Steven Tanaka

PRIOR WATER RECYCLING STUDIES

SOUTH SAN LUIS OBISPO COUNTY WATER RECYCLING FORUM

June 7, 2012
South County Regional Center

Hosted by: South San Luis Obispo County Sanitation District
Prior Recycled Studies in South County Area

Presented by: Steven G. Tanaka, PE, Wallace Group
Prior Recycled Water Studies

- 2001, SRF Grant-Funded Study
- 2007, City of Pismo Beach RW Study
- 2009, South County RW Update
  - Landscape (secondary and tertiary)
  - Agricultural Reuse
  - Stream Augmentation/Environmental
  - Groundwater Replenishment/Indirect Potable Reuse
- 2011 Focused Studies
  - Serve AG Cemetery and Caltrans Medians:
    - From SSLOCSD WWTP
    - From City of Pismo Beach WWTP
Study Objectives

- Determine Viability of Recycling Water from Area WWTPs:
  - Existing and Future Wastewater Flows from AG, Grover, Oceano CSD, City of Pismo
  - Water Quality and Supply Considerations
  - Market Study/Recycled Water Demands
  - Regulatory Review
  - WWTP Upgrade Requirements
  - Economic Analysis
Service Area Defined

- City of AG – 17,000 population
- City of Grover – 14,000 population
- Oceano CSD – 8,000 population

Legend

- SSLOCSD BOUNDARY
- CITY OF ARROYO GRANDE
- CITY OF GROVER BEACH
- OCEANO CSD
- CITY OF PISMO BEACH
- POTENTIAL USERS-PARKS & SCHOOLS

- City of AG – 17,000 population
- City of Grover – 14,000 population
- Oceano CSD – 8,000 population
Alternatives Considered

- Secondary and Tertiary Landscape Irrigation
- Agricultural Reuse
- GW Recharge/Indirect Potable Use
- Stream Augmentation
- Industrial Use (CP Refinery)
Recycled Water Demand

- **SSLOCSD AREA LANDSCAPE IRRIGATION**
  - Estimated Irrigated Area, 75 Acres
  - Annual Demand, 150 AF

- **CITY OF PISMO BEACH AREA LANDSCAPE IRRIGATION**
  - Estimated Irrigated Area, 340 Acres
  - Annual Demand, 1,000 AF

- **GROUNDWATER RECHARGE/STREAM AUG**
  - Annual Demand, 950 AF

- **DIRECT AGRICULTURAL IRRIGATION**
  - Estimated Irrigated Area, 3,000 Acres
  - Annual Demand, 7,500 AF

- **INDUSTRIAL (CONOCO PHILLIPS)**
  - Annual Demand, 1,290 AF
RW Market Overview

LEGEND
Potential Recycled Water Customers
- SECONDARY
- TERTIARY

Potential Recycled Water Customers
- Grover Heights Park
- Ramona Gardens Park
- Grover Beach Elementary School
- Mentone Basin Park
- 16th Street Park
- Soto Sports Complex
- Costa Bella Park
- Royal Oaks Christian School
- Kmart Center
- Walmart Shopping Center
- St Patrick's Elementary School
- Oceanview Elementary School
- Caltrans Median Branch
- Arroyo Grande Cemetery
- Arroyo Grande High School
- SSO LCSD WWTP
Recycled Water Supply

- SSLOCSD/City of Pismo WWTP
  - Today: 3.9 mgd (4,370 AFY)
  - At Combined Plant Design Capacity: 6.9 mgd (7,725 AFY)

- Diurnal Fluctuation vs. Irrigation Demand

- Seasonal Demand Considerations

- Joint SSLOCSD/Pismo Ocean Outfall Considerations
## Cost Overview

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Capital Cost, SM</th>
<th>Annualized Cost, $/AFY</th>
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</thead>
<tbody>
<tr>
<td>Turf Irrigation in SSLOCSD Service Area (tertiary), south of Hwy 101</td>
<td>$16</td>
<td>$11,600</td>
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<tr>
<td>Above Turf Irrigation + expanding north of Hwy 101</td>
<td>$19</td>
<td>$12,000</td>
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<tr>
<td>City of Pismo Beach Turf</td>
<td>$4 to $9</td>
<td>$3,300 to $14,000</td>
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<tr>
<td>Secondary Effluent to Caltrans and AG Cemetery</td>
<td>$6.5^b/$5.5^c</td>
<td>$11,000^b/$8,000^c</td>
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<tr>
<td>Tri-Cities Mesa Groundwater Recharge</td>
<td>$26</td>
<td>$4,900</td>
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<tr>
<td>GW Recharge plus SSLOCSD service area turf irrigation</td>
<td>$28</td>
<td>$5,100</td>
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<tr>
<td>Direct AG Reuse (tertiary)</td>
<td>$23</td>
<td>$1,400</td>
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<tr>
<td>Direct AG Reuse plus landscape irrigation in SSLOCSD service area</td>
<td>$28</td>
<td>$5,200</td>
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<td>Stream Augmentation, Arroyo Grande Creek</td>
<td>$15^d/$30^e</td>
<td>$1,700^d/$4,200^e</td>
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<tr>
<td>Indirect Potable Reuse/GW Recharge</td>
<td>$38</td>
<td>$2,000</td>
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</tbody>
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^a2001 RW Study  
^bFrom SSLOCSD WWTP  
^cFrom Pismo WWTP  
^dTertiary Treatment Only  
^eWith MF/RO