

# Comparative Energy Analysis Report

Prepared for  
**Covina**

Prepared by  
**The Energy Coalition**

On Behalf of  
**The Southern California Regional Energy Network Public Agency Program**

Date  
**2/7/2019**

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## 1. Overview

This report is intended to provide a framework for the Covina, 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.com](http://www.socalren.com)). Any questions about this report can be directed to your assigned Project Manager, Ken Gonzales at [kgonzales@energycoalition.org](mailto:kgonzales@energycoalition.org).

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## 2. Total Energy Portfolio

Your Total Annual Energy Cost is **\$909,409**

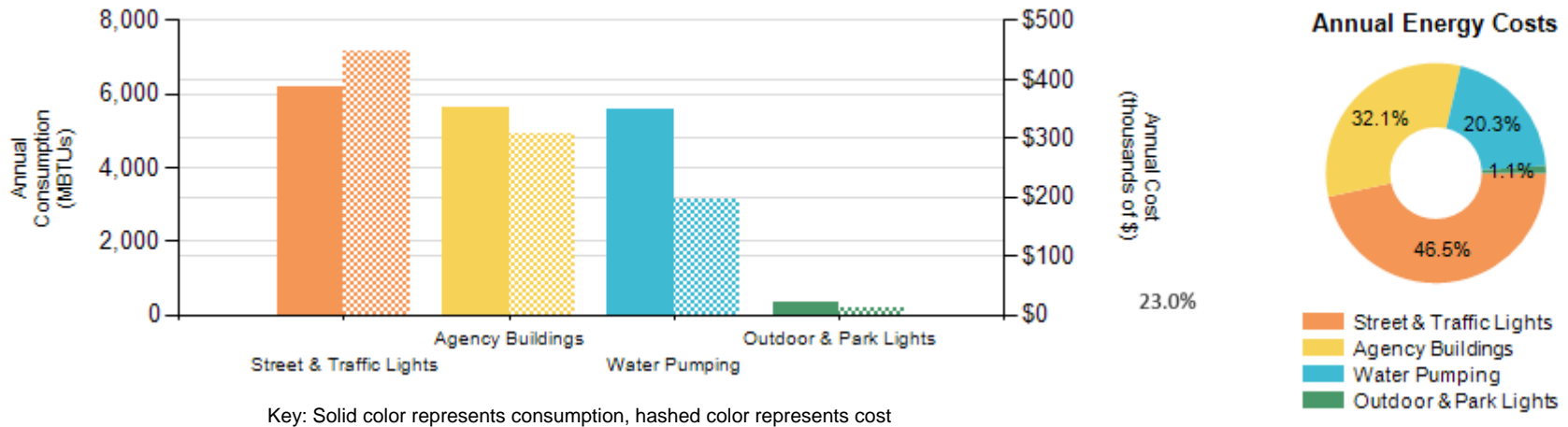


Table 1: Total Energy Portfolio (Annual)

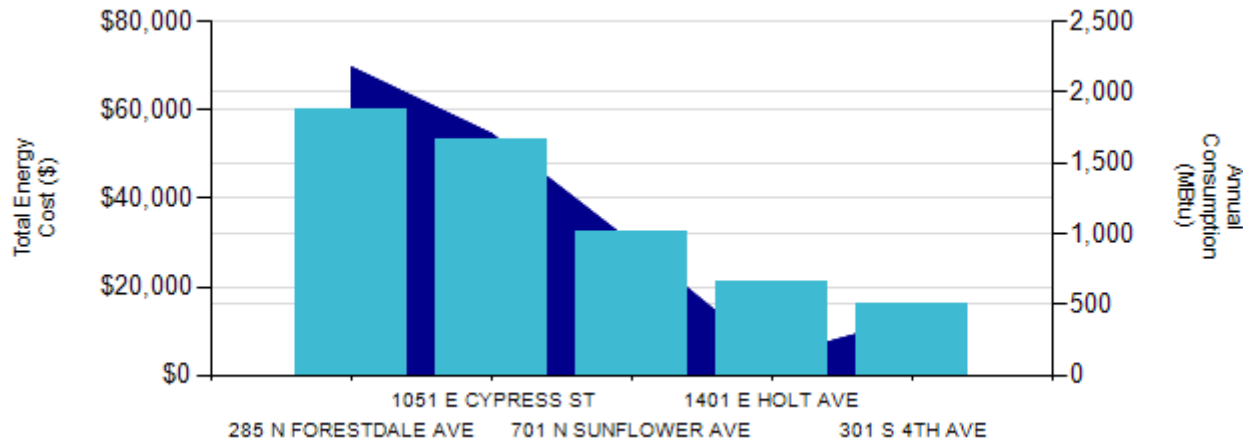
Agency Energy Use	Electric Consumption (kWh)	Electric Cost (\$)	Gas Consumption (therms)	Gas Cost (\$)	Total Energy Consumption (MBTUs)	Total Energy Cost (\$)	GHG Emissions (lbs CO2)
Street & Traffic Lights	1,233,264	\$394,452	0	\$0	4,205,430	\$333,327	637,597
Agency Buildings	1,647,131	\$306,555	6,018	\$3,610	6,650,046	\$310,165	851,567
Water Pumping	1,629,425	\$194,536	0	\$0	5,556,339	\$194,536	842,413
Outdoor & Park Lights	101,049	\$10,256	0	\$0	344,577	\$10,256	52,242

Assumption: Gas Cost (\$) was calculated using a \$0.60/therm cost

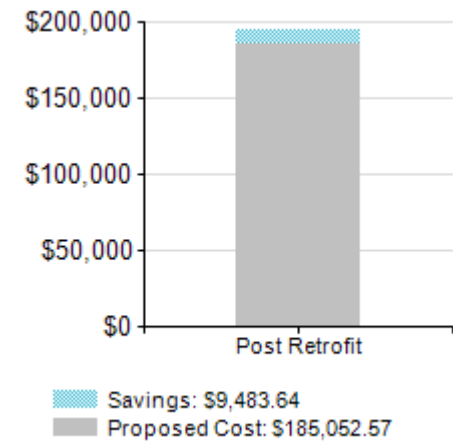


### 3. Water Pumping

Your Annual Energy Cost for Water Pumping is **\$194,536** and **20.3%** 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)

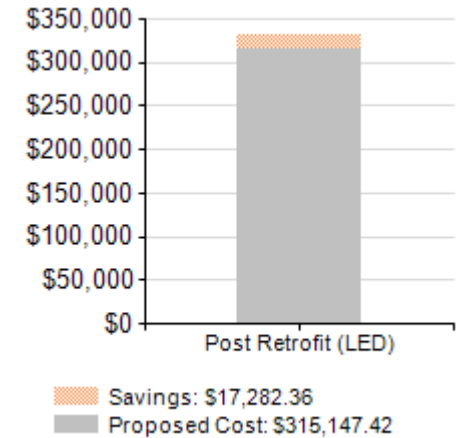
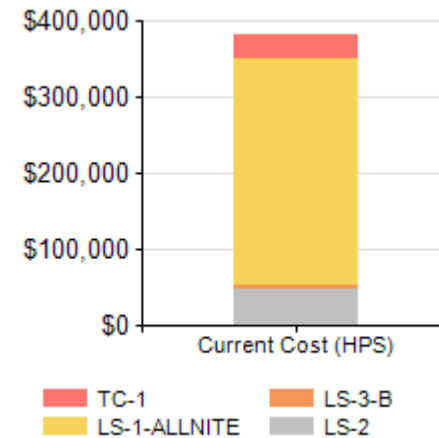
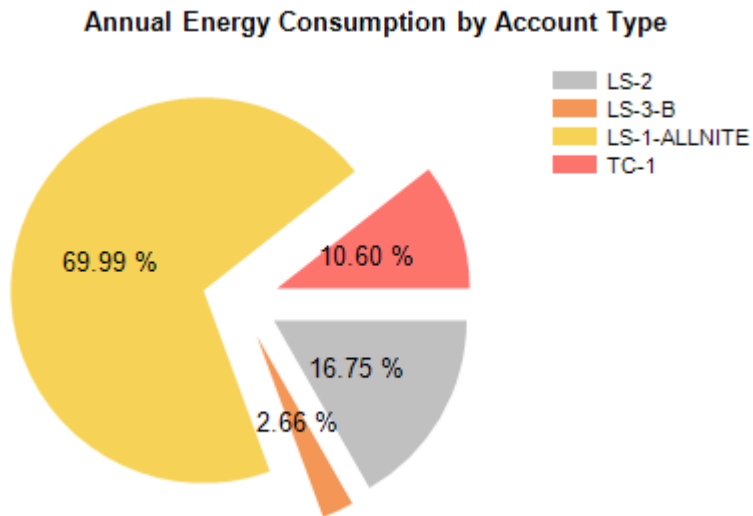
Table 2: Water Pumping (Annual)

Site Name	Address	Electric Consumption (kWh)	Electric Cost (\$)	Electric Rate (\$/kWh)
285 N FORESTDALE AVE	285 N FORESTDALE AVE	637,037	\$60,200	\$0.09
1051 E CYPRESS ST	1051 E CYPRESS ST	499,365	\$53,132	\$0.11
701 N SUNFLOWER AVE	701 N SUNFLOWER AVE	274,100	\$32,673	\$0.12
1401 E HOLT AVE	1401 E HOLT AVE	36,737	\$20,929	\$0.57
301 S 4TH AVE	301 S 4TH AVE	117,130	\$16,159	\$0.14



## 4. Street & Traffic Lights

Your Annual Energy Cost for Street & Traffic Lights is **\$394,452** and **46.5%** 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.

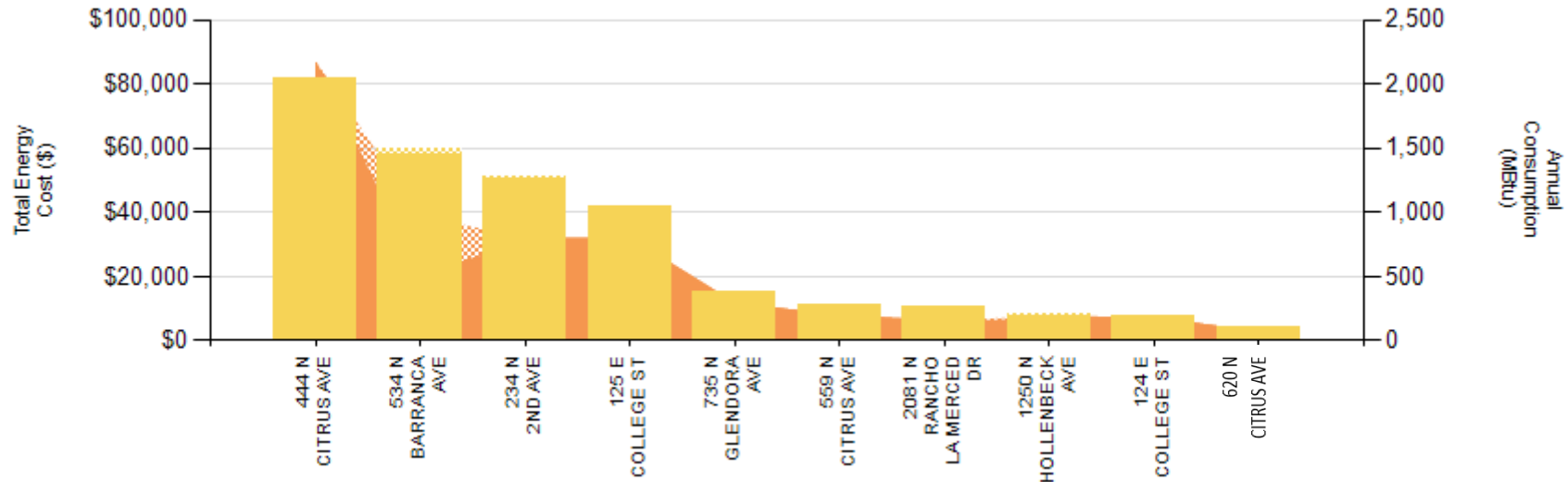
Table 3: Street & Traffic Lights (Annual)

Tariff	Tariff Description	Electric Consumption (kWh)	Electric Cost (\$)	Electric Rate (\$/kWh)
LS-1-ALLNITE	Street Lights (SCE Owned)	1,033,616	\$303,865	0.29
TC-1	Traffic Signal Lights (Agency Owned)	156,993	\$36,615	0.20
LS-2	Street Lights (Agency Owned – unmetered)	247,972	\$49,022	0.20
LS-3-B	Street Lights (Agency Owned - metered)	39,370	\$3,950	0.10

## 5. Building Summary



Your Annual Energy Cost for Buildings is **\$310,165** and **32.1%** of the Total Cost.



Key: Displays the top 10 consuming Buildings. Columns represent Cost, Area represents Consumption. Electricity is the solid shade, Natural Gas is the hashed shade.

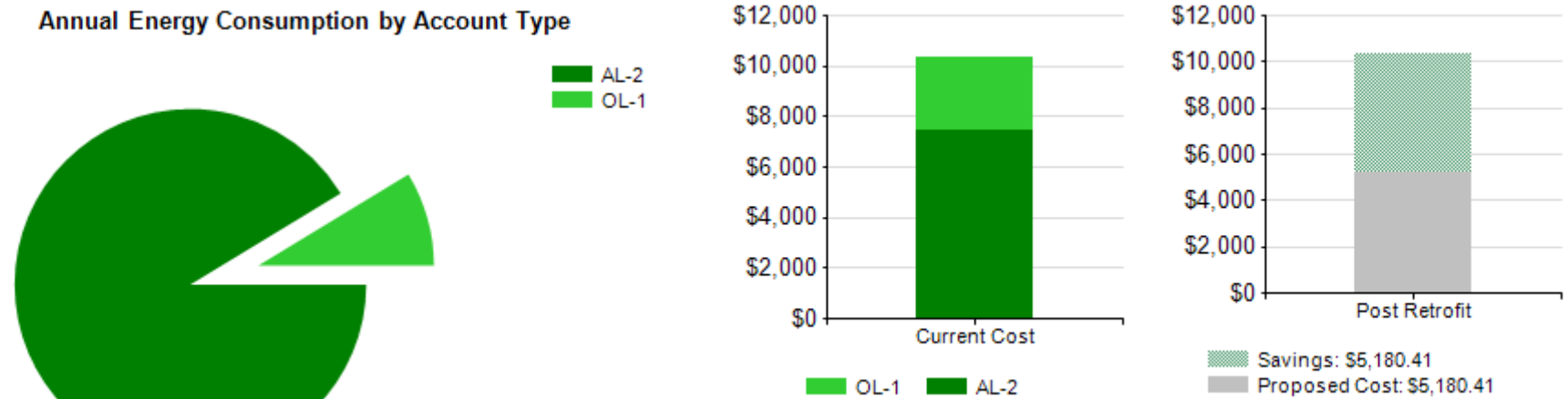
Table 4: Building Summary (Annual)

Site Name	Address	Electric Consumption (kWh)	Electric Cost (\$)	Electric Rate (\$/kWh)	Gas Consumption (therms)	Gas Cost (\$)	Gas Rate (\$/therm)
Covina Police Department	444 N CITRUS AVE	634,953	\$81,909	\$0.13	0	\$0	NaN
Covina Public Works	534 N BARRANCA AVE	148,619	\$58,317	\$0.39	300	\$180	\$0.60
Covina Public Library	234 N 2ND AVE	227,022	\$51,374	\$0.23	288	\$173	\$0.60
Covina City Council	125 E COLLEGE ST	234,386	\$41,833	\$0.18	0	\$0	NaN
Kalher Russell Park	735 N GLENDORA AVE	84,410	\$15,439	\$0.18	0	\$0	NaN
MetroLink Parking Structure	559 N CITRUS AVE	57,330	\$11,219	\$0.20	0	\$0	NaN
Water Tower	2081 N RANCHO LA MERCED DR	43,934	\$10,856	\$0.25	0	\$0	NaN
Hollenbeck Park	1250 N HOLLENBECK AVE	48,729	\$8,021	\$0.16	154	\$92	\$0.60
Covina Public Parking Structure	124 E COLLEGE ST	51,967	\$7,603	\$0.15	0	\$0	NaN
Covina MetroLink Station	620 N CITRUS AVE	31,116	\$3,906	\$0.13	0	\$0	NaN

## 6. Outdoor & Park Lights



Your Annual Energy Cost for Outdoor & Park Lights is **\$10,256** and **1.2%** 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	101 Main St.	AL-2	93,207	\$7,471	\$0.08
Area Lighting	101 Main St.	OL-1	8,876	\$2,890	\$0.33



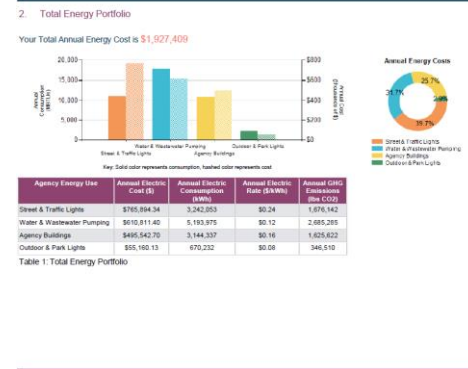
## Appendix A - Methodology

### 1. Data Sources

- Building information, energy usage and cost data used in this analysis were derived from: 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 May 1, 2017 – April 30, 2018.
  - 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 CO<sub>2</sub>/MWh + 11.91 lbs CO<sub>2</sub>/therm [1,2].
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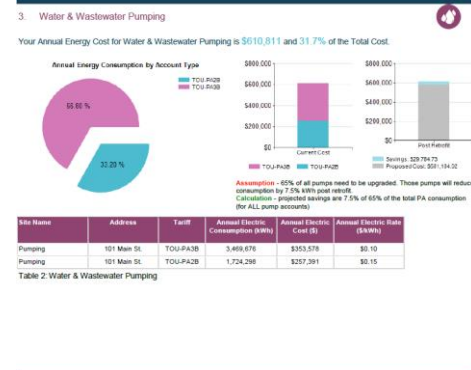
## 2. Total Energy Portfolio

- 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



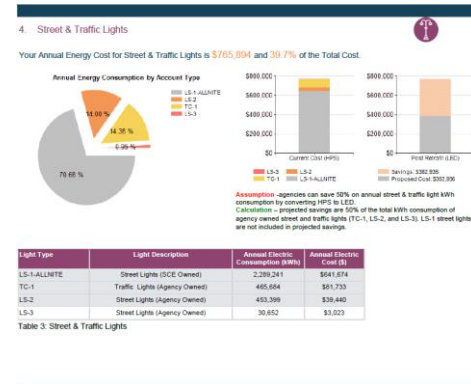
## 3. Water Pumping

- 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].



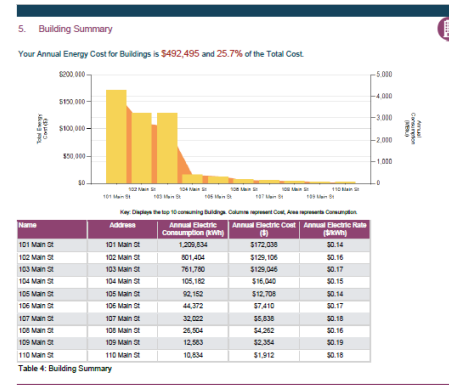
## 4. Street & Traffic Lights

- 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].



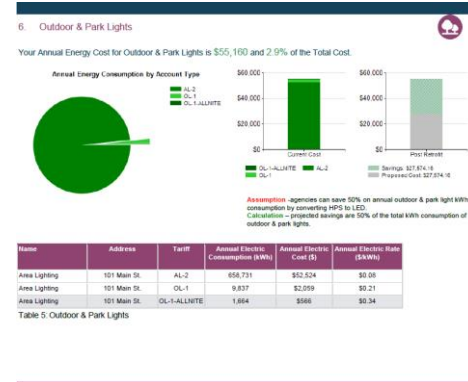
## 5. Building Summary

- 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:

Tariff Type	Meter Number
LS-1	47951775
TC-1	1182835, 1182847
GS	1182814, 1182788, 24817876, 1182797, 1182806, 1182799, 809672, 1182782

## 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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