Santa Margarita Water District

- Provides Water and Wastewater Service to over 155,000 residents
- Over Next 20-30 years ~40,000 More Residents

SMWD Service Area
RECYCLED WATER PROJECTS

- Califia – 220 afy
- Coto de Caza – 400-1,250 afy
- Palmia – 70 afy
- Lake Mission Viejo APWTF – 300 afy
- Misc. Conversions
  - Hidden Ridge – 35 afy
  - Lake Mission Viejo – 50 afy
  - City of Mission Viejo – 50 afy
- Las Flores – 220 afy
- Melinda Road – 150 afy
- Rancho Santa Margarita – 1,000 afy
Lake Mission Viejo
Advanced Purified Water Treatment Facility
Project Background

- Lake Refill ~ 600 afy
  - Rainfall ~ 100-300 afy
  - Groundwater ~ 150 afy
  - Potable Make Up Water ~ 150-350 afy
- Provide Sustainable Make Up Water
  - Drought proof
  - Avoid regulatory restrictions
- Cost Effective
- Implementable
  - Proximity to District Facilities
Finisterra Pump Station

- Pump Station
- Access Road
- Zone B Reservoir
Looking East Across Reservoir at Pump Station
Looking North West at Finisterra Pump Station
Looking West Across Reservoir
Lake Mission Viejo
APWTF - Components

- Process Feed Pumps
  - Remove “larger” solids
  - 475 gpm
  - >200 micron

- UltraFiltration (UF)
  - Protect RO membranes
  - 475 gpm

- Pre Screening

- Chemical Conditioning
  - Verify no free chlorine
  - pH adjustment for ammonia/nitrogen removal

- Reverse Osmosis (RO)
  - Remove TDS
  - Remove NH₃/NO₂
  - pH adjustment
  - 375 gpm
  - Pathogen Removal
  - No chlorine residual

- UV Disinfection

- Nitrate Removal (TBD)
  - If determined to be necessary

- Lake Mission Viejo
  - Improve RW System WQ

- Nitrate Removal (TBD)

- Brine ~ 130,000 gpd

- BW ~ 35,000 gpd

- Effluent Discharge
Lake Mission Viejo
APWTF Preliminary Site Plan
### Lake Mission Viejo - Advanced Purified Water

#### Estimated Cost of Water

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Annual Cost</th>
<th>300 AF/YR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CapEX @ $5.1 m – 20 yrs. @ 2.5% - 3.75%</strong></td>
<td>$300,000</td>
<td>$1,000</td>
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<tr>
<td><strong>O&amp;M Costs</strong></td>
<td></td>
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</tr>
<tr>
<td>Electrical</td>
<td>$ 66,000</td>
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<tr>
<td>Chemical</td>
<td>$ 61,000</td>
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<tr>
<td>Repair &amp; Replace</td>
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<tr>
<td>Labor</td>
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<tr>
<td><strong>Subtotal O&amp;M Costs</strong></td>
<td>$406,000</td>
<td>$ 680</td>
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<tr>
<td><strong>Cost of Source Water</strong></td>
<td>$ 320</td>
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<tr>
<td><strong>Cost of APW ($/AF)</strong></td>
<td>$2,000</td>
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<tr>
<td><strong>MWD – LRP Contribution</strong></td>
<td>($475)</td>
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<tr>
<td><strong>Effective Cost of APW ($/AF)</strong></td>
<td>$1,525</td>
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</tbody>
</table>

(1) Assumes operating costs spread over 600 af/yr production
Project Financing

- City of Mission Viejo
  - $1 million grant
  - $3 million low interest loan
- Santa Margarita Water District
  - $1.1 million loan
- Lake Mission Viejo Association
  - Repays CapEX with monthly fixed charges
  - Pays operating costs for only that APW provided
- Metropolitan Water District
  - LRP - $475/af, 15 years