



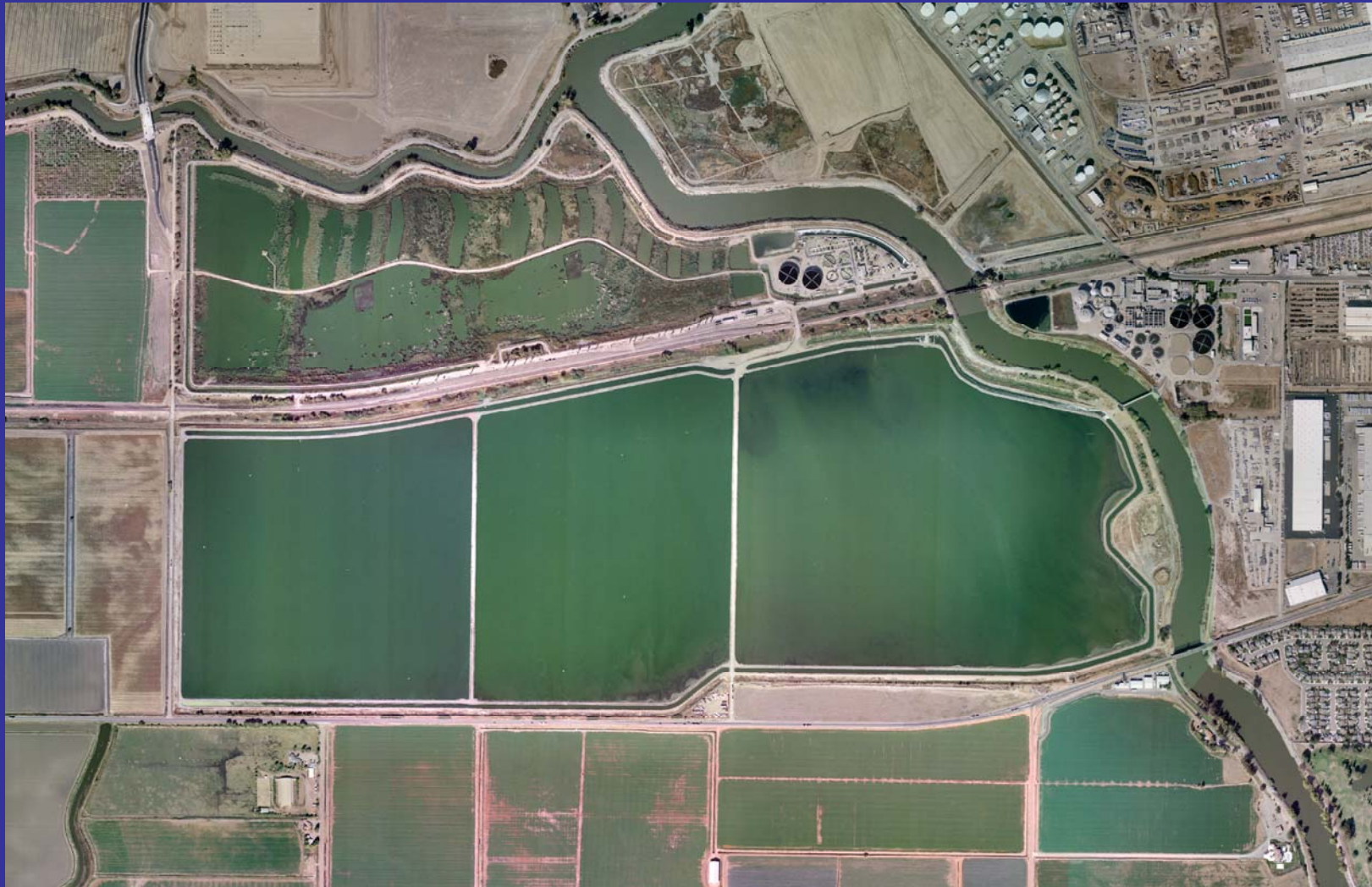
# City of Stockton Wastewater Nitrification Process Upgrade and Benefit to San Joaquin River Dissolved Oxygen

San Joaquin River Dissolved Oxygen Total Maximum Daily Load  
Technical Working Group Meeting

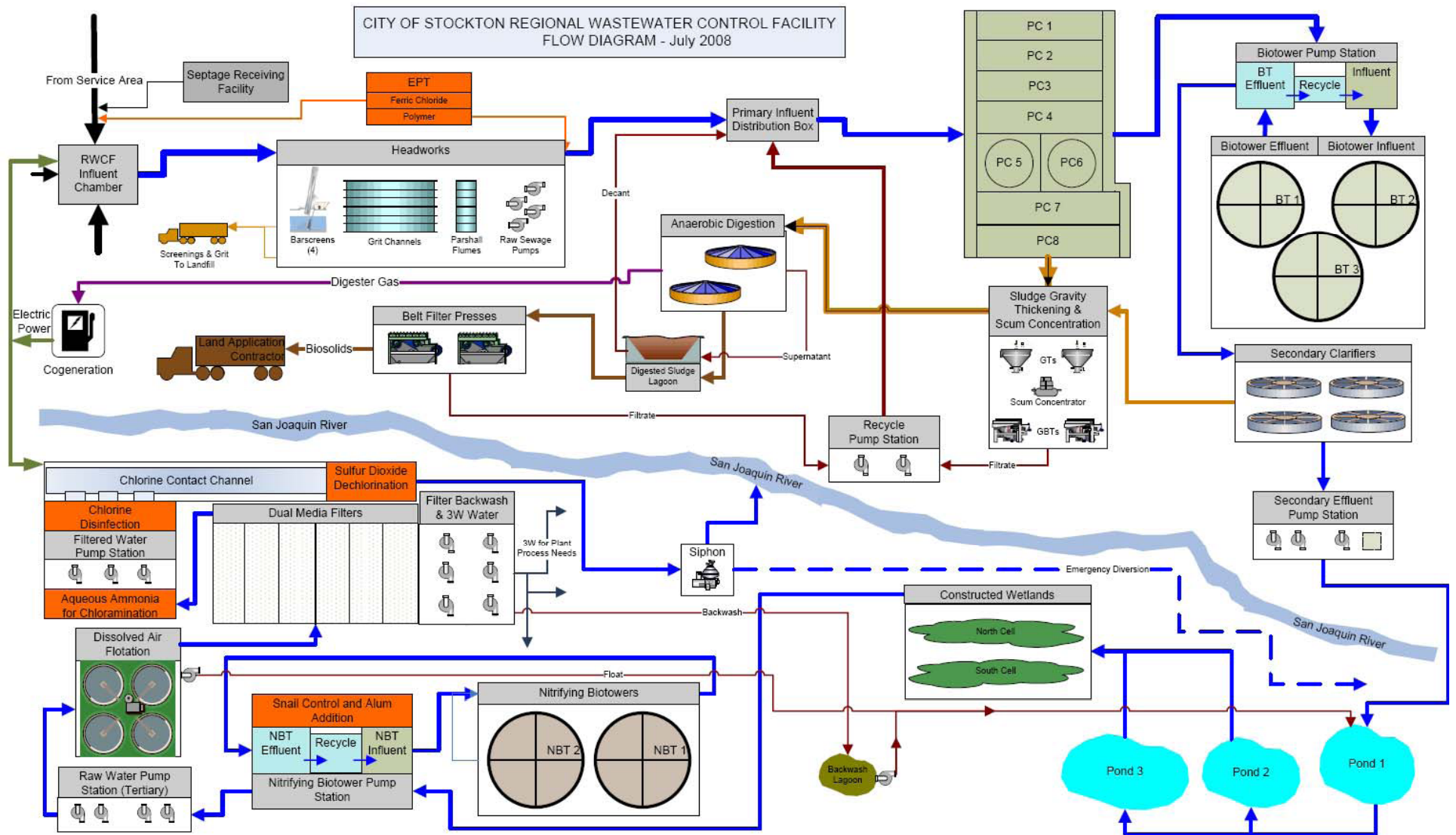
March 23, 2010

City of Stockton  
Municipal Utilities Department

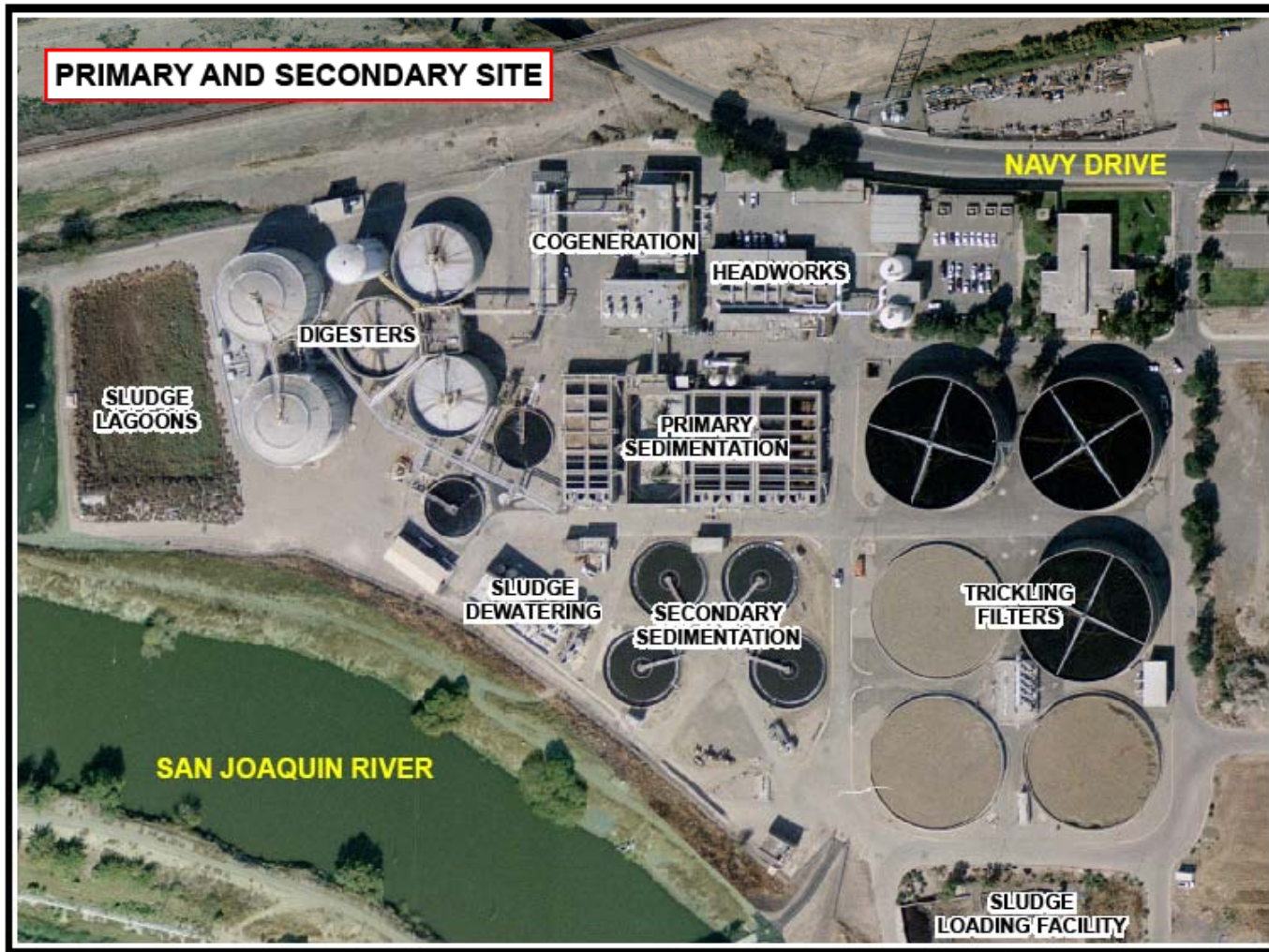
# City of Stockton RWCF Overview



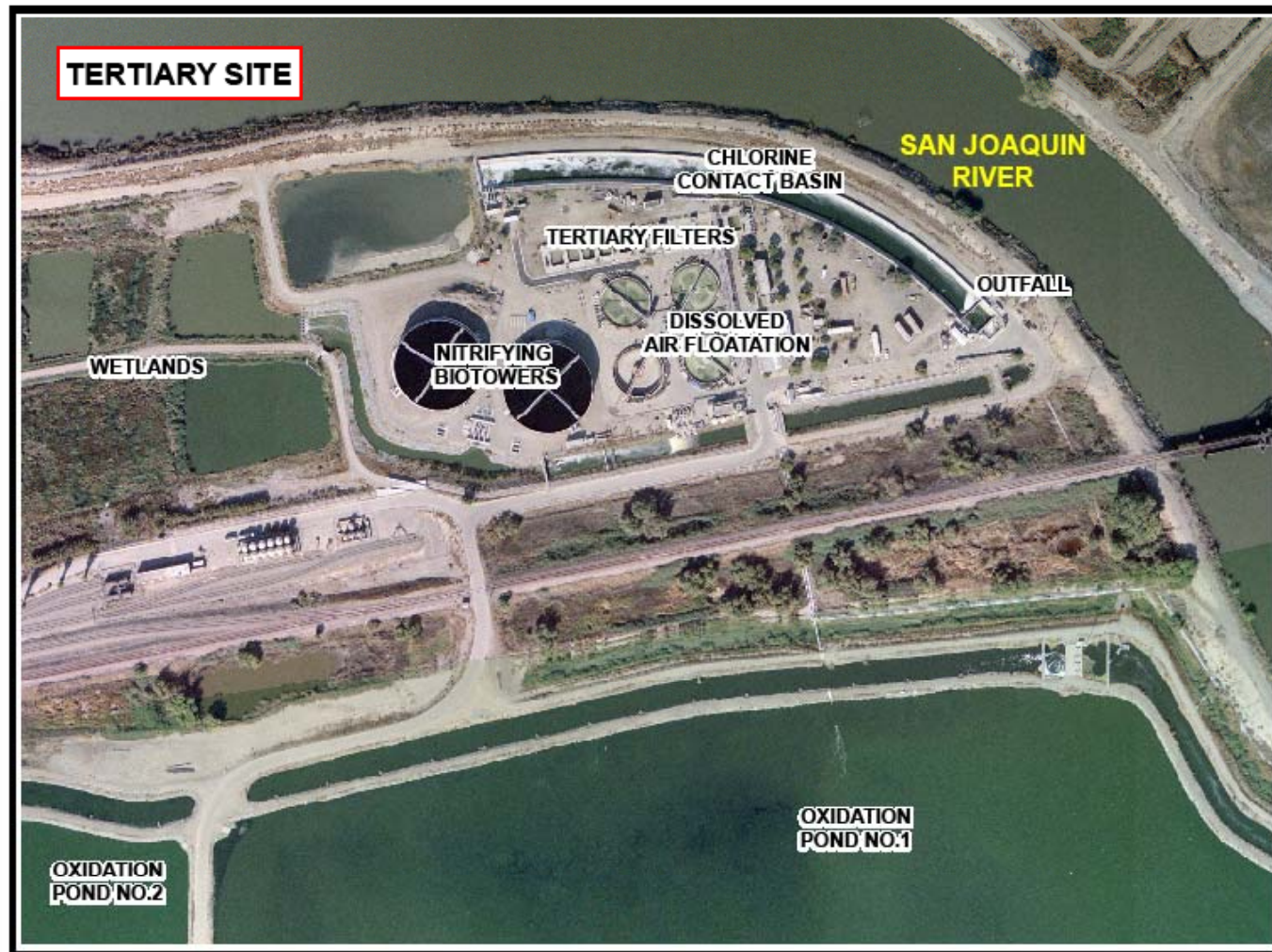
# City of Stockton RWCF Processes



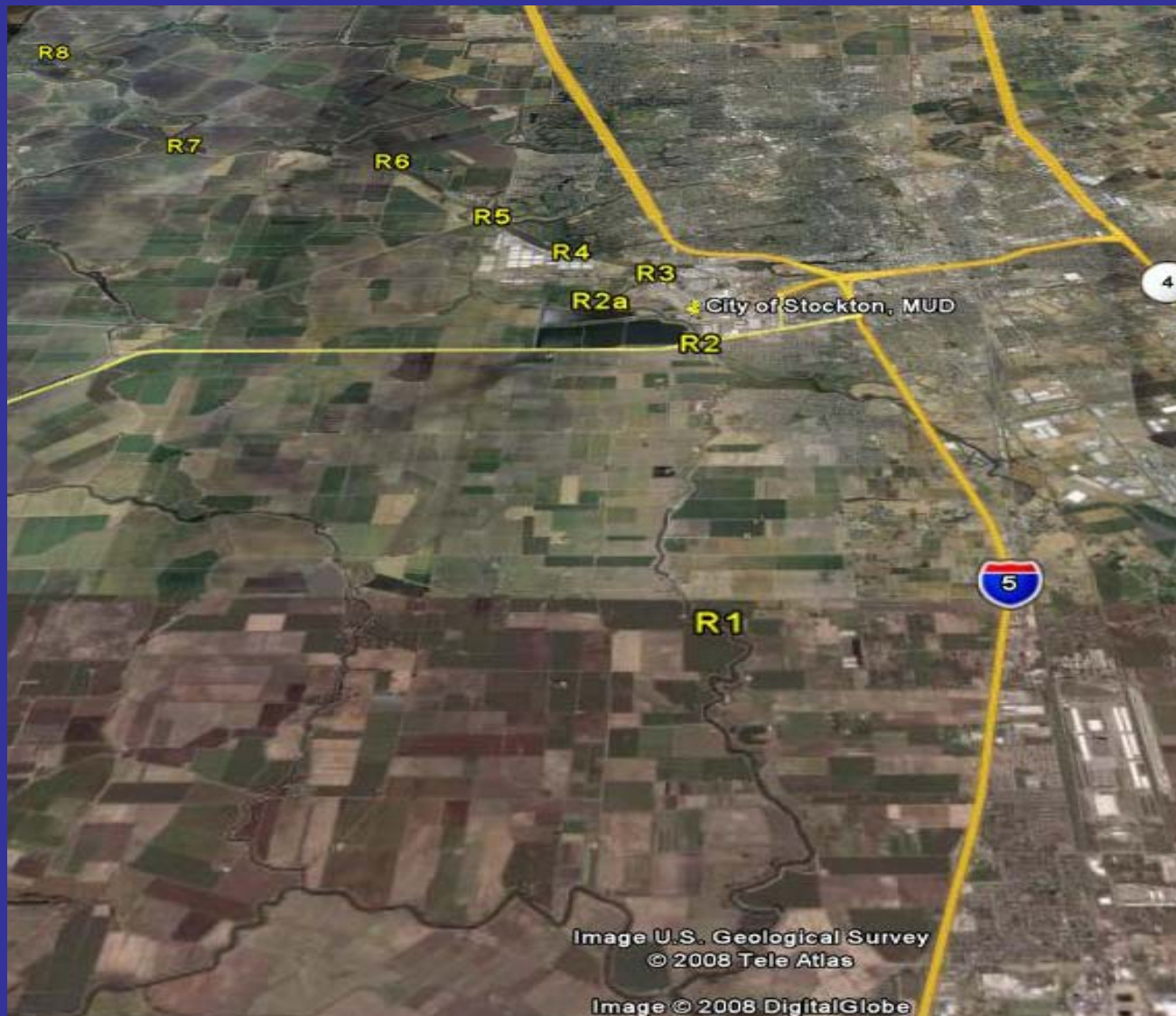
# City of Stockton RWCF Overview



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# River Monitoring Sites



# NPDES Permit Monthly Average Requirements @ 55mgd

- Effluent Ammonia Concentration 2 mg/L or 917 lbs/day
- CBOD<sub>5</sub> 10 mg/L or 4,590 lbs/day

# Wetlands Process



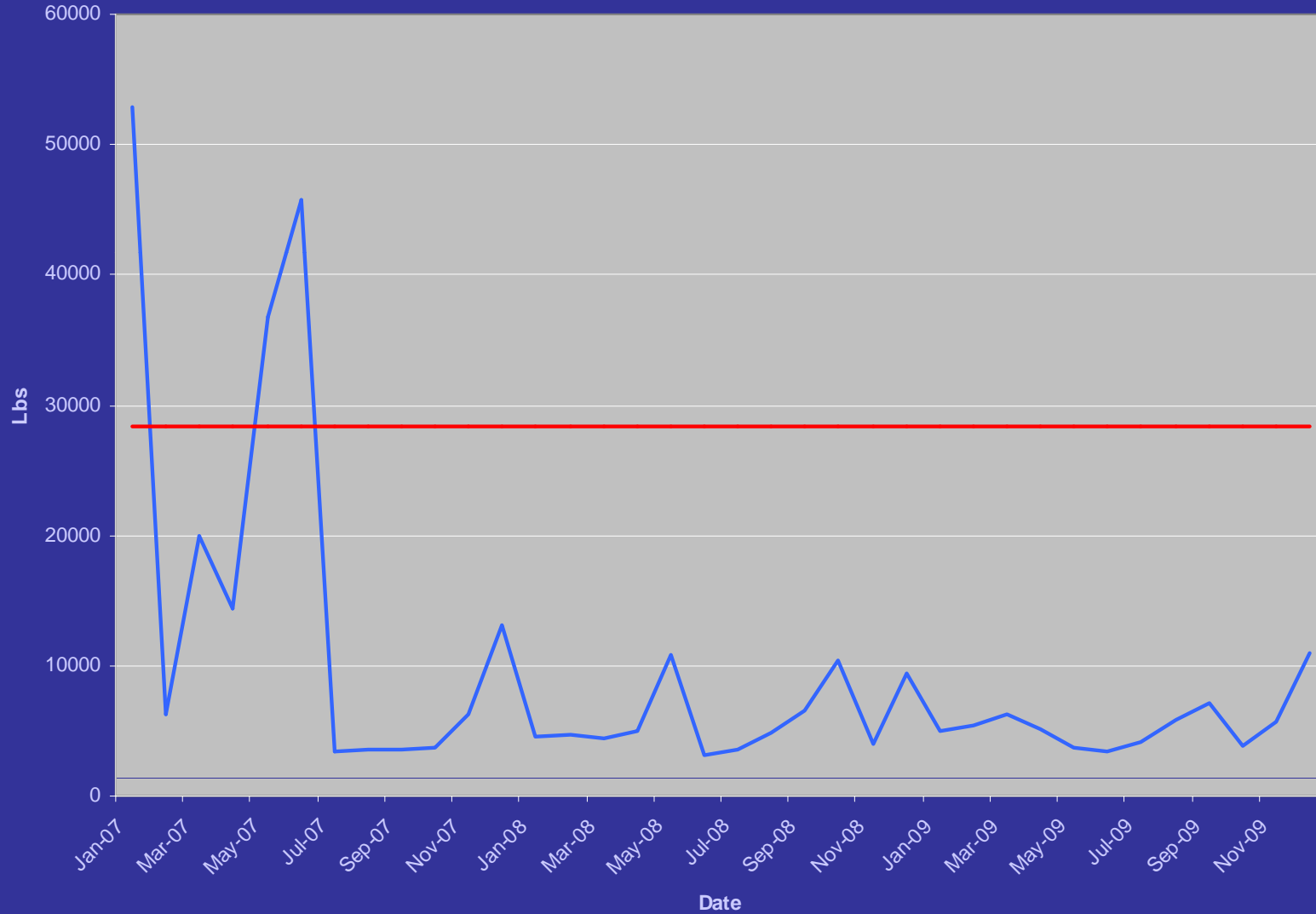


# Nitrification Process Biotowers



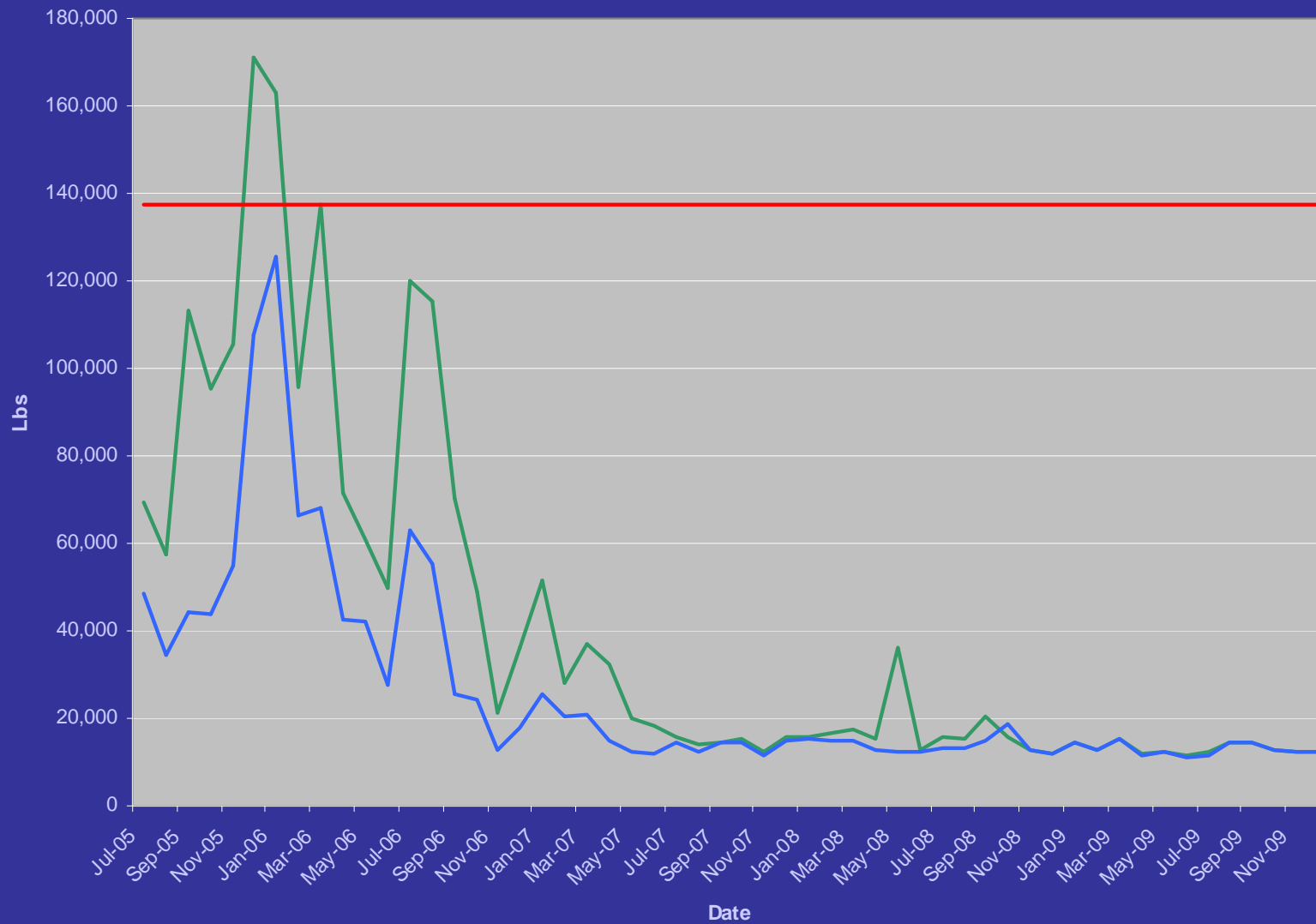
# Nitrification Process Performance

Monthly Average Effluent Ammonia Load



# Effluent BOD<sub>5</sub> Load

Monthly Average Effluent BOD<sub>5</sub> Load



# Benefits to San Joaquin River Dissolved Oxygen

- NPDES Permit Allows NH<sub>3</sub>N Load of ~28,000 lbs/month
- Nitrification Process Reduces Oxygen Demand ~650,000 lbs/month at Current 32 mgd Flow

# Benefits to San Joaquin River Dissolved Oxygen

- NPDES Permit Allows CBOD<sub>5</sub> Load of 137,610 lbs/month
- Actual Discharge CBOD<sub>5</sub> Load of <15,000 lbs/month
- Actual Discharge Reduces Oxygen Demand ~135,000 lbs/month

# Effluent Discharge to San Joaquin River

