MEMORANDUM

Project No.: 140290-04

April 27, 2015

To: Kittitas County Commissioners

cc: Kittitas County Public Health Department

From: Dan Haller, PE, Senior Associate Water Resources Engineer

Facilitator, on behalf of Citizen's Advisory Committee

Re: Kittitas County Water Banking, Citizen's Advisory Committee Summary Report

Executive Summary

In 2007, the Department of Ecology (Ecology) received a petition seeking the unconditional withdrawal from further use of all unappropriated groundwater in Kittitas County until enough information is known about potential effects on senior water rights and stream flows from the development of new groundwater uses (Ecology Publication: 10-11-021). From 2007 to 2014, there followed adoption of emergency and permanent groundwater rules (WAC 173-539A), community outreach, Attorney General Opinions and Court Rulings, USGS Studies, creation of private water banks, and a new mitigated-water framework for Kittitas County. On May 15, 2014, Kittitas County, Ecology, Futurewise, the Kittitas County Conservation Coalition, and RIDGE Association entered into a Settlement Agreement settling a case before the Growth Management Hearings Board, in which Kittitas County agreed to the phased integration of a Domestic Ground Water Mitigation Program (County Water Bank).

To begin implementing the County Water Bank, in 2014 Kittitas County committed approximately \$2.5 million dollars in funding to purchase approximately 105 acre-feet of senior consumptive use water rights as mitigation for new uses. In order to obtain advice on how best to establish the metrics for Mitigation Certificates that would be administered under the County Water Bank, in August 2014, Kittitas County accepted applications from 15 County residents who agreed to participate in a Citizen's Advisory Committee (Committee).

From October 2014 to March 2015, the Committee met five times in meetings facilitated by Dan Haller, an environmental engineer with Aspect Consulting, LLC (Aspect). The charter for the Committee was:

"To gather information and formulate a recommendation on the quantity of water to be issued with a mitigation certificate for the Kittitas County Water Bank. Committee members will share resources and research issues affecting residential and outdoor water use to support an educated recommendation to the Board of County Commissioners on the quantity of water the county will offer with a mitigation certificate through the Water Bank".

On March 27, 2015, the Committee submitted a Memorandum to the Kittitas County Commissioners entitled "*Recommendation on Water Quantities and Water Banking Framework*". Key findings of the Memorandum included both a majority and minority opinion for a numeric standard for Mitigation Certificates, Terms of Offering for Mitigation Certificates, and Assumptions on Water Bank Customer Demographics.

The majority of the Committee recommended offering two Mitigation Certificates:

"Package A": An indoor use package of approximately 275 gpd/house should be offered. Package A is mandatory for customers who have access to irrigation water supply for outdoor irrigation (e.g. irrigation district supply).

OR

"Package B": An indoor use package of approximately 275 gpd/house with an outdoor use package of 500 square feet at 25 gpd, or 300 gpd/house (averaged for the calendar year) should be offered. Package B is mandatory for customers who do not have access to an irrigation water supply for outdoor irrigation.

The minority of the Committee believed Package A and B should be offered in all situations and an additional Package C offering a higher irrigation allowance of 1,500 square feet at 350 gpd/house.

The Committee's recommendation was based on the following assumptions:

- The indoor use package is intended to include some small non-irrigation outdoor uses, such as car washing, window washing, etc.
- The County's target customer will be households with full-time occupancy, will use modern and efficient fixtures and appliances, and will have a fixed household size.
- Other sources of mitigation water are available besides the County Water Bank in most areas.
- Compliance and enforcement efforts should be at the bank level instead of the customer level.
- Customer usage data will be based on a metering program. There will be daily, annual, and peak time readings and allotments. Enforcement will only be done for significant outliers (households using significantly more than allotted).
- Lawn will be used as a surrogate for other outdoor landscaping (e.g. garden, shrubs, trees).
- A single value for crop irrigation use should be used county-wide. This will likely result in a slight overestimation of use in the Upper County (about 12% compared to average county use) and a slight underestimation of use in the Lower County (about 12% compared to average).
- Stockwatering uses were not a part of the Committee's charter and these recommendations do not reflect use for that purpose.
- The County should include clear and robust outreach materials for its water bank.

Background

This section provides a brief history of the background leading up to Kittitas County creating a Water Bank and forming the Committee to provide advice in establishing the metrics for Mitigation Certificates.

Regulatory Framework

Yakima River Basin surface water has been overappropriated since 1905 when the Bureau of Reclamation reserved all remaining surface water supplies to aid in the construction of storage reservoirs to supply irrigation and municipal supplies in the greater Yakima Valley, including Lake Keechelus, Lake Kachess, Lake Cle Elum, Bumping Lake, and Rimrock Lake (see Figure 1, Reclamation, 2015). The supply from these reservoirs, along with estimates of natural flow, return flow, and other sources, form the metric of Total Water Supply Available (TWSA), which is used to manage supplies in the basin.

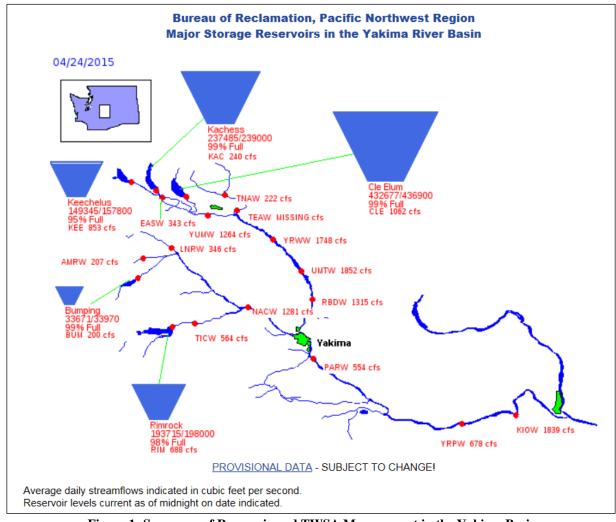


Figure 1: Summary of Reservoir and TWSA Management in the Yakima Basin

For decades, surface supplies have been managed by Ecology and Yakima Superior Court in the *Acquavella* Adjudication to prevent consumptive use increases that would diminish TWSA, and give rise to impairment of senior water rights. In 1999, the future potential for conjunctive use of surface and groundwater supplies in the Yakima Basin began with the adoption of a Memorandum of Agreement amongst Ecology, the Yakama Nation, and Reclamation (Ecology, 1999) to fund a comprehensive groundwater study in the basin. In 2010, the USGS estimated that Yakima River flows are reduced by as much as 200 cubic- feet- per- second (cfs) by the time the Yakima River drains into the Columbia River, due to groundwater withdrawals, and that that impact is significant when compared to federally mandated target flows at Sunnyside and Prosser dams, which range from 300 to 600 cfs (USGS, 2011). This study, coupled with droughts in 2001 and 2005, increased residential development during the mid-2000's, and increased clarity on the groundwater exemption under RCW 90.44.050 from the Courts, set the stage for increased regulatory scrutiny in the basin.

Chronology of Key Events Leading to Kittitas County Water Bank Formation

The following provides an overview of key events leading to the formation of the County Water Bank:

- On September 27, 2007, a petition was filed with Ecology by Aqua Permanente to "withdraw all unappropriated groundwater resources of Kittitas County until adequate information on quantities and sustainability of withdrawal is available" (Aqua Permanente, 2007).
- 2008-2010, Ecology adopted an emergency rule that established a partial withdrawal of groundwater within Upper Kittitas County, which included provisions for newly created residential developments, building structures on existing parcels, compliance with the 5,000 gpd exemption limit, and hydrogeologic assessments for new developments. This rule was adopted in part pursuant to an MOA between Ecology and Kittitas County on April 7, 2008. This rule was amended and extended nine times during this time period (Ecology, 2010).
- On September 21, 2009, in response to information requests from both Ecology and Kittitas County, the State Attorney General's Office issued an Opinion (AGO, 2009) clarifying that domestic use and lawn watering were separate exemptions under RCW 90.44.050, Ecology did not have authority for a partial withdrawal of groundwater (only a complete withdrawal), and Ecology's withdrawal authority included permitted and permit-exempt uses of groundwater.
- On January 22, 2011, Ecology's permanent groundwater rule for Upper Kittitas County (WAC 173-539A) became final, requiring consumptive use mitigation for new building permits (except those vested prior to July 16, 2009), (Ecology, 2011).
- In 2011, the Supreme Court issued its decision in the case *Kittitas County et al v. Eastern Washington Growth Management Hearings Board et al*, ruling in part that counties had a role in considering legal availability of water (in addition to physical availability) under County comprehensive planning.
- On May 15, 2014, Kittitas County, Ecology, Futurewise, the Kittitas County Conservation Coalition, and RIDGE Association entered into a Settlement Agreement settling a case

before the Growth Management Hearings Board, in which Kittitas County agreed to the phased integration of a Domestic Ground Water Mitigation Program.

• In 2014 Kittitas County committed approximately \$2.5 million dollars in funding to purchase approximately 105 acre-feet of senior consumptive use water rights as mitigation for new groundwater withdrawls.

Creating the Citizen's Advisory Committee

In order to obtain advice on how best to establish the metrics for Mitigation Certificates that would be administered under the County Water Bank, in August 2014, Kittitas County accepted applications from 15 County residents who agreed to participate in a Citizen's Advisory Committee. The following describes the County's process for soliciting volunteers to participate on the Committee, Committee Membership, the Committee's Mission and Charter, Operating Procedures, and tenure.

Soliciting Volunteers

The County provided notice of the formation of the Committee and reached out to key agencies with knowledge or regulatory oversight on the subject matter, such as Ecology and the Department of Health (DOH). The process and meetings were public and anyone with interest could apply or attend. The composition of the Committee resulted in a well-rounded group of interests, which was what the County desired in obtaining a recommendation that embodied a diverse Committee. The membership of the Committee is described below, and staff from the County also attended so they could support the Committee's needs and be fully informed when implementing Committee recommendations:

- 1. Winston Norish, Central Washington University Geology Department
- 2. Anne Johansen, Central Washington University Chemistry Department
- 3. Roger Weaver, Kittitas Association of Realtors
- 4. David Bowen, Kittitas County Chamber of Commerce
- 5. Rory Savage, Kittitas Association of Realtors
- 6. Craig Sill, PE, Central Washington Home Builders Association
- 7. Mark Nelson, Evergreen Valley Utilities
- 8. Lance Ballew, Tumwater Drilling and Pump
- 9. Marc Kirkpatric, Encompass Engineering
- 10. Carey Gazis, Central Washington University Geology Department
- 11. Jeremey Bach, Bach Drilling
- 12. Jon Eaton, Agricultural Community
- 13. Cynthia Nelson, DOH Drinking Water
- 14. Sage Park, Ecology
- 15. Bob Barwin, Ecology

Mission Statement and Charter

Because there was interest and potential for the topic of metrics for Mitigation Certificates to introduce a far-ranging discussion of policy issues that could be tangential to the actual work of the Committee, the County established an initial Mission Statement and Charter in an effort to ensure the scope of the Committee was defined. Throughout the meetings, there emerged an openness by the County to the notion that the Committee (or something like it) may provide subsequent strategic input on this work or other questions as the County Water Bank began operating and some of the information around the policy positions matured.

The Mission and Charter of the Committee is described below:

The mission of the Citizen's Advisory Committee is to develop a water quantity recommendation for a mitigation certificate for the Kittitas County Water Bank.

The water quantity citizen's advisory committee will discuss water related issues affecting future residents choosing to mitigate for water through the county owned water bank managed by Kittitas County Public Health Department. Committee members will share resources, gather information and formulate a recommendation on the quantity of water to be issued with a mitigation certificate from the future Kittitas County water bank. The committee will then make a recommendation to the Board of County Commissioners on the quantity of water the county will offer through the water bank.

Operating Procedures

The Committee was introduced to the following proposed Operating Procedures establishing ground rules for Committee operation during the first meeting. Following review and endorsement by the Committee, these Operating Procedures were used throughout the process to develop the Final Recommendation, which consisted of a consensus recommendation on many policy points, and a majority and minority opinion recommendation on specific metrics for Mitigation Certificates.

Governance and Decision Making:

- All parties have equal representation and equal participation.
- Consensus outcomes are desired, but not required. If the Committee determines to seek consensus on certain points, consensus is defined as an outcome everyone on the Committee can live with and support. Where the Committee does not reach consensus, a range of perspectives will be carried forward (e.g. majority/minority opinions).
- Meetings will be facilitated and summary discussion points, recommendations and action items from meetings will be documented for review by the Committee.

Expectations of Participants:

- Participants will make every effort to attend meetings.
- Collaborative problem solving depends on mutual respect and careful listening among participants and on active participation by all. Meetings will be conducted in a respectful atmosphere where all parties seek to foster trust and understanding.

- Comments and discussion during these meetings will be concise and relevant to the goals of the meeting and the issue at hand.
- Participants will represent their own personal views and expertise and the perspectives of their organizations.
- Participants will allow for open discussion and the right to disagree, and will look for opportunities to find common interests, agreements, and solutions.
- Participants will focus on clarifying their own views and interests, and will refrain from characterizing the views of other participants.

Meeting Schedule

The Committee's work was completed in five meetings ranging from 2 to 4 hours, with occasional correspondence and email discussion in between meetings. Meetings were held in Ellensburg at conference facilities at the Kittitas County Fairgrounds and Armory on the following dates:

- October 28, 2014
- November 17, 2014
- December 10, 2014
- January 12, 2015
- February 17, 2015

The initial three meetings consisted of presentations on background issues necessary for the Committee to be fully informed on the topic, with complimentary policy discussions and consensus points adopted as clarity in positions emerged. The final two meetings were largely focused on developing the metrics for indoor and outdoor water use for Mitigation Certificates.

Meeting Summary

The following sections summarize key presentations provided to the Committee during its meetings, policy issues evaluated, consensus points decided, and other issues leading up to the Final Recommendation to the County Commissioners on March 27, 2015. Comprehensive meeting notes and presentation materials for each meeting are provided in the appendices to this Memo.

Committee Meeting 1

Committee Meeting 1 included some initial open discussion time becoming acquainted with one another, their perspectives, followed by a review of the Mission, Charter and Operating Procedures so the Committee could focus its work. The Committee worked through an initial exercise called the "bullseye map" to clarify which topics the Committee should be focused on, which issues the Committee may be interested in but were tangentially related to their Mission, and which issues were off-topic.

Table 1: Summary of Committee Bullseye Map Exercise

Committee Responsibilities	Tangential Issues	Off-Topic Issues
Number of recommendations	Household population	Commercial use
Quantity needed for outdoor use	Existing metering data	TWSA
Unit of measurement	Water budget neutral	Hydraulic Continuity
Quantity needed for indoor use	Consumptive Use metrics	Compliance with metering program
	Minimum required for public health	USGS model
	Fire Protection/defensible space needs	Subdivision/development use
	Crop irrigation requirements	Yakima Basin Integrated Plan
		Pending litigation/court cases
		Cost of water bank quantity sold
		Conservation Measures
		GMA
		Stock Watering
		Other Mitigation sources
		Physical Water Availability

Presentations

The Committee heard two presentations on water use to begin the stage for an exercise that would be used throughout the Committee meetings, which was to set a range of indoor and outdoor water use numbers that could be agreed to by consensus, and then successively narrow that range until a final recommendation was achieved.

- Dr. Mark Larson, Health Officer from the Kittitas County Public Health Department provided a summary of his white paper recommending a minimum indoor use standard of 36 gpcd (gallon per capita per day).
- County staff led an exercise using an on-line water use calculator from the Southwest Florida Water Management District. Several committee members volunteered their use patterns to come up with a range of indoor uses of roughly 40 to 70 gpcd.

Key Open Discussion Items

Some of the key initial discussion items and consensus positions arrived at during Meeting 1 included:

- 1. There needs to be consensus on the mitigation metrics for the bank (e.g. gpcd, gpd/house, square feet of lawn) so we're all using the same units of measurement.
- 2. The water bank is not intended to make exceptions for seasonal occupancy, because residences can become full-time occupancy with no knowledge or notice to the County.
- 3. The Committee is interested in understanding the implications of its water quantity selection on bank operation and longevity, particularly as it pertains to consumptive use.

Committee Meeting 2

Committee Meeting 2 began with additional exercises with the on-line water use calculator for all the Committee Members, which yielded a fairly wide range of water use based on different assumptions on applicant efficiency, occupancy, and other factors. One of the issues that emerged was the need to define a "Target Customer" for the County Water Bank. This became an important concept throughout the remainder of the Committee meetings when policy issues arose, as the Committee sought to define the role of their recommendation within the context of a County-run bank in an area served by other private water banks or mitigation options.

The Committee agreed the County Water Bank target customer has the following attributes.

- 1. <u>Full time occupancy for the home</u>. Since occupancy can change from year-to-year with primary residence changes, college transitions, home sales, and other factors, it wasn't as practical to use a population based metric.
- 2. <u>Home will have modern energy-efficient appliances</u>. The County's current focus is mitigation for new uses, which implies modern construction.
- 3. <u>A fixed household size assumption (e.g., average number of people).</u> Since occupancy can change from year-to-year with vacations, births, deaths, home sales, and other factors, it wasn't as practical to use a population based metric.

A policy exercise the Committee worked through in Meeting 2 was the pros and cons of having a higher or lower water bank number metric. These included implications on County Water Bank customer behavior, and on the County itself, which are summarized in Table 2.

Table 2: Summary of Pros / Cons of Establishing a Larger or Smaller Mitigation Certificate

Larger Number	Smaller Number	
County acquisitions don't serve as many houses	County acquisitions serve more houses	
Residents have greater flexibility and use choices	Residents have less flexibility and use choices	
Compliance may be easier	Compliance may be harder	
Cost per residence is likely higher	Cost per residence is likely lower	
More protective of senior rights	Less protective of senior rights	
Potentially less risk to 3 rd party appeal	Potentially more risk to 3 rd party appeal	
Less incentive to conserve water	Incentivizes conservation of water	
Greater water utilization	Lesser water utilization	

Presentations

The Committee heard the following two presentations on water use and water banking.

- Holly Duncan with Kittitas County Public Health provided a presentation of water use data based on metered water use and water system planning data for public and private water systems in Kittitas County and throughout Eastern Washington.
- Robert Barwin with Ecology provided a presentation of how other water banks are being operated and what water quantities they are selling associated with their Mitigation Certificates.

Key Open Discussion Items

Some of the key initial discussion items and consensus positions arrived at during Meeting 2 included:

- 1. <u>Kittitas County is not the only option for residents</u>. Other banks or self-mitigation options exist in nearly all areas that the County's water bank will serve.
- 2. The County Water Bank should be managed at the "bank-level" for most compliance activities rather than the "customer-level". For example, customer overage or underuse due to the myriad of assumptions the Committee discussed becomes less important if that variance can be aggregated at the bank level.
- 3. The Committee agreed that indoor water use should not be less than 150 gpd/house and not more than 350 gpd/house. Outdoor use would be additive.

Committee Meeting 3

Committee Meeting 3 began to focus on outdoor water use information to help round out that portion of the Mitigation Certificate recommendation.

Presentations

The Committee heard the following two presentations on outdoor water use.

- Tip Hudson from WSU Extension gave a presentation on lawn and landscaping water usage, evapotranspiration (ET), upper/lower county crop ET rates, and outdoor water demands.
- Suzanne Wade from Kittitas County Conservation District gave a presentation on defensible space and fire protection.

Additionally, the County followed up on their previous presentation about analogous water systems in Kittitas County and throughout the State. The indoor and outdoor average of all presented water systems was 272 gallons per day. This data was qualified that it included systems with part-time and full-time demographics, systems partially served by separate irrigation supplies, and systems reporting data at different times.

Key Open Discussion Items

Some of the key initial discussion items and consensus positions arrived at during Meeting 3 included:

1. County metering would be used to track both customer and bank compliance. Customers would likely be expected to meet an average annual (per house) and peak monthly (per house) requirement, with significant deviations reported receiving some technical assistance to understand the reason. Some reasons would likely be readily acceptable (e.g. household size above the average, which would be balanced by low reports in other areas). Some would likely not be acceptable (e.g. leaking water lines, irrigating more lawn than permissible).

2. <u>Lawn is an appropriate surrogate for other outdoor uses</u>. As shown in Figure 2, the metric for outdoor use can be affected by where you're at in the County (upper or lower, due to climate), what your outdoor use is for (e.g. lawn, ornamental trees, garden crops), and how much area you're irrigating. The Committee agreed that while they would still consider geographical factors and irrigation size in future meetings, only one ET rate would be used.

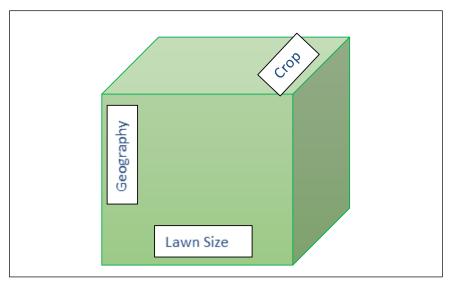


Figure 2: Factors Affecting the Outdoor Water Use Recommendation

Committee Meeting 4

Committee Meeting 4 began a process to finalize areas of concurrence, and prepare the recommendation to the Board of County Commissioners on metrics for the Mitigation Certificates. Areas of agreement were summarized, differences that still needed work noted, and data needs necessary to resolve these differences were identified.

Presentations

The Committee heard the following two presentations on household size and a water use spreadsheet on bank longevity.

- Erin Moore from Kittitas County Public Health District reviewed a map of census areas and the percentage of households with 1-2 person households, 3-4 person households, 5+ person households in each area. This helped give the Committee some comfort that a single number per house was appropriate, as long as compliance was largely managed at the bank level.
- Erin Moore from Kittitas County Public Health District reviewed a spreadsheet that helped assess County Water Bank longevity as a function of indoor and outdoor use recommendations. This helped the Committee understand the implications of choosing a larger or smaller number for Mitigation Certificates.

Key Open Discussion Items

Some of the key initial discussion items and consensus positions arrived at during Meeting 4 included:

- 1. A lawn size option of 500 square feet should be offered (potentially with conditions).
- 2. An indoor—only package for water use should be offered (potentially with conditions).
- 3. A half-acre lawn size (as allowed under RCW 90.44.050) would not be recommended. This level of lawn size, owing to its high consumptive use, depleted the County Water Bank too rapidly, was not reflective of Kittitas County demographics, and made the packaged too expensive given the County's initial investment.
- 4. <u>An average indoor recommendation across all Committee Members surveyed was 271 gpd/house</u>.

Committee Meeting 5 and Final Recommendation

The final Committee meeting was focused on attempting to obtain a consensus across all the recommendations, or in short of that, a majority/minority opinion. All the previous consensus decisions were reviewed, after which the discussion focused largely on indoor water use assumptions and the terms under which Mitigation Certificates would be offered.

Key Open Discussion Items

The key discussion items and consensus positions arrived at during Meeting 5 included:

- 1. Stockwatering was not included in the Committee Mission, and should be explicitly excluded so there is no confusion that it was included in the metrics.
- 2. An average county ET rate should be used for consumptive use for lawn, rather than separate numbers for Upper and Lower County. The Committee felt a single number was easier to administer, while multiple numbers would divide County residents unnecessarily and was not appreciably more accurate.
- 3. De minimis, non-irrigation, outdoor use should be included in the indoor package. The Committee did not want the County to have to manage window washing, car washing, or other small outdoor uses as part of compliance activities, as long as they weren't irrigation in nature (which can be more easily tracked).
- 4. A consensus position on a single indoor number could not be reached after multiple votes and a good faith effort to get there, with the average being approximately 275 gpd/house. The Committee was roughly split with about half being more conservation-focused at an indoor level on the order of 250 gpd/house (or lower), with the balance being more quality of life focused in the 300 gpd/house range (or higher).
- 5. The majority of the Committee believed that some conditions should be attached to the Mitigation Certificate to maximize bank longevity. These conditions largely focused on whether a given parcel had access to separate irrigation supplies.

The majority of the Committee recommended offering two Mitigation Certificates:

"Package A": An indoor use package of approximately 275 gpd/house should be offered. Package A is mandatory for customers who have access to irrigation water supply for outdoor irrigation (e.g. irrigation district supply).

OR

"Package B": An indoor use package of approximately 275 gpd/house with an outdoor use package of 500 square feet at 25 gpd, or 300 gpd/house (averaged for the calendar year) should be offered. Package B is mandatory for customers who do not have access to an irrigation water supply for outdoor irrigation.

The minority of the Committee believed Package A and B should be offered in all situations and an additional Package C offering a higher irrigation allowance of 1,500 square feet at 350 gpd/house.

Presentation to County Commissioners

The final Committee meeting was presented to the Board of the County Commissioners on March 10, 2015. The Commissioners accepted the recommendation with a request for a recalculation and rewording of the "package" descriptions for each in administration and development of outreach materials. This request did not alter the substance of the recommendation from the Committee. A modified recommendation was circulated by the Facilitator to the Committee, and a final Recommendation Memo was provided to the County on March 27, 2015.

References

- Aqua Permanente, Petition to Ecology for Groundwater Withdrawal, http://www.ecy.wa.gov/programs/wr/cro/images/pdfs/KittitaspetitionFINAL.pdf, 2007.
- Attorney General Opinion, Water—Water Rights—Wells—Interlocal Cooperation Act, http://www.ecy.wa.gov/programs/wr/cro/images/pdfs/2009_no6_ago_ZempleManningOpinion.pdf, AGO 2009 No. 6, 2009.
- Bureau of Reclamation, Teacup Diagram, http://www.usbr.gov/pn/hydromet/yakima/yaktea.html, April, 2015.
- Ecology, Memorandum of Agreement Related to Groundwater Management in the Yakima River Basin, http://www.ecy.wa.gov/programs/wr/cro/images/pdfs/moa_yn_br_ecy1999.pdf, Ecology, 1999.
- Ecology, Upper Kittitas Ground Water Rule Archive, http://www.ecy.wa.gov/programs/wr/cro/kittitas_wp_rulebg.html, 2010.
- Ecology, WAC 173-539A, Upper Kittitas Groundwater Rule, https://fortress.wa.gov/ecy/publications/SummaryPages/173539A.html, 2011.
- Ecology, Frequently Asked Questions on Upper Kittitas Groundwater Rule, Publication 10-11-021, August, 2013.

Southwest Florida Water Management District, Water Use Calculator, https://www.swfwmd.state.fl.us/conservation/thepowerof10/, 2008.

USGS, Hydrologic Framework of the Yakima River Basin Aquifer System, Washington, http://pubs.usgs.gov/sir/2009/5152/, 2011.

Limitations

Work for this project was performed for Kittitas County (Client), and this memorandum was prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. This memorandum does not represent a legal opinion. No other warranty, expressed or implied, is made.

All reports prepared by Aspect Consulting for the Client apply only to the services described in the Agreement(s) with the Client. Any use or reuse by any party other than the Client is at the sole risk of that party, and without liability to Aspect Consulting. Aspect Consulting's original files/reports shall govern in the event of any dispute regarding the content of electronic documents furnished to others.

Appendices

Appendix A: Committee Meeting #1 Materials

- Introductory Committee Email, Draft Operating Procedures
- Committee Contact List
- Committee Meeting 1 Notes
- Ecology County Settlement Agreement
- County GMA Water Compliance Fact Sheet
- Kittitas County Public Health Water Quantity White Paper

Appendix B: Committee Meeting #2 Materials

- Committee Meeting 2 Notes
- Water Banking Metrics Presentation
- Water Usage in Kittitas County Presentation

Appendix C: Committee Meeting #3 Materials

- Committee Meeting 3 Notes
- Average Gallons Per Day Handout
- Kittitas County Conservation District Firewise Presentation
- Lawn Water Use Presentation by WSU Extension

Appendix D: Committee Meeting #4 Materials

Committee Meeting 4 Notes

Appendix E: Committee Meeting #5 Materials

- Committee Meeting 5 Notes
- Committee Water Banking Final Recommendation Memo