Wastewater Treatment Plant
Palo Alto RWQCP Influent Flow w/Ammonia Load & Concentration
Recycled Water Project
Historic Baylands

Source: Oakland Museum of California
Lab results from 24-hour composite sample 9/8/14 to 9/9/14

Manhole 30-2-4
Manhole 29-6-5

Red line = Area of saline groundwater infiltration
Purple line = Area scheduled to be repaired in 2014

MH 39-4-5
MH 30-2-4
MH 29-6-5

Direction of MH 39-4-5 to MH 30-2-4 to MH 29-6-5
Palo Alto RWQCP Final Effluent Total Dissolved Solids (mg/L)

- Shoreline Trunkline Lined 01/13
- Drought and Conservation Impacts
- Mountain View Wells Removed 08/14

Remaining Projects:
- Kenneth Drive ~40 ppm
- East Palo Alto ~15 ppm
- MV A3 Well ~10 ppm
- MV Additional Refining - Unknown
- 72 Inch Line - Unknown but significant

Historical values >1000 mg/L
Early Reductions
Post Shoreline ~170 mg/L Reduction
Post MV Wells ~50 mg/L Reduction
Stanford Recommendation
Palo Alto Goal
Synergy
## Organics Facilities Plan

<table>
<thead>
<tr>
<th>Component</th>
<th>Funding Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biosolids Dewatering and Truck Off-Haul</td>
<td>B – Wastewater Treatment Fund</td>
</tr>
<tr>
<td>Anaerobic Digestion</td>
<td>F – Refuse Fund</td>
</tr>
<tr>
<td>Food Scrap Pre-processing</td>
<td>F – Refuse Fund</td>
</tr>
<tr>
<td>Yard Trimmings</td>
<td>Y – Refuse Fund</td>
</tr>
</tbody>
</table>

### Diagram Description

- **Biosolids Processing**: Emergency Back up
- **Consider Alternatives to Current Aerobic Composting and New Locations**: Add Food to Digester

### Legend

- **B**: Biosolids – Wastewater Treatment Fund
- **F**: Food Scraps – Refuse Fund
- **Y**: Yard Trimmings – Refuse Fund
Community GHG Emission Sources in 2005 (726,720 MT CO$_2$e)

(Total Emissions reduced from 798,000 MT to 636,000 MT, 565,000 MT respectively)
City Operations GHG Emissions:
(Total Emissions Reduced from 42,000 MT to 20,000 MT, a 53% reduction)

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>2005</th>
<th>2012</th>
<th>2013</th>
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</thead>
<tbody>
<tr>
<td>Buildings &amp; Other Facilities</td>
<td>10,698</td>
<td>4,643</td>
<td>5,502</td>
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<tr>
<td>Power Generation Facilities</td>
<td>9,308</td>
<td>3,008</td>
<td>29</td>
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<tr>
<td>Solid Waste Facilities</td>
<td>6,878</td>
<td>4,349</td>
<td>6,642</td>
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<tr>
<td>Streetlights &amp; Traffic Signals</td>
<td>767</td>
<td>387</td>
<td>0</td>
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<tr>
<td>Vehicle Fleet</td>
<td>11,269</td>
<td>2,835</td>
<td>2,546</td>
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<tr>
<td>Wastewater Facilities</td>
<td>11,269</td>
<td>4,659</td>
<td>5,024</td>
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<tr>
<td>Water Delivery Facilities</td>
<td>74</td>
<td>64</td>
<td>92</td>
</tr>
</tbody>
</table>

City Operations GHG Emissions:
(Total Emissions Reduced from 42,000 MT to 20,000 MT, a 53% reduction)
Energy Use at City of Palo Alto Facilities

- RWQCP
- Civic Center
- Arts Center
- Downtown Library
- Children's Library
MITCHELL PARK
Library & Community Center
GREEN DESIGN

Solar Energy & Rainwater:
Powers, Cools and Cleans

Rainwater
is collected to water the plants on the ground and on the green roofs

Natural Ventilation
is integrated into the buildings’ mechanical systems to improve air quality and lower cooling loads

Electric Vehicle Stations
to encourage their use, re-charging stations are given prime parking spaces

Pervious Paving
allows rainwater to pass through to the ground below

Bioswales
filter & clean water from the parking lot and building before it flows to the bay

Pervious Concrete Parking Stalls
allows water to pass through to ground below where it is filtered on its way to the infiltration basin

Recycled Water
 supplied in the future by the City

to Storm Drain
and to San Francisco Bay

Radiant Nightsky Cooling
chills water to condition the interior air

Photovoltaic (PV) Power Panels
a 5,962 sq. ft. array provides 72,000 kilowatts of electricity per year

Solar Heating Panels
water for restrooms and showers is heated with the passive radiation from the sun
Community GHG Emission Sources in 2005 (726,720 MT CO$_2$e)

- Past Landfilled Waste: 3% (20,643 MT CO$_2$e)
- Community Natural Gas: 22% (159,989 MT CO$_2$e)
- Community Electricity: 19% (135,027 MT CO$_2$e)
- Commute to Palo Alto: 5% (38,918 MT CO$_2$e)
- Commute from Palo Alto: 1% (9,563 MT CO$_2$e)
- Non-commute-related Travel in Palo Alto: 30% (218,019 MT CO$_2$e)
- Community Air Travel: 9% (66,900 MT CO$_2$e)
- Discarded Recyclable Materials: 3% (54,838 MT CO$_2$e)
- Landfilled Waste: 24,823 MT CO$_2$e (3%)

Total Community GHG Emissions: 726,720 MT CO$_2$e