

CITY OF ARCADIA



2019 ENERGY ACTION PLAN UPDATE

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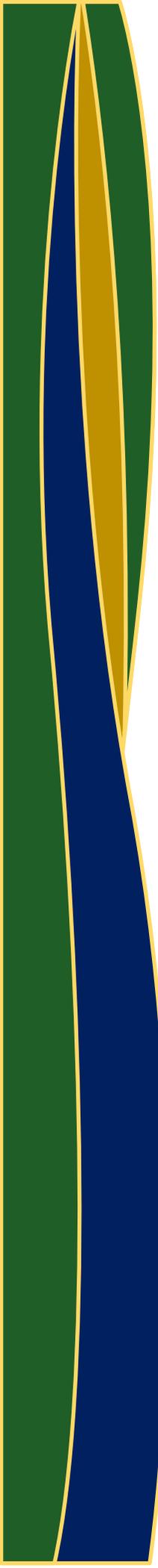
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DISCLAIMER

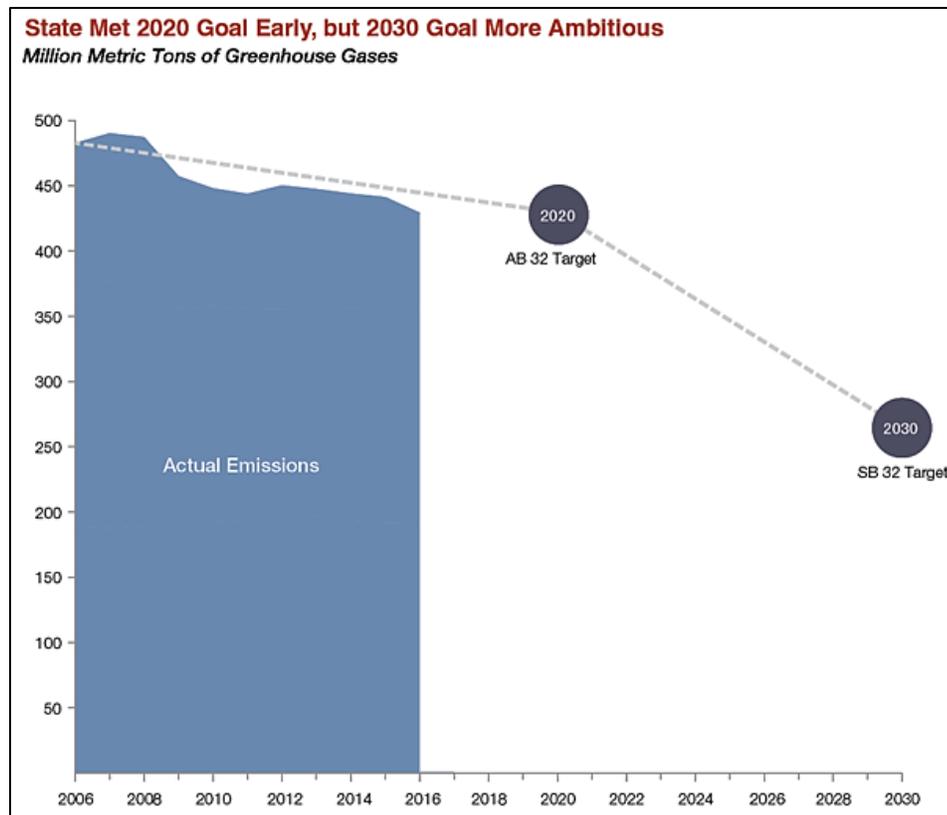
The 2019 EAP Update only includes updates and revisions to municipal operations that were referenced in the 2012 EAP. The intent of the update is to develop detailed recommendations for the City of Arcadia to better plan for energy efficiency actions and projects. This update is not intended to serve as a detailed engineering design document.

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SECTION 1: EXECUTIVE SUMMARY

In December 2012, the City of Arcadia published its Energy Action Plan (EAP) with aims to decrease its greenhouse gas emissions by reducing its energy consumption. The passage of the Global Warming Solutions Act, known as Assembly Bill 32, in 2006 outlined the goal of reducing statewide greenhouse gas emissions to 1990 levels by 2020. Since then, California has been on track with reducing its greenhouse gas emission levels as depicted in the chart below. In 2016, Senate Bill 32 was passed to extend the reduction goal to 40% below 1990 levels by 2030.



Source: California Legislative Analyst's Office (LAO)

The City of Arcadia has recognized the impact of carbon emissions and supports the State of California's emission reduction targets. The City is also committed to developing and implementing long-term climate action activities to reduce energy usage and lower greenhouse gas emissions. With the passage of new policies and the advanced developments of technological innovations, the City of Arcadia has sought to provide an updated report after reviewing the City's 2012 EAP. The updates to the EAP demonstrate the City's continuous and steadfast commitment to reduce greenhouse gas emissions. Additionally, these updates provide recommendations on how the City can better achieve its long-term vision and commitment to attain energy efficiency in municipal operations.

The 2019 EAP Update includes the following sections:

- ❖ **Introduction:** Provides a brief overview of the City of Arcadia’s regional partners and their programs, existing energy efficiency resources, and benchmarking tools.
- ❖ **City of Arcadia’s Energy Use:** Provides an overall summary of the City’s municipal electricity and natural gas uses, as well as a list of relevant federal and state energy policies.
- ❖ **City of Arcadia’s Reduction Goals:** Includes a detailed evaluation of the City’s 2012 EAP municipal goals and policies, an overview of the City’s revised reduction targets and strategy topics, and a list of revised energy efficiency policy recommendations for the City.
- ❖ **Energy Efficiency Projects:** Covers a list of recent municipal facility energy efficiency projects as well as projects that are being considered for future implementation.
- ❖ **Conclusion:** Provides a summary on the recommended steps to implement, monitor, and review the EAP.

Several technical appendices were prepared to provide support for the contents found throughout the updated report. The 2019 EAP Update Report includes the following appendices:

- ❖ **Glossary of Key Terms:** Provides detailed definitions of key terms used in this updated report.
- ❖ **References:** Includes a list of citations and sources used throughout the updated report.
- ❖ **Energy Efficiency Action and Project Checklist:** Provides a list that City staff can utilize to document and track the progress of completing the energy efficiency actions and projects that are mentioned in this document.
- ❖ **City of Arcadia’s Statement of Energy Reports:** Provides detailed energy usage reports from ENERGY STAR Portfolio Manager of existing municipal buildings and structures.

The City’s long-term vision for energy efficiency focuses on reducing the City’s carbon footprint and conserving energy at municipal facilities. After reviewing the reduction targets in the 2012 EAP, the City has developed the following revised reduction targets:

780,662 kWh

Reduce Overall Electricity Usage

Decrease overall municipal building electricity usage to 5% below 2018 levels by 2023

3 EE Projects

Energy Efficiency Projects

Complete 3 or more energy efficiency projects related to electricity and/or gas usage by 2023

1,582,845 kWh

Achieve Platinum Level

Achieve Platinum Level Status in SCE's Energy Leader Program by increasing municipal energy savings (1,582,845 kWh savings needed to attain level)

This document provides various measures and different methods on how the revised reduction targets can be achieved. The reduction targets, measures, and methods in this update were developed in accordance to the City of Arcadia's General Plan and Recreation and Parks Master Plan.

SECTION 2: INTRODUCTION

The City of Arcadia recognizes the importance of utilizing existing resources and creating regional partnerships to achieve the City's long-term energy efficiency goals. The following entities and resources will be mentioned throughout this EAP Update.

2.1: Partnership Programs and Resources

San Gabriel Valley Energy Wise Partnership (SGVEWP)

Recognizing the importance of regional partnerships in energy efficiency initiatives, the City of Arcadia entered into the San Gabriel Valley Energy Wise Partnership (SGVEWP) with twenty-eight other cities in the San Gabriel Valley region. SGVEWP serves as a partnership between Southern California Edison (SCE), the Southern California Gas Company (SoCalGas), the San Gabriel Valley Council of Governments (SGVCOG), and the 29 cities in the San Gabriel Valley. The Partnership was first launched in 2009 between SGVCOG and SCE. SoCalGas later joined the Partnership in 2013. SGVEWP is funded by the California Public Utilities Commission (CPUC) Local Government Partnerships Program.

The SGVEWP assists local governments in the San Gabriel Valley in reducing their energy consumption and greenhouse gas emissions to create a more sustainable future for the entire region. Particularly, the Partnership provides resources to support the implementation of energy efficiency projects at municipal facilities, as well as assistance to engage the community. Additionally, SGVEWP hosts energy efficiency trainings for City staff, organizes educational workshops and events, undertakes and supports other community education efforts, and hosts other special events to promote the reduction of energy usage within the region.

Some of the programs and services that SGVEWP provides the City of Arcadia include:

- ❖ City Staff Energy Work Group;
- ❖ One-on-One City Energy Efficiency Meetings;
- ❖ Building Officials Certification (BOC) Trainings;
- ❖ Toolbox Trainings;
- ❖ Residential Home Energy Assessment Program; and,
- ❖ Business Energy Assistance and Recognition Program

The City of Arcadia will continue working with Partnership representatives to ensure that the City is maximizing the services and resources made available through the SGVEWP. More information regarding the Partnership can be found on:

<https://www.sgvenergywise.org/>

Southern California Regional Energy Network (SoCalREN)

The City of Arcadia is one of the 120+ agencies enrolled with the Southern California Regional Energy Network (SoCalREN). Authorized in 2012 by the California Public Utilities Commission (CPUC) and administered by Los Angeles County, the SoCalREN provides services to residents, businesses, and public agencies throughout areas served by SCE and SoCalGas across Southern California.

Through enrollment in the SoCalREN's Public Agency Program, the City of Arcadia receives no-cost services from SoCalREN to reduce energy costs including:

- ❖ Facility Energy Audits;
- ❖ Streetlight LED Retrofit Assistance;
- ❖ Retrocommissioning Support;
- ❖ Energy Consumption Benchmarking;
- ❖ Project Financing Analysis;
- ❖ Project Approval Assistance Specifications;
- ❖ Cooperative Procurement for Project Delivery; and,
- ❖ Contractor Cost Estimate Review.

The City of Arcadia actively utilizes SoCalREN's services to receive energy analysis reports to review municipal facilities' energy usage. The City recognizes the various resources SoCalREN has to offer and aims to continuously work with the organization to identify future energy efficiency projects. More information regarding the SoCalREN can be found on: <https://socalren.com/>.

Southern California Edison's Energy Leader Partnership (ELP)

Through the SGVEWP, participating cities can benefit from SCE's Energy Leader Partnership Program. The program recognizes cities for increasing their energy efficiency in municipal facilities and communities, participating in demand response programs, and engaging in long-term strategic planning for energy efficiency.

There are four tiers in the ELP: Valued, Silver, Gold, and Platinum. The "Valued" tier is the lowest level while the "Platinum" tier is the highest level. Cities must meet thresholds in municipal and community energy efficiency, demand response, and strategic planning to qualify for higher levels. Cities also receive additional incentives and recognitions for achieving higher levels. The City currently is at the "Gold" level and aims to achieve the "Platinum" level by 2023. City staff and individuals can view the most updated ELP report by visiting: <https://www.sgvenergywise.org/energy-leader-model>.

An overview of the City of Arcadia's ELP report (generated on April 1, 2019) can be found on the following page.

Energy Leader Partnership City of Arcadia

Current Energy Leader Level: **Gold**

2006 Baseline Consumption: 17,537,983

2006 - Present Energy Savings: 1,924,752

Participation Savings % 10.97%

Accomplishments to Date Summary

	Value	Silver	Gold	Platinum
Municipal Savings	N/A	Met	Met	Not Met
IDSMS Criteria	N/A	Met	Met	Met

Details & Next Steps

	Value Level	Silver Level 5%	Gold Level 10%	Platinum Level 20%
Municipal Savings to Reach Level		X 876,899	X 1,753,798	3,507,597
Savings Needed to Attain Level		-	-	1,582,845
IDSMS Criteria Needed		0	0	0
IDSMS Criteria (Must Complete 2 Per Tier Level)		X Complete energy benchmarking Complete GHG Inventory	X Complete Energy Action Plan Establish mechanism for an EE Revolving Fund	Implement Energy Action Plan Establish mechanism for an EE Revolving Fund
		X Complete one (1) IDSMS Marketing and Outreach Menu Item	X Complete one (1) IDSMS Marketing and Outreach Menu Item	X Complete one (1) IDSMS Marketing and Outreach Menu Item
		X Distribute IDSMS Solutions Brochure to partner employees and enroll one (1) eligible facility in a Demand Response program and develop an Event Curtailment Plan for participating facility	Conduct one (1) co-branded IDSMS community event and enroll 10% of eligible facilities in a Demand Response program and develop Event Curtailment Plans for participating facilities	X Conduct one (1) co-branded IDSMS community event and enroll 20% of eligible facilities in a Demand Response program and develop Event Curtailment Plans for participating facilities
	Menu Items Completed		10-12: Community Savings -5% - 9.99%	Distribute Energy Efficiency - 3/5/15

IDSMS Marketing & Outreach Menu Options: Bill Insert, Group Presentation, IDSMS Workshop, Muni Success Story, Council Presentation, Kiosk / Display / Newsletter, or Website

** Please review IDSMS Marketing & Outreach Menu for detail requirements*

Institute for Local Governments' Beacon Program

The Beacon Program provides a framework for the City of Arcadia to share best practices that create sustainable communities within the City. This program honors voluntary efforts by local governments to reduce energy use and adopt policies that promote sustainability. The Beacon Program is supported by the Institute for Local Government and the Statewide Energy Efficiency Collaborative (SEEC). It is also funded by the California utility ratepayers through the Public Goods Charge, levied under the auspices of the California Public Utilities Commission and administered by Pacific Gas and Electric Company, San Diego Gas and Electric Company, Southern California Edison, and Southern California Gas Company. More information regarding the Beacon Program can be found on: <https://www.ca-ilg.org/beacon-program>.

Statewide Energy Efficiency Collaborative (SEEC)

The Statewide Energy Efficiency Collaborative (SEEC) is an alliance between three statewide nonprofit organizations and California's four Investor-Owned Utilities (IOUs). SEEC leverages the diverse expertise and resources of its implementing partners to meet evolving local government needs to save energy, reduce greenhouse gas emissions, and accelerate climate action. SEEC's resources can help the City of Arcadia reduce energy costs and greenhouse gas emissions while enhancing energy efficiency. The City recognizes the valuable resources that SEEC has to offer and strives to actively utilize these resources to achieve the goals that are outlined in this document. More information regarding SEEC can be found on: <http://californiaseec.org/>.

2.2 Existing Energy Efficiency Resources

Leadership in Energy Environmental Design (LEED)

LEED is the most widely-used green building rating system in the world. It provides a framework to create healthy, efficient, and cost-saving green buildings. Obtaining LEED certification is a globally-recognized symbol of sustainability achievement. The City has expressed both recognition and understanding of the sustainability benefits related to incorporating energy efficiency in building design; they strive to have any new municipal buildings and facilities be LEED-certified. More information on LEED can be found on: <https://new.usgbc.org/leed>.

ENERGY STAR

ENERGY STAR is the government-certified symbol for energy efficiency, which provides credible and unbiased information that consumers can rely on to make well-informed decisions. All products that are ENERGY STAR-certified meet the Federal Energy Management Program standards.

Recognizing that ENERGY STAR-certified products help with reducing energy use, the City of Arcadia strongly considers products that are ENERGY STAR-certified when purchasing appliances or equipment. More information on ENERGY STAR can be found on: <https://www.energystar.gov/about>.

2.3 Benchmarking Tools

ENERGY STAR Portfolio Manager

The ENERGY STAR Portfolio Manager is an energy-tracking tool that was used to evaluate energy usage in existing municipal buildings and facilities in this document. Portfolio Manager is a free online application that measures and tracks energy usage, water consumption, and greenhouse gas emissions. It can be used to manage the energy and water use of any facility or structure. More than 40% of structures and facilities in the United States are using this tool to benchmark energy use. Understanding the importance of analyzing facilities' energy usage, this EAP Update utilized the ENERGY STAR Portfolio Manager tool in evaluating the City of Arcadia's municipal energy consumption.

The appendices showcase statements of energy performance of each City facility. More information on the ENERGY STAR Portfolio Manager can be found on <https://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/use-portfolio-manager>.

Enterprise Energy Management Information System (EEMIS)

Managed by the County of Los Angeles, EEMIS was developed to provide a cost-effective means to analyze, monitor, and benchmark facility energy usage using a single energy management software. The software can provide comprehensive and intelligent analytical tools to actively and economically manage energy through an intuitive web-based interface. This tool can provide the following functions:

- Automate month-end utility bill data;
- Supply timely and credible usage and budget information;
- Expedite energy project development;
- Provide ongoing measurement and verification of energy projects; and,
- Identify opportunities for improved operation and maintenance practices.

2.4: Funding of Projects

The implementation and success of these projects at the city level hinge on adequate availability of funds and resources. The following are several project funding pathways that are available for the City to consider as the City moves forward with implementation.

Federal Government

The U.S. Department of Energy's Office of Energy Efficiency & Renewable Energy offers a great tool to identify financing mechanisms that will work for the City's needs, including residents and businesses. This tool can be found on <https://www.energy.gov/eere/slsc/pay-energy-initiatives>.

Some of the available funding mechanisms that cities should consider are as follows:

❖ **Bonding Tools**

Bonds are low-cost, long-term sources of capital available to most state and local entities from banks, public markets, or investment banking firms. The issuer is required to make scheduled interest payments at certain periods for a mutually agreed upon rate and then either return the principal on the date the issue matures, or pay incrementally throughout the life of the bond.

❖ **Energy Savings Performance Contracting (ESPC)**

A facility owner can use an ESPC to pay for upgrades presently by utilizing future energy savings, which mitigates the need to tap into capital budgets. This is done through a partnership with an energy service company (ESCO). This budget-neutral approach aims to reduce energy and water usage and increase overall operational efficiency.

❖ **Leasing Arrangements**

Leases are long-term rental contracts where the lessee uses the energy efficient equipment or product in return for payments to the lessor. By the end of the lease period, the lessee has the option to purchase the equipment or product.

❖ **Loan Loss Reserves**

This serves as an allowance from the bank which is set aside to cover any estimated losses. As loans are repaid, the reserve shrinks proportionally and increase as more loans are made.

❖ **Revolving Loan Funds**

These loans are used as a pool of capital where, once loans are repaid, capital is re-loaned for another energy project. These "evergreen" funds are recycled repeatedly assuming that the defaults remain low.

Through <https://www.grants.gov/>, the City can search for available grants.

State Funding

There are a few avenues for identifying and applying for state energy efficiency grants. Whereas some grants are competitive in which applicant cities compete against one another, other grants are formulaic in which grant funds are allocated according to a set of requirements that cities must meet. Through <https://california.grantwatch.com/>, the City can search for state sponsored grants.

The Funding Wizard website is also a great resource to search for state energy grants for cities.

California Lending for Energy and Environmental Needs (CLEEN) Center allocates direct public financing to cities to help the State meet its goals for greenhouse gas reduction, environmental preservation, and water conservation. There are two programs within the Center, Statewide Energy Efficiency Program (SWEEP) and Light Emitting Diode Street Lighting Program (LED) that can be financed through a direct loan from IBank or through public tax-exempt bonds ranging from \$500,000 to \$30 million.

Utility Rebates & Incentives (SCE/SoCalGas EE Programs)

SCE and SoCalGas offer many rebate and incentive programs for municipal customers.

SoCalGas offers the Energy-Efficiency Rebates for Business (EERB) program, which provides rebates on energy-efficient natural gas equipment and improvements for city facilities.

- ❖ The rebate amount is up to \$500,000 per site and up to \$1,000,000 per customer, per year.
- ❖ To qualify, cities must have valid, active, and non-delinquent commercial, agricultural, or industrial businesses with operational and ready-for-inspection equipment.
- ❖ The cost of purchasing and professionally installing the product must be below the rebate amount.
- ❖ Qualified equipment includes water heaters, boilers, water heating products, heat recovery products, insulation products, laundry products, and food service equipment.

Southern California Edison offers four main programs.

- ❖ **Express Solutions, Customized Solutions, and BRO (Behavioral, Retro-commission, Operational) Programs:** Cities can receive financial rebates and incentives for replacing, upgrading, or commissioning equipment through these programs.
- ❖ **On-Bill Financing (OBF):** Qualifying municipalities would repay a loan in monthly installments through OBF with zero interest, no fees, reduced electricity usage, rebates, or incentives on energy efficient projects.
- ❖ **Midstream Point of Purchase (MPOP) Program:** Some municipal customers may qualify for an instant rebate on technologies without having to fill out an application or apply with SCE through this program.
- ❖ **Automated Demand Response Control Incentives:** Municipal customers may receive financial incentives for installing equipment that automates electrical load reduction during demand response events and may also be eligible for bill credits or reduced rates through this program.

Southern California Regional Energy Network (SoCalREN)

The Revolving Loan Fund (RLF) is a 0% interest gap financial tool offered through SoCalREN that enables enrolled agencies to finance energy efficiency projects. This self-restoring fund can be used with longer term financing as well. The fund has the following characteristics:

- ❖ Easy process, from a simple application and efficient processing, to a quicker dispersal of funds
- ❖ Customizable services
- ❖ Provides short-term construction financing between construction and On-Bill Financing

California Energy Commission Energy Efficiency Financing Program

The California Energy Commission's Energy Efficiency Financing Program provides funding for energy saving projects to cities, counties, special districts, and other institutions. Made on a reimbursement basis, these 1% loans can fund 100% of the energy-related project within a 17-year payback period and must be repaid (including principal and interest) within 20 years. They cannot exceed the life of the loan-funded equipment and approved project costs with invoices dated within the term of the loan are eligible to be reimbursed from funds.

Additional Resources

❖ **Power Purchase Agreements (PPAs)**

This financial agreement is held with two parties: The electricity seller and the electricity purchaser. Common with solar power, this type of contract allows a developer to design, permit, finance, and install a solar energy system on a customer's property with low to no cost. The contract typically ranges from 10-25 years while the developer is responsible for the maintenance and operation of the system.

❖ **Efficiency Services Agreements (ESAs)**

These agreements are based on a pay-for-performance, off-balance sheet funding solution where customers can implement energy efficient projects with zero upfront capital costs. The ESA provider pays for all development and construction costs and the customer is responsible for service charge payments for actual realized savings after the project is operational.

❖ **Energy Performance Contracts (EPCs)**

This financial contract uses cost savings from reduced energy consumption to repay the energy conservation measures installation. Typically offered by Energy Service Companies (ESCOs), this allows for users to save on energy without any upfront capital costs. The performance contractor estimates the costs of the energy improvements and are paid back out of the energy savings. A single contractor can



perform the necessary energy audits and retrofit as well as guarantee energy savings from a series of conservation measures.

❖ **Green Revolving Fund (GRF)**

This fund is an internal capital pool with a purpose of funding energy efficiency, renewable energy, and/or sustainability projects. The fund is replenished by a portion of those savings which allows for reinvestment in future, similarly valued projects. A valuable guide for implementing this type of fund is available at:

http://greenbillion.org/wp-content/uploads/2013/01/GRF_Implementation_Guide.pdf

SECTION 3: ENERGY USE

3.1 Introduction

Energy use and cost data presented in this section were provided by the City of Arcadia in spreadsheet format. Data was generated from SCE and SoCalGas utility accounts. This data was input into ENERGY STAR Portfolio Manager to track energy usage over a period of time, compare past usage to present usage, and provide comprehensive measurements of which municipal buildings/uses are using the most energy. Current energy usage shown in all tables and figures are representative of January 2018 – January 2019. Baseline data shown in all tables and figures are representative of January 2016 – January 2017.

3.2 Glossary of Terms for this Section

The most pertinent terms for this section that must be defined for clarity are as follows¹:

Site Energy Use: The annual amount of all the energy a property consumes on-site, as reported on utility bills.

Energy Use Intensity (EUI): EUI is calculated by taking the total energy consumed in one year (measured in kWh or therms) and dividing it by the total floor space of the building (measured in sq.ft.). The EUI is a useful reference, especially when tracking a building's energy performance over time, or comparing one building (of similar type) to another. Since the energy use per square foot at a property is used to calculate this value, this means that some of the large energy-consuming buildings are not necessarily the least efficient on a per square foot basis.

EPA Units: The standard units applied by EPA for the most part follow the International System of Units (SI). EPA units include square feet for area, British Thermal Units (Btu) for energy, kilograms and Metric Tons for emissions, and gallons for volumes. For example, EUI will be in ***kBtu/ft²*** and area will be in ***ft²***.

Site EUI (*kBtu/ft²*): The Site Energy Use divided by the property square foot.

Weather Normalized Site Energy (*kBtu/ft²*): The energy uses a property would have consumed during 30-year average weather conditions. For example, if 2012 was a very hot year, then *Weather Normalized Site Energy* may be lower than *Site Energy Use*, because less energy would have been used if it had not been so hot. It can helpful to use this weather normalized value to understand changes in energy when accounting for changes in weather.

3.3 Properties Measured

The following is the list of properties and their corresponding addresses and meters that were examined for their energy usage for the purposes of this EAP.

- ❖ Civic Center
 - Address: 240 W. Huntington Dr., Arcadia, CA, 91007
 - Electric Meters: 259000-018599 & V349N-001067
 - Gas Meters: 13484876 & 13540239

- ❖ Community Services Department
 - Address: 375 Campus Dr., Arcadia, CA, 91007
 - Electric Meter: 259000-019035
 - Gas Meters: 11016568 & 13265106

- ❖ Fire Department 105 (HQ)
 - Address: 710 S. Santa Anita Ave., Arcadia, CA, 91006
 - Electric Meter: 259000-019557
 - Gas Meter: 12611149

- ❖ Fire Department 106
 - Address: 630 S. Baldwin Ave., Arcadia, CA, 91007
 - Electric Meter: 259000-018573
 - Gas Meter: 10961995

- ❖ Fire Department 107
 - Address: 79 W. Orange Grove Ave., Arcadia, CA, 91006
 - Electric Meter: 222013-741962
 - Gas Meter: 10214911

- ❖ Arcadia Public Library
 - Address: 20 W. Duarte Rd., Arcadia, CA, 91006
 - Electric Meter: V349N-014949
 - Gas Meter: 13425080

- ❖ Public Works Yard
 - Address: 11800 Goldring Rd., Arcadia, CA, 91006
 - Electric Meter: 259000-024662
 - Gas Meter: 15535733

- ❖ Wilderness Park
 - Address: 2240 Highland Oaks Dr., Arcadia, CA, 91006
 - Electric Meters: 222010-340481 & 222013-821180

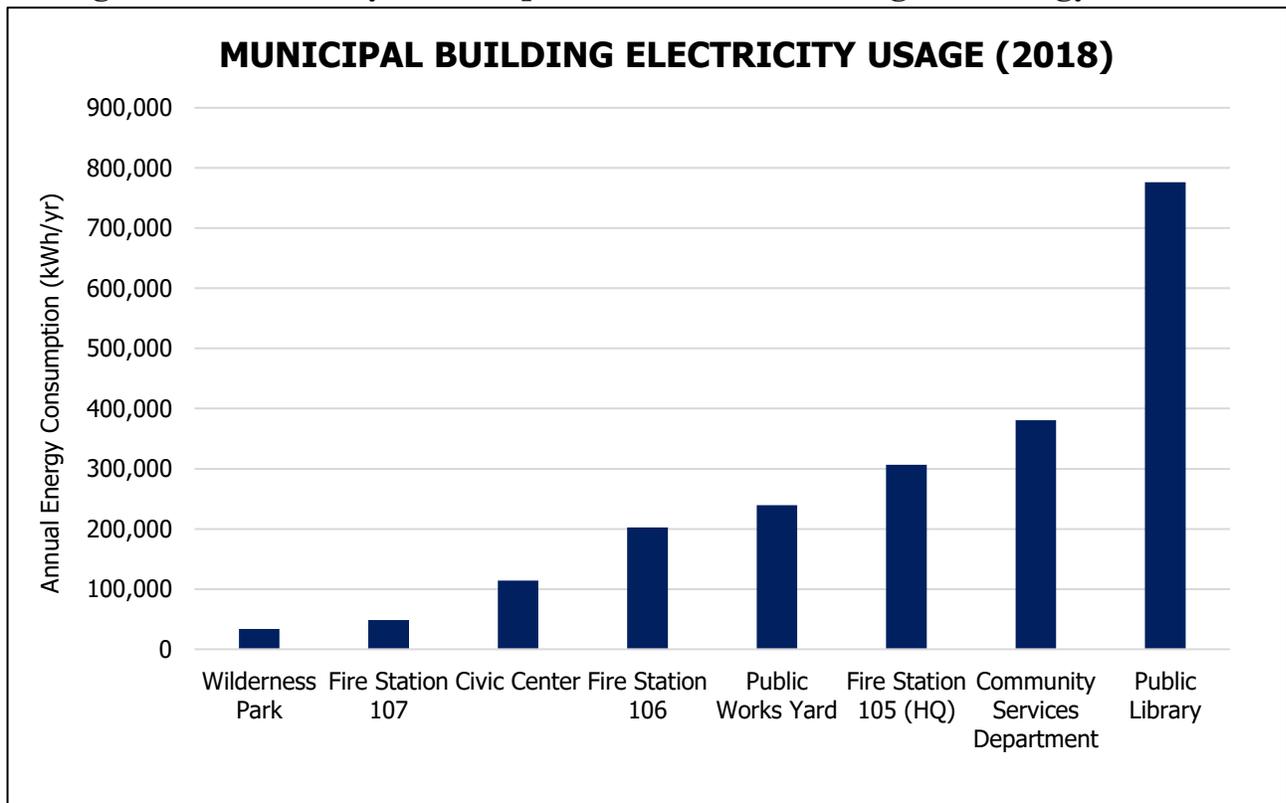
3.4 Electric Energy Usage

The following table (Table 3.1) and graph (Figure 3.1) show the breakdown of electrical energy usage and cost, sorted from lowest to highest users.

Table 3.1: Summary of City of Arcadia Electrical Consumption & Cost

Property Name	Electricity Energy Usage (2018)	Electricity Cost (2018)
Wilderness Park	33,630	\$5,821.77
Fire Station 107	48,352	\$6,327.23
Civic Center & Police Department	114,137.6	\$7,685.11
Fire Station 106	202,539	\$28,864.72
Public Works Yard	239,699	\$38,547.87
Fire Station 105 (HQ)	306,552	\$47,915.70
Community Services Department	380,455	\$58,838.55
Arcadia Public Library	776,543	\$126,035.40
Sum of Values	2,101,908	\$320,036.35

Figure 3.1: Electricity Consumption from Lowest to Highest Energy User



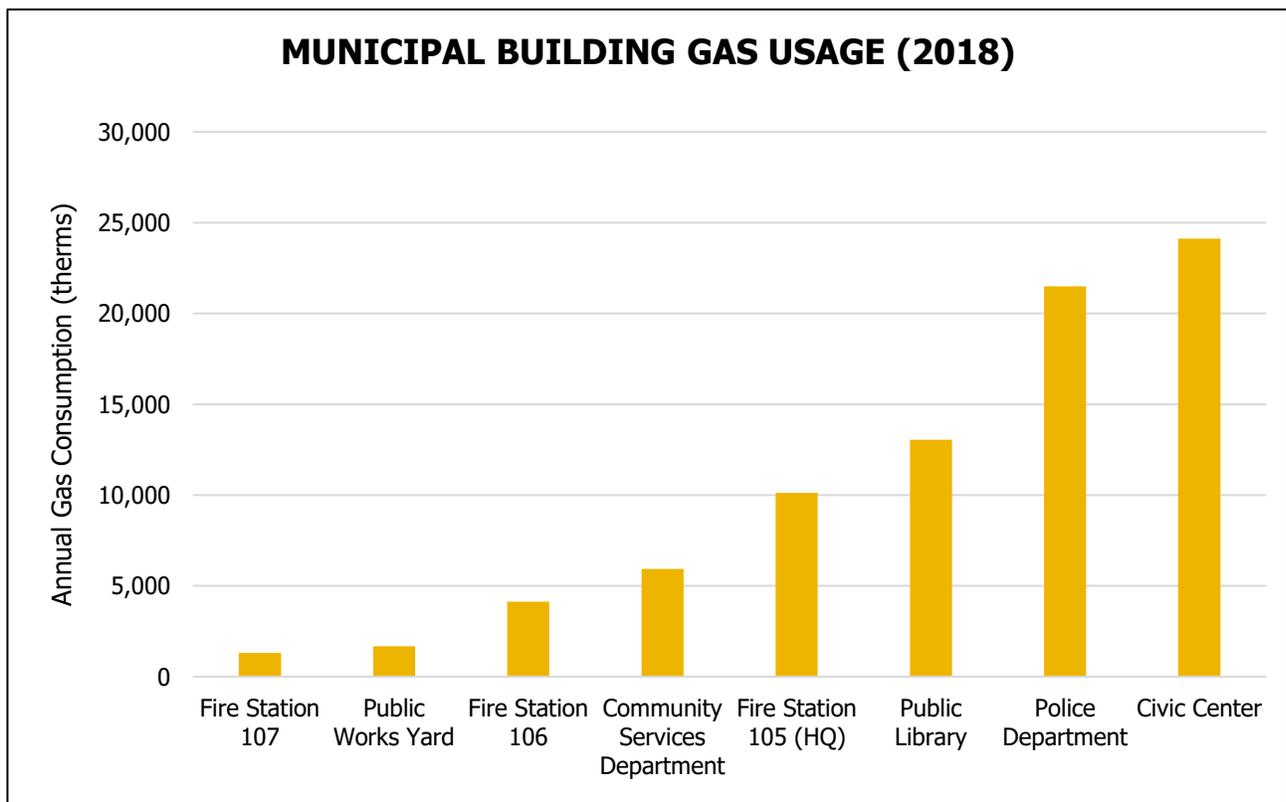
3.5 Natural Gas Energy Usage

The following table (Table 3.2) and graph (Figure 3.2) show the breakdown of natural gas usage and cost, sorted from lowest to highest users.

Table 3.2: Summary of City of Arcadia Natural Gas Consumption & Cost

Property Name	Gas Energy Usage (2018)	Gas Cost (2018)
Fire Station 107	1,315	\$1384.04
Public Works Yard	1,682	\$1,921.95
Fire Station 106	4,133	\$8,188.14
Community Services Department	5,937	\$5,667.68
Fire Station 105 (HQ)	10,132	\$15,538.55
Arcadia Public Library	13,044	\$10,548.61
Police Department	21,491	\$18,201.33
Civic Center	24,127	\$19,350.04
Sum of Values	81,861	\$79,416.30

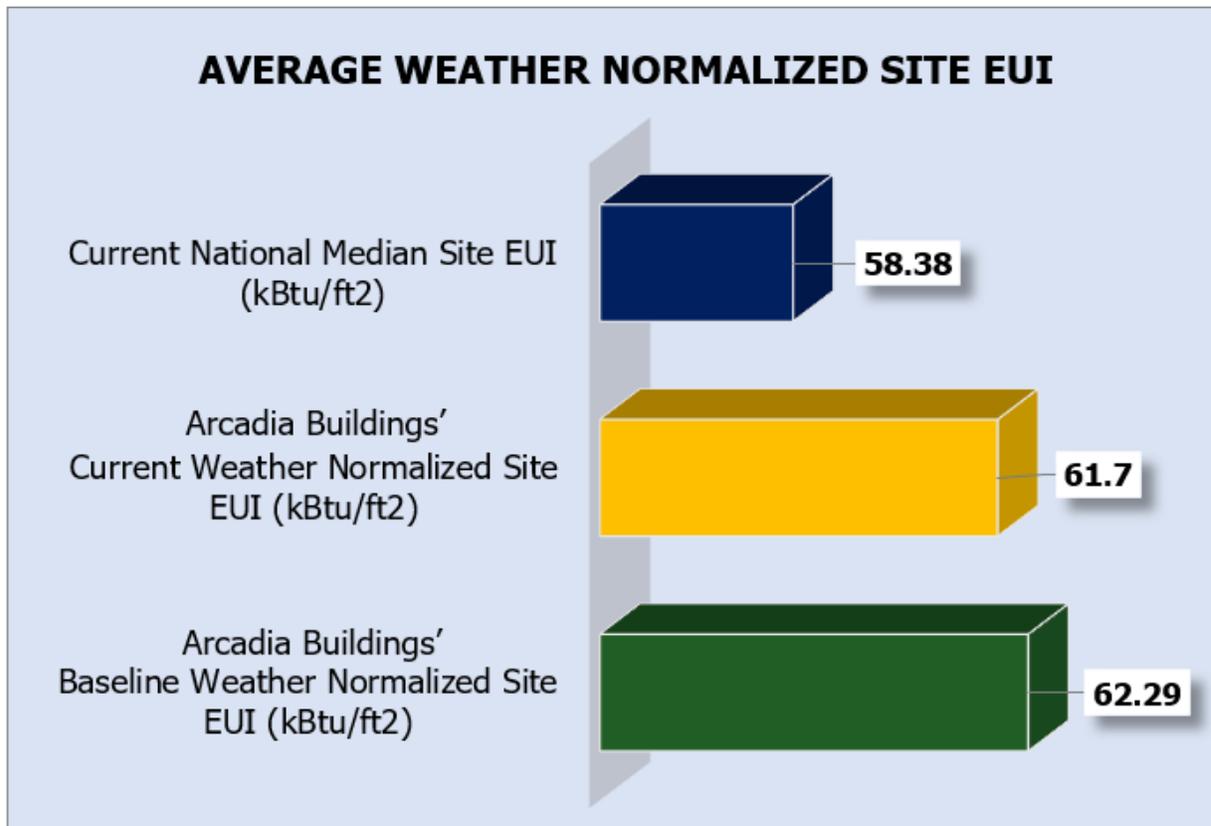
Figure 3.2: Natural Gas Consumption from Lowest to Highest Energy User



3.6 Average of all Buildings

Figure 3.3 depicts the average of all the City’s buildings Current and Baseline Weather Normalized Site EUI in comparison to the average of the Current National Median Site EUI for similar building types. As seen in the graph, the City of Arcadia has, on average, a lower aggregate Site EUI emission to that of other similar buildings’ aggregate Site EUI. In addition, there has been a slight decrease in Site EUI between the baseline year (2016) and the most current full year of data available (2018) that is being measured.

Figure 3.3: Averages of Current & Baseline Weather Normalized Site EUI



Those buildings that are lower than the current and baseline national median are depicted in Table 3.3. Upgrades and retrofits are still encouraged at these properties if the opportunity arises since it will continuously be beneficial to increase efficiency and decrease energy usage. In the case of Arcadia Wilderness Park, it is important to note that even though it has a Source EUI below the national median in the most recent full calendar year (2018), there has been an increase in energy usage between the baseline year (2016) and the most current full year of data available (2018).

Table 3.3: Summary of Properties with Lower Energy Usage than National Median

Property Name	Baseline Weather Normalized Site EUI (kBtu/ft ²)	Current Weather Normalized Site EUI (kBtu/ft ²)	Current National Median Site EUI (kBtu/ft ²)	Percent Difference Between National Median (baseline)	Percent Difference Between National Median (current)
Public Works Yard	19.2	19.1	35.3	46.53% (lower than national median)	45.86% (lower than national median)
Wilderness Park	27.3	29.9	40	31.71% (lower than national median)	25.35% (lower than national median)
Civic Center & Police Department	53.9	53.1	95.8	44.06% (lower than national median)	44.63% (lower than national median)

3.7 Highest Energy Users

This EAP will primarily focus on energy reduction efforts for those facilities with the highest energy use. Table 3.4 depicts the buildings that are higher than the current and baseline national median. This means that these properties represent the highest energy using facilities in the City.

Table 3.4: Summary of Properties with Higher Energy Usage than National Median

Property Name	Baseline Weather Normalized Site EUI (kBtu/ft ²)	Current Weather Normalized Site EUI (kBtu/ft ²)	Current National Median Site EUI (kBtu/ft ²)	Percent Difference Between National Median (baseline)	Percent Difference Between National Median (current)
Fire Station 107	70.8	65.3	59.4	16.25% (higher than national median)	9.91% (higher than national median)
Public Library	65.1	72.6	61.2	13.17% (higher than national median)	18.76% (higher than national median)

Property Name	Baseline Weather Normalized Site EUI (kBtu/ft ²)	Current Weather Normalized Site EUI (kBtu/ft ²)	Current National Median Site EUI (kBtu/ft ²)	Percent Difference Between National Median (baseline)	Percent Difference Between National Median (current)
Fire Station 105 (HQ)	94	91.7	65	44.22% (higher than national median)	41.04% (higher than national median)
Community Services Department	73.8	70.5	49.8	51.64% (higher than national median)	41.64% (higher than national median)
Fire Station 106	94.2	90.6	60.5	57.18% (higher than national median)	49.73% (higher than national median)

The following graphs (Figure 3.4 – Figure 3.8) depict these statistics more clearly. They are presented in order from lowest percent difference between the current national median to highest percent difference between the current national median.

Figure 3.4: Summary of Weather Normalized Site EUI for Fire Station 107

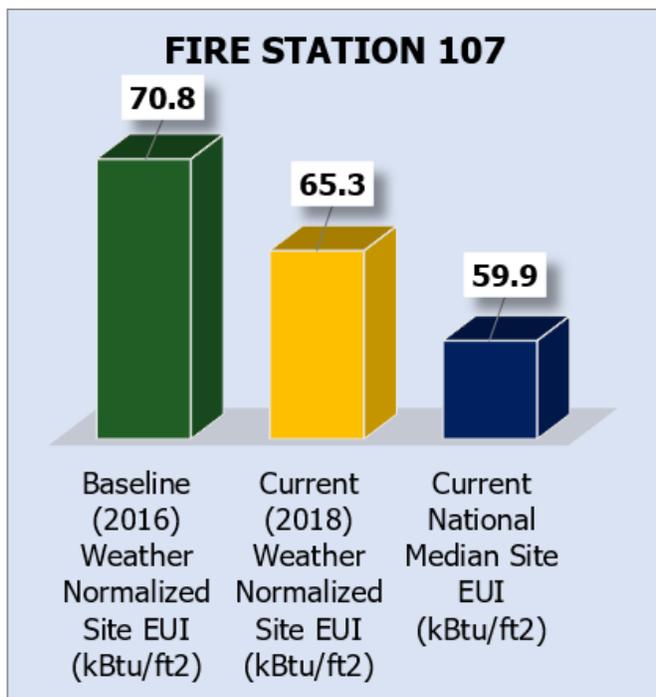


Figure 3.5: Summary of Weather Normalized Site EUI for Public Library

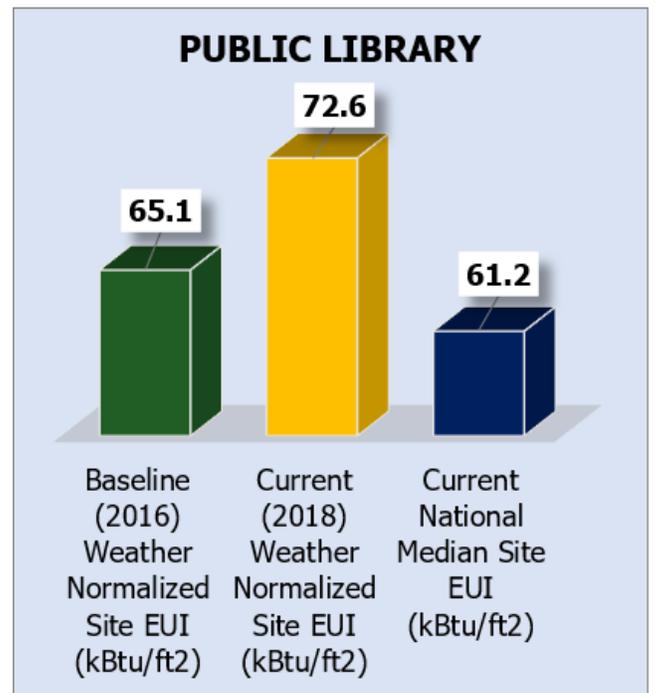


Figure 3.6: Summary of Weather Normalized Site EUI for Fire Station 105

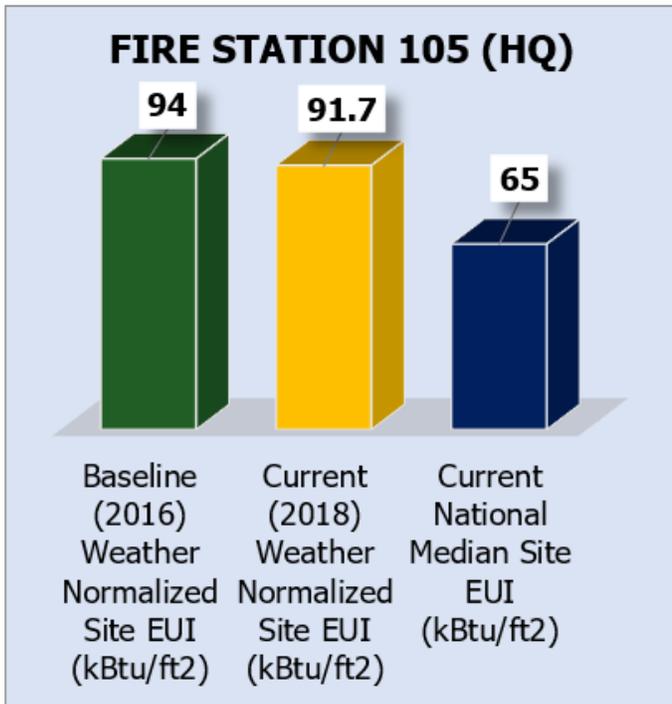


Figure 3.7: Summary of Weather Normalized Site EUI for Community Services Department

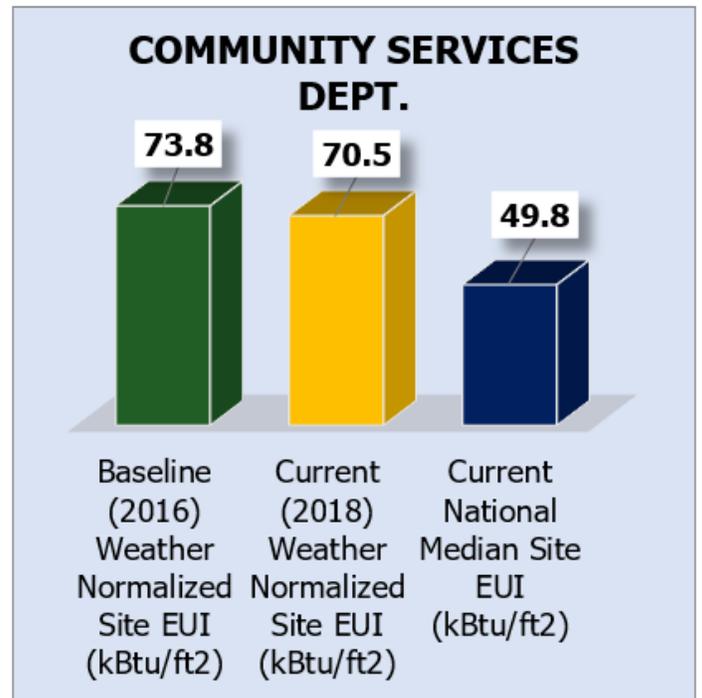
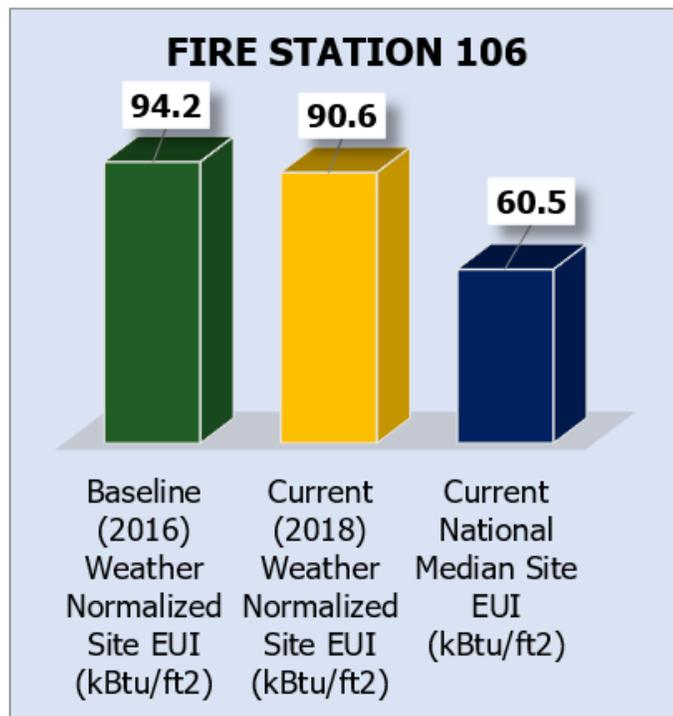


Figure 3.8: Summary of Weather Normalized Site EUI for Fire Station 106



Reduction goals and energy efficiency projects related to these buildings will be provided in the following sections, along with additional policies to increase overall energy efficiency of the City in the coming years.

3.8 Current Energy Programs/Policies

Federal and State Energy Efficiency Requirements¹

California Environmental Quality Act

The California Environmental Quality Act (CEQA) is California's broadest environmental law. CEQA helps to guide the California Department of Fish and Wildlife during issuance of permits and approval of projects. Courts have interpreted CEQA to afford the fullest protection of the environment within the reasonable scope of the statutes. CEQA applies to all discretionary projects proposed to be conducted or approved by a California public agency, including private projects requiring discretionary government approval.

Title 24 Compliance

Title 24 is a collection of energy standards that address the energy efficiency of new (and altered) homes and commercial buildings. Since 1978, California residents are required to meet the energy efficiency standards contained in Title 24, Part 6 of the California Code of Regulations. Due to the fact that energy efficiency reduces energy costs, increases reliability and availability of electricity, improves building occupant comfort, and reduces impacts to the environment, this has made a big impact on how lighting and other home fixtures are used in California. As these standards are important and necessary for California's energy future, the goal of the California Title 24 energy standards is the reduction of energy use to benefit all.

ASHRAE Standard 90.1 Compliance

ANSI/ASHRAE/IES Standard 90.1: Energy Standard for Buildings Except Low-Rise Residential Buildings is an American National Standard published by ASHRAE and jointly sponsored by the IES that provides minimum requirements for energy efficient designs for buildings except for low-rise residential buildings (i.e. single-family homes, multi-family buildings less than four stories high, mobile homes and modular homes).

ASHRAE 90.1 includes prescriptive requirements for the following:

- ❖ Building Envelope (Section 5): Minimum wall insulation, minimum roof insulation, roof reflectance, minimum glazing performance
- ❖ HVAC (Section 6): Minimum equipment efficiency, minimum system features, limitation on reheat, limitation on fan power
- ❖ Domestic Hot Water (Section 7): Minimum equipment efficiency, minimum system features

¹ Definitions for all legislation from CA.gov (<https://www.ca.gov/>)

- ❖ Power (Section 8): Transformer efficiency, automatic receptacle controls, energy monitoring
- ❖ Lighting (Section 9): Maximum indoor lighting power density (LPD, expressed in Watts/Sq. Ft.), minimum lighting controls, exterior lighting, parking garage lighting
- ❖ Other Equipment (Section 10): Electric motors, potable water booster pumps, elevators, and escalators

International Energy Conservation Code Compliance

This code contains separate provisions for commercial buildings and for low-rise residential buildings (three stories or less in height above grade). This comprehensive energy conservation code establishes minimum regulations for energy-efficient buildings using prescriptive and performance-related provisions. It is founded on broad-based principles that make possible the use of new materials and new energy-efficient designs. This IECC is fully compatible with the Family of International Codes.

Existing California Policies²

Recognizing that reducing greenhouse gas emissions and protecting the environment are crucial in enhancing the quality of life amongst Arcadia residents, the City complies with the following state mandates and strives to assist the State in achieving any reduction goals that the following legislation has set out:

Assembly Bill 995 (2000)

Under the Public Utilities Act (AB 995), the California Public Utilities Commission (CPUC) required electrical corporations to identify a separate rate component to fund cost-effective energy efficiency and conservation activities, public interest research and development, and development of renewable resources technology. This rate component is a non-bypassable element of local distribution and collected on the basis of usage. This bill reinstates the policy of the state that each electrical corporation operate its electric distribution grid in a safe, reliable, efficient, and cost-effective manner and that electric corporations continue to make prudent investments in their distribution grids. The bill also required the CPUC and the California Energy Commission to continue to administer energy efficiency programs, as defined, following prescribed guidelines.

Assembly Bill 32 (2006)

The Global Warming Solutions Act of 2006 (AB 32) is a law that fights climate change by establishing a comprehensive program to reduce greenhouse gas emissions from all sources throughout the state. AB 32 requires the California Air Resources Board (CARB or ARB) to develop regulations and market mechanisms to reduce California's greenhouse gas emissions to 1990 levels by 2020, with mandatory caps beginning in 2012 for significant emissions

² Definitions for all bills from California Legislative Information (<https://leginfo.legislature.ca.gov>)

sources. The bill provides the Governor the ability to suspend the emissions caps for up to one year in the case of an emergency or significant economic harm.

Senate Bill 375 (2008)

The Sustainable Communities and Climate Protection Act of 2008 (SB 375) directs the California Air Resources Board to set regional targets for reducing greenhouse gas emissions. The new law establishes a “bottom up” approach to ensure that cities and counties are involved in the development of regional plans to achieve those targets. SB 375 builds on the existing framework of regional planning to tie together the regional allocation of housing needs and regional transportation planning in an effort to reduce greenhouse gas (GHG) emissions from motor vehicle trips. It requires CARB to develop regional greenhouse gas emissions reduction targets to be achieved from the automobile and light truck sectors for 2020 and 2035. SCAG adopted reduction targets of 8% reduction per capita transportation emissions by 2020 and a conditional 15% reduction by 2035.

Assembly Bill 802 (2015)

AB 802 directs the Energy Commission to create a state-wide building energy use benchmarking and public disclosure program for certain buildings. The Commission's regulations require building owners to report building characteristic information and energy use data to the Commission by June 1st annually, for buildings with more than 50,000 square feet of gross floor area that have either no residential utility accounts or 17 or more residential utility accounts. Building owners report their buildings using ENERGY STAR Portfolio Manager. The state will rely on local municipalities to craft local ordinances that focus on building performance and may cover smaller buildings or currently exempt property types. The City of Arcadia acknowledges these regulations and will comply by benchmarking all existing city facilities that have gross floor areas of 50,000 square feet or more.

Senate Bill 1383 (2016)

SB 1383 establishes methane emissions reduction targets in a statewide effort to reduce emissions of short-lived climate pollutants (SLCP) in various sectors of California's economy. The bill sets a goal that California will reduce methane and hydrofluorocarbon refrigerants to 40% below 2013 levels by 2030. The steps to achieve this include a 50% reduction in the level of the statewide disposal of organic waste from the 2014 level by 2020, and a 75% reduction by 2025. The law grants CalRecycle the regulatory authority required to achieve the organic waste disposal reduction targets and establishes an additional target that not less than 20% of currently disposed edible food is recovered for human consumption by 2025.

Senate Bill 32 (2016)

The California Global Warming Solutions Act of 2006 (SB 32) expands upon AB 32 to reduce greenhouse gas (GHG) emissions. SB 32 requires CARB to reduce greenhouse gas emissions to 40% below the 1990 levels by 2030. This bill gives CARB the authority to adopt regulations to utilize the maximum technology feasible to be cost-efficient when reducing greenhouse gas

emissions. They are also required to meet these goals in such a way that benefits the state's most disadvantaged communities as they are disproportionately impacted by the effects of climate change, such as drought and flooding. SB 32 does not state how California will or should reach emission reduction targets; rather, it leaves it up to CARB to adopt rules and regulations in an open public process to achieve technologically feasible and cost-effective greenhouse gas emissions reductions.

Senate Bill 1440 (2018)

Existing law requires state agencies to consider and, as appropriate, adopt policies and incentives to significantly increase the sustainable production and use of renewable gas. SB 1440 would require the CPUC, in consultation with CARB, to consider adopting specific biomethane procurement targets or goals for each gas corporation. The bill would require the CPUC to take certain actions in regard to the development of the targets or goals and the procurement of biomethane to meet those targets or goals.

Senate Bill 1477 (2018)

SB 1477 would require the CPUC to develop and supervise two incentive programs aimed at reducing emissions from buildings. One, the Technology and Equipment for Clean Heating (TECH) Initiative, will require gas corporations to advance the state's market for low-emission space and water heating equipment for new and existing residential buildings. The CPUC must identify and target key low-emission space and water heating equipment technologies, develop guidelines and evaluation metrics, implement outreach strategies for hard-to-reach customers, and provide job training and employment opportunities in supervising the administration of the TECH Initiative. The second, the Building Initiative for Low-Emissions Development (BUILD) Program, requires gas corporations to provide incentives to eligible applicants for the deployment of near-zero-emission building technologies to significantly reduce the emissions of greenhouse gases from buildings. This bill also requires the CPUC to annually allocate \$50,000,000 of the revenues received by a gas corporation towards the TECH Initiative and the BUILD Program.

SECTION 4: EVALUATION OF ARCADIA'S 2012 EAP GOALS

Evaluation of 2012 EAP's Reduction Targets

In the 2012 Energy Action Plan, the City of Arcadia identified a bold electricity savings goal based on a baseline of its municipal energy consumption from calendar year 2006. As of 2006, the City of Arcadia, by means of its municipal operations, consumed 17,537,983 kWh annually. The City of Arcadia made the decision to aim to reach the Platinum Level of SCE's Energy Leader Model program. This ELP program recognizes cities for increasing their energy efficiency in municipal facilities, and provides tiered incentive benefits for future energy efficiency projects. To reach ELP Platinum Level status, a municipality must reduce its municipal electricity usage by 20% from its 2006 baseline. For the City of Arcadia, based on its 2006 baseline of 17,537,983 kWh, the City must reduce its municipal energy consumption by 3,507,597 kWh. As of Quarter 1 of 2019, the City of Arcadia has saved 1,924,752 kWh, a participation savings of 10.97%, resulting from new energy efficiency measures and actions, which means that the City is still 1,582,845 kWh shy of attaining Platinum Level status. Thus, the City of Arcadia has not yet achieved its 2012 EAP reduction target.

2012 Energy Action Plan Municipal Reduction Target	Target Completed	In Progress	Not Completed	Not Feasible
Achieve Platinum Level status in Southern California Edison's Energy Leader Partnership model by reducing electricity use at municipal facilities by 20% below 2004 levels.			X	

It should be noted that the City of Arcadia's 2012 EAP reduction target goal did not include or consider natural gas savings.

Evaluation of 2012 EAP's Long Term Municipal Policies

With the objective and purpose of achieving energy reduction and enhanced sustainability in its municipal operations, both at municipal-owned buildings and water pumping facilities, the City of Arcadia drafted ambitious and aspiring custom goals for the City to work to achieve. These goals are enumerated in the City's 2012 Energy Action Plan. Meeting these goals would enable the City to fill a leadership role in the San Gabriel Valley community and set a positive example in the field of sustainability for other municipalities in the region. To achieve each overarching goal, the City crafted interdisciplinary and concise policies to act upon. Moreover, pursuant to each municipal EAP policy, the City laid out sets of actions to use as guidance to successfully follow through on the respective corresponding policy.

The City has been reviewing the progress that it has made in completing these actions, meeting the corresponding policy, and fulfilling the sustainability goals. The City is solely reviewing the goals from the 2012 EAP which concern municipal operations only, and not community operations. Also, under consideration in this exercise is whether or not some of these actions are feasible or attainable, and whether the City is able to realistically follow through on these action items. The progress that the City has made in satisfying these goals are outlined in the following sections.

Goal 7: Conserve energy and act as a leader in energy efficiency and conservation projects and practices.

Policy 7.1: Use City facilities as a model for energy efficiency by incorporating state-of-the-art energy features into any new public facilities and significant remodeling of existing buildings.

Actions for Policy 7.1:	Action Completed	In Progress	Not Completed	Not Feasible
Publicize reductions in the amount of energy consumed by City operations. (Arcadia General Plan: Policy RS-5.6)		X		
Act as a model for the design and operation of civic buildings to be a leader in Energy and Environmental Design LEED-certified or similar building standards. (Arcadia General Plan: Policy RS-5.16)			X	

Since 2012, the City of Arcadia has minimally directed time and resources to publicize its energy efficiency reductions at facilities, which have resulted from the implementation of energy efficiency projects, upgrades, and retrofits. However, City staff has determined that it

is possible to execute and carry out this action item in the future, for the purposes of showing city energy efficiency action and transparency for its approximately 58,000 residents.

Regarding the second action for Policy 7.1, after further evaluation and consideration, the City has determined that this action item is likely not feasible due to the financial and time constraints and costs which are associated with working toward LEED certification, including applying for certification. There is currently no identified funding in the City’s budget to act upon this action.

Policy 7.2: Continue to monitor energy use and identify opportunities to reduce energy use at City facilities

Actions for Policy 7.2:	Action Completed	In Progress	Not Completed	Not Feasible
Conduct periodic audits of City facilities to ensure peak energy performance and identify new technologies or appliances to be installed as they become cost-effective.	X			
Participate in SGVCOG’s utility manager program, the Enterprise Energy Management Information System, to regularly track energy use and identify cost-saving opportunities through sub-metering and energy management.			X	

The City of Arcadia, since 2012, has worked with the SGVCOG, the SGVEWP, SoCalREN, SCE, and SoCalGas to conduct audits of City facilities to gain a better understanding of the energy needs, demands, and idiosyncrasies of each municipal facility. This has enabled the City to identify which facilities are in potential need of energy retrofits.

While the City of Arcadia has participated in the Enterprise Energy Management Information System (EEMIS), the City has not taken part in a utility manager program and has not pursued sub-metering. An example of a municipal campus at which the City of Arcadia could pursue sub-metering is the Civic Center property. The City Hall, the Police Station, and the city soccer field could all be put on separate meters. Sub-metering enables the City to glean the precise energy usage of each facility on the property, instead of only knowing the aggregate energy consumption totals for the multiple facilities on the property.

Policy 7.3: Install energy efficient appliances/equipment to reduce City energy use.

Actions for Policy 7.3:	Action Completed	In Progress	Not Completed	Not Feasible
Install motion sensors in municipal facilities to eliminate lighting-related energy use when spaces are unoccupied.	X			
Implement an energy-efficient procurement policy to ensure that energy-efficient equipment is purchased when energy cost savings will provide a positive return on investment.	X			

The City of Arcadia, in the last seven years, has been able to successfully complete both above actions to fulfill Policy 7.3. However, the City is still looking to pursue additional energy efficiency projects in future years to reduce the City’s carbon footprint and to achieve kWh and therms savings.

Policy 7.4: Work with the San Gabriel Valley Council of Governments to track energy use at City facilities, identify opportunities to energy savings and cost savings, and implement energy efficiency projects.

Actions for Policy 7.4:	Action Completed	In Progress	Not Completed	Not Feasible
Continue to support City staff participation in regional planning efforts and trainings related to energy efficiency.	X			
Encourage creation of a regional (or local) energy manager position to coordinate efficiency efforts and help departments implement energy-reduction activities.				X

The City has taken active steps to ensure that it is involved in the regional San Gabriel Valley Energy Wise Partnership, including attending SGVEWP kick-off and working group meetings, at which key information is shared pertaining to IOU rebate and financing information, direct install programs, SoCalREN municipal programs, and toolbox trainings have taken place.

However, the City of Arcadia has not been able to hire an energy manager staff member in the Public Works Department or any city department due to the lack of financial feasibility.

Goal 8: Implement, monitor, and update the EAP.

Policy 8.1: Support achievement of the reduction targets through monitoring and reporting.

Actions for Policy 8.1:	Action Completed	In Progress	Not Completed	Not Feasible
Facilitate implementation of policies and actions related to municipal operations.			X	
Prepare an annual progress report for review and consideration by the City Council.			X	
Identify key staff responsible for annual reporting and monitoring.	X			

Since 2012, the City of Arcadia has not drafted or implemented policies pertinent to its municipal building operations. This would include policies and actions related to what factors or energy consumption level thresholds would be cause for the implementation of energy retrofits.

The City also has not implemented the practice of preparing an annual progress report for the Mayor and City Council, which would outline the City’s activities pertaining to energy efficiency projects and activities for its municipal operations. Such a report would list projects completed and the realized costs and energy savings.

The City of Arcadia has identified staff members within its Public Works Department to follow and monitor progress in reaching its energy efficiency goals, also known as Energy Champions. These staff members include the Senior Management Analyst and General Services Superintendent.

Policy 8.2: Review and update the City’s greenhouse gas inventory, energy profile, and Energy Action Plan.

Actions for Policy 8.2:	Action Completed	In Progress	Not Completed	Not Feasible
Conduct an annual review of electricity usage and associated GHG emissions.	X			
Re-inventory community-wide and municipal GHG emissions every three to five years.			X	
Update the Plan to incorporate new technology, programs, and policies as available to achieve electricity efficiency as feasible.	X			
Consider updating and amending the Plan, as necessary, should the City find that policies and actions are not meeting the intended electricity reductions.	X			
When City resources are available, integrate the EAP into a comprehensive climate action plan or GHG reduction plan to incorporate GHG and energy/fuel reduction targets that address energy supply, natural gas demand, transportation, waste, wastewater, and other sectors as applicable.		X		

The City’s Public Works Department does consistently review annual energy usage of its facilities to identify facilities that might have high energy use. However, the City has not conducted a GHG inventory for its municipal GHG emissions since 2012. This is an important action that the City can potentially revisit since GHG emissions supplement energy consumption.

Arcadia drafted an Energy Action Plan update which pertains to its municipal operations in order to adjust sustainability goals and corresponding policies and actions to ones which are more pragmatic and attainable but are still forward-thinking. Since the City has not yet reached its reduction targets as outlined in the 2012 EAP at the time when the update was published, the City proposed new tailored, targeted actions and policies as part of the EAP Update that will enable the city to achieve additional energy savings for both electricity and natural gas.

Moreover, while the City is not currently integrating its original EAP into a climate action plan or GHG reduction plan, there are provisions in the City’s General Plan which stipulate that the City must address climate and energy efficiency-related matters. The City has been in the process of integrating ideas and goals from this EAP Update with the General Plan and

aligning some of the EAP’s suggested policies and action items into the City’s overall municipal operations.

Policy 8.3: Continue to develop collaborative partnerships that support implementation of the Energy Action Plan.

Actions for Policy 8.3:	Action Completed	Not Completed	Not Feasible
Continue collaboration with the SGVCOG and participation as an active member of the SGVEWP and the Energy, Environment, and Natural Resources Committee.	X		
Participate in other SGVCOG-sponsored programs, projects, and events to help meet the goals described in this EAP.	X		

The City has completed the first action pursuant to Policy 8.3 to an extent, as it is actively involved in the SGVCOG’s governance structure, including the governing Board and the Public Works Technical Advisory Committee (TAC). This City is, also, one of the most active cities in the San Gabriel Valley in the SGVEWP. However, the City does not have an active member – neither an elected official nor a City staff member – on the SGVCOG’s Energy, Environment, and Natural Resources Committee.

The City of Arcadia is active and engaged in other SGVCOG-sponsored functions, projects, and committee meetings. For example, the City participates in the SGVCOG’s Planning TAC and City Staff Energy Work Group. The City and the SGVCOG also work together to ensure that the SGVCOG and SGVEWP have a presence at Arcadia community events.

Policy 8.4: Work with the SGVCOG and regional partners to create an energy management position to track energy use at City facilities, identify opportunities for efficiencies and cost savings, and implement energy efficiency projects.

Actions for Policy 8.4:	Action Completed	Not Completed	Not Feasible
Work with the SGVCOG to identify regional funding sources to support policies in this EAP.	X		
Ensure implementation through the inclusion of policies and actions in department budgets, the capital improvement program, and other plans as appropriate.	X		

Pursue local, regional, state, and federal grants as appropriate to support implementation.	X		
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The City of Arcadia has made a concerted effort to work with the SGVCOG, SCE, and SoCalGas under the framework of the SGVEWP to take advantage of SGVEWP financial incentives and rebates for a menu of energy efficiency projects, retrofits, and measures. A primary objective and function of the SGVEWP is to identify opportunities for municipal building energy efficiency retrofits, and assist cities, such as Arcadia, in implementing these projects through financial incentives and technical resources. Financial resources available to Arcadia through this Partnership include increased incentive percentages through the SCE Energy Leadership Program, 0% on-bill financing, and rebates through SoCalGas.

The City has also included energy efficiency retrofit projects in its capital improvement plans throughout the years, meaning that the City is prioritizing significant capital improvement projects with an objective of reducing municipal energy usage and improving the “building envelope” of its city-owned facilities.

Arcadia has also worked both internally and with regional partners to pursue any external funding opportunities for its sustainability-centered projects.

SECTION 5: 2019 REVISED

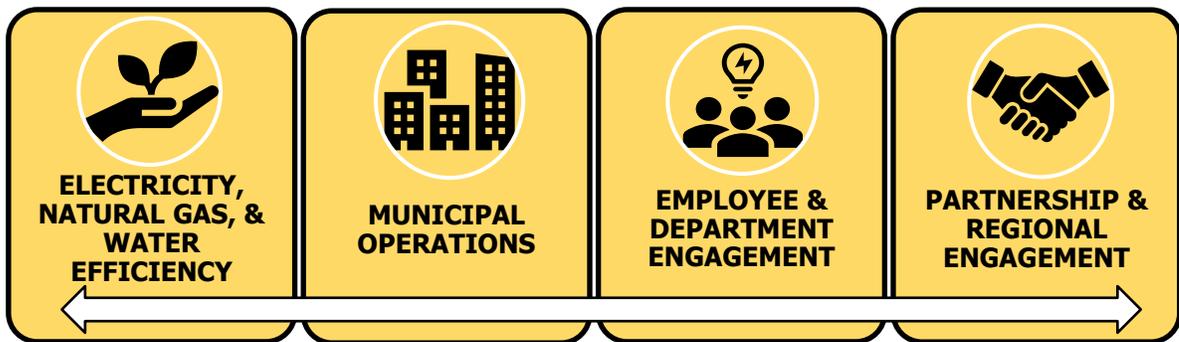
REDUCTION TARGETS

Based on the evaluation of the previous Energy Action Plan’s reduction targets, the City of Arcadia has outlined the following targets to further showcase its commitment to energy conservation:

- Reduce electricity usage by 780,662 kWh (5% below 2018 levels) by 2023;
- Achieve Platinum level status in Southern California Edison’s Energy Leader Program;
- Complete 3 or more energy efficiency projects by 2023.

Revised Strategy Structure

To achieve the reduction targets outlined above, the City of Arcadia will need to implement energy efficiency actions set forth within this document. The City’s strategy is structured around four key strategy topics, which includes:



Each strategic topic includes corresponding actions, policies, and goals that are required for successful implementation. A goal is the desired or expected outcome related to energy conservation. Each goal corresponds to one of the identified strategic topics. Within each goal, a policy is identified to guide decision-making and showcase a commitment to achieve specified outcomes of the goal. Within each policy, an action is identified to achieve the energy reductions of a policy. These actions may provide steps or opportunities to increase the energy reduction potential of a policy.

Revised Municipal Energy Efficiency Policies and Actions

The following goals, policies, and actions are aimed to reduce energy use within the City of Arcadia’s municipal facilities. By implementing these policies and actions, the City will reduce electricity use by 5% below 2018 levels by 2023.

5.1: Policy Recommendations

GOAL 1: Maximize energy efficiency at existing City facilities and infrastructure

Policy 1.1: Utilize benchmarking data to identify possible energy efficiency projects at existing City facilities and support the efforts to achieve reduction targets by monitoring and reporting.

Action Items

- Identify a staff member or an entity to monitor and review benchmarking data quarterly.
- Train City staff on using the Enterprise Energy Management Information systems (EEMIS) to benchmark existing facilities.
- Update City facilities' information on the Energy Star Management Portfolio and EEMIS as needed.
- Meet with relevant City departments to review benchmarking reports and review the facilities with higher energy usage for potential energy efficiency retrofits or upgrades.

Policy 1.2: Enhance the energy efficiency of City buildings and structures through retrofits.

Action Items

- Upgrade water pumps at City facilities.
- Continue to conduct water pump testing with SCE.
- Enhance the efficiency of indoor and outdoor lighting at all existing City facilities.
- Conduct audits at City facilities with EUI scores that are higher than the national median, such as the Community Center, the Arcadia Public Library, and Fire Stations 105, 106, and 107.
- Upgrade and purchase energy-efficient appliances, as needed.
- Continue to assess and identify potential energy efficiency projects at existing City facilities through analyzing the quarterly benchmarking reports.

Policy 1.3: Establish, maintain, and update a plan to secure additional funding for energy efficiency projects.

Action Items

- Include energy efficiency projects during any budget preparation for City departments.
- Work with regional partners and utility companies to identify programs that can help secure funding for energy efficiency or retrofitting projects, including on-bill financing, direct install, rebate, mid-stream, and SoCalREN incentive programs.

Policy 1.4: Monitor, evaluate, and update the Energy Action Plan on a continuous basis.

Action Items

- Identify a designee to work with regional entities, such as the SGVCOG or SoCalREN, to monitor, evaluate, and update the Energy Action Plan on a continuous basis.
- Provide a report to City Council and City Manager regarding the status and progress of fulfilling the Energy Action Plan goals and actions, as needed.

Policy 1.5: Become a water conservation leader in the San Gabriel Valley and lead other municipalities by example.

Action Items

- Retrofit all City parks and irrigation systems.
- Display water conservation signage in restrooms and kitchens at City facilities.
- Install water-efficient landscaping in newly-remodeled street medians.
- Replace existing water fixtures with water-efficiency fixtures at City facilities.

Policy 1.6: Incorporate energy efficiency as a key element in designing and building new City structures and facilities.

Action Items

- Act as a model for the design and operation of civic buildings to be ENERGY STAR-certified.
- Participate in the Savings By Design Program and consult with SCE and the SoCalREN when planning to build new municipal structures and/or facilities.

GOAL 2: Ensure that energy efficiency practices are incorporated into municipal operations.

Policy 2.1: Work with the City Council to include energy efficiency updates and topics when updating the City's General Plan, codes, policies, and Strategic Plan.

Action Items

- Ensure that the Resource Sustainability elements of the City's General Plan are thoroughly reviewed and updated in future General Plan updates.

- Include energy conservation and water conservation elements when updating the City's Recreation and Parks Master Plan.

Policy 2.2: Develop a plan to effectively adjust City facilities' energy usage to accommodate any switches or changes in peak demand rates and hours.

Action Items

- Analyze the effects of peak demand rate/hour changes on City facilities and adjust energy usage, parking lights, and water pumping accordingly.
- Add signage to inform city staff regarding the changes in peak demand rates and hours.

Policy 2.3: Track energy savings and facilitate analysis of energy-saving benefits.

Action Items

- Work with respective utility companies to ensure that the municipal facilities' metering addresses are accurate and up-to-date.
- Designate a staff member to work with the SoCalREN to complete an energy savings report on the costs and benefits of all energy efficiency projects on an annual basis.
- Provide a report to be shared with decision-makers and City staff regarding the financial impact and operational savings achieved through energy efficiency, as needed.

Policy 2.4: Track federal and state energy policies and work with City departments to adhere to any new energy efficiency mandates.

Action Items

- Identify a staff member to work with a regional entity, such as the SGVCOG and SoCalREN, to track energy policies on a continuous basis.
- Provide a report to each City department regarding any new energy mandates from the federal or state governments, as needed.
- Attend Title 24, Title 20, and other relevant policy workshops hosted by the SGVCOG, SCE, SoCalGas, or the SoCalREN, as needed.

GOAL 3: Maximize City staff's energy efficiency awareness and involve the City's employees and elected officials to promote energy efficiency.

Policy 3.1: Lead by example by expanding city staff education programs and integrating energy management practices into daily operation.

Action Items

- Place energy conservation signage in buildings with EUI scores that are higher than the national median.
- Invite city councilmembers or regional partners to host “energy efficiency” brown bag luncheons at least once a year to solicit feedback from city employees on how the City can save energy at facilities.
- Create annual “workplace environmental stewardship awards” for city employees.

GOAL 4: Demonstrate a commitment to realizing the Energy Action Plan goals through creative, equitable, and coordinated partnerships.

Policy 4.1: Maximize the benefits from regional partners to enhance energy efficiency projects at the City.

Action Items

- Designate a City staff member to attend each of the Partnership’s City Staff Energy Work Group meetings.
- Designate a City staff or councilmember to serve on, and continue to engage with, the SGVCOG’s Energy, Environment, and Natural Resource (EENR) Committee, Public Works, Technical Advisory Committee (TAC), Water Committee, Planners TAC, or any other committees or task forces that are related to energy efficiency.
- Attend at least two trainings hosted by Southern California Edison (SCE), the Southern California Gas Company (SoCalGas), and the Southern California Regional Energy Network (SoCalREN) every year.
- Send City staff to attend the SCE/SoCalGas All-Partners Meeting and the annual Statewide Energy Efficiency Collaborative (SEEC) Forum.
- Host annual meetings with the SGVCOG, SCE, SoCalGas, and SoCalREN to discuss possible energy efficiency projects that can be implemented in City facilities.

These actions identify a path for the City of Arcadia to achieve the municipal electricity and natural gas reduction targets that this updated EAP sets forth.

SECTION 6: ENERGY EFFICIENCY PROJECTS

Past Projects

Since the City's original EAP was drafted in 2012, this report enumerates energy efficiency projects which have been completed since 2012, to highlight the progress that the City has made in implementing energy efficiency projects.

Reporting/ASR Date	Description	Incentive	kWh
6/15/2018	HVAC Program	\$380	1,586.50
12/27/2016	Longden Well Project	\$28,008.46	126,134.70
6/10/2016	HVAC Program	\$238	129.47
3/14/2016	Statewide Commercial Energy Efficiency Program	\$149	N/A
3/14/2016	Statewide Commercial Energy Efficiency Program	\$808	1,644.28
3/14/2016	Statewide Commercial Energy Efficiency Program	\$119	N/A
3/14/2016	Statewide Commercial Energy Efficiency Program	\$507	N/A
2015	Public Library Space Heating Boiler Replacement	\$630	1,449 (Therms)
12/17/2015	Statewide Commercial Energy Efficiency Program	\$2,968	3,806.09
12/1/2015	Statewide Commercial Energy Efficiency Program	\$1,616	1,914.96
4/13/2015	Multiple Site Project	\$58,532.53	418,089.30
2/13/2015	HVAC Program	\$288	360
2/13/2015	HVAC Program	\$1,952	1,698.24

Reporting/ASR Date	Description	Incentive	kWh
2/13/2015	HVAC Program	\$582	1,389.04
12/19/2014	Live Oak Plant Well	\$7,570.48	47,432
5/1/2014	Orange Grove Pump 2-A (Rev)	\$5,206.76	35,284
5/1/2014	Orange Grove Pump 1-A (Rev)	\$4,267	28,900
7/31/2012	Arcadia City Hall HVAC and Lighting	\$26,278.42	157,490

Future Planned Projects

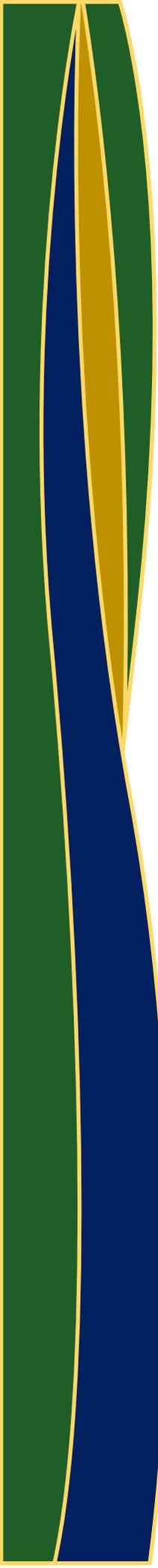
Recently, the City of Arcadia's Public Works Department has discussed and studied the potential of doing the following projects:

- ❖ Chiller replacement at the Public Library
- ❖ Boiler replacement project at Arcadia City Hall
- ❖ CNG fueling station at the Public Works Yard
- ❖ LED high bay lighting at the Public Works Service Center Garage
- ❖ VRF HVAC system installation at Fire Station 106

Additionally, the City of Arcadia should assess the potential for completing energy efficiency retrofit projects at the municipal facilities which have subpar Source EUI benchmarking scores:

- ❖ Fire Station 107
- ❖ Arcadia Public Library
- ❖ Arcadia Community Center
- ❖ Fire Station 105 -- Headquarters
- ❖ Fire Station 106

The City of Arcadia is currently planning for future audits of some of its municipal facilities, and will attempt to budget for this.



SECTION 7: CONCLUSION

The City of Arcadia strives to reduce greenhouse gas emissions in municipal buildings and facilities. This can be shown by the City's initiative to include energy conservation and water conservation goals and actions in its most recent General Plan update. By completing the energy efficiency actions and projects that are mentioned in previous sections, the City can reach the reduction targets that are listed in this EAP Update.

To effectively implement this EAP Update, this document should be evaluated and updated on a recurring basis. The City should continuously track energy use at existing facilities and add new facilities to the tracking system as needed. Additionally, energy use at each facility should be analyzed at least once a year to ensure that progress is being made to reach the stated reduction target. Furthermore, the City should pursue funding opportunities that can help implement energy efficiency projects that are costlier than others.

For the purpose of guiding the City to fulfill the energy efficiency reduction targets that were mentioned in this document, the City will strive to implement energy efficiency actions and projects through existing City planning documents, including the City's General Plan, Recreation and Parks Master Plan, Capital Improvement Plans, and City Ordinances.

All in all, the City of Arcadia recognizes and supports the importance of reducing greenhouse gas emissions and energy usage. By completing the actions and projects listed in this EAP Update and updating the document on a continuous basis, the City can maximize resources and serve as a model for the San Gabriel Valley community. The City is committed to demonstrating energy and water conservation leadership, protecting the overall health of its residents, and making financially sound cost-savings decisions with its public capital and resources.

APPENDICES

Glossary of Terms

California Public Utilities Commission (CPUC)

A regulatory agency that regulates privately-owned public utilities in California, including electric power, telecommunications, natural gas, and water companies.

Energy Efficiency

The concept of using less energy to provide and deliver the same amount of output and services.

Greenhouse Gas

A gas that contributes to the greenhouse effect by absorbing infrared radiation. Four greenhouse gases that enter the atmosphere due to human activities include carbon dioxide, methane, nitrous oxide, and fluorinated gases.

Joint Powers Authority (JPA)

A joint powers authority is an entity permitted under the laws of California, whereby two or more public agencies or authorities may jointly exercise any power common to all of them.

San Gabriel Valley Council of Governments (SGVCOG)

A joint powers authority (JPA) of 30 incorporated cities, the unincorporated areas in the San Gabriel Valley, and 3 San Gabriel Valley Municipal Water Districts. The SGVCOG is the largest and most diverse sub-regional council of governments in the Los Angeles County. The SGVCOG serves as a regional voice for its member agencies and works to improve the quality of life for the more than 2 million residents living in the San Gabriel Valley. The SGVCOG works on issues of importance to its member agencies, including transportation, homelessness, the environment, and water.

San Gabriel Valley Energy Wise Partnership (SGVEWP)

An energy partnership between the San Gabriel Valley Council of Governments, Southern California Edison, Southern California Gas Company, and 29 San Gabriel Valley cities to encourage energy savings in the region through energy efficiency projects, public education, and community outreach.

Southern California Edison (SCE)

An investor-owned utility that serves as the primary electricity providers to the Southern California region, including the San Gabriel Valley.

Southern California Gas Company (SoCalGas)

An investor-owned utility that serves as the primary provider of natural gas to the Southern California region, including the San Gabriel Valley.

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CITY OF ARCADIA
Checklist of Reduction Targets and Energy Efficiency Action Items

Reduction Targets

Reduction Targets	Completed?
Reduce electricity usage by 780,662 kWh (5% below 2018 levels) by 2023.	
Achieve Platinum level status in Southern California Edison's Energy Leader Program.	
Complete 3 or more energy efficiency projects by 2023.	

Energy Efficiency Action Items

Goal 1: Maximize energy efficiency at existing City facilities and infrastructure.

Policy 1.1: Utilize benchmarking data to identify possible energy efficiency projects at existing City facilities and support the efforts to achieve reduction targets by monitoring and reporting.

Action Items	Completed?
Identify a staff member or an entity to monitor and review benchmarking data quarterly.	
Train City staff on using the Enterprise Energy Management Information systems (EEMIS) to benchmark existing facilities.	
Update City facilities' information on the Energy Star Management Portfolio and EEMIS as needed.	
Meet with relevant City departments to review benchmarking reports and review the facilities with higher energy usage for potential energy efficiency retrofits or upgrades.	

Policy 1.2: Enhance the energy efficiency of City buildings and structures through retrofits.

Action Items	Completed?
Upgrade water pumps at City facilities.	

Continue to conduct water pump testing with SCE.	
Enhance the efficiency of indoor and outdoor lighting at all existing City facilities.	
Conduct audits at City facilities with EUI scores that are higher than the national median, such as the Arcadia Community Center, the Arcadia Public Library, and Arcadia Fire Stations 105, 106, and 107.	
Upgrade and purchase energy-efficient appliances, as needed.	
Continue to assess and identify potential energy efficiency projects at existing City facilities through analyzing the quarterly benchmarking reports.	

Policy 1.3: Establish, maintain, and update a plan to secure additional funding for energy efficiency projects.

Action Items	Completed?
Include energy efficiency projects during any budget preparation for City departments.	
Work with regional partners and utility companies to identify programs that can help secure funding for energy efficiency or retrofitting projects, including on-bill financing, direct install, rebate, mid-stream, and SoCalREN incentive programs.	

Policy 1.4: Monitor, evaluate, and update the Energy Action Plan on a continuing basis.

Action Items	Completed?
Identify a designee to work with regional entities, such as the SGVCOG or SoCalREN, to monitor, evaluate, and update the Energy Action Plan on a continuing basis.	
Provide a report to City Council and City Manager regarding the status and progress of fulfilling the Energy Action Plan goals and actions, as needed.	

Policy 1.5: Become a water conservation leader in the San Gabriel Valley and lead other municipalities by example.

Action Items	Completed?
Retrofit all City parks and irrigation systems.	

Display water conservation signage in restrooms and kitchens at City facilities.	
Install water-efficient landscaping in newly-remodeled street medians.	
Replace existing water fixtures with water-efficiency fixtures at City facilities.	

Policy 1.6: Incorporate energy efficiency as a key element in designing and building new City structures and facilities.

Action Items	Completed?
Act as a model for the design and operation of civic buildings to be ENERGY STAR-certified.	
Participate in the Savings By Design Program and consult with SCE and the SoCalREN when planning to build new municipal structures and/or facilities.	

Goal 2: Ensure that energy efficiency practices are incorporated into municipal operations.

Policy 2.1: Work with the City Council to include energy efficiency updates and topics when updating the City's General Plan, codes, policies, and Strategic Plan.

Action Items	Completed?
Ensure that the Resource Sustainability elements of the City's General Plan are thoroughly reviewed and updated in future General Plan updates.	
Include energy conservation and water conservation elements when updating the City's Recreation and Parks Master Plan.	

Policy 2.2: Develop a plan to effectively adjust City facilities' energy usage to accommodate any switches or changes in peak demand rates and hours.

Action Items	Completed?
Analyze the effects of peak demand rate/hour changes on City facilities and adjust energy usage, parking lights, and water pumping accordingly.	

Add signage to inform city staff regarding the changes in peak demand rates and hours.	
--	--

Policy 2.3: Track energy savings and facilitate analysis of energy-saving benefits.

Action Items	Completed?
Work with respective utility companies to ensure that the municipal facilities' metering addresses are accurate and up-to-date.	
Designate a staff member to work with the SoCalREN to complete an energy savings report on the costs and benefits of all energy efficiency projects on an annual basis.	
Provide a report to be shared with decision-makers and City staff regarding the financial impact and operational savings achieved through energy efficiency, as needed.	

Policy 2.4: Track federal and state energy policies and work with City departments to adhere to any new energy efficiency mandates.

Action Items	Completed?
Identify a staff member to work with a regional entity, such as the SGVCOG and SoCalREN, to track energy policies on a continuing basis.	
Provide a report to each City department regarding any new energy mandates from the federal or state governments, as needed.	
Attend Title 24, Title 20, and other relevant policy workshops hosted by the SGVCOG, SCE, SoCalGas, or the SoCalREN, as needed.	

Goal 3: Maximize City staff's energy efficiency awareness and involve the City's employees and elected officials to promote energy efficiency.

Policy 3.1: Lead by example by expanding city staff education programs and integrating energy management practices into daily operation.

Action Items	Completed?
Place energy conservation signage in buildings with EUI scores that are higher than the national median.	
Invite city councilmembers or regional partners to host “energy efficiency” brown bag luncheons at least once a year to solicit feedback from city employees on how the City can save energy at facilities.	
Create annual “workplace environmental stewardship awards” for city employees.	

Goal 4: Demonstrate a commitment to realize the Energy Action Plan goals through creative, equitable, and coordinated partnerships.

Policy 4.1: Maximize the benefits from regional partners to enhance energy efficiency projects at the City.

Action Items	Completed?
Designate a City staff to attend each of the Partnership’s City Staff Energy Work Group.	
Designate a City staff or councilmember to serve on and continue engagement with the SGVCOG’s Energy, Environment, and Natural Resource (EENR) Committee, Public Works Technical Advisory Committee (TAC), Water Committee, Planners TAC, or any other additional committees or task forces that are related to energy efficiency.	
Attend at least two trainings hosted by Southern California Edison (SCE), the Southern California Gas Company (SoCalGas), and the Southern California Regional Energy Network (SoCalREN) every year.	
Send City staff to attend the SCE/SoCalGas All-Partners Meeting and the annual Statewide Energy Efficiency Collaborative (SEEC) Forum.	
Host annual meetings with the SGVCOG, SCE, SoCalGas, and SoCalREN to discuss possible energy efficiency projects that can be implemented in City facilities.	



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ENERGY STAR[®] Statement of Energy Performance

N/A

Arcadia Civic Center

Primary Property Type: Police Station
Gross Floor Area (ft²): 51,163
Built: 1949

ENERGY STAR[®]
Score¹

For Year Ending: March 31, 2019
Date Generated: June 25, 2019

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Property & Contact Information

Property Address

Arcadia Civic Center
240 W. Huntington Drive
Arcadia, California 91007

Property Owner

,
(____)____-____

Primary Contact

,
(____)____-____

Property ID: 6024587

Energy Consumption and Energy Use Intensity (EUI)

Site EUI

53.5 kBtu/ft²

Annual Energy by Fuel

Natural Gas (kBtu) 2,343,500 (86%)
Electric - Grid (kBtu) 392,872 (14%)

National Median Comparison

National Median Site EUI (kBtu/ft²) 96
National Median Source EUI (kBtu/ft²) 124.9
% Diff from National Median Source EUI -44%

Source EUI

69.6 kBtu/ft²

Annual Emissions

Greenhouse Gas Emissions (Metric Tons CO₂e/year) 152

Signature & Stamp of Verifying Professional

I _____ (Name) verify that the above information is true and correct to the best of my knowledge.

Signature: _____ Date: _____

Licensed Professional

,
(____)____-____



Professional Engineer Stamp
(if applicable)



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ENERGY STAR® Progress & Goals Report

N/A

ENERGY STAR®
Score¹

Arcadia Civic Center

Primary Property Type: Police Station
Gross Floor Area (ft²): 51,163
Built: 1949

Property Address:
Arcadia Civic Center
240 W. Huntington Drive
Arcadia, California 91007

For Year Ending: March 31, 2019
Date Generated: June 25, 2019

Property ID: 6024587

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Performance Comparison

	Progress			Performance Goals		
	Baseline (Ending Date 3/31/2018)	(Ending Date 3/31/2019)	% Change	Property's Target	National Median	ENERGY STAR Score of 75
ENERGY STAR Score	N/A	N/A	N/A	N/A	50	75
Energy						
Site EUI (kBtu/ft²)	51.3	53.5	4.2	N/A	96	N/A
Source EUI (kBtu/ft²)	66.5	69.6	4.6	N/A	124.9	N/A
Energy Cost (\$)	N/A	N/A	N/A	N/A	N/A	N/A
Energy Cost Intensity (¢)	N/A	N/A	N/A	N/A	N/A	N/A
Greenhouse Gas Emissions						
Total GHG Emissions (Metric Tons CO2e)	145.9	152.1	4.25	N/A	273	N/A
Total GHG Emissions Intensity (kgCO2e/ft²)	2.9	3	4.25	N/A	5.3	N/A
Water						
All Water Use (kgal)	N/A	N/A	N/A	*	*	*
Indoor Water Use (kgal)	N/A	N/A	N/A	*	*	*
Indoor Water Use Intensity (gal/ft²)	N/A	N/A	N/A	*	*	*
Total Water Cost (\$)	N/A	N/A	N/A	*	*	*

*Setting and managing water targets is not yet available in Portfolio Manager.



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ENERGY STAR[®] Statement of Energy Performance

N/A

Arcadia Community Services Department

Primary Property Type: Social/Meeting Hall
Gross Floor Area (ft²): 27,539
Built: 1991

ENERGY STAR[®]
Score¹

For Year Ending: March 31, 2019
Date Generated: June 25, 2019

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Property & Contact Information

Property Address	Property Owner	Primary Contact
Arcadia Community Services Department 375 Campus Drive Arcadia, California 91007	_____	_____
	(____)____-_____	(____)____-_____

Property ID: 6024607

Energy Consumption and Energy Use Intensity (EUI)

Site EUI	Annual Energy by Fuel	National Median Comparison	
72 kBtu/ft ²	Electric - Grid (kBtu) 1,305,284 (66%)	National Median Site EUI (kBtu/ft ²)	49.8
	Natural Gas (kBtu) 676,400 (34%)	National Median Source EUI (kBtu/ft ²)	109.6
		% Diff from National Median Source EUI	45%
Source EUI	Annual Emissions		
158.5 kBtu/ft ²	Greenhouse Gas Emissions (Metric Tons CO ₂ e/year)		128

Signature & Stamp of Verifying Professional

I _____ (Name) verify that the above information is true and correct to the best of my knowledge.

Signature: _____ Date: _____

Licensed Professional

,
(____)____-_____



Professional Engineer Stamp
(if applicable)



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ENERGY STAR® Progress & Goals Report

N/A

Arcadia Community Services Department

Primary Property Type: Social/Meeting Hall
Gross Floor Area (ft²): 27,539
Built: 1991

Property Address:
Arcadia Community Services Department
375 Campus Drive
Arcadia, California 91007

Property ID: 6024607

**ENERGY STAR®
Score¹**

For Year Ending: March 31, 2019
Date Generated: June 25, 2019

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Performance Comparison

	Progress			Performance Goals		
	Baseline (Ending Date 4/30/2017)	(Ending Date 3/31/2019)	% Change	Property's Target	National Median	ENERGY STAR Score of 75
ENERGY STAR Score	N/A	N/A	N/A	N/A	50	75

Energy

Site EUI (kBtu/ft²)	22.6	72	218.3	N/A	49.8	N/A
Source EUI (kBtu/ft²)	23.7	158.5	567.8	N/A	109.6	N/A
Energy Cost (\$)	5,816.6	N/A	N/A	N/A	N/A	N/A
Energy Cost Intensity (\$/ft²)	0.21	N/A	N/A	N/A	N/A	N/A

Greenhouse Gas Emissions

Total GHG Emissions (Metric Tons CO2e)	33.1	127.9	286.4	N/A	88.4	N/A
Total GHG Emissions Intensity (kgCO2e/ft²)	1.2	4.6	286.4	N/A	3.2	N/A

Water

All Water Use (kgal)	N/A	N/A	N/A	*	*	*
Indoor Water Use (kgal)	N/A	N/A	N/A	*	*	*
Indoor Water Use Intensity (gal/ft²)	N/A	N/A	N/A	*	*	*
Total Water Cost (\$)	N/A	N/A	N/A	*	*	*

*Setting and managing water targets is not yet available in Portfolio Manager.



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ENERGY STAR[®] Statement of Energy Performance

N/A

Arcadia Fire Dept. Station 105 (HQ)

Primary Property Type: Fire Station
Gross Floor Area (ft²): 22,457
Built: 2008

ENERGY STAR[®]
Score¹

For Year Ending: March 31, 2019
Date Generated: June 25, 2019

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Property & Contact Information

Property Address

Arcadia Fire Dept. Station 105 (HQ)
710 South Santa Anita Ave.
Arcadia, California 91006

Property Owner

,
(____)____-____

Primary Contact

,
(____)____-____

Property ID: 6376797

Energy Consumption and Energy Use Intensity (EUI)

Site EUI

91.6 kBtu/ft²

Annual Energy by Fuel

Natural Gas (kBtu) 1,032,400 (50%)
Electric - Grid (kBtu) 1,023,836 (50%)

National Median Comparison

National Median Site EUI (kBtu/ft²) 65
National Median Source EUI (kBtu/ft²) 124.9
% Diff from National Median Source EUI 41%

Source EUI

175.9 kBtu/ft²

Annual Emissions

Greenhouse Gas Emissions (Metric Tons CO₂e/year) 127

Signature & Stamp of Verifying Professional

I _____ (Name) verify that the above information is true and correct to the best of my knowledge.

Signature: _____ Date: _____

Licensed Professional

,
(____)____-____



Professional Engineer Stamp
(if applicable)



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ENERGY STAR® Progress & Goals Report

N/A

Arcadia Fire Dept. Station 105 (HQ)

Primary Property Type: Fire Station
Gross Floor Area (ft²): 22,457
Built: 2008

Property Address:
Arcadia Fire Dept. Station 105 (HQ)
710 South Santa Anita Ave.
Arcadia, California 91006

Property ID: 6376797

**ENERGY STAR®
Score¹**

For Year Ending: March 31, 2019
Date Generated: June 25, 2019

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Performance Comparison

	Progress			Performance Goals		
	Baseline (Ending Date 3/31/2017)	(Ending Date 3/31/2019)	% Change	Property's Target	National Median	ENERGY STAR Score of 75
ENERGY STAR Score	N/A	N/A	N/A	N/A	50	75

Energy

Site EUI (kBtu/ft²)	47.8	91.6	91.7	N/A	65	N/A
Source EUI (kBtu/ft²)	50.1	175.9	250.8	N/A	124.9	N/A
Energy Cost (\$)	9,692.51	N/A	N/A	N/A	N/A	N/A
Energy Cost Intensity (\$/ft²)	0.43	N/A	N/A	N/A	N/A	N/A

Greenhouse Gas Emissions

Total GHG Emissions (Metric Tons CO2e)	57	127	122.81	N/A	90.1	N/A
Total GHG Emissions Intensity (kgCO2e/ft²)	2.5	5.7	122.81	N/A	4	N/A

Water

All Water Use (kgal)	N/A	N/A	N/A	*	*	*
Indoor Water Use (kgal)	N/A	N/A	N/A	*	*	*
Indoor Water Use Intensity (gal/ft²)	N/A	N/A	N/A	*	*	*
Total Water Cost (\$)	N/A	N/A	N/A	*	*	*

*Setting and managing water targets is not yet available in Portfolio Manager.



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ENERGY STAR[®] Statement of Energy Performance

N/A

Arcadia Fire Station 106

Primary Property Type: Fire Station
Gross Floor Area (ft²): 12,557
Built: 1994

ENERGY STAR[®]
Score¹

For Year Ending: February 28, 2019
Date Generated: June 25, 2019

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Property & Contact Information

Property Address

Arcadia Fire Station 106
630 South Baldwin Avenue
Arcadia, California 91007

Property Owner

,
(____)____-____

Primary Contact

,
(____)____-____

Property ID: 6376812

Energy Consumption and Energy Use Intensity (EUI)

Site EUI

94.9 kBtu/ft²

Annual Energy by Fuel

Electric - Grid (kBtu) 691,221 (58%)
Natural Gas (kBtu) 500,800 (42%)

National Median Comparison

National Median Site EUI (kBtu/ft²) 60.5
National Median Source EUI (kBtu/ft²) 124.9
% Diff from National Median Source EUI 57%

Source EUI

196 kBtu/ft²

Annual Emissions

Greenhouse Gas Emissions (Metric Tons CO₂e/year) 75

Signature & Stamp of Verifying Professional

I _____ (Name) verify that the above information is true and correct to the best of my knowledge.

Signature: _____ Date: _____

Licensed Professional

,
(____)____-____



Professional Engineer Stamp
(if applicable)



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ENERGY STAR® Progress & Goals Report

N/A

ENERGY STAR®
Score¹

Arcadia Fire Station 106

Primary Property Type: Fire Station
Gross Floor Area (ft²): 12,557
Built: 1994

Property Address:
Arcadia Fire Station 106
630 South Baldwin Avenue
Arcadia, California 91007

For Year Ending: February 28, 2019
Date Generated: June 25, 2019

Property ID: 6376812

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Performance Comparison

	Progress			Performance Goals		
	Baseline (Ending Date 3/31/2018)	(Ending Date 2/28/2019)	% Change	Property's Target	National Median	ENERGY STAR Score of 75
ENERGY STAR Score	N/A	N/A	N/A	N/A	50	75
Energy						
Site EUI (kBtu/ft²)	88.5	94.9	7.3	N/A	60.5	N/A
Source EUI (kBtu/ft²)	194.2	196	1	N/A	124.9	N/A
Energy Cost (\$)	N/A	N/A	N/A	N/A	N/A	N/A
Energy Cost Intensity (¢)	N/A	N/A	N/A	N/A	N/A	N/A
Greenhouse Gas Emissions						
Total GHG Emissions (Metric Tons CO2e)	71.6	75.3	5.17	N/A	48	N/A
Total GHG Emissions Intensity (kgCO2e/ft²)	5.7	6	5.17	N/A	3.8	N/A
Water						
All Water Use (kgal)	N/A	N/A	N/A	*	*	*
Indoor Water Use (kgal)	N/A	N/A	N/A	*	*	*
Indoor Water Use Intensity (gal/ft²)	N/A	N/A	N/A	*	*	*
Total Water Cost (\$)	N/A	N/A	N/A	*	*	*

*Setting and managing water targets is not yet available in Portfolio Manager.



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ENERGY STAR[®] Statement of Energy Performance

N/A

Arcadia Fire Station 107

Primary Property Type: Fire Station
Gross Floor Area (ft²): 4,500
Built: 1960

ENERGY STAR[®]
Score¹

For Year Ending: March 31, 2019
Date Generated: June 25, 2019

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Property & Contact Information

Property Address

Arcadia Fire Station 107
79 W. Orange Grove Ave.
Arcadia, California 91006

Property Owner

,
(____)____-____

Primary Contact

,
(____)____-____

Property ID: 6376832

Energy Consumption and Energy Use Intensity (EUI)

Site EUI

67.1 kBtu/ft²

Annual Energy by Fuel

Electric - Grid (kBtu) 181,556 (60%)
Natural Gas (kBtu) 120,617 (40%)

National Median Comparison

National Median Site EUI (kBtu/ft²) 59.4
National Median Source EUI (kBtu/ft²) 124.9
% Diff from National Median Source EUI 13%

Source EUI

141.1 kBtu/ft²

Annual Emissions

Greenhouse Gas Emissions (Metric Tons CO₂e/year) 19

Signature & Stamp of Verifying Professional

I _____ (Name) verify that the above information is true and correct to the best of my knowledge.

Signature: _____ Date: _____

Licensed Professional

,
(____)____-____



Professional Engineer Stamp
(if applicable)



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ENERGY STAR® Progress & Goals Report

N/A

ENERGY STAR®
Score¹

Arcadia Fire Station 107

Primary Property Type: Fire Station
Gross Floor Area (ft²): 4,500
Built: 1960

Property Address:
Arcadia Fire Station 107
79 W. Orange Grove Ave.
Arcadia, California 91006

For Year Ending: March 31, 2019
Date Generated: June 25, 2019

Property ID: 6376832

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Performance Comparison

	Progress			Performance Goals		
	Baseline (Ending Date 9/30/2018)	(Ending Date 3/31/2019)	% Change	Property's Target	National Median	ENERGY STAR Score of 75
ENERGY STAR Score	N/A	N/A	N/A	N/A	50	75

Energy

Site EUI (kBtu/ft²)	68.7	67.1	-2.2	N/A	59.4	N/A
Source EUI (kBtu/ft²)	141.1	141.1	0	N/A	124.9	N/A
Energy Cost (\$)	N/A	N/A	N/A	N/A	N/A	N/A
Energy Cost Intensity (¢)	N/A	N/A	N/A	N/A	N/A	N/A

Greenhouse Gas Emissions

Total GHG Emissions (Metric Tons CO2e)	19.5	19.2	-1.54	N/A	17	N/A
Total GHG Emissions Intensity (kgCO2e/ft²)	4.3	4.3	-1.54	N/A	3.8	N/A

Water

All Water Use (kgal)	N/A	N/A	N/A	*	*	*
Indoor Water Use (kgal)	N/A	N/A	N/A	*	*	*
Indoor Water Use Intensity (gal/ft²)	N/A	N/A	N/A	*	*	*
Total Water Cost (\$)	N/A	N/A	N/A	*	*	*

*Setting and managing water targets is not yet available in Portfolio Manager.



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ENERGY STAR[®] Statement of Energy Performance

N/A

Arcadia Public Library

Primary Property Type: Library
Gross Floor Area (ft²): 48,000
Built: 1996

ENERGY STAR[®]
Score¹

For Year Ending: March 31, 2019
Date Generated: June 25, 2019

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Property & Contact Information

Property Address

Arcadia Public Library
20 W. Duarte Road
Arcadia, California 91006

Property Owner

,
(____)____-____

Primary Contact

,
(____)____-____

Property ID: 6376757

Energy Consumption and Energy Use Intensity (EUI)

Site EUI

72.6 kBtu/ft²

Annual Energy by Fuel

Natural Gas (kBtu) 899,100 (26%)
Electric - Grid (kBtu) 2,584,782 (74%)

National Median Comparison

National Median Site EUI (kBtu/ft²) 61.2
National Median Source EUI (kBtu/ft²) 143.6
% Diff from National Median Source EUI 19%

Source EUI

170.4 kBtu/ft²

Annual Emissions

Greenhouse Gas Emissions (Metric Tons CO₂e/year) 230

Signature & Stamp of Verifying Professional

I _____ (Name) verify that the above information is true and correct to the best of my knowledge.

Signature: _____ Date: _____

Licensed Professional

,
(____)____-____



Professional Engineer Stamp
(if applicable)



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ENERGY STAR® Progress & Goals Report

N/A

ENERGY STAR®
Score¹

Arcadia Public Library

Primary Property Type: Library
Gross Floor Area (ft²): 48,000
Built: 1996

Property Address:
Arcadia Public Library
20 W. Duarte Road
Arcadia, California 91006

For Year Ending: March 31, 2019
Date Generated: June 25, 2019

Property ID: 6376757

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Performance Comparison

	Progress			Performance Goals		
	Baseline (Ending Date 4/30/2017)	(Ending Date 3/31/2019)	% Change	Property's Target	National Median	ENERGY STAR Score of 75
ENERGY STAR Score	N/A	N/A	N/A	N/A	50	75

Energy

Site EUI (kBtu/ft²)	19.1	72.6	280.3	N/A	61.2	N/A
Source EUI (kBtu/ft²)	20	170.4	750.6	N/A	143.6	N/A
Energy Cost (\$)	7,550.31	N/A	N/A	N/A	N/A	N/A
Energy Cost Intensity (\$/ft²)	0.16	N/A	N/A	N/A	N/A	N/A

Greenhouse Gas Emissions

Total GHG Emissions (Metric Tons CO2e)	48.7	229.8	371.87	N/A	193.7	N/A
Total GHG Emissions Intensity (kgCO2e/ft²)	1	4.8	371.87	N/A	4	N/A

Water

All Water Use (kgal)	N/A	N/A	N/A	*	*	*
Indoor Water Use (kgal)	N/A	N/A	N/A	*	*	*
Indoor Water Use Intensity (gal/ft²)	N/A	N/A	N/A	*	*	*
Total Water Cost (\$)	N/A	N/A	N/A	*	*	*

*Setting and managing water targets is not yet available in Portfolio Manager.



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ENERGY STAR[®] Statement of Energy Performance

N/A

Arcadia Public Works Yard

Primary Property Type: Other - Utility
Gross Floor Area (ft²): 50,486
Built: 1990

ENERGY STAR[®]
Score¹

For Year Ending: December 31, 2018
Date Generated: June 25, 2019

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Property & Contact Information

Property Address

Arcadia Public Works Yard
11800 Goldring Road
Arcadia, California 91006

Property Owner

,
(____)____-____

Primary Contact

,
(____)____-____

Property ID: 6376872

Energy Consumption and Energy Use Intensity (EUI)

Site EUI

19.2 kBtu/ft²

Annual Energy by Fuel

Electric - Grid (kBtu) 818,217 (84%)
Natural Gas (kBtu) 152,100 (16%)

National Median Comparison

National Median Site EUI (kBtu/ft²) 35.3
National Median Source EUI (kBtu/ft²) 89.3
% Diff from National Median Source EUI -46%

Source EUI

48.5 kBtu/ft²

Annual Emissions

Greenhouse Gas Emissions (Metric Tons CO₂e/year) 66

Signature & Stamp of Verifying Professional

I _____ (Name) verify that the above information is true and correct to the best of my knowledge.

Signature: _____ Date: _____

Licensed Professional

,
(____)____-____



Professional Engineer Stamp
(if applicable)



LEARN MORE AT
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ENERGY STAR® Progress & Goals Report

N/A

Arcadia Public Works Yard

Primary Property Type: Other - Utility
Gross Floor Area (ft²): 50,486
Built: 1990

Property Address:
Arcadia Public Works Yard
11800 Goldring Road
Arcadia, California 91006

Property ID: 6376872

**ENERGY STAR®
Score¹**

For Year Ending: December 31, 2018
Date Generated: June 25, 2019

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Performance Comparison

	Progress			Performance Goals		
	Baseline (Ending Date 4/30/2017)	(Ending Date 12/31/2018)	% Change	Property's Target	National Median	ENERGY STAR Score of 75
ENERGY STAR Score	N/A	N/A	N/A	N/A	50	75

Energy

Site EUI (kBtu/ft²)	19.2	19.2	0.2	N/A	35.3	N/A
Source EUI (kBtu/ft²)	47.7	48.5	1.7	N/A	89.3	N/A
Energy Cost (\$)	37,250.67	40,376.91	8.39	N/A	74,256.01	N/A
Energy Cost Intensity (\$/ft²)	0.74	0.8	8.39	N/A	1.47	N/A

Greenhouse Gas Emissions

Total GHG Emissions (Metric Tons CO2e)	65.2	65.7	0.77	N/A	120.9	N/A
Total GHG Emissions Intensity (kgCO2e/ft²)	1.3	1.3	0.77	N/A	2.4	N/A

Water

All Water Use (kgal)	N/A	N/A	N/A	*	*	*
Indoor Water Use (kgal)	N/A	N/A	N/A	*	*	*
Indoor Water Use Intensity (gal/ft²)	N/A	N/A	N/A	*	*	*
Total Water Cost (\$)	N/A	N/A	N/A	*	*	*

*Setting and managing water targets is not yet available in Portfolio Manager.



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ENERGY STAR[®] Statement of Energy Performance

N/A

Arcadia Wilderness Park

Primary Property Type: Other - Recreation
Gross Floor Area (ft²): 3,944
Built: 2000

ENERGY STAR[®]
Score¹

For Year Ending: May 31, 2019
Date Generated: June 25, 2019

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Property & Contact Information

Property Address

Arcadia Wilderness Park
2240 Highland Oaks Dr.
Arcadia, California 91006

Property Owner

,
(____)____-____

Primary Contact

,
(____)____-____

Property ID: 6740258

Energy Consumption and Energy Use Intensity (EUI)

Site EUI

29.9 kBtu/ft²

Annual Energy by Fuel

Electric - Grid (kBtu) 117,775 (100%)

National Median Comparison

National Median Site EUI (kBtu/ft²) 40
National Median Source EUI (kBtu/ft²) 112
% Diff from National Median Source EUI -25%

Source EUI

83.6 kBtu/ft²

Annual Emissions

Greenhouse Gas Emissions (Metric Tons CO₂e/year) 8

Signature & Stamp of Verifying Professional

I _____ (Name) verify that the above information is true and correct to the best of my knowledge.

Signature: _____ Date: _____

Licensed Professional

,
(____)____-____



Professional Engineer Stamp
(if applicable)



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ENERGY STAR® Progress & Goals Report

N/A

ENERGY STAR®
Score¹

Arcadia Wilderness Park

Primary Property Type: Other - Recreation
Gross Floor Area (ft²): 3,944
Built: 2000

Property Address:
Arcadia Wilderness Park
2240 Highland Oaks Dr.
Arcadia, California 91006

For Year Ending: May 31, 2019
Date Generated: June 25, 2019

Property ID: 6740258

1. The ENERGY STAR score is a 1-100 assessment of a building's energy efficiency as compared with similar buildings nationwide, adjusting for climate and business activity.

Performance Comparison

	Progress			Performance Goals		
	Baseline (Ending Date 3/31/2018)	(Ending Date 5/31/2019)	% Change	Property's Target	National Median	ENERGY STAR Score of 75
ENERGY STAR Score	N/A	N/A	N/A	N/A	50	75
Energy						
Site EUI (kBtu/ft²)	27.3	29.9	9.3	N/A	40	N/A
Source EUI (kBtu/ft²)	76.5	83.6	9.3	N/A	112	N/A
Energy Cost (\$)	N/A	N/A	N/A	N/A	N/A	N/A
Energy Cost Intensity (¢)	N/A	N/A	N/A	N/A	N/A	N/A
Greenhouse Gas Emissions						
Total GHG Emissions (Metric Tons CO2e)	7.6	8.3	9.21	N/A	11.1	N/A
Total GHG Emissions Intensity (kgCO2e/ft²)	1.9	2.1	9.21	N/A	2.8	N/A
Water						
All Water Use (kgal)	N/A	N/A	N/A	*	*	*
Indoor Water Use (kgal)	N/A	N/A	N/A	*	*	*
Indoor Water Use Intensity (gal/ft²)	N/A	N/A	N/A	*	*	*
Total Water Cost (\$)	N/A	N/A	N/A	*	*	*

*Setting and managing water targets is not yet available in Portfolio Manager.