Sector & Subsector		Water – all municipal landscaping water			
Reduction Percent		Varies		Source: CAPCOA WUW-4, WUW-5, and WUW-6	
Currently Implemented by the Sector in 2010		25% native vegetation, 10% irrigation		Source: City of Inglewood, Urban Water Management Plan	
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Potable Water Savings (gallons)	
50%-100%	100%	-27	-61	-14,100,226	

## INCREASE OPEN SPACE AND TREE PLANTINGS

Description: Increase the amount of open space and number of shade tree plantings in Inglewood. This measure quantifies the trees plantings (500 by 2020 and 1,000 by 2035), proposed open space at Hollywood Park (25 acres), and additional open space development.

Sector & Subsector		Vegetation			
Reduction (per tree)		0.0121	Source: CAPCOA V-1		
Currently Implemented by the Sector in 2010		N/A	Source: City of Inglewood		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Number of Trees in 2020	Electricity Savings in 2020 (kWh)
50%	100%	-335	-710	500	-19,864
Sector & Subsector		Vegetation			
Reduction (per tree)		0.0121	Source: CAPCOA V-1		
Currently Implemented by the Sector in 2010		N/A	Source: City of Inglewood		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Number of New Park Acres in 2020	
67%	100%	-129	-194	30	

## STRATEGY 2: INCREASE ENERGY EFFICIENCY

### EXPLORE DEVELOPING A COMMERCIAL ENERGY CONSERVATION ORDINANCE

Description: Explore the development of a commercial energy conservation ordinance that requires point of sale energy audits and requires commercial businesses to implement energy efficiency measures when sold or transferred.

Sector & Subsector		Commercial buildings – total energy			
Reduction Percent		20%	Source: Berkeley <sup>71</sup> and Oakland programs <sup>72</sup> , LBNL assessment of retro-commissioning <sup>73</sup>		
Currently Implemented by the Sector in 2010		0%	Source: N/A		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Electricity Savings in 2020 (kWh)	Natural Gas Savings (therms)
0.5% of businesses	10% of businesses	-106	-2,311	-347,048	-6,781

### EXPLORE DEVELOPING A RESIDENTIAL ENERGY CONSERVATION ORDINANCE

Description: Explore developing a residential energy conservation ordinance that requires point of sale energy audits and all single family and multifamily buildings to meet a list of energy efficiency measures when sold or transferred. It assumes one and eight-tenths percent (1.8%) of the housing stock is sold each year.<sup>74</sup>

Sector & Subsector		Residential buildings – total energy			
Reduction Percent		10%	Source: City of Berkeley, <sup>75</sup> City of San Francisco, <sup>76</sup> and Boulder, CO assessment <sup>77</sup>		
Currently Implemented by the Sector in 2010		0%	Source: N/A		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Electricity Savings in 2020 (kWh)	Natural Gas Savings in 2020 (therms)
9% of homes	36% of homes	-1,082	-4,840	-1,691,642	-137,288

<sup>71</sup> City of Berkeley. 2012. Commercial Energy Conservation Ordinance. <http://www.ci.berkeley.ca.us/ceco/>

<sup>72</sup> City of Oakland. 2012. Oakland Shines. <http://oaklandshines.com/index.php>

<sup>73</sup> Lawrence Berkeley National Laboratory. 2004. Cost-Effectiveness of Commercial-Buildings Commissioning: A Meta-Analysis of Energy and Non-Energy Impacts in Existing Buildings and New Construction in the United States (page 1). [www.ga.wa.gov/eas/bcx/Cx\\_Cost\\_Effectiveness.pdf](http://www.ga.wa.gov/eas/bcx/Cx_Cost_Effectiveness.pdf)

<sup>74</sup> Redfin. 2012. Sales History for Inglewood during the Last 12 Months. The three-year average is 5%.

<sup>75</sup> City of Berkeley. 2012. Residential Energy Conservation Ordinance. <http://www.ci.berkeley.ca.us/reco/>

<sup>76</sup> Eco Leader - Residential Energy Conservation Ordinance Factsheet [http://ecoleader.org/assets/downloads/RECO/RECO\\_factsheet.pdf](http://ecoleader.org/assets/downloads/RECO/RECO_factsheet.pdf)

<sup>77</sup> City of Boulder RECO Report (page 4) -[http://www.boulder.colorado.gov/files/reco\\_report\\_boulder.pdf](http://www.boulder.colorado.gov/files/reco_report_boulder.pdf).

## CONTINUE RESIDENTIAL SOUND INSULATION PROGRAM

Description: Continue implementing the Residential Sound Insulation Program financing by the LAX Land Use Mitigation Program. As of late 2009, the program had completed retrofits of 4,950 homes in Inglewood, expecting to retrofits a total of 10,276 homes.

Sector & Subsector		Residential buildings – total electricity			
Reduction Percent		-231 kWh, -7 therms, per home	Source: California Energy Commissions <sup>78</sup>		
Currently Implemented by the Sector in 2010		48%, 4,950 homes	Source: Los Angeles World's Airport <sup>79</sup>		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Electricity Savings in 2020 (kWh)	Natural Gas Savings in 2020 (therms)
75%, 7,697 homes	100%, 10,276 homes	-236	-441	-634,576	-19,230

## REPLACE COMMERCIAL LIGHTS WITH LED LIGHTS

Description: Work with businesses and Southern California Edison to replace all non-City-owned street and parking lot lights with LED lights.

Sector & Subsector		Community infrastructure (lighting)			
Reduction Percent		20%	Source: CAPCOA LE-1		
Currently Implemented by the Sector in 2010		N/A	Source: N/A		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Electricity Savings in 2020 (kWh)	Electricity Cost Savings in 2020 (2010 \$)
10%	50%	-51	-296	-654,147	-\$80,552

<sup>78</sup> California Energy Commission. Impact Analysis: 2005 Update to the California Energy Efficiency Standards.

[http://www.energy.ca.gov/title24/2005standards/archive/rulemaking/documents/2003-07-11\\_400-03-014.PDF](http://www.energy.ca.gov/title24/2005standards/archive/rulemaking/documents/2003-07-11_400-03-014.PDF)

<sup>79</sup> Los Angeles World Airports. 2009. Land Use Mitigation Program Los Angeles World Airports A Status Report. Available at [http://www.lawa.org/PDF/board\\_agenda/BOAC%20Presentation%20LUMP%20Program%20Summary%20Final.pdf](http://www.lawa.org/PDF/board_agenda/BOAC%20Presentation%20LUMP%20Program%20Summary%20Final.pdf)



## STRATEGY 4: IMPROVE TRANSPORTATION OPTIONS AND MANAGE TRANSPORTATION DEMAND

### CONTINUE IMPLEMENTATION OF INTELLIGENT TRANSPORTATION SYSTEM PLAN

Description: Improve traffic flow by using Intelligent Transportation System elements to reduce delay, increase incident response time, and provide real-time information.

Sector & Subsector		Transportation – all vehicles			
Reduction Percent		0.1%	Source: Iteris		
Currently Implemented by the Sector in 2010		N/A	Source: Inglewood Citywide Intelligent Transportation Systems Program		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Annual Vehicle Miles Traveled Saving in 2020	
100%	100%	-245	-231	554,305	

### CONTINUE TO MAKE STREET AND SIDEWALK IMPROVEMENTS TO ENSURE A SAFE AND CONVENIENT SYSTEM FOR PEDESTRIANS

Description: Use the Capital Improvement Program to improve pedestrian safety and access through City-wide corridor improvements. Projects include: Century Boulevard Multimodal Transportation Corridor Improvement, Imperial Highway Improvements, La Brea Avenue Roadway Improvements, Phase 2, La Cienega Boulevard Improvements (ARRA), Van Ness Avenue Improvements, and Florence Avenue Regional Corridor Improvement.

Sector & Subsector		Transportation – all vehicles miles			
Reduction Percent		Varies by project	Source: Iteris		
Currently Implemented by the Sector in 2010		N/A	Source: Inglewood Capital Improvement Program		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Annual Vehicle Miles Traveled Saving in 2020	
100%	100%	-515	-474	-1,164,350	

## CRENSHAW CORRIDOR LIGHT RAIL SERVICE

Description: Work with Metro to develop station areas in Inglewood for the Crenshaw Corridor Light Rail Service. The 8.5-mile line will connect the Metro Green Line and the Expo Line currently under construction at Crenshaw and Exposition Boulevards. Three proposed stations are located in the City of Inglewood.

Sector & Subsector		Transportation – all vehicles miles			
Reduction Percent		0.4%	Source: Project EIR		
Currently Implemented by the Sector in 2010		N/A	Source: N/A		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Annual Vehicle Miles Traveled Saving in 2020	Daily Walk Trips to Transit in 2020
100%	100%	-969	-892	-2,189,884	+472,310

## PROVIDE AND EXPAND LOCAL SHUTTLE SERVICE

Description: Provide and expand local shuttle services like the I-Line. The 30-Stop I-Line Shuttle Trolley provides a loop-trolley service in the La Brea corridor.

Sector & Subsector		Transportation – all vehicles miles			
Reduction Percent		< 1%	Source: Iteris		
Currently Implemented by the Sector in 2010		N/A	Source: N/A		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Annual Vehicle Miles Traveled Saving in 2020	
100%	100%	-3	-4	-7,836	

## EXPAND BIKE LANES

Description: Implement the General Plan proposed bicycle routes. "The project will incorporate bicycle lanes, routes, and shared-use paths into street systems, new subdivisions, and large developments. These on-street bike accommodations will be created to provide a continuous network of routes, facilitated with markings and signage. These improvements can help reduce peak-hour vehicle trips by making commuting by bike easier and more convenient for more people. In addition, improved bicycle facilities can increase access to and from transit hubs, thereby expanding the "catchment area" of the transit stop or station and increasing ridership. Bicycle access can also reduce parking pressure on heavily-used and/or heavily-subsidized feeder bus lines and auto-oriented park-and-ride facilities."

Sector & Subsector		Transportation – all vehicles miles			
Reduction Percent		0.075% increase in bicycle commuting with each mile of bikeway per 100,000		Source: Iteris	
Currently Implemented by the Sector in 2010		N/A		Source: N/A	
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Annual Vehicle Miles Traveled Saving in 2020	
100%	100%	-524	-472	-1,184,838	

## IMPLEMENT MARKET RATE PRICING FOR ON-STREET PARKING NEAR TRANSIT

Description: Introduce market rate pricing for on-street parking within one quarter of a mile from Crenshaw Transit Corridor Stations. The project and city in which it is located will implement a pricing strategy for parking by pricing all central business district/employment center/retail center on-street parking. It will be priced to encourage "park once" behavior. The benefit of this measure above that of paid parking at the project only is that it deters parking spillover from project supplied parking to other public parking nearby, which undermine the vehicle miles traveled benefits of project pricing. It may also generate sufficient area-wide mode shifts to justify increased transit service to the area.

Sector & Subsector		Transportation – all vehicles miles			
Reduction Percent		2.8% VMT		Source: Iteris	
Currently Implemented by the Sector in 2010		N/A		Source: N/A	
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Annual Vehicle Miles Traveled Saving in 2020	
100%	100%	-2,387	-2,253	-5,395,736	

## LIMIT PARKING FOR NEW DEVELOPMENT

Description: Establish parking maximums for new development within one-half mile of future rail or rapid bus stations. The project will change parking requirements and types of supply within the project site to encourage “smart growth” development and alternative transportation choices by project residents and employees. This will be accomplished in a multi-faceted strategy: elimination (or reduction) of minimum parking requirements; creation of maximum parking requirements; or the provision of shared parking.

Sector & Subsector		Transportation – all vehicles miles			
Reduction Percent		5% VMT	Source: Iteris		
Currently Implemented by the Sector in 2010		N/A	Source: N/A		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Annual Vehicle Miles Traveled Saving in 2020	
100%	100%	-12	-13	-26,715	

## UNBUNDLE PARKING

Description: Unbundle parking from residential property cost for new construction in the Downtown TOD overlay zone. This project will unbundle parking costs from property costs. Unbundling separates parking from property costs, requiring those who wish to purchase parking spaces to do so at an additional cost from the property cost. This removes the burden from those who do not wish to utilize a parking space. Parking will be priced separately from home rents/purchase prices or office leases. An assumption is made that the parking costs are passed through to the vehicle owners/drivers utilizing the parking spaces.

Sector & Subsector		Transportation – all vehicles miles			
Reduction Percent		2.6% VMT	Source: Iteris		
Currently Implemented by the Sector in 2010		N/A	Source: N/A		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Annual Vehicle Miles Traveled Saving in 2020	
100%	100%	-6	-7	-13,892	

## ALLOW PARKING CASH OUT

Description: Allow parking cash out for City Hall and businesses within ½ of a mile from Crenshaw Transit Corridor Stations. The project will require employers to offer employee parking “cash-out.” The term “cash-out” is used to describe the employer providing employees with a choice of forgoing their current subsidized/free parking for a cash payment equivalent to the cost of the parking space to the employer.

Sector & Subsector		Transportation – all vehicles miles			
Reduction Percent		0.6% Commute VMT		Source: Iteris	
Currently Implemented by the Sector in 2010		N/A		Source: N/A	
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO2e)	GHG Reduction in 2035 (MT CO2e)	Annual Vehicle Miles Traveled Saving in 2020	
100%	100%	-7	-14	-15,214	

## IMPLEMENT A VOLUNTARY COMMUTE TRIP REDUCTION PROGRAM

Description: Implement a voluntary commute trip reduction program that includes a ridesharing website. Examples include: Metro Guaranteed Ride Home Program, Metro Vanpool Program, and Employer purchased Metro Pass Program.

Sector & Subsector		Transportation – all vehicles miles			
Reduction Percent		1% Commute VMT		Source: Iteris	
Currently Implemented by the Sector in 2010		N/A		Source: N/A	
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO2e)	GHG Reduction in 2035 (MT CO2e)	Annual Vehicle Miles Traveled Saving in 2020	
100%	100%	-5	-11	-12,425	

## ENCOURAGE TELECOMMUTING AND ALTERNATIVE WORK SCHEDULES

Description: Encourage employers to offer telecommuting and alternative work schedules to workers. Encouraging telecommuting and alternative work schedules reduces the number of commute trips and therefore VMT traveled by employees. Alternative work schedules could take the form of staggered starting times, flexible schedules, or compressed work weeks.

Sector & Subsector		Transportation – all vehicles miles			
Reduction Percent		0.07% Commute VMT		Source: Iteris	
Currently Implemented by the Sector in 2010		N/A		Source: N/A	
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Annual Vehicle Miles Traveled Saving in 2020	
100%	100%	-2	-3	-3,550	

## ESTABLISH COMMUTE TRIP REDUCTION MARKETING

Description: Coordinate with Metro, government agencies, and non-profits to implement region and city-wide commute trip reduction marketing. The project will implement marketing strategies to reduce commute trips. Information sharing and marketing are important components to successful commute trip reduction strategies. Implementing commute trip reduction strategies without a complementary marketing strategy will result in lower VMT reductions.

Sector & Subsector		Transportation – all vehicles miles			
Reduction Percent		0.8% Commute VMT		Source: Iteris	
Currently Implemented by the Sector in 2010		N/A		Source: N/A	
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Annual Vehicle Miles Traveled Saving in 2020	
100%	100%	-2	-1	-3,708	

## ENCOURAGE SUBSIDIZED OR DISCOUNTED TRANSIT PROGRAM

Description: Work with local employers encouraging them to implement subsidized or discounted transit program.

Sector & Subsector		Transportation – all vehicles miles			
Reduction Percent		0.3% Commute VMT		Source: Iteris	
Currently Implemented by the Sector in 2010		N/A		Source: N/A	
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Annual Vehicle Miles Traveled Saving in 2020	
100%	100%	-7	-14	-15,214	

## EMPLOYER-SPONSORED VANPOOL AND SHUTTLES

Description: Encourage employers to provide vanpool and shuttles from major transit stations.

Sector & Subsector		Transportation – all vehicles miles			
Reduction Percent		0.6% Commute VMT		Source: Iteris	
Currently Implemented by the Sector in 2010		N/A		Source: N/A	
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Annual Vehicle Miles Traveled Saving in 2020	
100%	100%	-7	-14	-15,214	

## TARGET FUTURE DEVELOPMENT IN AREAS AROUND TRANSIT STATIONS

Description: Target future development in areas around Crenshaw Rail transit stations.

Sector & Subsector		Transportation – all vehicles miles			
Reduction Percent		0.8% VMT reduction, or 0.07% VMT reduction per 1% increase in residential density		Source: Iteris	
Currently Implemented by the Sector in 2010		N/A		Source: N/A	
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Annual Vehicle Miles Traveled Savings in 2020	
100%	100%	-7	-15	-15,495	

## BUILD AFFORDABLE AND MARKET RATE HOUSING

Description: Build affordable and market rate housing, particularly in areas around transit stations. Income has a statistically significant effect on the probability that a commuter will take transit or walk to work. BMR housing provides greater opportunity for lower income families to live closer to jobs centers and achieve jobs/housing match near transit. It also

addresses to some degree the risk that new transit oriented development would displace lower income families. This strategy potentially encourages building a greater percentage of smaller units that allow a greater number of families to be accommodated on infill and transit-oriented development sites within a given building footprint and height limit. Lower income families tend to have lower levels of auto ownership, allowing buildings to be designed with less parking which, in some cases, represents the difference between a project being economically viable or not.

Sector & Subsector		Transportation – all vehicles miles			
Reduction Percent		0.04% VMT Reduction for new units		Source: Iteris	
Currently Implemented by the Sector in 2010		N/A		Source: N/A	
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Annual Vehicle Miles Traveled Savings in 2020	
50%	100%	-1,600	-3,115	-4,159	



# STRATEGY 5: REDUCE CONSUMPTION AND WASTE

## INCREASE LOCALLY SOURCED WATER

Description: Increase the amount of water gathered from local sources. The City has a total pumped limit of 4,500 ac/ft./yr. The City currently pumps thirty percent (30%) of its water from wells, and the City has plans for a new well that will increase that percentage to thirty-five to thirty-eight percent (35-38%) of our total water—that well will be in place by the end of 2013. The City also has plans for another well that would increase the pumped amount to forty-five percent (45%) that would be in place by the end of 2015.

Sector & Subsector		Water			
Reduction Percent		81%	Source: CAPCOA WSW-3		
Currently Implemented by the Sector in 2010		30%	Source: City of Inglewood, Urban Water Management Plan		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Potable Water Savings in 2020 (gallons)	
45%	45%	-759	-776	-273,683,070	

## INCREASE RECYCLED WATER USE

Description: Accelerate the use of recycled water for irrigation and landscaping.

Sector & Subsector		Water – outdoor			
Reduction Percent		81%	Source: CAPCOA WSW-1		
Currently Implemented by the Sector in 2010		7%	Source: City of Inglewood, Urban Water Management Plan		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Potable Water Savings in 2020 (gallons)	
10%	15%	-136	-370	-48,942,076	

## USE GRAY WATER

Description: Adopt a community-wide ordinance that allows gray water “stub-outs” for residential properties and dual plumbing for indoor recycled water use for commercial and industrial development.

Sector & Subsector		Water			
Reduction Percent		100%	Source: CAPCOA WSW-2		
Currently Implemented by the Sector in 2010		0%	Source: City of Inglewood, Urban Water Management Plan		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Potable Water Savings in 2020 (gallons)	
2.5%	7.5%	-140	-428	-50,351,930	

## ACCELERATE AND EXPAND LOW-FLOW WATER FIXTURE PROGRAMS

Description: Accelerate the installation of low-flow water fixtures in residential homes and expand the program to commercial businesses. City has a showerhead and toilet replacement program, which produces an estimated eleven percent (11%) reduction.

Sector & Subsector		Water – existing development			
Reduction Percent		11%	Source: CAPCOA WUW-1		
Currently Implemented by the Sector in 2010		10%	Source: City of Inglewood, Urban Water Management Plan		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Potable Water Savings in 2020 (gallons)	
11%	13%	-12	-31	-4,403,122	

## REDUCE WATER FOR LANDSCAPING

Description: Reduce landscaping water use by encouraging water-efficient irrigation systems, grass replacement, and planting native and drought-resistant trees and vegetation. The City building code includes conservation strategy for new development.

Sector & Subsector		Water – new development			
Reduction Percent		35% native vegetation, 6% irrigation		Source: CAPCOA WUW-4 and WUW-5	
Currently Implemented by the Sector in 2010		Unknown		Source: N/A	
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Potable Water Savings (gallons)	
50%-100%	100%	-95	-237	-35,700,039	

## INCREASE RECYCLING RATES

Description: Increase residential and commercial recycling above California minimums.

Sector & Subsector		Solid waste – total			
Reduction Percent		4%	Source: EPA Warm Model		
Currently Implemented by the Sector in 2010		44%	Source: City of Inglewood		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Waste Diversion (tons)	
55%	65%	-74	-141	-364	
Sector & Subsector		Solid waste – total construction			
Reduction Percent		34%	Source: CAPCOA SW-2		
Currently Implemented by the Sector in 2010		50%	Source: N/A		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)	Waste Diversion (tons)	
60%	75%	-66	-172	-480	

# STATE MEASURES

## STATE ACTION 1: TITLE 24 UPDATES

Description: California's Title 24 Building Energy Code is updated every three years, continually increasing energy standards. The 2013 Building Energy Efficiency Standards, which take effect on January 1, 2014, are twenty-five percent (25%) more efficient than previous standards for single family residential construction, fourteen percent (14%) more efficient for multifamily construction, and thirty percent (30%) more efficient for non-residential construction.<sup>80</sup>

Sector & Subsector		Residential – new residential energy use			
Reduction Percent		Varies by year	Source: California Energy Commission		
Currently Implemented by the Sector in 2010		0%	Source: N/A		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO2e)	GHG Reduction in 2035 (MT CO2e)		
N/A	N/A	-227	-659		

Sector & Subsector		Non-residential – new non-residential energy use			
Reduction Percent		Varies by year	Source: California Energy Commission		
Currently Implemented by the Sector in 2010		0%	Source: N/A		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO2e)	GHG Reduction in 2035 (MT CO2e)		
N/A	N/A	-188	-544		

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<sup>80</sup> California Energy Commission. 2013. 2013 Energy Efficiency Standards. Available at [http://www.energy.ca.gov/title24/2013standards/rulemaking/documents/2012-05-31\\_2013\\_standards\\_adoption\\_hearing\\_presentation.pdf](http://www.energy.ca.gov/title24/2013standards/rulemaking/documents/2012-05-31_2013_standards_adoption_hearing_presentation.pdf)

## STATE ACTION 2: RENEWABLES PORTFOLIO STANDARD

Description: Requires investor-owned utilities, such as Southern California Edison, to increase procurement from renewable energy resources to thirty-three percent (33%) of total procurement by 2020. This action also includes assumptions about the transition from more carbon intense fossil fuels like coal to less-carbon intense natural gas. These assumptions are reflected in the E3 calculator.

Sector & Subsector		Residential and non-residential – all electricity			
Reduction Percent		27%	Source: E3 GHG Calculator <sup>81</sup>		
Currently Implemented by the Sector in 2010		17%	Source: California Public Utilities Commission		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)		
100%	100%	42,421	58,665		

## STATE ACTION 3: SOLAR INSTALLATION

Description: Incentivize residents and businesses with solar rebates, examples include the California Solar Initiative. Commercial customers currently generate 585.352 MW of electricity from Solar Panels, but only 22.5 KW in 2010. The additional solar capacity increases the percent (%) of commercial electricity from solar to one-half percent (0.5%). Residential customers currently generate 70.238 KW of electricity from solar panels, but only 24KW in 2010. The additional solar capacity raises the proportion of residential energy from solar from three-hundredths percent (0.03%) to nine-hundredths percent (0.09%). As of 2012, there were two solar water heaters installed on multifamily buildings with an expected energy savings for 890 therms per year.

Sector & Subsector		Residential and non-residential – all electricity			
Reduction Percent		100%	Source: CAPCOA AE-2		
Currently Implemented by the Sector in 2012		46.5 KW	Source: California Solar Initiative <sup>82</sup>		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)		
Residential - 0.5% Non-res - 1% 10 solar water heaters	Residential - 1% Non-res - 2% 25 solar water heaters	-775	-2,137		

<sup>81</sup> Energy and Environmental Economics. 2010. CPUC GHG Calculator. [http://ethree.com/public\\_projects/cpuc2.php](http://ethree.com/public_projects/cpuc2.php)

<sup>82</sup> California Solar Initiative. 2012. Cal Solar Statistics. <http://www.californiasolarstatistics.ca.gov/>

## STATE ACTION 4: PAVLEY CLEAN CARS STANDARDS

Description: Sets more stringent vehicle fuel economy standards for cars and light trucks that reduce greenhouse gas emissions

Sector & Subsector		Transportation			
Reduction Percent		17%, 23%	Source: 2011 EMFAC Pavley + LCFS Post-Processor Tool <sup>83</sup>		
Currently Implemented by the Sector in 2010		N/A	Source: N/A		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)		
100%	100%	-55,006	-76,261		

## STATE ACTION 5: LOW CARBON FUEL STANDARD

Description: Requires that the carbon intensity of California's transportation fuels are reduced by 2020

Sector & Subsector		Transportation			
Reduction Percent		7.2%	Source: Bay Area Air Quality Management District <sup>84</sup>		
Currently Implemented by the Sector in 2010		N/A	Source: N/A		
Implementation Goal by 2020	Implementation Goal by 2035	GHG Reduction in 2020 (MT CO <sub>2</sub> e)	GHG Reduction in 2035 (MT CO <sub>2</sub> e)		
100%	100%	-23,297	-23,873		

<sup>83</sup> California Air Resources Board. 2012. EMFAC.

[http://www.arb.ca.gov/ipub/webapp/EMFAC2011WebApp/emsSelectionPage\\_1.jsp](http://www.arb.ca.gov/ipub/webapp/EMFAC2011WebApp/emsSelectionPage_1.jsp)

<sup>84</sup> Bay Area Air Quality Management District. 2011. California Environmental Quality Act Air Quality Guidelines.

<http://www.baaqmd.gov/~media/Files/Planning%20and%20Research/CEQA/BGM%20Users%20Manual.ashx?la=en>

# APPENDIX E: GREENHOUSE GAS EMISSIONS INVENTORY

# TECHNICAL MEMORANDUM

TO: Mindy Wilcox, Linda Tatum

FROM: Matthew Burris, Eric Yurkovich

SUBJECT: Greenhouse Gas Emissions Inventory and Business-as-Usual Forecast

DATE: November 2012

The following memorandum summarizes community and municipal greenhouse gas emissions for the City of Inglewood. The analysis builds on earlier efforts of the South Bay Cities Council of Governments to quantify the main sources of emissions from the City, estimating community-level emissions for 2010 and developing business-as-usual forecasts for community-level and municipal operations emissions in 2020 and 2035.

## COMMUNITY EMISSIONS

In 2010, total greenhouse gas emissions in Inglewood were approximately 594,273 metric tons of CO<sub>2</sub>e (MTCO<sub>2</sub>e), three percent (3%) below the 2005 base year emissions of 610,910 MTCO<sub>2</sub>e. This aggregate number accounts for Scope 1 direct emissions from the on-site combustion of fuels and the combustion of fuel in vehicles. This figure also includes all indirect emissions associated with community electricity consumption (Scope 2), and emissions from solid waste generated and water consumed in Inglewood (Scope 3).

### COMMUNITY EMISSIONS SUMMARY BY SECTOR

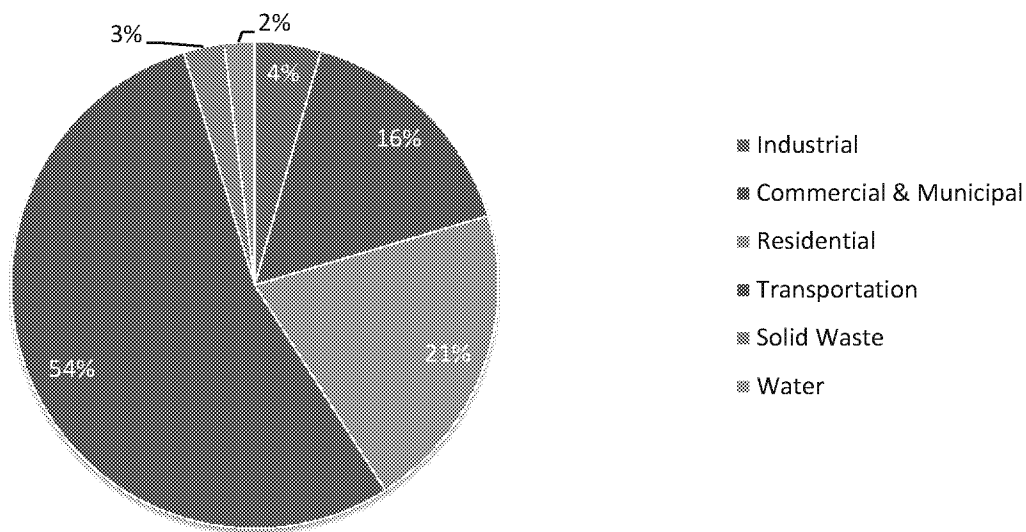
	1990	2005	2007	2010
COMMUNITY-WIDE GREENHOUSE GAS EMISSIONS				
Transportation	361,061	320,254	311,853	322,042
Residential	107,924	124,872	123,062	122,429
Commercial & Municipal	87,880	97,176	99,458	95,261
Industrial	42,514	34,940	31,272	26,100
Solid Waste	27,668	19,855	16,841	16,448
Water	15,068	13,813	13,272	11,993
Total Emissions	642,115	610,910	595,758	594,273
POPULATION, EMPLOYMENT, AND PER CAPITA AND PER SERVICE AREA EMISSIONS				
Population	109,602	112,417	111,428	109,673
Employment	30,800	32,683	33,656	31,303
Service Area Population (pop + emp)	140,402	145,100	145,084	140,976
Emissions per Capita (MT CO <sub>2</sub> e/Pop)	5.86	5.43	5.35	5.42
Emissions per Service Population (MT CO <sub>2</sub> e/SP)	4.57	4.21	4.11	4.22



## SUMMARY BY SECTOR

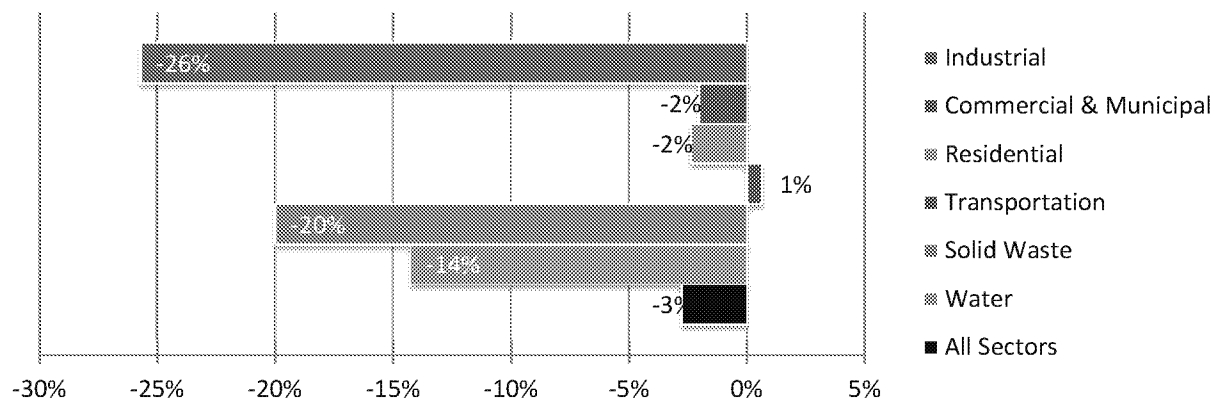
By understanding the relative scale of emissions within each sector, Inglewood can develop strategic actions that will achieve the largest greenhouse gas reductions. The transportation sector emitted fifty-four percent (54%) of Inglewood's greenhouse gas emissions, the largest quantity of any sector. The residential sector was the second largest producer of greenhouse gases, contributing twenty-one percent (21%) of the community total. The remainder of the emissions came from the commercial and municipal (16%), industrial (4%), solid waste (3%), and water (2%) sectors.

### COMMUNITY EMISSIONS SUMMARY BY SECTOR IN 2010



Between 2005 and 2010, greenhouse gas emissions fell from the 2005 base year emissions of 610,910 MTCO<sub>2</sub>e to 594,273 MTCO<sub>2</sub>e in 2010. Emissions declined twenty-six percent (26%) in the industrial sector, twenty percent (20%) in the solid waste sector, fourteen percent (14%) in water sector, two percent (2%) in the residential sector, and two percent (2%) in the commercial and municipal sector. Emissions increased one percent (1%) in the transportation sector.

### CHANGE IN COMMUNITY EMISSIONS FROM THE 2005 BASE YEAR TOTAL TO THE 2010 TOTAL



## PER CAPITA EMISSIONS

Emissions per person in Inglewood were 5.42 MTCO<sub>2</sub>e in 2010. 2010 per capita emissions were down from the 1990 emissions of 5.86 MTCO<sub>2</sub>e per person and 2005 emissions of 5.43 MTCO<sub>2</sub>e per person. Similar to person emissions, per service population emissions fell from 4.57 in 1990 to 4.22 in 2010.<sup>85</sup> However, emissions per service population were up between 2005 and 2010.

## ENERGY USE

Total electricity and natural gas use for 2010 was drawn from the Electricity Use Report provided by Southern California Edison and a Natural Gas Use Report provided by the SoCal Gas Company. The electricity report included information about commercial, residential, street lighting, and traffic control electricity use. The natural gas report included information for commercial, industrial, municipal, single family residential and multifamily residential. The following table shows electricity and natural gas use by sector in 1990, 2005, 2007, and 2010.

COMMUNITY ELECTRICITY AND NATURAL GAS USE IN 1990, 2005, 2007, AND 2010

EMISSIONS SOURCE AND SECTOR	ENERGY USE			
	1990	2005	2007	2010
ELECTRICITY (KWH)				
Industrial	120,117,426	94,528,643	86,766,236	62,221,057
Commercial and Municipal	207,570,627	232,041,326	241,369,604	241,574,320
Residential	122,685,204	161,821,398	168,262,379	164,093,216
Electricity Subtotal	450,373,257	488,391,367	496,398,219	467,888,593
Electricity Use per Person	4,094	4,361	4,472	4,254
NATURAL GAS (THERMS)				
Industrial	1,055,022	1,130,569	1,125,574	1,466,178
Commercial and Municipal	4,666,275	5,000,412	5,635,603	4,839,417
Residential	13,281,915	14,860,275	14,028,911	14,146,063
Natural Gas Subtotal	19,003,212	20,991,256	20,790,088	20,451,658
POPULATION, EMPLOYMENT, AND PER CAPITA AND PER SERVICE AREA ENERGY USE				
Population	109,602	112,417	111,428	109,673
Employment	30,800	32,683	33,656	31,303
Service Area Population (pop + emp)	140,402	145,100	145,084	140,976
Electricity Use per Capita (kWh/Pop)	4,109	4,344	4,455	4,266
Electricity Use per Service Population (kWh/SP)	3,208	3,366	3,421	3,319
Natural Gas Use per Capita (Therms/Pop)	173	187	187	186
Natural Gas Use per Service Population (Therms/SP)	135	145	143	145

<sup>85</sup> Service population is defined as population (residents) plus employment (jobs).

## COMMUNITY EMISSIONS FORECAST

Despite a downward trend in greenhouse gas emissions between 2005 and 2010, emissions are expected to rise under a business-as-usual forecast. Inglewood's greenhouse gas emissions are projected to increase from 594,273 MTCO<sub>2</sub>e of emissions in 2010 to 678,283 MTCO<sub>2</sub>e of emissions in 2035, a fourteen percent (14%) increase.

### SUMMARY OF COMMUNITY-WIDE EMISSIONS BY SECTOR FOR EXISTING AND PROJECTED GREENHOUSE GAS EMISSIONS

	1990	2005	2007	2010	2020	2035
COMMUNITY-WIDE GREENHOUSE GAS EMISSIONS						
Transportation	361,061	320,254	311,853	322,042	327,998	337,532
Residential	107,924	124,872	123,062	122,429	134,843	156,574
Commercial & Municipal	87,880	97,176	99,458	95,261	106,041	124,749
Industrial	42,514	34,940	31,272	26,100	26,376	26,830
Solid Waste	27,668	19,855	16,841	16,448	16,782	17,555
Water	15,068	13,813	13,272	11,993	14,707	15,044
Total Emissions	642,115	610,910	595,758	594,273	626,748	678,283
POPULATION, EMPLOYMENT, AND PER CAPITA AND PER SERVICE AREA EMISSIONS <sup>1</sup>						
Population	109,602	112,417	111,428	109,673	111,900	117,056
Employment	30,800	32,683	33,656	31,303	35,000	36,700
Service Area Population (pop + emp)	140,402	145,100	145,084	140,976	146,900	153,756
Emissions per Capita (MT CO <sub>2</sub> e/Pop)	5.86	5.43	5.35	5.42	5.60	5.79
Emissions per Service Population (MT CO <sub>2</sub> e/SP)	4.57	4.21	4.11	4.22	4.27	4.41

<sup>1</sup>Future population and employment is based on the Southern California Association of Government's regional growth forecast for 2012.

## MUNICIPAL INVENTORY

In 2007, government operations in Inglewood produced approximately 12,300 MTCO<sub>2</sub>e, eleven percent (11%) above the 2005 base year emissions of 11,100 MTCO<sub>2</sub>e. This roll-up figure includes emissions from municipal buildings and facilities, infrastructure, transportation, water delivery and treatment, and solid waste.

## GOVERNMENT OPERATIONS EMISSIONS SUMMARY BY SECTOR, SCOPE, AND SOURCE

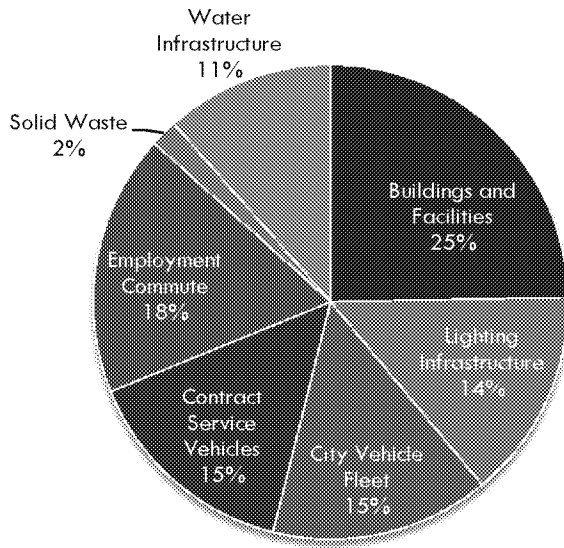
Sector	Scope	Source	Metric Tons of CO <sub>2</sub> e			% Change from 2005-2007
			1990	2005	2007	
Buildings and Facilities						
Buildings and Facilities	Scope 1	Natural Gas	N/A	400	1,000	150%
	Scope 2	Electricity	3,600	2,300	2,000	-13%
Infrastructure						
Traffic Signals/Controllers	Scope 2	Electricity	800	400	900	125%
Streetlights	Scope 2	Electricity	N/A	1,600	900	-44%
Transportation						
City Vehicle Fleet	Scope 1	Gasoline	N/A	700	1,700	143%
	Scope 1	Diesel	N/A	100	100	0%
	Scope 1	CNG	N/A	10	100	900%
	Scope 1	Propane	N/A	1	N/A	N/A
Employee Commute	Scope 3	Gasoline	N/A	1,700	2,200	29%
	Scope 3	Diesel	N/A	2	4	100%
Contract Services	Scope 3	Gasoline	N/A	100	100	0%
	Scope 3	Diesel	N/A	1,500	1,700	13%
Water Delivery						
Water Delivery and Treatment Facilities	Scope 1	Natural Gas	N/A	10	20	100%
	Scope 2	Electricity	700	1,900	1,400	-26%
Sprinkler/Irrigation Control	Scope 2	Electricity	300	100	10	-90%
Solid Waste						
Landfill Waste	Scope 3	Waste	N/A	300	200	-33%
Scope 1 Emissions <sup>1</sup>			-	1,200	2,900	142%
Scope 2 Emissions <sup>1</sup>			5,400	6,300	5,200	-17%
Scope 3 Emissions <sup>1</sup>			-	3,600	4,200	17%
Total Emissions <sup>1</sup>			5,400	11,100	12,300	11%

<sup>1</sup> Totals may be slightly off due to rounding.

## SUMMARY BY SECTOR

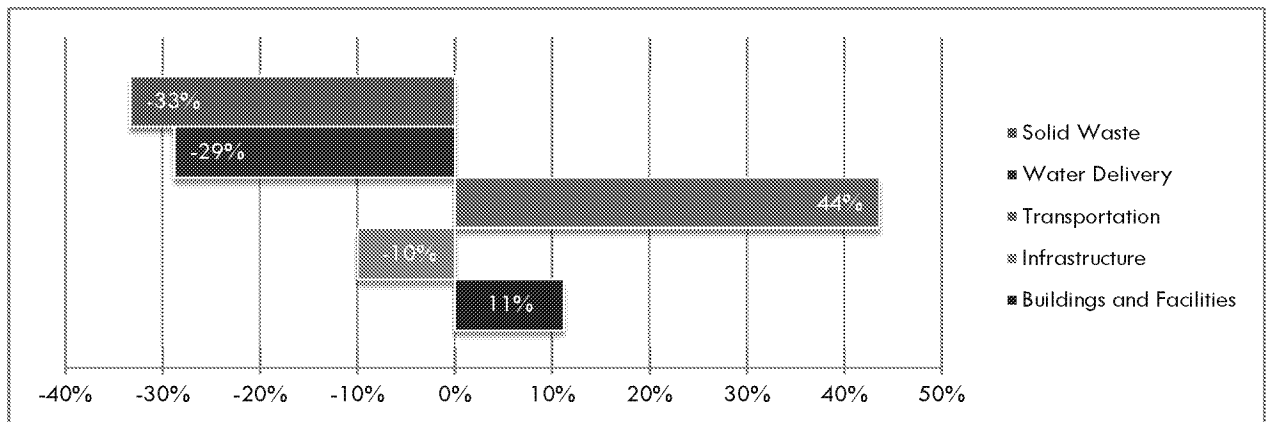
Transportation sector emissions accounted for nearly half of the greenhouse gas emissions from municipal operations. Operation of the city vehicle fleet, employee commuting, and contract services produced forty-eight percent (48%) of the emissions. Energy consumption for municipal buildings and facilities resulted in 3,000 MTCO<sub>2</sub>e of emissions, twenty-four percent (24%) of the total government operations emissions. The remainder of the emissions came from infrastructure (15%), water delivery and treatment (12%), and solid waste (2%).

## GOVERNMENT OPERATIONS EMISSIONS SUMMARY BY SECTOR IN 2007



Although total emissions from government operations increased from 11,100 MTCO<sub>2</sub>e in 2005 to 12,300 MTCO<sub>2</sub>e in 2007, not all sectors increased proportionally. Emissions from buildings and facilities and transportation increased over the two-year period. Transportation sector emissions increased forty-four percent (44%), while building and facility emissions grew eleven percent (11%). Between 2005 and 2007, emissions from infrastructure, water delivery and treatment, and solid waste all declined.

## CHANGE IN GOVERNMENT OPERATIONS EMISSIONS FROM THE 2005 BASE YEAR TOTAL TO THE 2007 TOTAL



## MUNICIPAL OPERATIONS EMISSIONS FORECAST

Under a Business-as-Usual forecast, greenhouse gas emissions from Inglewood's government operations are expected to increase from 12,300 MTCO<sub>2</sub>e in 2007 to 14,600 MTCO<sub>2</sub>e in 2035, a nineteen percent (19%) overall increase. Annual emissions are forecasted to grow by approximately sixty-one-hundredths percent (0.66%) each year.

# GOVERNMENT OPERATIONS BUSINESS-AS-USUAL FORECAST BY SECTOR AND SOURCE

Sector	Source	Metric Tons of CO <sub>2</sub> e				% Change from 2007-2035
		2007	BAU 2010	BAU 2020	BAU 2035	
Buildings and Facilities						
Buildings and Facilities	Natural Gas	1,000	1,000	1,100	1,200	20%
	Electricity	2,000	2,100	2,200	2,400	20%
Infrastructure						
Traffic Signals/Controllers	Electricity	900	900	1,000	1,100	22%
Streetlights	Electricity	900	900	900	1,000	11%
Transportation						
City Vehicle Fleet	Gasoline	1,700	1,700	1,800	2,000	18%
	Diesel	100	100	100	100	0%
	CNG	100	100	100	100	0%
	Propane	N/A	N/A	N/A	N/A	N/A
Employee Commute	Gasoline	2,200	2,200	2,400	2,600	18%
	Diesel	4	4	4	5	25%
Contract Services	Gasoline	100	100	100	100	0%
	Diesel	1,700	1,800	1,900	2,100	24%
Water Delivery						
Water Delivery and Treatment Facilities	Natural Gas	20	20	20	30	50%
	Electricity	1,400	1,400	1,500	1,600	14%
Sprinkler/Irrigation Control	Electricity	10	10	10	10	0%
Solid Waste						
Landfill Waste	Waste	200	200	200	300	50%
Scope 1 Emissions <sup>1</sup>		2,900	2,900	3,100	3,400	17%
Scope 2 Emissions <sup>1</sup>		5,200	5,300	5,600	6,100	17%
Scope 3 Emissions <sup>1</sup>		4,200	4,300	4,600	5,100	21%
Total Emissions <sup>1</sup>		12,300	12,500	13,300	14,600	19%

<sup>1</sup> Totals may be slightly off due to rounding.

# APPENDIX F: CLIMATE-READY DEVELOPMENT REVIEW PROCESS

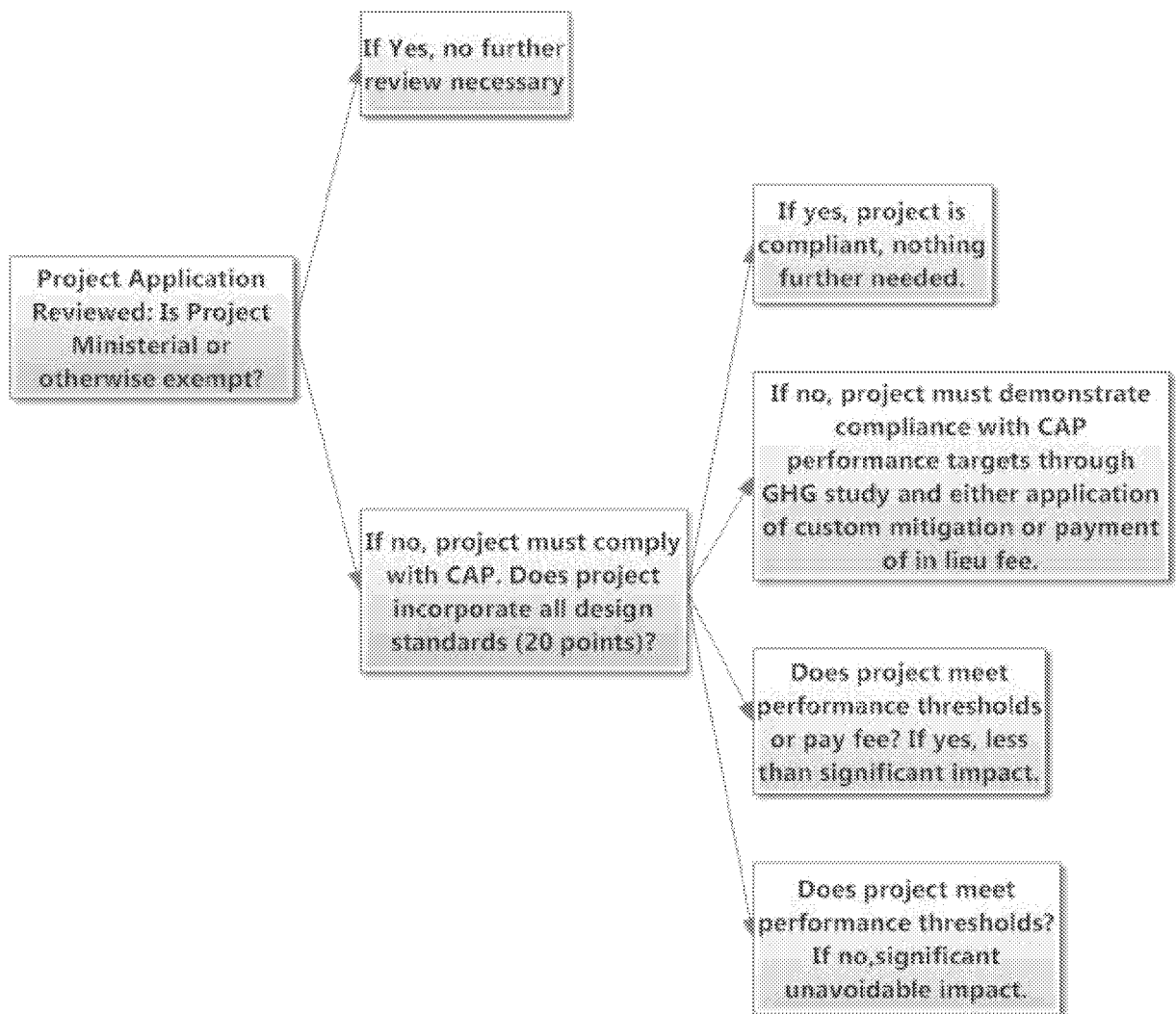
## DEVELOPMENT REVIEW

One of the benefits of having a local ECAP is the ability to streamline the environmental review of projects. By providing an emissions inventory, emissions targets, and strategies for reducing greenhouse gas emissions, Inglewood has established a framework evaluating and mitigating greenhouse gas emissions. Part of these emissions reductions will need to be achieved through better environmental performance of new development. The following discussion and review process (following figure) explains the steps the City will take to evaluate and streamline new development proposals under this ECAP. This review process has four primary compliance paths, which are described below:

- Ministerial and exempt projects;
- Projects that apply a combination City's Climate-Ready Development Standards;
- Projects that apply a set of custom GHG mitigation measures; or
- Projects that pay an in lieu fee.



## DEVELOPMENT REVIEW PROCESS



## MINISTERIAL AND EXEMPT PROJECTS

Many of the land use and building permit applications that come before the City are ministerial permits, or permits that can be approved without input from the Planning Commission or City Council. Similarly, many projects, such as building tenant improvements, are exempt from CEQA review because of the scale and nature of the projects. These projects must be compliant with applicable state regulations, such as Title 24 and CALGreen, and City regulations, and compliance determination does not require any discretionary input. As such, these projects are assumed to be compliant with the goals of the ECAP or so small that the increased greenhouse gas emissions would be miniscule.

## APPLY CLIMATE-READY DEVELOPMENT STANDARDS

If a project is not a ministerial approval, then it must integrate some combination of the City's Climate-Ready Development Standards. Like many environmental enhancement and green

design programs, the City's Climate-Ready Development Standards have been established as a point-based menu system. These measures were chosen because they have been demonstrated by various studies to directly reduce GHG emissions or support changes in activities that lead to GHG emissions reductions. These measures were prioritized as presented below based on a variety of different factors including performance estimates and analysis conducted for related studies, fit and applicability to Inglewood, and ability to support the ECAP's strategies. This analysis relied on such established resources as: CAPCOA's Quantifying Greenhouse Gas Mitigation Measures Report and the Urban Land Institute's Growing Cooler. Other resources that support the strategies include ongoing work by organizations such as the U.S. Green Building Council, Build It Green, the California Air Resources Board, the US EPA, the Urban Land Institute, and other California cities' local climate action planning efforts to better understand and explain how various energy efficiency measures, renewable energy measures, green design strategies, compact urban form, and efficient transit and transportation systems all help to reduce GHG emissions. The application of these measures to future development projects will enhance the potential emissions reductions targeted by the City.

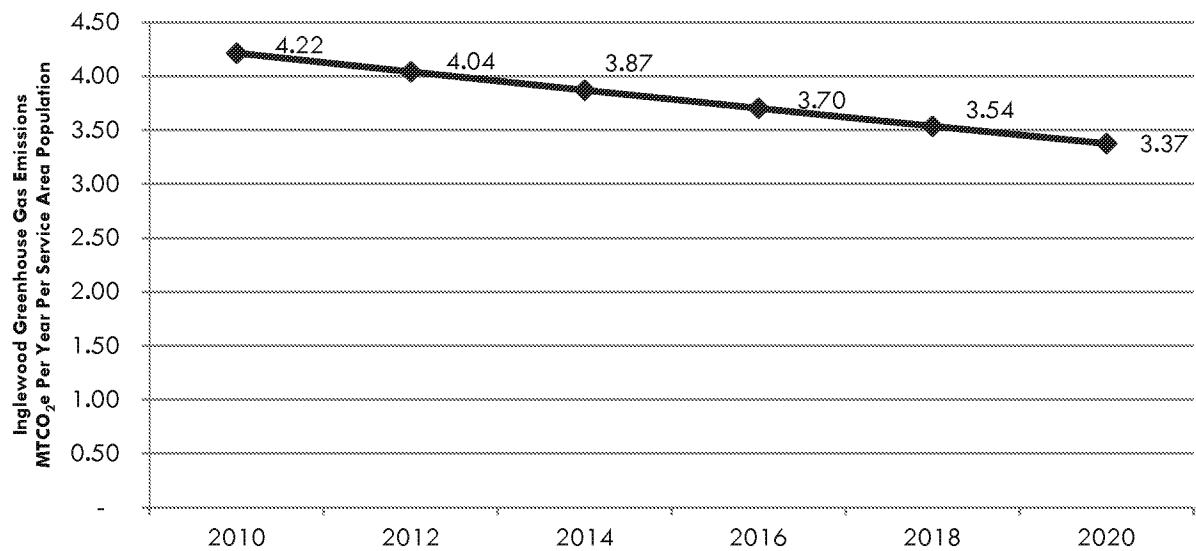
Each standard has a point value assigned to it that reflects its general effectiveness at reducing greenhouse gas emissions and each standard has a qualifier that identifies which type of projects the standards apply to. New project applicants will have the discretion of choosing which measures they want to integrate into their project. For a project to be fully compliant with the goals of the ECAP, an applicant must select measures that have an associated point total of 20 points. In this way, the City hopes to provide project applicants with additional flexibility in determining their own approach to creating a Climate-Ready project.

## **PERFORMANCE-BASED COMPLIANCE**

In some cases, a project applicant may seek approval for a unique project type to which the Climate-Ready Development Standards are not readily applied. To provide additional flexibility in evaluating projects, the ECAP provides performance targets that allow each project to be evaluated based on its actual greenhouse gas emissions. The ECAP establishes an annual greenhouse gas emissions per service area population schedule that maps out the City's per service area population emissions. When evaluating a non-standard project, the City will require the project applicant to commission the preparation of a Greenhouse Gas Emissions Study that estimates the project's per service area population greenhouse gas emissions. If the operational year per service area population emissions are less than or equal to the City's per service area population target as shown in the following figure, the project is assumed to be compliant with the ECAP.

If the project is non-compliant, mitigation actions will be required to the extent feasible. If a project's per service area population emissions are greater than the City's per service area target for its operational year, the project will be required to apply all feasible mitigation measures in order to bring projected emissions in line with this schedule. If there are no feasible mitigation measures available, and if the emissions are greater than the target, the project is assumed to be non-compliant with the ECAP, and it will likely result in a significant environmental impact.

## **GREENHOUSE GAS EMISSIONS PER SERVICE AREA POPULATION**



## PAYMENT OF AN IN LIEU FEE

To provide applicants with additional flexibility, the City will establish an in lieu fee program that will allow applicants to pay into a new, to-be-established fee program that will be used to offset greenhouse gas emissions through energy efficiency retrofits of the City's existing building stock. At this time, the City anticipates setting up this fee so that applicants would pay an abatement fee for each ton of CO<sub>2</sub>e that needed to be reduced to meet the City's Per Service Area Population targets. This option can also provide high-emitting projects with an additional compliance option if no feasible mitigation is available.

## CLIMATE-READY DEVELOPMENT STANDARDS

Projects must achieve points from the following list of development standards.

### INGLEWOOD CLIMATE-READY DEVELOPMENT STANDARDS

STANDARD	APPLICABLE USE				APPLICABLE SCALE	POINTS
	SFR	MFR	COM	MU		
Demonstrate the building will perform at least 15% better than the current Title 24. Three additional points can be achieved if the building will perform at least 30% better than the current Title 24.	✓	✓	✓	✓	All projects	3 - 6
Provide preferred parking for low-emitting and fuel efficient vehicles for 5% of the total vehicle parking capacity OR provide electric vehicle recharging stations for 3% of the total vehicle parking capacity.		✓	✓	✓	All projects	3
Hire a third-party commissioning agent to conduct a commissioning audit of the building and verify the building mechanical systems were installed and operate correctly.	✓	✓	✓	✓	All projects	3
Design and orient 75% or more new buildings such that one axis of each building is at least 1.5 times longer than the other, and such that the longer axis is within 15 degrees of the geographical east/west axis. The length to width ratio shall be applied only to the length of walls enclosing conditioned spaces; walls enclosing unconditioned spaces such as garages, arcades, or porches cannot contribute to standard achievement. South-facing vertical surfaces of buildings counting towards standard achievement must not be more than 25% shaded at time of initial occupancy (measured at noon on December 21st).	✓	✓	✓	✓	All projects	3
Implement a commute trip reduction program if the project generates more than 50 new permanent jobs.			✓	✓	All projects	3
Install solar energy generation to meet 35% of the project's energy demand. The solar panels should be onsite, but can be located offsite and within the City Limits, at the approval of the Planning Director. Two additional points can be achieved for meeting 50% of the project's energy demand through installed solar energy generation.	✓	✓	✓	✓	All projects	3 - 5
Use porous materials on all paved areas.	✓	✓	✓	✓	All projects	2
All non-permeable paving materials shall be high albedo materials with a Solar Reflectance Index of at	✓	✓	✓	✓	All projects	2

STANDARD	APPLICABLE USE				APPLICABLE SCALE	POINTS
	SFR	MFR	COM	MU		
least 29.						
If a new development is within ½ mile of a transit stop and requires off-street parking, parking must be unbundled from the rental or for-sale cost.		✓	✓	✓	All projects	2
Provide continuous rows of appropriately spaced trees (every 25 feet) along all streets (or an equivalent number of trees placed offsite at the discretion of the Planning Director). Trees shall be of a type and nature that have broad canopies and provide ample shade. Evergreen trees are preferred. Palm trees shall be prohibited from consideration towards achieving this standard.	✓	✓	✓	✓	All projects	2
If a facade faces a street or sidewalk, 30% or greater of its continuous length shall not be blank (without windows and doors). Walls with public art installations such as murals may be exempted.		✓	✓	✓	All projects	2
It is prohibited for more than 20% of the linear street frontage of new buildings to be garages and service bay openings.	✓	✓	✓	✓	All projects	2
New multi-unit developments must install electricity, gas, and water meters for each unit.		✓	✓	✓	All projects	2
Design and install landscaping to minimize summer heat gain through: (1) the placement of evergreen trees along the west façade of buildings, (2) the placement of trees so as to shade 50% of the site's hardscape with 5 years of construction, and (3) a covenant recorded that provides for the ongoing maintenance so as to maintain the trees' shade. Trees shall be of a type and nature that have broad canopies and provide ample shade. Evergreen trees are preferred. Palm trees shall be prohibited from consideration towards achieving this standard.	✓	✓	✓	✓	All projects	2
Provide at least one secure, enclosed bicycle storage space, separate and independent from the required automobile parking areas, per occupant for a percentage of the planned occupancy and no less than one space per unit. Points shall be achieved as follows:  For provision of spaces for 15% of planned occupancy, 1 point;  For provision of spaces for 30% of planned		✓		✓	All projects	1-4

STANDARD	APPLICABLE USE				APPLICABLE SCALE	POINTS
	SFR	MFR	COM	MU		
occupancy, a total of two points; For provision of spaces for 45% of planned occupancy, a total of three points; For provision of spaces for 50% or more of planned occupancy, a total of four points.						
Provide visitor bicycle racks on-site with at least one bicycle space per 10,000 square feet of new-non-retail space or 5,000 square feet of retail space but not fewer than four bicycle spaces per building or 1 space per business (whichever is greater).			✓	✓	All projects	2
Provide secure visitor bicycle racks on-site, with at least one bicycle space per 10 new dwelling units and not less than four space per project site.		✓		✓	All projects	2
Provide at least one on-site shower with changing facility for any development with 100 or more new workers and at least one additional on-site shower with changing facility for every 150 new workers thereafter.			✓	✓	All projects	2
Provide at least one additional tree per unit above what is required by code. Trees shall be of a type and nature that have broad canopies and provide ample shade. Evergreen trees are preferred. Palm trees shall be prohibited from consideration towards achieving this standard.	✓	✓		✓	All projects	2
Provide at least one tree per 500 square feet of building area. Trees shall be of a type and nature that have broad canopies and provide ample shade. Evergreen trees are preferred. Palm trees shall be prohibited from consideration towards achieving this standard.			✓	✓	All projects	2
Incorporate appropriate traffic calming features such as curb extensions, mini-circles, parking chicanes, roundabouts, medians, raised street crossings or similar features.	✓	✓	✓	✓	Projects greater than 5 acres	1
Minimize the number of driveway cuts that intersect with sidewalks and other pedestrian walkways.		✓	✓	✓	All projects	1
Delineate crosswalks at every intersection within ½ mile of the project site.	✓	✓	✓	✓	Projects greater than 5 acres	1
Construct sidewalks on both sides of streets for frontage controlled by the project applicant that is	✓	✓	✓	✓	All projects	1

STANDARD	APPLICABLE USE				APPLICABLE SCALE	POINTS
	SFR	MFR	COM	MU		
contiguous to the project site.						
Create external pedestrian and bicycle connections every 800 feet along the project perimeter.	✓	✓	✓	✓	Projects greater than 5 acres	1
Divert 100% of all non-hazardous inert construction and demolition debris for recycling and salvage and divert 75% of all remaining construction and demolition debris.	✓	✓	✓	✓	All projects	1
Locate the majority entry points to new buildings within a ¼ mile of a transit stop.		✓	✓	✓	All projects	1
Use salvaged, refurbished, or recycled materials such that the sum of these materials constitutes at least 5%, based on cost, of the total value of materials on the project. On additional point can be achieved if the use of these materials constitutes at least 10% of the total value of materials.	✓	✓	✓	✓	All projects	1-2
Provide designated space, facilities, and services for users to recycle and compost waste.		✓	✓	✓	All projects	1
Use only high efficiency lighting.	✓	✓	✓	✓	All projects	1
Meet at least 5% of a project's indoor water use through a combination of reclaimed water and gray water. Providing plumbing for future reclaimed water availability will meet the requirements of this standard if reclaimed water is not yet available at the site.	✓	✓	✓	✓	All projects	1
Design landscaping for very-low water use.	✓	✓	✓	✓	All projects	1
Utilize artificial turf in place of grass.	✓	✓	✓	✓	All projects	1
Use of efficient irrigation systems and weather-based irrigation controllers.	✓	✓	✓	✓	All projects	1
Provide at least one of the following sidewalk amenities like benches, trash receptacles, drinking fountains, and/or public art in new mixed-use and multifamily, for every 50 feet of sidewalk frontage.		✓		✓	All projects	1
New transit stops must provide seating, shade, and trash receptacles, if a project results in rebuilding, relocating, or new construction of a transit stop.	✓	✓	✓	✓	All projects	1
Locate all new off-street surface parking lots at the side or rear of buildings, leaving building frontages facing streets free of surface parking lots.		✓	✓	✓	All projects	1

