Wastewater Facilities in Salt Lake County:

Current Treatment Approaches and Planning for the Future—A Panel Discussion

Salt Lake County Watershed Symposium 2012
Panel Members:

Central Valley Water Reclamation Facility –
  Tom Holstrom PE, General Manager
Jordan Basin Water Reclamation Facility –
  Garland Mayne, Facility Manager
Salt Lake City Water Reclamation Facility—
  Tom Ward, PE, Deputy Director, Public Utilities
South Valley Water Reclamation Facility-
  Lee Rawlings, Facility Manager
Central Valley Water Reclamation Facility

800 West Central Valley Road
Salt Lake City, UT
Central Valley

- **Constructed 1981-1989**
- **Interlocal Agreement Agency**
  - South Salt Lake City, Murray City, GHID, TBID, KID, CID, MOID
- **Discharge to Mill Creek/Jordan River**
- **AADF of 54 mgd**
- **75 mgd capacity**
Central Valley

- Trickling Filter/ Solids Contact Process
- UV Disinfection
- Anaerobic Digestion
- CHP Energy Recovery
  - 1.3 MW Continuous
  - Heat Recovery
- 0.75 mgd Recycled Water
  - Golf Course Irrigation
- IASP Compost System
  - 12,000 CY / Year
Central Valley Plant Process Schematic
Central Valley

- Year 2000-2011 AADF- 56 mgd
- Projected AADF Estimates
  - Year 2025- 60 mgd
- Polished Secondary
  - < 10 mg/l BOD, TSS
  - < 5 mg/l NH₃ < 50 E-Coli/100 ml
- 2010 UV Disinfection Project
Jordan Basin
Water Reclamation Facility

13826 S Jordan Basin Lane
Riverton, Utah
Jordan Basin

- Started service July 12, 2012
- Service Areas – Riverton, Draper, Herriman, Bluffdale, South Jordan and portions of Sandy City
- Receiving Water -- Jordan River
- Current Flow- 8 mgd
- Current Capacity – 15 mgd
Jordan Basin

- **Membrane Bioreactor Facility**
  - TSS average 1mg/l
  - BOD average 1mg/l
  - NH3 average 0.2 mg/l
  - TP averaging <1.0 mg/l
  - Turbidity average 0.12 NTU

- **LEED Gold Certification**
  **Administration and Maintenance Buildings**

- **0.30 mgd Recycled Water**
  - Facility Irrigation, heat pumps for HVAC and as grey water for toilets
Jordan Basin

- Largest membrane facility in Intermountain West
- 130 acre site, facility is located on 30 acres with 3.5 acres of wetlands--sustained with reuse water
- Site will allow for expansion to 30 mgd
- Currently discussing re-use with member cities for supplemental secondary irrigation supply
- Can meet 1st tier nutrient criteria levels, as proposed by the DWQ
Salt Lake City

- Year Built - 1965
- Communities served: Salt Lake City
- Receiving water: Farmington Bay
- Current flow: 31 mgd
- Facility design capacity: 56 mgd
Salt Lake City

- General Process description-
  - Influent Screening,
  - Primary Settling,
  - Tricking Filter / Activated Sludge,
  - Secondary Settling,
  - Anaerobic Digestion,
  - Drying Beds & Chlorine Disinfection
Salt Lake City

- Recent trends in discharge flows - Decreasing
- Future (next 3 years) estimates in flow quantities – 30 to 36 mgd
- Water quality improvements achieved - Over 18 years perfect compliance to UPDES permit
- Planned Facility Expansions/Improvements- Waste Activated Sludge (WAS) Thickening, Primary Sludge Screening & Odor Control
Salt Lake City Water Reclamation
Environmental Achievements & Innovation

• Water Quality NACWA “Platinum 18 Award”
  – 18 yrs perfect NPDES permit compliance. Achieved by few plants in nation.
• Constructed Wetlands – 30 acre site
• Research & Development
  – Collaborating on wastewater treatment research projects
  – Increase treatment, energy production, and reuse materials
• Air Quality and Renewable Energy
  – 2004 Methane gas recovery with Cogen Engine
    • Two 700 kW generators, 60% of plant electrical needs, $200k savings per year.
    • 5,850,000 kWh (equivalent 657 households)
    • Heat recovery – generator heats water used to heat plant process
  – 2010 Digester Enhancement
    • new high efficiency sealed gas digester lid and linear mixer design
    • Increased methane gas recovery, Reduced air emissions
• Biosolids reuse at Kennecott land restoration
• 2011 Biofuel safflower project with US Army, USU, Salt Lake City/County
• Water reuse – Future 5 MGD plant for parks, golf, open space
South Valley Water Reclamation Facility

7495 South 1300 West
West Jordan, UT
South Valley

- Built 1985
- Serving West Jordan, Sandy, South Jordan, Midvale, etc
- Discharge into the Jordan River
- Currently treating 25 MGD
- Design capacity is 50 MGD --average daily flow
South Valley

• Activated Sludge Process
  – Five 6 million gallon treatment basins
  – Secondary clarifiers
  – Ultra Violet Disinfection
    • liquid chlorine as backup disinfection.

• Biosolids
  – DAP thickener
  – Belt Filter Press
  – Thermal Dryer to 92% solids
    • Backup is landfill disposal
South Valley

- Currently going through a reduction in flows as the Jordan Basin plant comes online
- Over the next 3 months reduce to 20 MGD before starting to build flows
- 2009 began retrofit to facilitate future biological nutrient removal requirements
- No Planned Facility Expansions/Improvements (Unless required by our permit)
Discussion Topics for the Panel

- Watershed wide planning for conveyance and treatment—is there the need? Is there support?
- Nutrient Criteria and TMDL compliance- bringing all sources together, stormwater, wastewater, non-point source. Does this require integrated water resource planning to assess appropriate beneficial use and/or standards, and mitigation measures.
- Is the level of funding for wastewater infrastructure by rate payers sustainable?