Columbia Basin Sustainable Water Coalition Stakeholder Meeting
Thursday, July 20, 2023
10:30am-12:30pm
Moses Lake City Council Chamber, 401 S Balsam, Moses Lake

The Columbia Basin Sustainable Water Coalition, a group of water purveyors and other municipal and small community water system stakeholders, was formed in 2018 to address Columbia Basin domestic groundwater supply issues and create locally-driven recommendations that influence water delivery methods and policy that will direct resources for long-term groundwater solutions

The Coalition's stakeholder meeting convened at 10:30am. Sara Higgins of the Columbia Basin Development League facilitated the meeting as a contractor for the Coalition.

WELCOME, INTRODUCTIONS, AND MEMBERSHIP

Sara Higgin introduced the concept of CBSWC membership. There is no cost to be a member, but the ability of the CBSWC to list a broad base of support—via membership—can aid efforts to advance CBSWC causes. Sara explained the two categories of members—one for individuals and companies, and one for state and federal policymakers—as well as the voting structure. Membership sign-up forms were circulated, and those online were asked to indicate their interest in being a member.

Self-introductions were conducted. Attendees included approximately 21 online and 21 in room participants.

Attending: Claire Miller, Michelle Keisz, Jo Gilchrist, Jamie Clark, Brenda Smits, Paul Kimmell, Jake Wollman, JR, John Freitag, Kristina Ribellia, Rep. Alex Ybarra, Scott Tarbutton, Krista Chavez, Jill Van Hulle, Gina Hoff, Jarod Cook, Adam Miller, Cathi Read, Jamin Ankney, Richard Rodriguez, Kevin Spearse, Paul Wollman, Ben Lee, Kevin Lindsey, Alicia Caldelaria, Richard Law, Chad Strevy, Jim Anderson Cook, Bill Sangster, Shawn O'Brien, Elsa Bowen, Carly Worley, Bob Davis, Dale Pomeroy, Mike LaPlant, Cari Cortez, Morgan Price, Joe Pessutti, Sara Higgins, Ryan Gross, Marvin Price

GUEST PRESENTATIONS

Ben Lee, the CBSWC technical contractor with Landau Associates, introduced the meeting's presenters.

WA Department of Health, Office of Drinking Water, Coordinated Water System Planning

Brenda Smits, DOH Regional Planner, and Jamie Clark, DOH Regional Planner presented.

- Water System Coordination Act defines Critical Water Supply Service Areas (CWSSA) and development of minimum planning and design standards.

    - First step is preliminary assessment, then declaration of Critical Water Supply Service Area, establish water utility coordinating committee, produce written report and map submitted to county legislative authority, create coordinated water system plan for CWSSA.
    - With CWSSA, no new water systems are approved unless authorized.
    - Intention is to allow purveyors to plan for future infrastructure and limit number of "straws" into aquifer.
- Grant County CWSP was done in 1982, updated in 1999. Managed by Grant County Health District. This CWSP has not been effective. DOH encourages looking at pros/cons of the CWSP for the area and how helpful it has been when considering this approach.
- Types of planning documents that can address coordination or regional approaches:
    - Water System Plan – Required for water systems of 1,000 connections or more, smaller systems that are expanding, systems within CWSPs, and new Group A systems. Requires engineering stamp.
    - Small Water System Management Program – Similar elements, doesn't need to be stamped by an engineer.
    - Watershed Management Partnership
        - Example: Cascade Water Alliance

There was discussion of the usefulness of the Grant Co. CWSP. Moses Lake has used it to identify whether new proposed water systems are located within their service area. Grant County has GIS maps that show Group As and Bs, looking into the ability to work toward mapping systems like Spokane Co. CWSP.

Aquifer Management Planning

Paul Kimmell with Avista, and Mike Faupel, Palouse Basin Aquifer Committee (PBAC) Executive Director, presented using the Palouse Aquifer Committee's work as a case study.

- Groundwater management plan in place since 1992.
- Membership are two cities (Pullman, Moscow), two counties (Whitman, Latah), two universities (WSU, U of Idaho), Ecology, Institute for Water Resources.
- 1.5 FTE, $250-500,00 annual budget.
- Entities developed their own sources until 1968, began to cooperate and join efforts to develop and preserve sources for those dependent on the aquifer.
- Testing, well monitoring has been crucial.
- Declines in pumping percentage has to do with use of reclaimed water.
- Pumping less water in 2023 than in 1992, but aquifer is still in decline.
- There are opportunity to reduce pumping in summer months: They have identified water for ornamental uses as conservation opportunity.
- They are considering alternatives that use less water, reuse water, look for additional sources, coordinating and communicating with partners.
- They put together a PBAC community awareness poll, and developed a marketing tag and campaign.
- They have used Amy Vickers' handbook on water use and conservation and other speakers have been useful for outreach and education.

- PBAC is at a point of transition from research to project development. They are not legally structured to be a water purveyor or provide water. There is a question of what the future roll is for PBAC.

There was discussion about the most effective planning approach. Groundwater management planning was the only alternative to join state efforts.

Future Funding

DOH Source Water Protection Funding for Coalition and Group A's

Nikki Guillot, DOH Source Water Protection Program Manager, presented.

- These grants support preventative actions to protect water quality and quantity.
- CBSWC will pursue funding to continue and expand well monitoring after the USBR WaterSMART Phase 1 grant concludes.

Future USBR Funding Options, Relationship with Source Water Protection Funding

Gina Hoff, USBR Water Quality Specialist, AIS Coordinator, presented.

- Gina identified USBR funding sources that the Coalition may be interested in:
    - Drought Resiliency
    - Environmental Water Resources Projects
    - Aquatic Ecosystems Restoration Program
    - Planning and Project Design Grants
    - Title XVI Authorized Projects
    - Large-scale Water Recycling Projects
    - Basin Study – not a funding source, but a coordinated effort to address Basin wide issues. Requires cost sharing.

There was discussion of the applicability of desalination grants, as the very deep aquifer water is high in sodium and salinates soil.

CBSWC WATERSMART GRANT ACTIVITY

Organizational Development Update

Elsa Bowen, Board Chair, reported.

- Richard Law, Moses Lake City Engineer, is a newly appointed board member.
- The board approved a new CBSWC website and will share the URL when it is available.
- The board voted to apply for a Source Water Protection Grant to continue well monitoring.

Well Monitoring Update

Ben Lee reported and presented data that has been gathered so far.

ADJOURN: 12:25pm

Next Meeting: Thursday, September 21, 10:30am-12:30pm

COLUMBIA BASIN SUSTAINABLE WATER COALITION (CBSWC)

Groundwater levels in areas of the Columbia Basin have been declining for decades and now impact almost all water wells. It is critically important that water systems have a reliable water source. A coalition of water purveyors and other municipal and small community water system stakeholders was created to develop locally and regionally implementable activities to address the issue for domestic groundwater supplies.

VISION

To protect and maintain a water supply for present and future generations of the Columbia Basin

MISSION

Address potable groundwater supply issues by creating locally-driven recommendations that influence water management and policy that will direct resources to create sustainable water solutions

GUIDING PRINCIPLES

- We generate ideas to help inform decision-making and solve problems
- We serve as the voice of group A and B water systems
- We convene, coordinate, and unify
- We leverage opportunities and partnerships

CBSWC MEETINGS

Where: City of Moses Lake Civic Center
When: Bi-monthly on the third Thursday from 10:30 a.m. -12:30 p.m.

BOARD MEMBERS

- **Elsa Bowen, Chair**
  Lincoln County Conservation District
- **Shawn O'Brien, Vice Chair**
  City of Othello
- **Kristina Ribellia, Secretary**
  Columbia Basin Conservation District
- **Judi Ellis, Treasurer**
  Group A & B Satellite Management Agency
- **Paul Wollman**
  Warden Hutterian Brethren
- **Rob Jones**
  Grant Co. Commissioner
- **Clint Didier**
  Franklin Co. Commissioner
- **Jo Gilchrist**
  Lincoln Co. Commissioner
- **Michele Kiesz**
  Farmer
- **Joseph Pessutti**
  Town of Lind
- **Richard Law**
  City of Moses Lake
- **Vacant**
  Water Purveyor
- **Vacant**
  Water Purveyor

GOALS

- Create a sustainable organization to address municipal/small community water system groundwater decline based on localized conditions
- Generate awareness and create calls to action for the depletion of potable water in the Basin, the urgent need to address the situation, and the efforts of the Coalition
- Lead the development of regional groundwater planning and the identification and promotion of new and/or alternative water sources

CONTACTS

Elsa Bowen
CBSWC Chair
ebowen@lincolncd.com

Claire Miller
Department of Commerce
claire.miller@commerce.wa.gov

PALOUSE BASIN AQUIFER committee

Working to ensure a long-term, quality water supply for the Palouse Basin region.

Columbia Basin Sustainable Water Coalition Stakeholder Meeting

July 20, 2023

Discussion Topics:

- History of the Palouse Basin Aquifer Committee (PBAC)
- Groundwater Management Plan
- Current and ongoing work within the Basin
- Our future

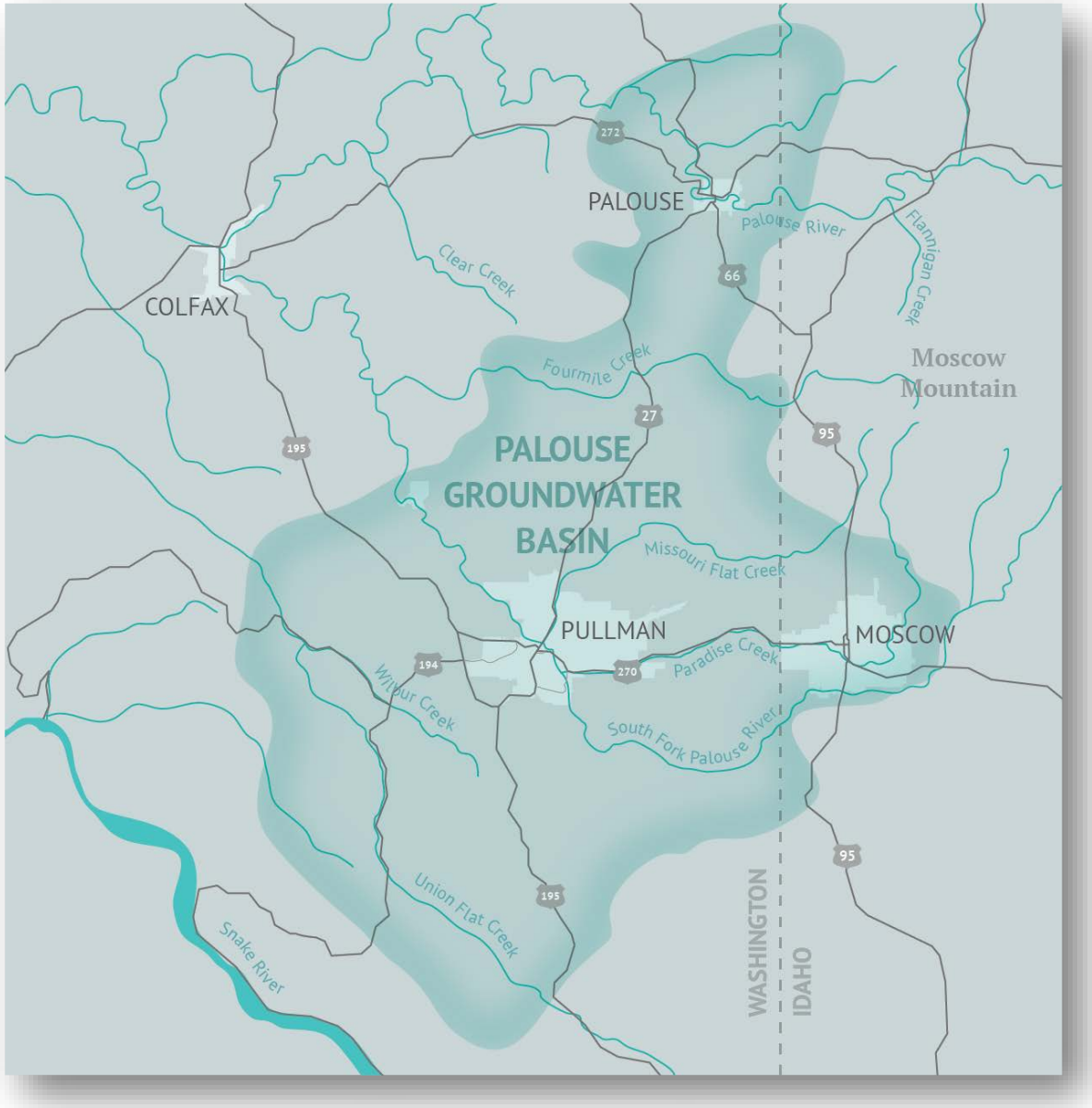
Palouse Groundwater Basin

The sole source of drinking water in the Palouse region

includes communities in
Latah and Whitman Counties

Moscow, ID and Pullman and Palouse, WA

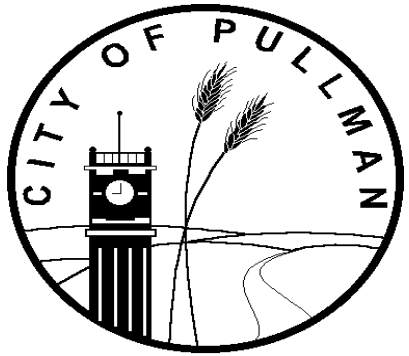
University of Idaho and Washington State University (both state land grant universities)



PALOUSE BASIN AQUIFER committee

PBAC's Mission

"To ensure a long-term, quality water supply for the Palouse Basin region"



What We Do

Collect data and fund groundwater research

Supply community with vital information

Provide strategic long-term water supply solutions

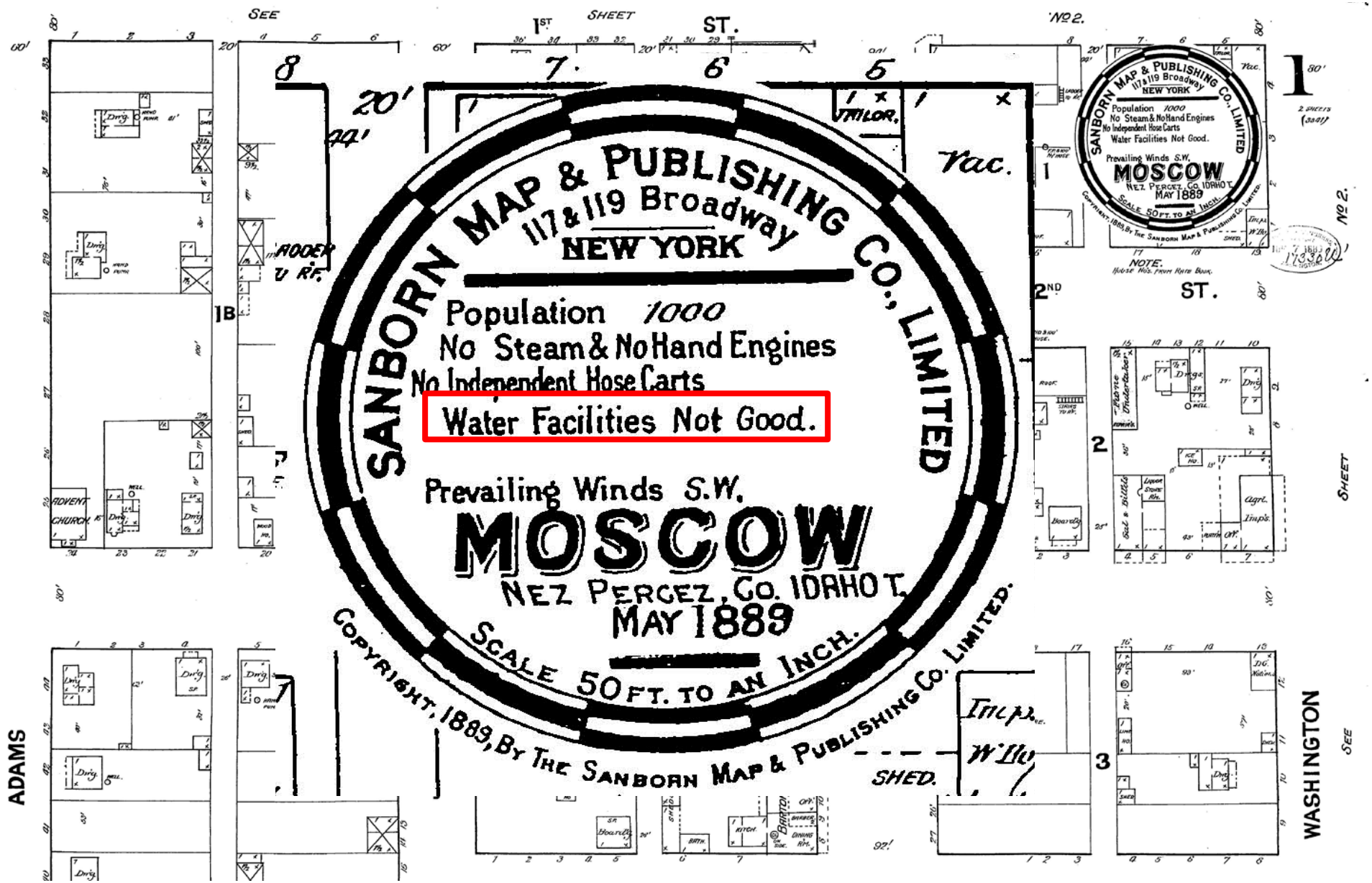
Public engagement and communications

History

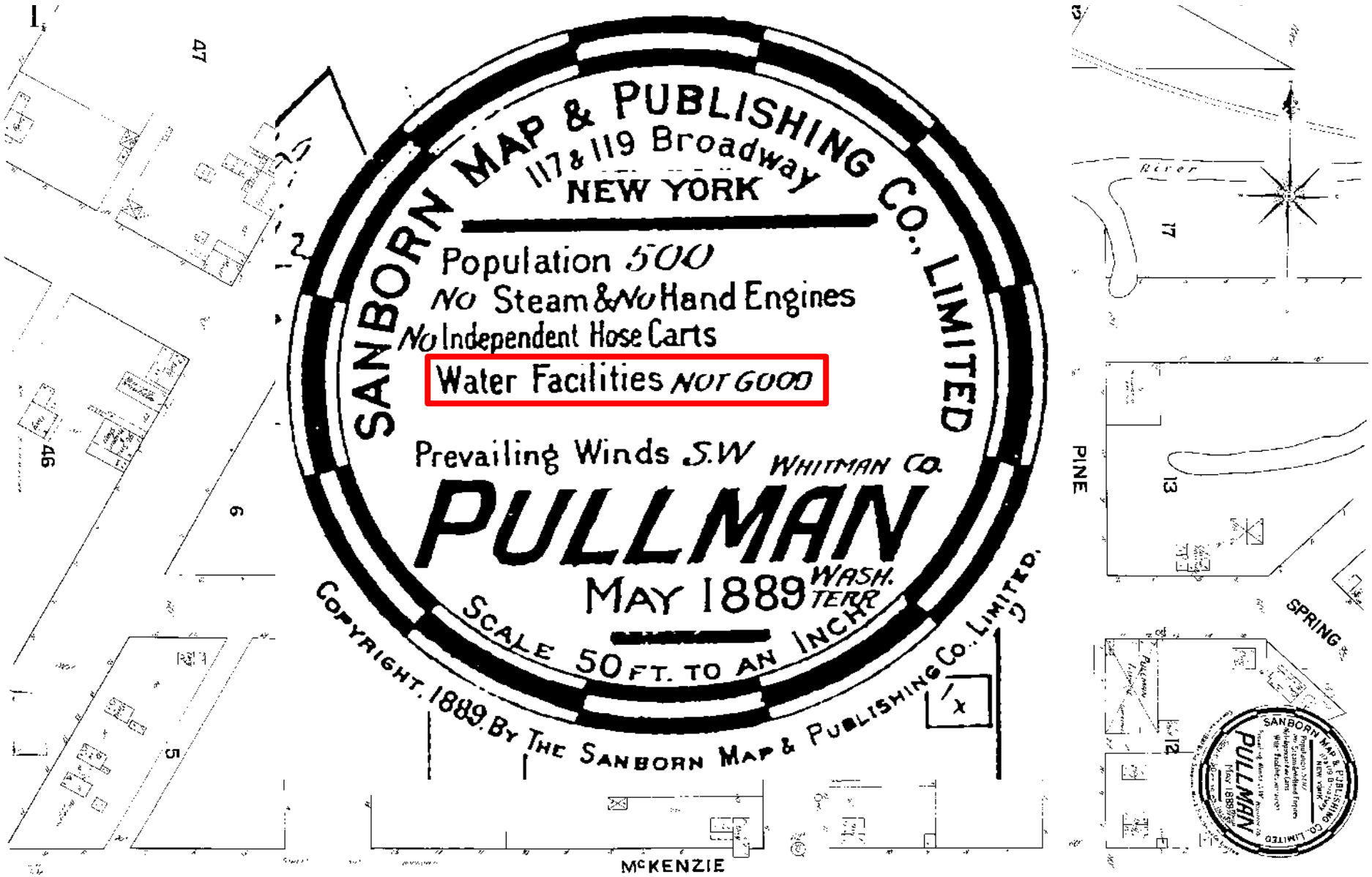
- Artesian wells
- Water Level declines
- PBAC was established in 1967
- Establishment of the Groundwater Management Plan in 1992 (GWMP)

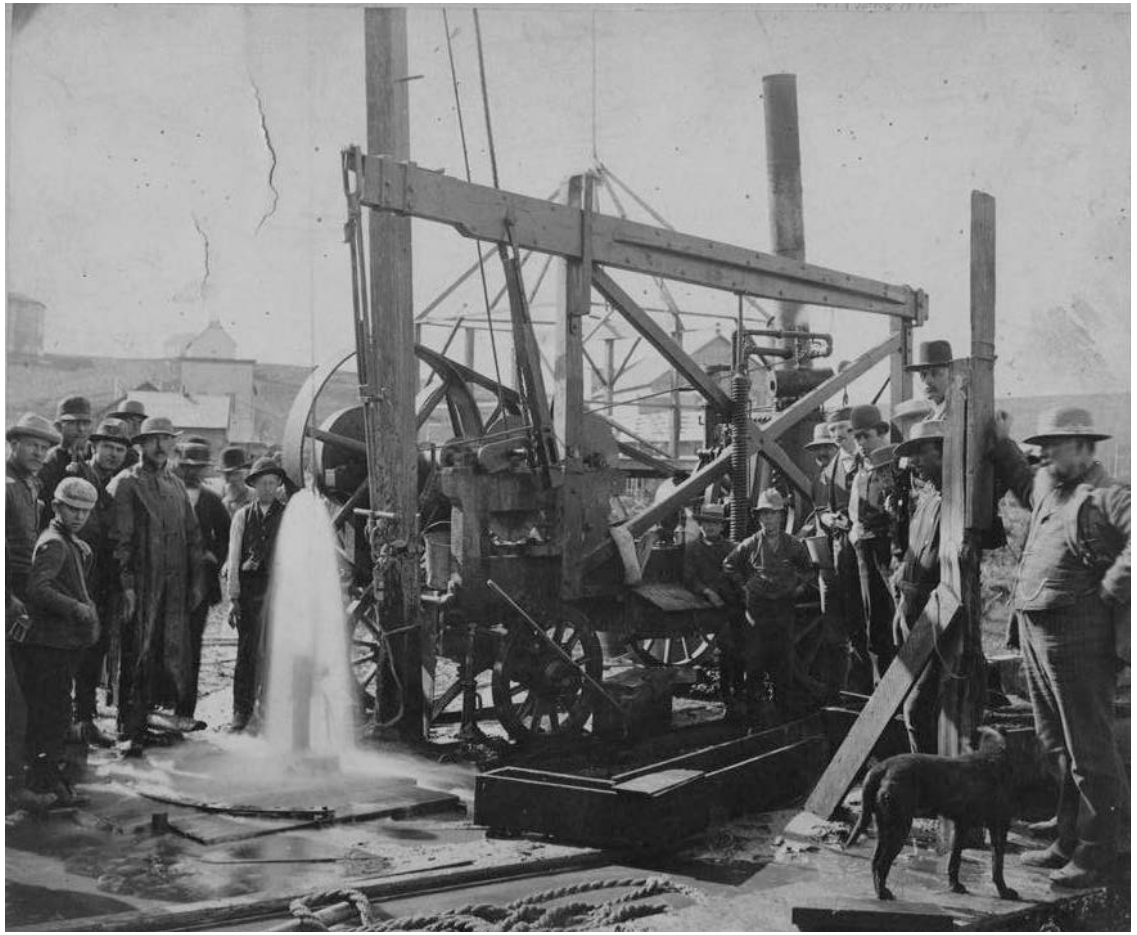
Moscow 1883

Map of Central Moscow – May 1889



Map of Central Pullman – May 1889





PALOUSE BASIN
AQUIFER
committee

Pullman Herald
May 2, 1891

The Agricultural College and School of Science come to . . .
The City of Flowing Wells

PULLMAN WINS.

The Agricultural College and School of Science come to The City of Flowing Wells.

The Vedder property is the accepted site. Only one-third of a mile from postoffice.

Building will be commenced in a short time. A Richly endowed Institution.

"The fight is over. Whitman wins, Pullman gets the agricultural college and school of science. Three cheers for the little star of the Palouse."

The above was a telegram received last Monday morning, from E. H. Letterman, one of the delegates who had been looking out for the county's interests at Olympia, that sent a thrill of joy throughout all Whitman, and the thrill was especially thrilling in Pullman, the favored spot.

For eighteen months Whitman county has been presenting her claims as the most suitable place for the location of the institution, and the claim was recognized.

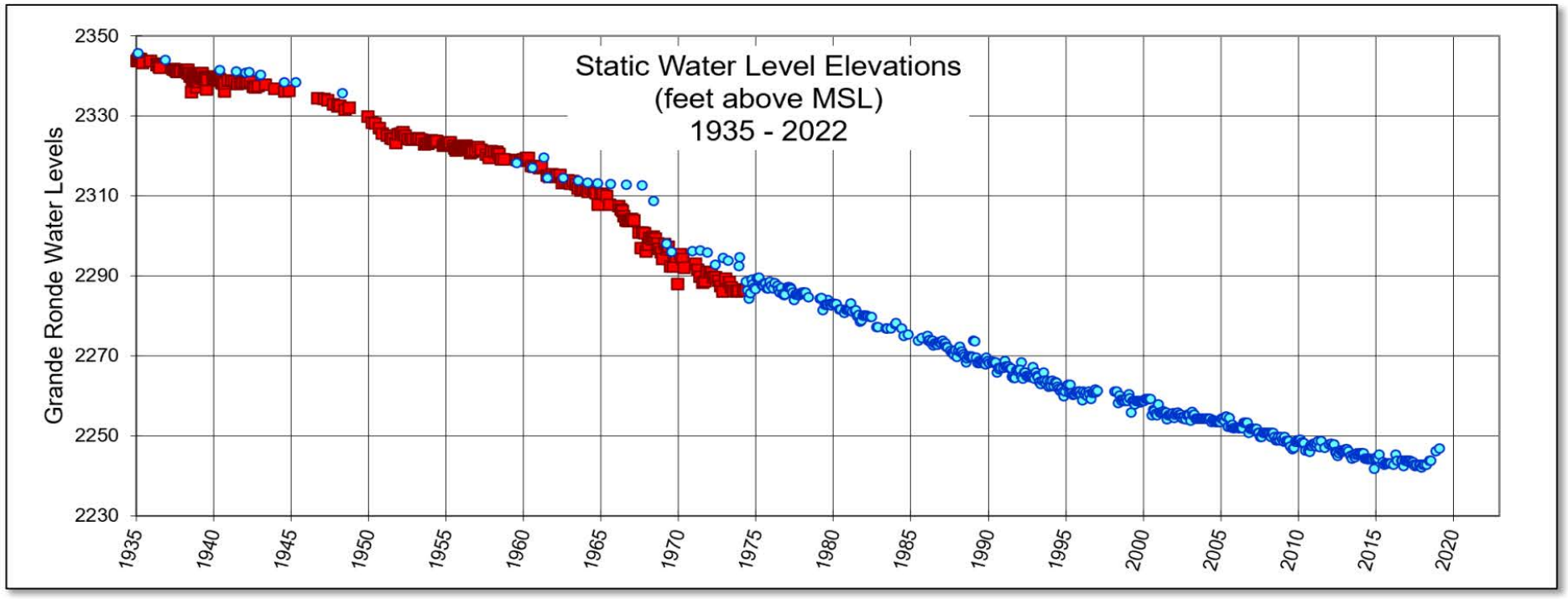
PALOUSE BASIN AQUIFER committee

2,352 ft above MSL

2,500 ft

2,400 ft

2,300 ft



Grande Ronde Water Level: 2,235 ft above MSL

PALOUSE BASIN AQUIFER committee

REPORT

Meetings

Following review of the domestic water supply problems with The Regents at the 2 March 1967 meeting, three meetings have been held with the four governmental, institutional units concerned with the local problem.

13 March 1967 University of Idaho Student Union.
Review of concepts and philosophy.

3 April 1967 University of Idaho Student Union.
Review of possible sources of water and selection of Potlatch River as best source.

11 April 1967 On site inspection of Potlatch River.

Participating Parties

1. City of Pullman
   Joe Street
   Larry Larse

2. Washington State University
   Dr. E. Roy Tinney, Director, State of Washington Water Research Center
   Jim Crosby

3. City of Moscow
   Marvin Kimberling
   Richard Day

4. University of Idaho
   George Gagon
   Kenneth A. Dick

UI/Moscow Domestic Water Supply Report (1968)

In the Spring of 1967, a series of meetings was held with the four governmental and institutional units concerned with the domestic water supply problems participating. The participating parties were the City of Pullman, Washington State University, the City of Moscow, Idaho, and the University of Idaho. From these meetings agreement was developed and endorsed by all four parties on the following points:

6. A non-profit corporate entity, owned by the four parties to construct and operate the system, should be developed.

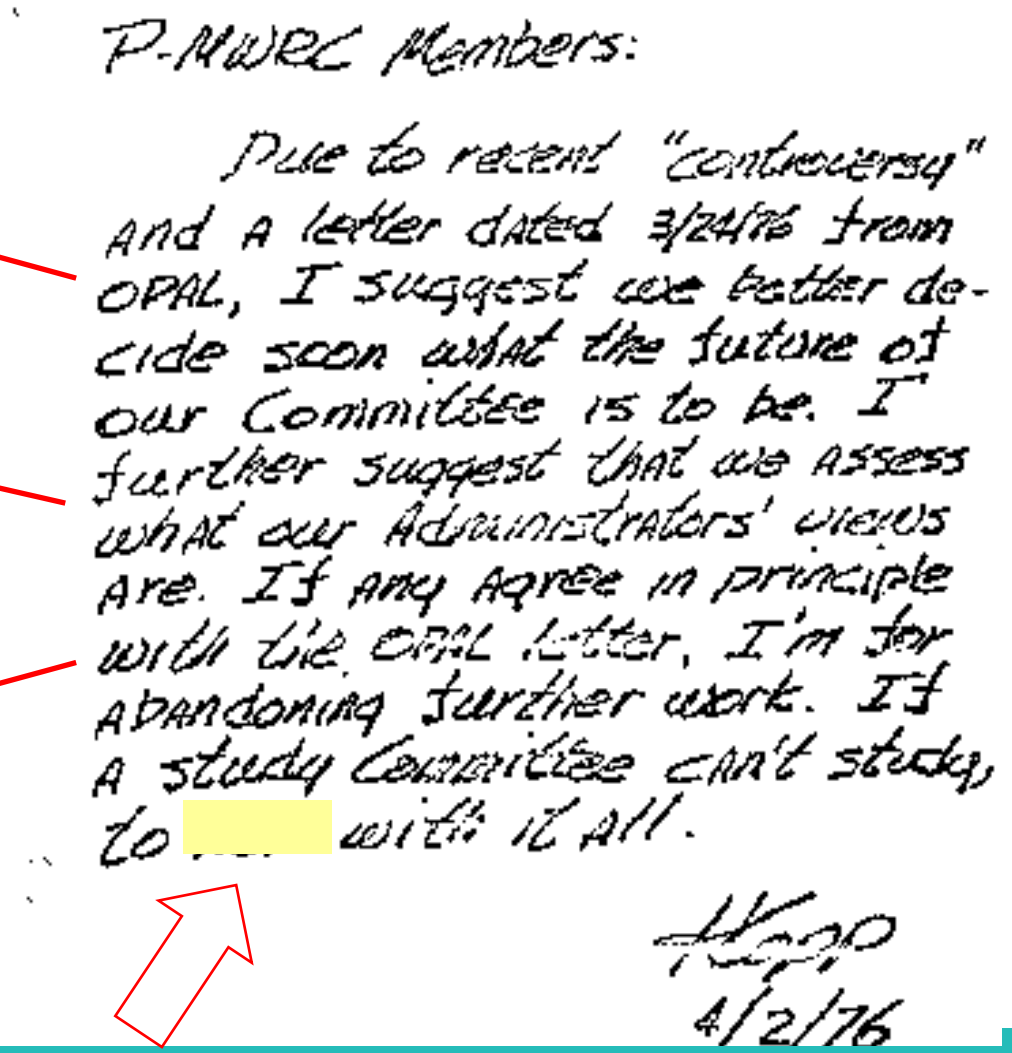
7. Enabling legislation in both Idaho and Washington, would be necessary, and should be developed for consideration at the 1969 legislature.

PMWRC Becomes Inactive (1976)

I suggest we better decide soon what the future of our Committee is to be.

. . . assess what our Administrators' views are

If any agree in principle with the OPAL letter, I'm for abandoning further work.



P-MWRC Members:

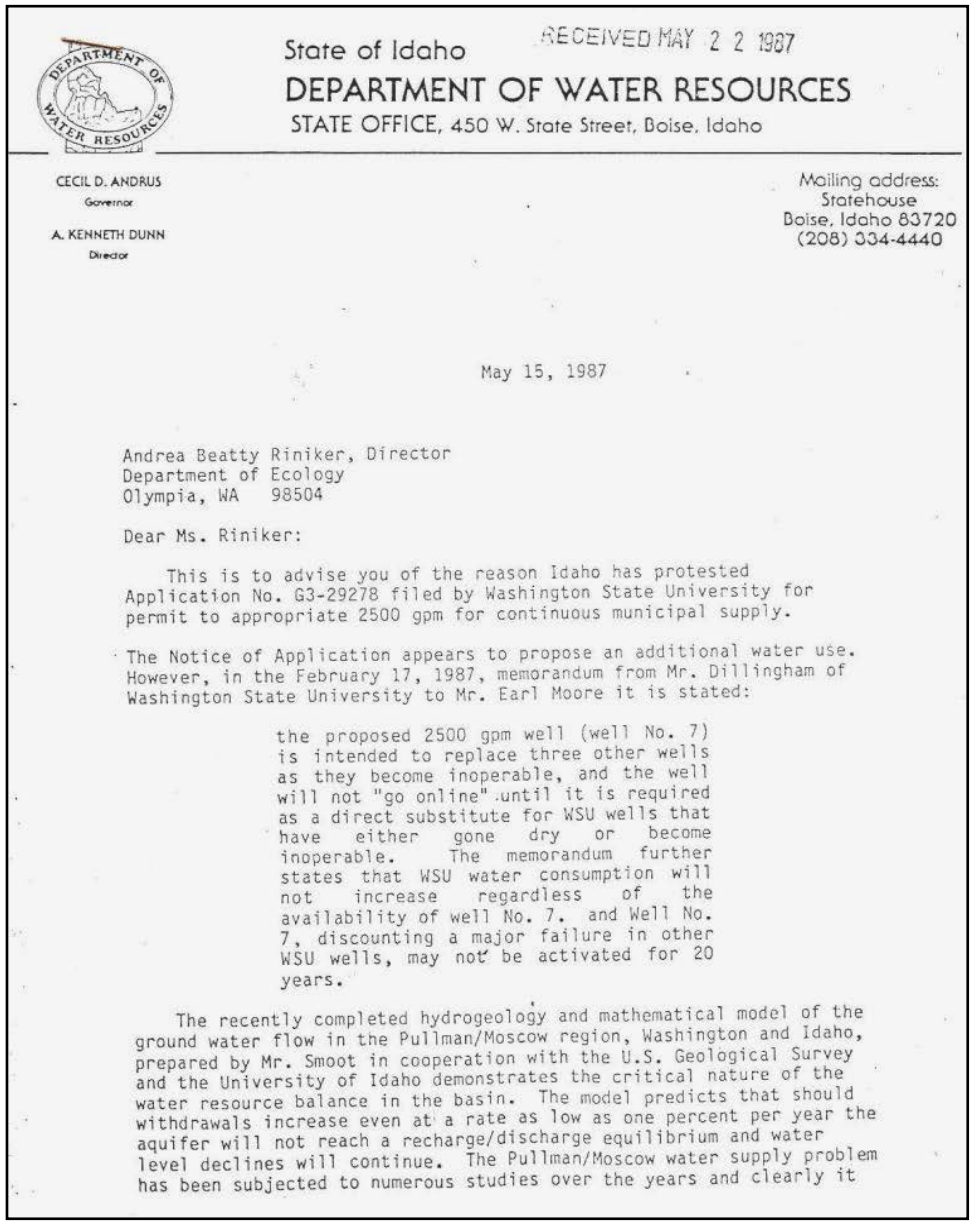
Due to recent "controversy" and a letter dated 3/24/76 from OPAL, I suggest we better decide soon what the future of our Committee is to be. I further suggest that we assess what our Administrators' views are. If any agree in principle with the OPAL letter, I'm for abandoning further work. If a study committee can't study, to [redacted] with it all.

4/2/76

IDWR Letter to WDOE - 1987

This is to advise you of the reason Idaho has protested Application . . . filed by Washington State University . . .

The model predicts that should withdrawals increase even at a rate as low as one percent per year the aquifer will not reach a recharge/discharge equilibrium and water level declines will continue . . .



State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

RECEIVED MAY 2 2 1987

CECIL D. ANDRUS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

May 15, 1987

Andrea Beatty Riniker, Director
Department of Ecology
Olympia, WA 98504

Dear Ms. Riniker:

This is to advise you of the reason Idaho has protested Application No. G3-29278 filed by Washington State University for permit to appropriate 2500 gpm for continuous municipal supply.

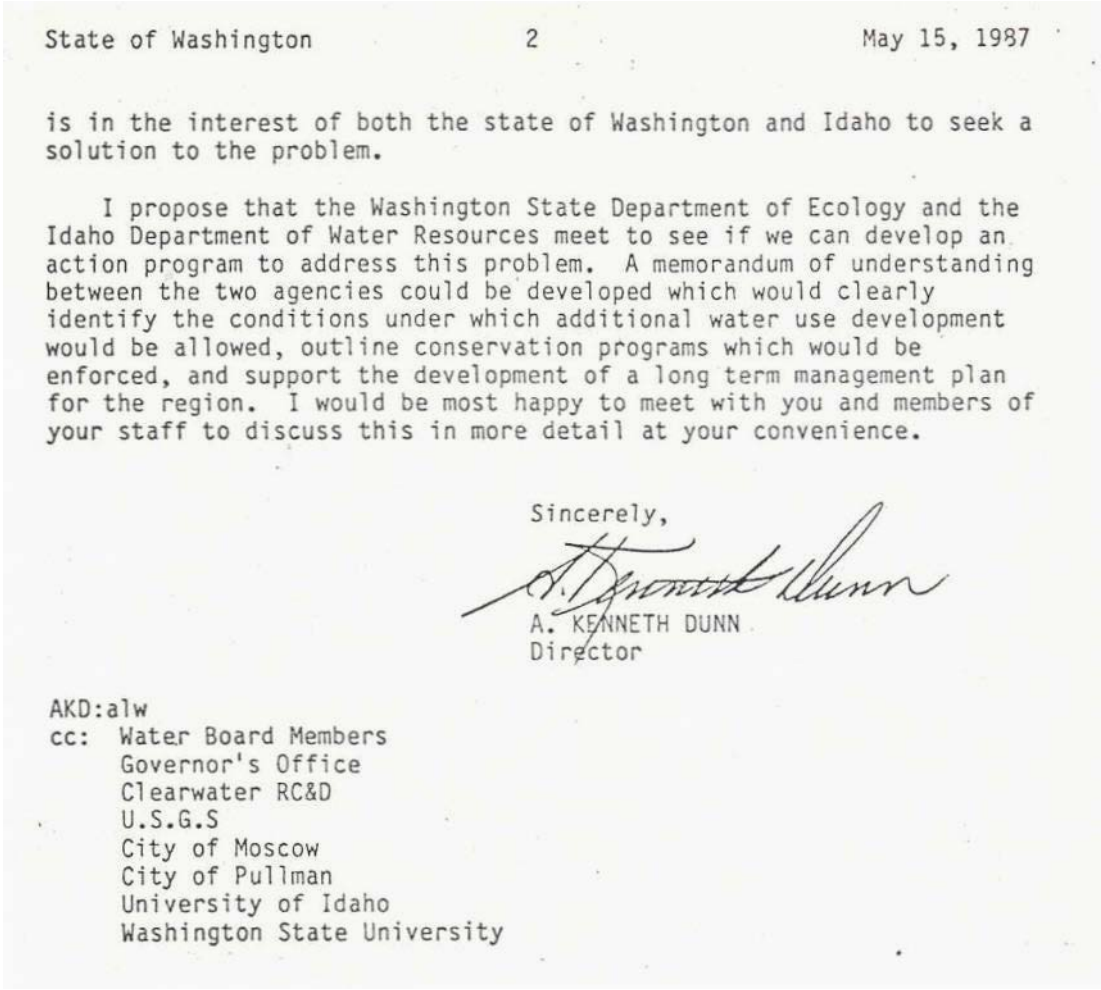
The Notice of Application appears to propose an additional water use. However, in the February 17, 1987, memorandum from Mr. Dillingham of Washington State University to Mr. Earl Moore it is stated:

> the proposed 2500 gpm well (well No. 7) is intended to replace three other wells as they become inoperable, and the well will not "go online" until it is required as a direct substitute for WSU wells that have either gone dry or become inoperable. The memorandum further states that WSU water consumption will not increase regardless of the availability of well No. 7. and Well No. 7, discounting a major failure in other WSU wells, may not be activated for 20 years.

The recently completed hydrogeology and mathematical model of the ground water flow in the Pullman/Moscow region, Washington and Idaho, prepared by Mr. Smoot in cooperation with the U.S. Geological Survey and the University of Idaho demonstrates the critical nature of the water resource balance in the basin. The model predicts that should withdrawals increase even at a rate as low as one percent per year the aquifer will not reach a recharge/discharge equilibrium and water level declines will continue. The Pullman/Moscow water supply problem has been subjected to numerous studies over the years and clearly it

IDWR Letter to WDOE - 1987

I propose . . . meet. A memorandum of understanding between the two agencies could be developed which would clearly identify the conditions under which additional water use development would be allowed, outline conservation programs which would be enforced, and support the development of a long term management plan for the region



State of Washington 2 May 15, 1987

is in the interest of both the state of Washington and Idaho to seek a solution to the problem.

I propose that the Washington State Department of Ecology and the Idaho Department of Water Resources meet to see if we can develop an action program to address this problem. A memorandum of understanding between the two agencies could be developed which would clearly identify the conditions under which additional water use development would be allowed, outline conservation programs which would be enforced, and support the development of a long term management plan for the region. I would be most happy to meet with you and members of your staff to discuss this in more detail at your convenience.

Sincerely,

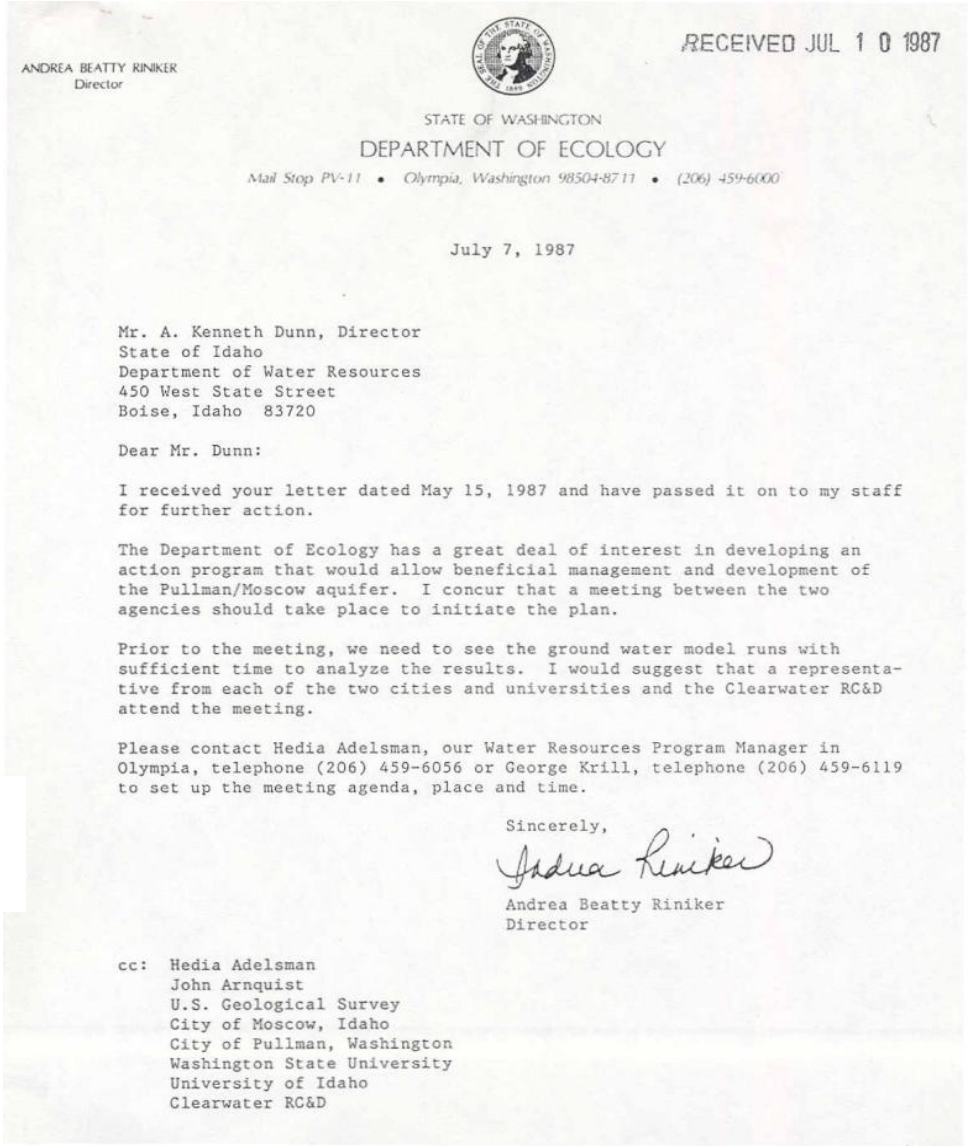
A. KENNETH DUNN
Director

AKD:alw
cc: Water Board Members
Governor's Office
Clearwater RC&D
U.S.G.S
City of Moscow
City of Pullman
University of Idaho
Washington State University

WDOE Response to IDWR Letter - 1987

The Department of Ecology has a great deal of interest. I concur that a meeting between the two agencies should take place to initiate the plan.

I would suggest that a representative from each of the two cities and universities . . . attend the meeting.



ANDREA BEATTY RINIKER
Director

RECEIVED JUL 1 0 1987

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

July 7, 1987

Mr. A. Kenneth Dunn, Director
State of Idaho
Department of Water Resources
450 West State Street
Boise, Idaho 83720

Dear Mr. Dunn:

I received your letter dated May 15, 1987 and have passed it on to my staff for further action.

The Department of Ecology has a great deal of interest in developing an action program that would allow beneficial management and development of the Pullman/Moscow aquifer. I concur that a meeting between the two agencies should take place to initiate the plan.

Prior to the meeting, we need to see the ground water model runs with sufficient time to analyze the results. I would suggest that a representative from each of the two cities and universities and the Clearwater RC&D attend the meeting.

Please contact Hedia Adelsman, our Water Resources Program Manager in Olympia, telephone (206) 459-6056 or George Krill, telephone (206) 459-6119 to set up the meeting agenda, place and time.

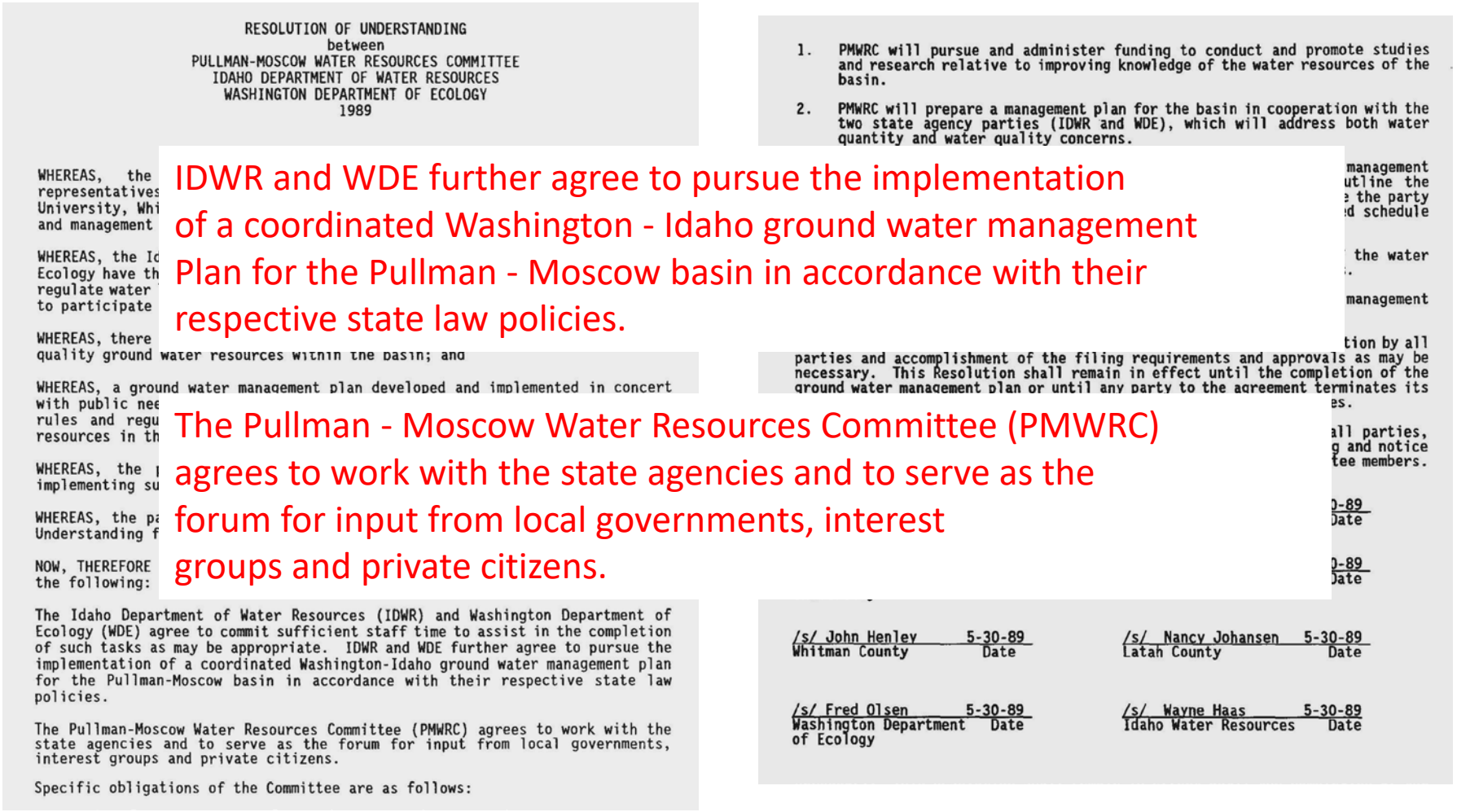
Sincerely,

Andrea Riniker

Andrea Beatty Riniker
Director

cc: Hedia Adelsman
John Arnquist
U.S. Geological Survey
City of Moscow, Idaho
City of Pullman, Washington
Washington State University
University of Idaho
Clearwater RC&D

Resolution of Understanding (PMWRC, IDWR, WDOE) - 1989



RESOLUTION OF UNDERSTANDING
between
PULLMAN-MOSCOW WATER RESOURCES COMMITTEE
IDAHO DEPARTMENT OF WATER RESOURCES
WASHINGTON DEPARTMENT OF ECOLOGY
1989

WHEREAS, the
representatives
University, Whi
and management

WHEREAS, the Id
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to participate

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WHEREAS, a ground water management plan developed and implemented in concert
with public nee
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Understanding f

NOW, THEREFORE
the following:

The Idaho Department of Water Resources (IDWR) and Washington Department of Ecology (WDE) agree to commit sufficient staff time to assist in the completion of such tasks as may be appropriate. IDWR and WDE further agree to pursue the implementation of a coordinated Washington-Idaho ground water management plan for the Pullman-Moscow basin in accordance with their respective state law policies.

The Pullman-Moscow Water Resources Committee (PMWRC) agrees to work with the state agencies and to serve as the forum for input from local governments, interest groups and private citizens.

Specific obligations of the Committee are as follows:

1. PMWRC will pursue and administer funding to conduct and promote studies and research relative to improving knowledge of the water resources of the basin.

2. PMWRC will prepare a management plan for the basin in cooperation with the two state agency parties (IDWR and WDE), which will address both water quantity and water quality concerns.

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management

tion by all
parties and accomplishment of the filing requirements and approvals as may be necessary. This Resolution shall remain in effect until the completion of the ground water management plan or until any party to the agreement terminates its
es.

all parties,
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tee members.

0-89
Date

0-89
Date

/s/ John Henley 5-30-89
Whitman County Date

/s/ Nancy Johansen 5-30-89
Latah County Date

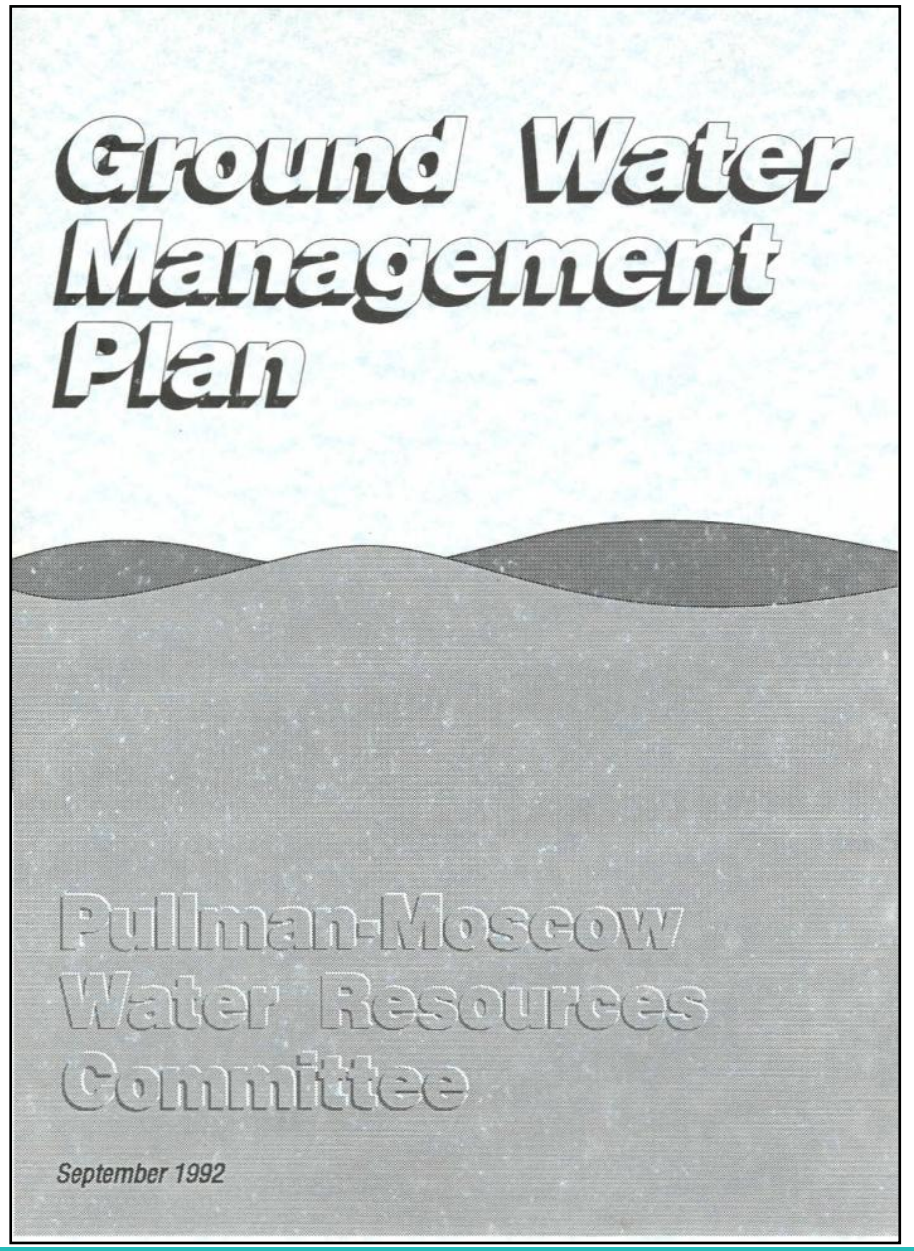
/s/ Fred Olsen 5-30-89
Washington Department Date
of Ecology

/s/ Wayne Haas 5-30-89
Idaho Water Resources Date

IDWR and WDE further agree to pursue the implementation of a coordinated Washington - Idaho ground water management Plan for the Pullman - Moscow basin in accordance with their respective state law policies.

The Pullman - Moscow Water Resources Committee (PMWRC) agrees to work with the state agencies and to serve as the forum for input from local governments, interest groups and private citizens.

Ground Water Management Plan - 1992



- GOAL -

- **TO PROVIDE FOR FUTURE BENEFICIAL USE OF THE BASIN GROUND WATER WITHOUT DEPLETING THE BASIN AQUIFERS WHILE PROTECTING THE QUALITY OF THE WATER.**

The primary goal is to insure that a stable ground water level is maintained in the **BASIN** aquifers. The **COMMITTEE** adopts the standard that the two universities and the two cities shall attempt to limit their annual aquifer pumping increases to one percent (1.0%) of their pumping volume based on a five (5) year moving average starting with 1986. At no time shall the accumulated total pumping exceed 125% of the 1981-1985 average for the two universities and the two cities. These initial limits on pumping rates are based upon historical data and water levels predicted by the **MODEL**. An estimate of the dispersed county pumping will be made based on an average per capita use for all county residences within the **BASIN** boundaries. Latah and Whitman counties will attempt to limit pumping increases from the **BASIN** aquifers to 125% of the estimated 1990 pumping levels. Further refinement of the **MODEL** will be necessary to establish acceptable limits on long term pumping rates which will confirm a stable water level for future users. The **COMMITTEE** will update the **MODEL** periodically and

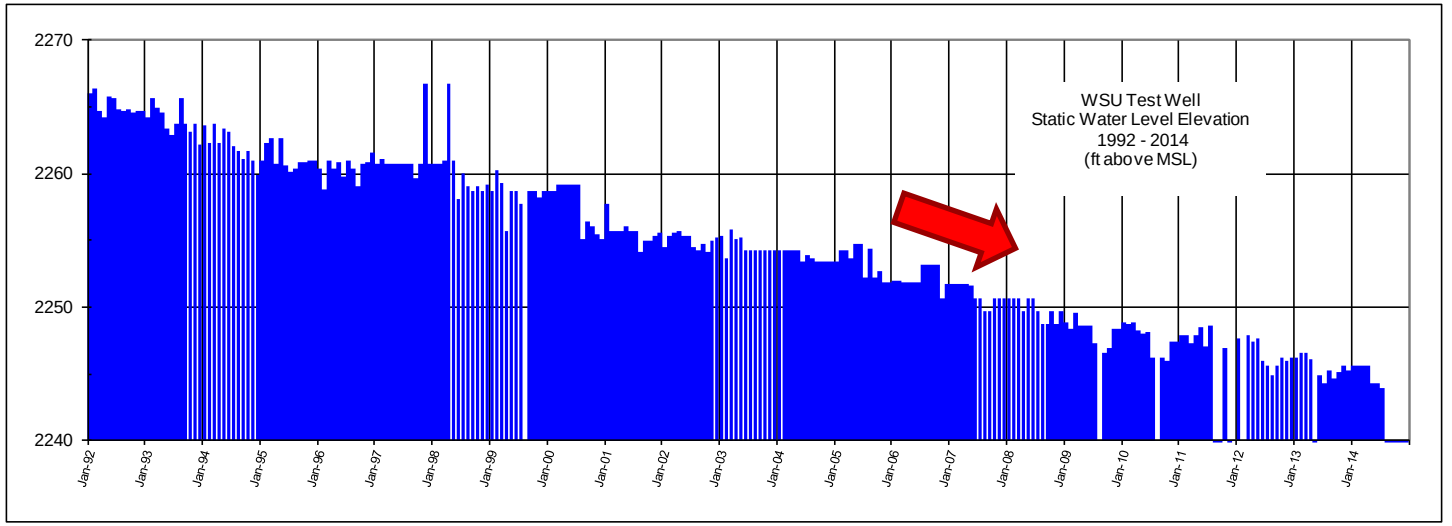
Ground Water Management Plan – Chapter 6 - 2011 Mission and Goals

- **Mission: To ensure a long-term, quality water supply for the Palouse Basin region.**

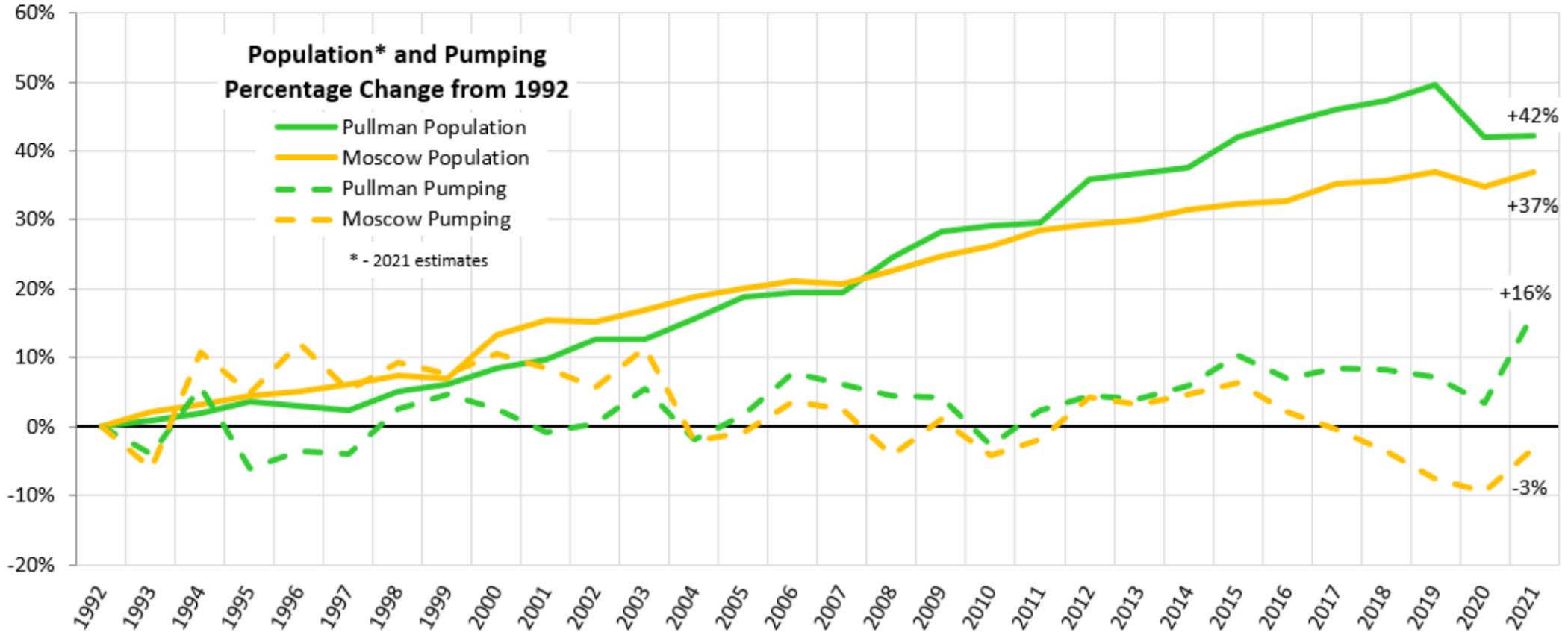
- **Consistent with the Palouse Basin Groundwater Management Plan, develop and Implement a balanced basin wide Water Supply and Use Program by 2025.**

- **Create and maintain an action plan for aquifer system sustainability, enhancement and/or alternate water supply development.**

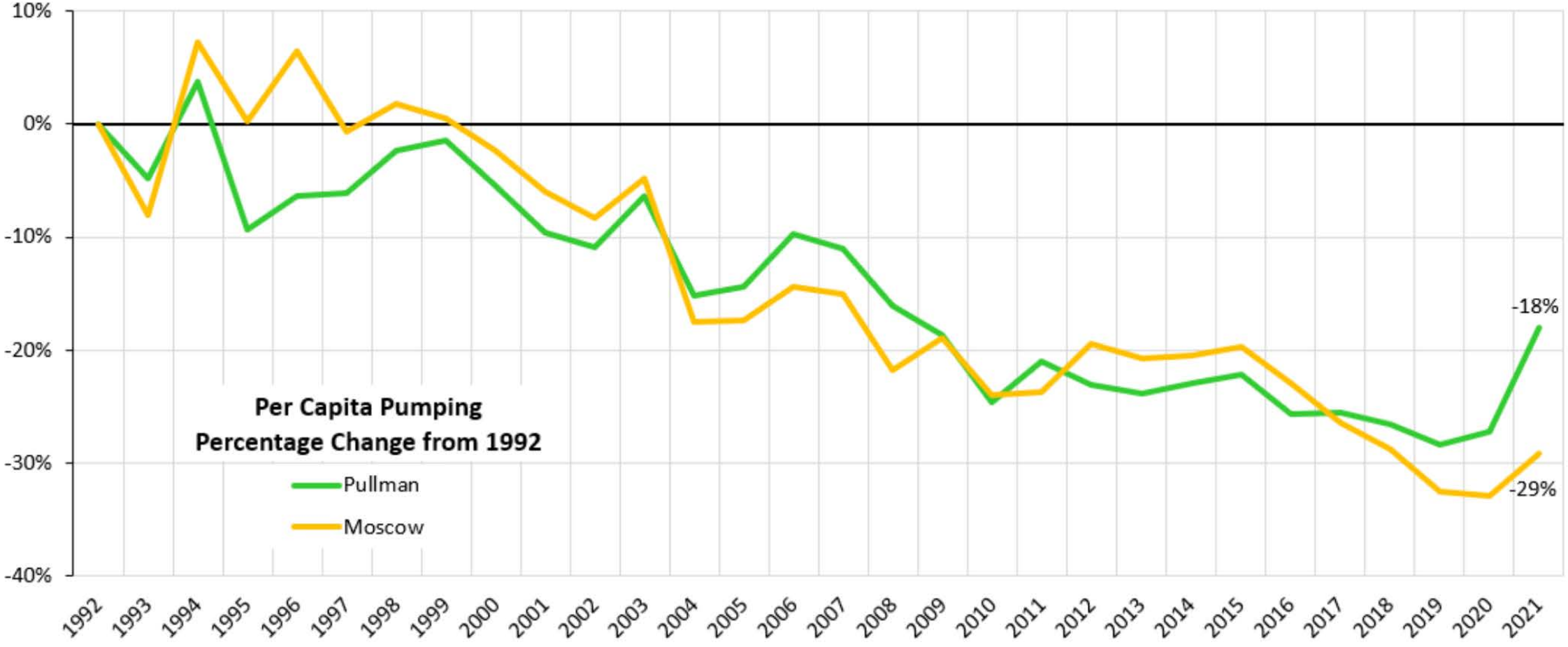
- **Direct research and implement pilot projects necessary to understand the basin hydrogeology in a manner sufficient to support the Water Supply and Use Program and the affiliated supply projects.**



Pop & Pumping % Change from 1992

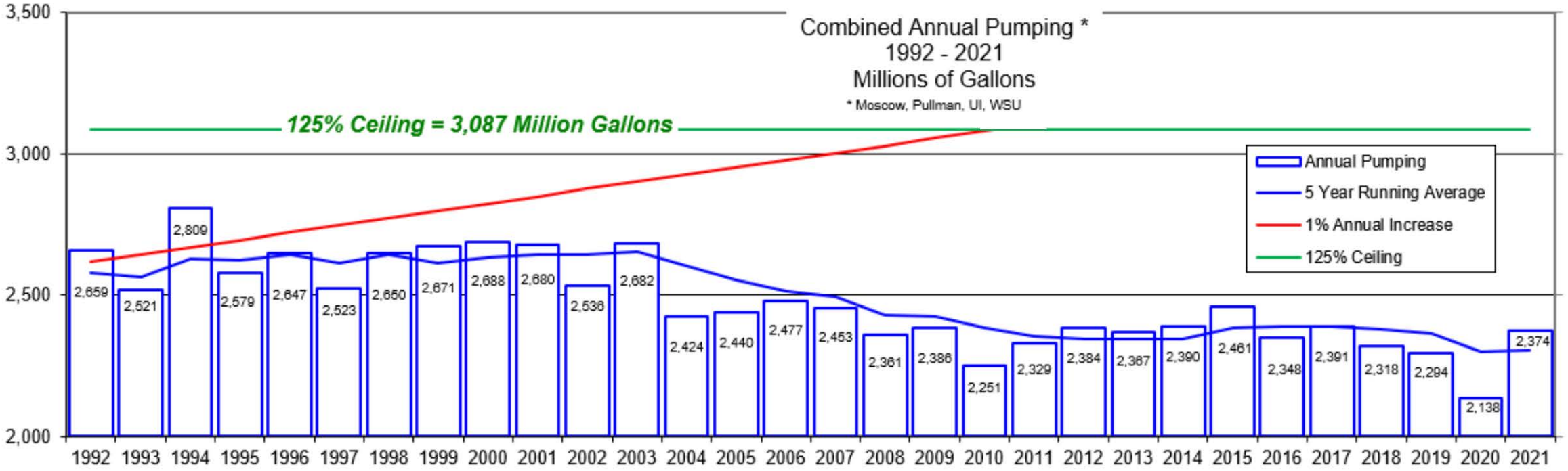


Per Capita Pumping % Change from 1992



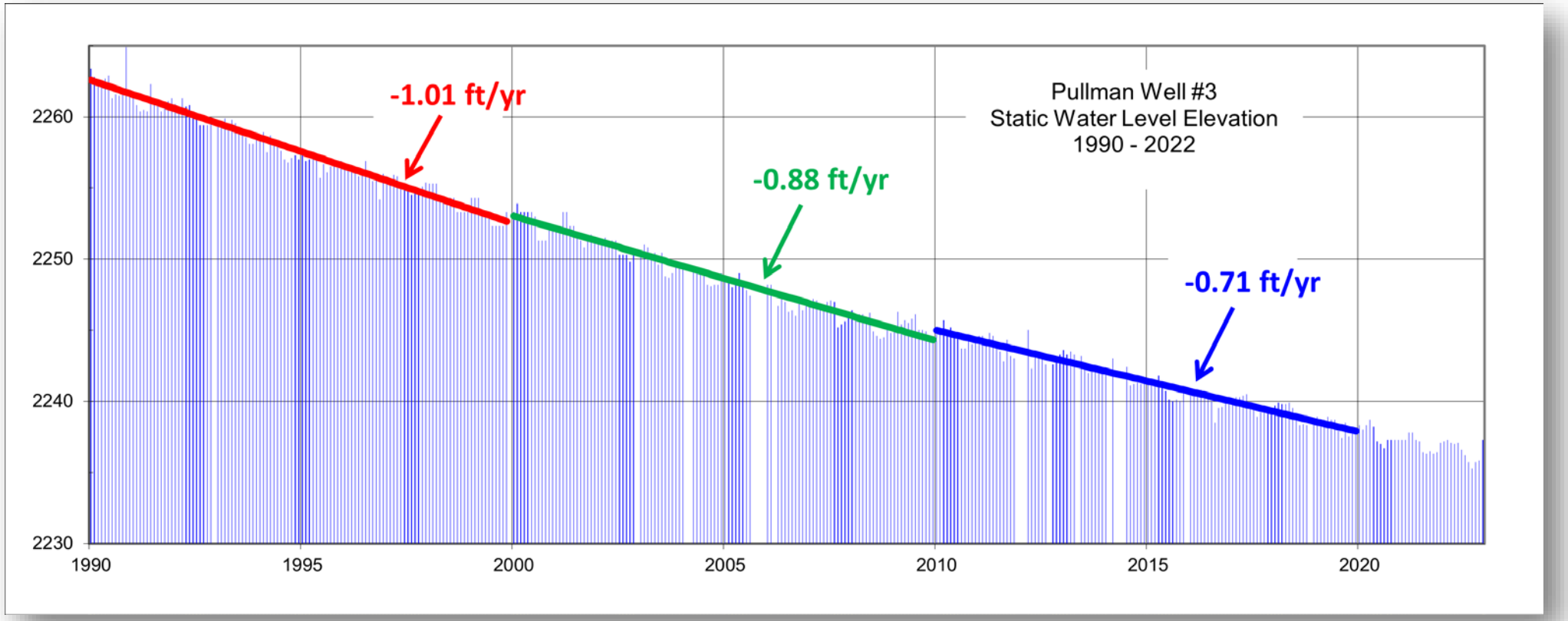
PALOUSE BASIN AQUIFER committee

Combined Annual Pumping – 1992-2021



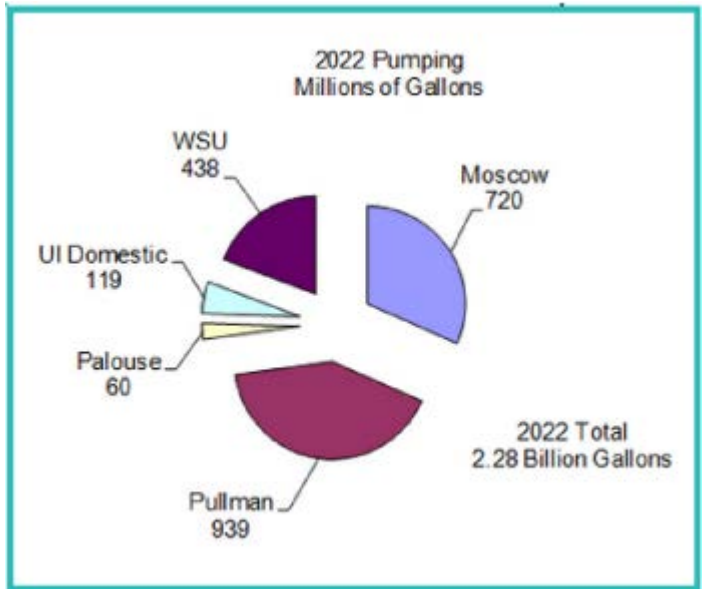
PALOUSE BASIN AQUIFER committee

Annual Water Levels (1990-2022)

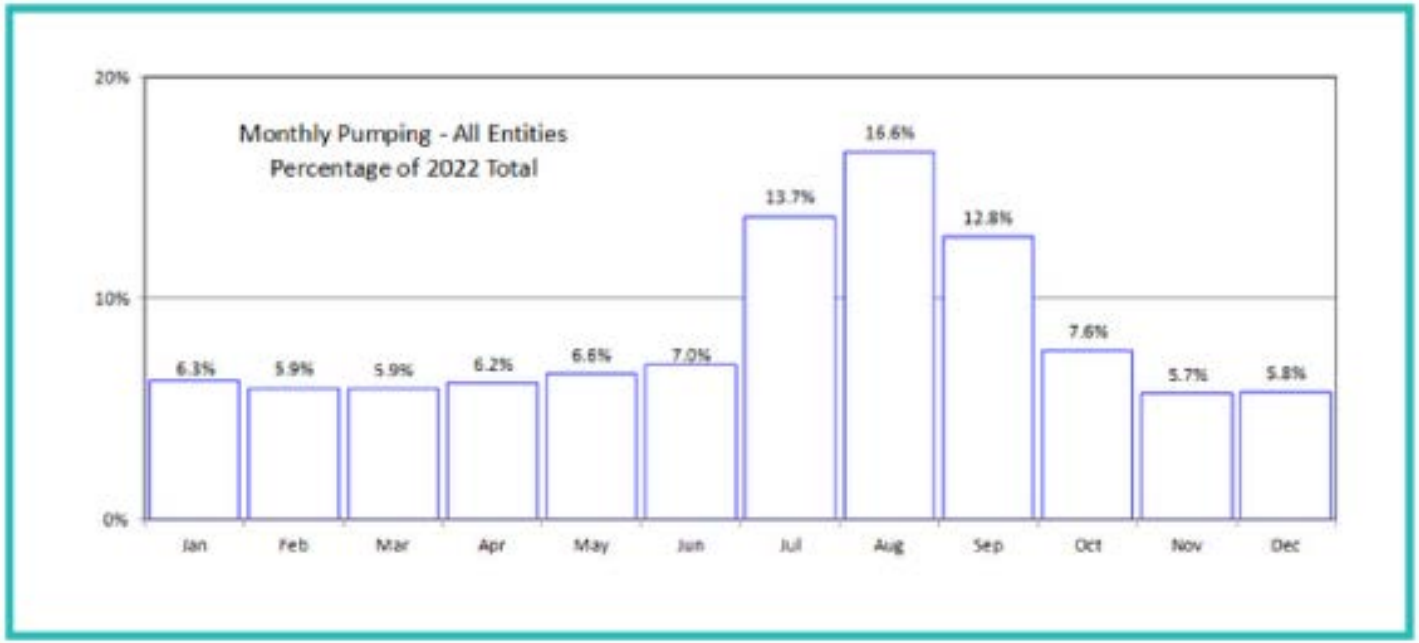


In 2022, approx. 2.28 billion gallons of water pumped

2022 GROUNDWATER USAGE

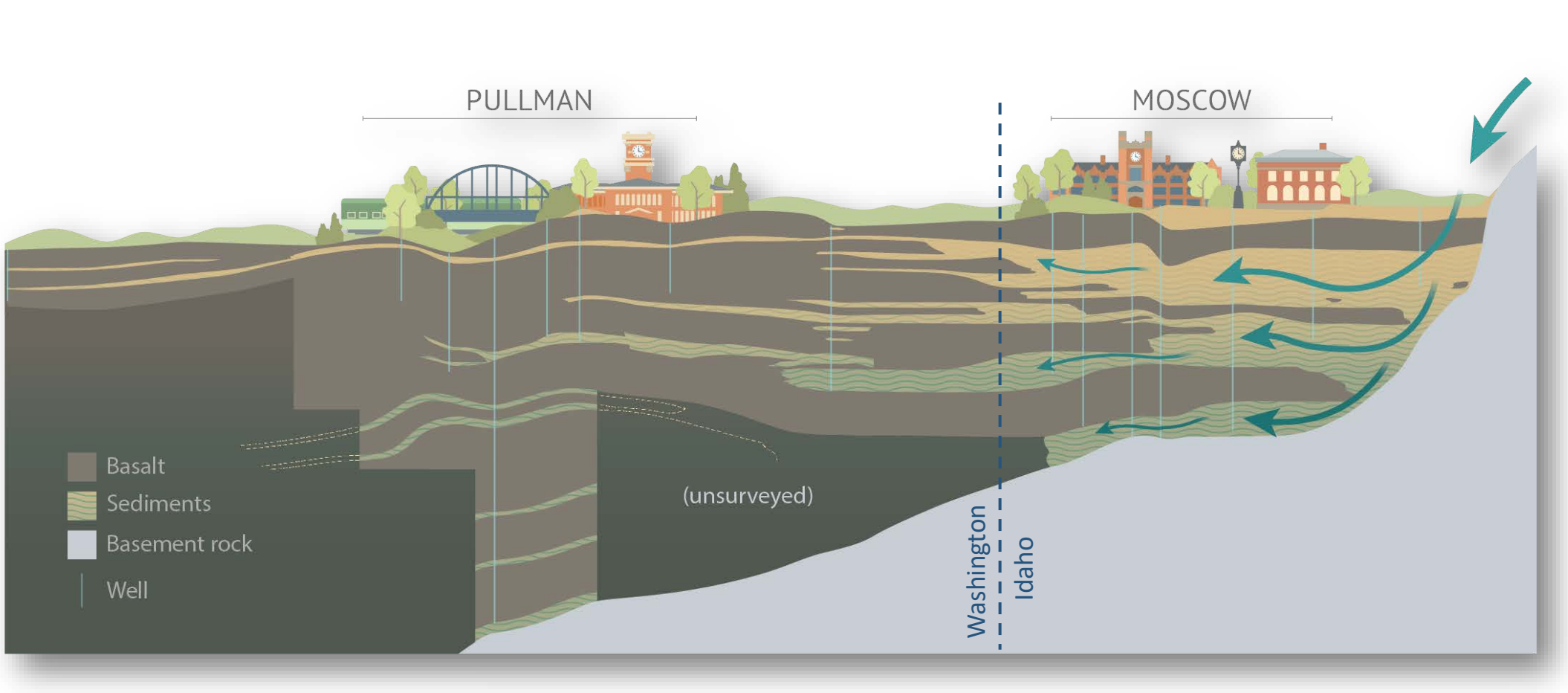


The total combined groundwater pumped by the cities (Pullman, Moscow, and Palouse) and the universities (WSU and UI) for the year 2022 was 2.28 billion gallons. In aggregate, this was 6% less than was pumped in 2021 (2.48 billion gallons), and 17% less than was pumped in 1992 (2.74 billion gallons),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

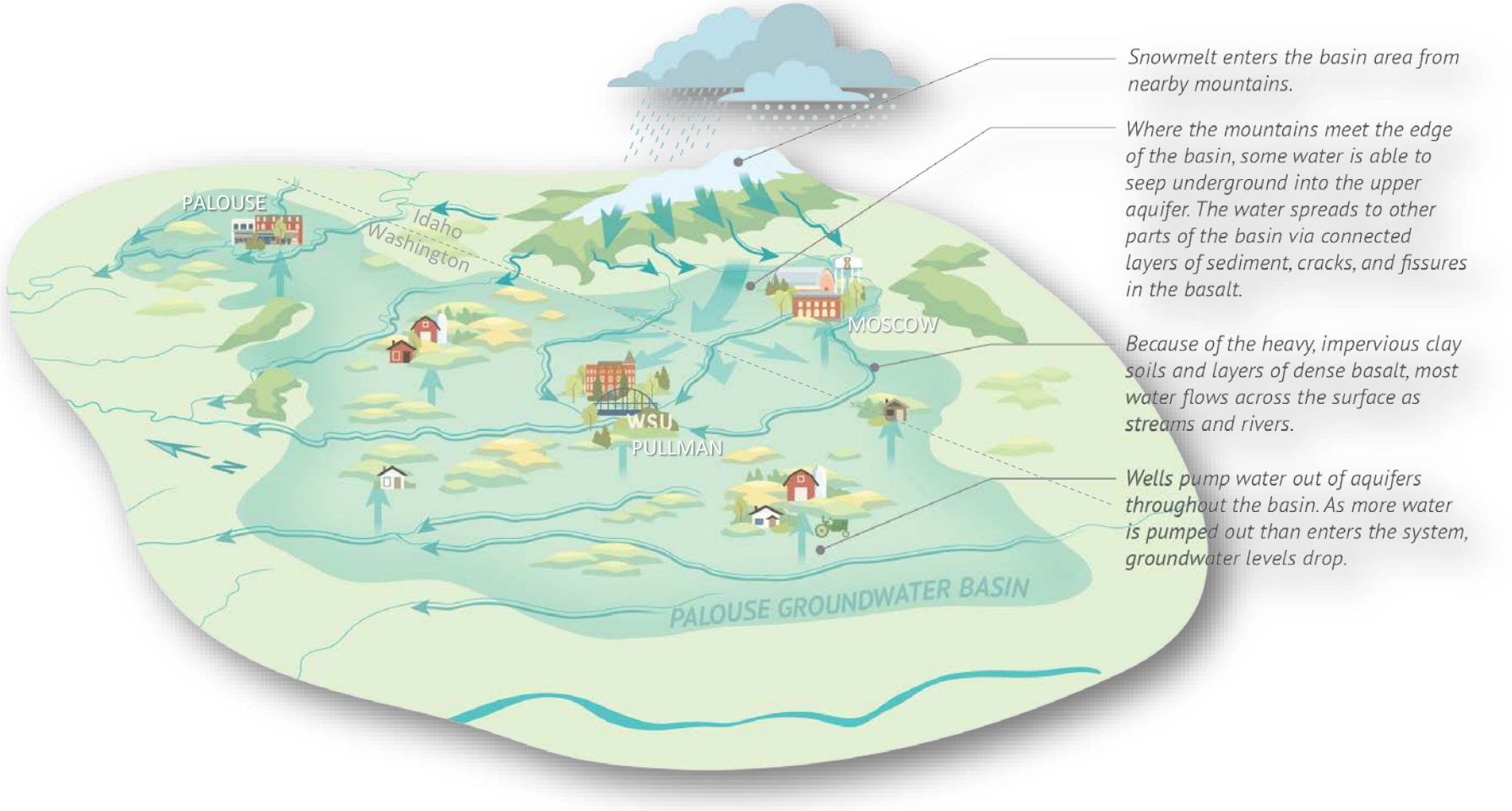


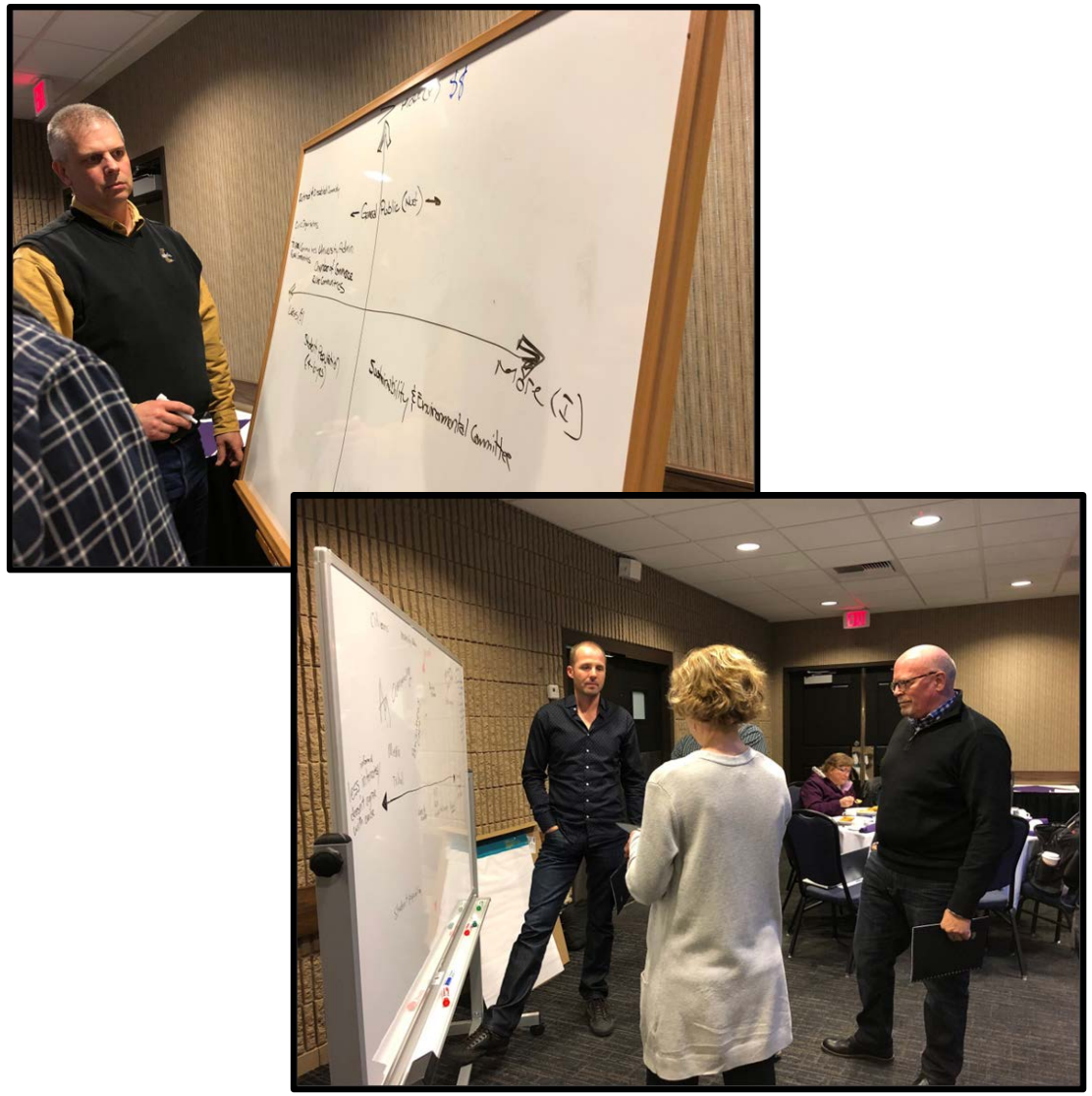
PALOUSE BASIN AQUIFER committee

Geologic Cross Section of the Basin



Water Cycle of the Palouse Groundwater Basin





What to Do?

- **Use Less**
  - Inside
  - Outside
- **Reuse Some**
- **Find More**
- **Collaborate**
- **Communicate**

Palouse Basin Water Supply Project

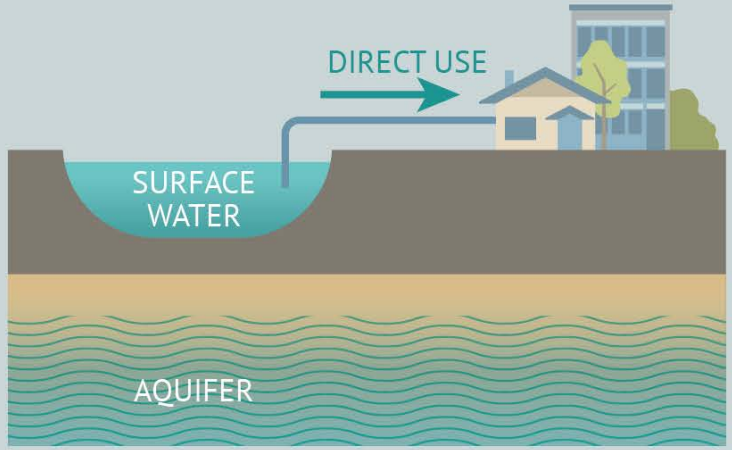
- The region's target need is **2,324 million gallons per year**
  - Calculated using historical water use data and anticipated population growth over 50 years
  - With a goal of aquifer stabilization (i.e., water levels no longer dropping and an aquifer in recovery)

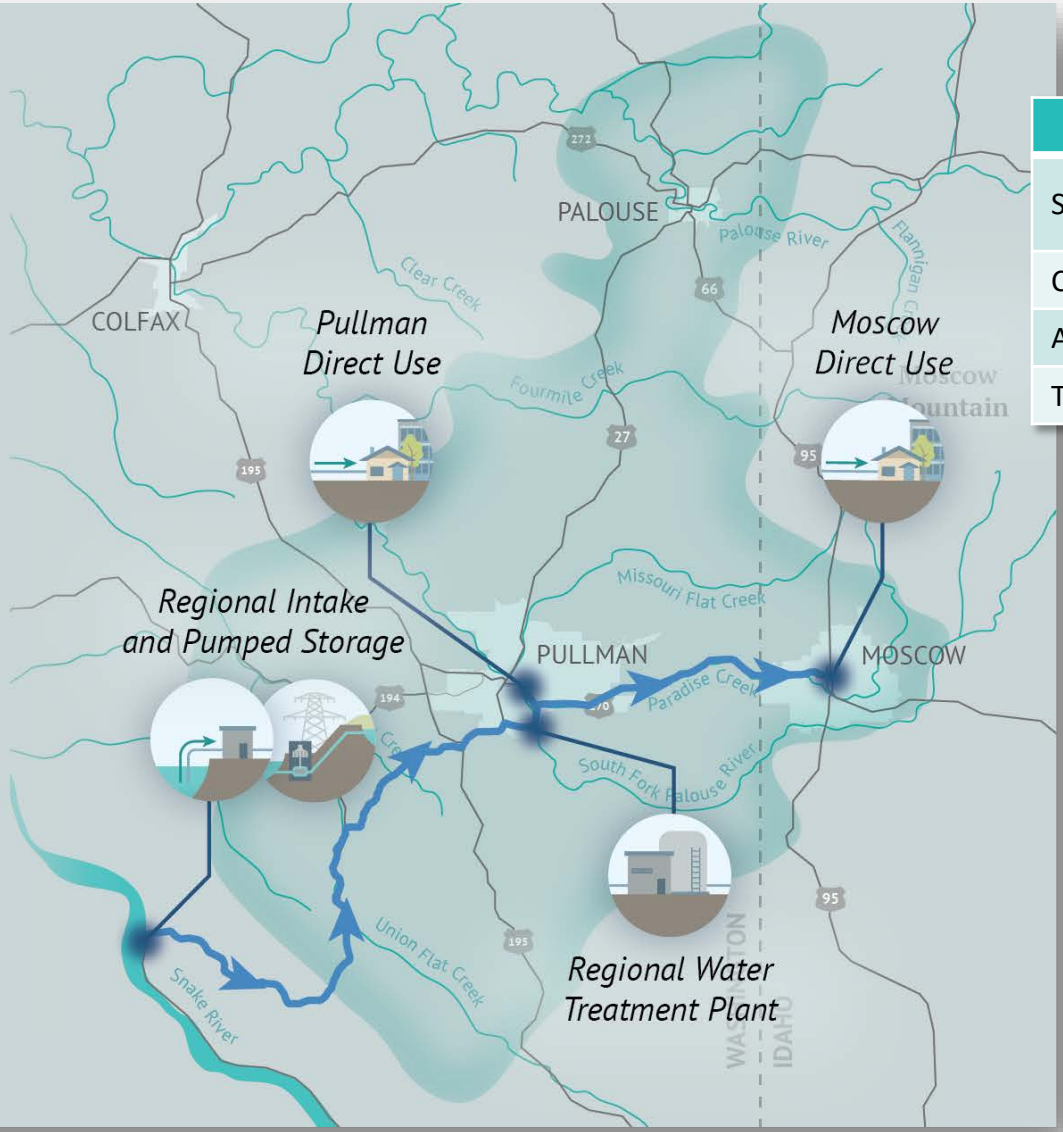
- PBAC is in the discovery phase for selecting an alternative water supply project.
  - In 2022, a consultant generated recommendations for 5 different projects. They analyzed:
    - what percentage of the target need would be supplied with each project,
    - the capital costs for build out
    - the capital costs for annual operating and maintenance costs
    - projected the timeline for implementation

Alternative 1

Direct Use of the Snake River:
Surface water would be diverted from the Snake River and conveyed to a new regional water treatment plant. There it would be treated and conveyed into the existing municipal water system for Pullman and WSU. An additional pipeline would allow treated water to be conveyed to Idaho into the existing municipal system for Moscow and UI.

Due to the topography change from the Snake River to the Palouse region, the potential for an off-channel pumped storage reservoir and hydropower facility would be considered to help offset costs and create additional power for the region.



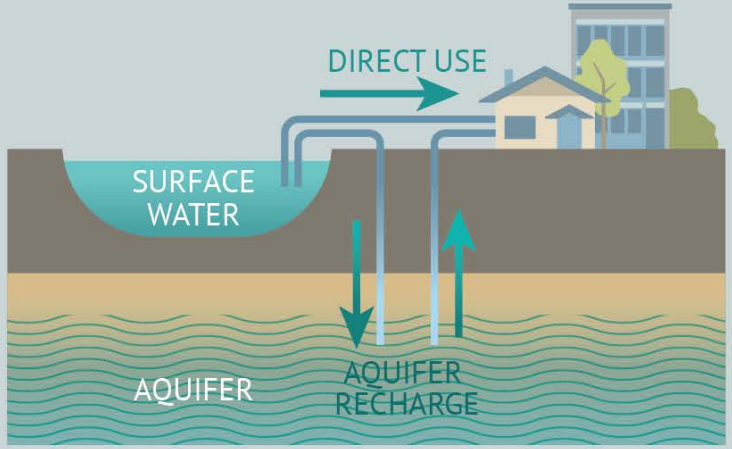


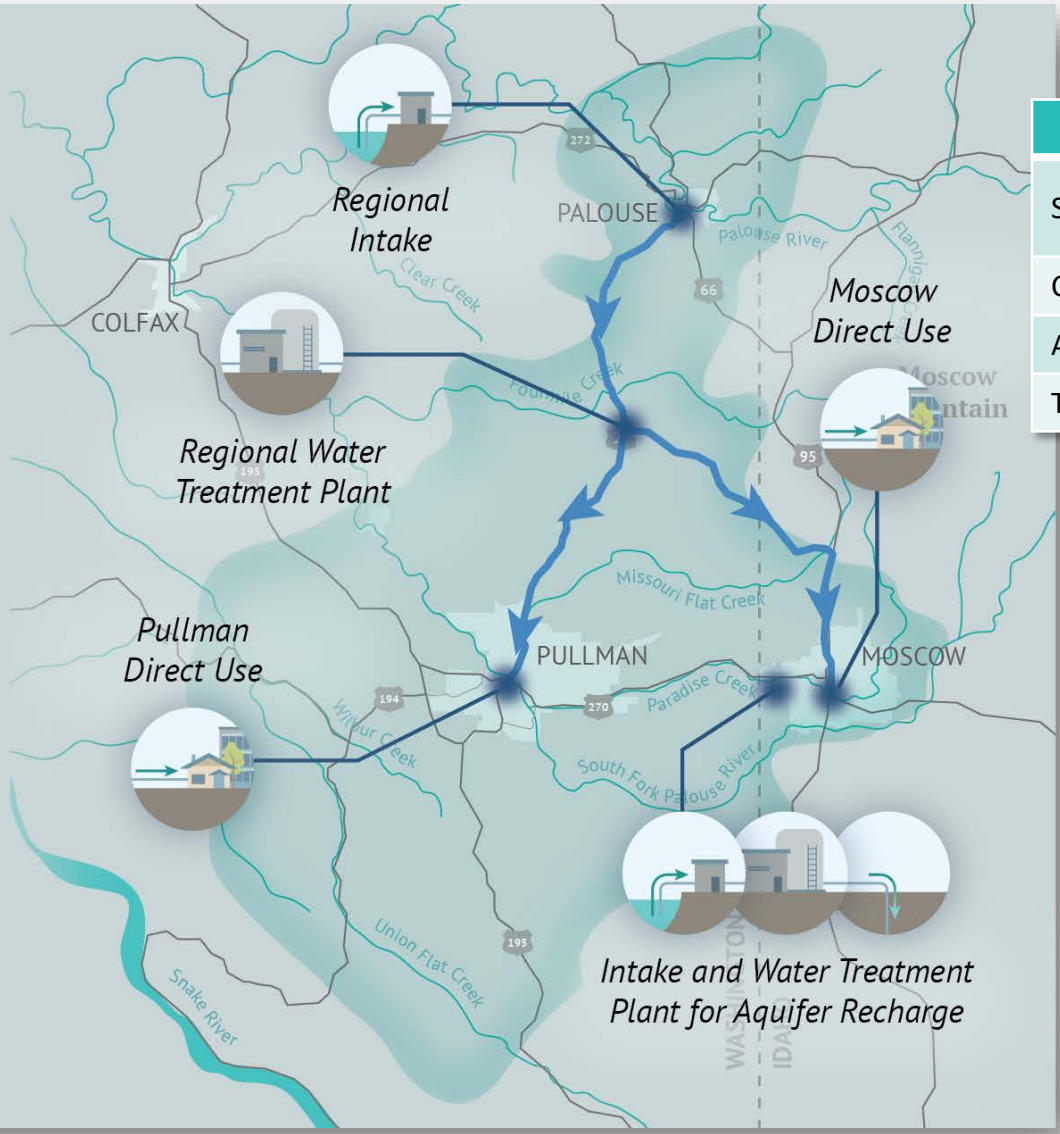
ALTERNATIVE 1	
Supply:	1,967 MGY (85% of target)
Capital Cost:	$109,851,689
Annual O&M:	$6,044,000
Timeline:	12 years

Alternative 2

Direct Use of the North Fork of the Palouse River:
Surface water would be diverted from the North Fork of the Palouse River near Palouse and conveyed to a new regional treatment plant. There it would be treated and conveyed into the existing municipal water system for Pullman and WSU. An additional pipeline would allow treated water to be conveyed to Idaho into the existing municipal system for Moscow and UI.

Aquifer Recharge from the South Fork of the Palouse River or Paradise Creek:
Surface water would be diverted from the South Fork of the Palouse River or Paradise Creek, treated, and injected into the aquifer system via recharge wells.



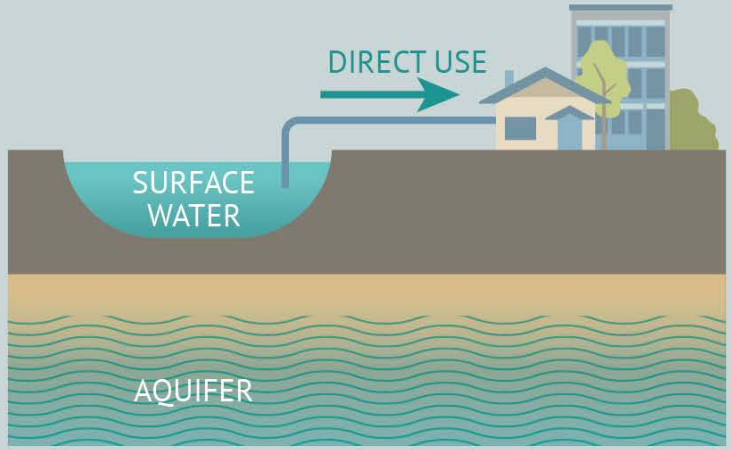


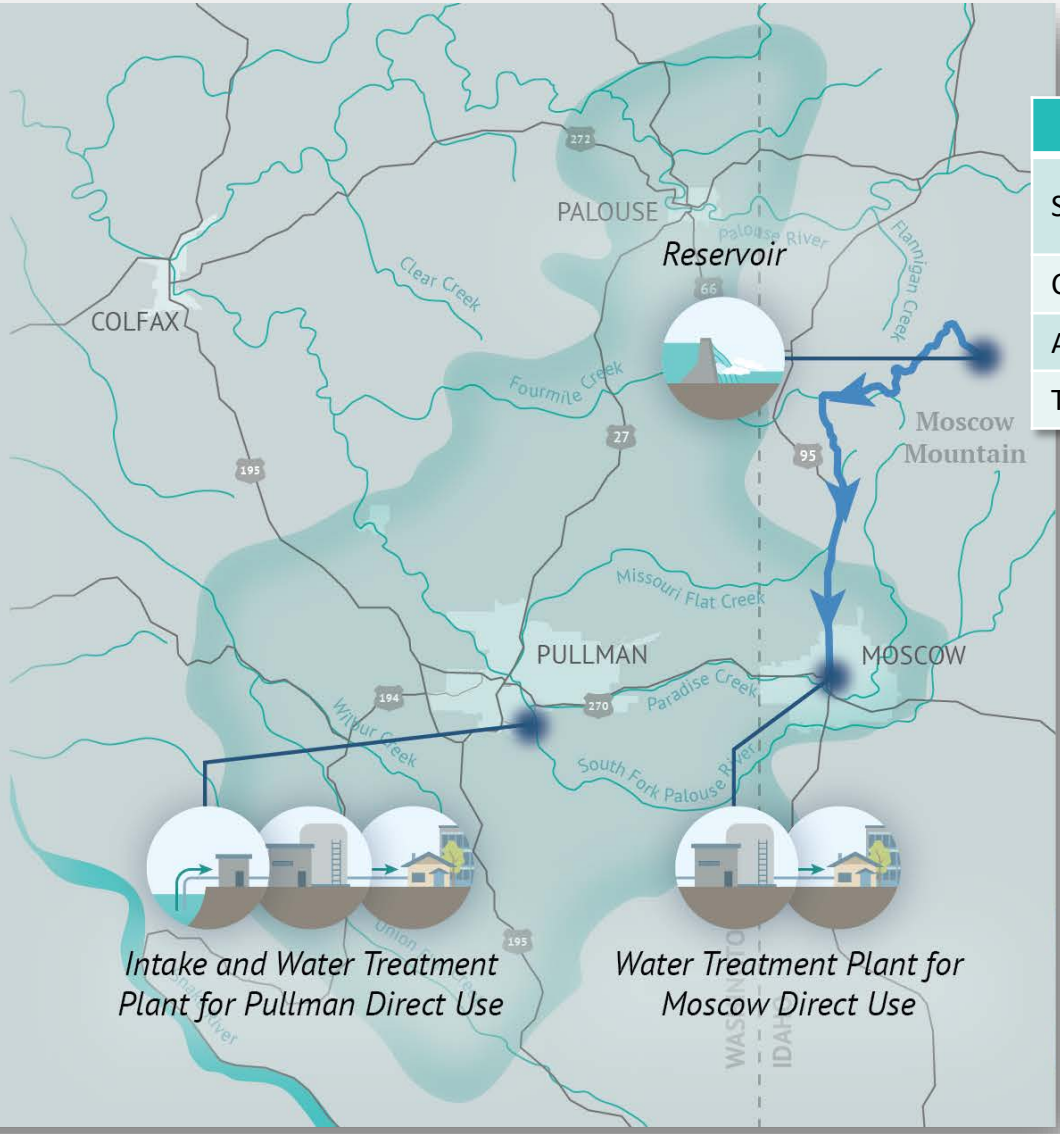
ALTERNATIVE 2	
Supply:	1,908 MGY (82% of target)
Capital Cost:	$76,987,615
Annual O&M:	$2,447,000
Timeline:	12 years

Alternative 3

Direct Use of Flannigan Creek:
Surface water from Flannigan Creek would be stored behind a new reservoir. Water would be pumped to Moscow to be treated and conveyed into the existing municipal water system for Moscow and UI.

Direct Use of the South Fork of the Palouse River:
Surface water would be diverted from the South Fork of the Palouse River, treated, and conveyed into the existing municipal water system for Pullman and WSU.





ALTERNATIVE 3	
Supply:	2,324 MGY (100% of target)
Capital Cost:	$105,016,244
Annual O&M:	$4,016,000
Timeline:	11 years

PALOUSE BASIN AQUIFER committee

Alternative 4

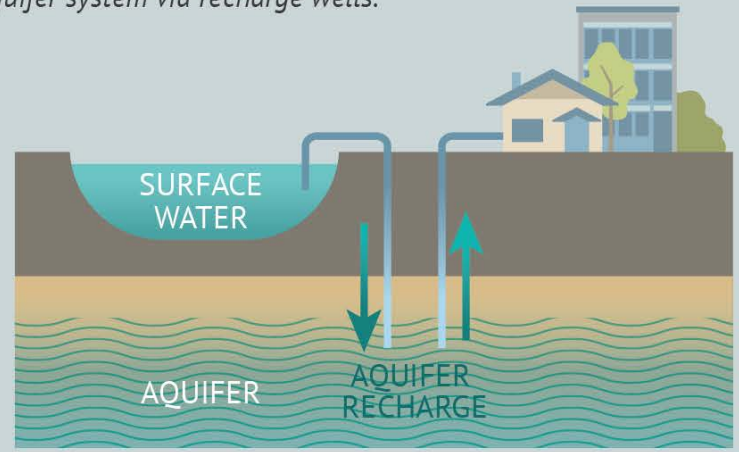
Aquifer Recharge from the South Fork of the Palouse River:
Surface water would be diverted from the South Fork of the Palouse River in Pullman, treated, and injected into the aquifer system via recharge wells.

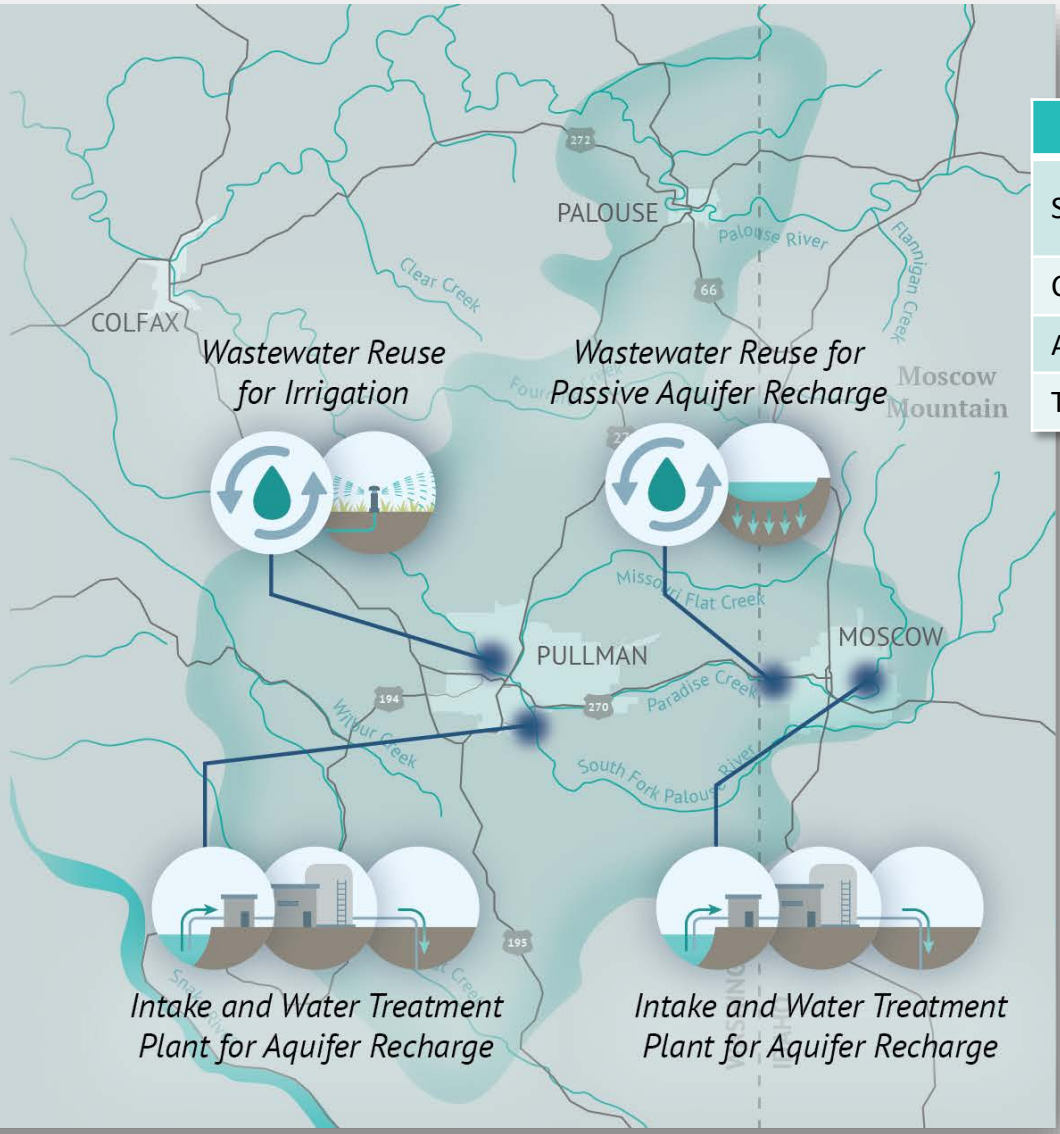
Aquifer Recharge from Paradise Creek:
Surface water would be diverted from Paradise Creek in Moscow, treated, and injected into the aquifer system via recharge wells.

Pullman Wastewater Reuse:
Using treated wastewater for irrigation in Pullman.

Moscow Wastewater Reuse:
Using treated wastewater for passive aquifer recharge in Moscow.

Additional Water Conservation:
Implementing conservation measures resulting in 15% less water than currently being used.





ALTERNATIVE 4	
Supply:	1,893 MGY (81% of target)
Capital Cost:	$121,322,206*
Annual O&M:	$1,838,000
Timeline:	12 years

Paradise/South Fork Direct Use:

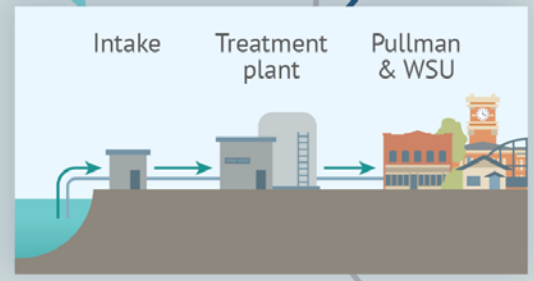
This project involves diverting water from Paradise Creek and the South Fork of the Palouse River to supply the communities of Moscow and Pullman. New facilities will collect and treat the water before directing it into existing city water systems. In addition to these direct use projects, additional conservation measures will be implemented with a goal to use 15% less water than currently being used.

PULLMAN

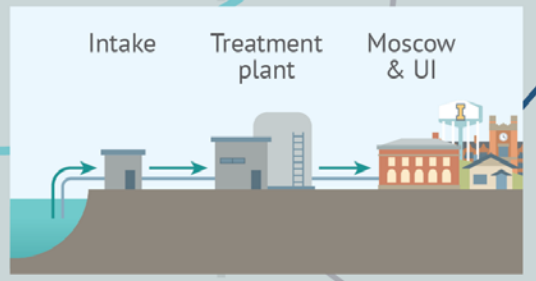
MOSCOW

Paradise Creek

South Fork Palouse River



Direct Use of the South Fork of the Palouse River
Surface water would be diverted from the South Fork of the Palouse River, treated, and then conveyed into the existing municipal water system for Pullman and WSU.



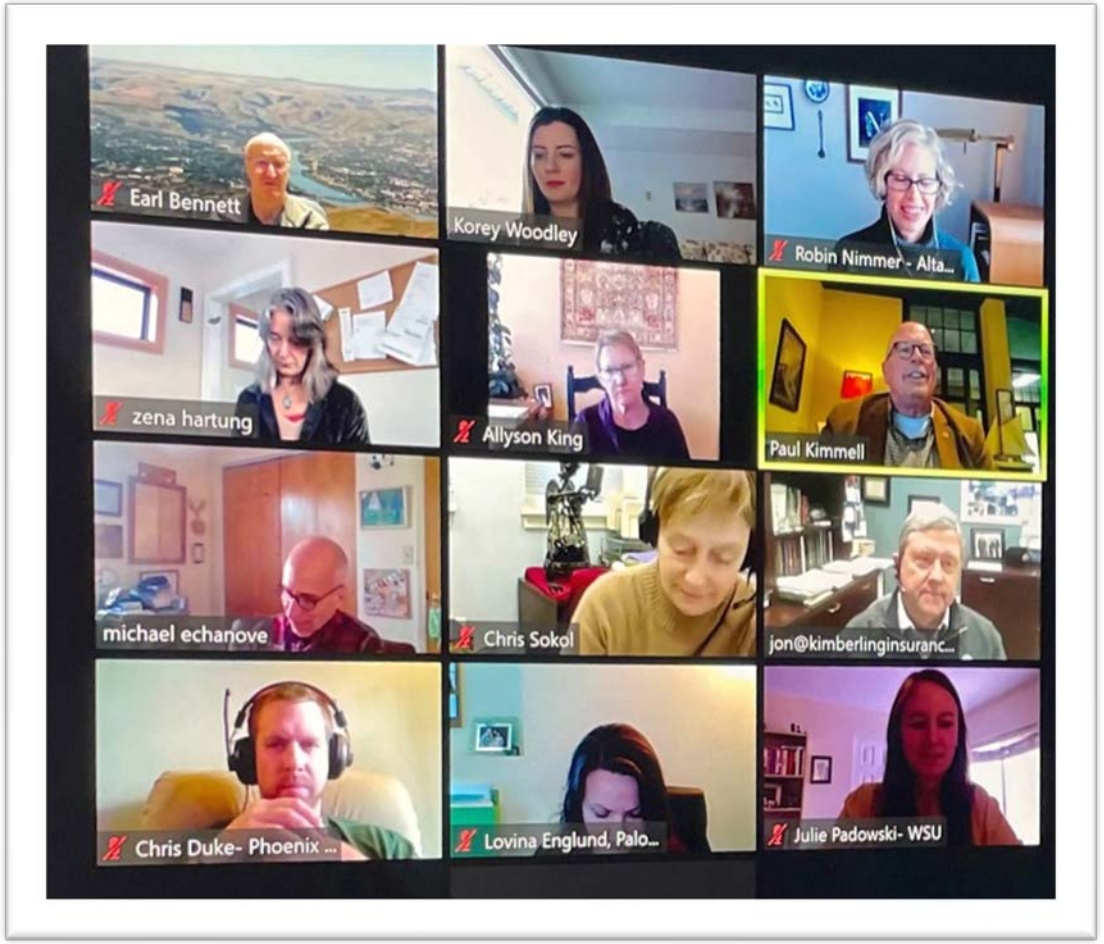
Direct Use of Paradise Creek
Surface water would be diverted from Paradise Creek, treated, and then conveyed into the existing municipal water system for Moscow and UI.

ALTERNATIVE 5	
Supply:	1,861 MG (80% of target)
Capital Cost:	$73,767,727*
Annual O&M:	$1,637,000
Timeline:	12 years

Stakeholder Engagement Group (SEG) Launched 2021

Mission: to provide input to PBAC through dialogue among a broad range of interested parties focusing on the four water supply alternatives and associated engineering and environmental evaluations and analyses, research activities, and public involvement.

- Build community awareness and understanding of the Palouse Basin's groundwater supply
- Engage the community and build public support of and involvement in PBAC's mission to ensure a quality, long-term water supply
- Strengthen PBAC's reputation and credibility as the Palouse Basin groundwater authority



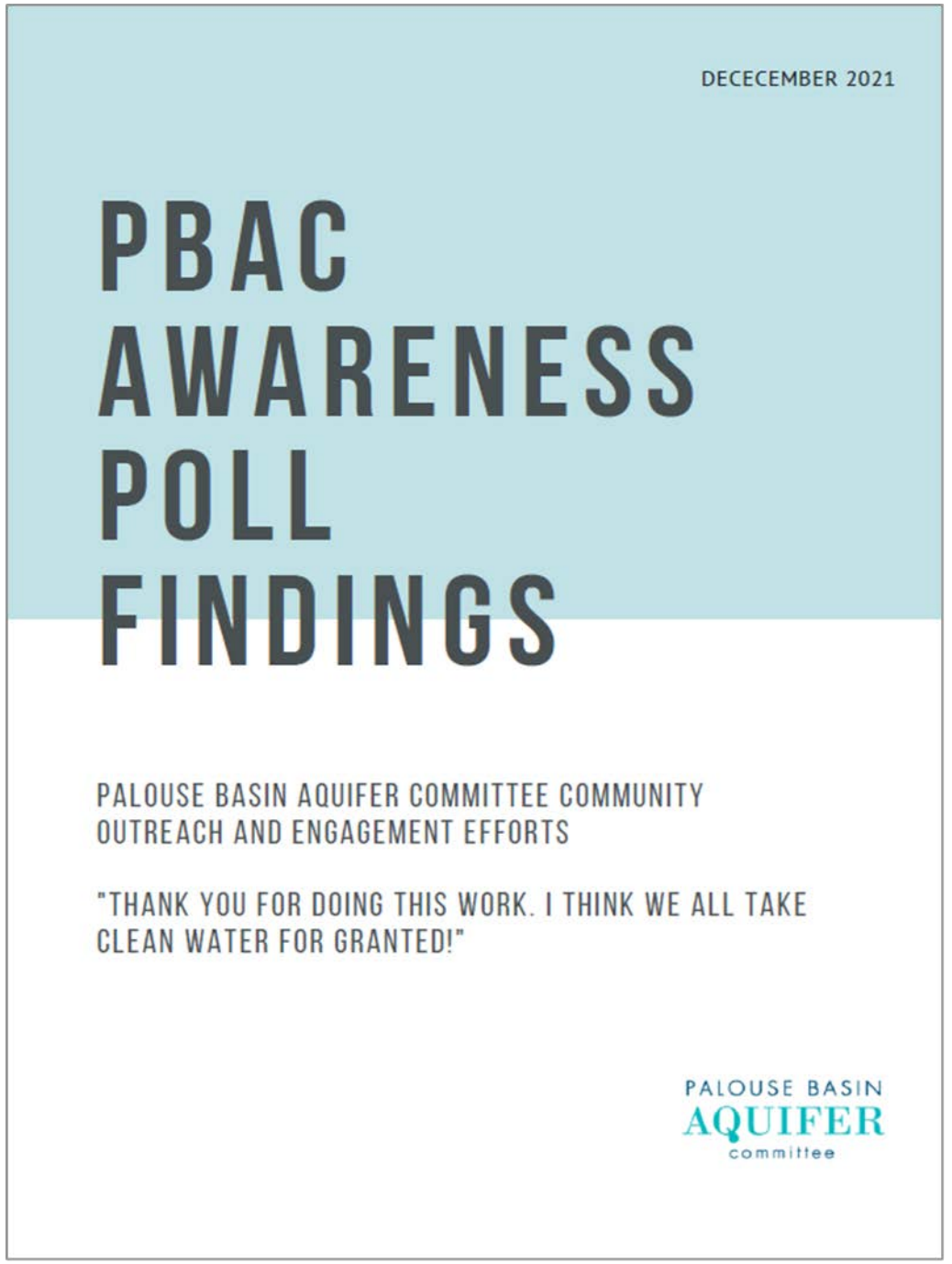
PBAC Community Awareness Poll

Gain understanding of public knowledge of our aquifers and water conservation

Better understand how residents access information on water matters

How we can shape messaging and effectively use social media

Increase community engagement through PBAC's "Conserve, Stabilize and Thrive" Campaign



Goal:

The goal of the following conservation questions was to understand what the public does for conservation, how important it is to them and what resources they might need moving forward.

> *"We need more definitive information about the status of the aquifer. How much is left? Our situation could be urgent and we don't know it. I understand that it is very difficult to measure. But knowing this information is imperative for the community to act collectively."*

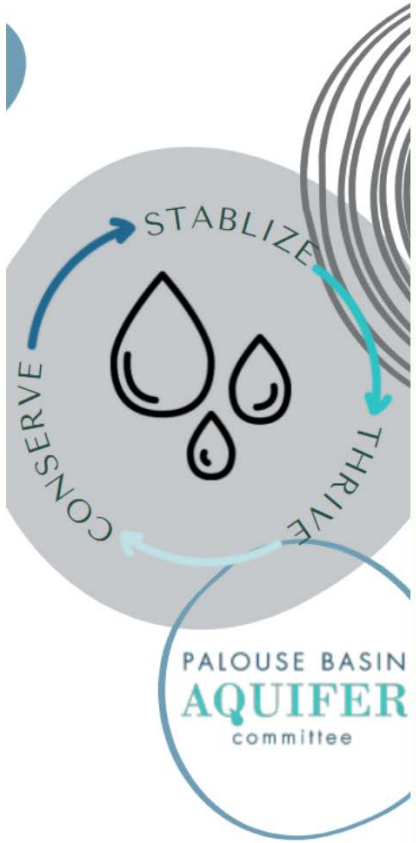
CONSERVATION QUESTIONS

CONSERVE

STABILIZE

THRIVE

PALOUSE BASIN
AQUIFER
committee



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@palousebasinaql

PALOUSE BASIN
AQUIFER
committee

The Palouse Basin Aquifer Committee works to ensure a long-term, quality water supply for the Palouse Basin region.

Water on THE PALOUSE

What is the Basin?

The Palouse Groundwater Basin underlies approximately 500 square mile area of north central Idaho and eastern Washington. 60,000 residents rely on the aquifer.

Increase Awareness

There is increased regional awareness and action. For example, there has been a 13% decline in pumping since the creation of the 1992 Palouse Basin Groundwater Management Plan, even though the population has grown by over 35%.

Conservation

Conservation efforts by communities have resulted in reduced pumping and a reduced rate of water decline about 0.72 feet per year. Water conservation is a great way for you to do your part: shorter showers, water-saving devices, and more. see your communities for free devices

Solution

PBAC has identified four possible water supply alternatives to stabilize the groundwater level in the lowe aquifer and to provide a sufficient water supply for our future, including growth of the community. PBAC is currently working on selecting the top 1-2 alternatives to move forward PBAC works closely with the Idaho Water Resource Board, Washington Department of Ecology and others to ensure support and identify funding opportunities.

Resources http://palousebasin.org.

Regional Water Conservation Plan

Priorities to Ensure Long-term Water Savings

- **Conservation Plan Development**
  - ✓ Open-minded goal-setting process: all water-saving options on the table
  - ✓ Benefit-cost analysis includes comparisons to new water and wastewater capital plan options
  - ✓ Financial commitment to conservation is equivalent to new water supply (and wastewater) expansions
- **Program Goals, Scale, and Budget Reflect Big Thinking, Long-term View**
  - ✓ Declared measurable volume and percent water saving goals, e.g. 20% by 2024, 30% by 2030
  - ✓ Significant capital and O&M cost savings,
  - ✓ Avoided adverse environmental impacts, e.g., river diversion, dam construction, energy/climate
- **Conservation Program Design Reflects Proven Practices–and Innovation**
  - ✓ Emphasis on hardware measures with documented water savings
  - ✓ Enticing incentives: Free fixtures/equipment, generous customer rebates
  - ✓ Ordinances: Maximum 1- or 2-day/week irrigation, development offsets, cap system water losses
  - ✓ High program participation, analytics-based customer targeting (high users, irrigation, leaks)

(Continued)

Priorities to Ensure Long-term Water Savings (cont.)

- **Interdisciplinary And Committed Team**
  - ✓ Water utility staff, community stakeholders; networking with regional and national water conservation colleagues and organizations
  - ✓ Integration with green, energy efficiency, and renewable energy and climate programs
  - ✓ Go to the annual Watersmart Innovations Conference
- **Commitment To An Open And Public Process**
  - ✓ Active and highly visible public and online/social presence
  - ✓ Ease in sharing information, progress updates and decision points shared with the public and media
  - ✓ Stay accountable to the public and meet your conservation goals

Annual Palouse Basin Water Summit

20th Year

250-300 community members attend

Key Takeaways

- Our community has water supply alternative options within our basin and near our basin
- Actively investigating and refining the water supply alternatives
- Need for community-wide solutions
- Continue to engage the communities
- Need to stay focused and work together

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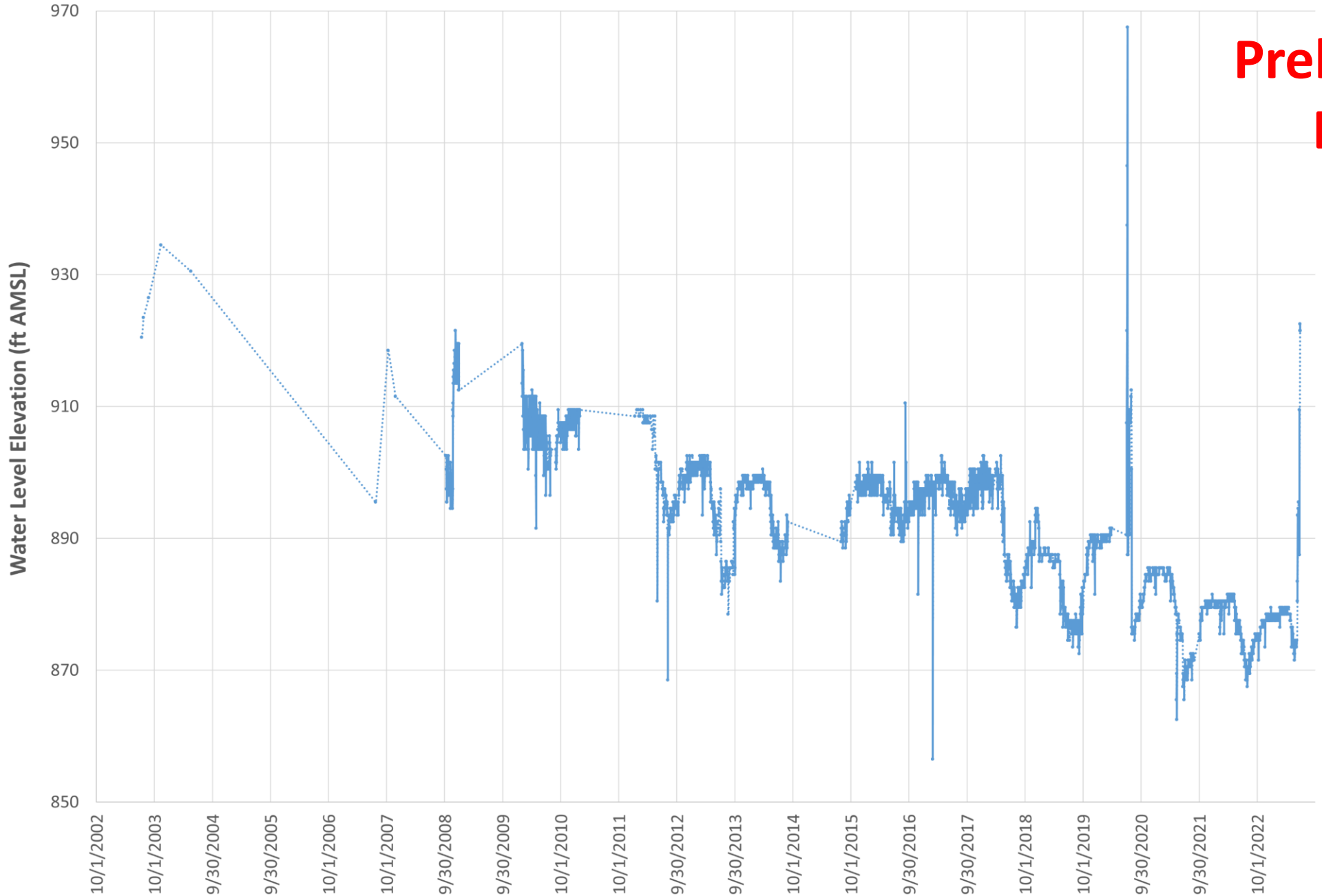
AQUIFER
committee

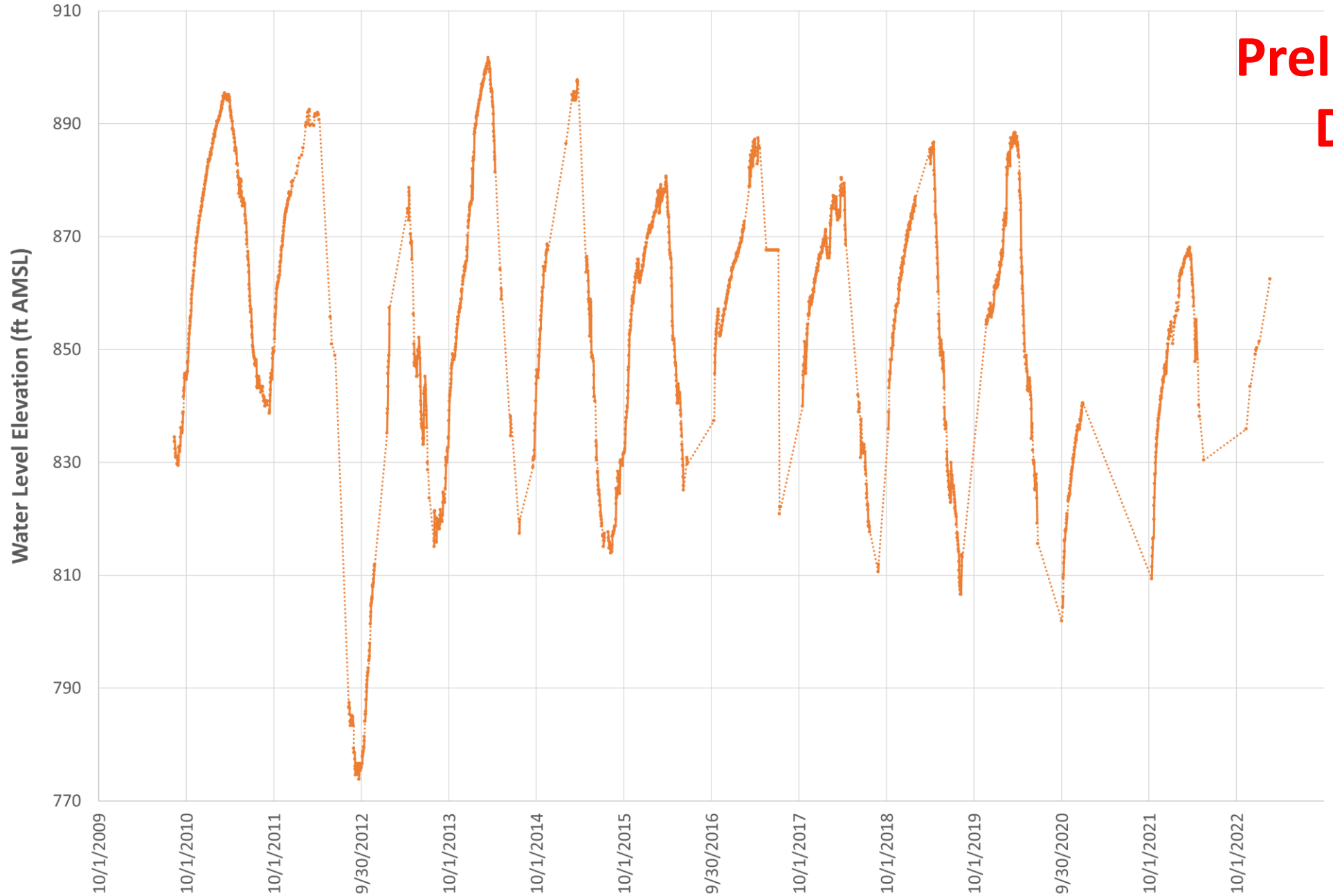
Water Level Elevation at Lind Well #8



Preliminary Draft

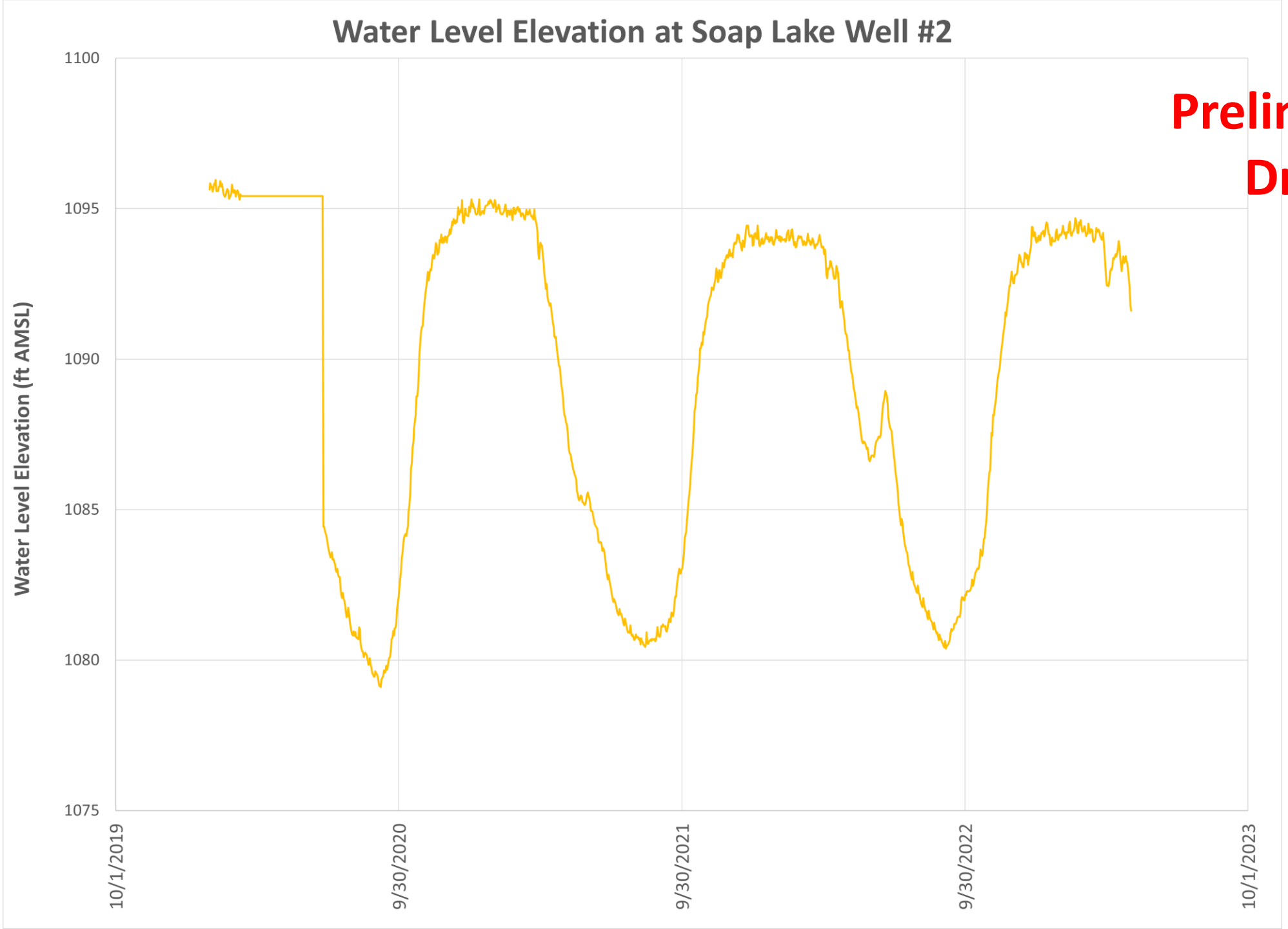
Note: Graph excludes water level evelations recorded while pump is on.

Water Level Elevation at Moses Lake Well #28



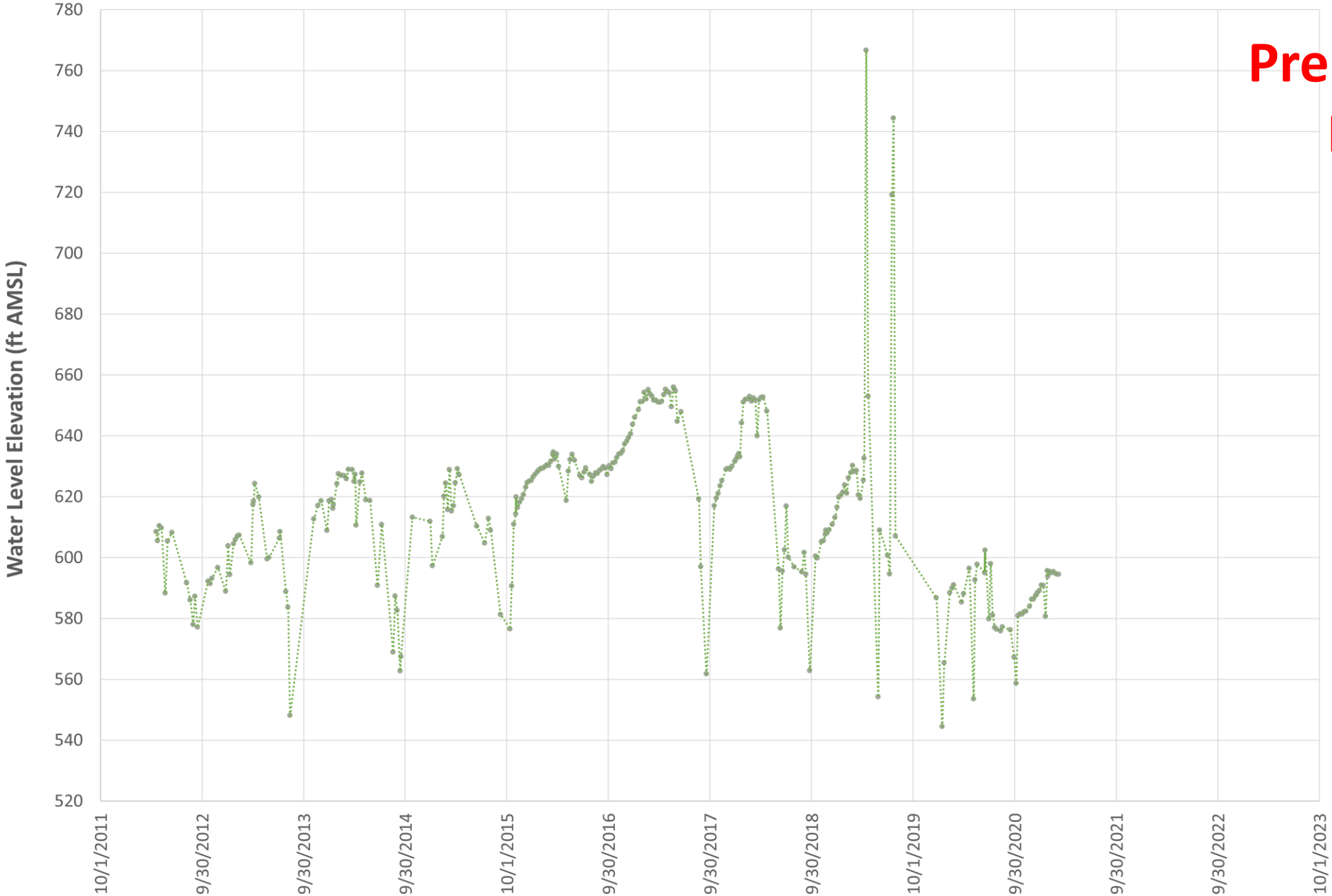
Preliminary Draft

Note: Graph excludes water level evelations recorded while pump is on.



Preliminary Draft

Water Level Elevation at Othello Well #8



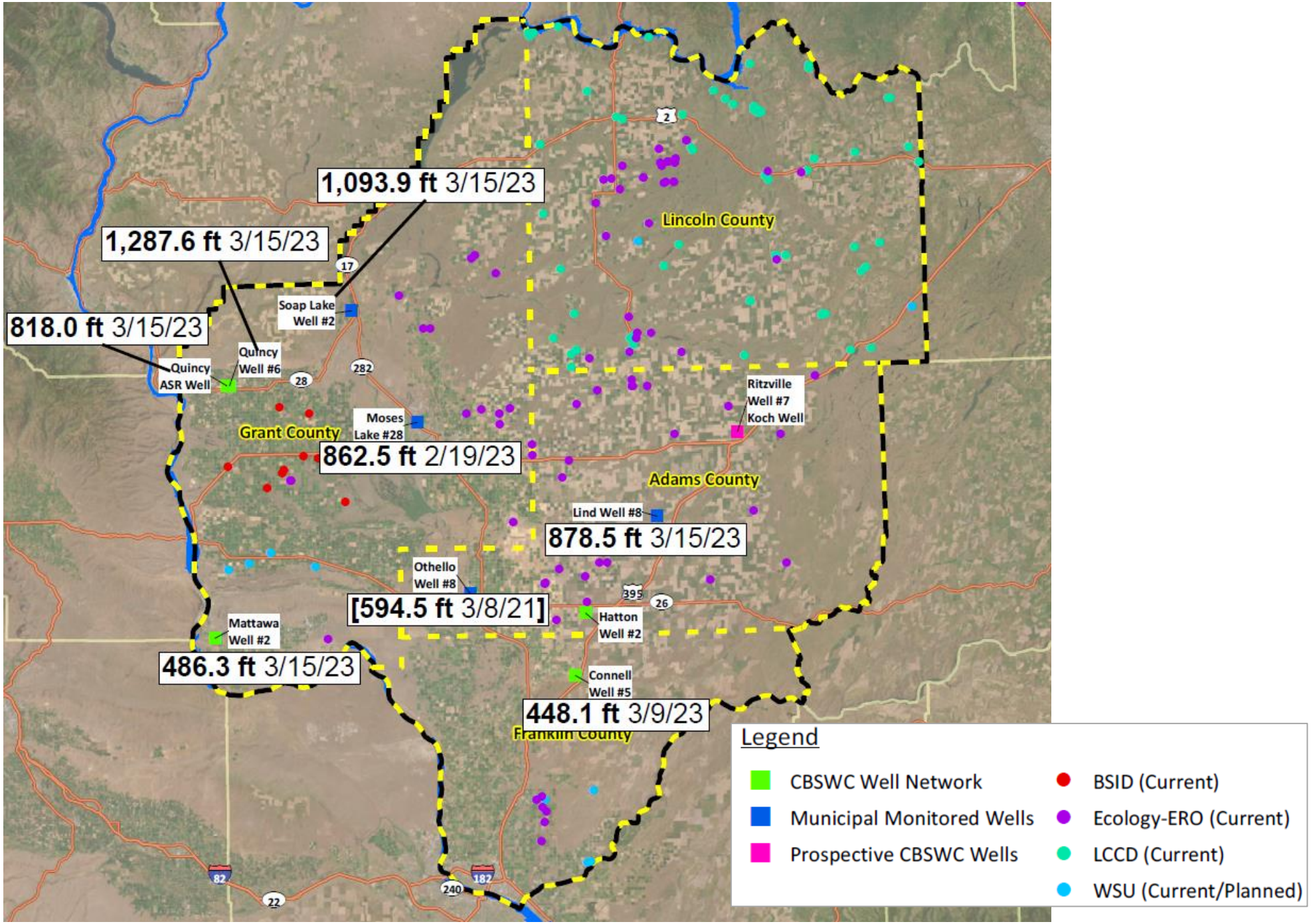
Preliminary Draft

Note: Graph excludes water level evelations recorded while respective pumps are on.

Water Level Elevation

Note: Graph excludes water level evelations recorded while respective pumps are on.

Preliminary Draft


1,093.9 ft 3/15/23
1,287.6 ft 3/15/23
818.0 ft 3/15/23
862.5 ft 2/19/23
878.5 ft 3/15/23
[594.5 ft 3/8/21]
486.3 ft 3/15/23
448.1 ft 3/9/23
Soap Lake Well #2
Quincy Well #6
Quincy ASR Well
Moses Lake #28
Ritzville Well #7 Koch Well
Lind Well #8
Othello Well #8
Hatton Well #2
Mattawa Well #2
Connell Well #5
Lincoln County
Grant County
Adams County
Franklin County
2
17
28
282
395
26
82
22
240
182
Legend
CBSWC Well Network
Municipal Monitored Wells
Prospective CBSWC Wells
BSID (Current)
Ecology-ERO (Current)
LCCD (Current)
WSU (Current/Planned)

U.S. Department of the Interior
Bureau of Reclamation
WaterSMART

Status of WaterSMART Program Funding Opportunities

Program	Eligible Applicants	Federal/Non-Federal Cost Share	Funding	Current Status
Water and Energy Efficiency Grants On-the-ground water management improvement projects, including projects that conserve water and address water supply reliability. Program Contact: Josh German jgerman@usbr.gov	Category A Applicants: States, Indian tribes, irrigation districts, water districts, or other organizations with water or power delivery authority. Category B Applicants: Nonprofit conservation organizations that are acting in partnership and with the agreement of an entity described above. Applicants must be located in the Western United States or United States Territories specifically: Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming (the "17 Western States"), Alaska, Hawaii, American Samoa, Guam, the Northern Mariana Islands, the Virgin Islands, or Puerto Rico.	Up to $500,000 for projects to be completed within two years; up to $2 million for projects to be completed within three years; and up to $5 million for large projects to be completed within three years. Non-Federal Cost Share: 50% or greater.	Reclamation's FY 2022 and FY 2023 spend plans for Bipartisan Infrastructure Law funding together include $310 million for these funding opportunities. Consistent with the Bipartisan Infrastructure Law, 25% of that amount is designated for Environmental Water Resources Projects that improve natural infrastructure. $38 million available for cooperative watershed management projects under the Bipartisan Infrastructure Law in FY 2022 and FY 2023 is also being allocated through the Environmental Water Resources Projects funding opportunity. These funding opportunities are also being used to allocate available FY 2023 appropriations. Each funding opportunity includes further details.	FY23 selections were announced on April 21, 2023. 84 projects were selected to receive $140 million in federal funding, including Bipartisan Infrastructure Law funding. FY24 Funding Opportunity is expected late August 2023.
Small-Scale Water Efficiency Projects Small water efficiency improvements that have been identified through previous planning efforts. Program Contact: Nickie McCann nmccann@usbr.gov		Up to $100,000 for projects to be completed within two years. Total project costs should generally be less than $225,000. Non-Federal Cost Share: 50% or greater.		FY22 selections were announced on January 5, 2023. 82 projects were selected to receive $7 million in Bipartisan Infrastructure Law funding. FY23 Funding Opportunity is expected September 2023.
Drought Resiliency Projects Funding for on-the-ground projects and modeling tools that will increase water reliability and improve water management. Program Contact: Sheri Looper slooper@usbr.gov		Up to $500,000 for projects to be completed within two years; up to $2 million for projects to be completed within three years; and up to $5 million for large projects to be completed within three years. Non-Federal Cost Share: 50% or greater.		FY23 selections were announced on December 22, 2022. 36 projects were selected to receive $84.7 million in Bipartisan Infrastructure Law funding. FY24 Funding Opportunity is expected July 2023.
Environmental Water Resources Projects Environmental Water Resources Projects, including water conservation and efficiency projects that result in quantifiable and sustained water savings and benefit ecological values; water management or infrastructure improvements to mitigate drought-related impacts to ecological values; and watershed management or restoration projects benefitting ecological values that have a nexus to water resources or water resources management. Program Contacts: Avra Morgan aomorgan@usbr.gov Robin Graber rgraber@usbr.gov	Applicant eligibility is as described above with the addition of Category C Applicants as described below. Category C Applicants: Nonprofit conservation organizations submitting an application for a project to improve the condition of a natural feature without a category A partner must demonstrate that entities described in Category A in the applicable service area have been notified of the project and do not object.	Up to $3 million for projects to be completed within three years. Total project costs should not exceed $6 million. Non-Federal Cost Share: 25 - 50%		A Funding Opportunity to allocate FY23 and Bipartisan Infrastructure Law funding was posted on grants.gov on January 24, 2023. Applications received by April 5, 2023, are currently under review. Selections are expected October 2023.
Applied Science Grants Projects to develop hydrologic information and water management tools and to improve modeling and forecasting capabilities. Program Contacts: Avra Morgan aomorgan@usbr.gov Nickie McCann nmccann@usbr.gov	States, Indian tribes, irrigation districts, water districts, universities, non-profit research institutions, organizations with water or power delivery authority, or non-profit organizations located in the 17 Western States, Alaska, Hawaii, American Samoa, Guam, the Northern Mariana Islands, the Virgin Islands, or Puerto Rico.	Up to $400,000 per agreement for a project that can be completed within two years. Non-Federal Cost Share: 25 - 50%		The FY23 Funding Opportunity was posted on grants.gov on June 28, 2023 and closes on October 17, 2023.
Aquatic Ecosystem Restoration Program Funding for the study, design and construction of aquatic ecosystem restoration projects that are collaboratively developed, have widespread regional benefits, and are for the purpose of improving the health of fisheries, wildlife, and aquatic habitat through restoration and improved fish passage. Program Contacts: Avra Morgan aomorgan@usbr.gov Irene Hoiby ihoiby@usbr.gov	Category A Applicants: States, Tribes, irrigation districts, or water districts, state, regional, or local authorities, agencies established under State law for the joint exercise of powers, and other entities or organizations that own a dam that is eligible for upgrade or modification located in the 17 Western States, American Samoa, Guam, the Northern Mariana Islands, or the Virgin Islands. Category B Applicants: Nonprofit conservation organizations that are acting in partnership with, and with the agreement of an entity described in Category A, with respect to a project involving land or infrastructure owned by the Category A entity.	Non-Federal Cost Share: 35%	Approximately $95 million available for aquatic ecosystem restoration projects under the Bipartisan Infrastructure Law in FY2023 and FY2024 (including funding for Section 40904 Multi-Benefit Projects To Improve Watershed Health) will be provided through this Funding Opportunity.	A Funding Opportunity to allocate FY23 and Bipartisan Infrastructure Law funding was posted on grants.gov on March 14, 2023. Proposals for the first application submission period were due June 1, 2023, and are currently being evaluated. Proposals for the second application submission period are due on January 24, 2024.
Cooperative Watershed Management Program - Phase I Watershed group development, watershed restoration planning, and watershed management project design. Program Contact: Robin Graber rgraber@usbr.gov	States, Indian tribes, local and special districts (e.g., irrigation and water districts), local governmental entities, and non-profit organizations that are located in the 17 Western States, Alaska, Hawaii, American Samoa, Guam, the Northern Mariana Islands, the Virgin Islands, or Puerto Rico.	Up to $200,000 may be awarded to an applicant per year, for a period of up to two years. Non-Federal Cost Share: No non-Federal cost-share required.	The FY23 Funding Opportunity is being used to allocate FY23 appropriations and Bipartisan Infrastructure Law funding.	FY22 selections were announced September 14, 2022. 21 projects were selected to receive $3.8 million in federal funding. FY23 Funding Opportunity to allocate FY23 appropriations and Bipartisan Infrastructure Law funding is expected August 2023.

Program	Eligible Applicants	Federal/Non-Federal Cost Share	Funding	Current Status
Planning and Project Design Grants Collaborative planning and design projects to support water management improvements, include the following activities: Water Strategy Grants (WSG): Projects to conduct planning to support water management solutions, such as water marketing, water conservation, drought resilience, and ecological resilience Project Design Grants (PDG): Projects to develop the final design of on-the-ground water management construction and restoration projects. Drought Contingency Planning (DCP): Projects to develop a new or update an existing Drought Contingency Plan. Program Contacts: WSG Irene Hoiby ihoiby@usbr.gov PDG Avra Morgan aomorgan@usbr.gov DCP Sheri Looper slooper@usbr.gov	Category A Applicants: States, Indian tribes, irrigation districts, water districts, or other organizations with water or power delivery authority. Category B Applicants: Nonprofit conservation organizations that are acting in partnership and with the agreement of an entity described above. Applicants must be located in the 17 Western States, Alaska, Hawaii, American Samoa, Guam, the Northern Mariana Islands, the Virgin Islands, or Puerto Rico. Note: Drought Contingency Planning funding is limited to Category A and applicants located in the 17 Western States, Hawaii, American Samoa, Guam, the Northern Mariana Islands, or the Virgin Islands.	Up to $400,000 for projects that can be completed within 3 years. Non-Federal Cost Share: 25 - 50%	Approximately $35 million in available program funds, including BIL funding (including funding for Section 40904 Multi-Benefit Projects To Improve Watershed Health) will be provided through this Funding Opportunity.	NEW FUNDING OPPORTUNITY: FY23 Funding Opportunity is expected in July 2023. Separate funding opportunities for Water Marketing and Drought Contingency Planning are consolidated into this Funding Opportunity as project types. In addition, this Funding Opportunity includes a new project type for final project design.
Title XVI Authorized Projects Funding for planning, design, and construction of specific congressionally authorized water recycling and reuse projects. Program Contact: Maribeth Menendez mmenendez@usbr.gov	Sponsors of water reclamation and reuse projects specifically authorized for funding under Title XVI of P.L. 102-575.	Federal funding is limited to 25% of the total project cost, up to $20 million, unless otherwise specified by Congress. Non-Federal Cost Share: 75% or greater.	Funding opportunities planned for August 2023 will be used to allocate up to $179 million in Bipartisan Infrastructure Law funding and a portion of $60 million in annual appropriations for this program.	FY22 selections were announced August 18, 2022. 25 water reuse projects were selected to receive $310 million in federal funding, including Bipartisan Infrastructure Law funding. The next Funding Opportunities are expected in August 2023.
Title XVI WIIN Act Water Reclamation and Reuse Projects Funding for planning, design, and construction of WIIN Act water recycling and reuse projects. Program Contact: Maribeth Menendez mmenendez@usbr.gov	Sponsors of water reclamation and reuse projects with completed feasibility studies that have been submitted to Reclamation for review. Entities must be located in the 17 Western States, Hawaii, American Samoa, Guam, the Northern Mariana Islands, or the Virgin Islands.	Federal funding is limited to 25% of the total project cost, up to $30 million. Non-Federal Cost Share: 75% or greater.		The next Funding Opportunity is expected in August 2023.
Desalination Construction Funding for planning, design, and construction of WIIN Act brackish groundwater and ocean desalination projects. Program Contact: Maribeth Menendez mmenendez@usbr.gov	Sponsors of desalination projects with completed feasibility studies that have been submitted to Reclamation for review. Entities must be located in the 17 western states.	Federal funding is limited to 25% of the total project cost, up to $30 million. Non-Federal Cost Share: 75% or greater.	The funding opportunity planned for August 2023 will be used to allocate over $30 million in Bipartisan Infrastructure Law funding and $12 million in annual appropriations for this program, along with other available program funding.	The next Funding Opportunity is expected in August 2023.
Large-Scale Water Recycling Projects Funding for planning, design, and construction of Large-Scale Water Recycling Projects with a total project cost greater than $500 million. Program Contact: Maribeth Menendez mmenendez@usbr.gov	Sponsors of water recycling projects with a total project cost greater than $500 million with completed feasibility studies that have been submitted to Reclamation for review. Entities must be located in the 17 Western States.	Federal funding is limited to 25% of the total project cost. Non-Federal Cost Share: 75% or greater.	The FY23 BIL spend plan includes $50 million for these projects.	FY23 Funding Opportunity to allocate Bipartisan Infrastructure Law funding is expected late July 2023.
Water Recycling and Desalination Planning Funding for planning and pre-construction activities, including the development of water recycling and desalination feasibility studies, to facilitate project development under the Title XVI Program, the Desalination Construction Program, and the Large-Scale Water Recycling Program. Program Contact: Maribeth Menendez mmenendez@usbr.gov	States, Indian Tribes, irrigation districts, and water districts; and any state, regional, or local authority located in the 17 Western States, Hawaii, American Samoa, Guam, the Northern Mariana Islands, or the Virgin Islands.	Non-Federal Cost Share: 50% or greater for planning and pre-construction activities for Title XVI and Desalination Construction projects. Non-Federal Cost Share: 75% or greater for planning and pre-construction activities for Large-Scale Water Recycling Projects with an anticipated total project cost greater than $500 million.	Approximately $30 million in available program funds will be provided through this Funding Opportunity	FY23 Funding Opportunity was posted on grants.gov on December 23, 2022. Applications received by February 28, 2023, are currently under review. Selections are expected late summer 2023.

This table is intended as a summary of programs including some basic program requirements.
Refer to each Notice of Funding Opportunity for details on program requirements, eligible projects, eligible applicants, and cost share.
For the U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Marianan Islands, all non-federal cost-share requirements are waived per Public Law 96-205, title VI, section 601, as amended, in conjunction with 48 U.S.C. § 1469a(d).