RECLAMATION
Managing Water in the West

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Yakima River Basin Study– Out of Stream Needs (Task 2) Subcommittee

Meeting Notes, July 14, 2010, City of Yakima Public Works Offices

Welcome and Introductions

Andrew Graham (HDR) said there is a subcommittee meeting scheduled on August 11, 2010. That meeting will only be held if the subcommittee feels an additional meeting is necessary. Several members of the Subcommittee will be unavailable for that meeting.

Two draft technical memoranda were sent to the Subcommittee last week: Water Needs Assessment and Municipal/Domestic Water Conservation Potential. Comments are due next week, on July 21.

Approve Notes from Prior Meeting

- Notes were approved with two changes. In the last bullet on the first page, the missing name for Wapato Irrigation Project contacts should be Virgil Lallachute. Roger Henderson has retired so is no longer a WIP contact.

- Chris Lynch sent an email to HDR and Anchor/QEA with some factual clarifications after the last subcommittee meeting, but they don't appear to require a change to the notes themselves.

Review Input Received at June Workgroup Meeting

On June 28 the HDR Team provided presentations to the YRBWEP Workgroup on the needs assessment. Bob Montgomery indicated the Workgroup's comments from that meeting are being taken into account as the team continues to refine the assessment.

Andrew reviewed the Workgroup comments on municipal demand estimates, as listed in the notes from the Workgroup meeting. In particular: the project team is making changes to the calculation for land that is transitioned from agricultural to urban use. This will be discussed in more detail later in the meeting.

Andrew reviewed an email from Jim Milton indicating that the project team should not assume that water rights with priority dates after 1905 are secure,; because those rights could face legal challenges. It's important to include supplies that could help resolve that issue. Also the project team should account for year-round municipal and domestic water needs, not just needs during the irrigation season.

Review of Activities and Results since the June Workgroup Meeting

Contacts with City and County Planning Departments

Since the June Workgroup meeting, the project team has contacted county and city planning departments in the Yakima Basin, to discuss the population growth rates used in the municipal water demand projection. They included: Yakima County, Benton County, Kittitas County, and City of Yakima. All four planning departments were comfortable with the range of growth rates presented.

Contacts with Irrigation Districts

Bob reported that the project team has also had ongoing contact with the irrigation districts to complete a survey of crop and water use information. Information has been received from Sunnyside, Roza and WIP. The team is still following up with Kittitas Reclamation District (KRD), Yakima-Tieton Irrigation District, and Kennewick Irrigation District (KID). The survey has been received from the remaining irrigation districts. The project team has most of the information needed to complete the water-needs assessment.

Results for Agricultural Needs Outside Federally Supplied Districts

Andrew presented results for agricultural water needs outside federally supplied districts. There are about 93,000 acres of land in this category. The project team estimated that about 509,000 acre-feet of water is currently needed for irrigation on these lands. To address the missing information in the Department of Agriculture's data that was discussed in previous meetings (the amount of land in the Department's data set is believed to be incomplete), the project team took a sampling of areas around the Basin, looked at aerial photos to quantify the amount of irrigated land, and used this information to estimate the amount of land missing from the Department's data set. The project team added a 15% adjustment to account for lands that were not included in the data set.

Ron van Gundy commented that the Workgroup will need to address the issue of post-1905 water rights taking from TWSA. There is an inequity in how Yakima Project facilities and operations are funded by pro-ratable water users, and post-1905 water users receive system benefits without paying. This should be addressed in the legislation that is developed from this process.

The group suggested that non-federal uses be separated into pre-1905 and post-1905 rights. Virtually all of the ground water rights are post 1905. Andrew said the technical memorandum does split out ground water uses; and also splits out "supplemental" from "primary" surface water uses. These breakdowns appear to meet the need for understanding pre- and post-1905 uses.

Results for Land Conversion from Agriculture to Urban Use

Andrew Graham presented findings on the change in water use as land is converted from agricultural to urban use. For this analysis, the project team focused on lands inside of urban growth areas (UGAs) with the expectation that it is within the UGAs where most of land-use conversion will occur. There are 21,000 acres of lands, and these were displayed on maps.

To estimate the effects of land conversion, the team looked at the population growth estimates previously presented to the work group, zoning codes, and spoke with city and county planners regarding housing densities in zoning codes. It should be recognized that land conversion will not just

be to from agricultural lands to residential, but will also include commercial areas to support the growing population. The team estimated that agricultural lands converted to residential acres will have on average four houses per acre with 2.8 people per house. Using these assumptions and comparing them to projected population growth, the project team estimates that one-third of the agricultural lands within cities and their UGAs will be converted by 2030; and two-thirds will be converted by 2060.

Ron van Gundy commented that there is conversion from agricultural lands to residential use on a large scale outside of UGAs and most of this growth is on average one house per two acres.

Jerry Kelso commented that KID has good examples of land conversion. Chuck Garner says about 37 percent of their land has been converted to urban use.

Andrew Graham reviewed two methods that were used to estimate water-need changes from land conversion. Method 1: assumes that converted residential land will have 4 houses per acre, 2.8 people per house, and per capita water use of 250 gallons per capita. The result of this calculation is that conversion to residential land use will result in a slight reduction in water use per acre of 0.9 AF/acre. Method 2: the project team estimated the average amount of water per acre used in the City of Yakima and City of Ellensburg water service areas (potable water & irrigation combined). The result of Method 2 estimate is a reduction of water use of 2.3 AF/acre for converted lands.

Andrew said the estimate presented in the Water Needs Assessment technical memorandum takes the average of Method 1 and Method 2. This is a reduction of about 1.5 AF/acre on converted lands. Based on the assumptions described above, this results in an estimated reduction of water use of 11,000 AF by 2030 and 22,000 AF by 2060.

Ron commented that in the Roza, these two-acre parcels generally use all the water they are entitled to. Some subcommittee members believe that water use is greater after conversion to an urban area. Dave Brown cautioned that lands that are converted inside City limits will be more dense. Tom Ring said that the less dense lands have a higher consumptive use, because they are using lots of their water for irrigation. The higher density, more urban lands will typically have less consumptive use.

Michael Garrity commented that urban development may use as much water as agricultural lands; but can this be changed through policies or incentives? Saving water this way would be cheaper than building storage. Ron felt there is not enough quantity involved to make it worthwhile. Dave Brown said this would only work if customers pay for water use. Ron said that Roza does require payment for water use per unit, once the user gets above a certain quantity.

Overview of Draft Technical Memo – Water Needs Assessment

Andrew walked through the organization of the tech memo. An earlier version of Section 3 was distributed previously (methods, for Peer Review by WSU). The most important part of the memo is Section 4 –water needs assessment results. The analysis hasn't yet accounted for agricultural conservation; changes in cropping patterns, or climate change or changes in cropping patterns (currently there are placeholders in the memo for these topics).

Bob Montgomery discussed table 20 on pg 22 (Preliminary Water Balance for Yakima Project divisions):

- There are some revisions to this table.
- For KID, WIP, Sunnyside, Kennewick; the water balance is based on crops/sprinkler types and reported conveyance losses. The water balance calculations match fairly closely to data from diversion records. The water balance calculations did not match diversions for Roza and Tieton (the reason for Tieton may be actual crop irrigation requirements are overestimated).
- For these 2 districts Bob proposes to work backwards to estimate deliveries to farms then proportion crop irrigation requirements and on farm losses.
- Ron – concern about cropping patterns; numbers probably due to wine grapes currently planted; if this was converted to apples, would be significant change; need flexibility for future.
- Comment – WIP has lots of acreage not being farmed now; plan to farm in future. 30,000-40,000 acres.
- Jim Trull: Don't understand why doing this – using entitlements would be better, and those were thoroughly examined under the adjudication process.
- Bob said the analysis using crop irrigation requirements is intended to support the assessment of water conservation savings from on-farm conservation actions.
- Figure 2 on pg 24 – one measure of short fall.
- Table 4 in the Tech Memo shows another measure of the shortfall: based on a 70% standard for pro-ratable water rights.
- Comment: should not include water that was purchased in droughts, as part of the diversion. The point is to quantify the shortfall, not diminish it by including steps that were taken to fix the shortfall.
- Ron: Table 4 seems wrong, since Roza is a larger district than KRD, but the table shows Roza having a smaller shortfall. 70% of a larger number should be a larger number.
- Jim Davenport – Why isn't 100% of entitlement used, instead of 70%?
- Tom Ring –The pro-ratable water users have said they can get by with 70% during drought years.
- Tom – Diversion reduction agreements need to be reflected. For example, the Sunnyside Division does not receive 458,000 AF, but a quantity less than that. Similar situation for Yakima-Tieton. Bob responded that he has requested information from Ecology to reflect the adjudication results.
- Jerry Kelso - Entitlements may not reflect efficient irrigation practices; want to show the Yakima Project is operated efficiently
- Tom Ring – add to tables: number of acres authorized to be irrigated x consumptive use associated with high water use crop. Supposed everyone planted crops in a given year…calculate from there. But also need to consider inefficiencies that can be fixed.
- Upper limit is no new irrigated acres (except on Reservation)
- Tom: Be careful in how the word "entitlement" is used – after the adjudication, it no longer is the equivalent of water rights for some districts. However it is still used in calculating relative shares of pro-rationed supply. Need to explain this difference.

- Ron – The statement that Roza needs 100,000 acre feet from storage is not accurate – that referred to the Large Bumping Reservoir option, which is no longer being considered. Should say that Roza would like to receive 70% when pro-rationing occurs.
- Factor in land converted to M&I (out of ag) for KID? Bob – not yet. Jerry Kelso– maybe look at this for info on changes from ag to M&I.
- Table 15 (irrigation efficiencies) –Ron says some of these figures need to be changed. Almost all sprinklers in Roza are high efficiency, would be higher. Hand line definitely wrong. Bob – these are averages; Bob will make sure the sprinkler types are better defined.
- Bob reviewed tables regarding agricultural conservation (packet handed out).
- The consulting team is identifying a list of proposed conservation projects to put into the hydrologic model and determine effects on water supply
- Theoretical water saving from on-farm conservation
    - We will need to look at costs for these savings
    - What would participation be? Is there a way to look at distribution of irrigated acres?
    - High percentage is corn, which is hard to go to more efficient irrigation
    - Jim Trull: There is "double counting" for Sunnyside Irrigation District. They had to reduce diversion requirement and now are limited to 4 AF/acre. The on-farm efficiencies will be needed to achieve that level of usage.
    - WIP system – a lot of savings are recycled to others in the system
- Jerry Kelso: Wendy Christensen asked him to remind the group that the focus should be on the appropriate level of information and detail needed to reach agreement on the Final Integrated Plan.
- Michael Garrity – he emailed a comment about the 70% standard. He would like to see an analysis of what the basin-wide economic effects are of meeting various prorationing levels during drought years.

Overview of Draft Technical Memo – Municipal/Domestic Water Conservation Potential

We did not have time to discuss this memo. Andrew reminded the group that the results have been presented previously, but have been updated. The memo estimates "bookends" for water conservation. The next step needed is to determine how the Workgroup should address municipal/domestic conservation in the Integrated Water Resource Management Plan. Andrew requested Subcommittee members provide input on this question by email, as they comment on the memo next week.

Andrew said we are looking for comments from the Subcommittee and Workgroup on both of the technical memos discussed today; then there will be another round of review by the WSU Peer Review team.

Attendance

Dave Brown, City of Yakima
Stuart Crane, Yakama Nation Water Resources
Jim Davenport, Basin resident
Joel Freudenthal, Yakima County
Chuck Garner, Reclamation
Michael Garrity, American Rivers (phone)
Don Gatchalian, Yakima County
Gerald Kelso, Consultant to Reclamation
Chris Lynch, Bureau of Reclamation
Tom Ring, Yakama Nation – Natural Resources
Derek Sandison, Ecology
Jim Trull, Sunnyside Valley ID
Ron Van Gundy, Roza Irrigation District
Andrew Graham, HDR
Bob Montgomery, Anchor QEA
Sharon Edgar, Anchor QEA