

# Comparative Energy Analysis Report

Prepared for  
City of La Verne

Prepared by  
The Energy Coalition

On Behalf of  
The Southern California Regional Energy Network Public Agency Project Delivery Programs

Date  
8/14/2019

## Table of Contents

1. Overview	1
2. Total Energy Portfolio	2
3. Water Pumping	3
4. Street & Traffic Lights	4
5. Building Summary	5
6. Outdoor & Park Lights	6
Appendix A - Methodology	7

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## 1. Overview

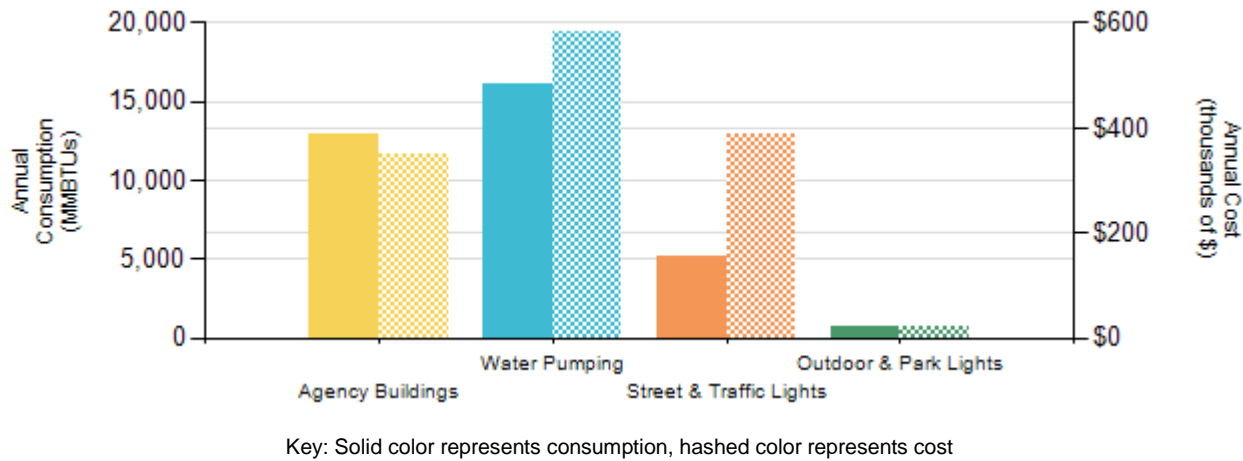
This report is intended to provide a framework for the City of La Verne, referred to as “Agency” herein, to identify inefficient facilities and infrastructure and prioritize further investigation and energy efficiency retrofit work. This analysis uses only energy billing data provided by the Agency to analyze energy use across Agency assets, and to help identify opportunities for energy efficiency improvements. Many factors affect the energy use in different assets, including age, type of heating, ventilation, air conditioning (HVAC), and lighting equipment, facility occupancy and hours, plug loads, and climate. Once individual opportunities with the greatest potential for energy savings are identified, a more detailed screening of those facilities can be performed to identify the specific sources of the inefficiencies.

This report was created by The Energy Coalition on behalf of the Southern California Regional Network ([www.socalren.org](http://www.socalren.org)). Any questions about this report can be directed to your assigned Project Manager, Minh Tran, at [mtran@energycoalition.org](mailto:mtran@energycoalition.org).

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## 2. Total Energy Portfolio

Your Total Annual Energy Cost is **\$1,344,904**



Annual Energy Costs

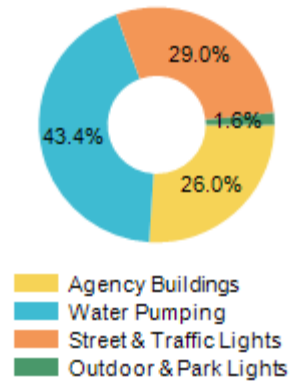


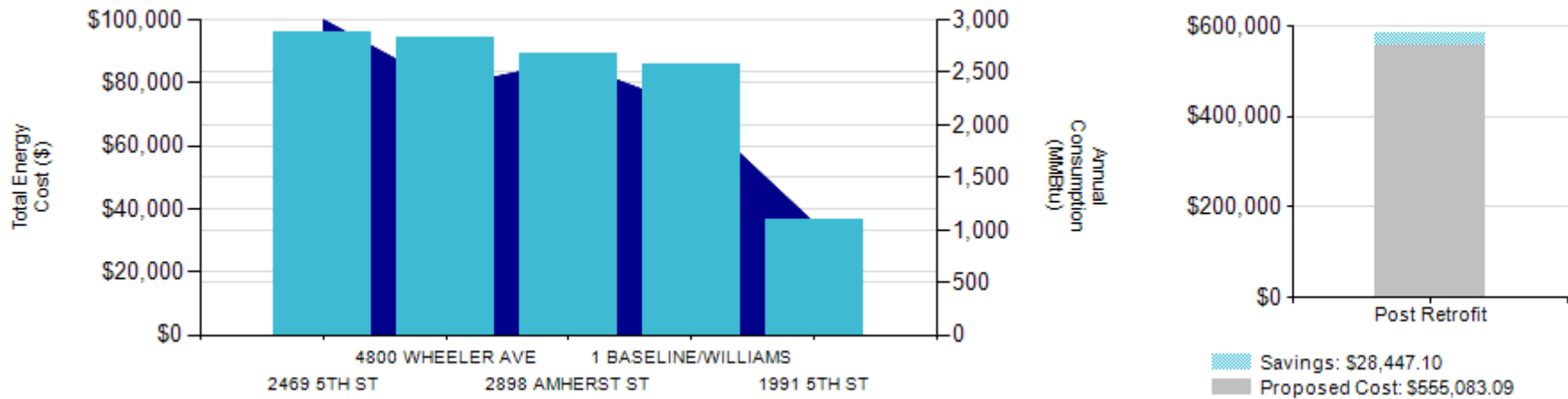
Table 1: Total Energy Portfolio (Annual)

Agency Energy Use	Electric Consumption (kWh)	Electric Cost (\$)	Gas Consumption (therms)	Gas Cost (\$)	Total Energy Consumption (MBTUs)	Total Energy Cost (\$)	GHG Emissions (lbs CO2)
Water Pumping	4,733,181	\$583,530	0	\$0	16,140,147	\$583,530	2,447,055
Street & Traffic Lights	1,509,665	\$389,432	0	\$0	5,147,958	\$389,432	780,497
Agency Buildings	1,730,801	\$294,255	70,157	\$55,815	12,917,728	\$350,070	894,824
Outdoor & Park Lights	200,091	\$21,872	0	\$0	682,310	\$21,872	103,447



### 3. Water Pumping

Your Annual Energy Cost for Water Pumping is **\$583,530** and **43.4%** of the Total Cost.



Key: Displays the top 5 consuming pumping service accounts. Columns represent Cost, Area represents Consumption.

**Assumption** - 65% of all pumps need to be upgraded. Those pumps will reduce consumption by 7.5% kWh post retrofit.

**Calculation** - projected savings are 7.5% of 65% of the total PA consumption (for ALL pump accounts)

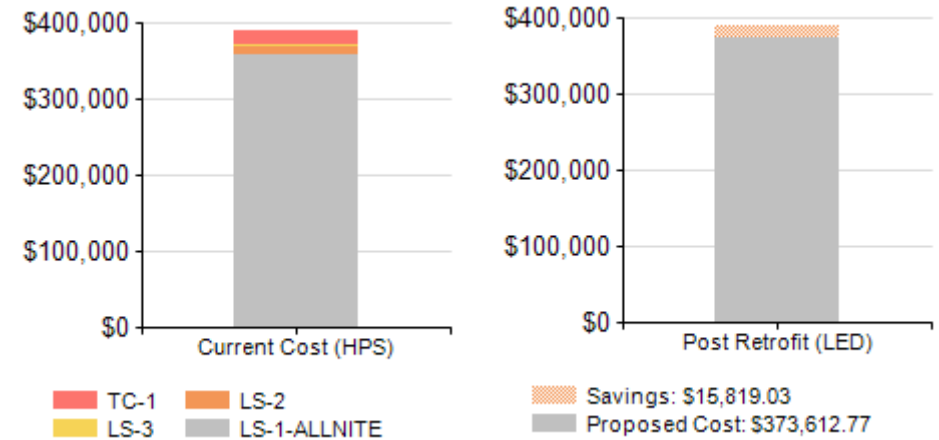
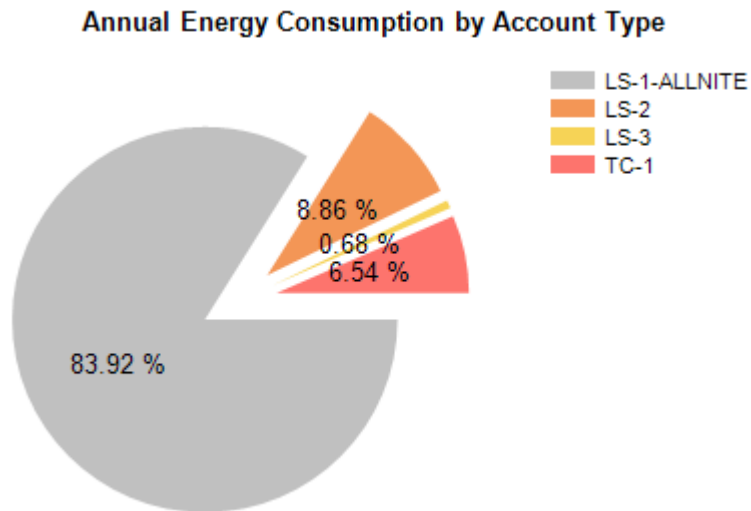
Table 2: Water Pumping (Annual)

Site Name	Address	Electric Consumption (kWh)	Electric Cost (\$)	Electric Rate (\$/kWh)
2469 5TH ST	2469 5TH ST	878,116	\$96,271	\$0.11
4800 WHEELER AVE	4800 WHEELER AVE	691,541	\$94,257	\$0.14
2898 AMHERST ST	2898 AMHERST ST	761,743	\$89,124	\$0.12
1 BASELINE/WILLIAMS	1 BASELINE/WILLIAMS	633,304	\$85,623	\$0.14
1991 5TH ST	1991 5TH ST	312,694	\$36,410	\$0.12



## 4. Street & Traffic Lights

Your Annual Energy Cost for Street & Traffic Lights is **\$389,432** and **29.0%** of the Total Cost.



**Assumption** -agencies can save 50% on annual street & traffic light kWh consumption by converting HPS to LED.

**Calculation** – projected savings are 50% of the total kWh consumption of agency owned street and traffic lights (TC-1, LS-2, and LS-3). LS-1 street lights are not included in projected savings.

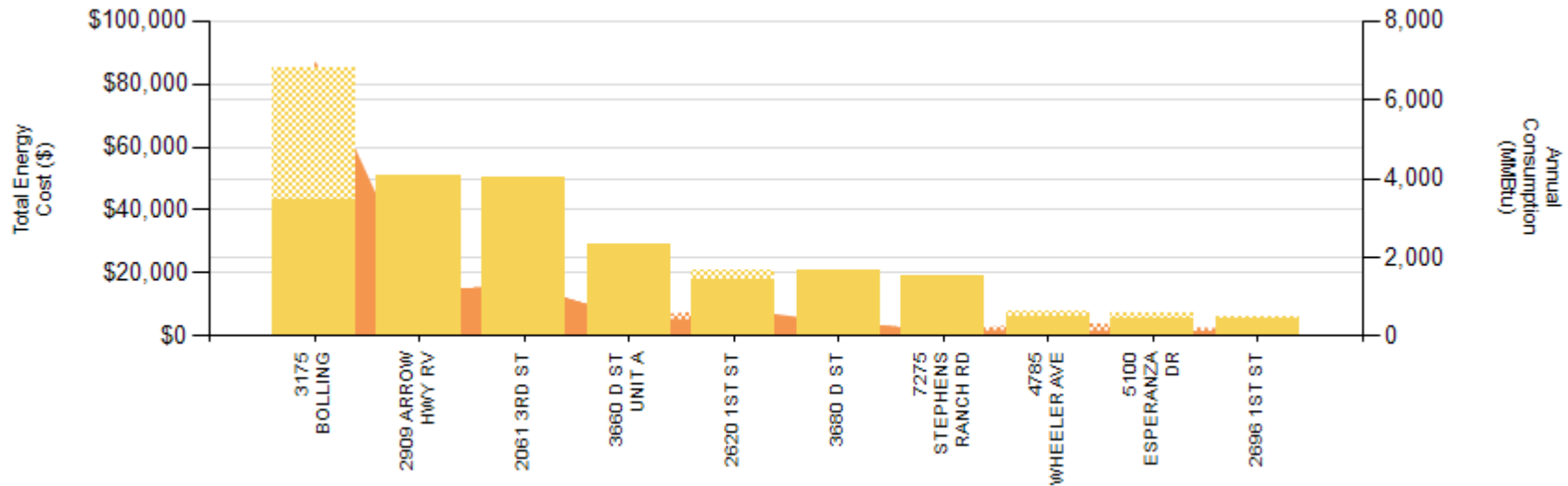
Table 3: Street & Traffic Lights (Annual)

Tariff	Tariff Description	Electric Consumption (kWh)	Electric Cost (\$)	Electric Rate (\$/kWh)
LS-1-ALLNITE	Street Lights (SCE Owned)	1,266,975	\$357,794	0.28
TC-1	Traffic Signal Lights (Agency Owned)	98,686	\$18,661	0.19
LS-2	Street Lights (Agency Owned - unmetered)	133,776	\$11,759	0.09
LS-3	Street Lights (Agency Owned - metered)	10,228	\$1,218	0.12

## 5. Building Summary



Your Annual Energy Cost for Buildings is **\$350,070** and **26.0%** of the Total Cost.



Key: Displays the top 10 consuming Buildings. Yellow columns represent Cost, Orange area represents Consumption. Electricity is the solid shade, Natural Gas is the hashed shade.

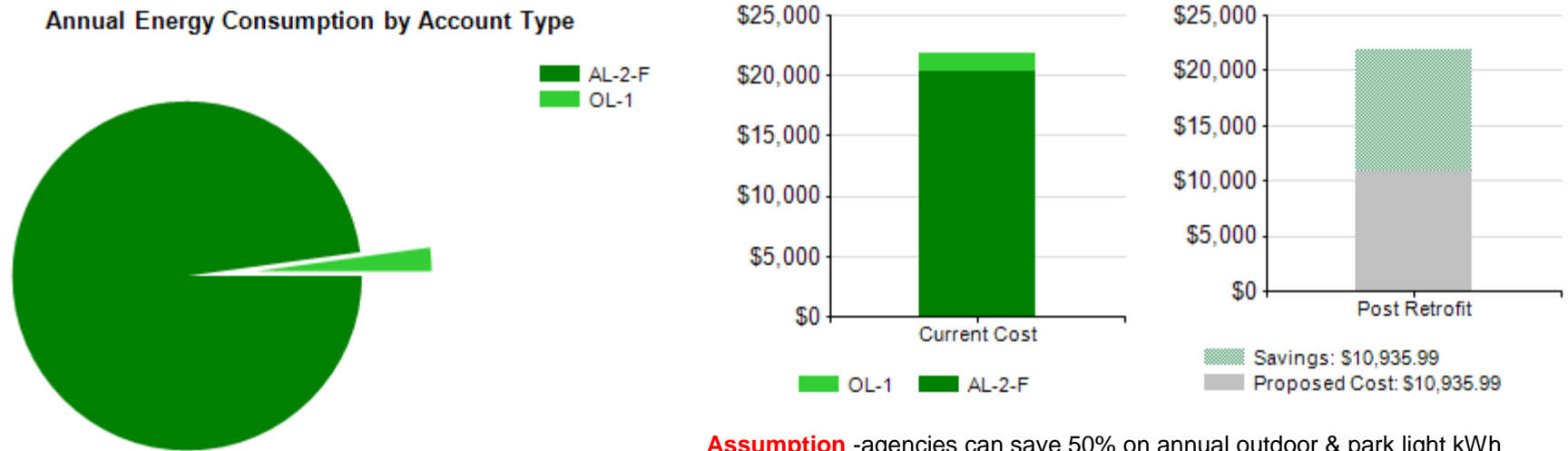
Table 4: Building Summary (Annual)

	Address	Electric Consumption (kWh)	Electric Cost (\$)	Electric Rate (\$/kWh)	Gas Consumption (therms)	Gas Cost (\$)	Gas Rate (\$/therm)
LAS FLORES PARK	3175 BOLLING	363,124	\$43,175	\$0.12	57,047	\$41,747	\$0.73
VALLEY RANCHO MOBILE PARK	2909 ARROW HWY RV	339,880	\$50,710	\$0.15	0	\$0	\$0.00
PUBLIC SAFETY FACILITY	2061 3RD ST	368,847	\$50,163	\$0.14	0	\$0	\$0.00
LA VERNE WATER DEPT	3660 D ST UNIT A	140,756	\$29,080	\$0.21	0	\$0	\$0.00
MAINTENANCE FACILITY	2620 1ST ST	103,950	\$17,848	\$0.17	3,218	\$3,278	\$1.02
LA VERNE COMMUNITY CENTER	3680 D ST	98,896	\$20,956	\$0.21	0	\$0	\$0.00
MARSHALL CANYON REGIONAL PARK	7275 STEPHENS RANCH RD	36,744	\$19,114	\$0.52	0	\$0	\$0.00
FIRE STATION 62	4785 WHEELER AVE	44,696	\$5,967	\$0.13	1,806	\$2,029	\$1.12
FIRE STATION 63	5100 ESPERANZA DR	33,623	\$5,427	\$0.16	1,541	\$1,904	\$1.24
2696 1ST ST	2696 1ST ST	34,216	\$5,488	\$0.16	94	\$358	\$3.82

## 6. Outdoor & Park Lights



Your Annual Energy Cost for Outdoor & Park Lights is **\$21,872** and **1.6%** of the Total Cost.



**Assumption** -agencies can save 50% on annual outdoor & park light kWh consumption by converting HPS to LED.

**Calculation** – projected savings are 50% of the total kWh consumption of outdoor & park lights.

Table 5: Outdoor & Park Lights (Annual)

Name	Address	Tariff	Electric Consumption (kWh)	Electric Cost (\$)	Electric Rate (\$/kWh)
Area Lighting	Various	AL-2-F	195,735	\$20,335	\$0.10
Area Lighting	Various	OL-1	4,356	\$1,537	\$0.35



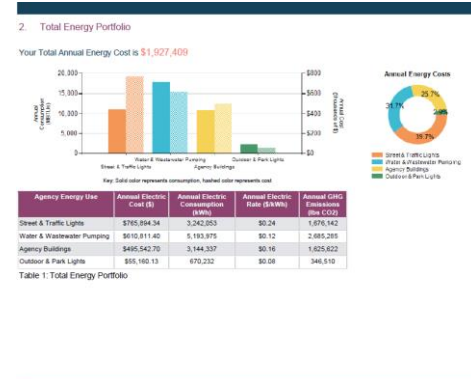
# Appendix A - Methodology

## 1. Data Sources

- Building information, energy usage and cost data used in this analysis were derived from utility consumption billing data provided by agency staff.
- Utility consumption billing data used in this analysis were derived from SCG gas tariffs and SCE electric tariffs
- For more information about the utility tariffs included in this analysis refer to:
  - SCG Gas Tariffs: [For more information about Southern California Gas tariffs](https://www.socalgas.com/regulatory/tariffs/tariffs-rates.shtml); https://www.socalgas.com/regulatory/tariffs/tariffs-rates.shtml
  - SCE Electric Tariff: [For more information about Southern California Edison tariffs](https://www.sce.com/wps/portal/home/regulatory/tariff-books/rates-pricing-choices); https://www.sce.com/wps/portal/home/regulatory/tariff-books/rates-pricing-choices
- All electricity and gas results were based on usage during period April 1, 2018 – March 31, 2019.
- In some cases, multiple meters were associated with a single facility or asset type. For such facilities, to generate estimates of facility-wide energy use, energy usage and cost values were aggregated by summing energy usage and cost values for each day in the analysis period.
- GHG emissions data used in this analysis were calculated using the conversion: 517 lb CO2/MWh + 11.91 lbs CO2/therm [1,2].

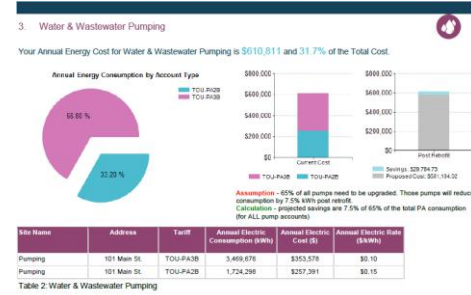
## 2. Total Energy Portfolio

- Total Energy Portfolio data represents an analysis of each agency facility type annual energy costs, annual energy consumption (kWh), GHG Emissions and total annual energy costs for agency facility types based on MBtus.
- The following agency assets are included in the Total Energy Portfolio:
  - Water Pumping
  - Street & Traffic Lights
  - Buildings
  - Outdoor & Parks Lights



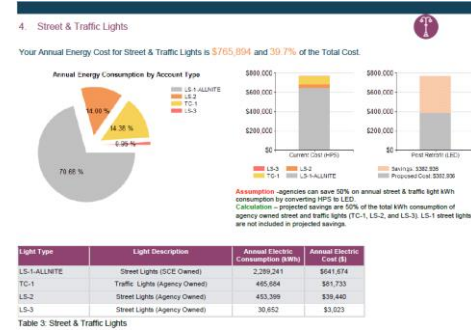
### 3. Water Pumping

- Water pumping data represents an analysis of the top five highest energy consuming water and wastewater pumping SCE service accounts annual energy costs, annual energy consumption (kWh), GHG Emissions, and total annual energy costs based on MBtus.
- Water pump conversion data used in this analysis is derived on the assumption that 65% of all existing pumps need to be upgraded. Of the 65% of pumps requiring upgrades, it is assumed that the pumps will save 7.5% of their annual kWh consumption [3].



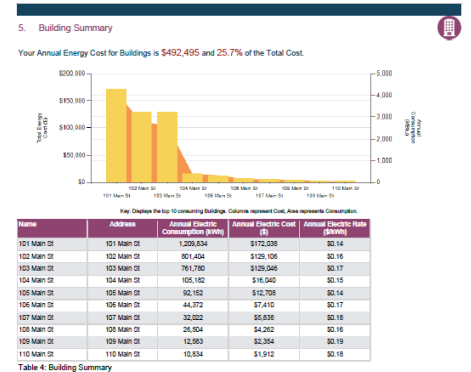
### 4. Street & Traffic Lights

- Street & traffic light data represents an analysis of annual energy costs, annual energy consumption (kWh), GHG Emissions per SCE street & traffic light tariff type.
- Annual cost savings reflects only agency owned street lights in the analysis; assumed cost savings conversion is based on converting HPS to LED agency owned traffic and street lights [3].
- On average, agencies can save 50% on annual kWh consumption by converting HPS to LED, which also results in cost savings [3].



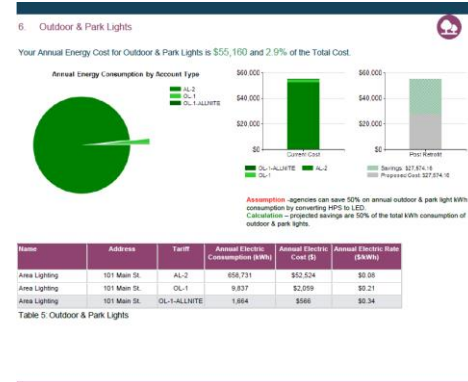
### 5. Building Summary

- Building summary data represents an analysis of the top ten highest energy consuming agency buildings annual energy costs, annual energy consumption (kWh), GHG Emissions, and total annual energy costs based on MBtus.



## 6. Outdoor & Park Lights

- Outdoor & park lights data represents an analysis of annual energy costs, annual energy consumption (kWh), GHG Emissions, and total annual energy costs based on MBtus per SCE outdoor and park lighting tariff type



Certain properties did not have energy usage data for the range of the analysis period and were excluded:

- LS-1 Street Lights – Service Account #8807549

Certain properties could not be matched to gas or electricity usage data and were excluded:

- 2250 Durward Way – Service Account #2354351
- 3751 Moreno Ave – Service Account #2019971
- 5390 Crestview Dr – Service Account #13317743
- 5475 Esperanza Dr – Service Account #1180835
- Arrow/White SO – Service Account #110810

## Endnotes

[1] Corporate Responsibility Report. (2015). In Southern California Edison. Retrieved from [https://www.sce.com/wps/wcm/connect/c0fcef5-e04a-4287-8301-8e66e3e5fbac/2014\\_Corporate+Responsibility+Report\\_FINAL+single-page.pdf?MOD=AJPERES&ContentCache=NONE](https://www.sce.com/wps/wcm/connect/c0fcef5-e04a-4287-8301-8e66e3e5fbac/2014_Corporate+Responsibility+Report_FINAL+single-page.pdf?MOD=AJPERES&ContentCache=NONE)

[2] Adams, L.S., Nicols, M.D., Goldstene, J. N. (2008). Climate Change Scoping Plan. In California Air Resources Board. Retrieved from [https://www.arb.ca.gov/cc/scopingplan/document/appendices\\_volume2.pdf](https://www.arb.ca.gov/cc/scopingplan/document/appendices_volume2.pdf)

[3] Based on SoCalREN previous project estimates.

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