City of Modesto - North Valley Regional Recycled Water Program (NVRRWP)

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Utilities Department
City of Modesto Wastewater System

- Provides sewer service for Modesto, Empire and portions of Ceres and Stanislaus County
- Serving population approx. 224,000
- Collection System
  - Over 900 miles of sewer pipelines
  - Approximately 12 miles of Cannery Segregation pipeline
  - 40 Lift stations
- ADWF of 20.0 MGD
  - More that 7.6 billion gallons treated annually
- Tertiary facilities expansion driven by 2008 NPDES Permit
  - Compliance by 2018
Modesto’s wastewater comes from two sources:

- Domestic/Commercial
- Industrial – No Human Waste – i.e. “Can Seg”

* Year round
** Cannery Season, June – September
Modesto’s treatment facilities are in two separate locations:

- Sutter Avenue Primary Treatment Plant
- Primary Effluent Outfall
- Jennings Road Secondary Treatment Facilities
- “Can Seg” Pipeline

[Map showing locations]
Current Modesto discharge permit allows seasonal river discharge and land application of secondary effluent.
Addition of BNR/tertiary facilities produces high quality effluent suitable for reuse.
Modesto’s Tertiary Treatment Facilities
Making the shift from River discharge to recycled water supply
North Valley Water Recycling Program (NVRRWP) is a Regional effort

- Growers experiencing drastically curtailed federal water allocations – they need a drought-proof supply
- Partnership formed in April 2010
  - Del Puerto Water District (DPWD)
  - City of Modesto
  - City of Turlock
  - City of Ceres
  - Stanislaus County
- Deliver recycled water produced by Modesto and Turlock plants for use by DPWD
NVRRWP established to:

- Regional solution to both local and State’s water supply crisis
- Make recycled water available for agricultural irrigation and wildlife refuges
- Provide long-term, drought-proof water supplies to DPWD
- Reduce reliance on CVP allocations and groundwater pumping to meet unmet water supply needs
Del Puerto Water District (DPWD)

• 45,200 irrigable acres
• More than 25 various high value crops
• Primary water source is federal allocations from Central Valley Project (CVP) via the Delta Mendota Canal (DMC)
• CVP allocations have been restricted due to drought and environmental concerns
  – 2014 & 2015: 0%
  – 2016: 5%
NVRRWP Recycled Water Flows

- Modesto = 14.9 MGD = 16,500 AFY (2017)
- Turlock = up to 12.6 MGD = 14,100 AFY (2020)
- Total = 30,600 AFY
- Buildout = up to 59,000 AFY
NVRRWP will supply 30-60% of Del Puerto WD demand

CVP Contract Allocation – 140,210 AFY
Service Area – 45,000 acres

<table>
<thead>
<tr>
<th></th>
<th>Acre-feet per year</th>
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<tbody>
<tr>
<td>DPWD Average Surface</td>
<td>94,000</td>
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<tr>
<td>Water Need</td>
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<td>DPWD Average Contractual</td>
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<td>Water Supplies 2008-2013</td>
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<td>2014-2015 Allocation</td>
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<td>Project Start-up</td>
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<tr>
<td>Project Build-out</td>
<td>59,000</td>
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Program Overview

- 74,000 LF (14 mi) of 42" pipe
- 3,000 HP Pump Station
- 2,800 LF Direction Drill (River)
- 300 LF Jack and Bore (Highway)
- 5 – 300 LF Microtunnels (Drainages)
Project Funding and Timeline

• CWSRF loan requires Modesto’s portion of the project completed by Dec. 2017
  – Funding available as response to Drought State of Emergency
  – City applied on behalf of the NVRRWP
  – Loan to be repaid by DPWD through water sales agreement
  – Prop 1 Grant obtained

• Modesto is implementing a Design-Build (D-B) approach
  – Expedites the design and construction process by compiling these services under a single entity
  – Minimize risks and reduce the project delivery schedule
Design-Build progress-to-date

✓ Design-Build Owner’s Advisor: November 2015
✓ D-B team RFQs issued: January 2016
✓ SOQs received: February 2016
✓ Shortlist approved and RFP issued: March 2016
✓ Proposals received: May 2016
  ✓ D-B Team Selection: end of May 2016
  ✓ Negotiation: June 2016
✓ Award to D-B Team: August 2016
✓ Construction Began: November 2016
☐ Construction Complete: Dec 2017
Modesto Project Status

- All right-of-way secured
- 100% design and design review complete
- 15% of construction complete
- Long lead equipment procured and being fabricated
- San Joaquin River crossing permits nearly complete
  - All other permits in place
- SRF application submitted
Modesto Project Status

• Delta Mendota Canal – Outfall Structure
Modesto Project Status

• Delta Mendota Canal – Outfall Structure
Modesto Project Status

• Delta Mendota Canal – Meter Vault
Modesto Project Status

Open - Cut Pipeline
Modesto Project Status

• Open-Cut Pipeline
Modesto Project Status

• Open-Cut Pipeline
Modesto Project Status

HWY 33 Crossing
Modesto Project Status

• Highway 33 Crossing
Modesto Project Status

• Highway 33 Crossing
Modesto Project Status

PID / WSID Crossings
Modesto Project Status

- PID / WSID Crossings
Modesto Project Status

Effluent Pump Station

Map showing locations of Zacharias Road, Lemon Avenue, and Standpipe.
Modesto Pro

- Effluent Pump Station
Modesto Project Status

• Effluent Pump Station
Modesto Project Status

Next Steps
- Open-cut & PID crossings
- HDD River Crossing
- Effluent Pump Station
San Joaquin River Crossing
Upcoming Project Challenges

• HDD Installation and Schedule Issues

Approximate location of HDD exit pit
Upcoming Project Challenges

• Modesto Effluent Pump Station and Pond Levels
Upcoming Project Challenges

- CDFW Permit (Incidental take for river crossing)

Swainson Hawk

Red Tailed Hawk
Turlock Project Status

• Basis of Design Workshop complete
• Survey, geotechnical, and corrosion investigations underway
• 50% design underway
• Biological surveys underway
Turlock Project Status

• Basis of Design Workshop - Operation
Turlock Design-Bid-Build Status

- Basis of Design Workshop – Modesto Tie-in
### Program Schedule

<table>
<thead>
<tr>
<th>Task Name</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
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<tbody>
<tr>
<td><strong>Modesto Project</strong></td>
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<tr>
<td>Develop RFP &amp; Select DB</td>
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<tr>
<td>Bidding</td>
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<td>Project Award</td>
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- **Early Completion**
- **Contractual Completion**
- **Design Completion**
- **Project Award**
Questions?