

Water Department
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April 19, 2013

Bureau of Reclamation
Attention: Ms. Pam Adams, LC-2721
P.O. Box 61470
Boulder City, NV 89006-1470

Subject: Colorado River Basin Water Supply & Demand Study

Dear Ms. Adams:

This letter is in response to the release of the Bureau of Reclamation's (Bureau's) Colorado River Basin Water Supply & Demand Study Final Reports (Study). Aurora's water department (Aurora Water) commends the Bureau for taking on such a formidable task as that of analyzing the entirety of water resource use on the Colorado River in the United States. As a water provider for more than 335,000 people, it is critical that Aurora Water secure sufficient, reliable, high quality water for its customers. To achieve this goal, Aurora Water secures water from three river basins: the Colorado, Arkansas and South Platte. Aurora receives about 25% of its average annual raw water supply from the Colorado River basin. Aurora Water submits the comments detailed below regarding the Bureau's Study, and will continue to participate in cooperative agreements and stakeholder groups to protect the diversity of use of the Colorado River.

Boating Flow Days Metrics Comments

- “Whitewater boating” must be defined.
 - It is unclear whether “whitewater flow” preferences are intended to encompass the flow preferences for all floatboaters. While this extrapolation could be appropriate, the Study and American Whitewater's report do not address this concept in any way.
- All information regarding Metrics must be made publicly available.
 - The Online Flow-Evaluation Survey used by American Whitewater is not available on the website listed under Appendix A of Appendix D2 of the Study (<http://www.americanwhitewater.org/content/Article/view/articleid/31219/>), nor could it be found elsewhere on American Whitewater's website.
- Sample size and variety of users in the American Whitewater's sample does not seem representative of the general user pool.
 - Six of the fourteen locations did not have the minimum 30 respondents suggested by Whittaker et al. (1993) as referenced by the American Whitewater Draft Report.
 - Less than 400 paddlers were surveyed, one time (not over multiple years), to develop these flow estimates. According to the Bureau's website

(http://www.blm.gov/co/st/en/fo/kfo/recreation_opportunities/rafting.html) over 60,000 visitors a year use the 4.5 mile stretch from Pumphouse to Radium alone. It seems highly inappropriate to extrapolate the opinion of 400 paddlers to the tens of thousands boaters that use the Colorado River for boating.

- No data has been made available to evaluate if the 400 boaters that were surveyed are representative of the over-all population; in gender, skill, craft, etc. It is reasonable to expect that there are differences in the types and preferences of users as defined by each section.
- Users must be identified and analyzed by their characteristics and by river segment.
 - The survey apparently asked how flows affected specific whitewater boating attributes. A boater may have a much different preference for flows over an entire reach than for one attribute of that reach. Therefore, listed preferences cannot be extrapolated to boaters' preferences to the entire stretch.
 - This is especially evident regarding the Big Sur attribute where there were too few rafter responses for the American Whitewater study to list a separate value for rafters. Big Sur is a feature that only appears at 20,000 cfs or higher, however many people raft that section at much lower flows. This feature is nearly exclusively focused on by kayakers for "surfing" and therefore 20,000 cfs was the minimum flow response.
 - The data for the Glenwood Springs & South Canyon location seem to be an anomaly in American Whitewater's study in that kayakers prefer higher flows only in this section and that the difference between the mean and median flows were extreme (indicating outlier values).
 - American Whitewater's report does not substantiate the claim that there was no statistically significant difference in responses between outfitters and non-commercial boaters.
- Useable Days should be compared to User Days as a metric.
 - While "usable days" may have been used in the past for FERC licenses, a Bureau study and report are not appropriate places to use "usable days" as defined by American Whitewater's study, which are based only on flow. In reality, multiple variables determine usability. "User days", as used by the industry, may be a more appropriate metric for this Study.
- Flow rate durations and timings should be evaluated.
 - High flows over a long period of time may be beneficial for some boaters, but detrimental for other users. Further analysis is needed to determine what length of time flows are preferred.
 - The duration of these flow rates are important (how often did they occur historically?) as well as the seasonality (when did they occur historically).

Aurora greatly appreciates the opportunity to comment on this report. To analyze the entirety of water resource use on the Colorado River in the United States is an ambitious goal, and Aurora Water looks forward to participating in any future reports and projects.

Sincerely,



Marshall Brown
Director, Aurora Water