

Comparative Energy Analysis Report



Prepared for
Colton Joint Unified School District

Prepared by
The Energy Coalition

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

Date
[Date]

Table of Contents

1. Overview
2. Total Energy Portfolio
3. Outdoor & Park Lights
4. Agency Buildings

Appendix A - Methodology

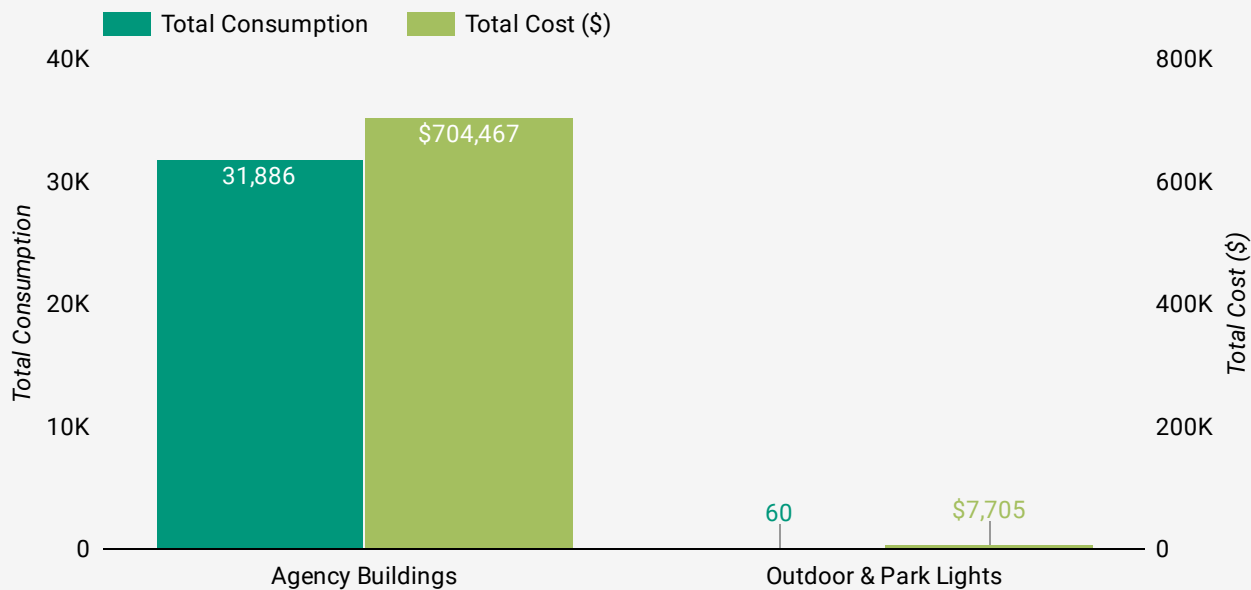
Overview

This report summarizes energy consumption and energy cost by sector (Agency Buildings and Outdoor & Park Lights) for Colton Joint Unified School District, referred to as "Agency" herein. This analysis uses energy billing data provided by the Utility and Agency to help identify opportunities for energy efficiency improvements across sectors. Once opportunities are identified, a more detailed screening of those facilities can be performed to further vet potential energy and cost-saving projects.

This report was created by The Energy Coalition on behalf of the Southern California Regional Network (www.socalren.org). Any questions about this report can be directed to your assigned Project Manager, Sumin Sohn at ssohn@energycoalition.org.

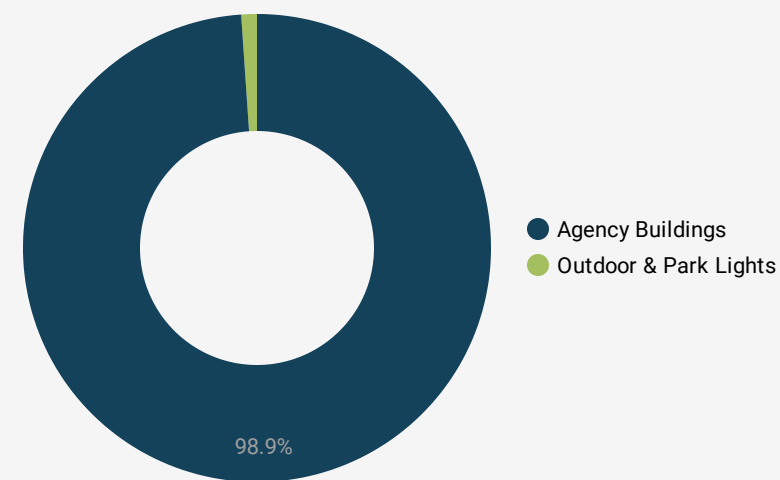
Total Energy Portfolio (Annual)

Annual Total Energy Consumption & Cost by Building Type

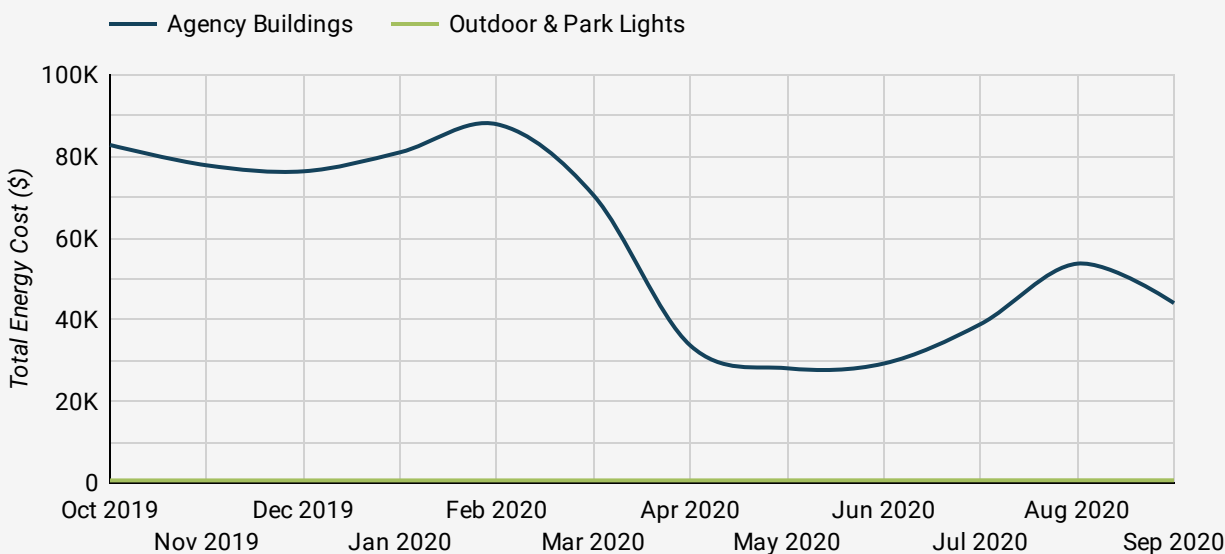


Total Energy Cost
\$712,169

% of Total Annual Energy Cost by Agency Energy Use



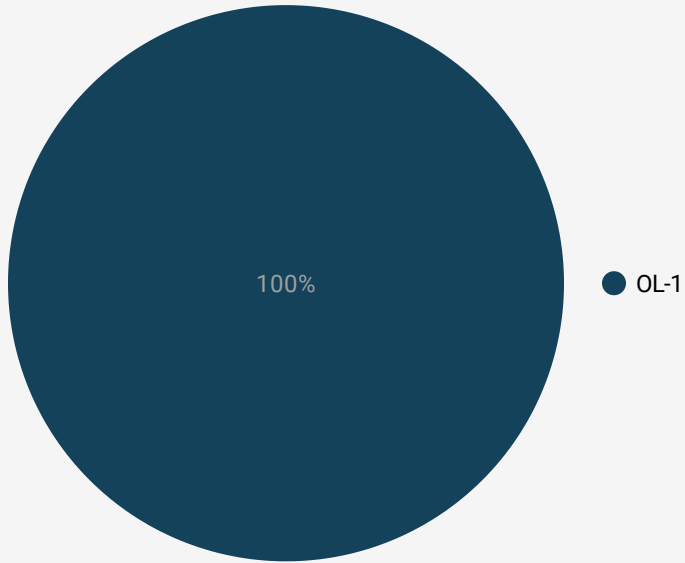
Monthly Cost by Energy Use



Agency Energy Use	Electric Consumption (kWh) ▾	Electric Cost	Gas Consumption (Therms)	Gas Cost	Total Energy Consumption (MMBTU)	Total Energy Cost	Energy Cost % of Total	GHG Emissions (lbs CO2)
Agency Buildings	4.4M	\$557.61K	169.1K	\$146.86K	31.9K	98.92%	99%	4.3M
Outdoor & Park Lights	22.7K	\$7.71K	0	\$0	77.5	1.08%	1%	11.8K
Grand total	4.4M	\$565.31K	169.1K	\$146.86K	31.9K	100%	100%	4.3M



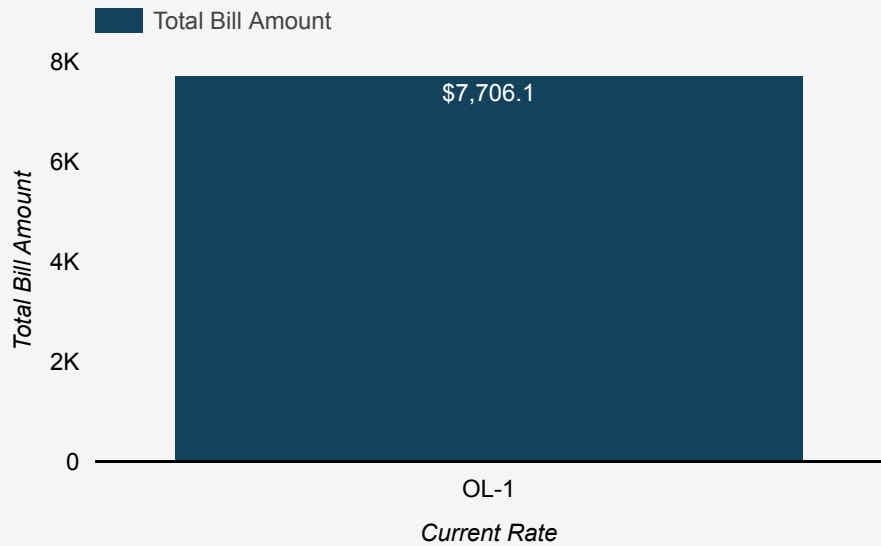
% of Annual Energy Cost by Account Type



Total Outdoor & Park Lights Energy Cost

\$7,706

Total Annual Energy Cost by Account Type



Post-Retrofit Cost Savings

\$3.85K

Post-Retrofit Energy Cost

\$3.85K

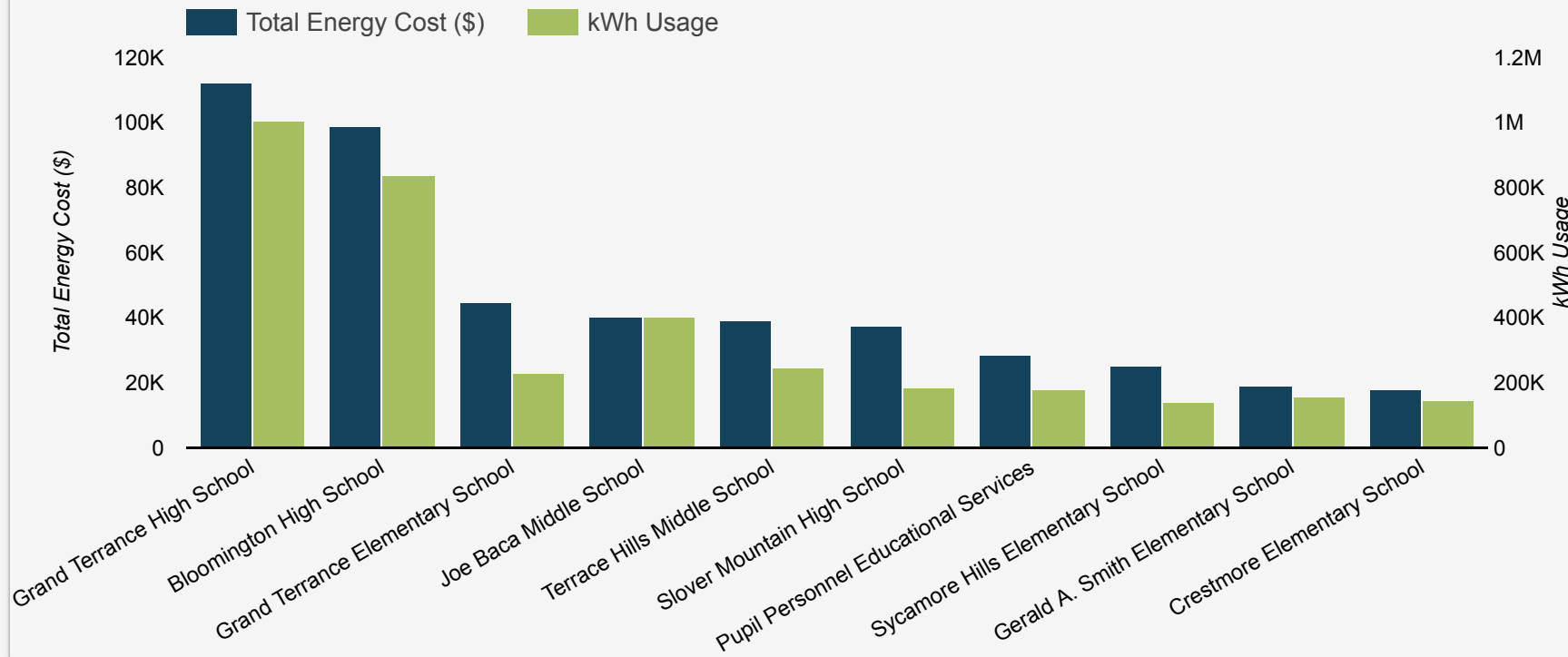
Assumption - agencies can save 50% on annual outdoor & park light kWh consumption by converting HPS to LED.

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

Building Name	Current Rate	kWh Consumption ▾	Electric Cost	Electric Rate (\$/kWh)
Area Lighting	OL-1	22.7K	\$7.71K	\$0.34
	Grand total	22.7K	\$7.71K	\$0.34

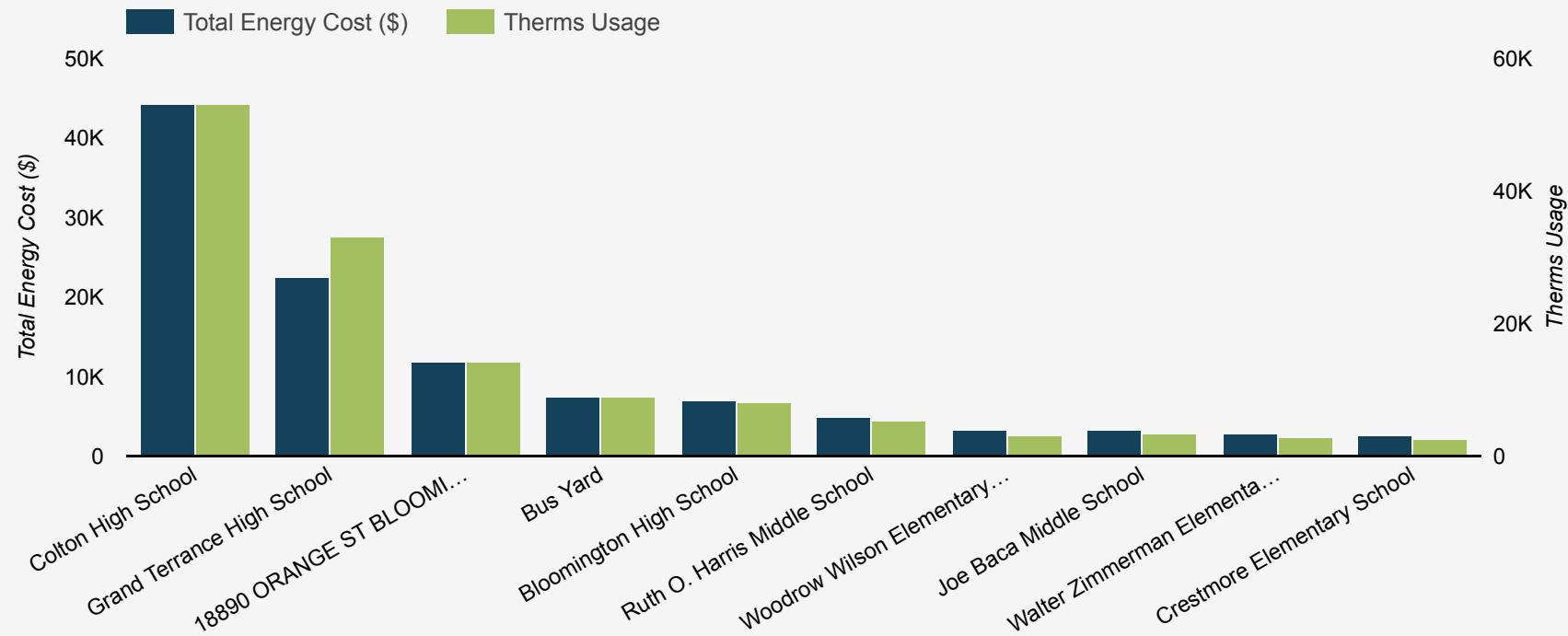


Total Annual Electric Cost and Consumption by Site



Total Annual Energy Cost for Buildings
\$704,463

Total Annual Natural Gas Cost and Consumption by Site



Agency Buildings (Cont'd)

Building Summary									
	Site Name	Address	Disadvantaged Community	kWh Consumption	Electric Cost	Electric Rate (\$/kWh)	Gas Consumption	Gas Cost	Gas Rate (\$/therm)
1.	Grand Terrace High School	21810 MAIN ST GRAND TERRACE	yes	1M	\$112.04K	\$0.11	33K	\$22.56K	\$0.68
2.	Colton High School	777 W VALLEY BLVD COLTON	yes	0	\$0	null	53.1K	\$44.19K	\$0.83
3.	Bloomington High School	10750 LAUREL AVE BLOOMINGTON	yes	838.6K	\$98.98K	\$0.12	8.1K	\$6.9K	\$0.85
4.	Joe Baca Middle School	1640 S LILAC AVE RIALTO	yes	403.9K	\$40.33K	\$0.1	3.3K	\$3.21K	\$0.98
5.	18890 ORANGE ST BLOOMINGTON	18890 ORANGE ST BLOOMINGTON	yes	0	\$0	null	14.3K	\$11.7K	\$0.82
6.	Ruth O. Harris Middle School	11150 ALDER AVE BLOOMINGTON	yes	175.7K	\$14.31K	\$0.08	5.3K	\$4.76K	\$0.9
7.	Bus Yard	451 N 3RD ST COLTON	yes	0	\$0	null	8.8K	\$7.36K	\$0.83
8.	Terrace Hills Middle School	30 DEBERRY-MOUNT VERNON GRAND TERRACE	yes	245K	\$38.91K	\$0.16	0	\$0	null
9.	Grand Terrace Elementary School	12066 VIVIENDA AVE GRAND TERRACE	yes	228.7K	\$44.39K	\$0.19	0	\$0	null
10.	Gerald A. Smith Elementary School	9551 LINDEN AVE BLOOMINGTON	yes	156.9K	\$19.22K	\$0.12	1.3K	\$1.55K	\$1.15

Annual Energy Consumption Comparison									
	Site Name	Address	kWh Consumption	% Δ	Gas Consumption	% Δ	MMBTU	% Δ	
1.	Grand Terrace High School	21810 MAIN ST GRAND TERRACE	1M	-28.5% ↓	33K	-37.2% ↓	6.7K	-33.1% ↓	
2.	Colton High School	777 W VALLEY BLVD COLTON	0	-	53.1K	-57.3% ↓	5.3K	-57.3% ↓	
3.	Bloomington High School	10750 LAUREL AVE BLOOMINGTON	838.6K	-28.1% ↓	8.1K	-17.9% ↓	3.7K	-26.1% ↓	
4.	Joe Baca Middle School	1640 S LILAC AVE RIALTO	403.9K	-21.2% ↓	3.3K	-49.9% ↓	1.7K	-29.0% ↓	
5.	18890 ORANGE ST BLOOMINGTON	18890 ORANGE ST BLOOMINGTON	0	-	14.3K	-51.8% ↓	1.4K	-51.8% ↓	
6.	Ruth O. Harris Middle School	11150 ALDER AVE BLOOMINGTON	175.7K	-35.5% ↓	5.3K	-0.7% ↓	1.1K	-22.8% ↓	
7.	Bus Yard	451 N 3RD ST COLTON	0	-	8.8K	-57.3% ↓	884.8	-57.3% ↓	
8.	Terrace Hills Middle School	30 DEBERRY-MOUNT VERNON GRAND TERRACE	245K	-29.2% ↓	0	-	835.8	-29.2% ↓	
9.	Grand Terrace Elementary School	12066 VIVIENDA AVE GRAND TERRACE	228.7K	-27.3% ↓	0	-	780.4	-27.3% ↓	
10.	Gerald A. Smith Elementary School	9551 LINDEN AVE BLOOMINGTON	156.9K	-21.8% ↓	1.3K	-40.3% ↓	670.2	-26.4% ↓	

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 and SCG gas tariffs.
- For more information about the utility tariffs included in this analysis refer to:
 - SCG Gas Tariffs: <https://www.socalgas.com/regulatory/tariffs/tariffs-rates.shtml>
 - SCE Electric Tariffs: <https://www.sce.com/wps/portal/home/regulatory/tariff-books/rates-pricing-choices>
- Analysis period for electricity and gas results were based on usage during the period October 1, 2019 - September 30, 2020.
- 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].

Total Energy Portfolio

- Total Energy Portfolio data represents an analysis of each agency facility type's annual energy costs, annual energy consumption (kWh), GHG Emissions, and total annual energy costs for agency facility types based on MMBTUs.
- The following agency assets are included in the Total Energy Portfolio:

Buildings
Outdoor & Parks Lights

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 MMBTUs per SCE outdoor and park lighting tariff type.
- On average, agencies can save 50% on annual kWh consumption by converting HPS to LED, which also results in cost savings [3].

Agency Buildings

- Building summary data includes the following metrics for the top ten highest energy-consuming agency buildings' (total annual energy costs): annual energy costs and annual energy consumption (kWh and therms).
- Annual comparison data includes the following metrics for the agency buildings with the greatest change (absolute value) in annual energy consumption (MMBTU) from the baseline period to the analysis period: annual energy costs, annual energy consumption (kWh and therms).
- Baseline period for electricity and gas results were based on usage during October 1, 2018 - September 30, 2019.
- Analysis period for electricity and gas results were based on usage during October 1, 2019 - September 30, 2020.

Data Quality

Multiple service accounts were associated with the below addresses and were therefore aggregated for the purposes of analysis:

- 10009 Spruce Ave
- 10750 Laurel Ave
- 1640 Lilac Ave
- 11036 Mahogany Dr
- 11645 Elm Ave
- 777 W Valley Blvd
- 18040 San Bernadino Ave
- 710 S 8th St
- 15920 Village Dr
- 18870 Jurupa Ave
- 10435 Cedar Ave
- 18890 Orange St
- 9551 Linden Ave
- 11150 Alder Ave
- 22731 Grand Terrace Rd
- 21810 Main St
- 18829 Orange St

End Notes

[1] Corporate Responsibility Report. (2015). In Southern California Edison. Retrieved from https://www.sce.com/wps/wcm/connect/c0fceef5-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

[3] Based on SoCalREN previous project estimates.