CITY OF MONTEREY PARK

MUNICIPAL ENERGY ACTION PLAN

Funded by:
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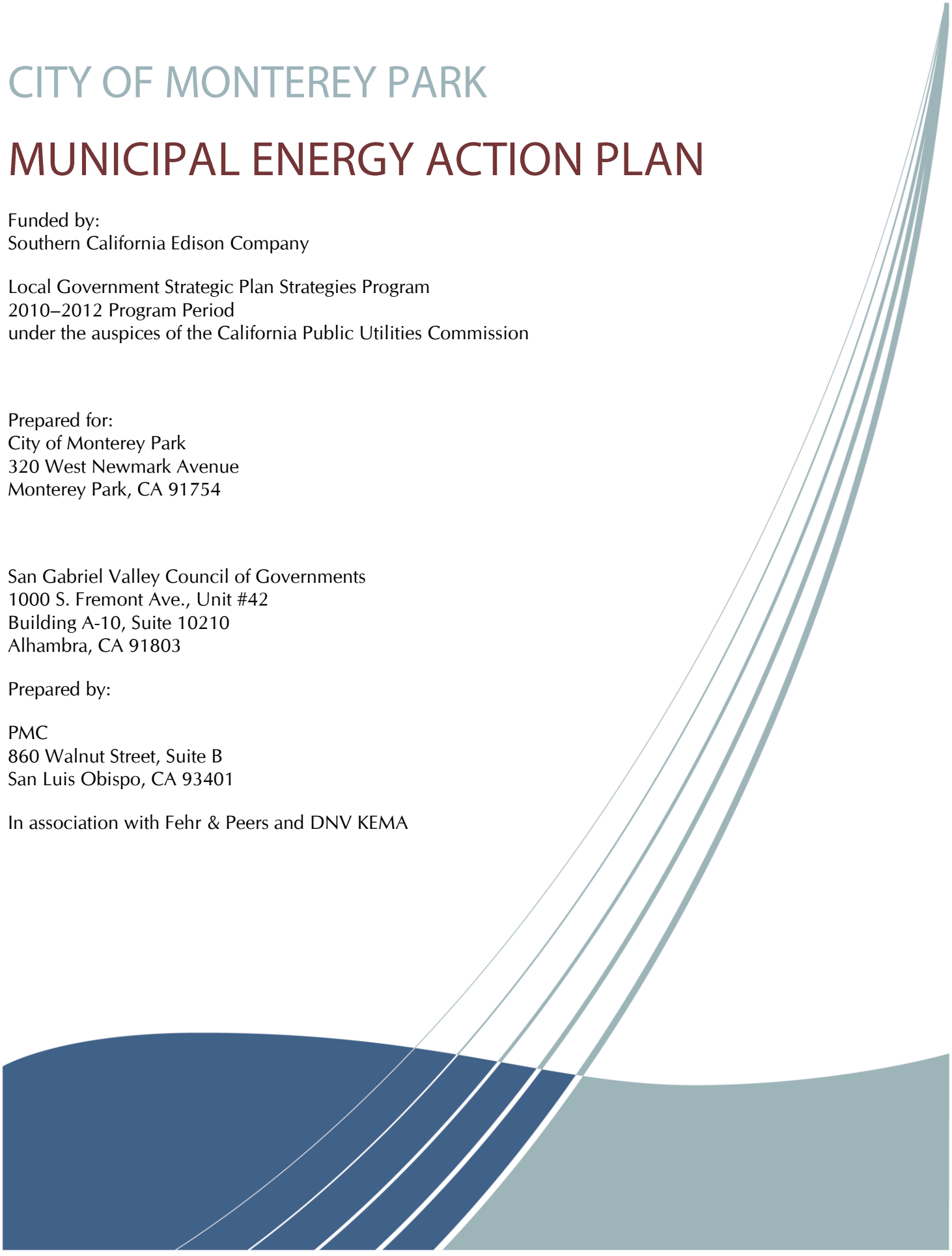

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ACKNOWLEDGEMENTS

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TABLE OF CONTENTS

Executive Summary **9**

Chapter 1: Introduction **15**

Purpose and Scope 15
Southern California Edison and the California Long Term Energy Efficiency Strategic Plan 16
The Energy Leader Partnership Model 18
Role of the EAP 19
City Profile 20
The EAP Planning Process 21
City Environmental Commission ..... **Error! Bookmark not defined.**
Chapter 2: GHG Emissions Inventory **23**
Inventory and Forecasting Purpose 23
Description of Relevant Emissions and Key Concepts 24
Municipal Inventory Summary 24
Municipal Electricity Use Profile 25
Comparison of Baseline Year to 2010 26
The Electricity Reduction Loading Order 28
Chapter 3: Energy Efficiency Strategy **29**
Strategy Structure 30
Policy Criteria and Evaluation 30
Municipal Electricity Efficiency Projects and Policies 31
Long-Term Municipal Policies 33
Chapter 4: Implementation **35**
Monitoring and Updating the EAP 36
Implementation and Monitoring Tools 37
Implementation Program 38
Continued Partnership Opportunities 39
Chapter 5: Conclusion **41**
Glossary **43**

Appendix A: ELP Requirements Checklist **57**

TABLE OF CONTENTS

LIST OF FIGURES

Figure ES-1: Municipal GHG Emissions Sources, 2009 10
Figure ES-2: Municipal GHG Emissions by Sector, 2009 ($MTCO_2e$) 11
Figure ES-3: Municipal Electricity Use by Account Type, 2009-2010 12
Figure ES-4: Monterey Park Energy Efficiency Target 12
Figure 1: "Big Bold" Strategies of the CEESP 16
Figure 2: Partners in the EAP Planning Process 18
Figure 3: Energy Leader Partnership Model 18
Figure 4: The EAP Planning Process 21
Figure 5: Municipal GHG Emissions Sources, 2009 24
Figure 6: Municipal GHG Emissions by Sector, 2009 24
Figure 7: Municipal Electricity Use by Rate Category, 2009 25
Figure 8: Changes in Municipal Electricity Use, 2009–2010 26
Figure 9: Retrofitting Loading Order 28
Figure 10: Municipal Electricity Reduction Target 30

LIST OF TABLES

Table ES-1: Municipal Electricity Use by Account, 2009 (kWh) 11
Table ES-2: Near-Term Municipal Projects 13
Table 1: Employment in Monterey Park, 2010 20
Table 2: Monterey Park Municipal Electricity Use by Rate Class, 2009 25
Table 3: Monterey Park Top Facility and Lighting Electricity Users by Account, 2009–2010 27
Table 4: Monterey Park Top Water Service Electricity Users by Account, 2009–2010 27
Table 5: Recently Completed Projects 31
Table 6: Near-Term Projects 32
Table 7: Implementation Program Table 38

ABBREVIATIONS

Abbreviation	Definition
CAP	Climate Action Plan
CARB	California Air Resources Board
CEC	California Energy Commission
CEESP	California Long-Term Energy Efficiency Strategic Plan
CFL	compact fluorescent light
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CPUC	California Public Utilities Commission
DR	Demand response
EAP	Energy Action Plan
EE	energy efficiency
EEMIS	Energy Enterprise Management Information System
ELP	Energy Leader Partnership
GHG	greenhouse gas
GWP	Global Warming Potential
iDSM	integrated demand-side management
kWh	kilowatt-hour
MT	metric ton
$MTCO_2e$	metric ton of carbon dioxide equivalent
N_2O	nitrous oxide
PSC	Project Steering Committee
SCE	Southern California Edison
SoCalREC	Southern California Regional Energy Consortium
SGVCOG	San Gabriel Valley Council of Governments
SGVEWP	San Gabriel Valley Energy Wise Partnership

EXECUTIVE SUMMARY

This Energy Action Plan (EAP) demonstrates the City's commitment to pursue energy efficiency and reduce GHG emissions. The purpose of this EAP is to identify the City of Monterey Park's long-term vision and commitment to achieve energy efficiency in municipal operations. Specifically, this EAP includes the following chapters:

- **Chapter 1: Introduction –** Provides an overview of the purpose and scope of the project, as well as the process and outreach efforts involved in developing this EAP.
- **Chapter 2: GHG Inventory and Forecast and Electricity Profile –** Summarizes the greenhouse gas (GHG)-generating activities occurring through municipal operations, highlights the factors that influence municipal electricity use, and identifies top electricity uses within municipal accounts.
- **Chapter 3: Energy Efficiency Strategy –** Identifies a comprehensive set of electricity-related energy efficiency targets, goals, policies, and actions to help the community and the city become more energy efficient.
- **Chapter 4: Implementation –** Provides policies and actions to assist with the implementation of energy efficiency strategy, and summarizes the policies, benefits, implementation time frame, and responsible departments for implementing the components of the energy efficiency strategy.
- **Chapter 5: Conclusion –** Reaffirms the City's commitment to implementing energy efficiency projects, programs, and policies to support the goals of the California Long Term Energy Efficiency Strategic Plan and foster energy efficiency throughout the community.
- **Glossary –** Defines the key terms used throughout the document.

CHAPTER 1: INTRODUCTION

Chapter 1 provides a brief overview of the purpose and scope of this EAP and how this Plan was created in partnership with the San Gabriel Valley Council of Governments (SGVCOG) and Southern California Edison (SCE). The City has prepared this Plan not only to follow the guidance of California's Long Term Energy Efficiency Strategic Plan (CEESP) but also to identify a clear path to successfully implementing actions, policies, and goals that will achieve the City's reduction targets.

This project was funded through the technical assistance program of the CEESP, which aims to provide local governments with expertise and resources to achieve energy efficiency at municipal facilities and throughout the community. In 2009, as part of CEESP implementation, the California Public Utilities Commission authorized SCE to use funding from the electricity public goods charge to complete strategic plan activities focused on energy efficiency. SCE is implementing the "Big Bold" strategies of the CEESP, and through this process, SCE awarded funding to the SGVCOG to provide funding and technical support for preparation of the Energy Action Plan.

CHAPTER 2: GREENHOUSE GAS INVENTORY AND ELECTRICITY PROFILE

The baseline GHG inventory and forecast summarizes existing GHG emissions and energy consumption from municipal activities based on the City's Climate Action Plan (see **Figure ES-1**). A baseline year of 2009 was selected for the inventory and electricity data for 2010 was translated into GHG emissions to serve as a common benchmark that will allow for accurate comparison between all cities in the San Gabriel Valley participating in the Energy Action Plan process.

Figure ES-1: Municipal GHG Emissions Sources, 2009

Inventories of GHG emissions from municipal operations are described in Chapter 2 and are summarized in **Figure ES-2** below. In 2009, municipal activities generated approximately 5,573 MTCO2e, with the largest source of GHG emissions coming from electricity use. While municipal GHG emissions are typically considered a subset of community sources and represent 1.3% of total community GHG emissions, they are the focus of this analysis as the City has a greater ability to influence municipal GHG emissions through changes to City facilities, purchasing policies, or other City-led efforts to reduce GHG emissions within City operations. **Table ES-1** depicts the total electricity used at municipal facilities in 2009 by the rate class.

Figure ES-2: Municipal GHG Emissions by Sector, 2009 ($MTCO_2e$)

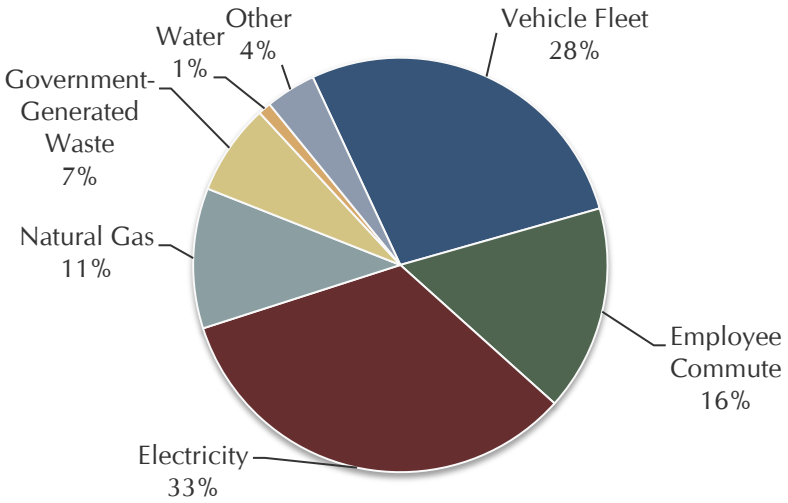


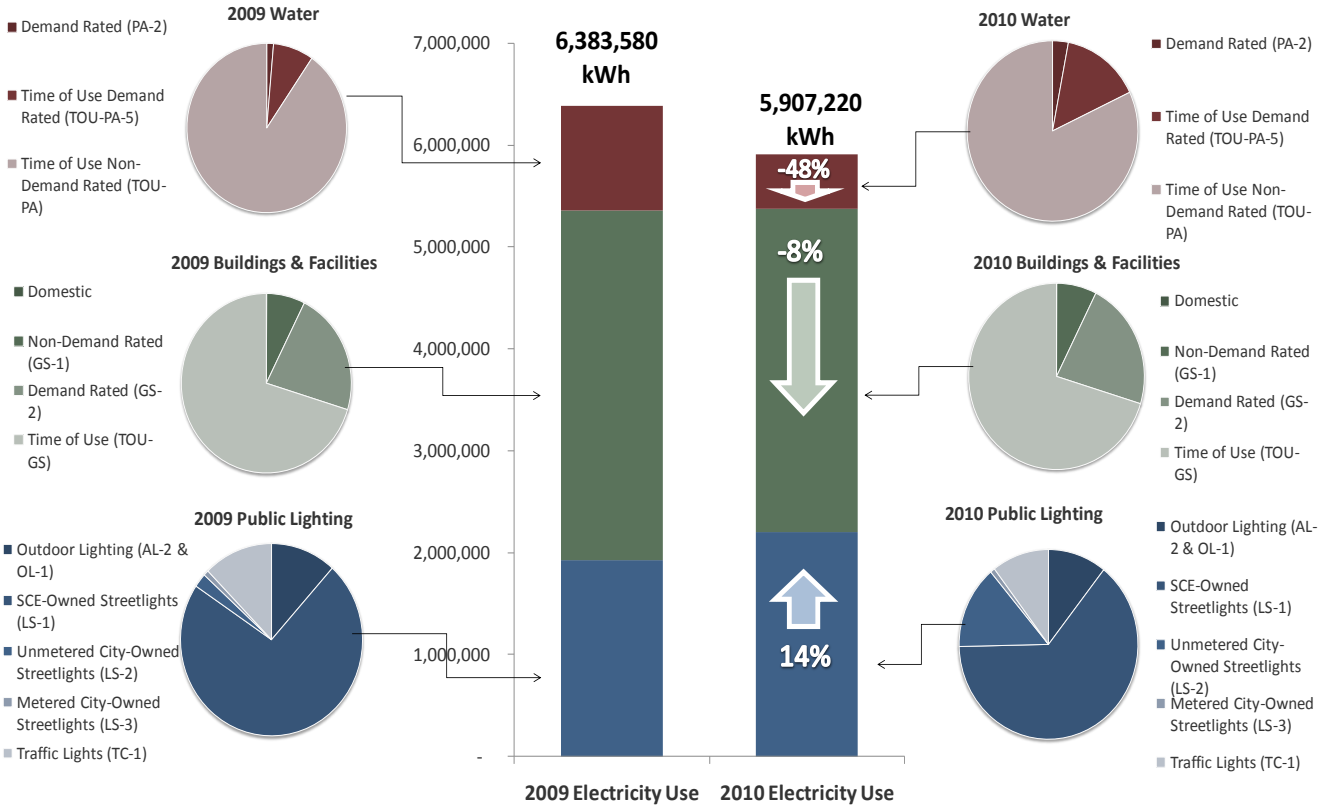
Table ES-1: Municipal Electricity Use by Account, 2009 (kWh)

Buildings & Facilities[1]	2009 Annual kWh	Percentage of 2009 kWh
Non-Demand Rated (GS-1)	251,990	7%
Demand Rated (GS-2)	767,110	22%
Demand Rated Time of Use (TOU-GS)	2,413,190	70%
Domestic	2,780	<1%
Total Buildings & Facilities in 2009 Baseline Year	**3,435,070**	**100%**
Lighting[1]	**2009 Annual kWh**	**Percentage of 2009 kWh**
Outdoor Lighting (AL-2 & OL-1)	224,680	12%
SCE-Owned Streetlights (LS-1)	1,399,020	73%
Unmetered City-Owned Streetlights (LS-2)	45,180	2%
Metered City-Owned Streetlights (LS-3)	17,610	1%
Traffic Lights (TC-1)	237,800	12%
Total Lighting in 2009 Baseline Year	**1,924,290**	**100%**
Water	**2009 Annual kWh**	**Percentage of 2009 kWh**
Agricultural Time of Use (TOU-PA-A & TOU-PA-B)	926,050	90%
Agriculture & Pumping Time of Use Demand Metered (TOU-PA-5)	84,090	8%
Agriculture & Pumping Demand Metered (PA-2)	14,090	1%
Total Water in 2009 Baseline Year	**1,024,230**	**100%**
Total All Municipal Accounts in 2009 Baseline Year	**6,383,580**	**100%**

1. For additional explanation of accounts, refer to the Glossary.

Municipal electricity use is also described in detail by depicting the changes in electricity use between the baseline year and 2010 (see **Figure ES-3**), and identifying the largest electricity uses by account to highlight the energy efficiency actions completed at City facilities and identify opportunities for reducing electricity use.

Figure ES-3: Municipal Electricity Use by Account Type, 2009-2010



CHAPTER 3: ELECTRICITY ENERGY EFFICIENCY STRATEGY

The City of Monterey Park has identified key electricity efficiency targets, shown in **Figure ES-4**, to support the goals of the Energy Leader Partnership. To achieve the electricity reduction targets for each electricity sector the City has identified a set of goals, policies, actions, and projects to be implemented, listed in Chapter 3.

Figure ES-4: Monterey Park Energy Efficiency Target

564,363 kWh Remaining

Municipal Electricity Use

- Achieve Gold Level status in SCE's Energy Leader Partnership Program.

The actions included in this Plan build upon the City's previous efforts by identifying the completed, near-term, and long-term projects or policies to achieve energy efficiency in municipal facilities. **Table ES-2** summarizes the near-term municipal projects to be implemented by the City.

Table ES-2: Near-Term Municipal Projects

Energy Efficiency Measure	Electric Energy Savings	Annual Cost Savings	Estimated Incentive/ Rebate	Net Cost to Customer	Estimated Payback Period	Equipment Life Expectancy
Description	kWh	$	$	$	years	years
City Hall						
Install Thermostat Occupancy Sensors	24,738	$2,721	$650	$650	0.2	8
Install Wall-Box Occupancy Sensor	10,850	$1,194	$813	$2,432	2	8
Ceiling-Mount Occupancy Sensor	2,622	$288	$201	$1,104	3.8	8
Implement Demand Control Ventilation	14,333	$1,577	$2,860	$8,340	5.3	8
Retrofit 32W T8 Fixtures with 25W T8s	36,326	$3,996	$2,656	$24,399	6.1	8
Retrofit 32W U-bend T8 Fixtures with 25W U-bend T8s	2,866	$315	$223	$2,423	7.4	8
Bruggemeyer Library						
Install Occupancy Sensor Controls on Parking Garage Night Light Fixtures	1,421	$256	$71	$219	0.9	8
Implement Demand Control Ventilation	17,098	$3,078	$4,529	$5,471	1.8	15
Replace Exterior 250W Pole-Mounted Metal Halide with LED	11,673	$2,101	$850	$5,650	2.7	11
Install Photocell Controls on Exterior Wall Packs	342	$61	$17	$233	3.8	8
Replace CFL 42W Wall Packs with LED	1,524	$274	$94	$1,256	4.6	11
Replace Recessed Can Fixtures with LED	14,802	$2,664	$1,136	$17,264	6.5	20
Replace 2x2 Fluorescent Fixtures with LED	49,878	$8,978	$3,812	$66,508	7.4	20
Langley Senior Center						
Ceiling-Mount Occupancy Sensor	8,311	$1,413	$643	$807	0.6	8
Replace HID Wall Packs with LED	2,365	$402	$118	$1,007	2.5	11
Replace 32W T8 with 25W T8 and New Clear Diffusers	15,293	$2,600	$1,188	$10,322	4	8
Replace Parking Lot and Walkway High-Pressure Sodium Fixtures with LED	13,035	$2,216	$652	$10,148	4.6	11
Install Wall-Box Occupancy Sensor	149	$25	$17	$148	5.9	8
Replace Cobra Head High-Pressure Sodium Fixtures with LED	1,708	$290	$85	$2,015	6.9	11
Barnes Park Pool Facility						
Upgrade Pool Pump with VFD	69,232	$7,616	$7,000	$7,000	0.9	8
Retrofit Metal Halide Pole-Mounted Lights with LED	16,622	$1,828	$831	$23,169	12.7	20
Elder Park Pool Facility						
Upgrade Pool Pump with VFD	123,015	$15,992	$7,000	$7,000	0.4	8
Replace 500W Quartz Halogen Fixtures with LED	12,792	$1,663	$640	$12,560	7.6	20
TOTAL	**450,995**	**$61,548**	**$36,086**	**$210,125**	**3.4**	

Source: Willdan Energy Solutions, 2012.

CHAPTER 4: IMPLEMENTATION

To ensure successful implementation of the EAP, several strategies and supporting actions have been included in Chapter 4, the implementation chapter. This chapter also includes an implementation matrix with details specific to each policy such as the electricity and GHG reductions that can be achieved. The implementation matrix will be a critical tool in monitoring the City's progress toward implementing the EAP.

CHAPTER 5: CONCLUSION

This EAP is an opportunity for the City to create and achieve a long-term vision for energy efficiency. The City of Monterey Park has developed this EAP as part of a regional framework that allows for close coordination and consistency between communities located in the San Gabriel Valley while responding to local community characteristics, values, and planning frameworks. Although the primary focus of this Plan is on reducing electricity and related GHG emissions, the policies and actions in this Plan also provide the ancillary benefits of improving air quality and the quality of life, enhancing natural areas, and stimulating the local economy through incentives in energy efficiency.

CHAPTER 1

INTRODUCTION

This Energy Action Plan (EAP) identifies an overarching vision that captures the City's long-term goals for energy efficiency. The intent of this Plan is to achieve optimal energy performance through municipal facilities. This Plan also identifies programs to achieve cost savings in City government facilities through energy reductions and more efficient maintenance and operational practices.

PURPOSE AND SCOPE

The purpose of this EAP is to identify the City of Monterey Park's long-term vision and commitment to achieve energy efficiency in government operations. The rationale for Monterey Park's municipal energy efficiency efforts includes demonstrating leadership in implementing cost-effective energy efficiency improvements, minimizing costs associated with energy and utilities, and protecting limited energy and natural resources.

Local governments play an important role in leading the community by example. This EAP shows the benefits of efficiency that the City will realize in government operations, providing a foundation for more comprehensive community-wide efficiency strategies. Strategies in this EAP provide a path toward optimizing energy use in the city, reducing utility costs, and maximizing operational productivity of government operations.

The EAP is a stand-alone document that meets multiple objectives of the City and Southern California Edison (SCE). The EAP supports the City's status in the Energy Leader Partnership with SCE and serves as a supplement to City's existing Climate Action Plan, by focusing on electricity use from and policies for government operations.

Created in partnership with the San Gabriel Valley Council of Governments (SGVCOG) and Southern California Edison (SCE), this EAP identifies municipal strategies to achieve the City's longer-term electricity efficiency goals. These municipal strategies allow the City to lead by example.

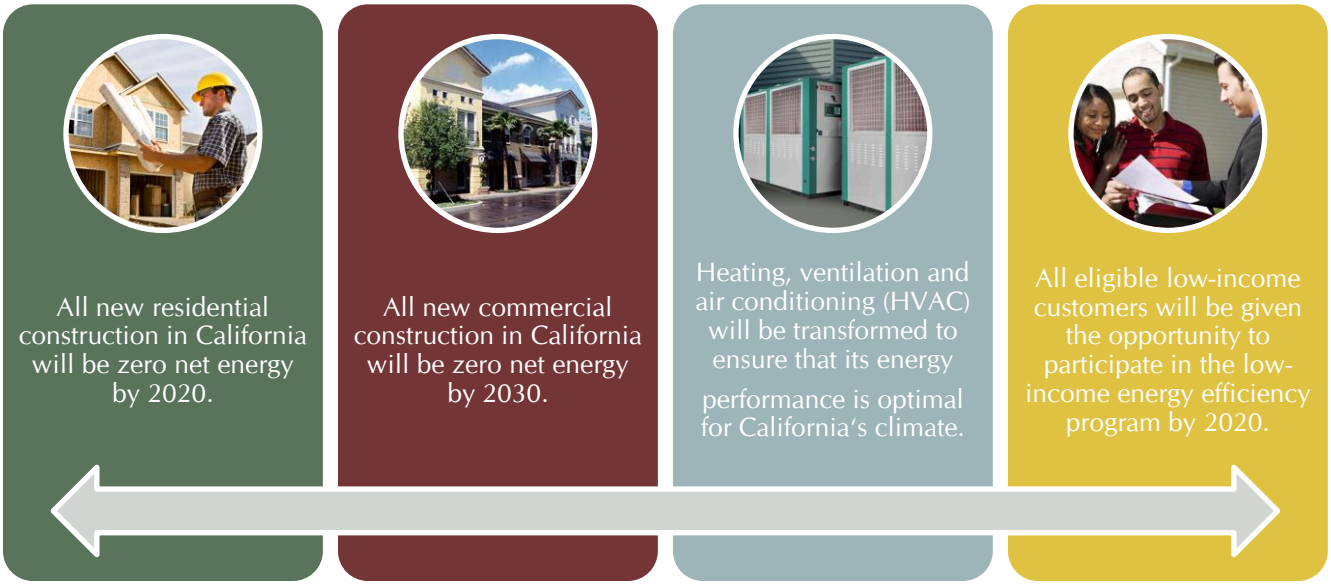
Specifically, the objectives of this municipal EAP are to:

- Create a long-term vision for municipal energy efficiency.
- Provide and assess information related to energy use and greenhouse gas (GHG) emissions.
- Establish reduction targets for energy efficiency.
- Identify goals, policies, and actions to achieve energy reductions.
- Provide a framework implementing the identified goals, policies, and actions.

SOUTHERN CALIFORNIA EDISON AND THE CALIFORNIA LONG TERM ENERGY EFFICIENCY STRATEGIC PLAN

California's Long Term Energy Efficiency Strategic Plan (CEESP) is the State's roadmap for achieving energy efficiency between 2009 and 2020, and beyond. The California Public Utilities Commission (CPUC) adopted the CEESP in 2008 following a collaborative planning effort of the CPUC, the state's investor-owned utilities, the governor's office, the California Energy Commission (CEC), the California Air Resources Board (CARB), and more than 500 individuals and organizations. The CEESP provides a strategic menu list of options that local governments can use to address the "Big Bold" strategies found in the strategic plan, as shown in **Figure 1**.

Figure 1: "Big Bold" Strategies of the CEESP



In addition, the CEESP identifies two primary goals that this EAP seeks to achieve:

- CEESP Section 12.5 Goal 3: Local governments lead by example with their own facilities and energy usage practices.
- CEESP Section 12.5 Goal 4: Local governments lead their communities with innovative programs for energy efficiency, sustainability, and climate change.

The EAP meets these goals by providing goals, policies, and actions for municipal operations. The CEESP also identifies a long-term vision and energy efficiency goals for California, as well as outlining specific near-term, mid-term, and long-term implementation strategies to assist each economic sector in achieving its energy efficiency goals.

The CPUC identified several policy tools to assist in the market transformation to more energy-efficient products or practices including:

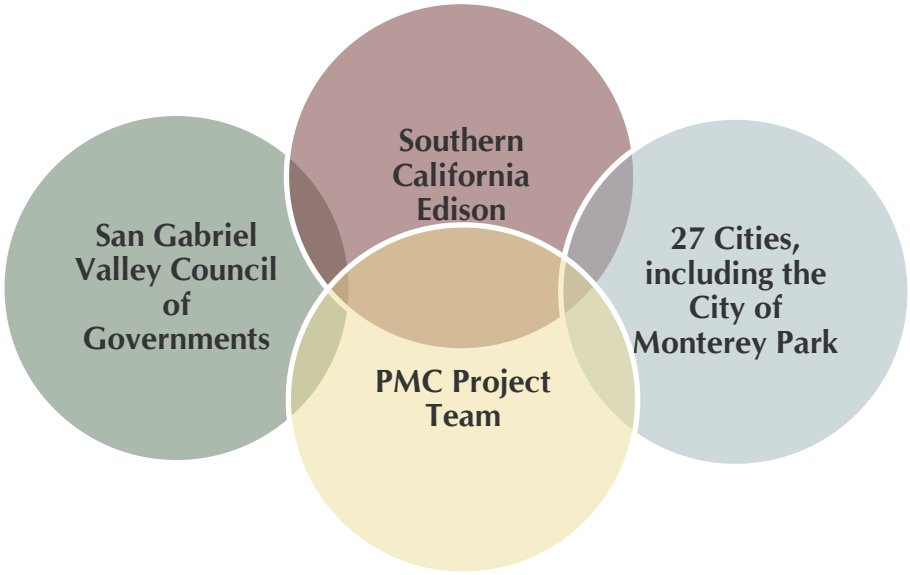
- Customer incentives.
- Codes and standards.
- Education and information.
- Technical assistance.
- Emerging technologies.

The City prepared this EAP through the technical assistance program of the CEESP, which aims to provide local governments with the technical expertise and financial resources to achieve energy efficiency at municipal facilities and throughout the community. In 2009, as part of CEESP implementation, the CPUC authorized SCE to use funding from the electricity public goods charge to complete local strategic plan activities focused on energy efficiency. SCE is implementing the "Big Bold" strategies of the CEESP. Through this process, SCE awarded funding to the SGVCOG and participating cities to provide funding and technical support for preparation of a regional framework and tailored, city-specific EAPs through a regional planning process.

The SGVCOG managed the project, through partnership with SCE, 27[1] member cities of the SGVCOG that receive electricity service from SCE, and the consultant team led by PMC. The project included preparation of customized EAPs for each participating city, including a comprehensive GHG emissions inventory, forecast of municipal operations, and longer-term goals, policies, and actions. This EAP has been prepared as part of a coordinated effort among the SGVCOG, SCE, the City of Monterey Park, and PMC (see **Figure 2**).

[1] While there were 31 cities in the SGVCOG at the time of this project, the cities of Azusa and Pasadena are not eligible to participate in SCE-funded programs as they are their own electricity providers. Additionally, the cities of Industry and Walnut have elected to not participate in this planning process.

Figure 2: Partners in the EAP Planning Process



THE ENERGY LEADER PARTNERSHIP MODEL

SCE developed the Energy Leader Partnership (ELP) model to provide support to local governments in identifying and implementing opportunities to improve energy efficiency in municipal facilities and promoting community awareness of demand side energy management opportunities. By participating in SCE's ELP, local governments are taking actions to support the CEESP while saving energy and fiscal resources for their communities. In the San Gabriel Valley, the SGVCOG is leading the implementation of the ELP with SCE and 27 of the 31 member cities.

The ELP comprises four focus areas: 1) municipal retrofits, 2) demand response, 3) strategic plan support, and 4) energy efficiency programs coordination. The ELP program has four incentive tiers for participating cities: 1) Valued Partner, 2) Silver, 3) Gold, and 4) Platinum. Each city begins the program as a valued partner. To advance to the next incentive tier, each participating city needs to achieve the pre-determined energy savings and requirements for city facilities and community-wide electricity use as shown in **Figure 3**. The City is currently a Valued Partner in the Energy Leader Partnership model.

Figure 3: Energy Leader Partnership Model

	Valued Partner Level enhanced incentives	Silver Level enhanced incentives	Gold Level enhanced incentives	Platinum Level enhanced incentives
Offerings	Technical support Strategic Plan support Co-branded marketing and outreach support	Technical support Strategic Plan support Co-branded marketing and outreach support	Technical support Strategic Plan support Co-branded marketing and outreach support	Technical support Strategic Plan support Co-branded marketing and outreach support Incentives for customized city/community offerings
Energy Efficiency Criteria	Basic EE Criteria: Commitment to Long Term Energy Efficiency Leadership	Basic EE Criteria Plus: City initiative Energy Action Plan Target at least 25% of city facilities to complete specified EE upgrades Target 5% kWh reduction for city facilities Co-sponsor marketing and outreach to the community on EE programs	Basic EE Criteria Plus: City initiative Energy Action Plan Target at least 50% of city facilities to complete specified EE upgrades Target 10% kWh reduction for city facilities Co-sponsor marketing and outreach to the community on EE programs	Basic EE Criteria Plus: City implements Energy Action Plan (policies, ordinances, and procedures) Target 100% of city facilities to complete specified EE upgrades Target 20% kWh reduction for city facilities Co-sponsor marketing and outreach to the community on EE programs
Demand Response Criteria	Basic DR Criteria: Enroll in California's Statewide Flex Alert and implement an internal educational campaign	Basic DR Criteria Plus: At least one (1) eligible facility to participate in one (1) SCE Demand Response program At least one (1) eligible facility to develop a Demand Reduction Action Plan to be followed during a Flex Alert event Distribute Energy Solutions brochure to partner employees Complete an integrated Demand Side Management (iDSM) audit at all eligible facilities	Basic DR Criteria Plus: Have at least 25% of eligible facilities participate in an SCE Demand Response program Conduct co-branded marketing and outreach to residential customers on SCE's Demand Response programs At least one (1) eligible facility implement a DR measure recommended from the iDSM audit	Basic DR Criteria Plus: At least one (1) eligible facility to participate in one (1) SCE Demand Response program Have at least 50% of eligible facilities participate in an SCE Demand Response program and develop a Demand Reduction Action Plan for the participating facilities Organize a local outreach event during the spring/summer season to promote Demand Response/iDSM

Source: Southern California Edison, 2012.

ROLE OF THE EAP

The role of this EAP is to serve as a strategic plan to achieve electricity efficiency in municipal facilities. This is a unique plan that identifies the City's role in reducing electricity use through the implementation of cost-effective energy efficiency projects. Strategies in the EAP will shape the City's planning framework, prioritize ongoing outreach responsibilities, and guide government operations. The City will use the EAP as a tool to facilitate electricity efficiency while achieving other local economic and planning objectives, refining the EAP as programs are implemented and tested over time. Strategies in this EAP will be an integral part of resource management, and fiscal planning priorities for the City. This EAP is an analytical link for the City between electricity reduction targets, local development, and state and regional electricity planning efforts. The EAP allows the City to understand the GHG mitigation potential of the strategies outlined in this Plan. Based on the funding opportunity provided through the CEESP, the EAP's focus is electricity efficiency for municipal facilities.

CHAPTER 1

CITY PROFILE

Monterey Park is a historic and diverse community that encompasses 7.73 square miles, and is home to 60,269 residents, as of 2010. The city is located just east of the City of Los Angeles, and has the smaller cities of Alhambra to its north, and Rosemead to its east. Monterey is bordered by the I-10 corridor, and the 710 freeway runs through its western edge. Because of its central location and proximity to downtown Los Angeles, Monterey Park is also well served by public rail and bus transit lines, and provides residents, employees, and visitors with easy access in and out of the city. The area now called Monterey Park was part of the Mission San Gabriel de Archangel in the late 1800s, and later, the Rancho San Antonio. The area first became a distinct community when Alessandro Repetto purchased 5,000 acres of the rancho and built his home, not far from where the Edison substation is now located on Garfield Avenue. Richard Garvey then developed the land by bringing water supplied through a connection to the Hondo River and a dam he constructed to form Garvey Lake. Repetto sold portions of his land to form the first residential subdivisions in the earliest years of the 20th century.

Residents organized to incorporate the city in 1916 in order to prevent the siting of a proposed sewage treatment facility in the immediate area. Monterey Park was named in honor of the oak-covered hills of the area known as Monterey Hills. In 1920, a large area on the south edge of the city broke away and the separate city of Montebello was established. By 1920, the early European settlers were joined by Asian residents who began farming potatoes and flowers and developing nurseries in the Monterey Highlands area. Real estate also became a thriving industry during this time; multiple residential subdivisions developed to serve growing commercial opportunities in the Los Angeles area. The end of World War II resulted in the area's second major growth spurt, resulting in a significant population gain during the 1940s and 1950s, and loss of the agricultural land encompassed in Monterey Park.

Modern-day Monterey Park is predominantly residential, with a mix of commercial, industrial, and mixed-use areas. Similar to many cities in the San Gabriel Valley today, Monterey Park is almost entirely built out. Home to a fairly affluent population, Monterey Park's economy has strong business, healthcare, and arts sectors (see **Table 1**). As one of the most diverse and community-oriented cities in the area, the city hosts numerous cultural, educational, and festive programs, many of which have received national attention, such as the Harmony Festival. The two largest employers in the city are the East Los Angeles College and the Garfield Medical Center. The city also has a significant technology-manufacturing base and service retail sector.

Table 1: Employment in Monterey Park, 2010

Occupation	Number	Percentage
Management, business, science, and arts	10,027	38%
Sales and office	7,824	30%
Service	4,705	18%
Production and transportation	2,723	10%
Natural resources, construction, and maintenance	1,064	4%

MONTEREY PARK'S RECENT SUSTAINABILITY EFFORTS

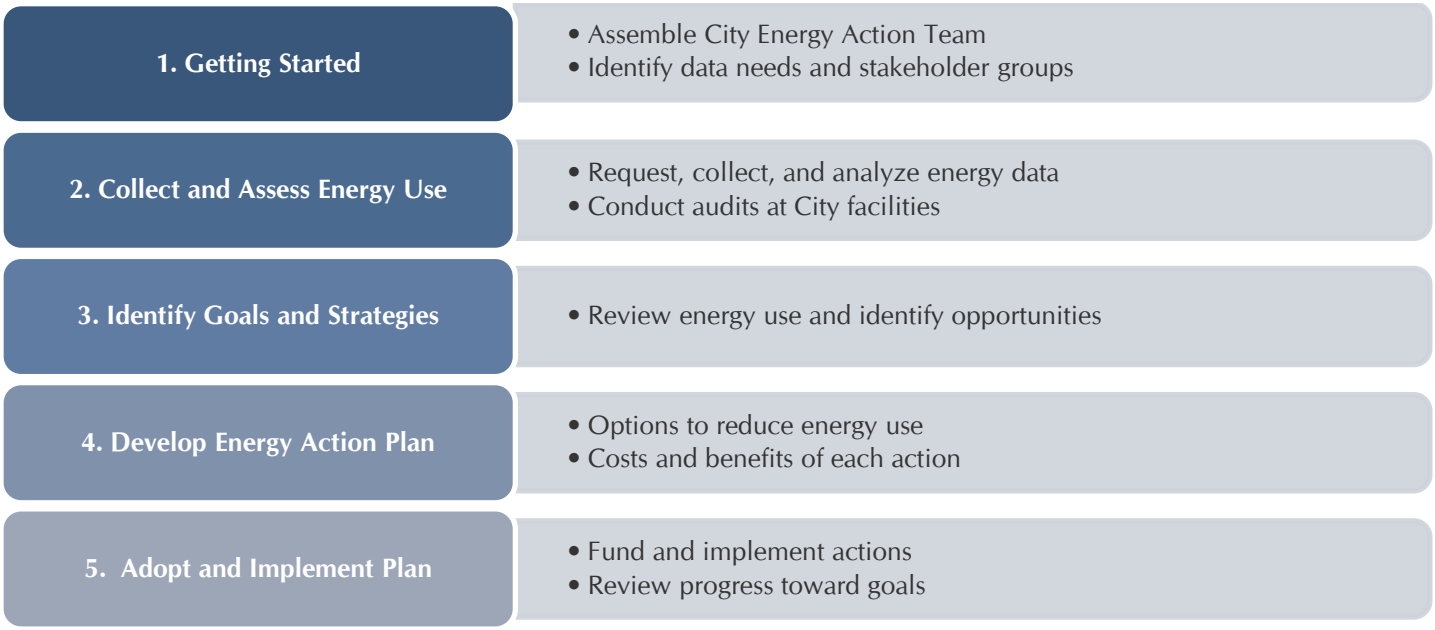
The City of Monterey Park has committed to improving health and sustainability in the community. These commitments are detailed in the City's recently approved Climate Action Plan and will be incorporated into the General Plan as two new elements, a Healthy Community Element and a Sustainable Community Element. The City is also committed to implementing sustainability principles in its facilities and operations. Five pumps

associated with the city's water services have been recently upgraded or replaced and are expected to save over 137,000 kWh annually. Additionally, Monterey Park used part of a $500,000 grant from the US Department of Energy to reduce energy use at City facilities by replacing an aging roof at the Senior Community Center and installing a smart pump control system at a City pool. The City established an Environmental Commission, which seeks to be a focal point for information to guide city leaders on environmental issues and promote environmental awareness in the community. Commission members advise the City in implementation of the Climate Action Plan and this Municipal EAP. The Commission members can also use their expertise to identify potential efficiency strategies that could be effective for City operations.

THE EAP PLANNING PROCESS

The EAP was prepared following a five-step planning process, as depicted in **Figure 4**. This process allowed the EAP team to identify, collect, and analyze the relevant energy data prior to developing and implementing strategies to improve energy efficiency and reduce GHG emissions. While the City was already engaged in an individual climate action planning process, participating in the SGVCOG regional process allowed the City to leverage additional resources, further identify opportunities for municipal energy efficiency, and ensure that the CAP was consistent with the regional framework prepared as part of the SGVCOG work.

Figure 4: The EAP Planning Process



CHAPTER 2
GHG EMISSIONS INVENTORY

INVENTORY AND FORECASTING PURPOSE

Monterey Park's greenhouse gas (GHG) emissions inventory and forecast (Inventory) was developed as part of the City's Climate Action Plan to provide a summary of municipal GHG emissions sources. The Inventory has been summarized in this Energy Action Plan (EAP) to demonstrate the sources of GHG emissions occurring in the city and identify opportunities for the City to reduce GHG emissions from municipal projects.

Specifically, this summary of GHG Inventory:

- Presents GHG emissions from municipal activities in calendar year 2009.
- Provides a snapshot of electricity-specific emissions from municipal activities in calendar year 2010.
- Identifies the highest energy users in municipal facilities.
- Provides City staff, decision-makers, and stakeholders with adequate information to direct development of this EAP and to establish GHG emissions reduction and energy efficiency targets.

Description of Relevant Emissions and Key Concepts

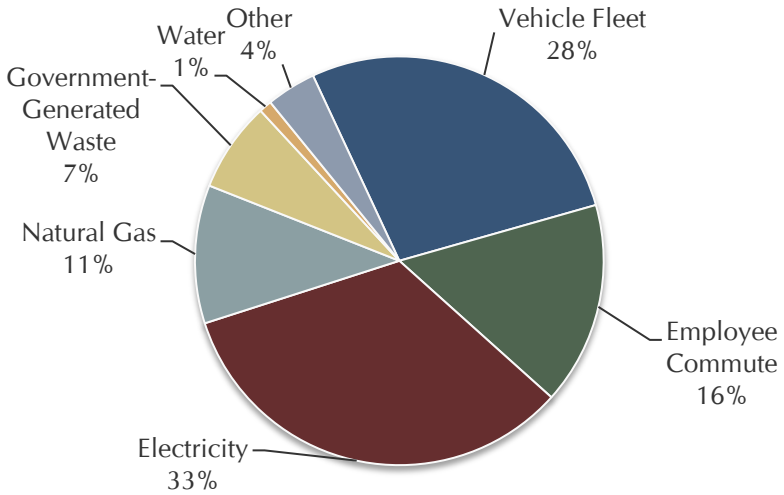
The Inventory includes the major sources of GHGs caused by municipal operations in the city as reported in the City of Monterey Park's Climate Action Plan. The Inventory analyzes GHG emissions from municipal sources as described in **Figure 5**.

Figure 5: Municipal GHG Emissions Sources, 2009

Municipal Inventory Summary

The City's municipal GHG emissions totaled 5,573 $MTCO_2e$ in 2009 and accounted for approximately 1.3% of total community-wide GHG emissions. **Figure 6** depicts the contribution of each activity to total GHG emissions. Electricity use at City facilities made up the largest contribution of municipal GHG emissions, accounting for 1,862 $MTCO_2e$. Vehicle fleet and employee commute made up the next largest contributions with 28% and 16% of total municipal GHG emissions, respectively. Natural gas use, government-generated waste, water, and other sources made up the remaining 23% of municipal GHG emissions.

Figure 6: Municipal GHG Emissions by Sector, 2009

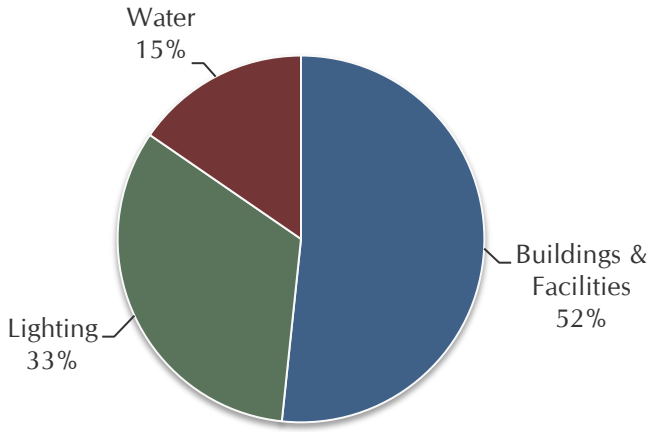


Source: City of Monterey Park, 2012.

MUNICIPAL ELECTRICITY USE PROFILE

With the largest portion of the City's municipal GHG emissions coming from electricity use, a closer look was taken at how energy is used by type of facility. This detailed look at electricity use in City facilities can help identify the greatest areas of potential energy efficiency improvements. Monterey Park's electricity accounts could be split into three primary uses: buildings and facilities, lighting, and water pumping. **Figure 7** and **Table 2** identify the municipal electricity uses by account and rate classes.

Figure 7: Municipal Electricity Use by Rate Category, 2009



Source: Southern California Edison, 2011.

Table 2: Monterey Park Municipal Electricity Use by Rate Class, 2009

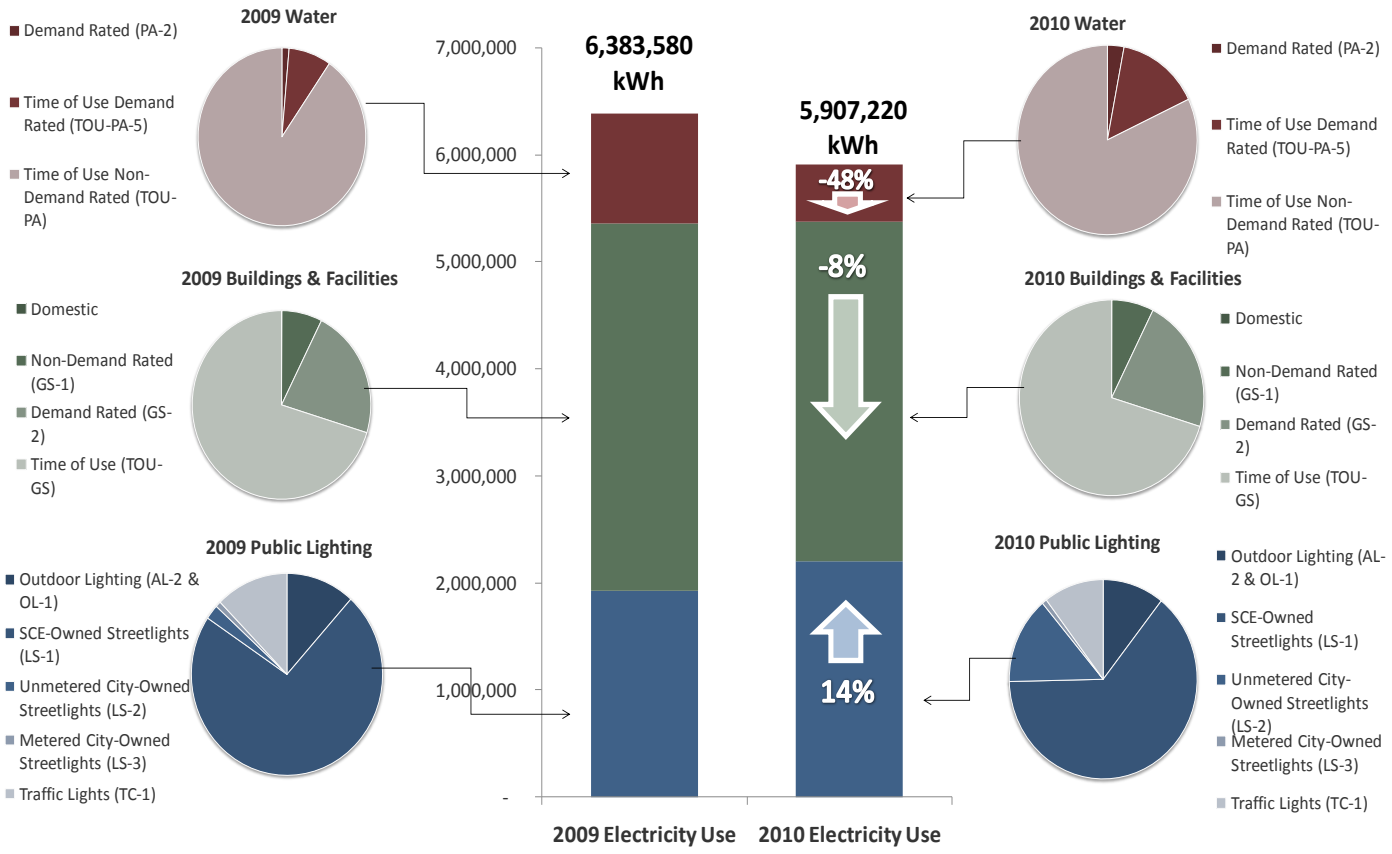
Buildings & Facilities[1]	2009 Annual kWh	Percentage of 2009 kWh
Non-Demand Rated (GS-1)	251,990	7%
Demand Rated (GS-2)	767,110	22%
Demand Rated Time of Use (TOU-GS)	2,413,190	70%
Domestic	2,780	<1%
Total Buildings & Facilities in 2009 Baseline Year	**3,435,070**	**100%**
Lighting[1]	**2009 Annual kWh**	**Percentage of 2009 kWh**
Outdoor Lighting (AL-2 & OL-1)	224,680	12%
SCE-Owned Streetlights (LS-1)	1,399,020	73%
Unmetered City-Owned Streetlights (LS-2)	45,180	2%
Metered City-Owned Streetlights (LS-3)	17,610	1%
Traffic Lights (TC-1)	237,800	12%
Total Lighting in 2009 Baseline Year	**1,924,290**	**100%**

Water	2009 Annual kWh	Percentage of 2009 kWh
Agricultural Time of Use (TOU-PA-A & TOU-PA-B)	926,050	90%
Agriculture & Pumping Time of Use Demand Metered (TOU-PA-5)	84,090	8%
Agriculture & Pumping Demand Metered (PA-2)	14,090	1%
Total Water in 2009 Baseline Year	**1,024,230**	**100%**
Total All Municipal Accounts in 2009 Baseline Year	**6,383,580**	**100%**
1. For additional explanation of accounts, refer to the Glossary.		

Comparison of Baseline Year to 2010

The goal of identifying baseline and current year energy use is to better understand how the City uses electricity and identify opportunities to reduce energy use at City facilities. **Figure 8** compares the City's 2009 electricity use to 2010 data and provides a breakdown of the types of activities in which that electricity is used. Between 2009 and 2010, the City's municipal electricity use declined approximately 11%, primarily driven by reductions in electricity used for water service. This 48% drop is likely the result of pump upgrades undertaken by the City along with usage factors (see **Chapter 3** for additional discussion of City projects).

Figure 8: Changes in Municipal Electricity Use, 2009–2010



The top electricity accounts associated with all other facilities, including buildings and streetlights, are presented below in **Table 3**. Streetlight electricity use is presented as a total by rate class category. The highest electricity user in 2009 was the City Hall building, using 1.8 million kWh. The second largest user was citywide streetlights owned by SCE, which the City is responsible to pay for. This electricity user consists of a single electricity service account. Other top users include the public library and Langley Senior Center. The greatest percentage of energy reduction between 2009 and 2010 occurred among City-owned streetlights (a 26% drop).

Table 3: Monterey Park Top Facility and Lighting Electricity Users by Account, 2009–2010

Facility	2009 Annual kWh	2010 Annual kWh	Net Change	2009 Annual Cost	2010 Annual Cost	Percent Change 2009-2010
City Hall—320 W. Newmark Ave.	1,765,056	1,750,311	-1%	$220,131	$ 207,495	-6%
SCE-Owned Street Lights(LS-1)—Citywide	1,399,024	1,409,478	1%	$421,839	$ 434,399	3%
Library—318 S. Ramona Ave.	648,129	480,669	-26%	$100,943	$ 85,484	-15%
Langley Senior Center—400 W. Emerson.	261,060	234,690	-10%	$ 42,009	$ 39,718	-5%
Elder Park Center & Pool—1950 Wilcox.	243,520	324,435	33%	$ 30,436	$ 30,392	0%
Traffic Lights (TC-1)—Citywide	237,804	227,743	-4%	$ 36,534	$ 38,251	5%
Outdoor Area Lighting (AL-2-A)—Citywide	195,253	203,933	4%	$ 15,021	$ 15,232	1%
City Yard—751 S. Alhambra Ave.	145,653	137,650	-5%	$ 22,336	$ 22,008	-1%
Sierra Vista Park—300 N. Rural Dr.	75,640	69,744	-8%	$ 11,447	$ 11,585	1%
City-owned Street Lighting (LS-2)—Citywide	45,175	34,502	-24%	$421,839	$312,047	-26%

The City's top accounts related directly to water service are displayed in **Table 4**. Like many municipal water providers, water is a significant user of electricity. The City's facility at 1490 Vagabond Road is the largest water-related account. Several of the City's largest water accounts have also seen drops in electricity use between 2009 and 2010, including a 9% drop at the Vagabond facility and a 24% drop at 901 Country Road

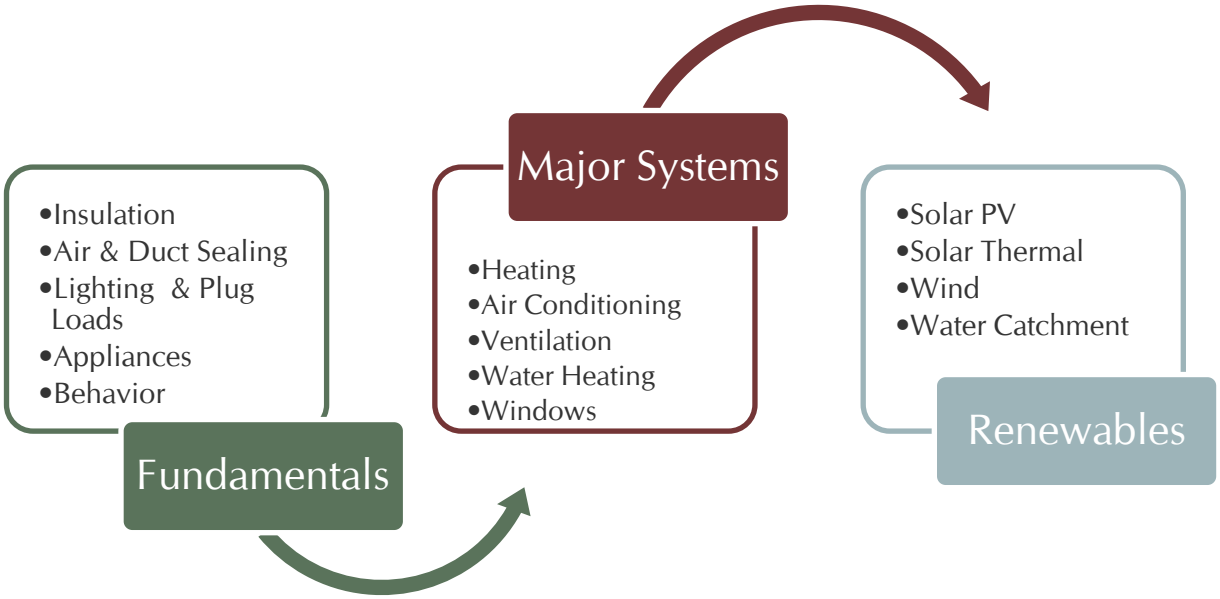
Table 4: Monterey Park Top Water Service Electricity Users by Account, 2009–2010

Facility	2009 Annual kWh	2010 Annual kWh	Net Change	2009 Annual Cost	2010 Annual Cost	Percent Change 2009-2010
1490 VAGABOND ROAD	171,660	156,881	-9%	$18,420.18	$20,200.46	10%
705 KINGSFORD ST	87,502	83,743	-4%	$10,994.33	$12,479.11	14%
1201 BRIGHTWOOD ST	76,713	66,706	-13%	$ 9,632.48	$ 9,860.37	2%
736 S CREST VISTA	60,779	62,718	3%	$ 6,718.63	$ 7,862.03	17%
901 COUNTRY RD	47,234	36,102	-24%	$ 5,674.30	$ 5,493.82	-3%
701 DE LA FUENTE ST	36,852	45,896	25%	$ 4,098.62	$ 5,309.13	30%
780 RUSSELL AVE	36,169	32,692	-10%	$ 5,776.68	$ 5,337.69	-8%
1009 BRADSHAWE AVE	20,390	18,320	-10%	$ 3,388.23	$ 3,915.62	16%
1310 SOMBRERO DR	11,440	11,240	-2%	$ 2,060.63	$ 2,369.85	15%
1900 CLOVER	9,810	27,784	183%	$11,702.20	$18,774.40	60%

THE ELECTRICITY REDUCTION LOADING ORDER

GHGs from electricity use can be reduced, primarily through increasing conservation (i.e., avoiding using electricity) and improving efficiency (i.e., using less electricity for the same activity) when conservation cannot be realized. Common conservation practices include unplugging appliances and electronics when not in use and turning off lights during the day or when the room is empty. Increasing energy efficiency means replacing incandescent light bulbs with compact fluorescent lights (CFLs) and inefficient or older models of appliances and electronics with new, preferably Energy Star (or other efficiency label) models in order to use less energy when it is necessary. Using small renewable solar panels can also reduce demand from SCE for daily electricity use. Reductions in electricity used for water pumping in the community can be achieved by using less water for irrigation and other household uses. More efficient toilets, showerheads, faucets, and drip irrigation systems can help conserve water. These are just some examples of energy efficiency and conservation. This EAP outlines programs and policies to support efficiency and conservation of electricity use at City facilities. When completing energy efficiency retrofits to buildings, there is a loading order that should be followed to maximize energy savings while minimizing added costs. **Figure 9** depicts the recommended loading order for undertaking energy efficiency projects and retrofits.

Figure 9: Retrofitting Loading Order



CHAPTER 3

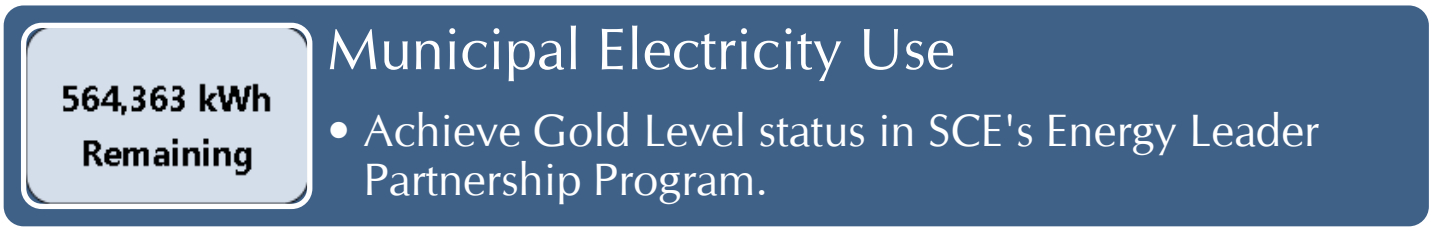
ENERGY EFFICIENCY STRATEGY

The City of Monterey Park identified key energy efficiency targets that support the goals of the Energy Leader Partnership (ELP) and local planning priorities. Consistent with the targets of the California Public Utility Commission's (CPUC) Long Term Energy Efficiency Strategic Plan (CEESP) (refer to **Chapter 1**, **Figure 1**), the focus of this plan is on municipal electricity efficiency. Electricity efficiency also provides the added benefit of reducing greenhouse gas (GHG) emissions.

In addition to the State-recommended reduction target of 15% below baseline GHG emissions, this chapter presents a municipal electricity reduction target, developed through this planning process and shown in **Figure 10**. The municipal reduction target is supported by a series of goals, policies, and actions.

EAP Reduction Targets

Figure 10: Municipal Electricity Reduction Target



Strategy Structure

In order to achieve the target electricity reductions by 2020, the City of Monterey Park will need to implement the goals, policies, and actions set forth in this chapter.

Each topic area includes corresponding goals, policies, and supporting actions that are necessary for successful implementation. Together, the goals, policies, and actions provide the City's strategy to achieve the electricity efficiency targets of this EAP. Each piece has a unique function, but they work together collectively to reduce electricity use.

- **Goal:** The desired end state or expected outcome related to electricity reductions. Each goal corresponds to one of the topic areas identified.
- **Policy:** A statement that guides decision-making and indicates a commitment to achieve the specified outcomes of the goal. Policies provide the foundation for quantification of electricity reduction potentials.
- **Implementation Action:** An action, procedure, program, or strategy to achieve the electricity reductions of a policy. Action items provide interim steps or supporting strategies and the range of opportunities to increase the electricity reduction potential of a policy.

Policy Criteria and Evaluation

Each project identified in this chapter is assessed for its reduction of electricity use in government operations. This assessment recognizes the broad value of electricity efficiency for the City of Monterey Park. Actions in City government facilities also fulfill the City's requirements for participation in the ELP model, helping to qualify the City for additional financial incentives from Southern California Edison (SCE).

Electricity efficiency results from a change in operation, activity, or efficiency. In general, there are three primary methods for reducing electricity-related GHG emissions: (1) conservation, (2) greater efficiency, and (3) change in energy source.

Each project in this chapter presents the following information:

- Annual kilowatt-hours (kWh) and cost savings ($).
- Estimated incentive to the City ($) and net cost to the City ($)
- Estimated payback period and equipment life expectancy.

The baseline GHG inventory and forecast serve as the foundation for quantifying the City's policies. Activity data from the inventory, kWh of electricity, is combined with the performance targets and indicators identified in this EAP to calculate the range of potential reduction benefit for each policy. This approach ensures that the City's electricity reductions are tied to the baseline and anticipated trends that will occur in Monterey Park.

MUNICIPAL ELECTRICITY EFFICIENCY PROJECTS AND POLICIES

GOAL 1: ACHIEVE GOLD LEVEL STATUS IN SCE'S ENERGY LEADER PARTNERSHIP PROGRAM

Monterey Park has completed and identified several energy efficiency projects to improve the energy efficiency of the City's facilities. The projects completed since 2009 are included in **Table 5**, and additional near-term projects that the City is considering implemented have been identified in **Table 6.** In addition to the projects identified in **Tables 5** and **6**, the City has identified several policies to demonstrate the longer-term commitment to energy efficiency that will be implemented by 2020.

Table 5: Recently Completed Projects

Facility	Energy Efficiency Measure	Annual Electricity Savings (kWh/yr)	Total Utility Savings ($/yr)	SCE Incentive ($)	Completion Date
Booster #2	Booster Pump Upgrade	136,780	$21,470	-	May 2010
Well #1	Pump & Motor	22,190	$3,480	-	February 2011
Delta Pump 3	Pump Upgrade	45,911	$7,208	$5,631	February 2012

NEAR-TERM PROJECTS

A key objective of this EAP is to identify additional prioritized, actionable, turnkey strategies and projects. The EAP also identifies future opportunities for municipal energy efficiency projects. In order to evaluate potential energy efficiency projects the City conducted audits at several key facilities, reviewed audit results and opportunities at other facilities, and identified near-term projects to be implemented. Energy audits were completed and energy efficiency projects were identified at the following city facilities:

- City Hall
- Bruggemeyer Library
- Langley Senior Center
- Barnes Park Pool Facility
- Elder Park Pool Facility

The City has committed to prioritizing the implementation of projects with payback periods that are shorter than the estimated equipment life, which are identified in **Table 6.** Based on the payback period, annual cost savings, and reductions in both electricity use and GHG emissions, the City believes that these priority short-term actions will help the City advance toward ELP targets and long-term energy efficiency objectives.

Table 6: Near-Term Projects

Energy Efficiency Measure	Electric Energy Savings	Annual Cost Savings	Estimated Incentive/ Rebate	Net Cost to Customer	Estimated Payback Period	Equipment Life Expectancy
Description	kWh	$	$	$	years	years
City Hall						
Install Thermostat Occupancy Sensors	24,738	$2,721	$650	$650	0.2	8
Install Wall-Box Occupancy Sensor	10,850	$1,194	$813	$2,432	2	8
Ceiling-Mount Occupancy Sensor	2,622	$288	$201	$1,104	3.8	8
Implement Demand Control Ventilation	14,333	$1,577	$2,860	$8,340	5.3	8
Retrofit 32W T8 Fixtures with 25W T8s	36,326	$3,996	$2,656	$24,399	6.1	8
Retrofit 32W U-bend T8 Fixtures with 25W U-bend T8s	2,866	$315	$223	$2,423	7.4	8
Bruggemeyer Library						
Install Occupancy Sensor Controls on Parking Garage Night Light Fixtures	1,421	$256	$71	$219	0.9	8
Implement Demand Control Ventilation	17,098	$3,078	$4,529	$5,471	1.8	15
Replace Exterior 250W Pole-Mounted Metal Halide with LED	11,673	$2,101	$850	$5,650	2.7	11
Install Photocell Controls on Exterior Wall Packs	342	$61	$17	$233	3.8	8
Replace CFL 42W Wall Packs with LED	1,524	$274	$94	$1,256	4.6	11
Replace Recessed Can Fixtures with LED	14,802	$2,664	$1,136	$17,264	6.5	20
Replace 2x2 Fluorescent Fixtures with LED	49,878	$8,978	$3,812	$66,508	7.4	20
Langley Senior Center						
Ceiling-Mount Occupancy Sensor	8,311	$1,413	$643	$807	0.6	8
Replace HID Wall Packs with LED	2,365	$402	$118	$1,007	2.5	11
Replace 32W T8 with 25W T8 and New Clear Diffusers	15,293	$2,600	$1,188	$10,322	4	8
Replace Parking Lot and Walkway High-Pressure Sodium Fixtures with LED	13,035	$2,216	$652	$10,148	4.6	11
Install Wall-Box Occupancy Sensor	149	$25	$17	$148	5.9	8
Replace Cobra Head High-Pressure Sodium Fixtures with LED	1,708	$290	$85	$2,015	6.9	11
Barnes Park Pool Facility						
Upgrade Pool Pump with VFD	69,232	$7,616	$7,000	$7,000	0.9	8
Retrofit Metal Halide Pole-Mounted Lights with LED	16,622	$1,828	$831	$23,169	12.7	20
Elder Park Pool Facility						
Upgrade Pool Pump with VFD	123,015	$15,992	$7,000	$7,000	0.4	8
Replace 500W Quartz Halogen Fixtures with LED	12,792	$1,663	$640	$12,560	7.6	20
TOTAL	**450,995**	**$61,548**	**$36,086**	**$210,125**	**3.4**	

Source: Willdan Energy Solutions, 2012.

LONG-TERM MUNICIPAL POLICIES

In addition to the near-term projects, the City has identified additional policies to facilitate achievement Gold Status in SCE's ELP program by achieving a 10% reduction in electricity use below 2004 levels at City facilities.

POLICY 1.1: LEAD THE COMMUNITY BY EXAMPLE THROUGH PILOTING COST-SAVING ENERGY MANAGEMENT PRACTICES.

Implementation Actions:

- Work with the SGVCOG to prepare an energy information display that highlights the energy and cost savings achieved through the implementation of projects at City facilities and how they can be applied to residential buildings and businesses.
- Conduct energy benchmarking on a regular basis and share results and improvements through the City's website and publications.
- Participate in the SGVCOG's utility manager program, the Enterprise Energy Management Information System (EEMIS), to regularly track energy use and identify cost-saving opportunities through sub-metering and energy management.

POLICY 1.2: IMPLEMENT AN ENERGY-EFFICIENT PROCUREMENT POLICY TO ENSURE THE PURCHASE OF EFFICIENT EQUIPMENT THAT WILL RESULT IN ENERGY COSTS SAVINGS THAT OUTWEIGH ADDITIONAL UPFRONT COSTS.

Implementation Actions:

- Work with the SGVCOG and regional partners to reduce the costs of energy-efficient appliances and equipment through bulk purchases.
- Integrate proper energy efficiency maintenance recommendations for appliances and equipment into the energy-efficient procurement policy.

POLICY 1.3: IDENTIFY ADDITIONAL OPPORTUNITIES TO IMPROVE THE ENERGY EFFICIENCY OF CITY FACILITIES.

Implementation Actions:

- Complete audits at all City facilities.
- Identify cost-effective projects with a payback period less than four years to reduce electricity at City facilities.
- Highlight and share energy efficiency projects and savings from energy efficiency projects.
- Participate in Los Angeles County's regional loan program to fund energy efficiency projects.

POLICY 1.4: WORK WITH THE SGVCOG TO USE REGIONAL PARTNERS FOR CREATION OF AN ENERGY MANAGEMENT POSITION TO TRACK ENERGY USE AT CITY FACILITIES, IDENTIFY OPPORTUNITIES FOR EFFICIENCIES AND COST SAVINGS, AND IMPLEMENT ENERGY EFFICIENCY PROJECTS.

Implementation Actions:

- Continue to support staff participation in regional planning efforts and trainings related to energy efficiency.
- Encourage creation of a regional energy manager position to coordinate efficiency efforts and help departments implement energy reduction activities.

CHAPTER 4

IMPLEMENTATION

This chapter outlines a path for the City of Monterey Park to implement the strategies described in this Energy Action Plan (EAP) and monitor overall progress toward achieving the EAP reduction targets.

The EAP implementation will require City leadership to execute strategies and report on the progress of implementation. Successful implementation requires regular monitoring and reporting of municipal savings. City staff should monitor the progress on implementing the EAP on an annual basis and report to the City Council on the EAP progress each year.

The City will work with the San Gabriel Valley Council of Governments (SGVCOG), the San Gabriel Valley Energy Wise Partnership (SGVEWP), and other partners as appropriate, such as Los Angeles County, the Los Angeles Regional Collaborative, and the Southern California Regional Energy Alliance, to identify effective procedures to track the status of energy efficiency projects without increasing the level of effort from existing City staff. A designated City staff lead will monitor Plan implementation, and will support ongoing regional collaboration. The City staff lead will participate in the identification of regional resources available to support and streamline the implementation process.

All program activity managers will be required to submit regular project updates to the City's designated EAP implementation coordinator and/or energy manager, including written reports of activities and project outcomes. The energy manager will track both short- and long-term progress toward EAP targets.

The SGVCOG is currently developing a regionally uniform method to collect, track, and report on EAP metrics and project outcomes. The City will work with the SGVCOG and the energy manager to benefit from these regional tools and standardize reporting processes.

Monterey Park's finance staff will maintain records of all project costs, funds, and expenditures. City staff will work closely with the energy manager to submit necessary reports to all funding agencies, including required financial reports and documentation of project outcomes. City staff or a third-party inspector will be responsible for all pre- and post-inspections of new or retrofitted work to confirm that the projects are installed, operational, and consistent with project objectives. The energy manager will be responsible for tracking all related project files and providing appropriate information to the SGVCOG and the SGVEWP.

Crucial to the implementation of this Plan will be the City's implementation program. The implementation program identifies the anticipated electricity savings, agency, or department responsible for implementation, starting time frame, and funding sources.

MONITORING AND UPDATING THE EAP

The City will use the implementation program to track, monitor, and update the EAP. As the City reports on progress in implementing the EAP, staff will evaluate the effectiveness of each measure to ensure that the anticipated electricity and GHG reductions are occurring. In the event that GHG reductions do not occur as expected, the City will be able to modify and add further policies to the EAP to ensure the City meets its reduction target.

IMPLEMENTATION POLICY 1: MONITOR AND REPORT THE CITY'S PROGRESS TOWARD ACHIEVING THE MUNICIPAL REDUCTION TARGET.

- Facilitate implementation of measures and actions related to municipal operations.
- Prepare an annual progress report for review and consideration by the City Council.
- Utilize the monitoring and reporting tool to assist with annual reports.
- Identify key staff responsible for annual reporting and monitoring.

IMPLEMENTATION POLICY 2: REGULARLY REVIEW AND UPDATE THE CITY'S GHG INVENTORY, ENERGY PROFILE, AND EAP.

- Conduct an annual review of municipal electricity usage and associated GHG emissions.
- Re-inventory municipal GHG emissions every three to five years.
- Update the Plan to incorporate new technology, programs, and policies as available to achieve electricity efficiency.
- Consider updating and amending the Plan, as necessary, should the City find that policies and actions are not meeting the intended electricity reductions.

IMPLEMENTATION POLICY 3: CONTINUE TO DEVELOP COLLABORATIVE PARTNERSHIPS THAT SUPPORT IMPLEMENTATION OF THE EAP.

- Continue collaboration with the SGVCOG and participation as an active member of the SGVEWP and the Energy, Environment, and Natural Resources Committee.
- Participate in other SGVCOG-sponsored programs, projects, and events to help meet the goals described in this EAP.

IMPLEMENTATION POLICY 4: SUPPORT REGIONAL FUNDING EFFORTS TO IMPLEMENT THE EAP.

- Work with the SGVCOG to identify regional funding sources to support policies in this EAP.
- Ensure implementation through the inclusion of policies and action in department budgets, the capital improvement program, and other plans as appropriate.
- Pursue local, regional, state, and federal grants as appropriate to support implementation.

IMPLEMENTATION POLICY 5: FULFILL SCE'S ENERGY LEADER PARTNERSHIP PROGRAM REQUIREMENTS TO IMPLEMENT THIS ENERGY ACTION PLAN.

- Confirm review and acceptance/adoption of this EAP by the city council.
- Identify the plan's implementation time frame to begin within 6 months of approval.
- Integrate EAP implementation projects into the city's operating budget.
- Integrate EAP initiatives into the city's general plan and other appropriate policy documents.
- Implement the identified policies, actions, and projects identified in this EAP.
- Demonstrate to SCE that the energy efficiency actions identified in this EAP have been implemented and the criteria identified in **Appendix A** have been met.

IMPLEMENTATION AND MONITORING TOOLS

ENTERPRISE ENERGY MANAGEMENT INFORMATION SYSTEM

The SGVCOG is collaborating with the City and Los Angeles County to implement the Enterprise Energy Management Information System (EEMIS) utility manager to track municipal energy usage, enabling participating San Gabriel Valley municipalities to access facility energy consumption, archive billing data, and report and analyze energy consumption data via the Internet. The EEMIS project was developed in 2000 and has been adapted to assist cities in the SGVCOG with monitoring, forecasting, and budgeting for energy use at City facilities.

EEMIS includes the following components and features:

- Web-based application using browser-based technology.
- Collects data from all connected facilities and stores data in a standard format.
- Generates usage and demand profiles for energy procurement and project identification.

- Provides utility bill data for the different department subtenants within a building based on prevailing rates or customized for modified rate schedule.
- Utilizes energy cost analysis and notifications based on user-defined parameters to control costs by gaining experience from similar usage facilities (based on area of facility, number of occupants, size of equipment, season, historical usage over user-defined periods, etc).

IMPLEMENTATION PROGRAM

The information in this implementation program provides an overall, planning-level framework for achieving the reductions in this Plan. **Table 7** presents indicators for the implementation of each project, and are presented by facility in order from shortest to longest payback period. The electricity metrics show the estimated energy savings, estimated payback period, implementation period and department, and potential funding source necessary to achieve each policy's reduction potential.

Table 7: Implementation Program Table

Energy Efficiency Measure	Energy Savings	Estimated Payback	Anticipated Completion Date	Potential Funding Sources
Description	kWh	years		
City Hall	Implementing Department:		Public Works – Maintenance Services	
Install Thermostat Occupancy Sensors	24,738	0.2	2014	SCE Incentive, On-Bill Financing
Install Wall-Box Occupancy Sensor	10,850	2	2014	SCE Incentive, On-Bill Financing
Ceiling-Mount Occupancy Sensor	2,622	3.8	2014	SCE Incentive, On-Bill Financing
Implement Demand Control Ventilation	14,333	5.3	2014	SCE Incentive, On-Bill Financing
Retrofit 32W T8 Fixtures with 25W T8s	36,326	6.1	2014	SCE Incentive, On-Bill Financing
Retrofit 32W U-bend T8 Fixtures with 25W U-bend T8s	2,866	7.4	2014	SCE Incentive, On-Bill Financing
Bruggemeyer Library	Implementing Department:		Public Works – Maintenance Services	
Install Occupancy Sensor Controls on Parking Garage Night Light Fixtures	1,421	0.9	2014	SCE Incentive, On-Bill Financing
Implement Demand Control Ventilation	17,098	1.8	2014	SCE Incentive, On-Bill Financing
Replace Exterior 250W Pole-Mounted Metal Halide with LED	11,673	2.7	2014	SCE Incentive, On-Bill Financing
Install Photocell Controls on Exterior Wall Packs	342	3.8	2014	SCE Incentive, On-Bill Financing
Replace CFL 42W Wall Packs with LED	1,524	4.6	2014	SCE Incentive, On-Bill Financing
Replace Recessed Can Fixtures with LED	14,802	6.5	2014	SCE Incentive, On-Bill Financing
Replace 2x2 Fluorescent Fixtures with LED	49,878	7.4	2014	SCE Incentive, On-Bill Financing

Energy Efficiency Measure	Energy Savings	Estimated Payback	Anticipated Completion Date	Potential Funding Sources
Description	**kWh**	**years**		
Langley Senior Center	**Implementing Department:**		**Recreation and Community Services**	
Ceiling-Mount Occupancy Sensor	8,311	0.6	2014	SCE Incentive, On-Bill Financing
Replace HID Wall Packs with LED	2,365	2.5	2014	SCE Incentive, On-Bill Financing
Replace 32W T8 with 25W T8 and New Clear Diffusers	15,293	4	2014	SCE Incentive, On-Bill Financing
Replace Parking Lot and Walkway High-Pressure Sodium Fixtures with LED	13,035	4.6	2014	SCE Incentive, On-Bill Financing
Install Wall-Box Occupancy Sensor	149	5.9	2014	SCE Incentive, On-Bill Financing
Replace Cobra Head High-Pressure Sodium Fixtures with LED	1,708	6.9	2014	SCE Incentive, On-Bill Financing
Barnes Park Pool Facility	**Implementing Department:**		**Recreation and Community Services**	
Upgrade Pool Pump with VFD	69,232	0.9	2014	SCE Incentive, On-Bill Financing
Retrofit Metal Halide Pole-Mounted Lights with LED	16,622	12.7	2014	SCE Incentive, On-Bill Financing
Elder Park Pool Facility	**Implementing Department:**		**Recreation and Community Services**	
Upgrade Pool Pump with VFD	123,015	0.4	2014	SCE Incentive, On-Bill Financing
Replace 500W Quartz Halogen Fixtures with LED	12,792	7.6	2014	SCE Incentive, On-Bill Financing
TOTAL	**450,995**	**3.4**	2014	

Source: Willdan Energy Solutions, 2012.

CONTINUED PARTNERSHIP OPPORTUNITIES

One component to the successful implementation of the City's EAP will be the sharing of resources through continued communication and collaboration with other cities in the region. Continued collaboration will foster a more supportive environment to share best practices, and potentially coordinate future requests for funding and/or implementation. Efforts to implement programs and policies on a regional scale will provide consistency in the energy efficiency market and leverage economies of scale. The City will continue to participate in SGVCOG discussions and events related to energy efficiency such as the Energy Wise Partnership, the Energy, Environment, and Natural Resources Committee, and other SGVCOG-sponsored events to help meet the goals described in this EAP.

CHAPTER 5

CONCLUSION

This Energy Action Plan is an opportunity for the City to create and achieve a long-term vision for energy efficiency. The City of Monterey Park has developed this EAP as part of a regional framework that allows for close coordination and consistency between communities in the San Gabriel Valley, while responding to local community characteristics, values, and planning frameworks.

The policies and actions in this plan are meant to serve as a roadmap for reducing electricity use in municipal facilities. While the primary focus of this Plan is on reducing electricity and related greenhouse gas emissions, the policies and actions in this Plan also provide the ancillary benefits of improving the quality of the local built environment, reducing municipal electricity costs, and stimulating the local economy through investments in energy efficiency.

GLOSSARY

Baseline Inventory

The base year for assessment of energy trends against which future progress can be measured for a single calendar year (2005–2008), consistent with legislative guidance and the Assembly Bill 32 Scoping Plan.

Best Practice

Coordinated technologies, systems and design approaches, which (through research and experience) demonstrate the ability to consistently achieve above standard results while avoiding negative environmental impacts. Best practices change over time as improved components, technologies, systems and design approaches become available.

Source: California Long Term Energy Efficiency Strategic Plan

Buildout; Build-out

Development of land to its full potential or theoretical capacity as permitted under current or proposed planning or zoning designations.

California Air Resources Board (CARB)

A part of the California Environmental Protection Agency that reports directly to the Governor's Office in the Executive Branch of California State Government. CARB's mission is to promote and protect public health, welfare, and ecological resources through the effective and efficient reduction of air pollutants while recognizing and considering the effects on the economy of the state.

Source: California Long Term Energy Efficiency Strategic Plan

California Building Code (Title 24, Part 6)

California Code of Regulations, Title 24, also known as the California Building Standards Code (composed of 12 parts). Title 24, Part 6 sets forth California's energy efficiency standards for residential and nonresidential buildings and was established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods.

Source: Southern California Edison

California Long Term Energy Efficiency Strategic Plan (CEESP)

A plan adopted by the California Public Utilities Commission in 2008 that presents a single roadmap to achieve maximum energy savings across all major groups and sectors in California. This comprehensive plan for 2009 to 2020 is the state's first integrated framework of goals and strategies for saving energy, covering government, utility, and private sector actions, and holds energy efficiency to its role as the highest priority resource in meeting California's energy needs.

Carbon Dioxide Equivalent (CO_2e)

A metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential (GWP). The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by the associated GWP. For example, the GWP for methane is 21. This means that emissions of one million metric tons of methane are equivalent to emissions of 21 million $MTCO_2e$.

Climate Change (global climate change)

The term "climate change" is sometimes used to refer to all forms of climatic inconsistency, but because the earth's climate is never static, the term is more properly used to imply a significant change from one climatic condition to another. In some cases, climate change has been used synonymously with the term "global warming"; scientists, however, tend to use the term in the wider sense to also include natural changes in climate.

Demand Response

Mechanism for managing end user electricity consumption in response to energy supply conditions. A demand responsive system is one that can be controlled (either directly or remotely) to reduce electricity consumption during times of increased energy demand and/or constrained energy availability.

Source: California Long Term Energy Efficiency Strategic Plan

Energy Conservation

Methods of reducing energy waste, such as turning off lights or heating when not needed.

Energy Efficiency

Doing the same or more work with less energy, such as replacing incandescent light bulbs with compact fluorescent light bulbs, using appliances that use less electricity to run than older models, or utilizing a vehicle that can travel farther using the same amount of gasoline.

Energy, Environment, and Natural Resources Committee

The San Gabriel Valley Council of Government's Energy, Environment, and Natural Resources Committee coordinates environment-related efforts among the valley's many jurisdictions, pursues funding opportunities for the valley, and promotes beneficial policies to its member agencies.

Energy Leader Partnership Model

Southern California Edison (SCE) has developed the Energy Leader Partnership (ELP) Model to provide support to local governments in identifying and implementing opportunities to improve energy efficiency in municipal facilities and promoting community awareness of demand side energy management opportunities. By participating in SCE's ELP, local governments are taking actions to support the California Long Term Energy Efficiency Strategic Plan while saving energy and fiscal resources for their communities. In the San Gabriel Valley, the San Gabriel Valley Council of Governments (SGVCOG) is leading the implementation of the ELP with SCE and 27 of the 31 member cities in the SGVCOG. The ELP comprises four focus areas: municipal retrofits, demand response, strategic plan support, and energy efficiency programs coordination. The ELP program has four incentive tiers for participating cities: (1) Valued Partner, (2) Silver, (3) Gold, and (4) Platinum. Each city begins the program as a valued partner and to advance to the next incentive tier, each participating city must achieve the pre-determined energy savings and requirements community-wide and for city facilities.

Energy Star

A joint program of the US Environmental Protection Agency and the US Department of Energy to provide consumers with information and incentives to purchase the most energy-efficient products available.

Enterprise Energy Management Information Systems

The San Gabriel Valley Council of Governments (SVGCOG) has funded and created a program to set up a "utility manager" computer program to track municipal usage and identify need for sub-metering to plan, budget, and manage bills for each city facility. The SGVCOG is collaborating with the County of Los Angeles to implement the County's Enterprise Energy Management Information System (EEMIS) utility manager to track municipal energy usage, enabling participating San Gabriel Valley municipalities to access facility energy consumption, archive billing data, and report and analyze energy consumption data via the Internet. The County's EEMIS project was developed in 2000 and has been adapted to assist cities in the SGVCOG with monitoring, forecasting, and budgeting for energy use at city facilities.

First Cost

Immediate purchase and installation cost. First costs do not include lifecycle or long-term operating costs, which may result in long-term cost savings from increased efficiency, reduced maintenance, and other factors.

Source: California Long Term Energy Efficiency Strategic Plan

Goal

The desired end state or expected outcome related to electricity reduction targets in the Energy Action Plan (EAP). Each goal corresponds to one of the EAP's seven topic areas: existing residential buildings, existing nonresidential buildings, new development, planning framework, urban cooling, water and electricity efficiency, and municipal operations.

Green Building

Sustainable or "green" building is a holistic approach to design, construction, and demolition that minimizes the building's impact on the environment, the occupants, and the community.

Greenhouse Gases

Gases which cause heat to be trapped in the atmosphere, warming the earth. Greenhouse gases are necessary to keep the earth warm, but increasing concentrations of these gases are implicated in global climate change. The

majority of greenhouse gases come from natural sources, although human activity is also a major contributor. The principal greenhouse gases that enter the atmosphere because of human activities are:

- Carbon Dioxide (CO_2): Carbon dioxide is a colorless, odorless gas that occurs naturally in the Earth's atmosphere. Carbon dioxide also enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees, and wood products, and as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.
- Methane (CH_4): Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.
- Nitrous Oxide (N_2O): Nitrous oxide is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.
- Fluorinated Gases: Hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are synthetic, powerful greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances (i.e., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes referred to as high global warming potential gases ("high GWP gases").

Greenhouse Gas Inventory

A greenhouse gas inventory provides estimates of the amount of greenhouse gases emitted to and removed from the atmosphere by human activities. A city or county that conducts an inventory looks at both community emissions sources as well as emissions from government operations. A base year is chosen and used to gather all data from that year. Inventories include data collection from such things as vehicle miles traveled, energy usage from electricity and gas, and waste. Inventories include estimates for carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs), which are referred to as the six Kyoto gases.

Green Teams

A formal or informal group of people in an organization tasked with addressing environmental issues. The groups brainstorm solutions and promote ways in which their company's practices can become more environmentally sustainable, often creating sustainability plans and approaching management for funding to meet plans.

Source: California Long Term Energy Efficiency Strategic Plan

Implementation Action

An action, procedure, program, or strategy to achieve the electricity reductions of a policy. Action items may provide interim steps or supporting strategies. Actions may also indicate the range of opportunities to increase the electricity reduction potential of a policy.

Integrated Systems

Lighting systems that include components, assemblies, and controls designed to work together effectively.

Kilowatt-hour (kWh)

A unit of energy equivalent to one kilowatt (kW) of energy used for an hour. For example, if an appliance requires a kW of energy to function, leaving the appliance on for one hour would consume one kWh of energy.

Source: California Long Term Energy Efficiency Strategic Plan

Lifecycle Cost

Cost of a component, technology, or system over its entire lifespan, including not just first costs but also operating, maintenance, and disposal costs.

Methodology

A consistent body of methods or procedures to approach a given task; in terms of a greenhouse gas emissions inventory and forecast, refers to an internally consistent approach to quantify greenhouse gas emissions that supports the principles of inventories identified in the Local Government Operations Protocol: relevance, completeness, consistency, transparency, and accuracy.

Mixed Use

Properties on which various uses such as office, commercial, institutional, and residential are combined in a single building or on a single site in an integrated development project with significant functional interrelationships and a coherent physical design. A "single site" may include contiguous properties.

Municipal Operations Greenhouse Gas Inventory

Looks at greenhouse gas emissions caused by City operations. Typical sectors include energy associated with City facilities, vehicle fleets, equipment, waste generation, employee commutes, and more.

Participating Municipality

Those jurisdictions or member cities that: (i) are located in Southern California Edison's (SCE) service territory; and (ii) have been selected by SCE and the SGVCOG to participate in the program as set forth in the Statement of Work. Includes 27 participating cities (Alhambra, Arcadia, Baldwin Park, Bradbury, Claremont, Covina, Diamond Bar, Duarte, El Monte, Glendora, Irwindale, La Cañada-Flintridge, La Puente, La Verne, Monrovia, Montebello, Monterey Park, Pomona, Rosemead, San Dimas, San Gabriel, San Marino, Sierra Madre, South El Monte, South Pasadena, Temple City, and West Covina).

Source: Southern California Edison

Performance Indicators

Specific, measureable, actionable, realistic and time-specific requirements that will directly and measurably contribute to the City's Energy Action Plan goals.

Source: Southern California Edison

Policy

A statement that guides decision-making and indicates a commitment to achieve the specified outcomes of the goal. Policies provide the foundation for quantification of electricity reduction potentials in the Energy Action Plan.

Project Steering Committee

Along with other San Gabriel Valley cities taking part in the regional Energy Action Plan (EAP) project, the City was able to participate in a Project Steering Committee (PSC) throughout EAP development. The purpose of the PSC is to confirm a regional approach to EAP development, guide the project, and share best practices among jurisdictions The PSC convened approximately once a month from June 2011 to September 2012 . During PSC

meetings, representatives from San Gabriel Valley Council of Governments staff and technical consultant project team facilitated discussions and presentations to review options to achieve electricity efficiency.

Public Goods Charge

The funds which make up the Implementer Budget and which are collected from electric utility ratepayers pursuant to Section 381 of the California Public Utilities Code for public purposes programs, including energy efficiency programs approved by the California Public Utilities Commission.

Source: Southern California Edison

Rebate

Offered by the state, utility, or local government to promote the installation of renewables and energy efficiency projects.

Renewable Energy

Energy from sources that regenerate and are less damaging to the environment, such as solar, wind, biomass, and small-scale hydroelectric power.

San Gabriel Valley Council of Governments (SGVCOG)

A Joint Powers Authority representing 31 incorporated cities and unincorporated areas in the San Gabriel Valley. The SGVCOG works with member agencies to collectively address transportation, housing, economic growth, and environment issues that are most effectively addressed at a regional scale.

San Gabriel Valley Energy Wise Partnership

An alliance between the San Gabriel Valley Council of Governments and Southern California Edison to bring energy savings to the San Gabriel Valley through innovative public education and energy efficiency projects. The program seeks to reduce energy usage in the region by approximately 5 million kilowatt-hours by 2012.

Savings by Design (SBD)

California's nonresidential new construction energy efficiency program, administered statewide and funded by energy utility customers through the Public Purpose Programs surcharge applied to gas and electric services. Projects participating in SBD receive services including design assistance, owners incentives, design team incentives, and energy design resources. Services begin in the project design phase and continue through construction completion.

Source: Southern California Edison

Sectors

Emissions are grouped by the type of activity that generated the emissions, such as transportation, residential energy use, or commercial energy use.

Simple Payback Period

Amount of time required to recover an initial investment.

Source: California Long Term Energy Efficiency Strategic Plan

Southern California Edison (SCE)

An investor-owned utility that is the primary electricity provider to Southern California and the San Gabriel Valley.

SCE Energy Leader Partnership

A program run by SCE that provides support to local governments and institutions to assist them in achieving a joint vision of sustainability. SCE works closely with partners to address key issues that are barriers to achieving this vision and develop a long term energy efficiency strategy. For local governments, SCE provides support to identify and address energy efficiency opportunities in municipal facilities, take actions supporting the California Long Term Energy Efficiency Strategic Plan, and increase community awareness and participation in demand side management opportunities. A key goal in SCE's local government partnerships is helping cities and counties lead by example in addressing energy efficiency first in their own municipal facilities.

SCE (financial incentive)

Provisions issued by SCE in order to promote the installation of energy efficiency and renewable projects in the utility territory. There are a variety of types of incentives, including rebates, loans, and alternative rates. The incentives are paid through the statewide Public Good Charge.

Southern California Regional Energy Consortium

Los Angeles County program that will bundle like projects for economies of scale after city energy efficiency projects have been identified.

Sustainability

Community use of natural resources in a way that does not jeopardize the ability of future generations to live and prosper.

Sustainable Development

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Source: *Report of the World Commission on Environment and Development: Our Common Future*, also known as the Brundtland Commission or Brundtland Report

Water Conservation

Reducing water use, such as turning off taps, shortening shower times, and cutting back on outdoor irrigation.

Water Efficiency

Replacing older technologies and practices in order to accomplish the same results with less water; for example, by replacing toilets with new low-water-using models and by installing “smart controllers” in irrigated areas.

Zero Net Energy

For buildings, use of no more energy over the course of a year than can be generated onsite through renewable resources such as solar, wind, or geothermal power.

Source: California Long Term Energy Efficiency Strategic Plan

APPENDIX A

ENERGY ACTION PLAN – ENERGY LEADER PARTNERSHIP REQUIREMENTS CHECKLIST

Southern California Edison (SCE) provides Energy Action Plan (EAP) guidance to cities participating in the Energy Leader Partnership (ELP) through the following checklist. Southern California Edison (SCE) prepared the checklist to outline a critical path to move from Valued Partner to Platinum Level. The City of Monterey Park should complete the following steps to advance beyond the Silver level in the ELP.

Silver Level – Initiate EAP

The Partner City/County demonstrates initiation of an EAP to qualify for the Silver level criteria. This can include any of the following options:

A. Partner selected and was approved for Strategic Plan menu item 3.2.1
B. A draft of an EAP is submitted by Partner City/County
C. RFP issued or consultant hired to complete EAP

Gold Level - Complete EAP

The Partner City/County must submit a completed plan to SCE, which includes (at least) the following components:

A. Establish long term vision and plan for energy efficiency in City/County (In kWh savings or % reduction)
B. Clearly states the aim and objectives of the plan
C. Records the baseline municipal energy usage (kWh)
D. Displays the highest users (facilities) that the city should target
E. Identifies the City/County reduction goals and milestones to help reach long term target.
F. Provides the plan of municipal facility projects that the City/County can complete to assist in achieving their reduction (Provide savings calculated for each project)
    i. Identify priority of projects
    ii. Identifies expected funding mechanisms to complete municipal facility EE projects
G. Identifies any policies or procedures the City/County can implement to assist in reducing energy use
H. Add statement/paragraph identifying all actions including (but not limited to) municipal retrofit projects and policies that will constitute meeting the “Implementation” requirement in the ELP Platinum Level
I. Language stating the EAP’s long term policies will be integrated in the local government’s policy documents such as the next General Plan, climate action plan or sustainability plan

Platinum Level – Implement EAP

A. EAP approved by Council/Board
B. Implementation actions must include the following
    a. Evidence of inclusion (as a line item) of EAP implementation in city/county operating budget
        i. Example: Establishment of energy revolving fund or reference to energy efficiency in the annual maintenance budget demonstrating long term implementation of EAP
    b. Evidence of integration of EAP into long term policies such as the General Plan, climate action plan, or sustainability plan or adopt the following resolution, "RESOLVED that the completed Energy Action Plan will serve to guide the city of Monterey Park in future energy efficiency actions and initiatives that will be incorporated in a long term policy document such as the General Plan, climate action plan, or sustainability plan."
    c. As referenced in Gold Level H, the completion of the identified actions that were delineated in the EAP (items as invoices or signed resolutions should be provided as evidence)

ELP REQUIREMENTS CHECKLIST

Please use the following table to help identify areas of the EAP that satisfy the requirements.

EAP Requirements for Gold	Page Number and Section Found
A. Establish long term vision and plan for energy efficiency in City/County (In kWh savings or % reduction)	Chapter 1, "Purpose & Scope" section, page 15; Chapter 3, "EAP Reduction Targets" section, page 31
B. Clearly states the aim and objectives of the plan	Chapter 1, "Role of the EAP" section, page 16
C. Records the baseline municipal energy usage (kWh)	Chapter 2, "Municipal Inventory Summary" section, page 25-26; Chapter 3, "Municipal Electricity Profile" section, page 26
D. Displays the highest users (facilities) that the city should target	Chapter 2, "Municipal Electricity Profile" section, page 27
E. Identifies the City/County reduction goals and milestones to help reach long term target	Chapter 3, "Reduction Targets" section, page 30
F. Provides the plan of municipal facility projects that the City/County can complete to assist in achieving their reduction (Provide savings calculated for each project) i. Identify priority of projects ii. Identifies expected funding mechanisms to complete municipal facility energy efficiency projects	Chapter 3, "Near Term Projects" section, page 31, Table 5
G. Identifies any policies or procedures the City/County can implement to assist in reducing energy use	Not included in this EAP, See Climate Action Plan.
H. Add statement/paragraph identifying all actions including (but not limited to) municipal retrofit projects and policies that will constitute meeting the "Implementation" requirement in the ELP Platinum Level	The EAP as approved supports achievement of the Gold Level as currently defined by SCE. When the City is ready to move to Platinum, an update to the EAP should include the appropriate recommended language in Chapter 1, Chapter 3, and Chapter 4.
I. Language stating 1) the EAP's long term policies will be integrated in the local government's policy documents such as the next General Plan, climate action plan or sustainability plan or 2) that the following resolution will be adopted, "RESOLVED that the completed Energy Action Plan will serve to guide the city of Monterey Park in future energy efficiency actions and initiatives that will be incorporated in a long term policy document such as the General Plan, climate action plan, or sustainability plan."	1) Chapter 4, "Monitoring and Updating the Energy Action plan" section, page 38.

Note: Revised ELP EAP Checklist provided by SCE to SGVCOG and PMC on February 12, 2013.