



SPOKANE AQUIFER JOINT BOARD MEETING MINUTES

November 16, 2023

SAJB Officers:

President Jeremy Jenkins, VP Shane Sheppard, Secretary Todd Henry, Treasurer Doug Greenlund

1. CALL TO ORDER

The Board of Directors of the Spokane Aquifer Joint Board (SAJB) met in Regular Session via Zoom and in person at Spokane County Water Resource Center. A total of eighteen (18) attended the meeting including: eight (8) SAJB voting representatives, three (3) proxy votes from Carnhope, Hutchinson and Pasadena Park Irrigation District were given to Rick Neal and Todd Henry, one (1) non-voting representative, Program Manager Hanson, and eight (8) guests. The sign-in sheet for SAJB members and guests is available upon request. The meeting was called to order at 1:34 pm. President Jenkins asked everyone in person and via zoom to introduce themselves.

Consideration of Regular Meeting Minutes

President Jeremy Jenkins called for any additions, corrections, or deletions to the Minutes of October 26, 2023. Tonilee Hanson reported that a correction was made to the 6th bullet under the Spokane County Comprehensive /Capital Facilities Plan. Brenda Smits, DOH, wanted to clarify that purveyors may be required to submit a water system plan to DOH but are not required by DOH to submit a county -wide coordinated system plan as suggested in updating the Spokane County Capital Facilities Plan. Doug Greenlund moved to approve the meeting minutes for October as amended. Todd Henry seconded the motion. President Jenkins called for discussion and the vote. The motion was approved unanimously.

2. FINANCIAL REPORT

Administration and WIP Bill Payment Summary

Treasurer Greenlund presented the Bill Payment Summary and financial reports for November.

November 2023 Bill Payments totaled \$6,214.44. The November summary detailed SAJB Administration bills of \$0.00. Wellhead Implementation bills were paid with checks numbered 2673-2676. Education and Awareness bills were \$2,254.80. Program Manager Consulting Services, mileage, and reimbursements amounted to \$3,537.14. PCSI bill amounted to \$422.50. Treasurer Greenlund noted that he received a \$2,500 check from IWAC for 2023 administrative assistance provided by PM Hanson.

Those present reviewed the Bill Payment summary. Shane Sheppard moved to approve the November Bill Payment Summary. Matt Wright seconded the motion. President Jenkins called for the vote and the motion passed unanimously. The Spokane County Investment Pool balance is \$49,007.66. The Washington Trust WIP bank account balance is \$81,639.94. The Washington Trust Administrative bank account balance is \$2,586.72.

3. OLD BUSINESS



April – October
Media Campaign

Month	IWAC \$2,000 / Month	SAJB \$2,100 / Month
April	Protect the Aquifer Story Map	Sprinkler System Checkup
May	Leak Detection	Repair and Retrofit
June	Drought Tolerant & Native Plants	Smart Controllers & Sensors
July	Calculate Water Needs	Tips to Save Water
August	Fertilizers, Pesticides & Herbicides	Calculate Water Needs
September	Drip Systems & Soaker Hoses	Backflow Protection
October		DIY and Find a Professional

	Display	Facebook
Impressions	99,962	169,580
Clicks	188	883
CTR	0.24%	0.52%
Google	Views	Events
	1,154	3,289

1. October Nerds Media Campaign Results



Outdoor Watering Nerds – October was the final month of the Outdoor Watering Nerds Media Campaign with a focus on DIY and Find a Professional resources. The table above summarizes the total number of impressions and clicks for October. The media campaign April – November resulted in 1,757,204 impressions. The impressions resulted in 10,336 clicks. Google analytics for the Outdoor Watering Nerds website confirmed 17,772 visits to the site.

Definitions: Impressions: The number of times the ad was displayed. Clicks: The number of times the ad was clicked on. CTR (Click Through Rate): The number of clicks divided by the number of impressions. (Facebook Average 0.05% - 0.20%) (Display Average 0.05% - 0.12%). Google Analytics (GA4) Events: Refers to the number of times an event is triggered on your website or app. An event is a user's specific action on your site, such as clicking a button, playing a video, or submitting a form. Please add a link to the Outdoor Watering Nerds on your websites or Facebook pages. <https://outdoorwateringnerds.org/>

Wellhead Model – Convert MicroFEM to MODFLOW – John Porcello, GSI Water Solutions, responded to SAJB’s request for a proposal for a Groundwater Model Conversion and Update. John’s presentation was recorded and can be viewed at <https://youtu.be/IdFZyWXL7pU>. The topics, objectives, steps, and cost estimate are provided below.

Topics

- Objectives
- Study methods (scope of work)
 - Groundwater flow model setup
 - Wellhead protection update
 - Climate-change analysis
 - Documentation
- Details of the budget estimate
- Recent City of Spokane work
 - Provides a starting point in two regards
 - New groundwater flow model
 - Climate-change study (nearing completion)

Objectives

1. Update wellhead protection area capture zones to incorporate 20+ years of information obtained since the original capture zones were delineated in the late 1990s.
 - Changes to well network
 - Improved understanding of lithology and aquifer properties in the eastern portion of the City of Spokane

- Aquifer and river studies
 - SAJB, City of Spokane, USGS, Idaho DWR
- Improved groundwater modeling tools
- 2. Use new climate models and a groundwater model to understand implications of growth and climate change on groundwater levels and pumping capacities in individual wells.
 - Climate projections show changes in:
 - Natural recharge to aquifer
 - Temperatures and length of growing season (which affects demands)
 - Many wells are shallow, with little room to maintain yields if water levels decline with particular concern in summer.

Study Methods

Step 1: Develop an updated groundwater flow model.

- Use knowledge from prior modeling studies (SAJB, City, USGS)
- Use new software, with refined gridding and layering
 - MODFLOW-USG (the core groundwater modeling code)
 - Groundwater Vistas (graphical user interface)
- Regional-scale calibration to data from prior studies
 - Spokane River gains/losses
 - Groundwater elevation contours
- First step to a modern model; not the model to end all models

Status: Essentially completed (by City of Spokane)

Key Assumption: Model is sufficiently calibrated for use by SAJB.

Remaining Work: Conduct grid refinements at SAJB wells.

Step 2: Change hydrologic inputs in the groundwater flow model using published climate change factors from a publicly available source. (<https://climatetoolbox.org>).

- Simulate multiple possibilities for the period 2070-2099
 - Low and high scenarios for future greenhouse gas emissions
 - RCP 4.5: a somewhat optimistic scenario (emissions decline by ~2050)
 - RCP 8.5: a pessimistic scenario (“business as usual”)
 - Low, medium, and high amounts of change for each emissions scenario
- Simulate changes to the aquifer and to monthly demands
 - Climate-change influences on aquifer recharge terms
 - Climate-change influences on timing and magnitude of monthly demand curve
 - Increased demand (50-year projections)

Status: Completed (by City of Spokane)

Remaining Work: Develop pumping demand details for each SAJB member well.

Step 3: Run the groundwater flow model with climate change applied to the aquifer and to the demand curve, then analyze results against baseline (current) conditions.

- Total of 7 simulations
 - Baseline = Current conditions (2015-2020 average)
 - Six climate-change scenarios
- The comparison of each climate-change scenario to baseline conditions evaluates the effect of three influences:
 - Increased demand due to growth
 - Climate-influenced changes on seasonal demands
 - Climate-influenced changes in the aquifer and Spokane River

Status: City of Spokane has defined two critical inputs

- Climate-change inputs for aquifer recharge and Spokane River
- 50-year demand projection for City of Spokane wells (with climate change)

Remaining Work: For all SAJB member wells

- Define 50-year demand (with climate change)

- Run and analyze model results for all SAJB member wells

Step 4: Select a simulation to use for conducting updated delineations of wellhead protection areas.

- Use same delineation approach and methods as before
 - Pumping rates are based on annual water rights volume
 - Delineate Special Wellhead Protection Areas (SWHPAs) for a travel time of 1 year multiplied by an importance factor
 - The importance factors are related to the response time to a contamination event:
 - Importance factor = Response Time in Months / 12 months
 - Ranges in value from 0.1 to 5.0
 - Original delineations used 15 scenarios for importance factors
 - Three types of well uses (primary, secondary, or peaking supply)
 - Availability of water from other purveyors (via interties)
 - Ability of distribution system to accommodate higher flow at specific wells

Step 5: Documentation.

- WHP Updates: Technical memorandum
 - Provides documentation for SAJB members and DOH
- Climate change analysis: Presentation
 - Assume presentation is sufficient (cost savings by avoiding a technical memorandum)

Cost Estimate Details Four tasks (For Budget Planning Purposes) Estimated cost: \$75,000.

Without the work already conducted by the City of Spokane, the cost would be \$40,000 greater.

	Activity	Estimated Cost
1. Data gathering		
2. Model simulations		
• Setting up and running 7 simulations	Data gathering, deciding on importance factors	\$9,000
• Baseline conditions	Set up, run, and QC flow simulations (7 model runs)	\$20,000
• 6 different climate scenarios	Delineate SWHPAs	\$10,000
• Analyzing climate change model results	Analyze climate-change effects on production wells	\$14,000
• Updating SWHPAs (using 1 simulation)	Presentation of results	\$7,000
3. Presentation of results	SWHPA delineation report	\$15,000
4. SWHPA delineation report	Total	\$75,000

Discussion followed. Members wanted confirmation that the MODFLOW model would be supported into the future and that an updated groundwater flow model could be updated as new production wells were added. A point of discussion was raised referencing a previous study that did not have a formal report and the question of future usefulness for a presentation compared to a final report. Dan Kegley said that updating the current model could also be useful to updating the 2007 Bi-State aquifer model. This potential 2024 budget item will be considered during budget discussions at the December 14th SAJB Meeting. Here are links to [Climate Change presentations](#) and an article [Climate Change & Summer Streamflows](#) published in “The Water Report”.

4. NEW BUSINESS

Introducing Graphic Designer, Hannah Walker. PM Hanson invited Hannah to the SAJB Meeting so members could meet the artist who has produced ads for the Outdoor Watering Nerds media campaign, KSPS PBS animated videos, IWAC’s event materials and Drippy the Water Drop Activity Book. Hannah is currently working on promotional materials for SAJB including a cornhole game, ring toss, spinner, pens, banner, and a brochure. These items will be completed in 2023. Hannah is available to do freelance work for any design projects your district might need. Contact Hannah at hanwalker626@gmail.com.

Retiring December 2024 – Program Manager Tonilee Hanson announced that she will retire in one year. Tonilee realized that funds would need to be budgeted in 2024 for hiring and training a new Program Manager. She will prepare a PM job description and training document. Tonilee said she is confident that SAJB will find an amazing person who will bring new energy, ideas, and creativity to the work.

2024 DRAFT Budget – New Items for your consideration were added to the 2024 draft budget since it was discussed in October. The items include: \$5,000 to hire and train a new Program Manager and \$6,500 for a proposed *Careers in Water Booklet*. The cost would cover content, photos, and design.

- Interview SAJB members for number and types of careers to spotlight.
- Design layout template for information to gather on each career.
- Gather and edit photos for each career type.
- Work with SAJB members to create text for each career type.
- Compile careers into 20-page booklet (same size as Aqua Duck comics)

2023 Unexpended Funds – PM Hanson requested approval to use \$4,000.00 in unexpended 2023 PCSI budget to print Drippy the Water Drop Activity Books. Drippy the Water Drop Activity cards were developed into a coloring-activity book by Hannah Walker and paid for by IWAC. IWAC, City of Spokane and Spokane County are also purchasing print copies. Shane Sheppard moved to approve using \$4,000.00 of unexpended 2023 funds for the printing of Drippy the Water Drop Activity Books. (approximately 3,850 copies). Doug Greenlund seconded the motion. President Jenkins called for discussion and the vote. The motion passed unanimously.

5. WELLHEAD PROGRAM IMPLEMENTATION PLAN – PM Hanson’s Report

SAVE THE DATE: Thursday, May 30, 2024, for the Spokane River Forum’s EXPO 2024 H2O 1-Day Symposium. Keynote: John Matthews, Executive Director of the [Alliance for Global Water Adaptation](#), is a leading climate change/water resource thinker with regional, national and international experience considering strategies and opportunities to address water resources in the era of climate change. His work applies to our region. [Read more](#)

EnviroCertified Food Rescue Recognition program is working to address the 30-40 % of food produced that is thrown away, which wastes the energy, water, fertilizers, and labor that goes into growing, transporting and disposing of the food. Food waste ends up in landfills and the WTE facility and creates methane gas. A new Food Rescue Brochure was produced to show grocery stores and restaurants how to donate unused food.



6. OPEN FORUM

PNWS-IESS-AWWA offered, “A Day with DOH and Idaho DEQ.” On 11/1/23. Find more training opportunities at www.pnws-awwa.org.

Next Meeting December 14, 2023.

7. ADJOURN

There being no further business this 16th day of November 2023. President Jeremy Jenkins adjourned the meeting at 3:12 pm.

President, Jeremy Jenkins

Secretary, Todd Henry