

2022 ANNUAL REPORT

PALOUSE BASIN AQUIFER committee

Palouse Basin Aquifer Committee
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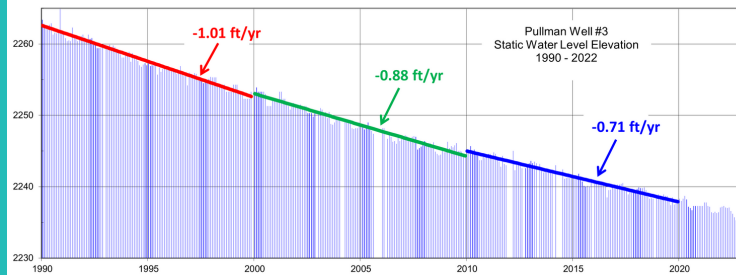
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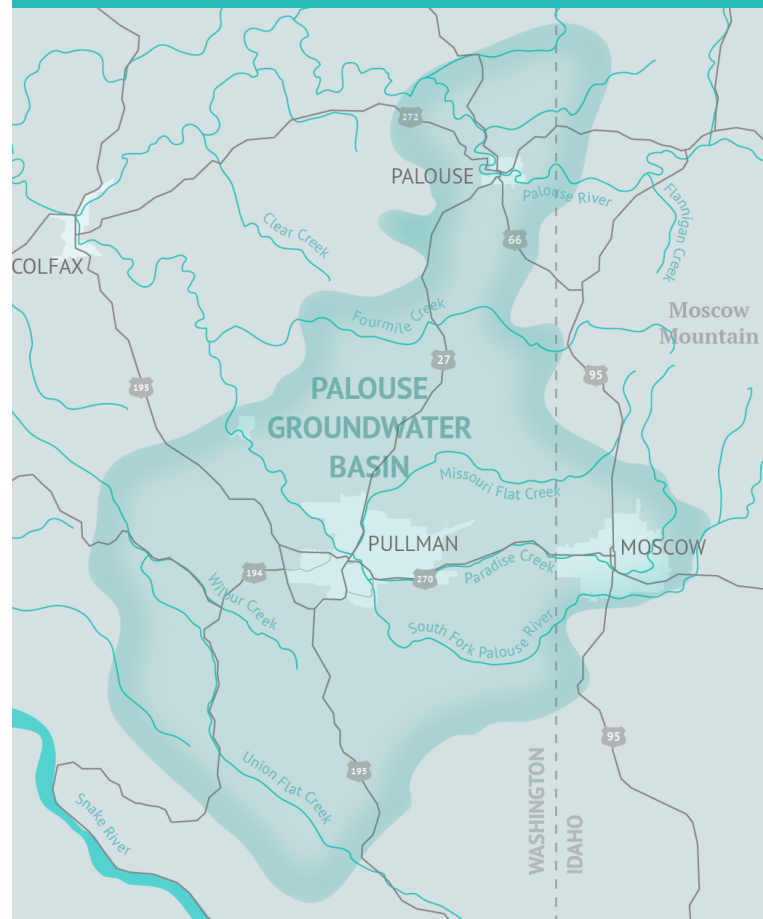
BACKGROUND of the Palouse Basin Aquifer Committee

The Palouse Basin Aquifer System provides the sole drinking water supply for over 80,000 residents in Whitman County (Washington) and Latah County (Idaho). Groundwater levels have been declining since the late 1800's when the area was first settled. Since then the amount of water being pumped from the aquifer system outpaces what re-enters from the natural recharge process.

In the 1990's, the decline rate was 1.3 feet per year. The current rate of decline in the basin is approximately 0.7 feet per year. While the rate of decline has decreased over the last 30 years, demonstrating conservation efforts and technology advancements have been effective, the aquifer water levels continue to drop as demand outstrips supply. State statute defines this as mining an aquifer, an unsustainable practice. This condition can lead either the Washington Department of Ecology (WDOE) or the Idaho Division of Water Resources (IDWR) to declare the Palouse Basin a Critical Groundwater Management Area (CGMA). This could significantly curtail future growth, including housing and businesses, and remove the authority for local decision-making. In an effort to maintain local control and demonstrate a willingness and ability to work on solutions to the supply challenges in the Palouse Basin, the local jurisdictions came together and established the Palouse Basin Aquifer Committee.



**THE CURRENT
RATE OF WATER
LEVEL DECLINE IN
THE BASIN IS 0.7
FEET PER YEAR.**



ABOUT THE COMMITTEE

PBAC MISSION:

To ensure a long-term, quality water supply for the Palouse basin region.

The Palouse Basin Aquifer Committee is a cooperative, multijurisdictional, bi-state committee made up of representatives from cities, counties, and universities within the basin. This includes the City of Pullman, Whitman County, and Washington State University, in Washington state, and the City of Moscow, Latah County, and the University of Idaho, in the state of Idaho. Each entity has two voting representatives on the Committee. The City of Palouse, Washington, is also in the basin's boundaries, though not presently a formal member of the Committee. Ex-Oficio members include representatives from WDOE and IDWR.

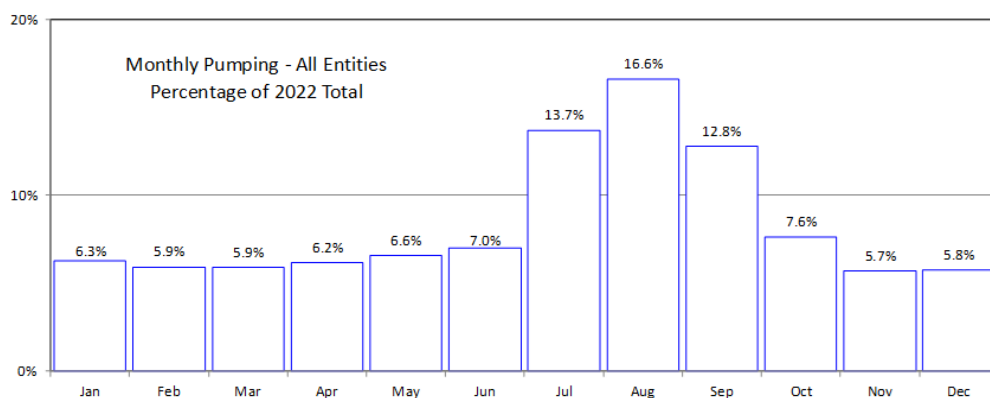
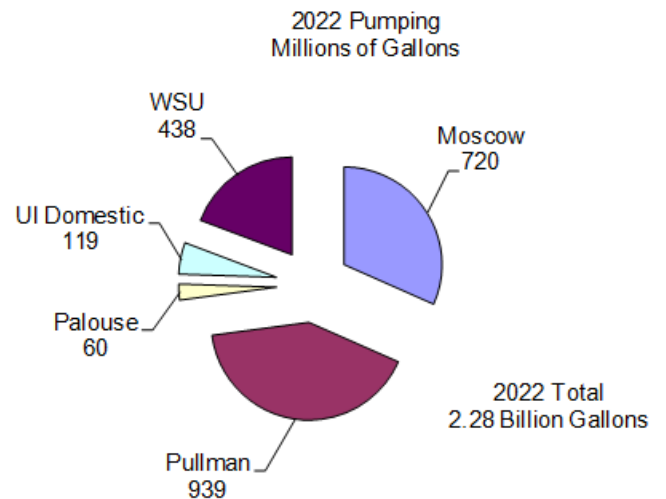
The [Groundwater Management Plan](#) (GWMP) and an associated [interagency agreement](#) include requirements to gather annual pumping numbers, analyze water level information, research the basin's geology, actively engage and educate the community, foster and maintain relationships with state and local agencies, and implement a supplemental water source with the goal of aquifer stabilization.

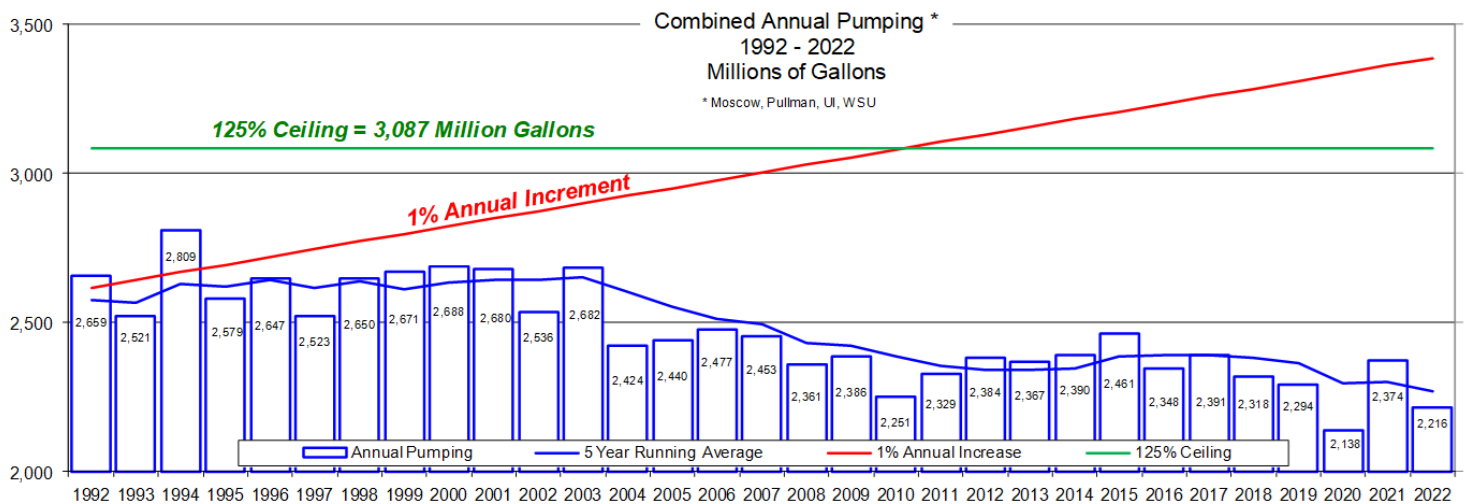


2022 GROUNDWATER USAGE

The total combined groundwater pumped by the cities (Pullman, Moscow, and Palouse) and the universities (WSU and UI) for the year 2022 was 2.28 billion gallons. In aggregate, this was 6% less than was pumped in 2021 (2.48 billion gallons), and 17% less than was pumped in 1992 (2.74 billion gallons), the first year the GWMP took effect.

During the months of November through April, the water used indoors (due to the colder climate) is known as 'baseline use'. Pumping increases significantly during the warmer months typically, starting in May and continuing through October, primarily due to outdoor irrigation or what is known as 'non-baseline use'. In 2022, the region experienced a longer, cooler, wetter spring, resulting in a late start to the irrigation season which in turn meant less water use. During the three months of July through September the water pumped accounted for 43.1% of the water used for the entire year. In theory, if outdoor irrigation use was eliminated, those months would have used roughly 18.9% of the annual water use.





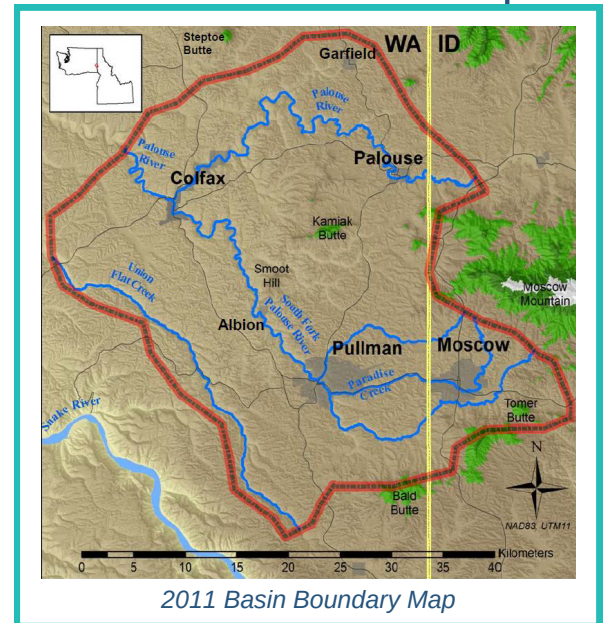
As part of the GWMP, each major pumping entity agreed to pumping limitation goals. The effort was to limit annual pumping increases to 1% from the 1986-1990 five-year average pumping amount (the red line in the chart above). In addition, entities agreed to a cap of no more than 125% of the 1981-1985 five-year average pumping amount (the green line). The entities have met these goals almost every year, except once. With the cities prioritizing the creation of a regional conservation plan, it's likely each entity should revisit their action plans and create new pumping caps with a goal to conserve more and more each year. Conservation continues to be the most economical first step and will help extend the lifespan of any future water supply project.

**2.28 BILLION GALLONS
OF GROUNDWATER
WAS PUMPED IN 2022**

2022 ACCOMPLISHMENTS

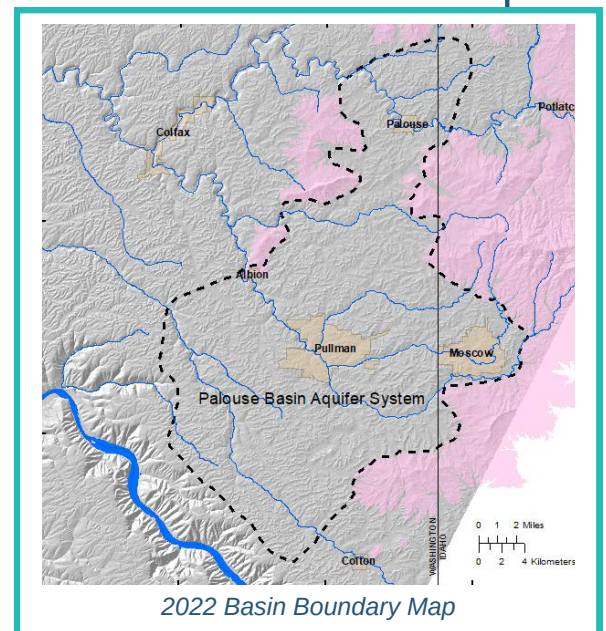
ADJUSTED BOUNDARIES

- Through their extensive decades of research and involvement in the basin, Emeritus Professor John H. Bush, Pamela Dunlap, and Steve Robischon presented new boundaries for the Palouse Groundwater Basin. In summary, with geological analysis, well connectivity tests, and water level data analysis, the city of Colfax was once thought to be within the basin and has now been removed. The [new boundary map](#) was adopted by the Committee in May.



ANNUAL DATALOGGER DOWNLOADS

- Over 30 wells in the region have transducers that take readings of water levels once an hour. Throughout the year data is stored and each summer the data is obtained through field work. This year's downloads were performed by Alta Science & Engineering with a total cost of \$15,000. Data is reviewed and analyzed and tracked to determine water levels in the basin. It is vital to maintain consistent data each year to track trends in conjunction with pumping reports. The [2022 hydrograph](#) includes a map with well locations and the data obtained from each transducer in each well over the past several decades.



ARPA FUNDS

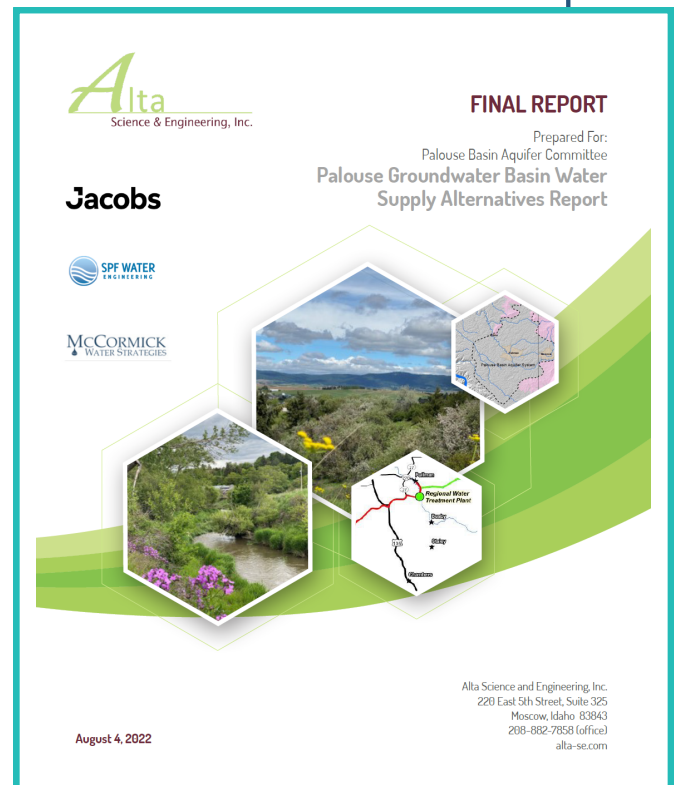
- In the spring, PBAC requested through Latah County to utilize ARPA (American Rescue Plan Act) funds specifically for outreach and education regarding water conservation. The request was formally awarded at \$50,000 in July but has not yet reached PBAC accounts due to processing logistics.

TRANSITION TO AN EXECUTIVE DIRECTOR

- PBAC's staff has historically been part time positions responsible for the monthly public meetings, contract and financial management, and technical data analysis. In 2022, the Executive Manager role transitioned to a full time Executive Director position. Expanding this role allows for more consistent community outreach and further advancement of a water supply project.

ADOPTION OF ALTERNATIVE WATER SUPPLY REPORT

- In 2020, PBAC contracted with Alta Science & Engineering to further the work completed in the 2017 Water Supply Alternatives Analysis Report. In July of 2022, the Committee held a workshop to discuss the final details of Alta's report which focused on refining the potential alternative supply options and ranked five projects. The Committee [adopted the report](#) on August 18, 2022. The report and the work in total cost \$200,000. After adoption, presentations to each member entity took place in September and again at a Leadership Roundtable in November, where stakeholders discussed next steps. With a preferred alternative identified, PBAC has commissioned preliminary work on additional conservation, water rights analysis, and preliminary project funding exploration. All of this considers that there are significant potential developments that could influence that viability of each of the identified alternatives including the adjudication of the Palouse Basin and the potential for a pumped storage project. PBAC is closely monitoring these and is prepared to pivot as new information becomes available.



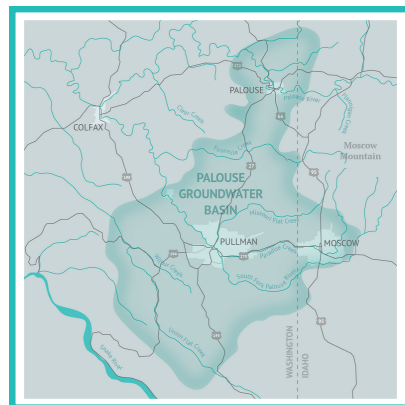
2023 GOALS

OUTREACH & EDUCATION

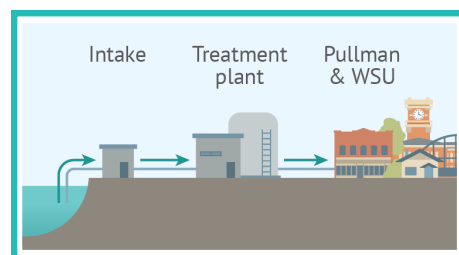
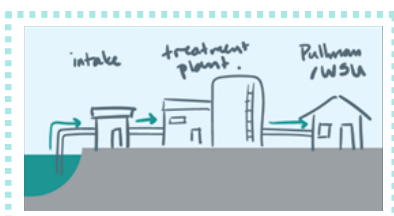
- There is an inherent complexity in the analysis of groundwater systems, monitoring of declining water levels, and especially the generation of water supply projects. Public outreach and education are critical components of PBAC's work. A lack of clear, consistent, and timely public outreach and involvement played a key role in failures of previous attempts at implementing water supply projects. PBAC is in the final review phases for a series of infographics that help communicate the challenges and explain the projects to a variety of audiences. The initial infographic creation is projected to cost \$9,000. There will likely be another phase to create additional infographics based solely on the topic of water conservation which could be another \$10,000. Additionally, planning and executing public outreach events will require various forms of media and collateral which is estimated to cost \$5,000.



Conceptual Sketch



Final Infographic



CONTINUED PARTNERSHIPS

- Leaning into the collaborative nature of PBAC, maintaining relationships and making others aware of the work PBAC is charged with is a continued priority. For example, the Idaho Water Resource Board's July meeting will be held in Moscow where PBAC will have a unique opportunity to present an update on the basin and request financial resources.

RESEARCH

- In 2022, the City of Genesee drilled a roughly 820-foot deep well - the deepest, furthest south well in the nearby area. Chips from the driller were obtained and will be analyzed with PBAC research dollars in 2023, for an estimated cost of \$7,000. There will also be future coordination for placement of a transducer to be added to PBAC's monitoring network which will generate data to help determine possible connectivity in the southern boundary of the basin.
- Each year data from transducers in the monitoring network are obtained, batteries are checked and equipment is replaced to ensure consistent data is collected. Four transducers will need to be replaced in 2023, along with the routine data collection work, estimated to cost \$20,000.
- Alternative 5 is the project the Committee chose to focus efforts towards when adopting the Alternative Water Supply Projects Report in the summer of 2022. However, the other Alternatives are still viable, especially as interest grows from the private sector which could allow for collaboration and potential cost-sharing benefits. Opportunities may arise in 2023 for PBAC to be a partner with feasibility studies.

STRATEGIC PLAN FOR WATER SUPPLY PROJECT

- Historically, PBAC has focused its efforts on research to understand the dynamics of the basin. Now, with an aquifer stabilization and target need goal for our growing region, PBAC is pivoting to an applied technical research role, specific to the supplemental water supply project. PBAC directed Alta to create a prioritized implementation plan to determine next steps for project implementation of a supplemental water supply project. This work is scoped at \$20,000 and is scheduled to finish in the spring. The results will identify next steps for data collection, technical planning, engineering, and permitting elements; provide a suggested sequence and prioritization of identified next steps; and provide budgetary values for the first few steps to better understand future financial expectations.
- The prioritization list will be the foundation in creating a 5-10-year strategic plan and will guide next steps for PBAC, or individual entities, to take the lead on project elements and facilitate funding discussions based on what next steps are required. It could also facilitate a future RFP to perform future critical work for state or federal approval.

FINANCIALS

Entity	Admin	Research	Total
Pullman	\$27,000	\$20,000	\$47,000
Moscow	\$27,000	\$20,000	\$47,000
Whitman County	\$6,750		\$6,750
Latah County	\$6,750		\$6,750
WSU	\$27,000	\$20,000	\$47,000
UI	\$27,000	*	\$27,000
Total	\$121,500	\$60,000	\$181,500
*UI has not contributed to research since FY20			

The Committee is financed through contributions from its member entities. The major pumpers (i.e. Pullman, Moscow, WSU, and UI) contribute a larger amount as the major pumping entities in the basin with independently-operated water systems, while the counties (i.e. Whitman and Latah) contribute a smaller amount as they do not operate water systems, but represent the number of small pumpers scattered through rural Whitman and Latah Counties. PBAC's fiscal year (FY) is July 1 through June 30.

Administrative Account Activities

Income	Budget	Balance
\$121,500	\$140,000	\$164,375

The administrative contributions are applied toward salary, fringe benefits, and professional development for PBAC personnel, contract management, memberships dues, collateral for public engagement and education outreach, and general office expenses including the PBAC website. PBAC employs one full time position, an Executive Director, and one temporary help position, a Technical Advisor.

Compensation alone accounts for approximately \$130,000 annually. The administrative budget is currently outspending the annual income. When the Executive Manager position transitioned to full-time in FY22, the PBAC Board approved the expenditure to fund the position with a realization that reserves would be drawn down within two to three years, and an increase request to the participating entities would be necessary. A variety of solutions have been identified and include reallocating research funds to support the Technical Advisor's salary or increasing contribution amounts from the entities. A solution will need to be implemented by FY25.

Research Account Activities

Income	Budget	Balance
\$181,500	Varies	\$248,700

Research activities vary year to year. In 2022, the aforementioned Alternative Water Supply Report was funded at \$200,000 and finished after two years' worth of work. The essential annual groundwater monitoring efforts were also funded by research contributions as it provides holistic, regional data required by the GWMP. This data also is imperative to inform conversations about water usage and conservation.

Research projects have encompassed a wide range of topics from creating a new groundwater model, tracking isotopes to determine the age of water or the amount of recharge occurring, to selecting alternative water supply projects for a regional supplemental water project and the data refinement to move a project forward. Research funds are not typically spent in full each year due to the high cost of projects, which can range from \$50,000-\$300,000. With annual contributions of \$60,000, it is vital carryforward occur from year to year to ensure PBAC can support future projects. The below table details a three-year outlook for future Research projects and the anticipated costs.

3-Year Research Expenditure Outlook	
Research Project	Anticipated Budget Need
Genesee Well Chips	\$7,000
Creation of Prioritization List	\$20,000
Public Outreach Education	\$30,000
Pumped Storage Feasibility Study Participation	\$50,000
Project Implementation Data Refinement RFPs	\$300,000-500,000
Updates to Groundwater Model	\$100,000

Historically, PBAC has funded over \$1.5 million worth of research on aspects of the basin. To see a list of modern and historical research content, view the [research webpage](#).

PBAC has actively worked to identify and pursue additional sources of revenue such as grants from the member entities or funding awarded by the states, depending on the scope of the project proposed. In July 2022, PBAC was awarded \$50,000 ARPA funds through Latah County for outreach and education for water conservation. In December 2022, PBAC applied for the Idaho Water Resources Board's Regional Sustainability Water Priority List and is now formally on the list, listed with an approximately \$75 million price tag. PBAC is actively engaged with both State's water resource departments to ensure coordination of a future project so resources can be allocated appropriately.

PALOUSE BASIN AQUIFER

committee members

Chair: Cara Haley (Pullman)

Shawn Kohtz (Pullman)

Eileen Macoll (Pullman)

Mark Storey (Whitman Co)

Tom Handy (Whitman Co)

Jeff Lannigan (WSU)

Jason Sampson (WSU)

Vice-Chair: Tyler Palmer (Moscow)

Michael Parker (Moscow)

Gina Taruscio (Moscow)

Past-Chair: Paul Kimmell (Latah Co)

Tom Lamar (Latah Co)

Rusty Vineyard (UI)

Tim Link (UI)

ex-officio members

Patrick Cabbage (WDOE)

Michelle Richman (IDWR)

staff

Céline Acord (Executive Director)

Steve Robischon (Technical Advisor)

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