

Comparative Energy Analysis Report



Prepared for
City of Irwindale

Prepared by
The Energy Coalition

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

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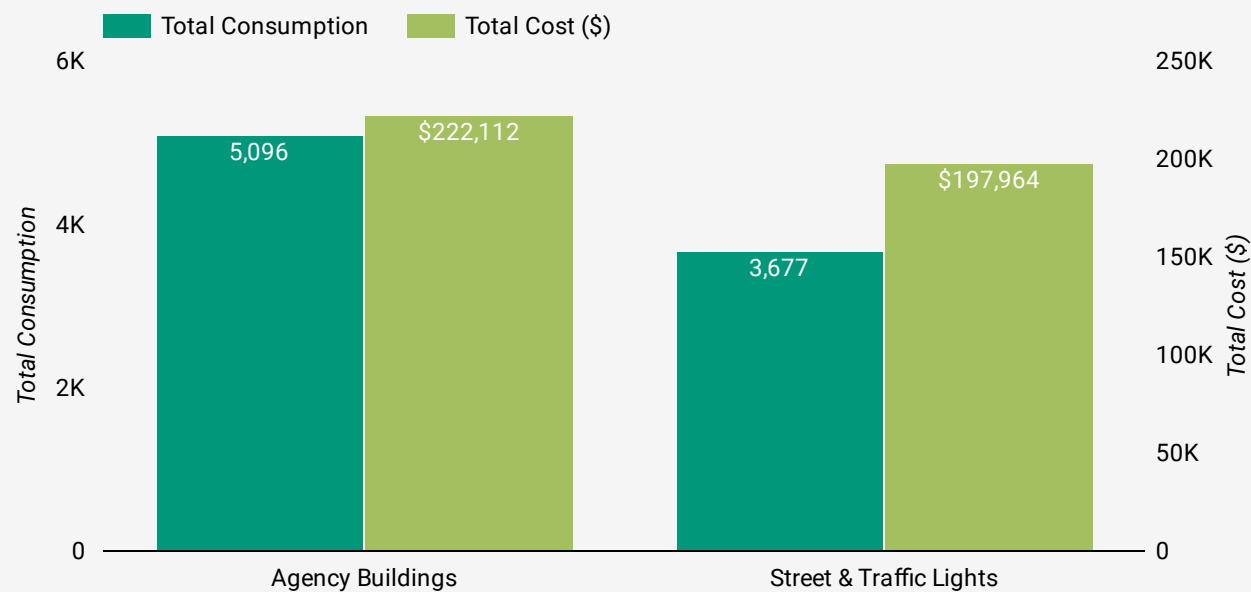
Overview

This report summarizes energy consumption and energy cost by sector (Street & Traffic Lights, Agency Buildings, Water Pumping, and Outdoor & Park Lights) for the City of Irwindale, 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, Casey Novell at cnovell@energycoalition.org.

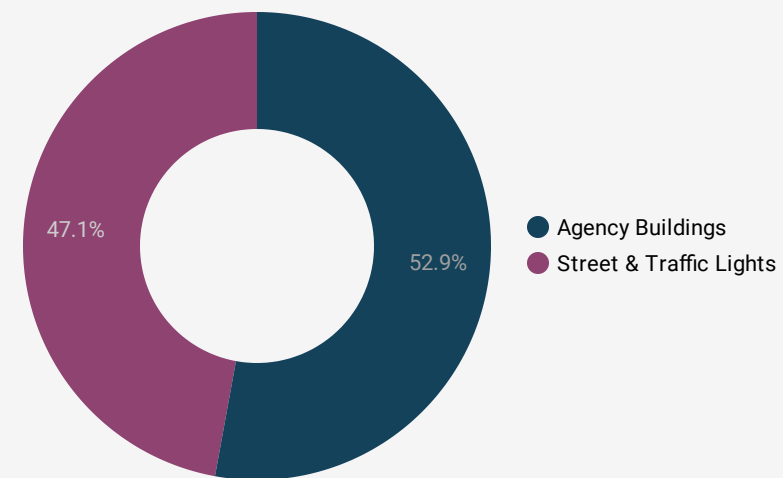
Total Energy Portfolio (Annual)

Annual Total Energy Consumption & Cost by Building Type

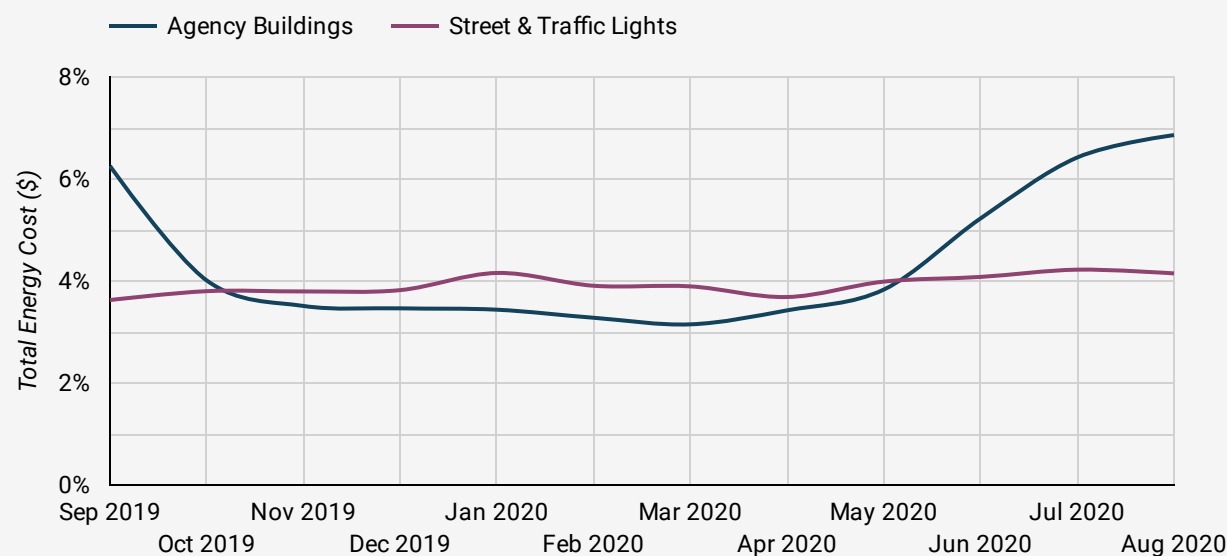


Total Energy Cost
\$420,088

% of Total Annual Energy Cost by Agency Energy Use



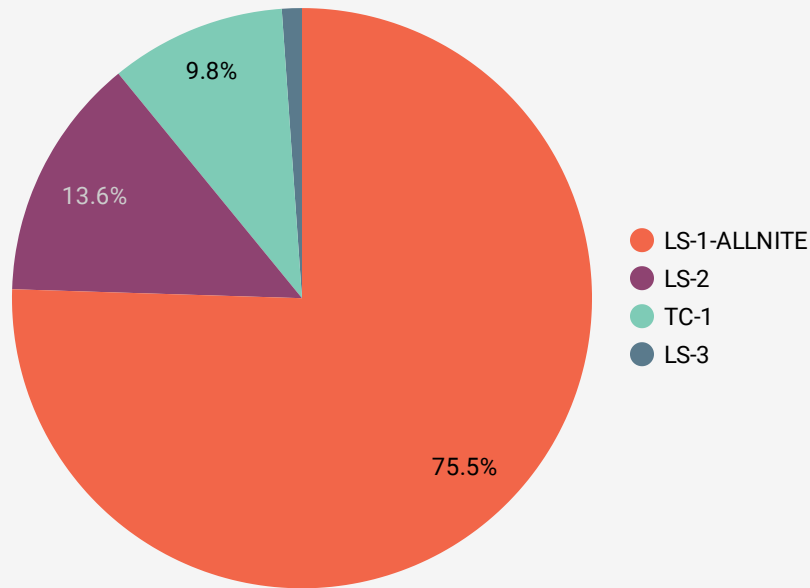
Monthly Cost by Energy Use



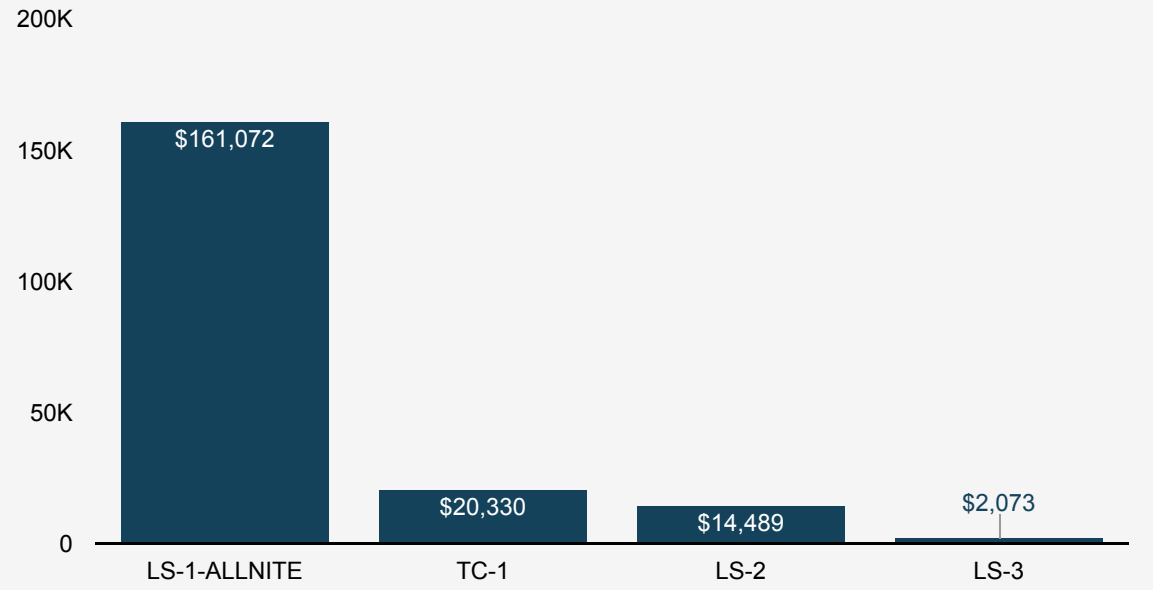
Agency Energy Use	Electric Consumption (kWh)	Electric Cost	Gas Consumption (Therms)	Gas Cost	Total Energy Consumption (MMBTU)	Total Energy Cost	Energy Cost % of Total	GHG Emissions (lbs CO2)
Agency Buildings	1.2M	\$210.32K	10.9K	\$11.79K	5.1K	52.87%	53%	1.3M
Street & Traffic Lights	1.1M	\$197.97K	0	\$0	3.7K	47.13%	47%	1M
Grand total	2.2M	\$408.29K	10.9K	\$11.79K	8.8K	100%	100%	2.3M

Street & Traffic Lights

% of Annual Energy Cost by Account Type



Total Annual Energy Cost by Account Type



Total Street & Traffic Lights Energy Cost

\$197.97K

Post-Retrofit Cost Savings

\$18.45K

Post-Retrofit Energy Cost

\$179.52K

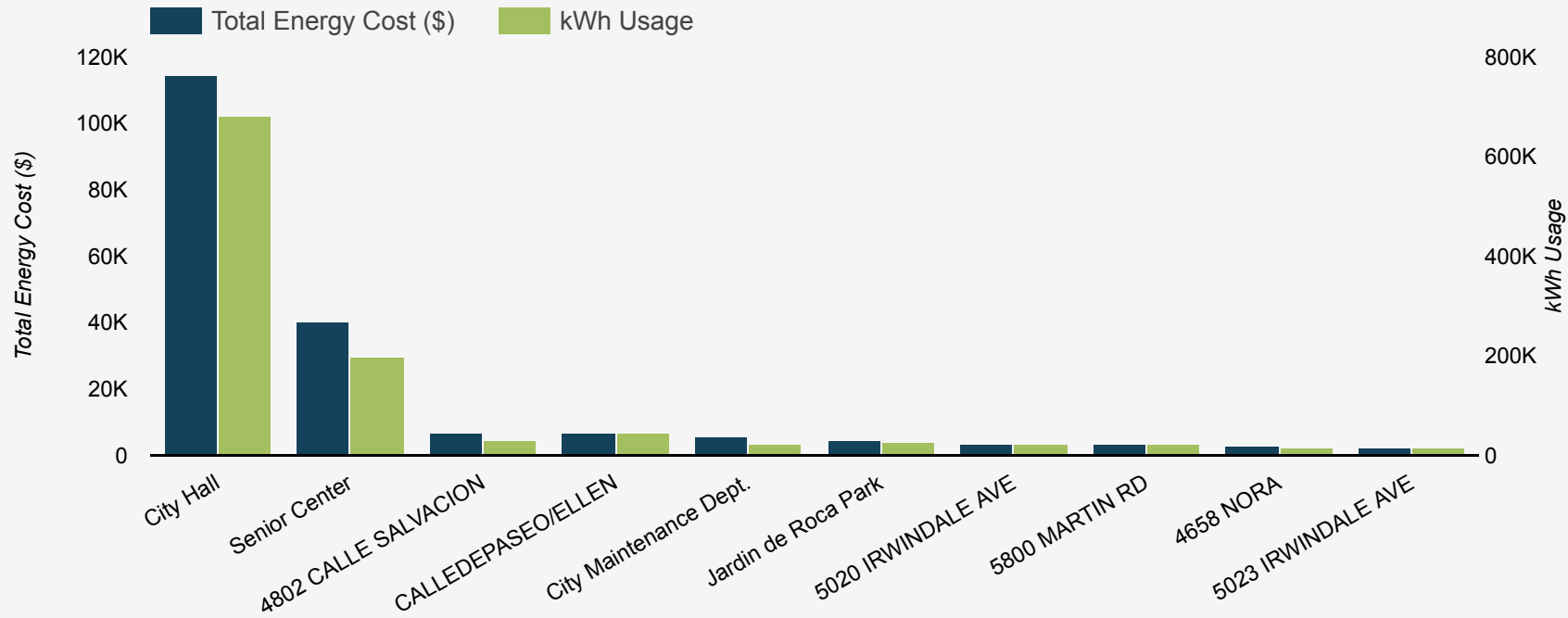
Current Rate	Rate Description	Electric Consumption (kWh) ▾	Electric Cost	Electric Rate (\$/kWh)
LS-1-ALLNITE	Street Lights (SCE Owned)	809.8K	81.36%	\$0.2
LS-2	Street Lights (Agency Owned - unmetered)	145.8K	7.32%	\$0.1
TC-1	Traffic Signal Lights (Agency Owned)	105.1K	10.27%	\$0.19
LS-3	Street Lights (Agency Owned - metered)	12K	1.05%	\$0.17
	Grand total	1.1M	100%	\$0.18

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.

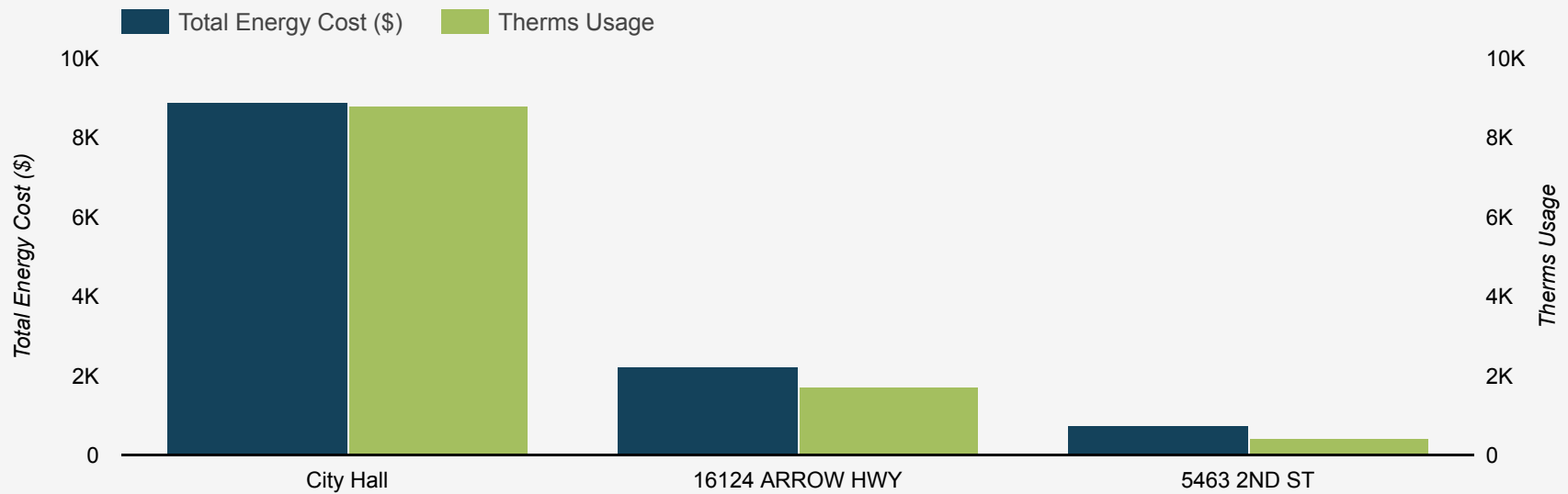


Total Annual Electric Cost and Consumption by Site



Total Annual Energy Cost for Buildings
\$222,115

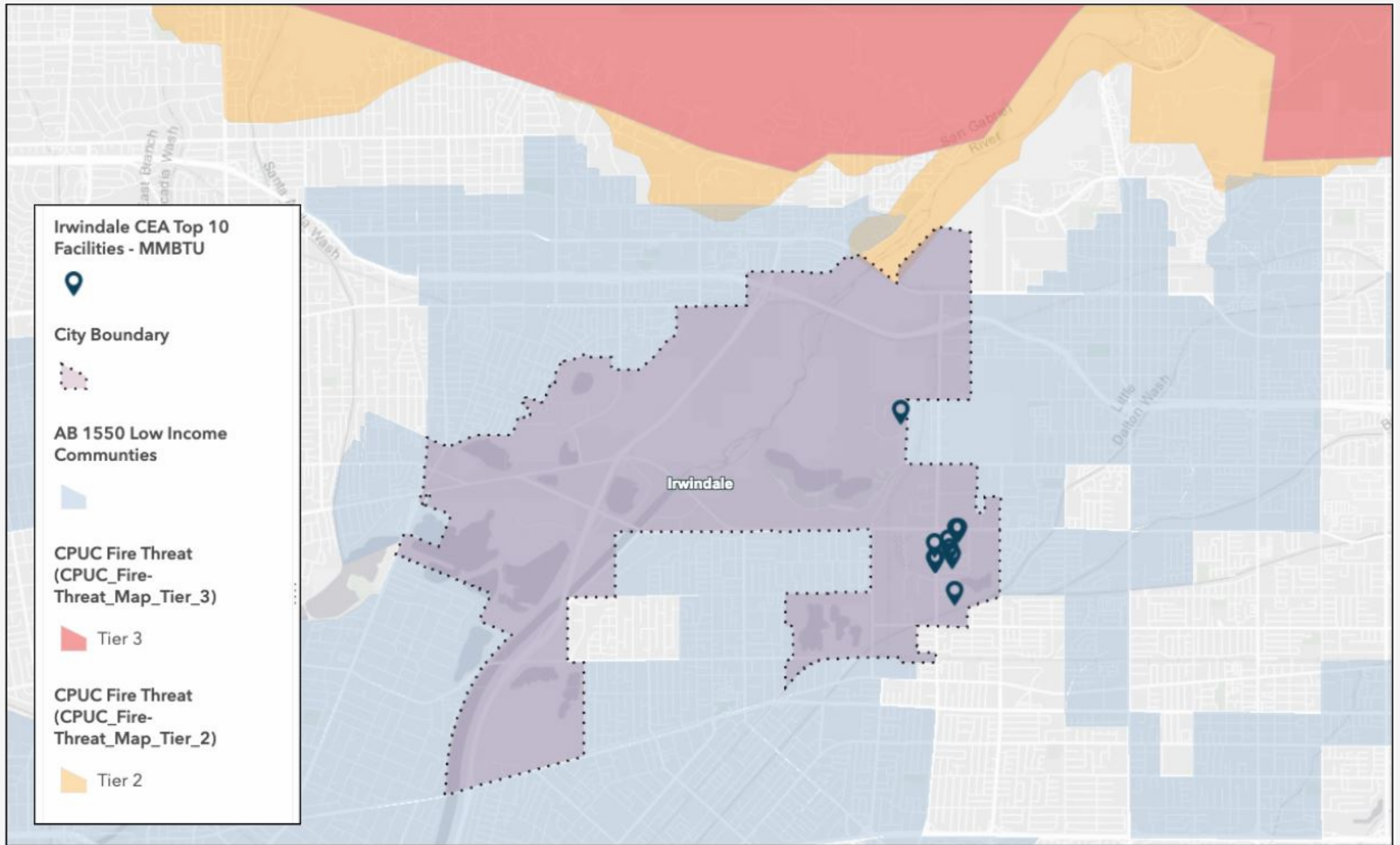
Total Annual Natural Gas Cost and Consumption by Site



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.	City Hall	5050 IRWINDALE AVE IRWINDALE	yes	681.4K	\$114.68K	\$0.17	8.8K	\$8.87K	\$1.01
2.	Senior Center	16116 ARROW HWY IRWINDALE	yes	196.2K	\$40.02K	\$0.2	0	\$0	null
3.	16124 ARROW HWY	16124 ARROW HWY IRWINDALE	yes	0	\$0	null	1.7K	\$2.21K	\$1.31
4.	CALLEDEPASEO/ELLEN	CALLEDEPASEO/ELLEN IRWINDALE	yes	43.4K	\$6.49K	\$0.15	0	\$0	null
5.	4802 CALLE SALVACION	4802 CALLE SALVACION IRWINDALE	yes	30.3K	\$6.96K	\$0.23	0	\$0	null
6.	Jardin de Roca Park	5051 1/2 IRWINDALE AVE IRWINDALE	yes	25K	\$4.4K	\$0.18	0	\$0	null
7.	5020 IRWINDALE AVE	5020 IRWINDALE AVE IRWINDALE	yes	24.1K	\$3.54K	\$0.15	0	\$0	null
8.	5800 MARTIN RD	5800 MARTIN RD IRWINDALE	yes	24K	\$3.53K	\$0.15	0	\$0	null
9.	City Maintenance Dept.	16034 CALLE DEL NORTE IRWINDALE	yes	23.1K	\$5.61K	\$0.24	0	\$0	null
10.	5023 IRWINDALE AVE	5023 IRWINDALE AVE IRWINDALE	yes	15.2K	\$2.35K	\$0.15	0	\$0	null

Annual Energy Consumption Comparison									
	Site Name	Address	kWh Consumption	% Δ	Gas Consumption	% Δ	MMBTU	% Δ	
1.	City Hall	5050 IRWINDALE AVE IRWINDALE	681.4K	-3.8% ↓	8.8K	-31.8% ↓	3.2K	-13.6% ↓	
2.	Senior Center	16116 ARROW HWY IRWINDALE	196.2K	-7.9% ↓	0	-	669.5	-7.9% ↓	
3.	16124 ARROW HWY	16124 ARROW HWY IRWINDALE	0	-	1.7K	-17.5% ↓	169	-17.5% ↓	
4.	CALLEDEPASEO/ELLEN	CALLEDEPASEO/ELLEN IRWINDALE	43.4K	-8.2% ↓	0	-	148	-8.2% ↓	
5.	4802 CALLE SALVACION	4802 CALLE SALVACION IRWINDALE	30.3K	8.4% ↑	0	-	103.5	8.4% ↑	
6.	Jardin de Roca Park	5051 1/2 IRWINDALE AVE IRWINDALE	25K	-3.0% ↓	0	-	85.3	-3.0% ↓	
7.	5020 IRWINDALE AVE	5020 IRWINDALE AVE IRWINDALE	24.1K	7.1% ↑	0	-	82.3	7.1% ↑	
8.	5800 MARTIN RD	5800 MARTIN RD IRWINDALE	24K	6.1% ↑	0	-	81.8	6.1% ↑	
9.	City Maintenance Dept.	16034 CALLE DEL NORTE IRWINDALE	23.1K	-38.6% ↓	0	-	78.9	-38.6% ↓	
10.	5023 IRWINDALE AVE	5023 IRWINDALE AVE IRWINDALE	15.2K	7.9% ↑	0	-	51.7	7.9% ↑	



* Please note that data in this section comes directly from the Office of Environmental Health Hazard Assessment (OEHHA) CalEnviroScreen 3.0 tool. For more information, please visit <https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30>

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 September 1, 2019 - August 31, 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 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:
 - Street & Traffic Lights
 - Buildings

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 HOPS 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].

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 from September 1, 2018 - August 31, 2019.
- Analysis period for electricity and gas results were based on usage from September 1, 2019 - August 31, 2020.

Data Quality

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

- 4901 Rivergrade Rd, Meter 222010-128503
- 1 Live Oak United Con
- Irwindale / 210 FY, Meter 211010-022069
- 16101 Foothill Blvd
- LW Azusa / SN Gab RV
- 6368 N Irwindale Ave

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

- 5050 Irwindale Ave
- 16116 Arrow Hwy
- 6350 Irwindale Ave
- 4901 Rivergrade Rd

End Notes

[1] Corporate Responsibility Report. (2015). In Southern California Edison. Retrieved from https://www.sce.com/wps/wcm/connect/c0fceed5-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.