Subject : Impact to Carson Division Supply for EIS/EIR runs

Current EIS/EIR runs show no impact to Carson Division supply. Yet, "During certain months of dry years, water is available to serve all Truckee Meadows water rights. But, the potential diversion to Lahontan Reservoir (under applicable provisions of OCAP) may allow diversion of more water than is in the Truckee River. In such months, TROA provides the opportunity to exercise more water rights because TROA allows establishment of credit storage using water rights that have been acquired by Truckee Meadows interests. When Truckee Meadows water rights are exercised by establishing credit storage, the quantity of water released from Truckee Reservoirs is reduced, thereby reducing the quantity of water available for diversion to the Newlands Project." (Rod Hall, August 6, 2003 memo)

Primary reason for showing no impact in the model runs to the Carson Division supply between the local water supply and TROA alternative despite the possible reduction of Truckee River water under TROA as described above, is due to the assumption of 21,500 acre-feet of Truckee River diversion demand in the Truckee Meadows for the local water supply alternative and 4,800 acre-feet of Truckee River diversion demand under the TROA alternative. Due mainly to the differences in the diversion demand, there is a 11,190 acre-feet difference in the depletion assumptions from Farad to Vista between the two alternatives. The net result is that there is approximately 11,000 acre-feet more water in the river under TROA alternative from this assumption

Diversion Demand Calculations

The calculations showing the difference between the alternatives for the Truckee River diversion demand from Farad-Derby irrigation are shown below. Also see pages 5-6 of the local water supply letter from TMWA for additional explanation of the water rights purchased under the alternatives.

The TROA and Local Water Supply estimates of remaining irrigation diversions in the Truckee Meadows are based upon earlier estimates. The basic TMWA water right acquisition amount was set as 81,433 acre-feet based upon what was once judged to be a reasonable non-TROA water right acquisition for a 119,000 demand. The 21,000 acre-feet in the Truckee Meadows irrigation right base was the base used in the previous draft EIS/EIR for TROA and was developed by agreement between engineers for the Tribe and Sierra Pacific. For this draft EIS/EIR investigation, the previous amounts were adjusted as shown in the following tabulation.

	TROA	LWSA
Base TMWA Water Right Acquisition	81,433	81,433

TMWA Water Right Acq. Under Alternative	93,550	83,033
Difference from Base	12,117	1,600
Base Truckee Meadows Irrigation Rights	21,000	21,000
6,700 ac-ft Water Right Acquisition	6,700	0
Water Qual. Agreemt. Acquisition, Farad- Vista	900	900
Water Qual. Agreemt. Acquisition, Vista-Derby	1,500	1,500
Extra Land Application	3,224	3,224
Subtotal	8,676	15,376
50% of Difference in TMWA Acquisition	6,059	800
Remaining Rights in Irrigation	2,618	14,576
Estimated Transportation Efficiency	60%	69.4%
Estimated Farad-Derby Irrigation Diversion	4,363	21,011

Rounding and adding 490 acre-feet of stock watering in the winter months brings these totals to 4,860 acre-feet for TROA and 21,500 acre-feet for the Local Water Supply and No Action alternatives.

Additional Studies

To make a more direct comparison of TROA and local water supply alternative without the impact of the additional water right acquisition under TROA, another model run was made. This additional model run assumed the local water supply alternative depletion was the same amount as the TROA alternative. Nothing would prohibit TMWA from purchasing these water rights under the local water supply. But without a TROA agreement, it would be highly unlikely the water rights associated with the program for .11 additional water rights, the meter retrofit requirements, and the additional 6,700 acre-feet purchased for water quality, would be purchased for those respective programs.

The results of the study are:

		Localws	Troa	localws Depletion same as TROA
1931	SHORTAGE	87.02	85.09	83.76
1934	SHORTAGE	88.75	94.43	82.3
1961	SHORTAGE	65.92	68.04	52.66
1977	SHORTAGE	96.52	91.15	82.63
1988	SHORTAGE	76.38	73.79	72.87
1990	SHORTAGE	54.82	53.69	49.11
1991	SHORTAGE	125.43	123.15	120.09
1992	SHORTAGE	159.11	158.09	156.89
1994	SHORTAGE	71.62	70.17	69.98

average shortage	91.7	90.8	85.6

The net result shows that if the same amount of water rights are purchased under the local water supply alternative and the TROA alternative, Lahontan Reservoir would have slightly less water during drier years and average shortages would increase by approximately 5,000 AF in water short years.

The net result shows that if the same amount of water rights are purchased under the local water supply alternative and the TROA alternative, when compared to the TROA analysis and the basic LWSA analysis, the modified LWSA analysis shows that Lahontan Reservoir would have slightly more water during drier years causing average shortages to decrease by approximately 5,000 to 6,000 AF in water short years.

Exceedence curves are attached, showing the difference from these model runs at Lahontan Reservoir and Pyramid Lake.

Also, attached is an August 6 memo on Carson Division shortages from Rod Hall.

Subject : Impact to Carson Division Supply for EIS/EIR runs

Tom, Would it help to change the final paragraph as I have indicated below with underlines and cross-outs. I was a little confused as to what runs were compared in the discussion.

The results of the study are:

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