Lower San Joaquin River Salinity Objectives
Screening Approach for Implementation Planning (LSJRC Task 4)
January 21, 2014

The LWA Team has identified eighteen potential salinity control actions or "implementation actions", ranging from large regional solutions to best management actions (BMPs), to reduce salinity inputs into the Lower San Joaquin River (LSJR) or increase salt exports from the watershed (see attached Implementation Matrix). Each implementation practice has pros and cons that must be considered in order to prioritize the options and evaluate management alternatives. The LWA Team is charged with the development and evaluation of three (3) management alternatives using the WARMF model. Each alternative will likely be a combination of several implementation actions.

The purpose of Task 4 is to evaluate a range of management alternatives and assess their ability to achieve proposed salinity WQOs for the LSJR. Information generated in Task 4 will be used to evaluate the feasibility and cost effectiveness of potential implementation actions.

Screening criteria have been developed to guide the LWA Team and the LSJR Committee toward the selection of the three alternatives to be evaluated. These include three main criteria, and several sub-criteria. The main criteria are: 1) technical feasibility, 2) economic viability, and 3) the ability to implement in a timely manner.

The criteria were selected following a review of the approaches and considerations presented in the LSJR Salt and Boron TMDL and available SSALTS documents. The criteria are also supportive of the overall goals of the Central Valley SNMP that have been identified by CV-SALTS. These goals are to:

- Sustain the Valley's lifestyle
- Support regional economic growth
- Retain a world-class agricultural economy
- Maintain a reliable, high-quality water supply
- Protect and enhance the environment

The alternatives analysis will involve three steps: The first step will be to use the criteria to screen and prioritize the implementation actions. The second step will be to combine compatible actions into three management alternatives for a detailed evaluation. The third step will be to evaluate the three alternative management scenarios using the WARMF modeling tool and assess the ability to achieve proposed water quality objectives. Tables 1 and 2 present the criteria, sub-criteria, narrative scoring range, and suggested scoring metric for each criterion, and pertinent considerations as they relate to Steps 1 and 2. These proposed steps and criteria will be reviewed with the LSJR Committee.

<u>Step 1: Prioritize the Implementation Actions (Table 1)</u>

The 18 implementation actions that have been identified will be screened and ranked for suitability to either control salinity inputs into the LSJR or facilitate export of salts from the LSJR, and for inclusion into management alternatives. Prioritization and scoring of implementation actions will be based on qualitative metrics and will occur in a workshop with the LSJR Committee. Prior to the workshop, an initial assessment of the salinity sources and their relative significance as a source of salinity in the river will be developed for discussion at the workshop. The actions will be prioritized and ranked according to the results of the workshop and an explanation of the analysis will be summarized in a table.

Step 2: Development of Three Management Alternatives

The LWA Team will review the results of the screening analysis, and in concert with the LSJR Committee, develop and recommend three management alternatives for detailed evaluation. It is envisioned that the three alternatives will "book-end" the management efforts, ranging from low, medium to high intensity management of salts in the basin. They will all be based on a common agreed-upon set of baseline conditions. In addition to the three management alternatives, a no-action alternative will be carried forward for comparison.

Step 3: Evaluation of Three Management Alternatives (Table 2)

Upon agreement by the LSJR Committee, each of the three alternatives will be modeled to determine compliance with the proposed range of WQOs, and to estimate volumes and loads that will be reduced by each alternative. Based on the findings of the modeling analyses, the three management alternatives will be evaluated using the screening criteria in Table 2. Depending on the criteria, the evaluation will be based on qualitative or quantitative metrics. Compliance with WQOs and the costs of compliance may vary depending on water year types or seasonal conditions. Therefore, it is anticipated the evaluation may involve use of a sensitivity analysis or other contextual approaches. The preliminary ranking/scoring will be presented to the LSJRC for consideration and development of final recommendations.