Auditing School Facilities for High-Value Water Conservation Opportunities
Experience with CII and LL Audits

• WaterWise has surveyed over 1,200 Commercial, Industrial, Institutional (CII) and Large Landscape (LL) sites throughout California.
• Total savings based on our recommendations so far are over 1.5 million HCF/CCF (1.1 billion gallons).
• WaterWise has surveyed over 150 schools throughout California.
• Total annual savings based on our recommendations so far are over 150,219 HCF/CCF (112 million gallons) with a money savings of $1.1 million.

TYPES OF CII FACILITIES SURVEYED INCLUDE:

• School Districts
• Municipalities
• Jails
• Silicon Wafer Manufacturers
• Commercial Office Space
• Hospitals
• Car Washes

• Retirement Care Centers
• Hotels
• Multi-family Residents
• Restaurants
• Breweries
• Ice Rinks
• College Campuses
Elementary Schools

- Elementary schools make up the majority of schools that were surveyed throughout our CII and LL programs.
- 95 schools surveyed.
- Landscape irrigation and bathroom use were the top two water uses at elementary schools.
- The total potential annual water savings from elementary schools is approximately 93,815 CCF/HCF (70 million gal) with a money savings of $373,932.
Water Use at Elementary Schools

- Bathroom Water Use: 26%
- Kitchen Water Use: 2%
- Classroom Water Use: 3.6%
- Janitorial Water Use: 2%
- Laundry Water Use: 0.7%
- Other Water Use: 0.7%
- Landscape Irrigation: 65%
Middle Schools

- Based on our audit data, middle schools have the highest average water use with an annual average water use of 9,072 CCF/HCF (6.7 million gal) per school.

- 23 schools surveyed.

- Total potential annual water savings reported from the 23 schools is approximately 41,284 CCF/HCF (30.8 million gal) with a total annual money savings of $233,223.
Water Use at Middle Schools

- Bathroom Water Use: 23%
- Kitchen Water Use: 3%
- Classroom Water Use: 3.4%
- Janitorial Water Use: 2%
- Laundry Water Use: 0.1%
- Other Water Use: 1.2%
- Landscape Irrigation: 67%
Based on our audit data, middle schools have the second highest average water use with an annual average water use of 7,222 CCF/HCF (5.4 million gal) per school.

- 11 schools surveyed.
- Total potential annual water savings reported from the 11 schools is approximately 15,121 CCF/HCF (11.3 million gal) with a total annual money savings of $559,466.
Water Use at High Schools

- Bathroom Water Use: 29%
- Kitchen Water Use: 1%
- Classroom Water Use: 2.2%
- Janitorial Water Use: 1%
- Laundry Water Use: 1.1%
- Other Water Use: 0.5%
- Landscape Irrigation: 62%
Indoor Water Use Recommendations

<table>
<thead>
<tr>
<th>WATER EFFICIENCY MEASURES RECOMMENDED</th>
<th>HET TOILETS</th>
<th>DUAL FLUSH HANDLE KITS</th>
<th>HE URINALS</th>
<th>BATHROOM FAUCET AERATORS</th>
<th>SHOWERHEADS</th>
<th>CLASSROOM FAUCET AERATORS</th>
<th>KITCHEN FAUCET AERATORS</th>
<th>PRE-RINSE SPRAY VALVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary Schools</td>
<td>284</td>
<td>432</td>
<td>391</td>
<td>1,141</td>
<td>3</td>
<td>1,686</td>
<td>138</td>
<td>12</td>
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<tr>
<td>Middle Schools</td>
<td>61</td>
<td>127</td>
<td>110</td>
<td>284</td>
<td>36</td>
<td>656</td>
<td>44</td>
<td>5</td>
</tr>
<tr>
<td>High Schools</td>
<td>52</td>
<td>173</td>
<td>83</td>
<td>225</td>
<td>227</td>
<td>133</td>
<td>23</td>
<td>3</td>
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<tr>
<td>Totals</td>
<td>397</td>
<td>732</td>
<td>584</td>
<td>1,650</td>
<td>266</td>
<td>2,475</td>
<td>205</td>
<td>20</td>
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</tbody>
</table>

- Total estimated annual water savings from indoor recommendations is approximately 119,969 CCF/HCF (89.7 million gal).
- The total estimated annual money savings from outdoor recommendations is approximately $1,088,720.
- Savings numbers were calculated from a sample of 96 schools.
Outdoor Water Use Recommendations

<table>
<thead>
<tr>
<th>WATER EFFICIENCY MEASURES RECOMMENDED</th>
<th>INSTALL ROTARY NOZZLES</th>
<th>INSTALL WBIC</th>
<th>INSTALL RAIN SENSORS</th>
<th>FIX IRRIGATION SYSTEM PROBLEMS</th>
<th>REPLACE TURF WITH DROWN TOLERANT PLANTS (SF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary Schools</td>
<td>2,723</td>
<td>64</td>
<td>57</td>
<td>1,735</td>
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<tr>
<td>Middle Schools</td>
<td>1,215</td>
<td>18</td>
<td>18</td>
<td>26</td>
<td>36</td>
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<tr>
<td>High Schools</td>
<td>432</td>
<td>17</td>
<td>11</td>
<td>293</td>
<td>227</td>
</tr>
<tr>
<td>Totals</td>
<td>4,370</td>
<td>99</td>
<td>86</td>
<td>2,054</td>
<td>266</td>
</tr>
</tbody>
</table>

- Total estimated annual water savings from outdoor recommendations is approximately 30,250 CCF/HCF (22.6 million gal).
- The total estimated annual money savings from outdoor recommendations is approximately $77,901.
- Savings numbers were calculated from a sample of 35 schools.
Past and Present CII and LL Clients

California Water Service

Los Angeles County Waterworks Districts

Santa Clara Valley Water District

Municipal Water District of Orange County

California American Water Service Company

San Diego County Water Authority

Metropolitan Water District of Southern California