

Comparative Energy Analysis Report



Prepared for
Irvine Unified School District

Prepared by
The Energy Coalition

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

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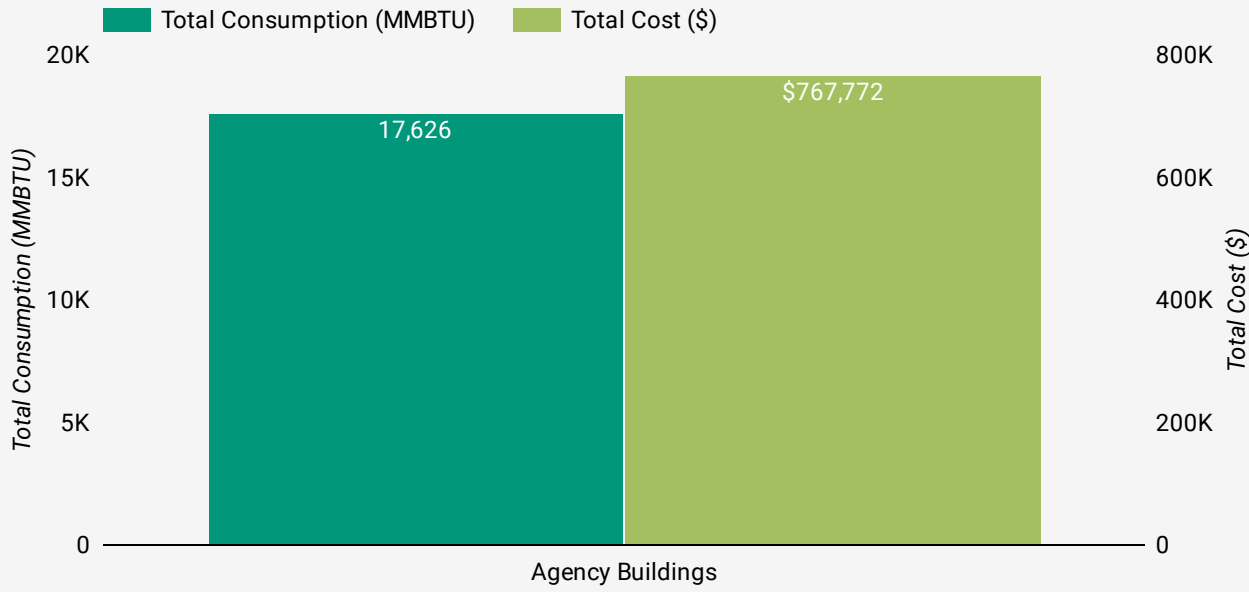
Overview

This report summarizes energy consumption and energy cost by 10 selected Agency Buildings for the Irvine 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 these agency buildings. 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.

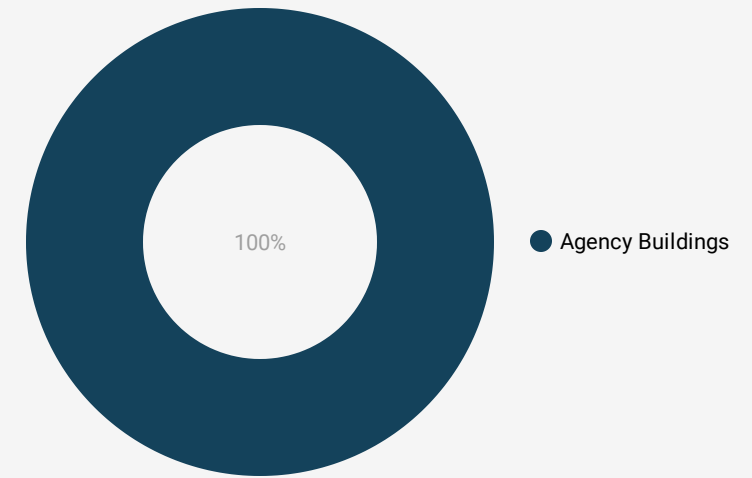
Total Energy Portfolio (Annual)

Annual Total Energy Consumption & Cost by Building Type

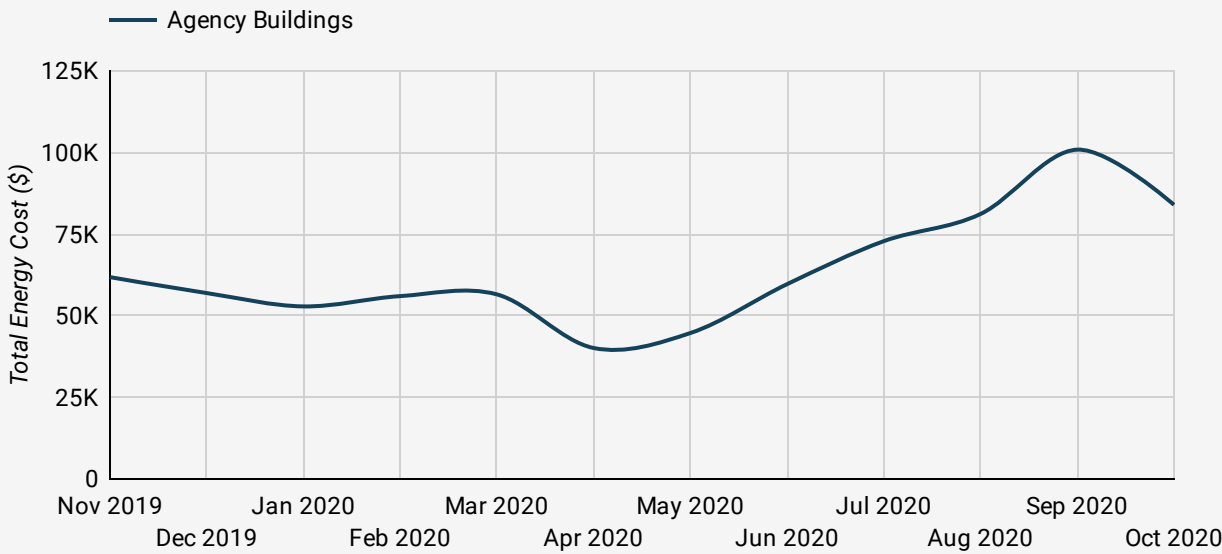


Total Energy Cost
\$767,774

% of Total Annual Energy Cost by Agency Energy Use



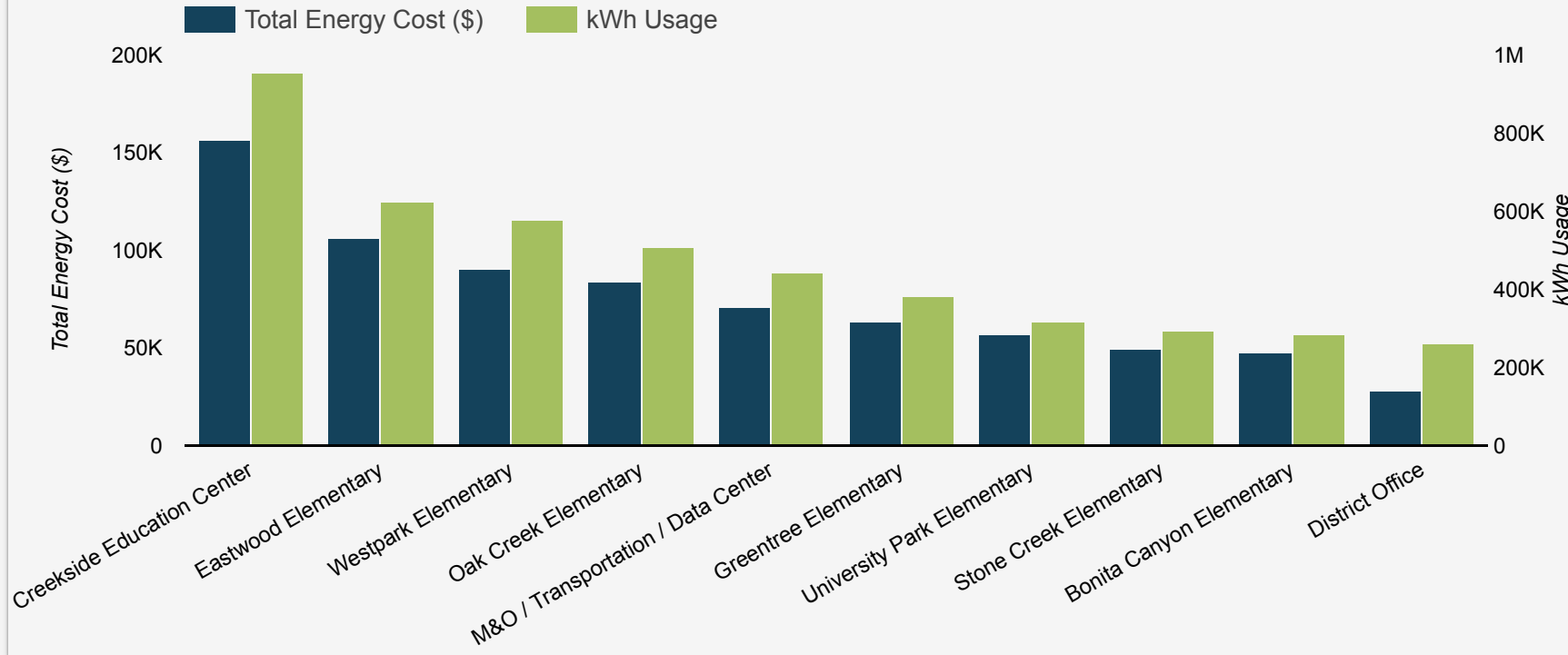
Monthly Cost by Energy Use



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	4.6M	\$751.5K	18.2K	\$16.27K	17.6K	\$767.77K	100%	2.6M
Grand total	4.6M	\$751.5K	18.2K	\$16.27K	17.6K	\$767.77K	100%	2.6M



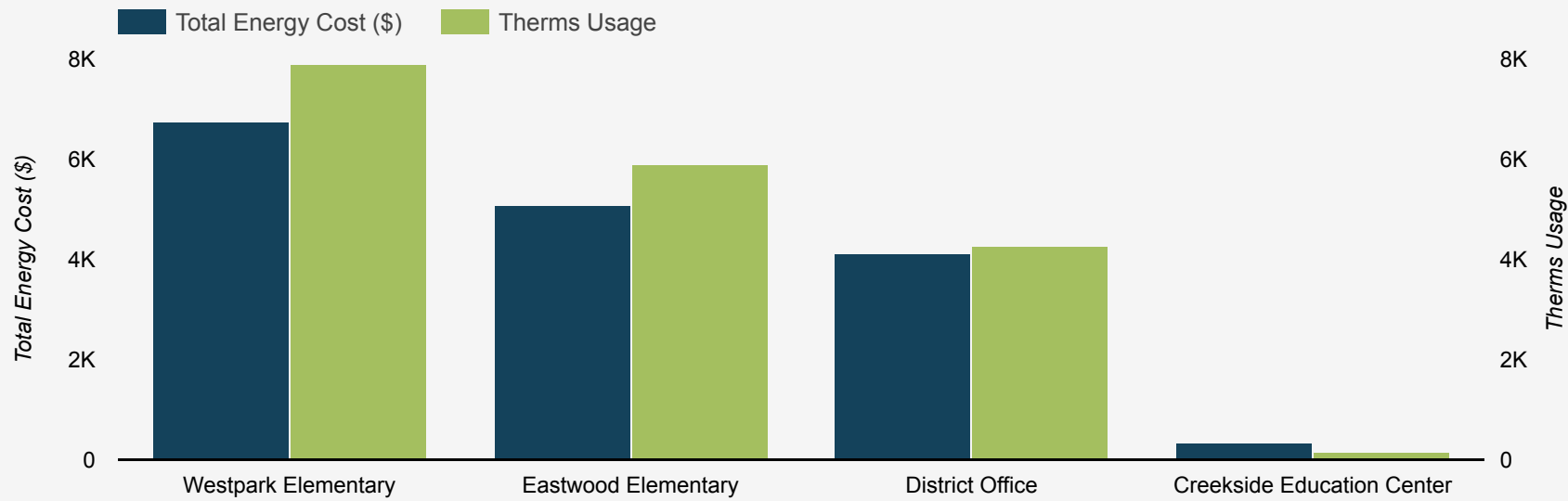
Total Annual Electric Cost and Consumption by Site



Total Annual Energy Cost for Buildings

\$767,774

Total Annual Natural Gas Cost and Consumption by Site



Agency Buildings (Cont'd)

Building Summary									
	Site Name	Service Street Address	Disadvantaged Community	Electricity Consumption (kWh)	Electric Cost	Electric Rate (\$/kWh)	Gas Consumption (therms)	Gas Cost	Gas Rate (\$/therm)
1.	Creekside Education Center	3387 BARRANCA PKWY	no	954.2K	\$156.33K	\$0.16	161	\$342.59	\$2.13
2.	Westpark Elementary	25 SAN CARLO	no	574.7K	\$90.6K	\$0.16	7.9K	\$6.76K	\$0.86
3.	Eastwood Elementary	99 MEANDER	no	621.1K	\$105.91K	\$0.17	5.9K	\$5.07K	\$0.86
4.	Oak Creek Elementary	1 DOVECREEK	yes	508.5K	\$83.79K	\$0.16	0	\$0	null
5.	M&O / Transportation / Data Center	100 NIGHTMIST	yes	440.9K	\$70.55K	\$0.16	0	\$0	null
6.	District Office	5050 BARRANCA PKWY	no	261.8K	\$28.3K	\$0.11	4.3K	\$4.1K	\$0.96
7.	Greentree Elementary	4200 MANZANITA	no	380.7K	\$63.1K	\$0.17	0	\$0	null
8.	University Park Elementary	4572 SANDBURG WAY	no	318.3K	\$56.38K	\$0.18	0	\$0	null
9.	Stone Creek Elementary	2 STONE CRK S	no	291.3K	\$48.84K	\$0.17	0	\$0	null
10.	Bonita Canyon Elementary	1 SUNDANCE	no	282.6K	\$47.7K	\$0.17	0	\$0	null

Annual Energy Consumption Comparison									
	Site Name	Service Street Address		kWh Consumption	% Δ	Gas Consumption	% Δ	MMBTU	% Δ
1.	Creekside Education Center	3387 BARRANCA PKWY		954.2K	-0.9% ↓	161	-68.2% ↓	3.3K	-1.9% ↓
2.	Westpark Elementary	25 SAN CARLO		574.7K	-4.3% ↓	7.9K	314.8% ↑	2.8K	22.9% ↑
3.	Eastwood Elementary	99 MEANDER		621.1K	40.6% ↑	5.9K	36.1% ↑	2.7K	39.6% ↑
4.	Oak Creek Elementary	1 DOVECREEK		508.5K	-15.8% ↓	0	-	1.7K	-15.8% ↓
5.	M&O / Transportation / Data Center	100 NIGHTMIST		440.9K	12.8% ↑	0	-	1.5K	12.8% ↑
6.	District Office	5050 BARRANCA PKWY		261.8K	-4.7% ↓	4.3K	-39.3% ↓	1.3K	-19.5% ↓
7.	Greentree Elementary	4200 MANZANITA		380.7K	-14.6% ↓	0	-	1.3K	-14.6% ↓
8.	University Park Elementary	4572 SANDBURG WAY		318.3K	-13.0% ↓	0	-	1.1K	-13.0% ↓
9.	Stone Creek Elementary	2 STONE CRK S		291.3K	-7.5% ↓	0	-	994.1	-7.5% ↓
10.	Bonita Canyon Elementary	1 SUNDANCE		282.6K	-8.6% ↓	0	-	964.1	-8.6% ↓

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 November 1, 2019 - October 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.
- This report only includes 10 agency sites selected by the agency.

Agency Buildings

- Building summary data includes the following metrics for the ten sites selected by the agency: 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 was based on usage from November 1, 2018 - October 31, 2019.
- Analysis period for electricity and gas results was based on usage from November 1, 2019 - October 31, 2020.

Data Quality

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

- 3387 Barranca Pkwy
- 99 Meander
- 4572 Sandburg Way
- 100 Nightmist
- 25 San Carlo
- 5050 Barranca Pkwy

End Notes

[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

[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.