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Yakima River Basin Water Enhancement Project (YRBWEP) 2009 Workgroup

Meeting Notes

October 7, 2009, Yakima Arboretum in Yakima, Washington

Review of September 23, 2009 Meeting Notes

The workgroup had the following comments on the September 23, 2009 meeting notes:

- Urban Eberhart's name spelled wrong on the first page.
- The first bullet under the Keechelus to Kachess Pipeline should read "in conjunction with inactive storage access." The workgroup did not limit this to pumping projects.
- Reclamation is not proposing the K-K pipeline or Cle Elum Dam 3-foot raise, but presenting information completed for previous studies and planning efforts. Wendy Christiansen will provide edits for the notes on her presentations. HDR will update the notes to reflect this.
- Discussed the public comment "Bumping Lake should be made a natural lake as it was 30 years ago." Some workgroup members expressed opinions on this comment that were not reflected in the notes. HDR only included the public comment in the notes. Workgroup members can consider public input at their discretion while developing the Integrated Package. The public comment was further clarified and was revised to be: "If additional new storage is provided for the Basin, Bumping Lake should be made a natural lake as it was prior to 1910."

Climate Change Overview by Levi Brekke (Reclamation)

Levi Brekke from the Bureau of Reclamation gave a presentation titled Climate Change Overview. In the presentation, he reviewed how climate modeling is conducted, global and local climate trends, and modeling predictions. In the Western US, recent trends of less snow and more rain, less spring snowpack, and earlier greening of vegetation have been observed. A recent publication estimates that up to 60% of the climate related trends of Western US river flow, winter air temperature, and snowpack from 1950 to 1999 are human induced, although it is hard to apply this to a local scale.

Levi discussed different issues with global climate modeling and projecting future climate change, including activities under CMIP (coupled model intercomparison project), which will generate a new collection of global climate projections during roughly the next 2 years.

One issue not solved by CMIP is projecting future regional to local climate. This is currently addressed through downscaling of climate projections. An example archive of downscaled climate projections was discussed ("Statistically Downscaled WCRP CMIP3 Climate Projections," http://gdo-dcp.ucllnl.org/downscaled_cmip3_projections/). Levi presented information from this archive. Focusing on middle changes among these projections distributed over the Columbia-Snake basin:



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- Significant changes in mean-annual precipitation begin to occur by middle 21st century and thereafter, with much of the central to north parts of the basin experiencing mean-annual increases of 5% and greater (from 1950 to 1979 period levels).
- Significant change in mean-annual temperature begins to occur by early-21st century and are broadly consistent across the basin (more so than precipitation), with projected increases of 2 to 3°F by early 21st century (from 1950 to 1979 levels), roughly 4°F by middle 21st century, and roughly 6°F by late 21st century.

Levi also presented projection uncertainty information over the Yakima basin, and highlighting how the middle changes described above are bracketed by a broad range of projection-specific changes.

Levi noted that climate change studies completed by different entities have been qualitatively similar for the region, but differ quantitatively. He presented information on the 2009 Washington Climate Change Impacts Assessment completed at the University of Washington (WACCIA, available at <http://www.cses.washington.edu/db/pdf/wacciaexecsummary638.pdf>). The assessment projects that April 1st snow water equivalent will decrease 28 to 29% by the 2020s, 37 to 44% by the 2040s, and 53 to 65% by the 2080s for Washington State (mean statewide average). In the Yakima Basin, runoff is expected to happen earlier in the year. These changes are predicted to have supply and demand side impacts. On the supply side, it is projected that the Yakima basin reservoir system will become less able to supply water to all users, especially those with junior water rights. The mean 2080s analysis estimates a water short, defined as 75% prorating for junior water rights holders, 77% of years. On the demand side, the growing season will likely be earlier by 2 weeks, and crop maturity will likely be earlier by 2 to 4 weeks by the 2080s.

Ongoing climate studies include the following:

- Climate Impact Group (CIG)'s Washington State House Bill (HB) 2860 Data Development is working on a "comprehensive hydrologic data base incorporating Intergovernmental Panel on Climate Change (IPCC) climate change scenarios to support long-range water planning in the Columbia River Basin."
- The Reservoir Management Joint Operating Committee (RMJOC) will, using the CIG's HB 2860 project, adopt a common data set for climate and hydrology and establish consensus methods for data use in order to efficiently use limited resources. This project is scheduled to be completed in July 2010. The RMJOC study will provide supply-side data for Yakima basin water management efforts. The workgroup could therefore focus on water demands.
- Odessa Special Study: Reclamation and Ecology are considering climate change for the Odessa sub-area plan, using the 2040 projected changes (conservative scenarios). Due to planning schedule, the technical team has proceeded using "average" scenarios derived from the CIG climate change scenarios featured in the 2009 WACCIA (discussed above). A subset of the global climate projections included in the WACCIA are being used in CIG's HB 2860 project discussed above, which means that the central climate change assumptions should be broadly consistent; range of projection-specific changes may vary.

The workgroup discussed the following points related to the presentation:

- Some, but not all, of the climate change models discussed assume progress is made in reducing greenhouse gases.
- The effect of temperature on snowpack can be projected through hydrologic modeling.
- There is some level of uncertainty and variability in how climate change models are developed, but there do appear to be trends towards warmer temperatures and slight changes in precipitation for the Yakima region.
- Runoff in the Yakima River will peak earlier in the year in the future according to model projections.
- The RMJOC is conducting a study on Columbia River reservoir operation supply effects, assuming existing operating conditions. Study expected to be available in July 2010.
- The USGS has climate and hydrology data that can be used in future modeling.
- Reclamation does not have an official policy on how to address climate change in its studies or operations.
- The University of Washington study looked at stream temperatures.
- Warming and cooling cycles will still take place as the trend towards warmer temperatures progresses.

Public Comment

The workgroup meeting was opened for public comment. The following comments were received:

- Resource-specific impacts studies in the 2009 WACCIA, including the study that involved use of Reclamation's Riverware model and assessment of Yakima basin water management impacts, can be accessed at: <http://cses.washington.edu/db/pdf/wacciareport681.pdf>.
- The workgroup will not have “engineering grade” climate change projections. Can the group begin to shape a package with the current information?
- The workgroup says they need an integrated package that is “flexible,” but a more appropriate word from an economic standpoint may be “sensitive.”

Reservoir Fish Passage Subcommittee Recommendations

Ben reviewed the fish passage subcommittee recommendations presented at the last workgroup meeting and asked workgroup members if they were ready to accept them as working draft recommendations to include in the draft integrated package. The group discussed the following points related to the recommendations:

- Jeff Thomas wants fish passage at Keechelus to be a near-term project. He said the US Fish & Wildlife Service cannot support the package without a stronger commitment to provide bull trout passage at existing reservoirs. Reclamation may have cost/engineering information from previous studies done on Keechelus.
- The fish passage subcommittee recommendations are consistent with agreements Reclamation has with the Yakama Nation and Washington Department of Fish and Wildlife.
- Passage at the existing Bumping Lake dam is estimated at \$27 million.

- A group member suggested adding a provision in the legislation that guarantees a portion of water for out of stream uses to address a concern that out of stream water needs could be held “hostage” to instream flow needs in low water years. It was also noted that ESA compliance is still applicable for existing listed species in low flow years.
- The fish passage approaches were developed with existing operational constraints in mind, including flip flop. This point will be highlighted in the subcommittee recommendations executive summary.
- The near-term recommendations (Cle Elum, Bumping and Clear Lake passage, and Phase II study on Kachess, Keechelus, and Tieton) are the minimum recommendations for the fish community. Debate exists within the fish community about priorities, criteria, and timing of long-term projects.
- Near-term and long-term timeframes should be defined.
- Some workgroup members did not like the word “whether” in the long-term recommendations; they want a commitment to pursue fish passage at all existing reservoirs. One group member noted that fish passage will become more important as temperatures increase, as projected to happen with climate change effects. Another group member noted that all the projects will need to be listed in the legislation.
- Thy type of fish passage may vary.
- A group member noted that he thinks it is important to consider storage along with fish passage.
- No group members expressed opposition at this point to including all six dams in the recommendations, along with a specified timeframe.
- The fish passage subcommittee will meet to discuss the workgroup’s feedback and define the recommended timeframes. They may also consider interim measures to increase genetic interchange in fish populations.

Workgroup Discussion: Progress Review and Reflections

Derek Sandison and Jerry Kelso discussed their impressions of the workgroup process to date and how the group should move forward. In their discussion, they made the following points:

- There are many different estimates for long-term water demand. The workgroup should focus on short-term water needs first.
- The integrated package should use a phased approach.
- The project team is putting together three initial draft integrated packages for the workgroup to discuss. All three draft packages will include all the seven elements.
- Because science changes rapidly, the package should allow for adaptation.
- The workgroup should focus on developing a package to implement rather than recommending more studies.
- In order to present a legislative package, the workgroup needs to make projections on how much the package benefits fish. In addition, projects that receive federal funding must be multipurpose projects to gain support.

- Reclamation and Ecology received money (50/50 cost share), which they hope to use to validate assumptions made in the integrated package. They may also want to use a portion of the money to gain information about the relationship between surface water and groundwater in the basin.
- The workgroup may want to consider changing its name to something that indicates it is a basin-wide program.
- There are many studies previously completed for the basin. The workgroup should look into these studies and take into consideration past recommendations and why certain projects were never realized.
- The workgroup should begin thinking about how projects will be sponsored.

After Derek and Jerry's discussion, each member of the workgroup was given a minute to provide input on the workgroup's progress and what lies ahead. Workgroup members expressed that they were encouraged by the process so far, but many noted that the most difficult part of putting together an integrated package is yet to come. The following additional comments were made:

- The workgroup needs to know how validation analysis results will affect the package before the studies are completed.
- Concern for where the money for the integrated package will come from.
- The most difficult discussions will relate to who gets access to new water supply. The workgroup needs to think about TWSA versus earmarked water for specific users.
- Interested in seeing a draft outline of the legislation for the workgroup to use as a starting point.
- There have been many studies completed in the basin, so the workgroup should not recreate old efforts. The workgroup should look at past recommendations from these studies to move forward.
- Interest in comparing different integrated packages.
- The workgroup should shift focus to what the legislation will look like, considering that legislation does not always allow for lots of detail.
- Reclamation and Ecology should spend the cost-share money that they received on projects in the field.
- The workgroup has an opportunity to develop an ecosystem restoration water management mode. In order to do so, the workgroup should focus on the big picture.
- Reclamation and Ecology should spend their cost-share money on modeling to ground truth assumptions and predictions.
- Workgroup members should resist the urge to be positional in order to come to a group consensus.
- Concerned about how realistic the integrated package will be.
- Complete modeling to determine if the integrated package will provide the expected benefits. Concern for how long this would take.
- Do nothing is not an option.
- The workgroup should address water supply demands in the basin for the next 100 years.

- Biological based flows for the mainstem Yakima River need to be identified. This is important to return flows in Benton County.
- How will the workgroup apply what was learned about climate change?
- The Bonneville Power Administration put out a resource package for wind energy that includes pump storage. Need to look at how pump storage might fit in.
- The workgroup needs good metrics to support the package. Congress will be interested in how the package benefits fish, a sustainable food supply, and job creation.
- The workgroup needs to move beyond the conceptual stage on inactive storage. The workgroup needs to look at “strawman” packages and then an outline of the legislative proposal.

Public Comment

The workgroup meeting was opened for public comment. The following comments were received:

- The workgroup needs to identify biologically based flows in the mainstem of the Yakima River. The best way to do this is by forming a subcommittee.
- Why has Reclamation not applied for funding for these projects under Title XII?
- Inactive storage likely not available in Cle Elum reservoir because it looked very drawdown during a recent visit.

Habitat Subcommittee Update

The habitat subcommittee has met several times to develop recommendations for the workgroup. HDR is currently preparing an initial draft of the recommendations. Once approved by the subcommittee, these will be ready for workgroup discussion at either the October 22nd or November 9th meeting.

Action Items

- HDR will update the previous meeting’s notes.
- HDR will update the executive summary of the fish passage subcommittee recommendations to include a footnote about operational constraints.
- The fish passage subcommittee will revisit recommendations per the workgroup’s discussion.
- The habitat subcommittee will finalize initial recommendations by the October 22nd or November 9th meeting.
- The project team will prepare three initial draft integrated packages for the workgroup to discuss at the October 22nd meeting.

Workgroup Members in Attendance

Brad Avy, Washington Department of Agriculture

Dale Bambrick, NOAA Fisheries Service

Max Benitz, Benton County Commissioner

Dave Brown, City of Yakima

Alex Conley, Yakima Basin Fish & Wildlife Recovery Board

Rick Dieker, Yakima-Tieton Irrigation District
Urban Eberhart, Kittitas Reclamation District
Rand Elliot, Yakima County Commissioner
Michael Garrity, American Rivers
Mark Johnston, Yakama Nation – Yakima/Klickitat Fisheries Project
Sid Morrison, Yakima Basin Storage Alliance
Scott Revell, Kennewick Irrigation District
Phil Rigdon, Yakama Nation - Natural Resources
Derek Sandison, Washington Department of Ecology
Jeff Thomas, US Fish and Wildlife Service
Ron VanGundy, Roza Irrigation District
Dawn Wiedmeier, Bureau of Reclamation

Other Attendees

Melissa Bates, Aqua Permanente
Scott Boelman, Bureau of Reclamation
Brent Bohan, American Rivers
Kevin Bouchey, Yakima County Commissioner
David Child, Yakima Basin Joint Board
Wendy Christensen, Bureau of Reclamation
Dan Church, Bureau of Reclamation
Stuart Crane, Yakama Nation
James Davenport
Sharon Edgar, HDR Engineering
Ben Floyd, HDR Engineering
Joel Freudenthal, Yakima County
Don Gatchalian, Yakima County
Jennifer Hackett, Central Washington University
Justin Harter, Naches-Selah Irrigation District
Joel Hubble, Bureau of Reclamation
Eleanor Hungate
Jerry Kelso, Bureau of Reclamation
Chuck Klarich, Yakima Basin Storage Alliance
Edwin Lewis, Wapato Irrigation Project
Mike Marvich, Aqua Permanente
Jason McCormick, Washington Water Trust
Tom Monroe, Roza Irrigation District
Bob Montgomery, Anchor QEA
Bryan Myre, Yakama Reservation Irrigation District
Onni Perela
Tom Ring, Yakama Nation

Ryan Rodruck, Office of Representative Richard Hastings
Mike Schwisow, Schwisow & Associates
Jan Sharar, Aqua Permanente
Michael Tobin, North Yakima Conservation District
Jim Trull, Sunnyside Valley Irrigation District
Ric Valicoff, Roza Irrigation District
Joanne Wellner, Washington Department of Ecology

Next Workgroup Meeting

The next meeting will be held on October 22, 2009 at the Yakima Area Arboretum.

Where to Find Workgroup Information

Meeting materials, notes, and presentations from the workgroup's meetings will be posted on the project website (<http://www.usbr.gov/pn/programs/yrbwep/index.html>). A bibliography of information sources, many of which are available online, is posted on the website. If anyone needs help finding an information source, contact those listed at the top of page 1 or Ben Floyd at HDR Engineering's Pasco, Washington office, (509) 546-2053, or ben.floyd@hdrinc.com.