Water Banking in the Little Spokane Watershed, Washington

By Carl Einberger, Aspect Consulting and Mike Hermanson, Spokane County Utilities

There are significant uncertainties regarding current and future water availability in many areas of Washington State, including the Little Spokane Watershed (WRIA 55). To be proactive in addressing these uncertainties, Spokane County (the County) is planning to develop a regional water bank to address existing and potential future regulatory constraints on water use in WRIA 55. Ecology is not issuing new water rights in WRIA 55 under current regulatory conditions.

A water bank is a mechanism that facilitates transfer of water rights between sellers and buyers, or that reallocates water made available through infrastructure projects (e.g. conservation, storage). The source water right that is "banked" is typically held in the State's Trust Water Right Program and protected from relinquishment, until its diversion/withdrawal authority is formally conveyed to the buyer. Currently, approximately 30 public, quasi-public, and private water banks are in operation or being studied in Washington.

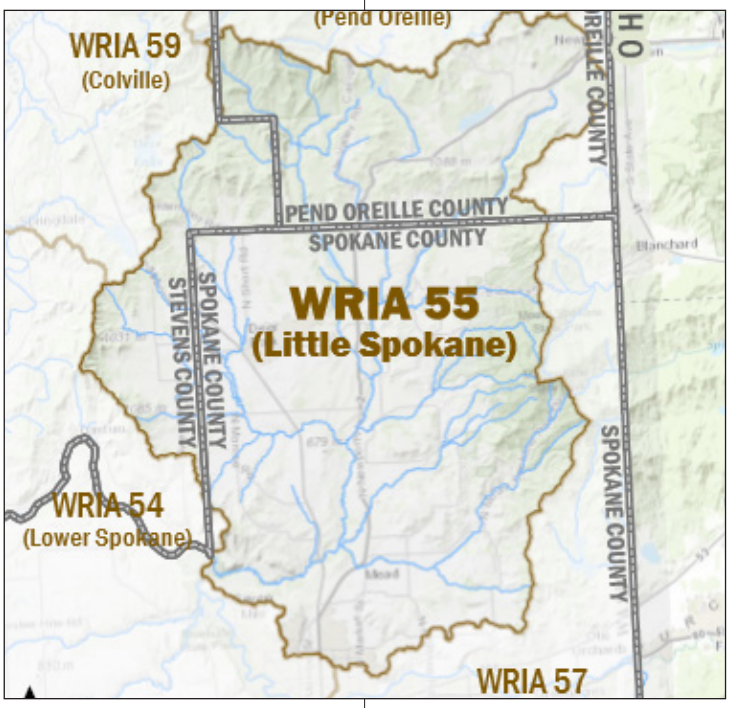

Figure 1: WRIA 55 and surrounding environs

As part of this process, the County convened a Policy Advisory Group (PAG) with members from the counties, water purveyors, the Kalispel Tribe, and Ecology to support interagency and stakeholder coordination and evaluation of water banking in the watershed. Aspect Consulting, along with Jonathan Yoder of Washington State University, Cascadia Law Group, and Carlstad Consulting, were engaged by the County to conduct a feasibility study on water banking and to facilitate PAG meetings. The recently completed feasibility study has yielded a number of themes critical to evaluating the path forward for water banking in WRIA 55. These themes include understanding the legal, regulatory, and policy framework; evaluating potential demand; understanding the economic environment; developing bank seeding approaches; and constructing an implementation plan.

Understanding the Legal, Regulatory, and Policy Framework

There are numerous legal, regulatory, and policy framework issues that provide incentives to the Counties to be proactive in developing water banking in the Little Spokane Watershed. For example the Little Spokane River instream flow rule (WAC 173-555; the "Rule") does not address groundwater and contains ambiguous exemptions for domestic use. This means that water is frequently unavailable to meet adopted instream flows in WRIA 55 and existing surface water users with water rights junior to the Rule are routinely curtailed by Ecology.

Groundwater right holders and exempt well users have not historically been curtailed, but could be in the future based on Ecology's and the Court's evolving interpretation of the law, the Rule, and standards for protection of existing water rights. Case law on groundwater exempt use, impairment of instream flows, conjunctive management of surface and groundwater, county building permit and Growth Management Act (GMA) responsibilities, and over-riding considerations of the public interest (OCPI) standards continue to be clarified by the court system. There is a corresponding trend towards increasing County and Ecology co-management of future curtailment risks and the associated impacts on property values, on the ability to develop property, and on property transactions when instream flows are not met.

Developments served by permit-exempt wells are constrained by the Department of Ecology v. Campbell & Gwinn Decision, which limits a development project to one permit exemption, which could affect existing and future subdivisions in WRIA 55.

In other Washington basins (e.g., Kittitas, Skagit, Yakima), regulatory uncertainty over legal water availability has created economic conditions that are politically challenging for counties. WRIA 55 may face these same challenges in the future. Specific examples include the following:

- In 2001, junior surface water users in the Yakima Basin, including 1,000 cabin owners and the City of Roslyn, were ordered by Superior court to curtail water use.
- In 2006, new groundwater use was restricted in the Upper Kittitas basin.
- In 2013, a Washington State Supreme Court Decision (Swinomish Indian Tribal Community v. Ecology) invalidated a portion of an instream flow rule that allowed exempt well development in Skagit and Snohomish Counties.

As a result of all these actions property values dropped, refinancing loans were deferred, cabin sales slowed, and properties were devalued.

Continued on Page 4: Spokane

Conference Review: Hydrologic Impacts of Climate Change

By Terry Smith, AWRA-WA Board Member

The first session of the AWRA-WA State confered featured Julie Vano of the Oregon Climate Change Research Institution, Oregon State University, and Matt Bachmann, Hydrologist, United States Geological Survey Washington Water Science Center.

Ms. Vano, a former student-recipient of AWRA-WA fellowship and postdoctoral fellow at the college of Earth, Ocean and Atmospheric Sciences at Oregon State University, gave a presentation on "A User's Guide to Climate Change Information for Water Resources Planning." She presented ways in which global climate models can by used to address local-scale climate impacts, including projections of future streamflow. These models use a combination climate and land structure information.

Ms. Vano emphasized the importance of using historical data as well as future simulations, and not relying on one model. As an example, ehe used the Yakima River Basin as an example of how to use specific information for streamflow estimates in 2050. Ms. Vano advocated a need to better quantify uncertainty, and the need to develop new ways to connect scientists, water managers, and decision makers.

She also emphasized the need to work on including climate change alongside other influential changes, and to improve the ability to monitor current changes, citing the UW Drought Monitoring System for the Pacific Northwest as one example of important monitoring reports.

Matt Bachmann gave the presentation "A Look at the Future: Climate Change and Anticipated Impacts on the Hydrologic Cycle in the Pacific Northwest". Based on anticipated climate impacts rising temperatures will increase evapotranspiration and thus significantly reduce the amount of water recharging our shallow aquifers.

The USGS groundwater models suggest that this effect will cause groundwater depletions under future climate scenarios, even in cases where we get the the same amount of total rainfall. Groundwater impacts from drought are somewhat delayed compared to surface water impacts but they are just as real.

Water users who try to use groundwater pumping as a mitigation strategy for water scarcity during drought years are only postponing the impacts of those withdrawals. That might work out well if the drought turns out to be short-lived and the impacts of that missing water don't show up until a wet year when that water won't be missed, but under projections for future Pacific Northwest climate scenarios these kinds of droughts might not be so short-lived.

Groundwater and glaciers would only be capable of supplying sufficient water for two to three years in drought time. More of Mr. Bachmann's presentation, with some informative graphics and reference to specific projects, will be available on the AWRA-WA website.

Page 3: Spokane *Evaluating Potential Water Demand*

A major component of assessing the feasibility of establishing a water bank in WRIA 55 is understanding the magnitude and characteristics of the potential existing and future demand for water. Demands include:

- Future rural residential development in WRIA 55, which is forecasted to increase by approximately 3,000 acre-feet per year by 2040.
- Surface water rights, issued after the Rule was adopted, which contain instream flow provisions totaling approximately 800 acre-feet per year of water.
- Pending water right applications that have been on hold since 1987, with an annual quantity of about 4,000 to 5,000 acre-feet per year.
- Groundwater rights and current exempt uses that are junior to the Rule if Ecology or Court determinations create a new regulatory framework.

Understanding Economic Considerations

The WRIA 55 water bank feasibility study evaluated a range of benchmarks for price and market activity outcomes, based on whether water banks are nonprofit (public) or for-profit, and whether a regulatory imperative (e.g., Ecology enforcement or future changes in county land use decisions based on legal interpretations of water availability) is implemented for mitigation requirements.

Data on water pricing from Spokane, Pend Oreille, and Stevens Counties and from statewide transactions were considered. The analysis focused on residential costs assuming a single family home with 500 square feet of lawn irrigation. The analysis suggested that water bank transaction costs could range from less than 1% of the improved value of a home for a publically run water bank without a regulatory imperative, to 10% or more for a privately run water bank under a regulatory imperative.

Developing Water Bank Seeding Options

The establishment of a water bank requires the input of some form of credit (seeding) for water use resulting from an action that adds to the overall stream flow of the basin. Potential seeding sources in WRIA 55 include:

- **Pre-Rule Irrigation Water Rights.** As part of the feasibility study, a screening-level analysis of selected water rights and claims predating the Rule for potential bank seeding was conducted, as these water rights are not subject to the instream flow requirements of the Rule. As such they are not interruptible. Some of these water rights could ultimately provide bank seeding.
- **Surface Storage.** Storage projects could contribute to water bank seeding and instream flow mitigation through passive surface aquifer recharge (SAR) or more active aquifer storage and recovery (ASR). The WRIA 55 Watershed Plan evaluated the construction of new infiltration galleries and restoration of existing natural wetland sites for the purposes of augmenting groundwater and increasing storage.
- **Pend**

Continued on Page 11: Storage

Page 4: Storage

Oreille River Interbasin Transfer. Water from the Pend Oreille River could be diverted into the upper headwaters of the Little Spokane River, near the town of Newport. A review of water rights decisions and Ecology regulation of the mainstem of the Pend Oreille River indicates that water is potentially available during much of the year.

- **Habitat Restoration.** Restoration of instream and near channel habitat, and fish migration barriers consistent with scientific and resource agency guidance on the sustainability of critical fish species in the Little Spokane Basin could provide out-of-kind mitigation credits for bank seeding; however, statewide uncertainty and pending litigation regarding use of out-of-kind mitigation may constrain bank seeding.

Figure 2: Snow Lake after the parching summer of 2015.

Construct an Implementation Plan

A general consensus was reached among the PAG to develop a publically run bank management model, as opposed to private, state, or NGO-led management structure. Management of the bank could occur through the use of Watershed Management Partnerships, a board of joint control, and other cooperative means to coordinate water bank management. It is envisioned that a centralized water bank accounting system would be incorporated, while water bank applicants would work through the individual county planning and building departments to obtain mitigation certificates as part of other associated building permits.

An Implementation Plan has been developed for continued water bank development. Tasks incorporated into the Implementation Plan include Stakeholder Collaboration, Public Outreach, Water Bank Operational Structure Design, Water Right Acquisition Outreach, Pend Oreille Watershed Source Investigations, and Water Right Procurement. As part of setting up the water bank, plans also call for improvement of instream flows and habitat in the watershed in addition to bank seeding needs.

Conclusion: Water Banking is a Viable Regional Water Management Tool

The feasibility study concluded that water banking is a viable option for WRIA 55. Spokane County would like to continue with water bank development for WRIA 55, pending securing ongoing funding mechanisms to initiate the water bank. The proactive approach the County and other stakeholders are taking is intended to prepare for and mitigate sudden changes in the regulatory environment that may occur, as illustrated by the exempt well moratorium in portions of the Skagit River Basin.

Page 7: Icicle

include a pilot evaluation of reuse at Leavenworth National Fish Hatchery (LNFH) that may utilize up to 20 cfs. This will enable the operator of the hatchery to capture and pump "run-through" water from an effluent pipe at the LNFH back into the Hatchery Channel to improve water supply. Such reuse has been successful at other area hatcheries.

Groundwater Augmentation

The LNFH groundwater augmentation project will expand groundwater supplies at LNFH by over 7 cfs. Geophysical testing was completed in 2014 to confirm availability of the groundwater. A test well has been proposed for installation in early 2016 with production wells to follow. The estimated cost of this project is $2- $5 million.

Storage

An appraisal study was completed earlier this year to determine whether optimizing and automating water storage at the seven Alpine Lakes, managed by IPID and the U.S. Fish and Wildlife Service (USFWS), can meet the Guiding Principles. IPID manages Square Lake, Upper and Lower Klonaqua Lakes, Colchuck Lake, and Eightmile Lake. USFWS manages Upper and Lower Snow Lakes, and Nada Lake. Flows released from Snow Lakes and Nada Lake supply water to LNFH and allow the USFWS to meet instream flow obligations.

These seven lakes, collectively referred to as the Alpine Lakes, each have a small dam and low-level outlet that can be regulated to meet IPID and LNFH diversion needs on Icicle Creek. The Alpine Lakes have a combined estimated usable storage capacity of 20,015 acre-feet. That total usable storage volume is not typically released during a given year due to the difficulty of accessing the more remote lakes and due to the reliability of recharge in the Upper and Lower Snow Lakes Basin. Presently, these lakes are managed in a way that provides the highest level of certainty for drought protection for IPID and LNFH interests. A governing premise of this project is that there is a high degree of certainty that IPID's needs for release from the lakes will be met in drought years.

Next Steps

Future IWG work will include scoping for SEPA and NEPA, initiating feasibility studies, and seeking public consensus on the proposed project list.

Page 6: Fish

to climate change. Even better, these types of wood replenishment projects have been accomplished using simple tools (such as a griphoist), the invaluable Washington Conservation Corps, and wood found within walking distance of the stream.