



# Comparative Energy Analysis Report

Prepared for  
**Port of Long Beach**

Prepared by  
**The Energy Coalition**

On Behalf of  
**The Southern California Regional Energy Network, Public Agency Project Delivery Programs**

Date  
**5/12/2020**

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## 1. Overview

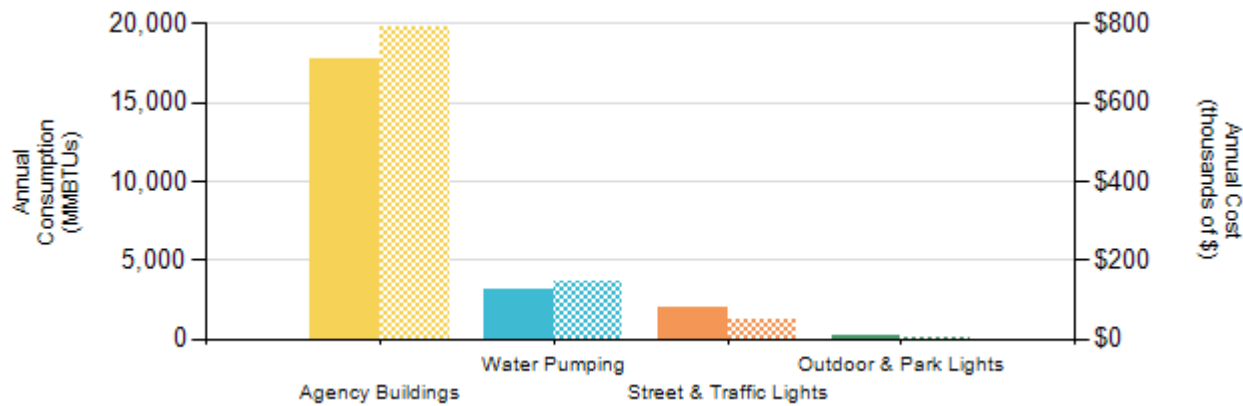
This report is intended to provide a framework for the Port of Long Beach, referred to as “Agency” herein, to identify inefficient facilities and infrastructure and prioritize further investigation and energy efficiency retrofit work. This analysis uses only energy billing data provided by the Agency 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.org](http://www.socalren.org)). Any questions about this report can be directed to your assigned Project Manager, Shawn Thompson, at [sthompson@energycoalition.org](mailto:sthompson@energycoalition.org).

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## 2. Total Energy Portfolio

Your Total Annual Energy Cost is **\$994,351**



Key: Solid color represents consumption, hashed color represents cost

Annual Energy Costs

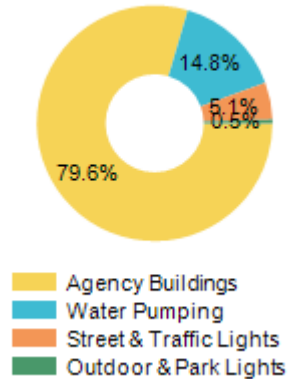


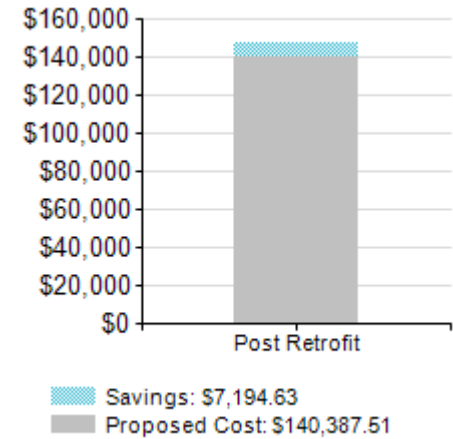
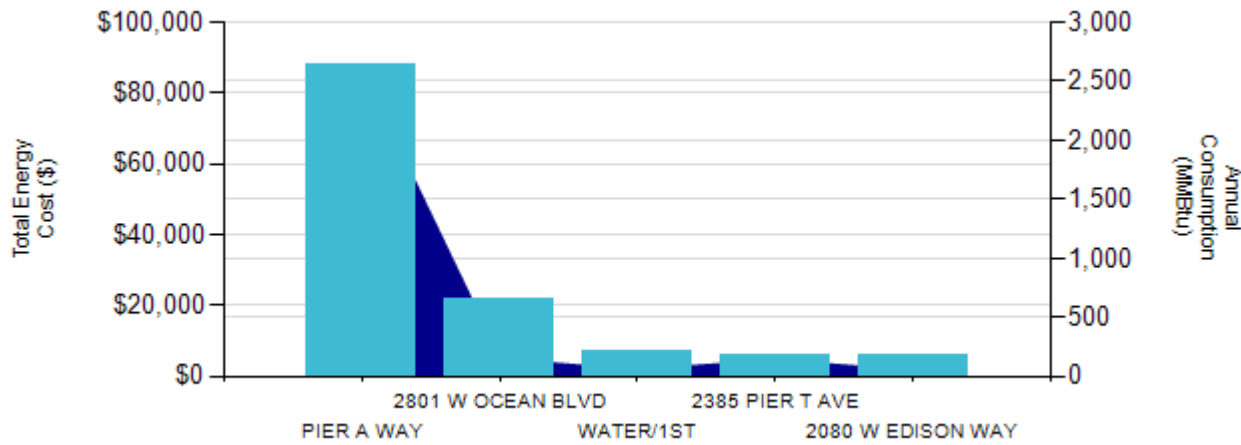
Table 1: Total Energy Portfolio (Annual)

Agency Energy Use	Electric Consumption (kWh)	Electric Cost (\$)	Total Energy Consumption (MMBTus)	Total Energy Cost (\$)	GHG Emissions (lbs CO2)
Agency Buildings	5,219,757	\$791,127	17,810	\$791,127	2,698,614
Water Pumping	927,446	\$147,582	3,164	\$147,582	479,490
Street & Traffic Lights	579,783	\$50,561	1,978	\$50,561	299,748
Outdoor Lights	64,918	\$5,082	222	\$5,082	33,563



### 3. Water Pumping

Your Annual Energy Cost for Water Pumping is **\$147,582** and **14.8%** of the Total Cost.



Key: Displays the top 5 consuming pumping service accounts. Columns represent Cost, Area represents Consumption.

Table 2: Water Pumping (Annual)

Site Name	Address	Electric Consumption (kWh)	Electric Cost (\$)	Electric Rate (\$/kWh)
PIER A WAY	PIER A WAY	757,357	\$88,232	\$0.12
SEWAGE TREATMENT FACILITY	2801 W OCEAN BLVD	43,636	\$21,779	\$0.50
WATER/1ST	WATER/1ST	16,704	\$7,422	\$0.44
SEWAGE TREATMENT FACILITY	2385 PIER T AVE	41,036	\$6,213	\$0.15
2080 W EDISON WAY	2080 W EDISON WAY	14,939	\$5,838	\$0.39

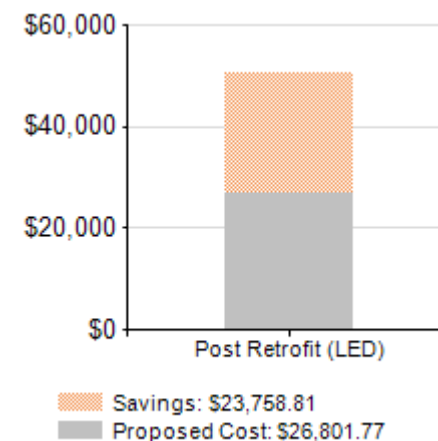
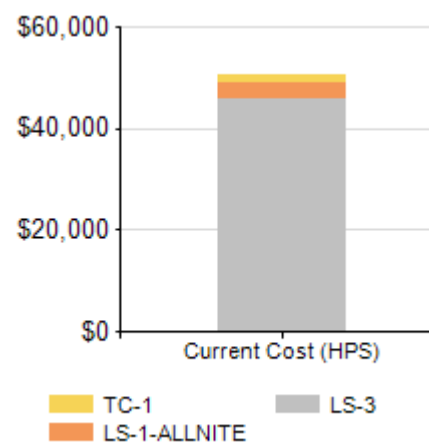
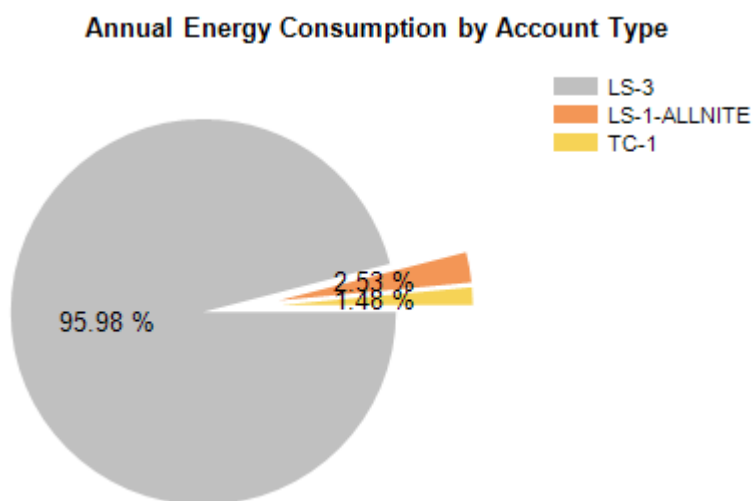
**Assumption** - 65% of all pumps need to be upgraded. Those pumps will reduce consumption by 7.5% kWh post retrofit.

**Calculation** - projected savings are 7.5% of 65% of the total PA consumption (for ALL pump accounts)



## 4. Street & Traffic Lights

Your Annual Energy Cost for Street & Traffic Lights is **\$50,561** and **5.1%** 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.

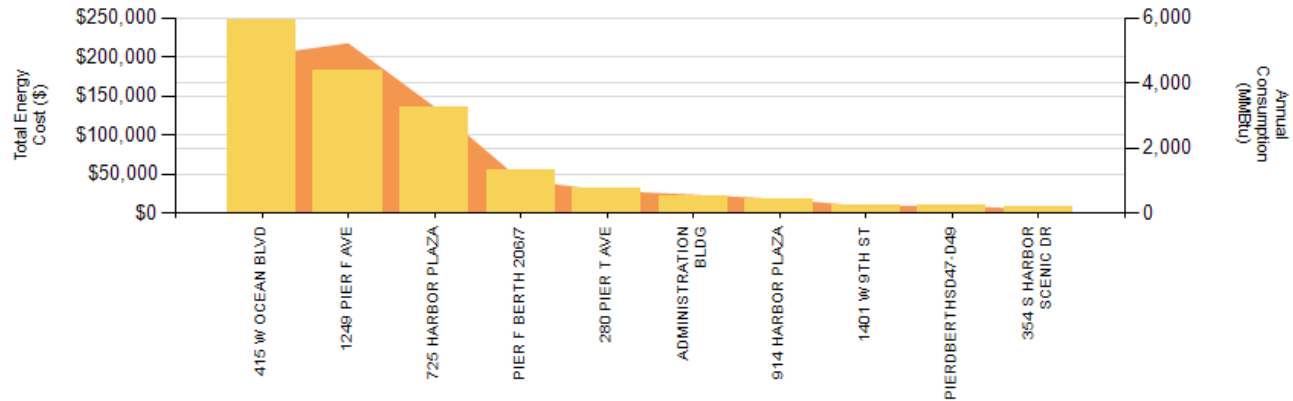
Table 3: Street & Traffic Lights (Annual)

Tariff	Tariff Description	Electric Consumption (kWh)	Electric Cost (\$)	Electric Rate (\$/kWh)
LS-3	Street Lights (Agency Owned - metered)	556,487	\$45,801	0.08
LS-1-ALLNITE	Street Lights (SCE Owned)	14,688	\$3,043	0.21
TC-1	Traffic Signal Lights (Agency Owned)	8,608	\$1,716	0.20



## 5. Building Summary

Your Annual Energy Cost for Buildings is **\$791,127** and **79.6%** of the Total Cost.



Key: Displays the top 10 consuming Buildings. Yellow columns represent Cost. Orange area represents Consumption. Facilities over 50,000 sq/ft are required to be in compliance with the California Energy Benchmarking Public Disclosure Program (AB 802)

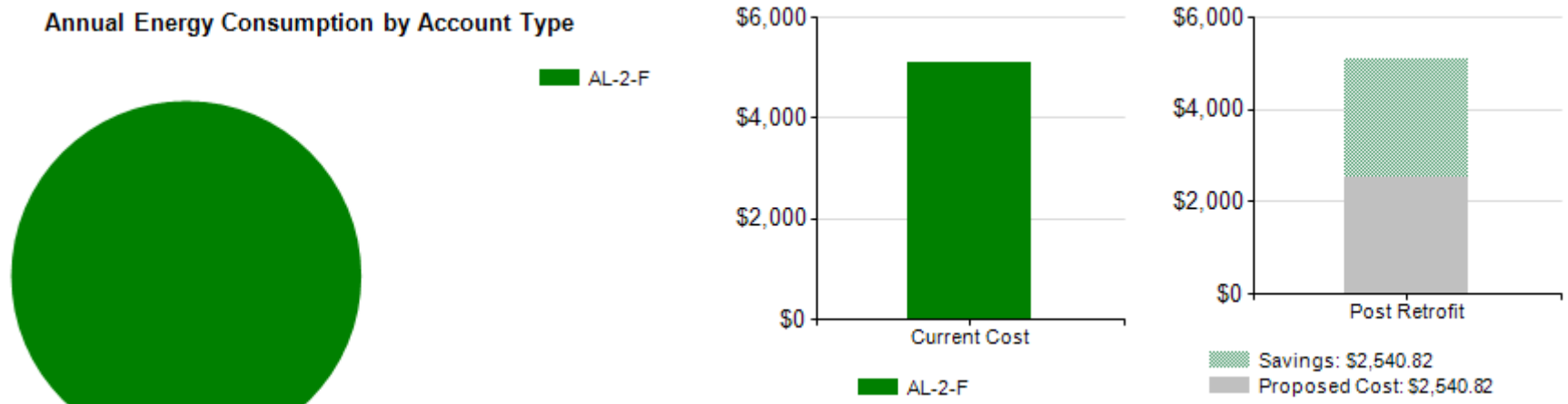
Table 4: Building Summary (Annual)

Site Name	Address	Electric Consumption (kWh)	Electric Cost (\$)	Electric Rate (\$/kWh)	Disadvantaged Community (Yes or No)
ADMINISTRATION BUILDING	415 W OCEAN BLVD	1,556,890	\$269,199	\$0.18	Y
JOINT COMMAND AND CONTROL CENTER	1249 PIER F AVE	1,524,659	\$183,111	\$0.12	Y
MAINTENANCE FACILITY	725 HARBOR PLAZA	948,633	\$134,968	\$0.14	Y
CRESCENT TERMINAL	PIER F BERTH 206/7	292,631	\$55,109	\$0.19	Y
WEYERHAEUSER COMPANY	280 PIER T AVE	196,855	\$31,320	\$0.16	Y
OLD ADMINISTRATION BUILDING	ADMINISTRATION BLDG	161,815	\$22,039	\$0.14	N/A
NON-RESIDENTIAL BUILDING OPERATION	914 HARBOR PLAZA	121,480	\$18,210	\$0.15	Y
POLICE PROTECTION	1401 W 9TH ST	55,987	\$9,600	\$0.17	Y
PORT & HARBOR OPERATIONS	PIER D BERTH D47-D49	62,221	\$9,377	\$0.15	Y
354 S HARBOR SCENIC DR	354 S HARBOR SCENIC DR	29,987	\$8,597	\$0.29	Y



## 6. Outdoor Lights

Your Annual Energy Cost for Outdoor Lights is \$5,082 and 0.5% of the Total Cost.



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

**Calculation** – projected savings are 50% of the total kWh consumption of outdoor lights.

Table 5: Outdoor Lights (Annual)

Name	Address	Tariff	Electric Consumption (kWh)	Electric Cost (\$)	Electric Rate (\$/kWh)
Area Lighting	Various	AL-2-F	64,918	\$5,082	\$0.08



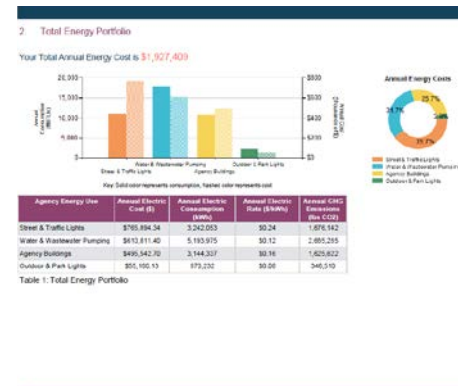
## Appendix A - Methodology

### 1. Data Sources

- Building information, energy usage and cost data used in this analysis were derived from utility consumption billing data provided by Agency.
- 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:
  - 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>
- Analysis period for electricity were based on usage during period January 1, 2019 – December 31, 2019.
- 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 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].

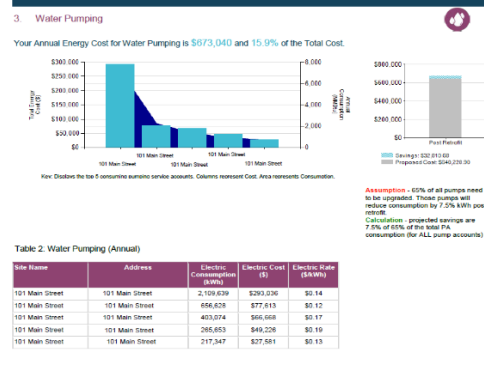
### 2. Total Energy Portfolio

- Total Energy Portfolio data represents an analysis of each agency facility type annual energy costs, annual energy consumption (kWh and therms), 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:
  - Water Pumping
  - Street & Traffic Lights
  - Buildings
  - Outdoor Lights



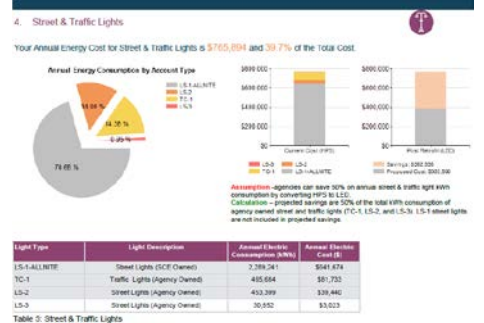
### 3. Water Pumping

- Water pumping data represents an analysis of the top five highest energy consuming water and wastewater pumping SCE and SCG service accounts annual energy costs, annual energy consumption (kWh and therms) and total annual energy costs.
- 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].



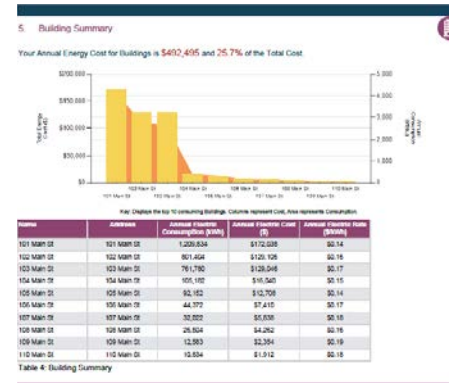
### 4. Street & Traffic Lights

- Street & traffic light data represents an analysis of annual energy costs and annual energy consumption (kWh) 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].



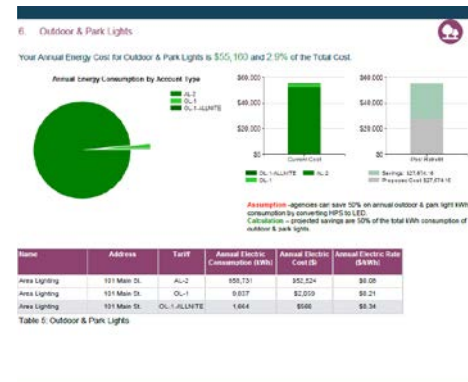
## 5. Building Summary

- Building summary data is weather normalized and 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).



## 6. Outdoor Lights

- Outdoor lights data represents an analysis of annual energy costs, annual energy consumption (kWh) and total annual energy costs 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:

- 4801 AIRPORT PLAZA – Service Account #39782428
- 108 N HARBOR SCENIC DR – Service Account #815797
- 1171 PIER F AVE – Service Account #47825729

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## 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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