

**Selected Quotes Demonstrating that the Data/Research Regarding Water Use, Water Supplies, and Potential Conservation Measures is Incomplete, and Insufficient to Support Meaningful Analyses and Decision-Making for the Columbia River Water Management Program**

**1) Water Supply Inventory Quotes**

- “[T]he short-time frame in which this report was prepared limited the ability to conduct a comprehensive survey of water rights and water use. Existing data on water rights and water use from agency databases was compiled and is presented here with minimal confirmation and no field verification. Conclusions based on this information should be made carefully.” 4.4.1 Overview and Components of the Inventory (pg. 4-1 to 4-2).
- “It is expected that future inventory reports to the Legislature will include more comprehensive estimates of water conservation savings.” 4.3 Water Conservation Inventory Results (pg. 4-8).
- “However, many of the projects had cost estimates prepared 5-10 years ago which means the costs are probably underestimated. They were not updated for this study as more detailed engineering analyses would be needed to accurately estimate costs for the projects. These total estimated costs and water savings should be viewed as being very preliminary and should be used only to screen or compare projects within the inventory. More detailed evaluation of the costs and water savings will be needed before determining the benefits of individual projects.” 4.3.2 Irrigation District Conservation Inventory (pg. 4-9 to 4-10). Quote in regards to the projected average cost per acre-foot for district irrigation conservation projects.
- “Water system plans for the seven largest municipalities in the Columbia Basin were reviewed for current and future water use, demand, and conservation information, including water reuse. Few of these plans provided quantitative information regarding the current conservation and reuse.” 4.3.3 Municipal/County Conservation Inventory (pg. 4-10).
- “Some of the water rights available for review in the WRTS database are incomplete, and duplicate rights listed in the database may overestimate allocated water. The WRTS database may not capture federal or Tribal water rights” 4.6.1 Water Rights (pg. 4-15). Quote referring to the records for water rights within Ecology’s database.
- “The WRTS database contains a significant number of records with no associated  $Q_a$ , the annual quantity, and may include duplicative records. In cases where no annual quantity is reported in the database, the quantity is calculated based on continuous use of the,  $Q_i$ , the instantaneous quantity. This likely over-predicts the maximum allowable annual water use associated with these water rights.” 4.7.1 Washington Water Rights (pg. 4-16) *Note: The appendix to this section, Appendix D, explains that the formula for calculating annual quantity assumed that the instantaneous quantity would be pumped at the highest instantaneous rate for 24 hours per day, 365 days a year.*

- “Additional work is necessary to confirm the water rights analysis...[t]he unusually large value associated with Environmental and Wildlife GUD also needs to be investigated further by additional analysis of the information provided from the Oregon water rights database.” 4.7.2 Oregon Water Rights (pg. 4-18).
- “Ecology has been tracking the number of permit-exempt wells in the Washington State Notice of Intent Database since 1993. The database does not contain entries before 1993 and may contain duplicate entries in the case where wells have been deepened or reconditioned. Furthermore, well drillers were not required to file well logs before 1971; therefore, the existing data sources are incomplete. A further recommendation for Ecology is to improve existing databases or use County building permit records to identify permit-exempt wells.” 4.7.4 Washington Permit-Exempt Water Rights (pg. 4-19).
- “This level of detail is not feasible for the initial forecasting effort, so a surrogate distribution of CIR was developed to translate annual water volumes to monthly water volumes.” 4.8 Water Use Overview (pg. 4-19 to 4-20). Quote regarding Ecology’s inability to calculate the actual monthly water use from different crops.
- “Future updates should be able to address data gaps and accuracy issues by utilizing additional sources, resulting in more robust estimates of water use, especially if metering data are available.” 4.9 Water use Inventory Results (pg. 4-20).
- “The most current basin-wide estimates of water use were published in 2004 by the USGS...and are based on data from the year 2000...” 4.9.1 USGS Water Use Estimates (pg. 4-20).
- “The USGS has no control over the quality and accuracy of the data it receives. At present, the accuracy and confidence limits of the estimates are not quantified. The estimates are aggregated at a County level, and it is not possible to estimate water use within the Management Zone from the USGS reports.” 4.9.1 USGS Water Use Estimates (pg. 4-21).
- “Only seventeen of the thirty-five WRIAs in the Columbia Basin study area have plans containing estimates of current and/or future water use. All seventeen have information on current and/or future water use and ten have information on future water use...However, there is no standardized reporting of water use. Some WRIAs do not report water use for all categories used in the USGS report, while some combine categories. This lack of complete information makes it difficult to compare discrete categories with the USGS estimates or to compare between WRIAs.” 4.9.2 Watershed Plan Water Use Estimates (pg. 4-21).
- “Comprehensive plans for many counties were not available in the short turn around time.” 4.9.3 County Comprehensive Plan Estimates (pg. 4-21).
- “Except for generalized statements regarding water use, comprehensive plans are not useful for the inventory.” 4.9.3 County Comprehensive Plan Estimates (pg. 4-21 to 4-22).
- “The approach used for the forecast is not analytically sophisticated and, ultimately, additional work at both the inventory level and the forecasting level is needed.” 5.1 Introduction to Water Supply and Demand Forecast (pg. 5-1)

- “Both the first tier and second tier forecasts have limitations in their approach that will require future refinement to improve and quantify their accuracy. These limitations could not be eliminated in the short time available to produce the report.” 5.1 Introduction (pg. 5-1).
- “The accuracy of the 242 cfs  $Q_i$  reported in the applications is not known.” 5.2.2 Domestic (pg. 5-2). Quote regarding the amount of water calculated to be in use for the 214 domestic water right applications in the Management Zone of the Columbia Basin.
- “Peaking factors for commercial and industrial use could be lower since the water is often used on a more continuous basis, so the total annual demand associated with 230 cfs of commercial/industrial  $Q_i$  may be underestimated.” 5.2.3 Commercial/Industrial (pg. 5-3). Quote regarding the accuracy of the peaking demand figure for commercial/industrial use.
- “[T]he proportion of conserved water that would accrue to the Columbia River cannot be determined accurately with available data...the proportion of accrual could be in the range of 5 to 20% on an aggregate basis.” 5.2.7 Comparison to Conservation Potential; 5.2.7.1 Agriculture; Consideration 1. (pg. 5-4).
- “Similar to irrigation conservation, the appropriate factors and methodology for assigning appropriate conservation to potential new population and/or new water right needs is not well defined.” 5.2.7.2 Comparison to Conservation Potential; Residential. (pg. 5-5).
- “There is insufficient detail at this time to compare projected storage volumes for smaller water storage projects identified through watershed planning efforts or other local planning documents.” 5.2.8 Comparison to Storage Potential (pg. 5-5).
- “The factors used to project future water use are very generalized aggregate estimates, and have not been “built” from an analysis of the many potentially underlying variables that affect the demand for water. More sophisticated methods of incorporating multiple factors into an aggregate estimate exist, but could not be developed in the short time frame for this project.” 5.3 Second Tier Water Demand Forecast (pg. 5-5 to 5-6).
- “However, because the forecast relies solely on historical data, any factors that affect crop production that have not occurred in the sample period would not be included in the forecast. New technologies or market changes that significantly change crop production compared to the sample period cannot be predicted by this forecast method.” 5.3.1.2 Economic Forecasting Results (pg. 5-7).
- “...[N]o definite conclusions could be made regarding the need for additional water based solely on this report.” 5.3.1.3 Conclusions about Future Water Demand in the Agriculture Sector (pg. 5-8).
- “It is not possible to develop a sophisticated analysis of growth and validate potential growth in agriculture water use.” 5.3.2 Agriculture Sector-USGS Water Use (pg. 5-8).
- “Factors related to conservation, agriculture and economics, and climate factors are not incorporated in this projection of water demand.” 5.3.2 Agriculture Sector-USGS Water Use (pg. 5-8).

- “A more detailed evaluation of individual water right requests and more sophisticated demand projection methodology is necessary to address individual situations and to factor in issues such as the CBP.” 5.3.4 Comparison of First Tier and Second Tier Demand Projections; Consideration 1. (pg. 5-10).
- “In effect, there is currently not an accurate picture of legal entitlements to water from the Columbia River and there will likely not be in the immediate future.” 5.3.5 Comparisons to Existing Water Rights and Existing Storage (pg. 5-11).
- “Based on the available information, the most important conclusion is that the future balance between water supply and water demand in the Columbia River is not well defined...[a]dditional work at both the inventory and forecasting level is necessary to refine the analysis presented in this report.” 5.4 Conclusions (pg. 5-11).
- “What remains elusive is:
  1. A clear understanding of the detailed connections between various management decisions that are currently applied to water management on the Columbia River, and the relative contributions each have on flow in the Columbia River and its tributaries; and
  2. The degree to which a response to changes in future conditions can be anticipated, in light of current management capabilities, environmental conditions and socioeconomic values in the region.”
 5.5 Future Considerations for Columbia River Water Forecasting (pg. 5-12).

## **2. Draft Programmatic EIS for the Columbia River Water Management Program** **Quotes**

- “A major area of uncertainty in the Columbia River Basin is the relationship between environmental variables and the survivability of anadromous fish....[i]n particular, the relationship between flow levels in the Columbia River and salmon survival is not clear.” S.5 Areas of Uncertainty and Controversy (pg.S-10).
- “Several potential storage sites have been proposed in the project area. The technical and economic feasibility of these sites is not yet known. Reclamation and Ecology will continue to evaluate the feasibility through appraisal and feasibility studies.” S.5 Areas of Uncertainty and Controversy (pg. S-10).
- “It is uncertain how much additional water can be made available through storage, conservation, and other water management projects. The socioeconomic impacts of the Management Program are also uncertain.” S.5 Areas of Uncertainty and Controversy (pg. S-10).
- **The Goal of the Inventory and Demand forecast as stated in the EIS:** “The goal of the project is to develop a comprehensive database of all known conservation project opportunities in the Columbia River Basin in eastern Washington...[t]he data and recommendations will form the foundation for implementing the Management Program and will help state officials determine the need for water supplies in the Columbia River Basin.” 2.1.2.4 Inventory and Demand Forecasting Component (pg. 2-13 to 2-14).

- “Further analysis using water quality models of specific drawdown scenarios would be required to quantify the magnitude of potential impacts.” 5.1.1.3 Impacts at Lake Roosevelt for Non-Drought and Drought Year Withdrawals; Surface Water; Short-term impacts; Water Quality (pg. 5-4).
- “The location and timing of Trust Program water discharge has not been defined to date, making assessment of the adverse or beneficial influences to aquatic resources difficult.” 5.1.2.6 Impacts at Lake Roosevelt for Non-Drought and Drought Year Withdrawals; Fish Wildlife, and Plants; Long-term impacts; Fish (pg. 5-19).