United States Department of the Interior

BUREAU OF RECLAMATION
Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, California 95825-1898

APR 15 2009

IN REPLY
REFER TO:
MP-700
ENV-8.00

Mr. Joseph Simi
Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, Suite 200
Sacramento, California 95670

Subject: California Environmental Quality Act (CEQA) Scoping Notice Comment Letter – Upstream San Joaquin River Salinity Objectives/Total Maximum Daily Load (TMDL) Program (3/30/09 Notice)

The Bureau of Reclamation, Mid-Pacific Region, Regional Water Quality Coordination Program, has received the subject scoping notice and attended the March 30, 2009 scoping meeting. Because the Regional Water Quality Control Board (Regional Waterboard) has not identified a proposed project for the purposes of scoping, Reclamation reiterates its concerns with the analysis conducted for the Basin Plan Amendment adopted for the control of Salt and Boron Discharges into the Lower San Joaquin River (BPA). Reclamation encourages the Regional Waterboard to address these concerns in its analysis to support setting upstream salinity objectives and an implementation program.

These concerns can be summarized as follows:

- The Regional Waterboard should employ a more accurate and dynamic modeling of the San Joaquin basin. The use of a lumped, static model to develop the current BPA resulted in an overly protective Margin of Safety and an over-reliance on the New Melones Reservoir. The Regional Waterboard should evaluate existing conditions and also dynamically model the proposed project and alternatives.
- The Regional Waterboard should reevaluate the baseline used for the analysis. The current BPA utilized an inconsistent baseline that included post construction east-side reservoirs and pre-construction Central Valley Project (CVP) facilities. The Regional Waterboard should consider using a baseline for which it has actual water quality data, instead of guessing at what water quality conditions were in the past.
- The Regional Waterboard should consider a strong analysis of the beneficial uses that these new objectives are being designed to protect, including consideration of setting site-specific standards that are more appropriate to the existing and projected future uses than the standard numbers currently used.

- A salt and water budget needs to be developed that includes a reasonable estimate of all parameters and these parameters need to be applied consistently basin-wide. The water balance would need to include both surface and ground water.The economic analysis should be robust. Cost estimates to dischargers and the economic benefits of protecting the identified beneficial uses should be fully evaluated. This is especially important as Central Valley Project water users will ultimately pay for any load reduction required of Reclamation.
- The San Joaquin River is regulated for many purposes, such as TMDLs for other constituents and biological opinions to protect fishery resources. For example, the San Joaquin River Restoration Settlement Act was recently enacted by Congress. The Regional Waterboard should evaluate proposed salinity objectives and TMDL within the context of all of these supply and quality constraints. Ideally, the Regional Waterboard should consider an analytical approach that bundles all pollutants on the 303(d) list on the Lower San Joaquin River and also works with the Irrigated Lands Program and the CVSALTs initiative. Developing a unified water shed approach would be more effective and have a much better chance of success than the existing piece-meal approach.
- Impacts on water supply and power management should be fully and accurately evaluated with the models used to develop the objectives and implementation program.
- The use of 52 mg/L concentration for the Delta-Mendota Canal background is unreasonable and not based on sound science. The load offset actions identified in the existing BPA place responsibilities on Reclamation which are beyond our legal authority and are therefore not implementable.
- Currently, the only cost-effective way to achieve water quality objectives while avoiding build up of salts within the basin is through a Real Time Management Program. The current BPA does not motivate Reclamation or dilution water providers to participate in a Real Time Management Program. The Regional Waterboard should use the upstream objectives process to explore ways in which to encourage the implementation of such a program if it proposes this as an alternative. Other physical alternatives should fully evaluate the costs, identify which parties will be expected to pay for the solution, and examine the economic impacts of this responsibility.
- Reclamation is currently charged by Congress to implement a Program to Meet Standards, to meet Delta water quality objectives at Vernalis and in the South Delta and to reduce the burden on New Melones Reservoir. The Action Plan submitted to the Regional Waterboard under the Management Agency Agreement outlines the activities which Reclamation is legally authorized to pursue to resolve salinity issues in the San Joaquin River. Reclamation encourages the Regional Waterboard to recognize these federal goals in its process.

These are further discussed in the enclosure to this letter.

Reclamation has long been engaged in salinity issues in the San Joaquin basin. Reclamation is committed to remain engaged in salinity issues through the Bay-Delta Plan Review, the development of upstream objectives, the CVSALTS initiative, the

implementation of the Program to Meet Standards, engagement in the Delta Vision, Bay Delta Conservation Plan, and other CALFED programs, and through investment in the Westside Drainage Plan. We look forward to continue working with the Regional Waterboard and finding a viable solution regarding these concerns, including consideration of federal initiatives and legal constraints.

If you have any questions, please feel free to contact Gene Lee, Regional Water Quality Coordinator at 916-978-5092, Lisa Holm, Program to Meet Standards project manager at 916-978-5078 or Michael Delamore, San Joaquin Drainage Program Manager, at 559-487-5039.

Sincerely,

William Rohwer

FOR Michelle Light
Regional Planning Officer

Enclosure

cc: P. Arroyave (MP-115), M. Jackson (SCC-100), R. Milligan (CVO-100)
(w/ encl to each)

Bureau of Reclamation CEQA Scoping Comments on the Upstream SJR Salinity Objectives/TMDL

1. Model: The Regional Waterboard should employ a more accurate and dynamic modeling of the San Joaquin basin. The use of a lumped, static model to develop the current BPA resulted in an overly protective Margin of Safety and an over-reliance on the New Melones Reservoir. The Regional Waterboard should evaluate existing conditions and also dynamically model the proposed project and alternatives.

The Regional Waterboard should first identify what it wishes to gain from numeric modeling. Since the development of the BPA there have been some advances in the modeling representation of the San Joaquin Basin. CALSIM 2, for example, is a better, more dynamic model of water management and salinity within the basin and through the Delta. While it allows for comparisons of alternatives, it may not be accurate enough to base stringent TMDL allocations on. Actual TMDL allocations would benefit from some nonparametric statistical evaluation of historical data to determine variability characteristics beyond the traditional water year/month characterizations, which are somewhat arbitrary categories. For example, it may be more relevant to use the basin flow numbers underlying these categories to examine flow, concentration, and load relationships. Design flow selection should also consider more appropriate statistical methods.

Reclamation supports the use of CALSIM 2 for this effort. It is also important that selection of the CALSIM 2 baseline and the assumptions for the modeling be done in an open process and fully disclosed to the public and within TMDL documents. The model should be operated in a way that considers all water management possibilities, and not rely solely on New Melones Reservoir. The baseline should consider water quality conditions with New Melones Reservoir releases limited to 70 thousand acre feet per year. Reclamation believes that the State Waterboard's directive in D1641 to develop the BPA was intended to relieve some of the existing pressures on New Melones Reservoir by fairly allocating a load responsibility, not to increase them by doubly taxing Reclamation with both water rights and TMDL constraints.

Once implementation designs are completed, they should be applied to the CALSIM 2 model to determine the environmental integrity of the alternative and to determine whether the alternative results in water quality improvements, impacts to flow levels, or impacts on water management operations to protect fish and to provide water supplies. Alternatives should also be evaluated for potential impacts to water supplies during prolonged droughts and evaluated for changes to salt loading at the Bill Jones Pumping Plant to the DMC.

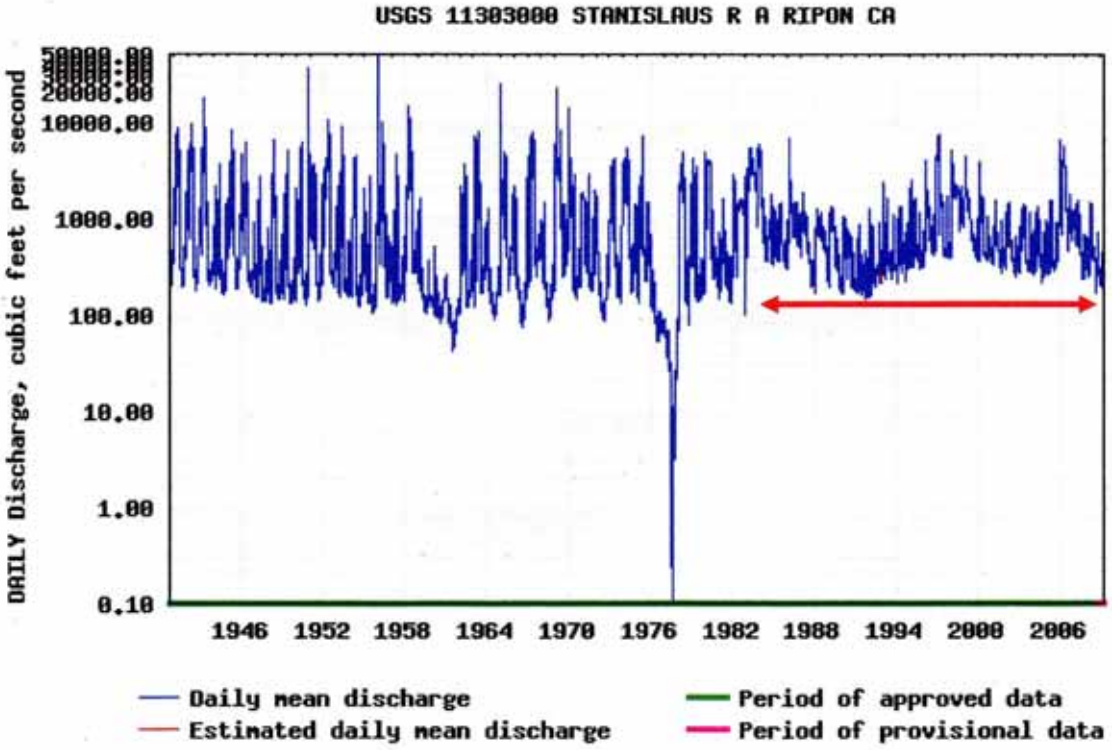
If the Regional Waterboard desires to explore the activities that contribute to salinity load, and to look at a finer time step and finer grid, it should also consider using a watershed model such as the WARMF San Joaquin model. This could also be used as a cross-check with subarea load calculations. WARMF is also a large aggregation of regional data, collected from various monitoring sites and individually funded projects.

2. Baseline: The Regional Waterboard should reevaluate the baseline used for the BPA analysis rather than merely copying it. The BPA utilized an inconsistent baseline that included post construction east-side reservoirs and pre-construction CVP facilities. The Regional Waterboard should consider using a baseline for which it has actual water quality data, instead of guessing at what water quality conditions were in the past. Regardless of the authority of the Regional Waterboard, the baseline should be consistent in time, and consider all contributors to the described problem, not just those that can be regulated by the Regional Waterboard. The Regional Waterboard could then include direction to the State Waterboard on water rights actions to assist the TMDL, similar to the State Waterboard's approach in the Bay-Delta Plan.

Reclamation does not see the value in using a baseline that represents "natural conditions" in a highly developed system like the San Joaquin Basin, other than to assign some kind of penalty for past actions. The basin is the way it is, and unless the Regional Waterboard is recommending a wholesale abandonment of water supply projects (which is not within its authority), a more pragmatic solution is to identify a point in time for which there is relatively good flow and salinity data and close to current operations. A baseline which includes the Grassland Bypass Project and is supported by good data would allow the Regional Waterboard to use existing conditions as its baseline, to determine objectives based on existing and potential future beneficial uses, and to develop implementation actions that work within the existing structure of the basin and the Delta, while divorcing the process from regional politics.

Reclamation recommends this approach for several reasons. First, it believes that this approach has the highest likelihood of resulting in an implementable solution. Second, it does not risk the arbitrary inclusion or exclusion of existing reservoirs, canals, or land uses and the impacts they have on salinity, such as the attenuation of flows from reservoir operations (see the following figure of New Melones Reservoir effects on Stanislaus River flows as an example). Third, it does not put Reclamation or the Regional Waterboard in the regulatorily untenable position of attempting to achieve Sierra quality water in the Delta. Fourth, it will result in a TMDL load allocation that is more realistic of existing conditions and constraints and allow the Regional Waterboard to focus on practicable, implementable actions, rather than further delaying water quality improvement in battles over politics or over unpracticable and unimplementable load allocations.

Finally, Reclamation suggests that it is *critical*, when dealing with salinity, to develop a TMDL that examines loads in the context of both flow and concentration. Discussion of loads alone is inadequate to guarantee an equitable and implementable TMDL program. The baseline should discuss flow and concentration conditions in parallel with loads.



3. Beneficial Uses: The Regional Waterboard should consider a strong analysis of the beneficial uses that these new objectives are being designed to protect, including consideration of setting site-specific standards that are more appropriate to the existing and projected future uses than the standard numbers currently used. During the March 30 hearing, speakers suggested that agricultural standards should be appropriate to actual crops being produced and that the Department of Public Health be consulted on the issue of Municipal Use. Reclamation supports those suggestions, and believes that in such a highly constrained basin, for this particular constituent, it is important for the Regional Waterboard to take an approach to beneficial uses that considers optimizing for both water supply and water quality.

4. Salt and Water Budget: A salt and water budget needs to be developed that includes a reasonable estimate of all parameters and these parameters need to be applied consistently basin-wide. The water balance would need to include both surface and ground water. This is essentially what the CVSALTS Initiative is attempting to do for the entire Central Valley. A water and salt budget is also a way to examine water supply and water quality together, to analyze activity-specific management options or TMDL alternatives, and to develop an appropriate margin of safety for the TMDL.

A water and salt budget should include a closer look at groundwater flow dynamics and consider the retention of salts within the groundwater basins when loads are reduced by land application of salts. The BPA does not account for seasonal and annual fluctuations in groundwater tables, for the deep percolation and leakage from groundwater, or for historic salt loading or leaching from groundwater basins. Reclamation encourages the Regional Waterboard to include a more dynamic and more robust analysis of the role of

groundwater in the water and salt budget for the basin. Groundwater accretions and salinity buildup are extremely important to river salinity management in the long term and should not continue to be overlooked in Water Quality Objective setting and TMDL development. If more monitoring and/or management actions are needed, this should be identified and encouraged by the Regional Waterboard.

Reclamation is available to work with Board on accurate representation of water and salt in the CVP system.

5. Economic Analysis: The economic analysis should be robust. Cost estimates to dischargers and the economic benefits of protecting the identified beneficial uses should be fully evaluated. This is especially important as Central Valley Project water users will ultimately pay for any load reduction required of Reclamation.

The economic analysis should include several elements. First, the Regional Waterboard should determine the potential benefits of meeting any newly proposed water quality objectives as well as the potential costs of not meeting any newly proposed water quality objectives. This should then be used to justify the additional expense of the control program. The Regional Waterboard should also determine the cost to dischargers of not complying with proposed control program alternatives. The Economic Analysis report does not show how the profitability of a water user may change as a result of implementing the alternatives.

Second, the Regional Waterboard should fully evaluate the potential economic impacts to Reclamation contractors. First, if Exchange Contractors are required to restrict or "clean up" their irrigation discharges of DMC water, then it may be economically justified for them to exercise their right to San Joaquin River water, requiring Millerton Reservoir to be re-operated. Under this scenario, water that is currently diverted into the Friant-Kern Canal will be released into the San Joaquin River, thus allowing the Exchange Contractors to divert from the San Joaquin. There would be significant economic impacts of taking water away from the Friant-Kern water users. Second, the cost of compliance could be very high if Reclamation had to reallocate or purchase additional water for dilution flows at Vernalis. Although Reclamation is exploring the potential for a Real-Time Management Program, the economic and physical affects of reallocating the loads to high flow periods could cause wide spread disruption in the agricultural marketplace in the San Joaquin Valley. The cost of monitoring could be considerable. Surface storage of selenium-tainted drain water would be cost prohibitive and underground storage may cause irretrievable damage to the soil profile resources. Third, many wells on the west side of the valley are prohibited by Reclamation from discharging into Reclamation facilities (DMC) due to the high boron concentrations. This ground water pumping is outside of Reclamation's control and will be problematic during a "normal" water year. During a drought year, i.e. low water allocation, ground water pumping will increase substantially and will create an undue hardship on Reclamation if Reclamation is primarily responsible to meet the Salt and Boron TMDL on the Lower San Joaquin River.

Salinity is basically an economics question: What are willing to spend to protect what value? Salts are very expensive to physically treat and remove, therefore salt is generally managed through source shifting, matching, and timing and through preventing salinity from entering the system. It is too late to prevent salinity from entering the system and there are very limited opportunities for other methods of management. It is critical, therefore, that the worth of the resources being protected be determined so that stakeholders can evaluate and weigh in on the cost parties should pay to protect it.

6. Consideration of Other Regulations and Laws: The San Joaquin River is regulated for many purposes, such as TMDLs for other constituents and biological opinions to protect fishery resources. For example, the San Joaquin River Restoration Settlement Act was recently enacted by Congress. The Regional Waterboard should evaluate proposed salinity objectives and TMDL within the context of all of these constraints. Ideally, the Regional Waterboard should consider an analytical approach that bundles all pollutants on the 303(d) list on the Lower San Joaquin River and also works with the Irrigated Lands Program and the CVSALTs initiative. Developing a unified water shed approach would be more effective and have a much better chance of success than the existing piece-meal approach.

The Regional Waterboard, therefore, should develop a goal of environmental integrity. This would focus efforts on optimizing water use to meet desired outcomes, while also setting quality objectives that do not result in significant reductions in river flows. For example, the use of focused prohibition of discharge and general and individual waste discharge requirements could have an adverse effect if surface water was intentionally allowed to infiltrate into the groundwater system to meet permitting requirements. An environmental integrity goal would force the Regional Board to examine implementation of the program with respect to river conditions. It is not at all clear that a reduction in salt load from one portion of the basin will equate to an equivalent reduction at some point in the San Joaquin River.

Also, one of the required elements of a TMDL submittal according to EPA Report 841-D-99-001, an allowance for future growth, should be included in the new BPA. Future growth could be analyzed through output from the CALSIM 2 model, which can model present and future projected land uses.

7. Impacts on Water Supply and Power Management: Impacts on water supply and power management should be fully and accurately evaluated with the models used to develop the objectives and implementation program.

In addition to the economic effects of the scenarios described under comment #5, the environmental, water supply, and power management impacts should also be analyzed. Water Supply and Power Management impacts can be initially determined through a dynamic modeling of the system with the proposed implementation program imposed. The analysis should also consider existing regulatory constraints and priorities, including Reclamation Law, the Global Warming Solutions Act of 2006, and the current processes addressing the future of the Sacramento-San Joaquin Delta. The analysis should also

consider the current regulatory constraints on and operational agreements for water supply and power management, and recognize the parties responsible for those constraints.

Modeling of water supply should extend out to the Delta and evaluate changes to the recycling of salts from the San Joaquin River to the DMC through the Bill C. Jones Pumping Plant.

8: DMC background water quality: The Regional Waterboard should not perpetuate the use of 52 mg/L Total Dissolved Solids concentration as the goal for Delta Mendota Canal, as it is unreasonable and is not based on sound science. This goal has resulted in load offset actions identified in the existing BPA which place responsibilities on Reclamation that are beyond legal authority and therefore not implementable.

Reclamation believes the use of 52 mg/L TDS to represent the background water quality of the water supplies to the west side of the San Joaquin Valley is inappropriate. 52 mg/L represents reservoir-attenuated high-flow upper basin Sierra Nevada quality water, and runoff from the valley's west side would not be of that quality, even without the impacts of the Central Valley Project:

- The native soils in this area naturally contain a high amount of salts, which are mobilized when water is applied to the surface soils. Runoff from storm events should mobilize salts from the soils, as well as runoff from riparian water users and wetland water users. The Regional Waterboard recognized this in its Waste Discharge Requirements for the Grassland Bypass Project, which recognizes high selenium background loads during storm events (and is true of salt as well). If water imported from the Delta had a zero salt load, the Northwest and Grasslands sub-area contribution would remain significant due to continued leaching of salts from irrigated soils in these two sub-areas. Prior to the construction of Reclamation project facilities in this area, significant quantities of salt were deposited in these soils due to the use of high salinity groundwater from the deep coastal aquifer. Salt leaching is necessary for the sustained irrigation of lands in the San Joaquin Valley, and would endure assuming agriculture continues in the Valley.
- Large detention dams have been constructed on Los Banos and Little Panoche Creeks, which contribute to the Grasslands inflow. Historically, large wetland areas have concentrated salt through consumptive use, and groundwater irrigation occurred in the study area prior to CVP development.
- The use of a Sierra Nevada quality water as the value for Friant deliveries to the lower San Joaquin River is overly conservative, as it does not account for anthropogenic influences (diversions and discharges) that would occur between Millerton Dam and the lower San Joaquin River locations absent Millerton Dam. It is likely that a great deal of agriculture would occur upstream with or without the Dam. The BPA started to recognize this by stating "the average base TDS concentration for the LSJR above Salt Slough was determined to be approximately 79 mg/L."

Therefore, Reclamation believes the Regional Waterboard should determine a background value of saline loading for the west side that takes these factors into account, and that does not penalize the project users for salt loading which would occur even without the project.

A water quality goal for the Delta-Mendota Canal should be based on existing Delta conditions and regulations. This would hold Reclamation responsible for impacts from Reclamation lands and facilities, not for loading that is a result of activities on private lands. Reclamation's loading should be calculated by adding any pickup in salt and boron that occurs on Reclamation lands. This would include inflows that are allowed into the Delta-Mendota Canal and any changes in water quality that has resulted from DMC water entering the groundwater system on Reclamation lands. In addition, Reclamation should be held accountable for water brought into the basin that exceeds water quality objectives, and not the agricultural concentrating effects of the water use. The farmers should be responsible for salt increases due to agricultural uses.

If the Regional Waterboard believes that existing Delta conditions and regulations are not restrictive enough to protect San Joaquin River beneficial uses, it should pursue developing an appropriate water quality objective and implementation program for that location, including the necessary analysis of associated benefits and costs. Otherwise, the Regional Waterboard is essentially requiring Reclamation to clean up or offset loading from all upstream Delta polluters, including those within the San Joaquin River basin. Reclamation finds this unacceptable and encourages the Regional Waterboard to find a more equitable solution.

There are currently only two ways in which Reclamation can comply with the BPA – one is to purchase dilution water (which is likely not available) and the other is to construct a cost-prohibitive desalination plant for the DMC (which is not currently authorized or funded). Because the BPA so heavily relies on this, it is unlikely that the BPA will ever be successfully implemented, but will continue to rely on the band-aid approach of relying solely on New Melones Reservoir releases to meet the water quality objective at Vernalis, while failing to meet the program of implementation described in the BPA.

9. Real-Time Management: Currently, the only cost-effective way to achieve water quality objectives while avoiding build up of salts within the basin is through a Real Time Management Program. The current BPA does not motivate Reclamation or dilution water providers to participate in a Real Time Management Program. The Regional Waterboard should use the upstream objectives process to explore ways in which to encourage the implementation of such a program if it proposes this as an alternative. Other physical alternatives should fully evaluate the costs, identify which parties will be expected to pay for the solution, and examine the economic impacts of this responsibility.

Under the current BPA, the entities that have the potential to provide dilution water have no regulatory benefit of participating in real-time management and Reclamation does not clearly benefit from promoting a real-time management program. Only the highest dischargers stand to benefit, and it is left in their hands to develop a program. This is not

gaining traction. The Regional Waterboard should fully engage in and support the development of an economic or regulation-based trading scheme that eventually becomes incorporated into the BPA if it expects a real time management program to be implemented. Without a real-time management program, the current BPA is overly restrictive and should be revised.

Reclamation has committed to working on a real time management program, in spite of a lack of any guarantee that it will offset any DMC loads.

11. Federal Authority: Reclamation is currently charged by Congress to implement a Program to Meet Standards to meet Delta water quality objectives at Vernalis and in the South Delta and to reduce the burden on New Melones Reservoir. The Action Plan submitted to the Regional Waterboard under the Management Agency Agreement outline the activities which Reclamation is legally authorized to pursue to resolve salinity issues in the San Joaquin River. Reclamation encourages the Regional Waterboard to recognize these federal goals in its process.

On alternatives that involve Reclamation, we encourage the Regional Waterboard to work directly with Reclamation on developing evaluation criteria and methods. For example, it does not appear that the Regional Waterboard considered Reclamation law when determining consistency with State and Federal laws.

12. Other:

Surveillance and monitoring program: There continues to be large data gaps in northwest and east valley floor. Monitoring at the ends of tributaries doesn't help the Regional Waterboard identify sources or track progress. This effort should use and coordinate with the monitoring under the Irrigated Lands Regulatory Program.

Compliance Schedule: Reclamation is very interested in determining the long-term objectives for San Joaquin River water quality and water management so it can strategically invest in projects, programs, and actions appropriately and avoid investing in short-term projects that become stranded assets. Reclamation encourages the Regional Waterboard to work with the larger CVSALTS effort to develop solutions that can be widely agreed upon and therefore are more likely to be successful in obtaining state and/or federal funding for implementation.