

## San Joaquin River Real Time Management Program

### Description

The Real Time Management Program (RTMP) is an umbrella program to optimize/maximize the export of salt from groundwater, perched zones, and agricultural drain water from the Lower San Joaquin River (LSJR) Basin while ensuring that salinity and boron water quality objectives are met at Vernalis. The CVRWQCB has approved RTMP in the Basin Plan as an alternative salt management strategy in lieu of monthly salt load allocations enforced by the CVRWQCB.



The Vernalis objectives for EC are 30-day moving averages: 700  $\mu\text{S}/\text{cm}$  during the irrigation season (April to August) and 1000  $\mu\text{S}/\text{cm}$  during the non-irrigation season (September to March). According to the RTMP Draft Framework (Reclamation *et al.*, 2014), *“The goal under a real-time management program is to continue to meet the irrigation and nonirrigation season salinity water quality objectives by managing salt loads so they are discharged when there is assimilative capacity in the river, rather than be constrained by mandated monthly load allocations in WDR’s. Managing the use of assimilative capacity is also anticipated to reduce reliance on fresh water releases from New Melones Reservoir to meet the salinity objectives at Vernalis and to provide a mechanism to maximize salt exports from the SJR Basin.”* The RTMP components include:

- Stakeholder participation
- Real time monitoring network
- Data Management
- Predictive modeling/forecasting of flows and salinity in the river in order to predict assimilative capacity
- Physical infrastructure (gates, inlets, rubber dams, *etc.*)
- Program and project management practices
- Funding

Examples of pilot studies of RTMP include:

- Grassland Resource Conservation District Wetland Areas
- Grassland Bypass Project and Panoche Drainage District

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<b>Constituent Salts or Nutrients Managed</b>	The RTMP effectively manages all salts, nutrients and other constituents, in that it is not a treatment process but a sophisticated management tool for managing and exporting salt loads to the river at times when there is assimilative capacity. Other WQOs (boron, selenium, <i>etc.</i> ) must also be met.
<b>Applicability</b>	<p>Federal Clean Water Act (CWA) §305(b) requires that each state assesses the water quality status of each waterbody under CWA jurisdiction and report these findings to EPA. For this assessment, the state reviews available water quality data, compares these data to water quality objectives, and evaluates whether the beneficial uses of each waterbody are supported. Through this process and pursuant to CWA §303(d) the state is required identify waterbodies not meeting water quality standards even after all required effluent limitations have been implemented (<i>e.g.</i>, through a WDR). These waters are often referred to as “303(d) listed” or “impaired” waters. Waterbodies placed on the 303(d) list may require development of a Total Maximum Daily Load (TMDL). A TMDL is a calculation of the maximum amount or load of a pollutant that a waterbody can receive and still meet water quality objectives; this load is allocated among the various sources of the pollutant.</p> <p>The CVRWQCB adopted a TMDL for salt and boron in the LSJR as a Basin Plan amendment on September 10, 2004. EPA approval occurred in 2006. The approved TMDL establishes a water quality control program for salt and boron to achieve existing salinity and boron WQOs in the San Joaquin River at the Airport Way Bridge near Vernalis (“Vernalis”). The adopted control program requires a second phase TMDL to address salinity and boron concerns in the LSJR upstream of Vernalis. Through CV-SALTS, a LSJR Committee was established to develop recommendations for updated WQOs that support the beneficial uses on the LSJR and an implementation plan to support those objectives. The outcome of this effort will have direct bearing on how salt is managed in the watershed draining to the San Joaquin River.</p>
<b>Practice Benefits and Impacts</b>	<p>The CVRWQCB provided for participation in the LSJR RTMP in lieu of load allocations: <i>“The Regional Water Board will adopt a waiver of waste discharge requirements for salinity management, or incorporate into an existing agricultural waiver, the conditions required to participate in a Regional Water Board approved RTMP. Load allocations for nonpoint source dischargers participating in a Regional Water Board approved RTMP are described in Table IV-4.4. Additional waiver conditions will include use of Regional Water Board approved methods to measure and report flow and electrical conductivity. Participation in a Regional Water Board approved RTMP and attainment of salinity and boron water quality objectives will constitute compliance with this control program.”</i></p> <p>The umbrella RTMP is an effective tool for exporting salt out of the LSJR basin, while being protective of WQO compliance at Vernalis.</p>
<b>Effectiveness Documentation</b>	<p>The effectiveness of the GBP in reducing salt and salinity loading to the San Joaquin River via the San Luis Drain and Mud Slough:</p> <p>SFEI. 2013. Grassland Bypass Project Annual Report 2010-2011. Prepared for the Grassland Bypass Project Oversight Committee. November 2013.</p>

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	<a href="http://www.sfei.org/gbp/reports">http://www.sfei.org/gbp/reports</a>
<b>Supporting Documentation</b>	U. S. Bureau of Reclamation, Central Valley Regional Water Quality Control Board, San Joaquin Valley Drainage Authority, Grassland Resource Conservation District, San Luis & Delta-Mendota Water Authority/Grassland Bypass Project. 2014. Draft Salinity Real-Time Management Program Framework. May 9, 2014.
<b>Implementation: Planning Level Costs</b>	The Grassland Resource Conservation District Wetland Areas RTMP has been in operation for over a decade and has over 45 monitoring stations that characterize discharge and water quality entering and leaving the Grassland Wetland Complex. Reclamation I (2013) states, <i>"GRCD can offer guidance to those who are implementing similar programs. Costs associated with this program, including equipment acquisition, installation, quality assurance, and data management are currently in excess of \$5 million. Approximate annual programmatic costs are currently in the range of \$500,000."</i> About \$140M has been invested to date on the GBP and SJRIP.
<b>Implementation: Status and Potential</b>	The RTMP consists of four Phases: <ul style="list-style-type: none"> <li>▪ Phase 1 – Initiation Phase – to be completed prior to first compliance date of July 28, 2014</li> <li>▪ Phase 2 - Development Phase – begin at first compliance date and complete in 12 months</li> <li>▪ Phase 3 – Early implementation Phase – complete 36 months from first compliance date.</li> <li>▪ Phase 4 - Implementation Phase – completed 60 months from first compliance date</li> </ul>
<b>Implementation: Monitoring Documentation</b>	<a href="http://www.sfei.org/projects/grassland-bypass-project">http://www.sfei.org/projects/grassland-bypass-project</a> <a href="http://www.sfei.org/gbp/sjrip">http://www.sfei.org/gbp/sjrip</a>
<b>Implementation: Other Regulatory Approvals or Requirements</b>	NEPA/CEQA analysis may be required for the future phases of RTMP.
<b>Website:</b>	<a href="http://www.water.ca.gov/waterquality/sjr_realtime/">http://www.water.ca.gov/waterquality/sjr_realtime/</a> <a href="http://www.sfei.org/projects/grassland-bypass-project">http://www.sfei.org/projects/grassland-bypass-project</a> <a href="https://www.usbr.gov/mp/watershare/wcplans/2010/Refuges/Grasslands%20RCD.pdf">https://www.usbr.gov/mp/watershare/wcplans/2010/Refuges/Grasslands%20RCD.pdf</a> <a href="http://www.sfei.org/gbp/sjrip">http://www.sfei.org/gbp/sjrip</a>

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<http://gwdwater.org/grcd/who-we-are.php>