LED ROADWAY LIGHTING
CASE STUDY

SH 121

US 75

Fairview
4 LANE DIVIDED COLLECTOR
6’ AND 10’ SIDEWALKS

- RP-8 ROADWAY LIGHTING STANDARDS (SAFE PEDESTRIAN CORRIDOR TO SHOPPING AREA)
- HIGH PEDESTRIAN, COLLECTOR \(1.2\) fc
- FULL CUT-OFF FIXTURES (DARK SKIES)
- MEETS ONE OF FAIRVIEW’S GOALS TO BE LEADER IN GREEN TECHNOLOGY
- REDUCE OPERATING/ENERGY COSTS
HALF MILE OF ROADWAY

30 STREET LIGHTS

52 PEDESTRIAN LIGHTS
LIGHTS WERE INSTALLED AND THIS IS WHAT WE SAW
<table>
<thead>
<tr>
<th>METAL HALIDE</th>
<th>LED</th>
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<tbody>
<tr>
<td>458 WATTS/129 WATTS</td>
<td>215 WATTS/53 WATTS (lab tested load)</td>
</tr>
<tr>
<td>30/52</td>
<td>30/52</td>
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<tr>
<td>5 YEARS</td>
<td>12 YEARS</td>
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<tr>
<td>ENERGY 7,361 kWh/mnth</td>
<td>3,314 kWh/mnth</td>
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**ACTUAL ELECTRICAL USAGE METERED**

<table>
<thead>
<tr>
<th>Month</th>
<th>kWh</th>
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<tbody>
<tr>
<td>Sept</td>
<td>2,774</td>
</tr>
<tr>
<td>Oct</td>
<td>3,180</td>
</tr>
<tr>
<td>Nov</td>
<td>3,526</td>
</tr>
<tr>
<td>Dec</td>
<td>4,190</td>
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<tr>
<td><strong>AVERAGE</strong></td>
<td><strong>3,418 kWh/mnth</strong></td>
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**WE PAY .095/kWh  annual savings $4,613**

**Annual energy savings per street light  $101**

**So, ROI on a LED fixture $300 more than trad. < 3 years**

**ENERGY SAVINGS OVER 12 YEAR LIFE SPAN $55,365**
LESSONS LEARNED FROM LED LIGHTS:

- No complaints from citizens, no blinding of drivers or strange colors
- Light cut off is very precise
- Do not have to overlight/waste light just to achieve the average desired lighting
- Light is much more uniform than traditional lighting
- Lighting engineers and customers will have to be more precise about what they actually want to light
- New builds will be easier than retrofitting
- Pole height, spacing and location have a greater affect on the footprint
- Switching manufacturers will be more difficult
- Can keep pedestrians safe without over lighting
- Energy bill really is cut in half