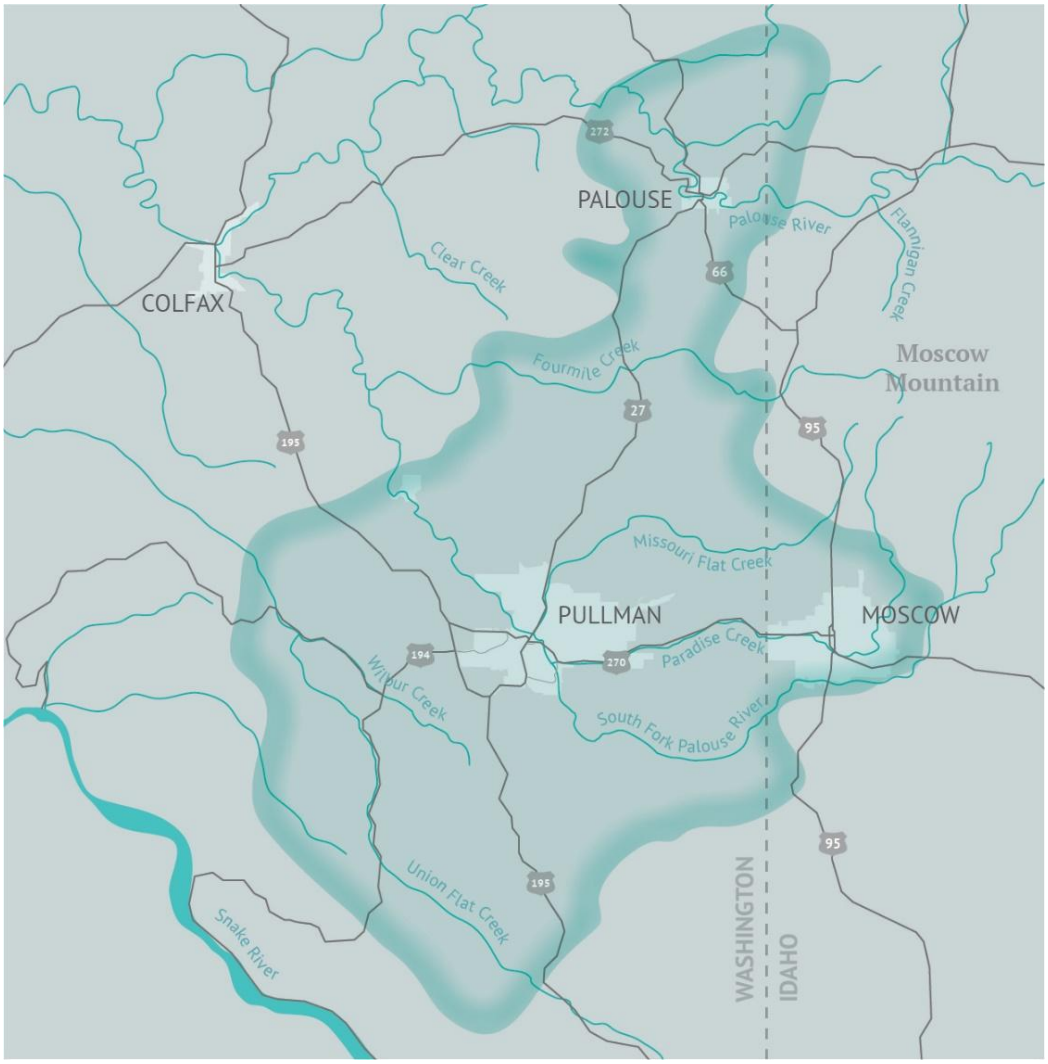
PALOUSE BASIN
AQUIFER
committee

2025 Annual Report

BACKGROUND

The Palouse Basin Aquifer System provides the sole municipal water supply for most residents of Whitman County (Washington) and Latah County (Idaho). The map below shows our best understanding of the Aquifer Basin boundaries:



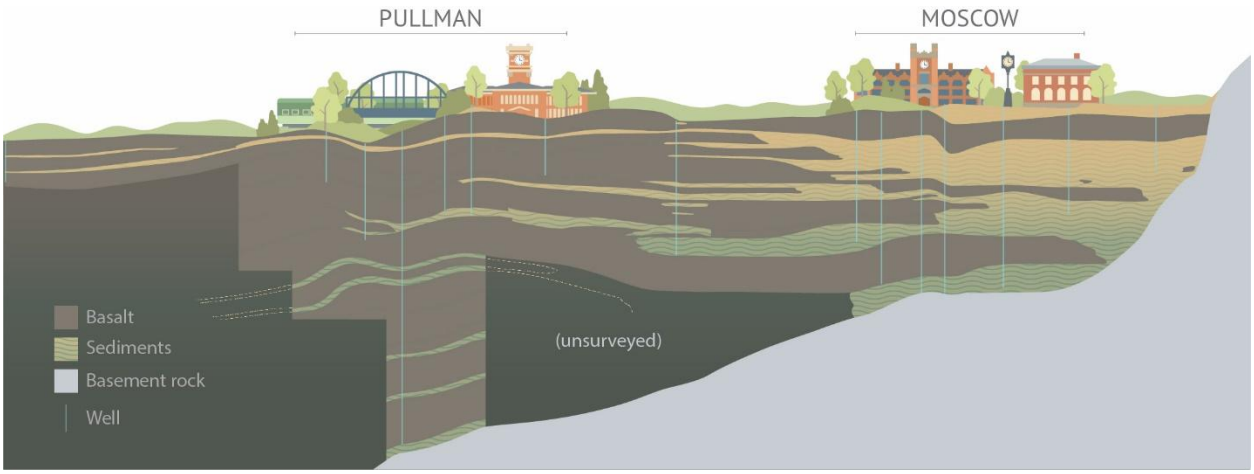
ABOUT THE COMMITTEE

The Palouse Basin Aquifer Committee (PBAC) is a cooperative, multijurisdictional, bi-state partnership 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. Non-voting members include representatives from Washington Department of Ecology and Idaho Department of Water Resources. The City of Palouse, Washington, is also in the basin boundaries, though not presently a member of the Committee.

PBAC's MISSION: To ensure a long-term, quality water supply for the Palouse basin region.

The Palouse Basin Aquifer Groundwater Management Plan (GWMP) was finalized in 1992 and updates in 2016; it includes 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. Encouraging implementation of the GWMP, including monitoring of and reporting on aquifer levels, are core activities for PBAC.

This cross-section illustrates the complexities of the aquifer system. We have a shallow and a deep aquifer, known respectively as the Wanapum and the Grande Ronde. The horizontal layers of basalt largely prevent surface water from seeping into the Grande Ronde aquifer. Most of the aquifer recharge occurs east of the City of Moscow, where the basalt layers are shallower.



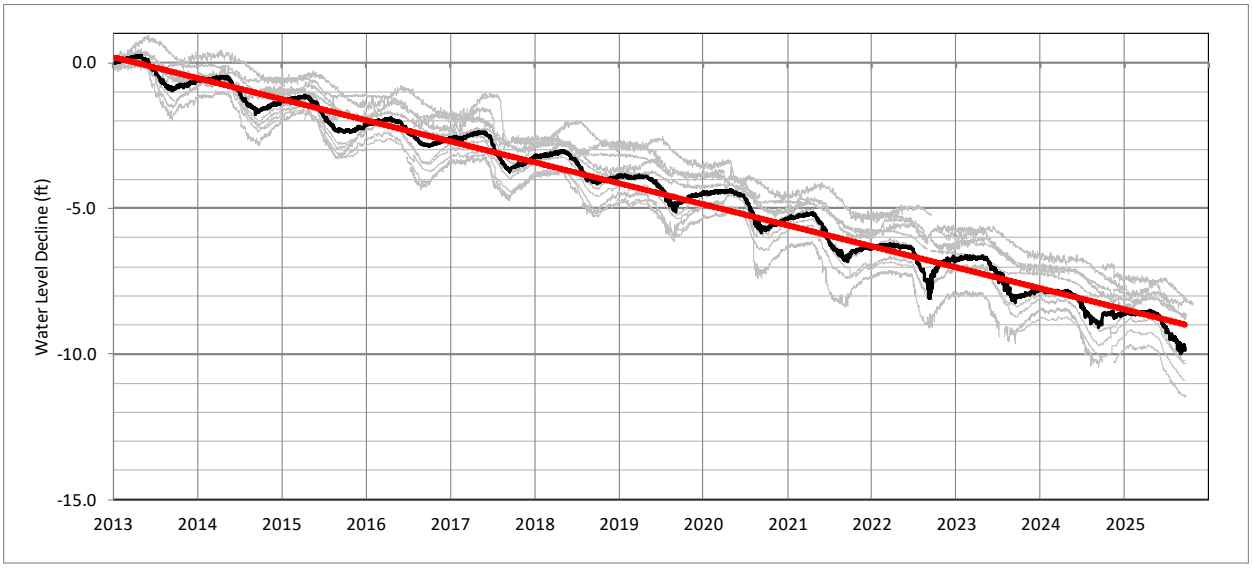
Groundwater levels have been declining since the late 1800's when European settlers began digging wells on a large scale. Since then, the amount of water being pumped from the aquifer system outpaces what re-enters from the natural recharge process.

In the 1990's, the decline rate was 1.3 feet per year. The current average rate of decline in the basin is approximately 0.72 feet per year.

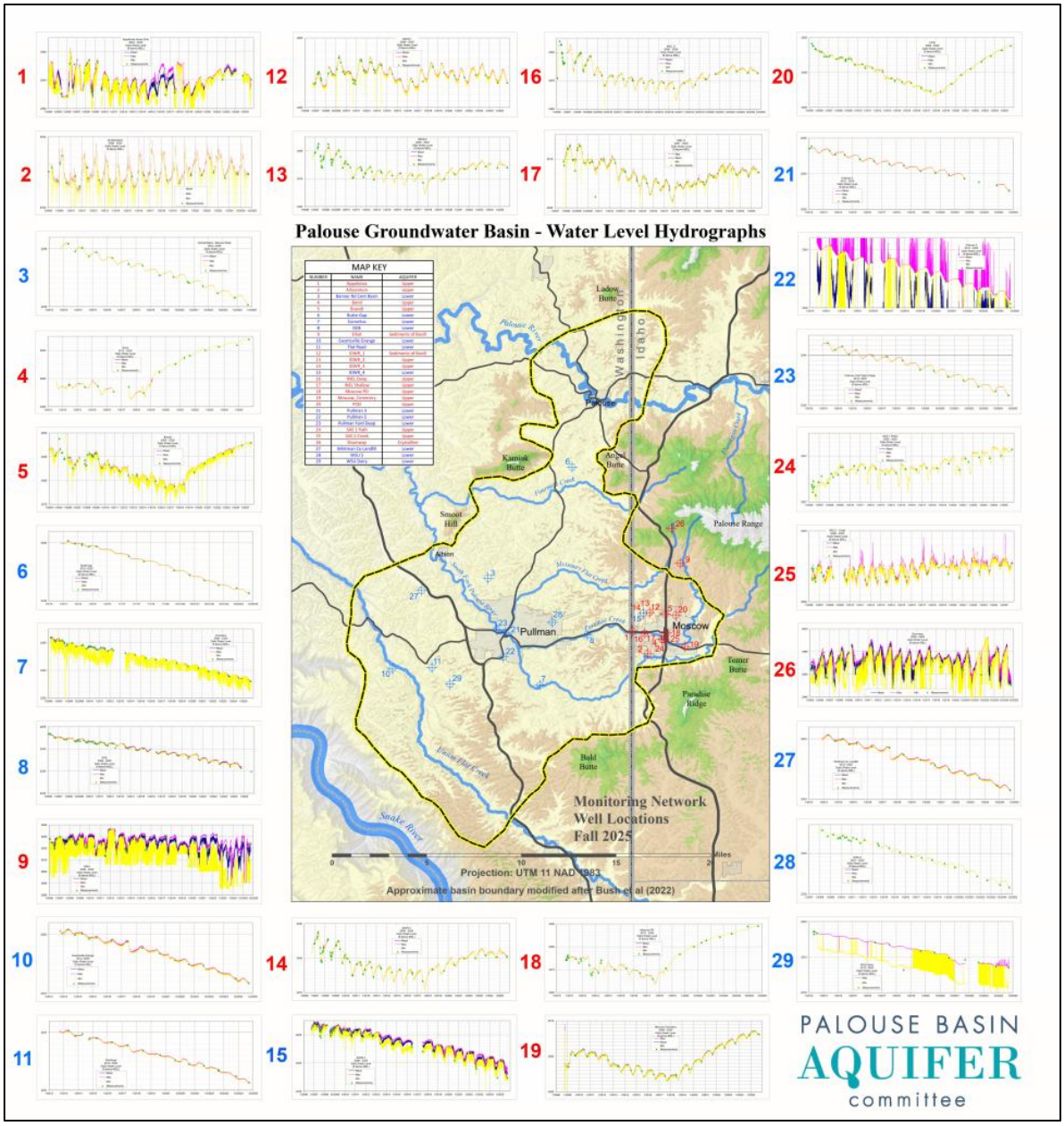
While the rate of decline has decreased over the last 30+ years, demonstrating that conservation efforts and technological advancements have been effective, the aquifer water levels continue to drop as demand is greater than the natural aquifer recharge. State statutes categorize this as mining an aquifer, which is 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 regarding usage of municipal water resources.

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 graph below illustrates a composite of water levels in the lower aquifer from 2013-2025.

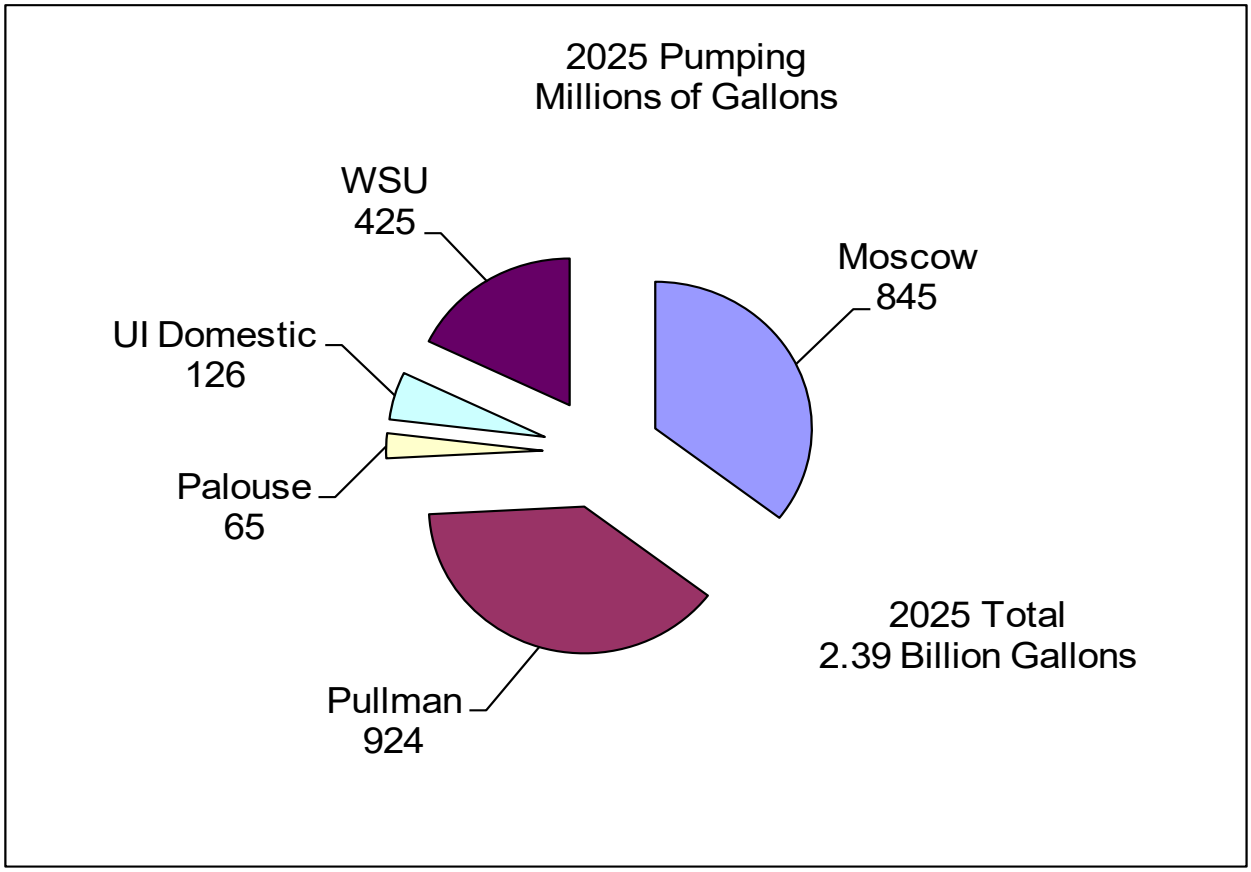


The chart below shows hydrographs, or well depth levels over time, for the wells monitored by PBAC; it also shows a map of the well locations. The graphs show a steady decline in the deeper Grand Ronde aquifer, and those with more fluctuations are in the shallow Wanapum aquifer. Nearly all the City and University water pumping is done from the Grand Ronde aquifer because otherwise the Wanapum aquifer would be quickly depleted and create water availability issues for private wells.

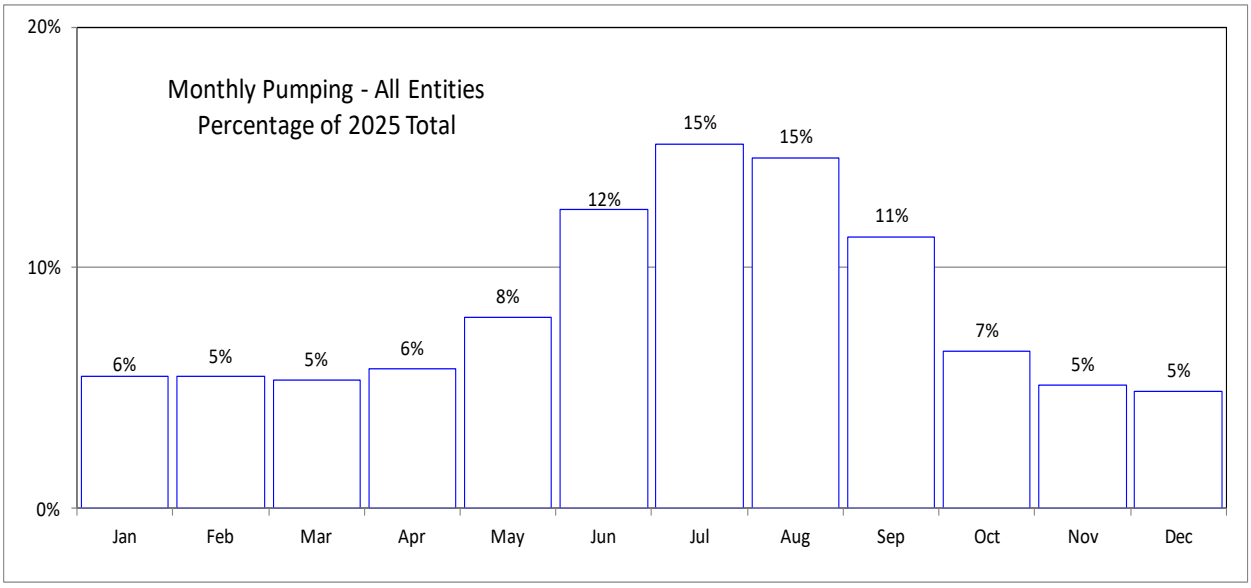


2025 GROUNDWATER USAGE

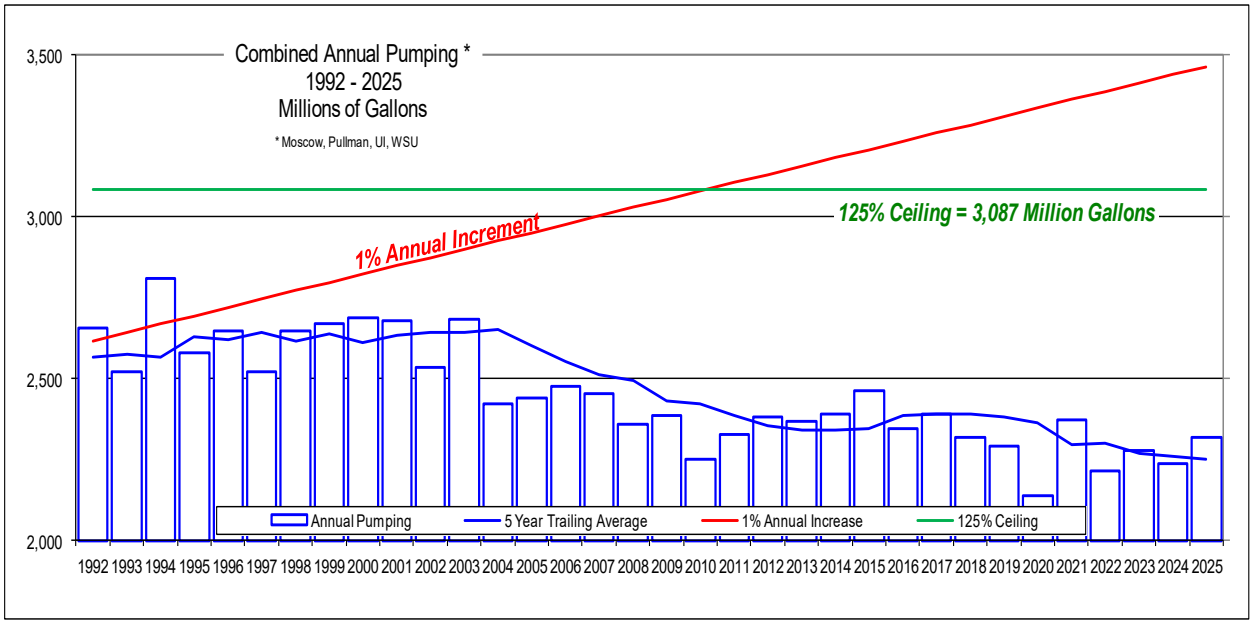
The total combined groundwater pumped by the cities (Pullman, Moscow, and Palouse) and the universities (WSU and UI) for the year 2025 was 2.39 billion gallons. In aggregate, this was 3.6% more than was pumped in 2024 (2.30 billion gallons), and 13.0% less than was pumped in 1992 (2.74 billion gallons), the first year the GWMP took effect. These variances are within normal year-to-year ranges.



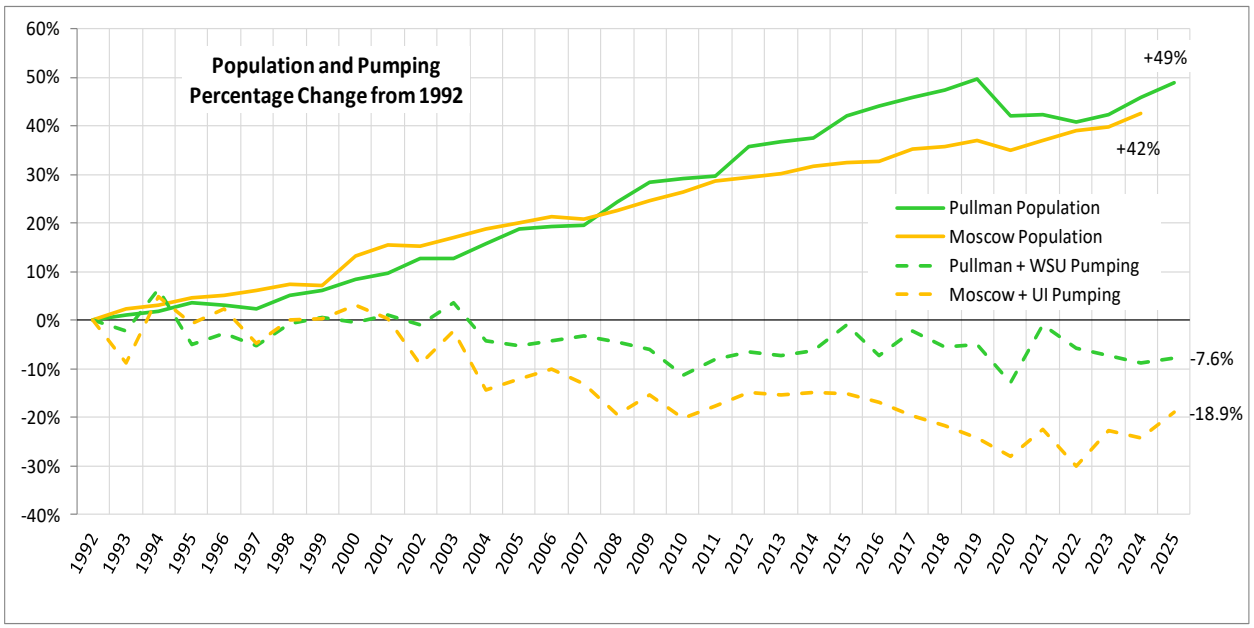
From November through April, the water used indoors (due to no irrigation during colder weather) is known as 'baseline use'. Pumping increases significantly during the warmer months, typically starting in May and continuing through October, primarily due to outdoor irrigation or what is known as 'non-baseline use'.



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 below). In addition, entities agreed to a cap of no more than 125% of the 1981-1985 five-year average pumping amount. 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 of conserving more each year. Conservation will be the most economical step to help extend the lifespan of any future water supply project.



Conservation efforts to date have seen quite a bit of success. The graph below shows that total water usage over time has remained relatively constant despite a steady population increase for the region.



2025 ACCOMPLISHMENTS and 2026 GOALS

Prioritizing Water Conservation

Conserving water will always be the most cost-effective solution to resolving our shared water resources, and education/outreach on this topic is a high priority for PBAC.
PBAC institutionalized its outreach program in 2025, focusing on water conservation education and awareness by adding a University of Idaho staff position to focus on these efforts. Previously these programs were conducted by an AmeriCorps Member.

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 about $16,000. Data are reviewed and analyzed to determine aquifer levels in the basin. It is vital to maintain consistent measurements each year to track trends in conjunction with pumping reports. The 2025 hydrograph includes a map with well locations and the data obtained from each transducer in each well over the past several decades.

Outreach & Education

There is an inherent complexity in the analysis of groundwater systems, monitoring 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.

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.
PBAC's Stakeholder Engagement Group has been an important component of our community engagement in the past. This group will help us share information and conduct dialogues with community members and interested stakeholders.
Additionally, a Research & Technical Colloquium will be conducted early in 2026 to engage and learn from academic stakeholders at the University of Idaho and Washington State University as well as other water industry professionals from our region.

Refinement and Outreach for a Palouse Basin Supplemental Water Supply Report

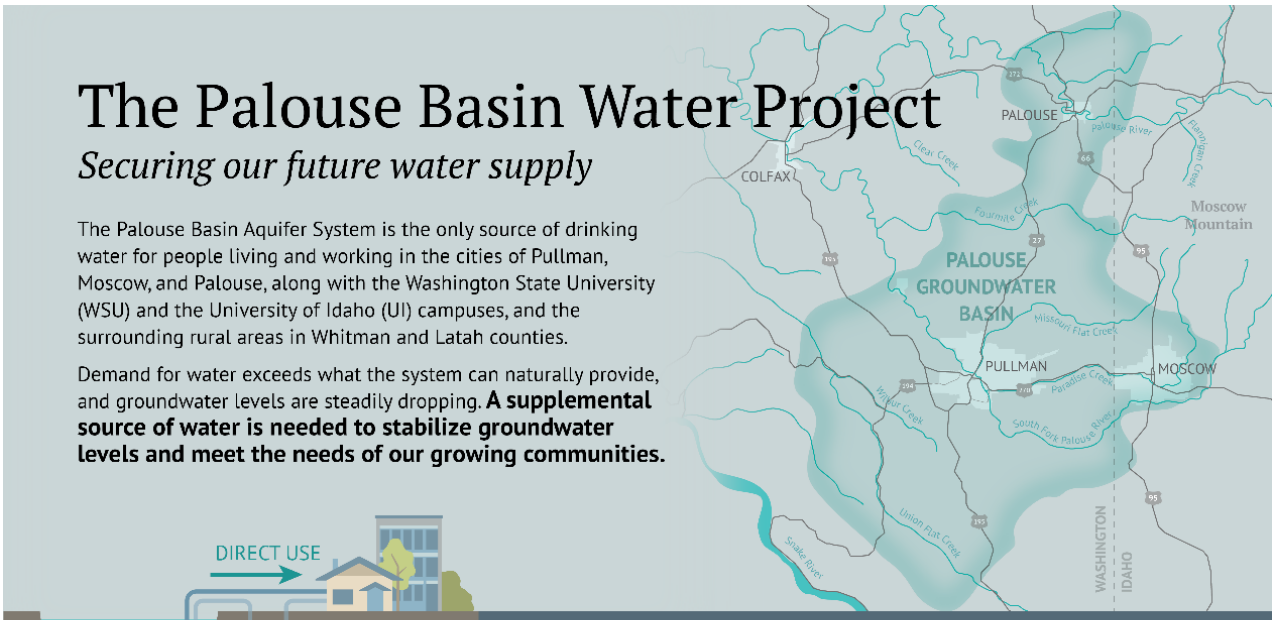
PBAC continues to evaluate and refine supplemental water supply alternatives identified in our efforts to stabilize our shared water resources. In 2025 PBAC launched a preliminary study of a potential Clearwater River diversion to the Palouse Basin for a supplemental municipal supply. The focus of this study is explained in the image on the next page.

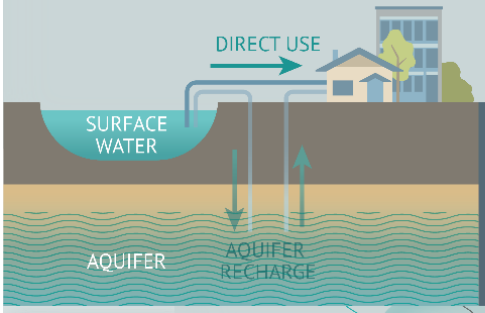
The Palouse Basin Water Project

Securing our future water supply

The Palouse Basin Aquifer System is the only source of drinking water for people living and working in the cities of Pullman, Moscow, and Palouse, along with the Washington State University (WSU) and the University of Idaho (UI) campuses, and the surrounding rural areas in Whitman and Latah counties.

Demand for water exceeds what the system can naturally provide, and groundwater levels are steadily dropping. **A supplemental source of water is needed to stabilize groundwater levels and meet the needs of our growing communities.**



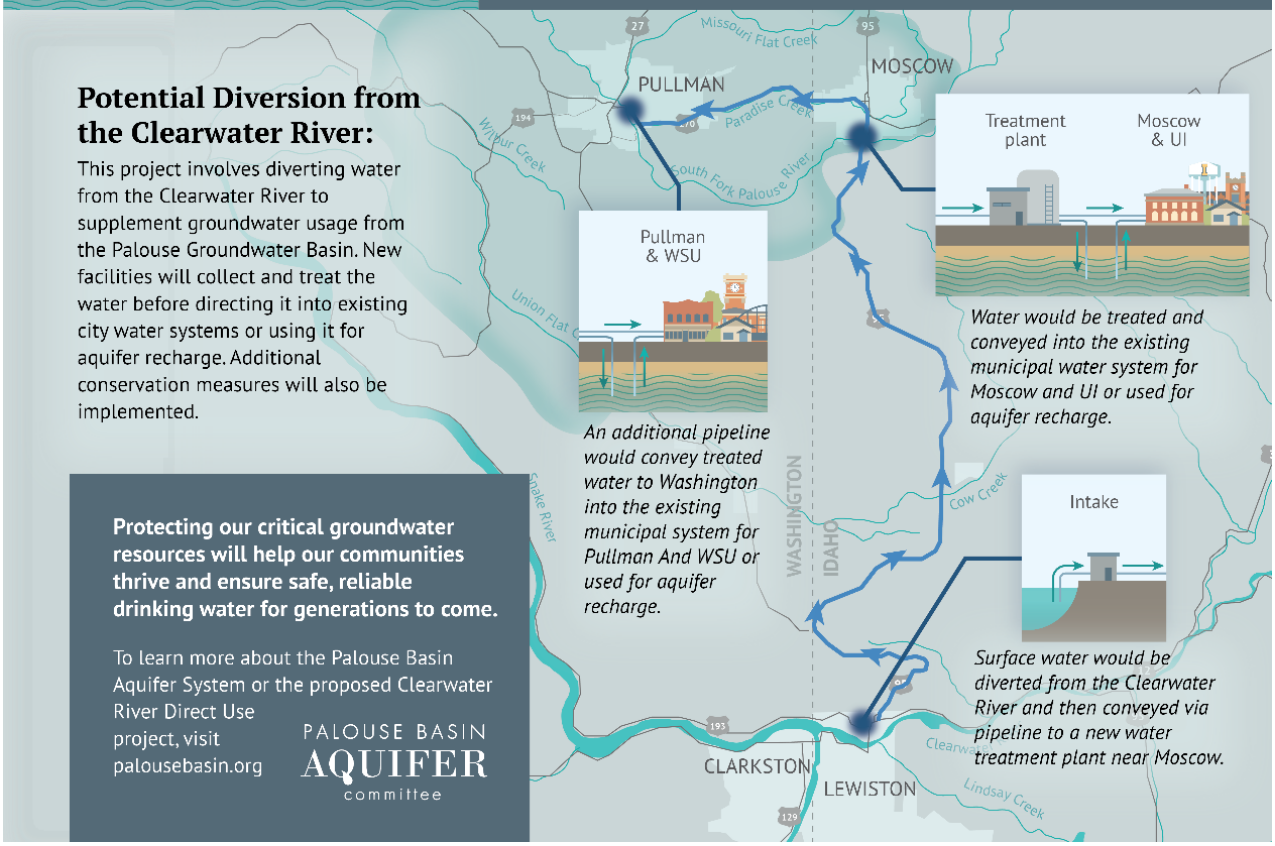


There are two main approaches for implementing supplemental water sources: conveying surface water directly to communities (direct use) or using surface water to replenish the groundwater (aquifer recharge).

After considering several water supply alternatives, **the Palouse Basin Aquifer Committee believes the best supplemental water supply may be a diversion from the Clearwater River.**

Potential Diversion from the Clearwater River:

This project involves diverting water from the Clearwater River to supplement groundwater usage from the Palouse Groundwater Basin. New facilities will collect and treat the water before directing it into existing city water systems or using it for aquifer recharge. Additional conservation measures will also be implemented.



An additional pipeline would convey treated water to Washington into the existing municipal system for Pullman And WSU or used for aquifer recharge.

Water would be treated and conveyed into the existing municipal water system for Moscow and UI or used for aquifer recharge.

Surface water would be diverted from the Clearwater River and then conveyed via pipeline to a new water treatment plant near Moscow.

Protecting our critical groundwater resources will help our communities thrive and ensure safe, reliable drinking water for generations to come.

To learn more about the Palouse Basin Aquifer System or the proposed Clearwater River Direct Use project, visit palousebasin.org

PALOUSE BASIN AQUIFER committee

Research

The Palouse Basin Aquifer system is geologically complicated and PBAC continues to gain greater understanding of the water systems in our region. 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 has pivoted to an applied technical research role, emphasizing taking local responsibility to solving our shared aquifer decline.

A two-year research project led by University of Idaho and funded by PBAC was launched in 2025 with a goal of determining areas of greatest aquifer recharge potential along the base of Moscow Mountain.

PBAC ADMINISTRATION AND BUDGET

PBAC is governed by an Inter-State Agreement between the member entities. The current 10-year agreement was executed in October 2024.

The Committee is financed through contributions from its member entities. 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 (Whitman and Latah) contribute a smaller amount as they do not operate water systems but represent the number of small pumpers scattered through rural areas in the basin.

PBAC's fiscal year (FY) is July 1 through June 30. The current entity annual contributions are shown below:

PBAC's Revenue Forecast FY 2026-27	
City of Pullman	$53,750.00
City of Moscow	$53,750.00
Whitman County	$8,438.00
Latah County	$8,438.00
Washington State University	$53,750.00
University of Idaho	$53,750.00
Total	$231,876.00

PBAC has a healthy budget reserve and is spending it down somewhat due to research project funding and expected supplemental funding necessary to investigate a supplemental water supply.

PBAC is working to identify and pursue additional sources of revenue such as grants from our member entities, or funding awarded by the states, or other appropriate funding opportunities.

It is well understood that conservation of our shared water resources will provide the best possible return on investment in both the short and long term; PBAC will continually strengthen our water conservation outreach and education efforts to this end.