Comparative Energy Analysis Report

Prepared for
Newport Mesa USD

Prepared by
The Energy Coalition

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

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1. **Overview**

This report is intended to provide a framework for the Newport Mesa USD, referred to as “Agency” herein, to identify inefficient facilities and infrastructure and prioritize further investigation and energy efficiency retrofit work. This analysis uses only total floor area and 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). Any questions about this report can be directed to your assigned Project Manager, Lauren Seymour at lseymour@energycoalition.org.
2. Total Energy Portfolio

Your Total Annual Energy Cost is $2,116,827

Table 1: Total Energy Portfolio (Annual)

<table>
<thead>
<tr>
<th>Agency Energy Use</th>
<th>Electric Consumption (kWh)</th>
<th>Electric Cost ($)</th>
<th>Gas Consumption (therms)</th>
<th>Gas Cost ($)</th>
<th>Total Energy Consumption (MMBtus)</th>
<th>Total Energy Cost ($)</th>
<th>GHG Emissions (lbs CO2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agency Buildings</td>
<td>10,442,633</td>
<td>$1,725,361</td>
<td>473,492</td>
<td>$390,186</td>
<td>82,979</td>
<td>$2,115,547</td>
<td>5,398,841</td>
</tr>
<tr>
<td>Outdoor &amp; Park Lights</td>
<td>1,716</td>
<td>$678</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>$678</td>
<td>887</td>
</tr>
<tr>
<td>Street &amp; Traffic Lights</td>
<td>1,529</td>
<td>$602</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>$602</td>
<td>790</td>
</tr>
</tbody>
</table>
3. Street & Traffic Lights

Your Annual Energy Cost for Street & Traffic Lights is $602 and 0.0% of the Total Cost.

Table 2: Street & Traffic Lights (Annual)
<table>
<thead>
<tr>
<th>Tariff</th>
<th>Tariff Description</th>
<th>Electric Consumption (kWh)</th>
<th>Electric Cost ($)</th>
<th>Electric Rate ($/kWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LS-1-ALLNITE</td>
<td>Street Lights (SCE Owned)</td>
<td>1,529</td>
<td>$602</td>
<td>0.39</td>
</tr>
</tbody>
</table>
4. Building Summary

Your Annual Energy Cost for Buildings is $2,115,547 and 99.9% of the Total Cost.

![Graph showing top 10 consuming buildings.]

Key: Displays the top 10 consuming Buildings. Yellow columns represent Cost, Orange area represents Consumption. Electricity is the solid shade, Natural Gas is the hashed shade.

Table 3: Building Summary (Annual)

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Address</th>
<th>Electric Consumption (kWh)</th>
<th>Electric Cost ($)</th>
<th>Electric Rate ($/kWh)</th>
<th>Gas Consumption (therms)</th>
<th>Gas Cost ($)</th>
<th>Gas Rate ($/therm)</th>
<th>Energy Use Intensity (kBtu/ft^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corona Del Mar High</td>
<td>2101 Eastbluff Dr</td>
<td>1,432,605</td>
<td>$217,756</td>
<td>$0.15</td>
<td>98,058</td>
<td>$76,602</td>
<td>$0.78</td>
<td>50.2</td>
</tr>
<tr>
<td>Costa Mesa High</td>
<td>2650 Fairview Rd</td>
<td>1,069,497</td>
<td>$146,842</td>
<td>$0.14</td>
<td>91,509</td>
<td>$67,351</td>
<td>$0.74</td>
<td>61.4</td>
</tr>
<tr>
<td>Newport Harbor High</td>
<td>600 Irvine Ave</td>
<td>1,155,520</td>
<td>$154,578</td>
<td>$0.13</td>
<td>131,992</td>
<td>$101,786</td>
<td>$0.80</td>
<td>73.7</td>
</tr>
</tbody>
</table>
5. Outdoor & Park Lights

Your Annual Energy Cost for Outdoor & Park Lights is $678 and 0.0% of the Total Cost.
**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.

Table 4: Outdoor & Park Lights (Annual)

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Tariff</th>
<th>Electric Consumption (kWh)</th>
<th>Electric Cost ($)</th>
<th>Electric Rate ($/kWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area Lighting</td>
<td>Various</td>
<td>OL-1</td>
<td>1,716</td>
<td>$678</td>
<td>$0.40</td>
</tr>
</tbody>
</table>
Appendix A - Methodology

1. Data Sources

- Building information, energy usage and cost data used in this analysis were derived from: ENERGY STAR Portfolio Manager® and utility consumption billing data provided by agency staff.
- Utility consumption billing data used in this analysis were derived from SCG gas tariffs and SCE electric tariffs.
- For more information about the utility tariffs included in this analysis refer to:
- Analysis period for electricity and gas results were based on usage during period February 1, 2019 – February 1, 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 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:
  - Street & Traffic Lights
  - Buildings
  - Outdoor & Parks Lights

3. 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].

4. 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).
- Energy Use Intensity (EUI) results are represent Site EUI data found in Energy Star Portfolio Manager (ESPM).
- Baseline Period for EUI results is August 1, 2002 - July 31, 2003.
- Analysis Period for EUI results is July 1, 2018 – June 30, 2019.
5. Outdoor & Park Lights

- Outdoor & park 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.


[3] Based on SoCalREN previous project estimates.