

From: Ken Merrill <kmerrill@kalispeltribe.com>
Sent: Friday, March 29, 2019 5:50 PM
To: Carl Einberger
Cc: caseyf@SpokaneTribe.com; Hermanson, Mike; Short, Jaime (ECY); Deane Osterman; Zach Welcker
Subject: RE: Kalispel comments - WRIA 55 next meeting 5/22 & comment reminder

Hi Carl- There is substantial concern that minimum in-stream flows are currently not being achieved most years in the Little Spokane River and it will only dry up further over the next 20 years based on the assumptions of draft water demand memo and all the excluded water pumping from exempt wells currently being omitted from future considerations (e.g., pasture irrigation, stock watering, and any other commercial use). It is apparent that there will need to be a significant paradigm shift in water management from the current proposal if we are going to prevent reductions in minimum summer flows in the Little Spokane River and achieve future sustainable development. Please consider the comments below in a redraft of the water demand memo and planning for future strategies to maintain flows in the Little Spokane River.

- 1) Water demand projections for exempt wells are being underestimated for the 20-year planning period by using outdated underestimations of irrigation evapotranspiration rates (ET), and those calculation methods need to be reevaluated.**
 - a) Trends in increasing evapotranspiration rates have been documented where there have been good historical records of ET maintained over the last 20 years such as in Central Washington (Bond and Bumbaco 2015). A similar trend in rate of ET increase should be derived and used along with climate change considerations to update the WRIA 55 ET used in the water demand memo.
 - b) Trends in ET are anticipated to further increase for Eastern Washington with regional climate change predictions of higher summer temperatures and decreasing summer precipitation. This information should be used to recalculate appropriate ET rates through 2040 (see <http://www.climate.washington.edu/trends/>). Climate change impacts may be especially significant in the Little Spokane River Watershed which may experience an even higher rate of ET increase due to a reduction in days of summer cloud cover as summer days dry out with reduced precipitation.
- 2) It appears that the actual net water increase anticipated for stream flow restoration from purchased water rights is being over-estimated by not accounting for the routine recharging of the watershed by seepage losses from agricultural irrigation similar to those used for lawn watering. The same method for calculating consumptive and non-consumptive water demand from lawn watering also needs to be applied to all estimates of actual mitigation water available for instream flow restoration through the purchase of agricultural/commercial water rights.**

Respectfully --Ken

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