

Comparative Energy Analysis Report

Comparative Energy Analysis

Prepared for

City of Moreno Valley

Prepared by

Southern California Regional Energy Network (SoCalREN)

Date

11/30/2017

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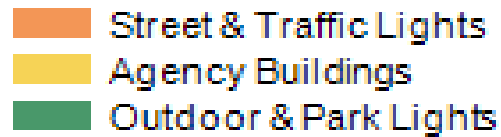
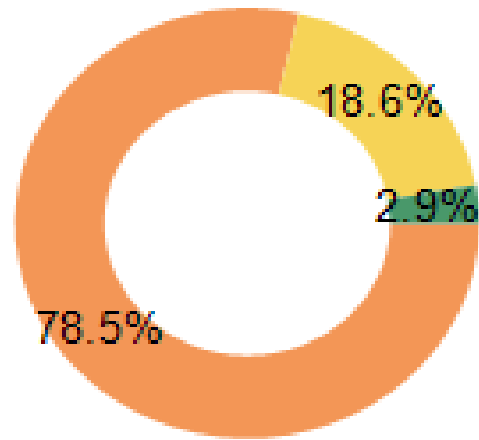
1. Overview

This report is intended to provide a framework for the City of Moreno Valley, referred to as “City” herein, to identify inefficient facilities and prioritize further investigation and energy efficiency retrofit work. This analysis uses only total floor area and energy billing data provided by the City to provide an overview of energy use in City facilities and to help identify individual locations with the potential for energy efficiency improvements. Many factors affect the energy use in different facilities, including age, type of heating, ventilation, air conditioning (HVAC), and lighting equipment, facility occupancy and hours, plug loads, and climate. Once individual facilities 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. Further analysis can identify inefficient equipment, malfunctioning equipment, equipment not operating as designed, or suboptimal operational procedures.

2. Total Energy Portfolio

Your Total Annual Energy Cost is **\$2,168,808**

Annual Energy Costs



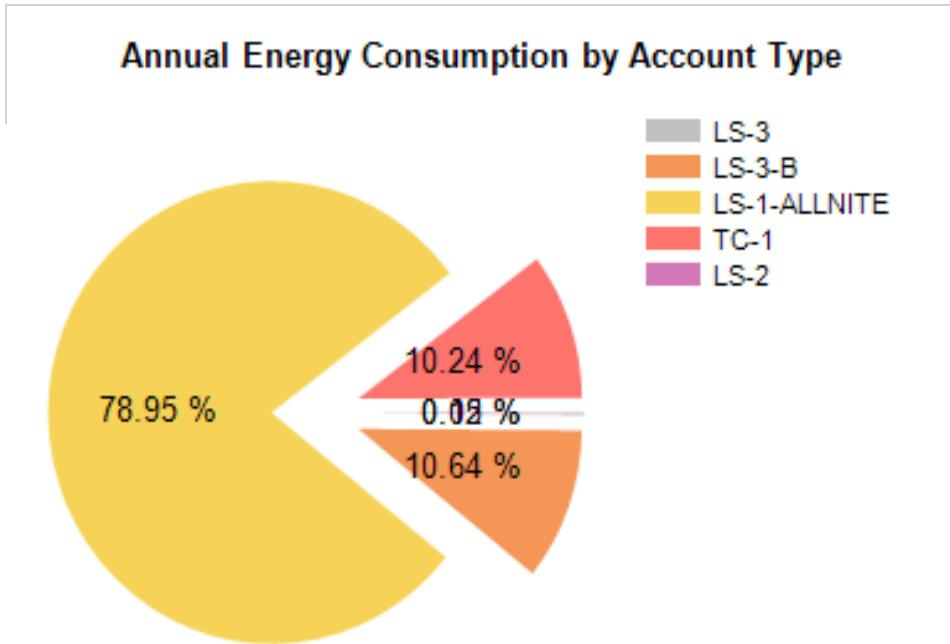
City Energy Use	Annual Electric Cost	Annual Electric Consumption (kWh)	Annual Electricity Cost (\$)/kWh	Annual GHG Emissions (lbs CO2)
Street & Traffic Lights	\$1,703,445.37	7,576,904	\$0.22	3,917,260
Agency Buildings	\$402,934.56	1,772,914	\$0.22	916,597
Outdoor & Park Lights	\$62,428.00	893,104	\$0.07	461,735

Table 1: Total Energy Portfolio

3. Street & Traffic Lights



Your Annual Energy Cost for Street & Traffic Lights is **\$1,703,445** and **78.5%** of the Total Cost.



	Light Type	Light Description	Electricity Use (kWh)	Electricity Cost
1	LS-1-ALLNITE	Streetlighting (SCE Owned)	5,983,041	\$1,481,466
2	LS-3-B	Streetlighting (City Owned)	806,200	\$83,877
3	TC-1	Traffic Lighting (City Owned)	776,102	\$136,547
4	LS-3	Streetlighting (City Owned)	8,765	\$1,357
5	LS-2	Streetlighting (City Owned)	4,052	\$333

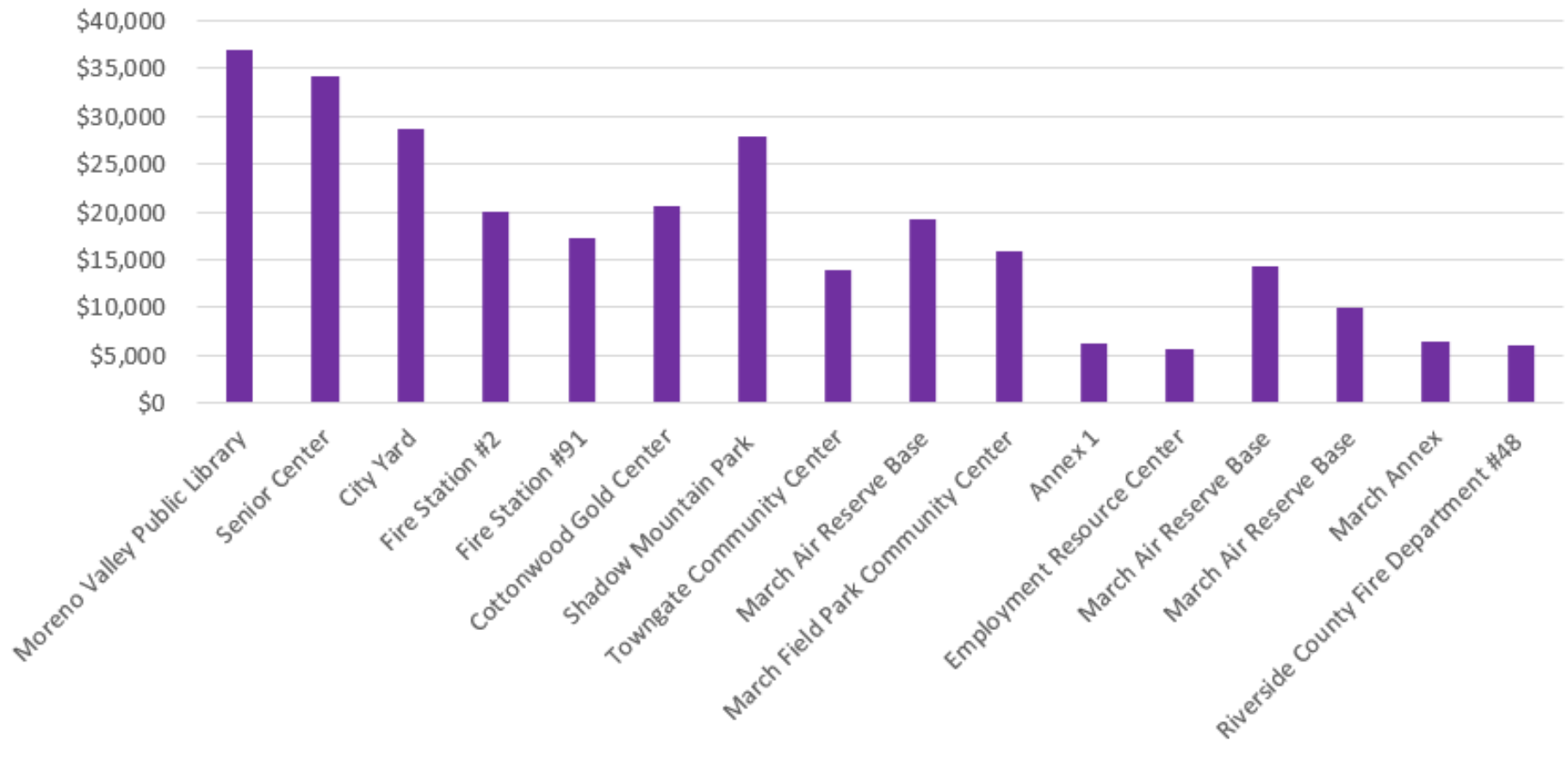
Table 2: Street & Traffic Lights



4. Building Summary

Your Annual Energy Cost for Buildings is **\$402,935** and **18.6%** of the Total Cost.

Annual Electric Cost (\$)



	Name	Address	EUI (kBtu/Sq.Ft.)	Annual Electric Usage (kWh)	Annual Electric Cost (\$)	Electric Cost (\$) /kWh
1	Moreno Valley Public Library	25480 ALESSANDRO BLVD UNIT B	44.0	193,287	\$36,982	\$0.21
2	Senior Center	25075 FIR AVE	44.9	193,270	\$34,132	\$0.18
3	City Yard	15670 PERRIS BLVD	10.1	186,148	\$28,704	\$0.15
4	Fire Station #2	24935 HEMLOCK AVE	55.5	143,996	\$20,102	\$0.14
5	Fire Station #91	16110 LASSELLE ST	46.9	121,576	\$17,312	\$0.14
6	Cottonwood Gold Center	13671 FREDERICK ST	31.3	83,069	\$20,701	\$0.25
7	Shadow Mountain Park	23239 PRESIDIO HILLS		80,261	\$27,803	\$0.35
8	Towngate Community Center	13100 ARBOR PARK LN	64.3	75,325	\$13,878	\$0.18
9	March Air Reserve Base	15415 6TH ST		74,092	\$19,234	\$0.26
10	March Field Park Community Center	15325 5TH	17.3	73,484	\$15,799	\$0.22
11	Annex 1	14331 FREDERICK ST STE 2	12.7	43,492	\$6,229	\$0.14
12	Employment Resource Center	12625 FREDERICK ST STE K3	21.2	30,872	\$5,623	\$0.18
13	March Air Reserve Base	15452 W 6TH ST		27,609	\$14,312	\$0.52
14	March Air Reserve Base	15362 6TH		17,148	\$10,048	\$0.59
15	March Annex	5660 4TH	5.5	6,862	\$6,410	\$0.93
16	Riverside County Fire Department #48	10511 VILLAGE RD		49,379	\$5,995.14	\$0.21

Table 3: Building Summary

5. CalEnviroScreen 3.0 Disadvantaged Communities Map

City of Moreno Valley Facilities

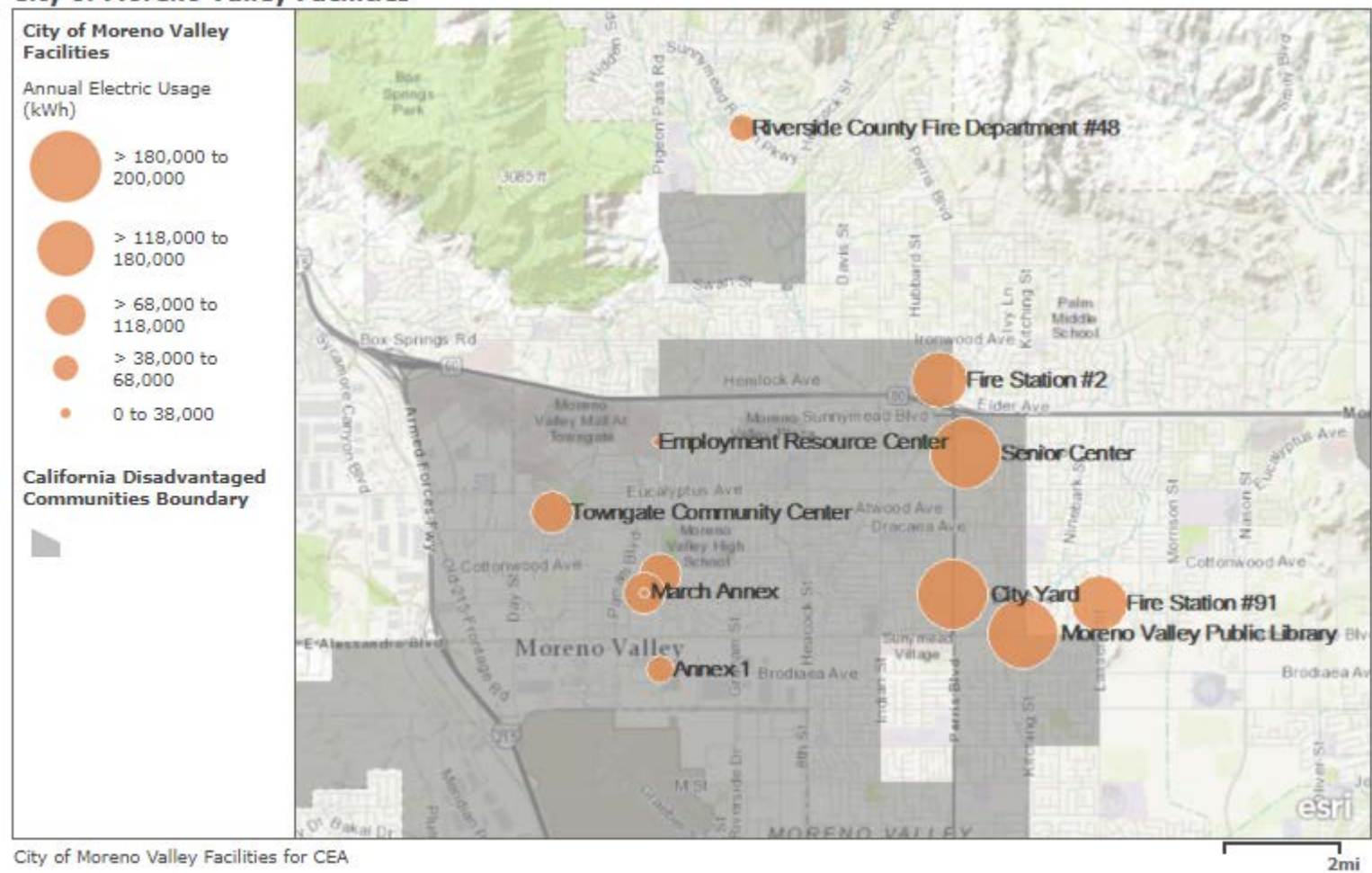


Table 4: Disadvantaged Communities Map

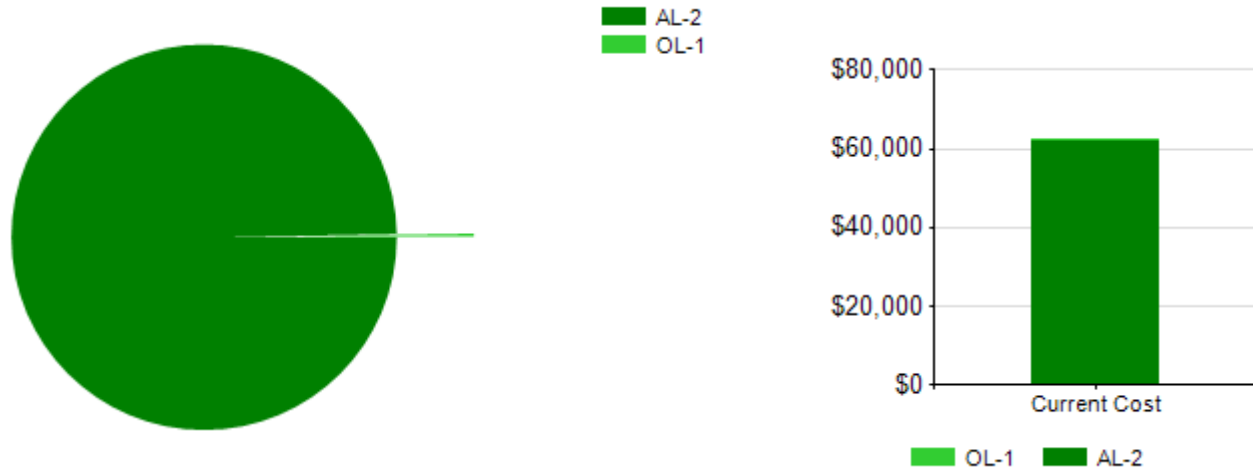
The map above shows the Agency’s facilities and their relationship with the CalEnviroScreen 3.0 results. CalEnviroScreen is a screening tool used to help identify communities disproportionately burdened by multiple sources of pollution and with population characteristics that make them more sensitive to pollution. To learn more about CalEnviroScreen, go to the [OEHHA website](#).

6. Outdoor & Park Lights



Your Annual Energy Cost for Outdoor & Park Lights is **\$62,428** and **2.9%** of the Total Cost.

Annual Energy Consumption by Account Type



	Name	Address	Tariff	Annual Electric Usage (kWh)	Annual Electric Cost (\$)	Electric Cost (\$)/kWh
1	Area Lighting	TBD	AL-2	890,834	\$61,725	\$0.08
2	Area Lighting	TBD	OL-1	2,271	\$703	\$0.31

Table 5: Outdoor & Park Lights

6. Methodology

Data Sources

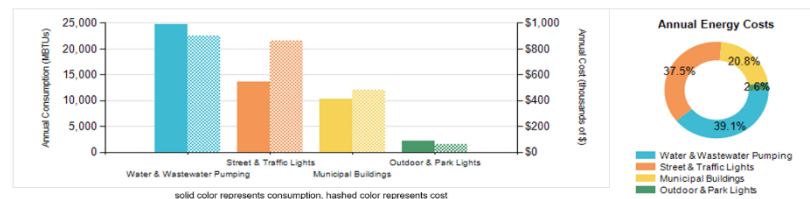
- Building information, energy usage and cost data used in this analysis were derived from: [Utility consumption billing data provided by agency staff.](#)
- Utility consumption billing data used in this analysis were derived from [SCE electric tariffs](#)
- For more information about the utility tariffs 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>
 - [SCE Electric Tariff: For more information about Southern California Edison tariffs](#); <https://www.sce.com/wps/portal/home/regulatory/tariff-books/rates-pricing-choices>
- All [electricity](#) results were based on usage during period [January 1, 2015 – January 1, 2016.](#)
- 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 and energy intensity, energy usage and cost values were aggregated by summing the average daily 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}

Total Energy Portfolio

- Total Energy Portfolio data represents an analysis of each agency facility type annual energy costs, annual electric cost, annual electric 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:
 - Street & Traffic Lights
 - Buildings
 - Outdoor & Parks Lights

2. Total Energy Portfolio

Your Total Annual Energy Cost is **\$2,305,500**



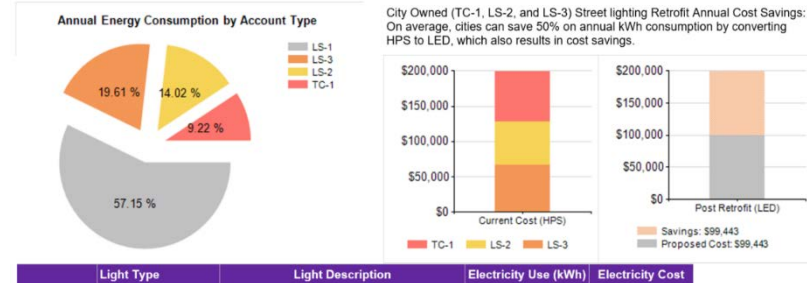
City Energy Use	Annual Electric Cost	Annual Electric Consumption (kWh)	Annual Electricity Cost (\$/kWh)
Water & Wastewater Pumping	\$900,324.96	7,244,624	\$0.14
Street & Traffic Lights	\$864,254.72	3,982,741	\$0.22
Municipal Buildings	\$480,585.21	3,012,566	\$0.18
Outdoor & Park Lights	\$60,335.27	653,789	\$0.14

Table 1: Total Energy Portfolio

Street & Traffic Lights

- Street & traffic light data represents an analysis of annual energy costs, annual electric cost, 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

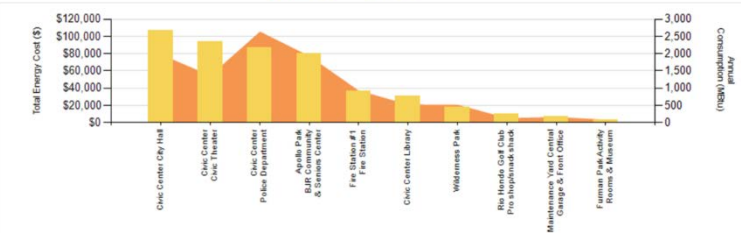
Your Annual Energy Cost for Street & Traffic Lights is **\$864,255** and **37.5%** of the Total Cost.



Building Summary

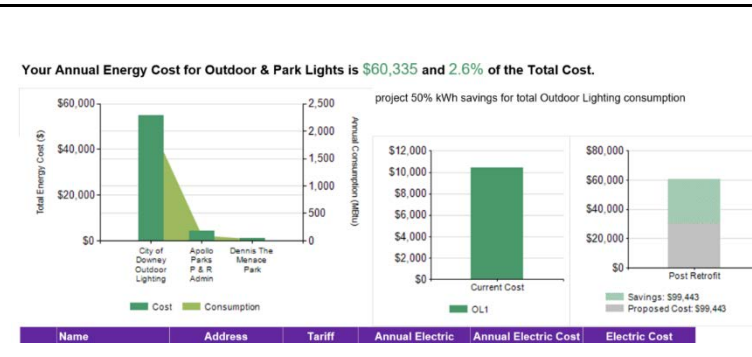
- Building summary data represents an analysis of the top ten highest energy consuming agency buildings annual energy costs, annual electric cost, annual energy consumption (kWh), GHG Emissions, and total annual energy costs based on MBtus.
- [CalEnviroScreen is a mapping tool](#) that helps identify California communities that are most affected by many sources of pollution, and where people are often especially vulnerable to pollution's effects.
- CalEnviroScreen uses environmental, health, and socioeconomic information to produce scores for every census tract in the state.
- The scores are mapped so that different communities can be compared. An area with a high score is one that experiences a much higher pollution burden than areas with low scores.
- CalEnviroScreen ranks communities based on data that are available from state and federal government sources.

Your Annual Energy Cost for Buildings is **\$480,585** and **20.8%** of the Total Cost.



Outdoor & Park Lights

- Outdoor & park lights data represents an analysis of annual energy costs, annual electric cost, 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:

- Electric
 - LS-1
 - 43558927
 - 44673521
 - 4518840
 - LS-3
 - 20494212
 - 4527315
 - 4527313
 - 27980954
 - 22806233
 - 11040367
 - 42273891
 - 44709900
 - 43469608
 - 10550985
 - 45873330
 - Traffic

- 1116946
- 45873346
- 20494180
- 44709886
- 10767479
- 1116936
- 119001

Endnotes

¹Corporate Responsibility Report. (2015). In *Southern California Edison*. Retrieved from https://www.sce.com/wps/wcm/connect/c0fcee5-e04a-4287-8301-8e66e3e5fbac/2014_Corporate+Responsibility+Report_FINAL+single-page.pdf?MOD=AJPERES&ContentCache=NONE

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

³Based on The Energy Network previous project estimates.