

**Draft Findings - Out of Stream Needs to be Met Through
Yakima River Basin Study/Integrated Water Resource Management Plan**

Background: The Out of Stream Needs Subcommittee of the YRBWEP Workgroup has been working with the Consultant team to define the agriculture and municipal/domestic water needs to be met through the Integrated Water Resource Management Plan (Integrated Plan). The draft findings from this work are provided below.

Action: The Workgroup accepts the out of stream need values below for Federally-Supplied Agriculture and Municipal/Domestic water needs as a rough approximation of water needs to be met through the combination of actions in the Integrated Plan. Determination of needs for proratable water rights is based, in part, on calculation of supplies available under drought conditions, and this portion of the needs assessment will be refined through use of the RiverWare model. The Workgroup will have the opportunity to formally approve the final recommended need values at a future meeting.

I. Federally-Supplied Agriculture

Total diversions averaged approximately 1.8 million acre-feet during the years 1990-2009 (non-drought years only) in the Yakima Project.

Non-Proratable Districts' Needs: No additional water needed under current conditions.

Proratable Districts' Needs for Additional Supply, Current Conditions: The need to be met for single and multi-year droughts is 70% of the water right entitlement each year for irrigation districts that have proratable water rights and are seeking drought relief through the Integrated Plan.

The values below represent the needs estimated for a single-drought year, based upon 2001, which is the worst single drought year on record. This provides a rough approximation of need. However the "adjusted total" below will be refined through use of the RiverWare hydrologic model to analyze single and multi-year droughts in the hydrologic record from the period 1981-2005.

Single Drought Year Estimated Need

Kittitas Reclamation District (KRD):	112,600 AF
Roza Irrigation District (Roza):	116,300
Wapato Irrigation Project (WIP):	<u>126,500</u>
Subtotal	355,400
Less KRD Return Flows: <u>-56,300</u>	
Adjusted Total:	299,100 AF

Future Conditions with Potential Climate Change Impacts for all Districts supplied water by Reclamation. Irrigation water consumptive use will likely increase with climate change. A preliminary estimated range is still being discussed by the subcommittee, and so is not provided at this time. The results will be presented at a future Workgroup meeting. It will apply to the entire Yakima Project. The range is being estimated using data from University of Washington Climate Impacts Group (UW) and by reviewing crop irrigation requirements for a central California area where current crop requirements are similar to those predicted by UW for the Yakima River basin under future climate change conditions. The

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methodology used to compare the surrogate site in California will also be shared with both UW and WSU for review and comment.

II. Non-Federally Supplied Agriculture

Total water uses (current) in this category are estimated to be 590,000 acre-feet per year. The water needs assessment does not define a supply deficiency. This is because the Integrated Plan has not identified an objective of providing additional supplies in this category.

III. Municipal/Domestic Water Uses (Non-Drought Conditions; Drought Uses Depend on Curtailment Policies)

	<u>Low</u>	<u>Medium</u>	<u>High</u>
Projected additional use by 2060, adjusted for water conservation and land conversion (AF):	26,000	49,000	75,000
Projected additional <u>consumptive</u> use by 2060 (AF):	10,000	20,000	30,000

The subcommittee has focused in on the Medium projected demand value (49,000 AF) as the targeted need. However there is discussion over whether to reduce the level of water usage per capita to project long-term needs to year 2060. The 2060 estimate of 49,000 AF, after accounting for existing trends in water conservation, is 234 gallons per capita per day (gpcd). One suggestion is to project long-term needs using a lower value of 200 gpcd, based on an expanded conservation program. This would result in a 2060 demand projection of 41,000 AF.

IV. Other Uses (Stockwater, commercial/industrial, fish and wildlife, non-community public water systems)

Current use (estimated):	26,000 AF
Current consumptive use (estimated)	13,000 AF

Future changes in this category were not assessed; and do not appear necessary to permit the Workgroup to develop recommendations for the Integrated Plan.