Central Valley Salinity Alternatives for Long-Term Sustainability
Development of a BPA for Salt and Boron in LSJR

MODELING APPROACH FOR
PLANNED PLUS MAXIMUM MANAGEMENT FOCUS BUNDLE

Below is a description of the implementation action (IA) included in the proposed Planned Plus Maximum Management Focus Bundle (Maximum Management Focus Bundle) that was identified during the 9 December 2014 LSJRC conference call to discuss options for modeling approaches for the remaining two salinity management bundles to be modeled by the LWA Team. The Maximum Management Focus Bundle includes the same IAs as the Planned Bundle plus additional implementation of IA 10b. Sequential Reuse and Volume Reduction – Salt Accumulation Area (SJRIP), and IA 12a. Drainage Water Recirculation – Tailwater Recovery. The Maximum Management Focus Bundle is designed to meet an EC target of 1,010 µmhos/cm at Crows Landing. This document reflects the communications to date with the LSJRC regarding the modeling of the Maximum Management Focus Bundle, as well as additional information that recently has recently been developed.

IA 10b. Sequential Reuse and Volume Reduction – Salt Accumulation Area (SJRIP)

Assumptions: As part of the Maximum Management Focus Bundle, the LWA Team will model the effects of a new SJRIP-like project in the Grassland Drainage Area (GDA) that will accumulate salts from all agricultural flows that currently drain to the Newman Wasteway from the GDA. The new SJRIP-like project will result in zero discharge of salts from this portion of the GDA.

Modeling Approach: WARMF includes inputs from the Newman Wasteway that originate in the GDA. These GDA-derived flows in the Newman Wasteway will be set to zero (0) in the model so that this portion of the GDA will not contribute any flow or loading to the San Joaquin River.

IA 12a. Drainage Water Recirculation – Tailwater Recovery

Assumptions: The LWA Team will model the effects of the implementation of tailwater recovery projects throughout the Northwest and East Valley Floor subareas using WARMF by blending tailwater with irrigation supply to result in reductions of tailwater discharge and usage of fresh irrigation supply water. The purpose of modeling this implementation action is to take credit for any changes in salinity in the LSJR that will occur as a result of implementing tailwater recovery throughout these two subareas. A target salinity load reduction of 5% (requiring 20% recirculation of tailwater) will be applied to the Northwest and East Valley Floor subareas. This salinity management strategy assumes all agricultural dischargers in these subareas will contribute to a lowering of ambient salinity concentrations in the LSJR.

It is understood that drainage water recirculation through tailwater recovery will result in the sequestration of salts in groundwater. The accumulation of salts in groundwater will eventually require the implementation of either tilewater recovery projects that will direct saline groundwater to a regional desalination facility, or direct pumping and treatment of groundwater followed by reinjection or reuse of treated groundwater as irrigation supply water. Groundwater treatment will produce a concentrated brine that will require disposal. For the purpose of modeling this salinity management strategy in WARMF, only tailwater recovery needs to be modeled. The tilewater recovery and/or desalination

components of the larger project will be considered by the LWA Team in its evaluation of economics and California Environmental Quality Act (CEQA) impacts.

Modeling Approach: The LWA Team will model the estimated changes in LSJR ambient salinity concentrations brought about by the installation of tailwater recovery projects throughout the Northwest and East Valley Floor subareas by considering the water "savings" (in AFY) resulting from the use of recovered tilewater as a reduction in the fresh irrigation water applied in the two subareas. This will result in a corresponding net increase in irrigation efficiency in the project area, but also an increase in salt concentration within the root zone.