Better Process, Better Product

From USE (Undisinfected Secondary Effluent) to Tertiary Disinfected Recycled Water Production and Distribution

July 19, 2018
1. Regional Wastewater Reclamation Facility
2. Tertiary Treatment and Disinfection Facility
3. Recycled Water Customers
Fresno-Clovis Regional Wastewater Reclamation Facility

- Located on over 3,300 acres southwest of Fresno
- Provides wastewater treatment to the Cities of Fresno, Clovis, and unincorporated areas of the County of Fresno
- Designed capacity of 80 MGD. Currently receiving an average of 60 MGD. Serves a population of approximately 750,000
- Waste Discharge Requirements Order No. 5-01-254
Treatment Highlights

• The RWRF is a secondary activated sludge plant with common primary treatment followed by secondary treatment processes

• Originally, treatment included 4 aeration basins and 4 clarifiers that were constructed in the mid 70s

• The next treatment process was completed in the late 90s

• The latest treatment improvement was completed in 2010 as part of the $104 million Organic Upgrade Project
Solids Treatment and Power Generation

- The RWRF currently has 13 anaerobic digesters and 7 belt filter presses
- Biosolids are hauled to a composting facility outside the County of Fresno
Disposal Ponds

There are approximately 1,750 acres of land with ponds for effluent disposal.
Secondary Undisinfected Recycled Water

- Direct reuse of final effluent provides irrigation to farmers of non food crops.
- The City leases land to farmers, specifically for farming of non food crops with effluent reuse rather than using agricultural wells.
Crop Types

- Alfalfa
- Triticale
- Wheat
- Sorghum Sudan
- Winter Forage
- Corn Silage
Reclamation (Direct Reuse) Farming Sites

Effluent Irrigated Acreage

- Onsite: 49%
- Offsite: 51%

Map showing off-site and on-site farming sites.
Network of Extraction Wells

- Effluent disposal to ponds has over the years created an extensive mound under the pond area.
- The City has a contract with Fresno Irrigation District (FID) to discharge groundwater from extraction wells into Dry Creek and Houghton Canals.
- Approximately 10,000 acre feet a year could be extracted for irrigation canals according to the FID agreement.
Network of Extraction Wells

Dry Creek Canal

Houghton Canal
Fill Station Program
Fill Station Program

Program-to-date

9,136 residential and commercial visits

- 11.8 MG (2016)
- 1.8 MG (2017)
- 3.4 MG (2015)
- 845,000 G (2018)
Recycled Water and Major DPU Projects
Tertiary Treatment and Disinfection Facility
WQ 2016-0068-DDW
Recycled Water Distribution System

5 MILLION GALLONS-PER-DAY of disinfected recycled water

Fresno/Clovis Regional Wastewater Reclamation Facility (RWRF)

Roeding Park

Map not to scale
Completed and Ongoing Projects in Southwest Fresno

TTDF and RW Distribution System:

1% Financing Commitment through CWSRF
Quist Farms
Quist Farms
Quist Farms
Roeding Park

ROEDING PARK IRRIGATION SYSTEM
RECYCLED WATER CONVERSION & SIGNAGE PLAN

LEGEND
- ROEDING PARK IRRIGATION
- STORYLAND PLAY LAND IRRIGATION
- FRESNO CHAFFEE ZOO IRRIGATION
- NEW FRESNO CHAFFEE ZOO IRRIGATION
- CITY OF FRESNO POTABLE WATER LOOP
- RECYCLED WATER SIGNAGE PER CITY STD DWG RW-13
- CROSS CONNECTION CHECK COMPLETE
- NON-POTABLE WATER SIGN
Fresno Memorial Gardens
Pride in the Product

THINK GREEN
GO PURPLE

PROUDLY
IRRIGATED WITH
RECYCLED WATER

NUESTROS PARQUES SON REGADOS
ORGULLOSAMENTE CON AGUAS
RECYCLADAS. FAVOR DE NO BEBER.

ZOO SIAB PEB QHOV CHAW UA SI SIV DEJ
RECYCLE. THOV TXHOB HAUS, UA TSUAG.

DO NOT DRINK
RECYCLED WATER

City of FRESNO

We are conserving our most valuable resource by irrigating with recycled water.

NOTES:
1. All signs where recycled water is
   available and accessible to the
   public shall be posted with one
   or more informational signs in
   conspicuous locations that are
   visible to the public.
2. Information signs shall be
   constructed of 0.03" thick frame
   aluminum or other sign materials
   that are highly visible and make
   a permanent impression when
   viewed.
3. Secure sign to post with vandal
   proof hardware.
Recycled Water Customers
## Uses of Recycled Water

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<thead>
<tr>
<th>Required use</th>
<th>Voluntary use</th>
<th>Landscape Irrigation</th>
<th>Dual Plumbing</th>
<th>Other Uses</th>
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<td>Existing Institutional/Governmental</td>
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<td>New Apartments/Condominiums</td>
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<td>New Single Family Residential Homes</td>
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<td>Home Owner Associations</td>
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* The Director shall review the Recycled Water Master Plan and make a preliminary determination whether the current or proposed use of the property require it to be served with recycled water or to include facilities designed to accommodate the use of recycled water in the future, due to its location within the existing or proposed Recycled Water Project Area.
Recycled Water Planning

- Integrated Water Resource Management
- Demand and supply analysis
- Regulatory analysis
- On-site feasibility studies
- Market trends and opportunities
- Benefits to community
- Project alternatives analysis
- Cost feasibility and optimization
- Hydraulic modeling to minimize cost
- Funding availability
Thank you!

Discussion and Questions

City of Fresno

WASTEWATER MANAGEMENT DIVISION

Recycled Water...
Making Every Drop Count