

Optimizing the Carson River to Minimize Water Quantity and Quality Impacts on the Truckee River

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Abstract: The Operating Criteria and Procedures (OCAP), first implemented in 1967 and last modified in 1997, are the federal rule intended to provide sufficient water to Newlands Project water users to meet their water rights while maximizing the use of Carson River water and minimizing use of the Truckee River water. Uncertainties in the stream flow forecasts for the Carson River can result in an inappropriate amount of water being diverted from the Truckee River to the Truckee Canal. There is a strong desire by the water managers (Truckee-Carson Irrigation District, the stakeholders on the Truckee River and the Newlands Project) to improve the accuracy of the diversions throughout the year. This desire becomes particularly important during the summer when the stream flow in the Truckee River is low and the demand for water in the Newlands project is high. During these times, unnecessary diversions from the Truckee River will decrease water quantity and quality, and degrade environmental conditions downstream of Derby Dam. Conversely, diversions from the Truckee River in deficit of the appropriate amount result in valid water right holders in the Newlands Project receiving less irrigation water than their entitlement. The USBR has already invested a significant amount of resources into a decision support system (DSS) aimed at improving the streamflow forecasts on the Truckee River. The central component of the Truckee River DSS is an application of the river operations and stream routing computer model RiverWare coupled with a real-time data acquisition and storage system. The primary goal of this project is to develop a water resources model of the Carson River that will enable Reclamation to fully understand and optimize the use of the Carson River for Newlands Project uses and thus possibly reduce the quantity of water diverted from the Truckee River to meet valid water rights.