Water Reuse

Caltrans Recycled Water

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Supervising Landscape Architect
Caltrans, Division of Design
Goal Reduce potable water use by 50%
Achieved 62% in 2014

Actions reduce watering, delay planting, upgrade irrigation controllers to “Smart”, repair irrigation systems, convert potable water use to recycled water use

Long term Maximize recycled water use (80% by 2030)
Recycled Water Use

**Use**

**Landscaping** 30,000 acres of irrigated landscape, about 17% percent is irrigating with recycled water

**Construction** Certain conditions contractors are directed to use recycled water
Recycled Water Use

Calculating Estimated Required Water

<table>
<thead>
<tr>
<th>Construction Activity</th>
<th>Gallons Per Unit</th>
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</thead>
<tbody>
<tr>
<td>Aggregate Base &amp; Subbase</td>
<td>15/CY</td>
</tr>
<tr>
<td>Dust Control</td>
<td>2/CY</td>
</tr>
<tr>
<td>Subgrade Compaction</td>
<td>10/SQYD</td>
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<tr>
<td>Hot Mix Asphalt Compaction</td>
<td>7/Ton</td>
</tr>
<tr>
<td>Concrete</td>
<td>25/CY</td>
</tr>
<tr>
<td>Cold Planning Pavement</td>
<td>0.5/SQFT</td>
</tr>
<tr>
<td>Grind Concrete Pavement</td>
<td>6.5/SQFT</td>
</tr>
<tr>
<td>Groove Concrete Pavement</td>
<td>1.5/SQFT</td>
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</tbody>
</table>
Recycled Water Use 17%

Landscape Irrigation Water usage

Jan – Oct 2015

Potable 1,776B gallons

Recycled 358M gallons

Total 2,134B gallons
Existing Recycled Water Policy

Highway Design Manual Whenever available, water sources should be non potable

Project Development Manual Cost for the water system does not exceed 125% of all costs associated with using a potable water source
Recycled Water and Drought

**Director Policy** Existing maintenance and construction practices shall utilize recycled water wherever feasible.

**Chief Engineer Policy Memo** Delay planting unless irrigated with recycled or non-potable water.

**Emergency Contracts** Cost constraints relaxed, approximately $30 million in contracts to convert irrigation to recycled.
Current Recycled Water Projects

- 19 Recycled Water Projects
  - 11 projects in So Cal
  - 1 in Los Angeles, 2 in San Bernardino, 2 in Irvine, 6 in San Diego

- Transmission line (outside CT ROW)
  range 6 ft – 3 miles to POC

- Lateral line (inside CT ROW)
  range 315 ft – 11,000 ft

- $22,000 avg /water meter

funded with emergency dollars
Opportunities and Challenges

How can we Partner to maximize recycled water usage

**Goal** 80% of Caltrans landscape irrigation will use recycled water by 2030

Location and Access
- Truck loading stand pipes
- Mapped transmission lines

Ownership
- State Highway Right-of-Way
- Local Road / Private lands

Maintenance and Operation
- Cost and Access fees (meters)
- Water reliability
- Quantity
- Quality