Investing in Local Water Services and the Importance of Integrated Resource Management

Mayor Gary Soiseth
City of Turlock, CA
California’s Central Valley


Map Source: map-of-usa.co.uk

500 miles
Turlock’s Economy

- Population 74,000;100,000 (Day Time)
- WWTP capacity = 375,000 people
- Home to large food processors
  - Foster Farms
  - California Dairies
  - Sunnyside Farms
  - Land O’Lakes
  - Blue Diamond Growers, etc.
- Residential water use low, but **significant** wastewater generation from industries
North Valley Regional Recycled Water Program

- Del Puerto Water District
- City of Ceres
- City of Modesto
- City of Turlock
- Stanislaus County
- US Bureau of Reclamation (USBR)
North Valley Regional Recycled Water Program Partnership was established to:

- Provide a regional solution for a local water supply crisis
- Make recycled water available for agricultural irrigation and potential wildlife refuges
- Allow Cities to eliminate discharge to the San Joaquin River
- Provide long-term, reliable water supplies to DPWD to mitigate on-going and severe contractual water supply shortages
- Reduce reliance on Delta conveyance and groundwater pumping to meet unmet water supply needs
RESIDENTIAL Per Capita Water Use 1989-2014
Need for the Program
The Cities’ Wastewater Story

**Modesto’s Wastewater**
- 25 MGD
  - Seasonally discharged to San Joaquin River
  - Irrigation of 2,530 acres on City-owned ranch land
  - NPDES permit requires tertiary-treatment

**Turlock’s Wastewater**
- 10 MGD
  - San Joaquin River disposal of tertiary-treated wastewater
  - Recently upgraded outfall from an open drain to a closed pipeline for compliance with NPDES permit
Together the partners can work through their challenges

- Del Puerto Water District
  - Primary water source is Federal allocations from the Central Valley Project (CVP)
  - CVP allocations have been restricted due to drought and environmental concerns

- Cities of Modesto and Turlock
  - Both cities treat to tertiary levels with minimal reuse
  - Cities within irrigation districts that have Pre-1914 Senior Water Rights
Del Puerto Water Customers Have Experienced Significant Shortages and Decreased Reliability in the Last 20 Years

- Average Surface Water Need: ~90,000 AFY
- Average contractual water supplies over last 5 years: ~45,000 AFY
- Current Year contract supply: 0 AF
- Shortfall: ~90,000 AF
Primary Crops in Del Puerto

- Almonds (15,000 ac)
- Tomatoes (5,000 ac)
- Beans (3,000 ac)
- Apricots (2,500 ac)
- Barley/Oats (2,500 ac)
- Alfalfa (2,000 ac)
- Walnuts (2,000 ac)
- Other – Misc. (3,500 ac)
- Fallowed (7,500 ac)

**Total = 43,000 acres**
Conceptual Solution
Single Pipeline to Delta Mendota Canal

- 54-inch Pipeline from Jennings Plant to DMC
- 42-inch Pipeline from Harding Drain Bypass Pipeline to Jennings Plant Pump Station
- Delta-Mendota Canal
- Zacharias Road
- Lemon Avenue
- San Joaquin River
Recycled Water Supplies

![Graph showing the increase in recycled water supply from 2010 to 2050 for Modesto, Turlock, and Combined sources. The graph indicates a steady increase with Modesto and Turlock showing a gradual rise, while the Combined source shows a sharper increase, particularly around 2020.](image-url)
NVRRWP Implementation Phases

**Phase 1: Initial Feasibility**
- Evaluate supplies/demands
- Develop/evaluate alternatives
- Draft Feasibility Study

**Phase 2: DMC Feasibility**
- Focus on Delta-Mendota Canal as best conveyance option
- Revised Draft Feasibility Study

**Phase 3: Env. Document**
- Facilities Planning
- EIR/EIS
- Permitting
- Outreach

**Phase 4: Design**
- Final Design
- Continued Permitting

**Phase 5: Construction**
- Construction
- Construction Management
- Engineering Services during Construction

May 2010
$150K

June 2012
$760K

Dec 2013
$1.5 M

May 2015
$7.5 M

July 2016
$87 M

Mar 2018

## Estimated Project Costs

<table>
<thead>
<tr>
<th></th>
<th>Single Pipeline Alternative</th>
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</thead>
<tbody>
<tr>
<td>Base Construction</td>
<td>$76 M</td>
</tr>
<tr>
<td>Implementation Costs</td>
<td>$22 M</td>
</tr>
<tr>
<td>Total Capital Cost</td>
<td>$98 M</td>
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</table>

Depending on grants and financing mechanisms, the first year water cost is estimated at $180-$320 per acre-foot.
## Basic Scenarios Over Time

<table>
<thead>
<tr>
<th></th>
<th>Rate</th>
<th>2018 (30,600 AF)</th>
<th>2028 (47,700 AF)</th>
<th>2038 (56,600 AF)</th>
<th>2048 (59,000 AF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonds – 30 yr</td>
<td>5%</td>
<td>$321</td>
<td>$234</td>
<td>$215</td>
<td>$79</td>
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<tr>
<td>SRF – 20 yr</td>
<td>2.5%</td>
<td>$267</td>
<td>$199</td>
<td>$71</td>
<td>$79</td>
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<tr>
<td>SRF – 30 yr</td>
<td>2.5%</td>
<td>$213</td>
<td>$164</td>
<td>$156</td>
<td>$79</td>
</tr>
</tbody>
</table>

Costs are shown as $ per acre-foot
Questions?

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Project Scheduled to be On-Line by 2018

- Issue Draft EIR/S
- Public Hearing
- Final EIR/EIS
- NPDES Permit
- Water Rights
- Reclamation Approvals
  - (ROD, Warren Act Agmt., Approval for Recycled Water in DMC)

Design/Construction
- Design
- Contractor Procurement
- Construction

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