

Salinity Management Update

October 18, 2017



Agenda

- Salinity Management
- Water Supply
- Long-Term Planning
- Modeling Effort
- Schedule

Salinity Management

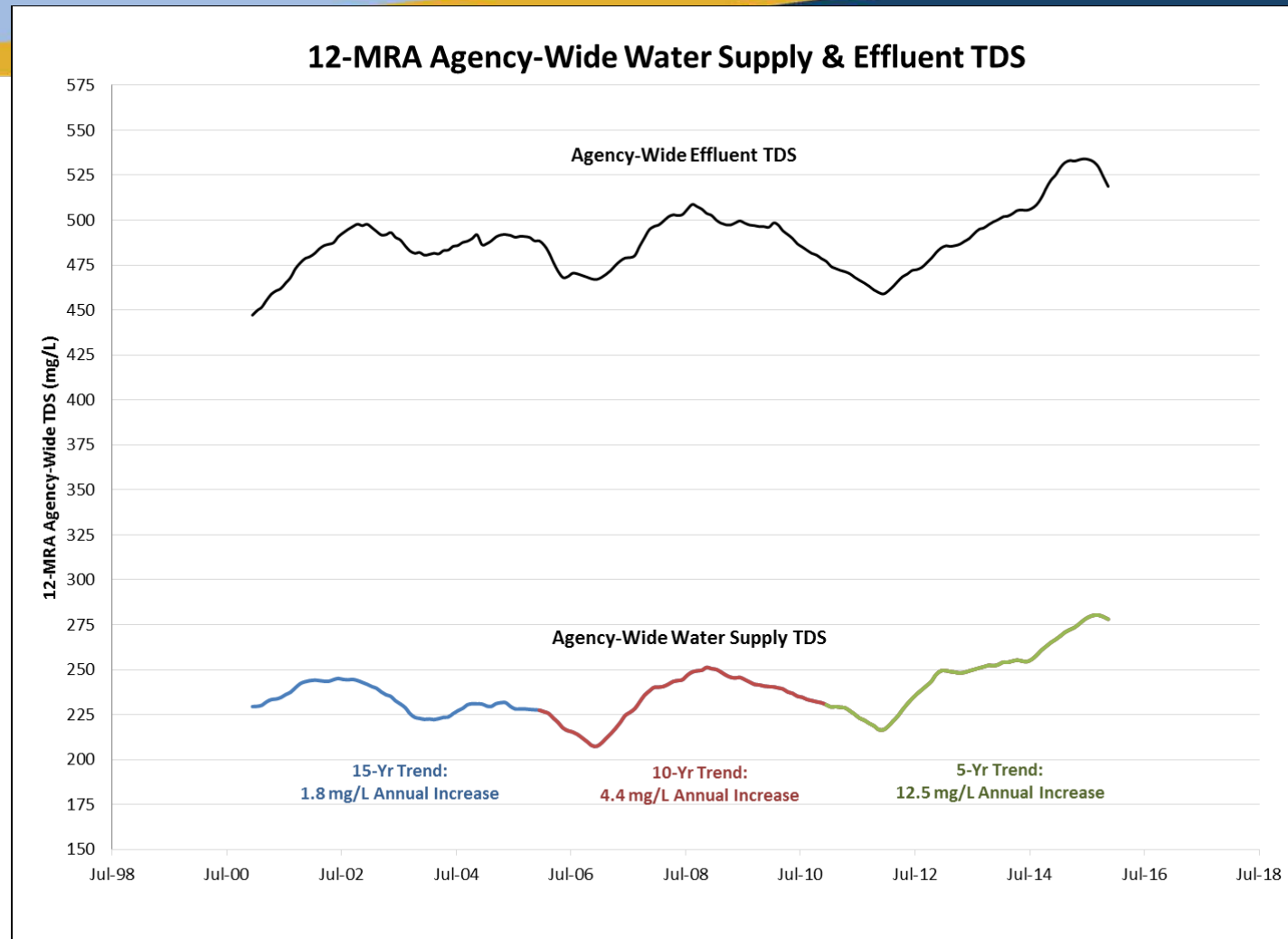
- Maximum Benefit Plan enables use of RW (irrigation & GWR)
- Commitment to implement regional programs to manage/reduce TDS
- Region has been working for past 15+ years to meet this commitment
 - Chino Basin Desalters
 - Self-generating water softener use ordinance
 - Brine line discharge requirements
 - Chemical use optimization in the WWTP
 - Securing high quality supplemental water



Maximum Benefit Commitments

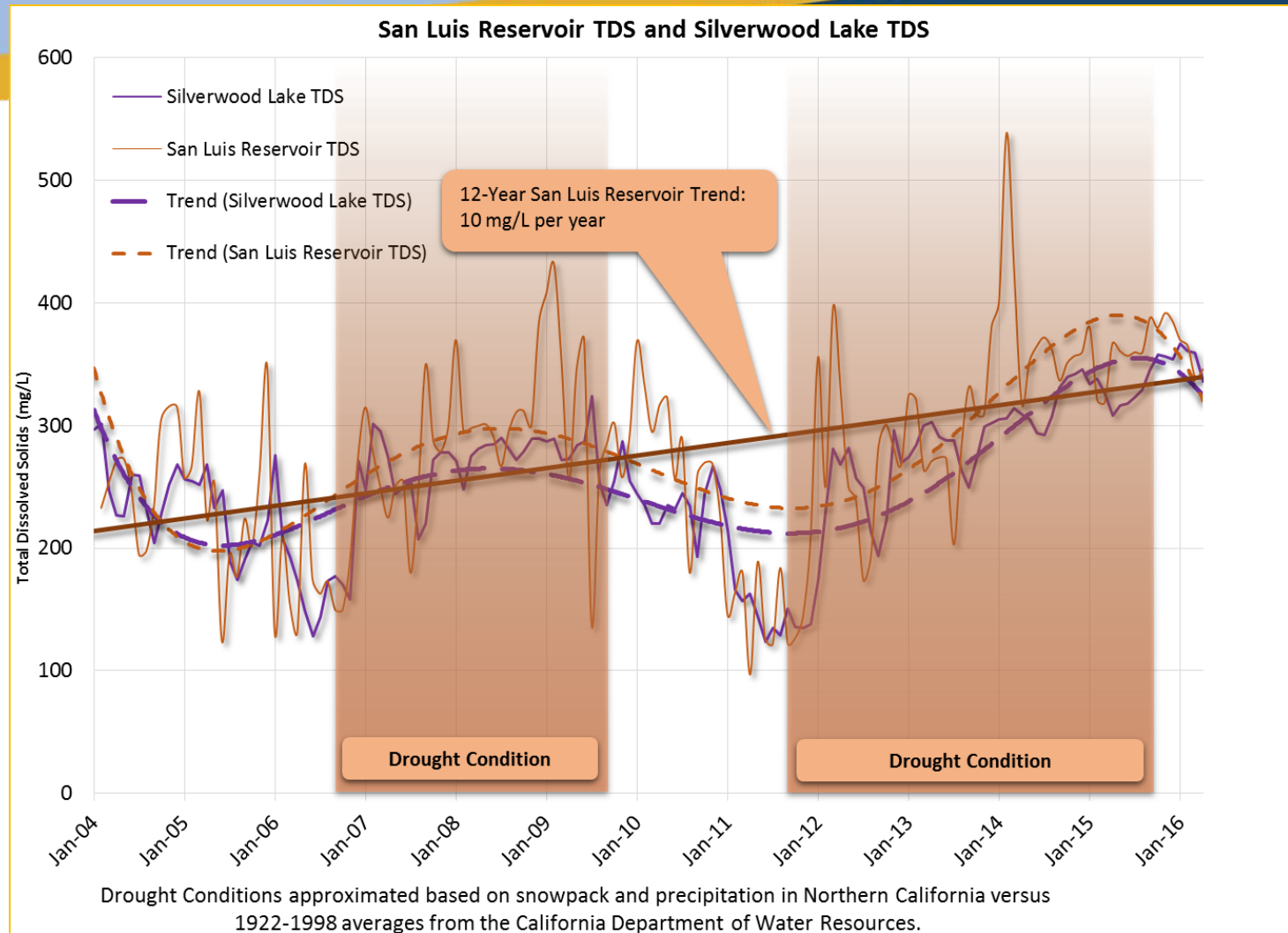
- ✓ Commitment No. 1: Surface Water Monitoring Program - met
- ✓ Commitment No. 2: Groundwater Monitoring Program - met
- ✓ Commitment No. 3: Chino Desalters I expansion & II constructed before recharge of RW - met
- ✓ Commitment No. 4: Future Desalters Plan – implementation in progress
- ✓ Commitment No. 5: Construct Recharge Facilities – met
 - Phase I & Phase II projects
 - RMPU projects
- ✓ Commitment No. 6: IEUA Wastewater Quality Improvement Plan when TDS and nitrate concentration triggers exceeded – not triggered
- ✓ Commitment No. 7: 5-Yr Running Average Recharge Quality - met
 - TDS & NO₃-N metrics are 345 mg/L and 3 mg/L, respectively as of Dec 2016
- ✓ Commitment No. 8: Hydraulic Control - met
- ✓ Commitment No. 9: Ambient GW Quality Determination - met

Water Supply & Effluent TDS



State Water Project TDS Trend

- Local water supply TDS is affected by SWP TDS
- 12-year avg: +10 mg/L per year



Salinity Management Programs

- Industry connections to Brine Line
 - North NRWS: 39 industries; ~15k tons of salt exported annually
 - South NRWS: 14 industries; ~30k tons of salt exported annually
- Water Softener Program
 - 825 units removed since 2008
 - 149 tons of salt per year not entering the regional sewer
- Septic-to-Sewer Project
 - Currently in feasibility stage
 - Planned implementation over the next 10 – 20 years
- Recharge of Low TDS Imported Water

Long-Term Planning Projects

- Planned projects included in analysis:
 - Conservation
 - UV Conversion (5–20 yrs)
 - 2013 Recharge Master Plan Update (stormwater projects) (5–20 yrs)
 - Septic-to-sewer conversion (10–20 yrs)
 - Reverse Osmosis (10-20 yrs)
 - Increased supplemental recharge (SARCCUP) (5–20 yrs)
- Implementing projects provides a TDS reduction benefit

Scope of Work Summary

- Scope of Work Objectives

- Develop updated modeling tools to evaluate the TDS concentrations of the Chino Basin
- Define planning scenarios
- Evaluate impacts from climate change
- Use updated modeling tools to project the TDS concentrations of the Chino Basin and perform an antidegradation analysis
- Use the results to develop and finalize a regulatory compliance strategy proposal
- Work with the Regional Board throughout this effort

Groundwater Modeling Tools

- Develop an MT3D-based numerical solute transport model that is based on the 2017 Chino Basin Watermaster MODFLOW Model
 - 2017 MODFLOW Model is an updated version of the Watermaster's 2013 groundwater flow model
 - The 2013 model was extensively calibrated, peer reviewed, accepted by the Chino Basin parties and relied on by the Court to reset the safe yield of the Chino Basin

MT3D Model Development

- Initial condition of vadose zone based on recharge sources and associated TDS concentrations for period of 1986-2016
- Initial condition of saturated zone based on current TDS concentrations
- Develop and agree on assumptions for TDS of recharge and discharge terms in planning projections
- This MT3D model can be used to test the impacts of different TDS management strategies on future TDS concentrations in the Chino Basin

Schedule

- Collaborative effort: IEUA, CBWM, Wildermuth Environmental
- Update Chino groundwater basin modeling
- Analyze projects, source water, groundwater, and climate impacts
- Work with the Regional Water Quality Control Board (RWQCB) on potential options

Description	Schedule
Develop Groundwater Model	May 2018
Groundwater Modeling & Evaluation	February 2019
Proposal to RWQCB	April 2019
Updated Proposal	August 2019
Environmental Evaluation	November 2019
Final Documents	December 2019

