Palouse Basin Regional Planning

Eastern Washington Water Law Conference
Spokane, WA

May 15, 2024

Robin Nimmer, PhD, LG, PG

Alta Science & Engineering, Inc.

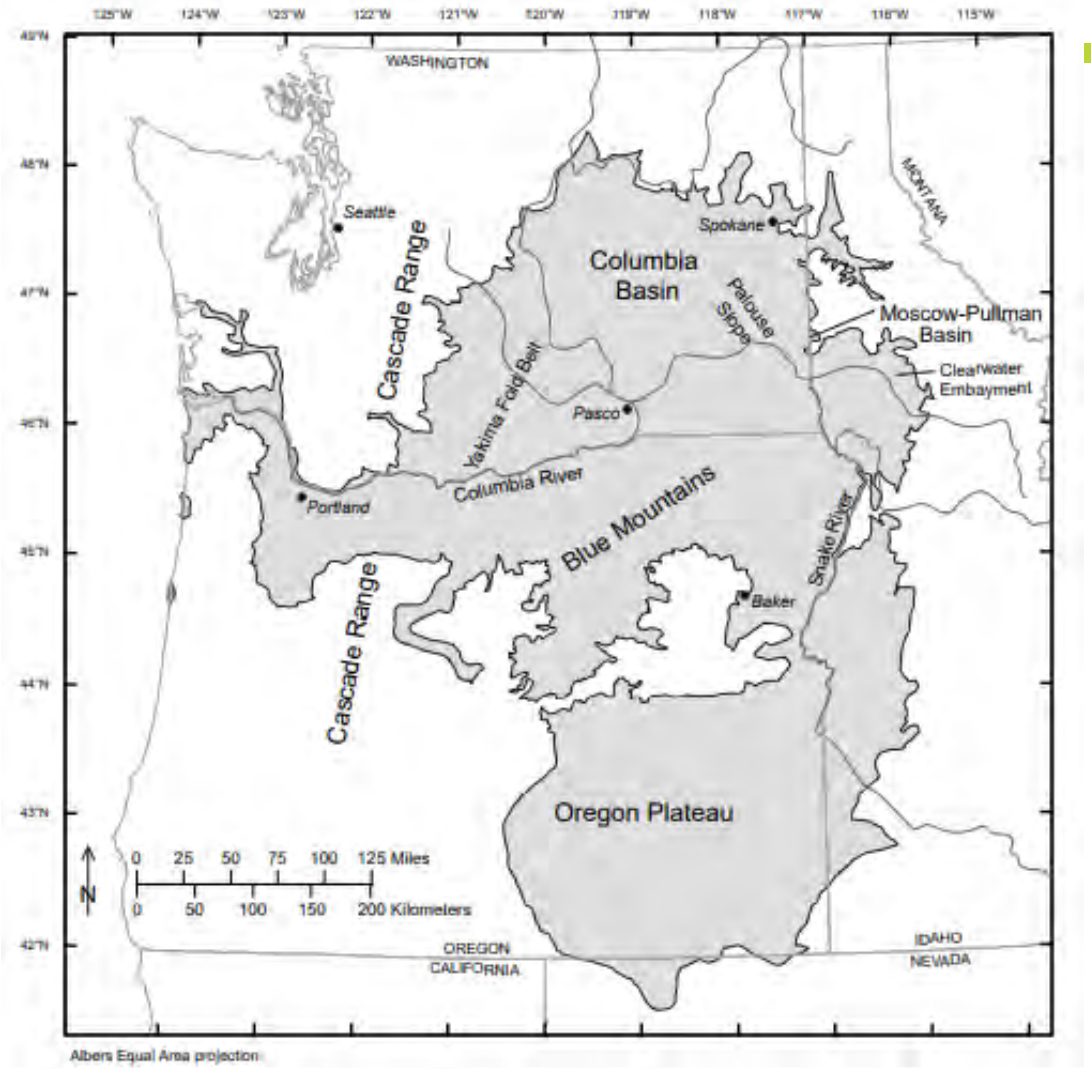
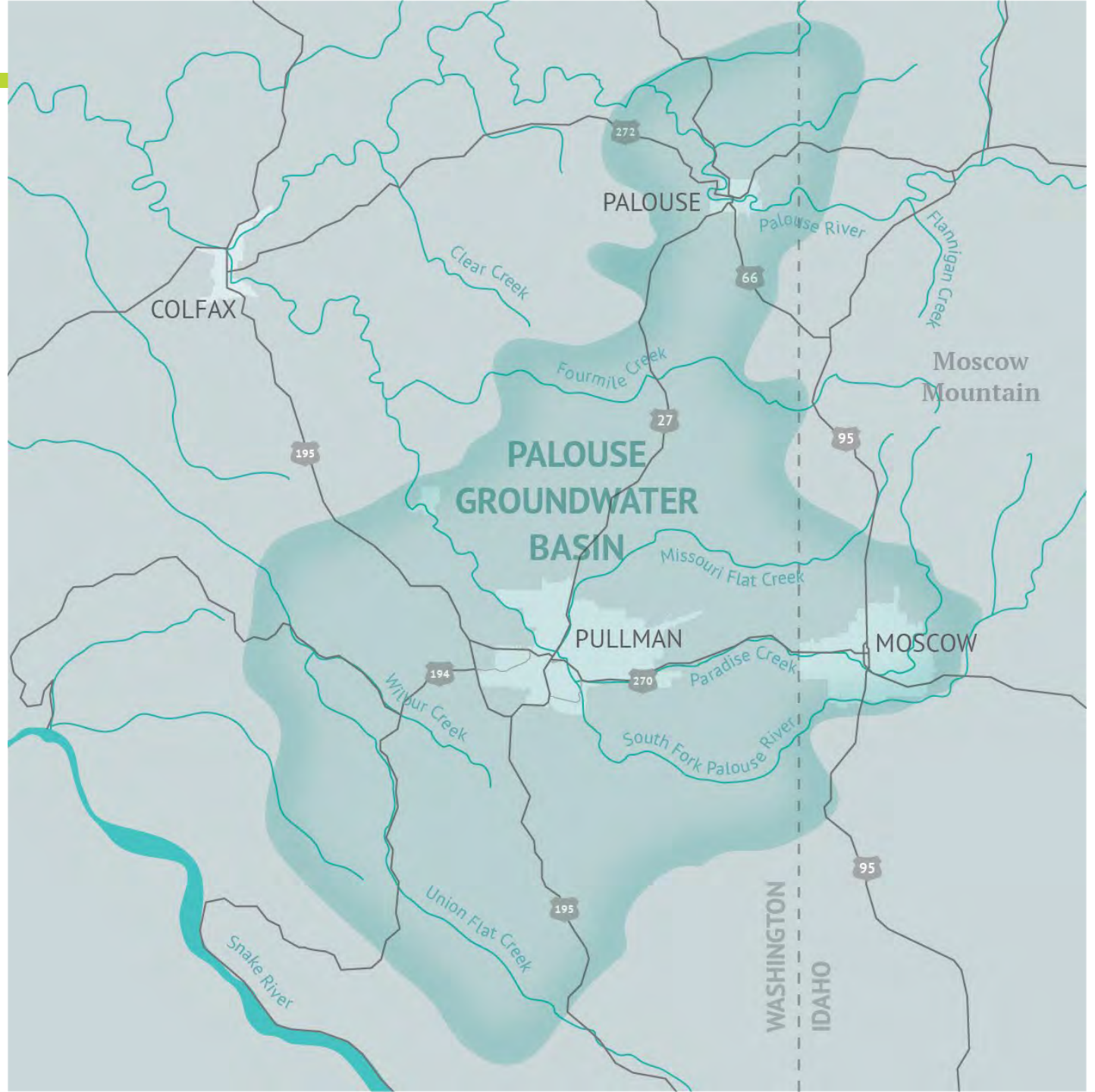
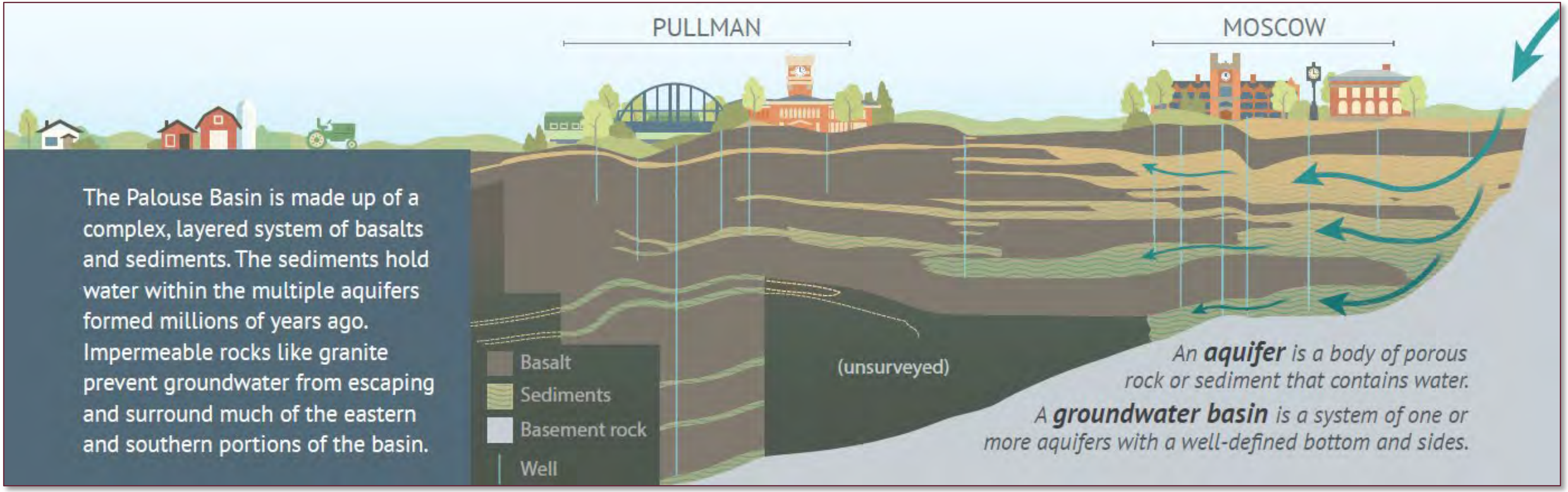


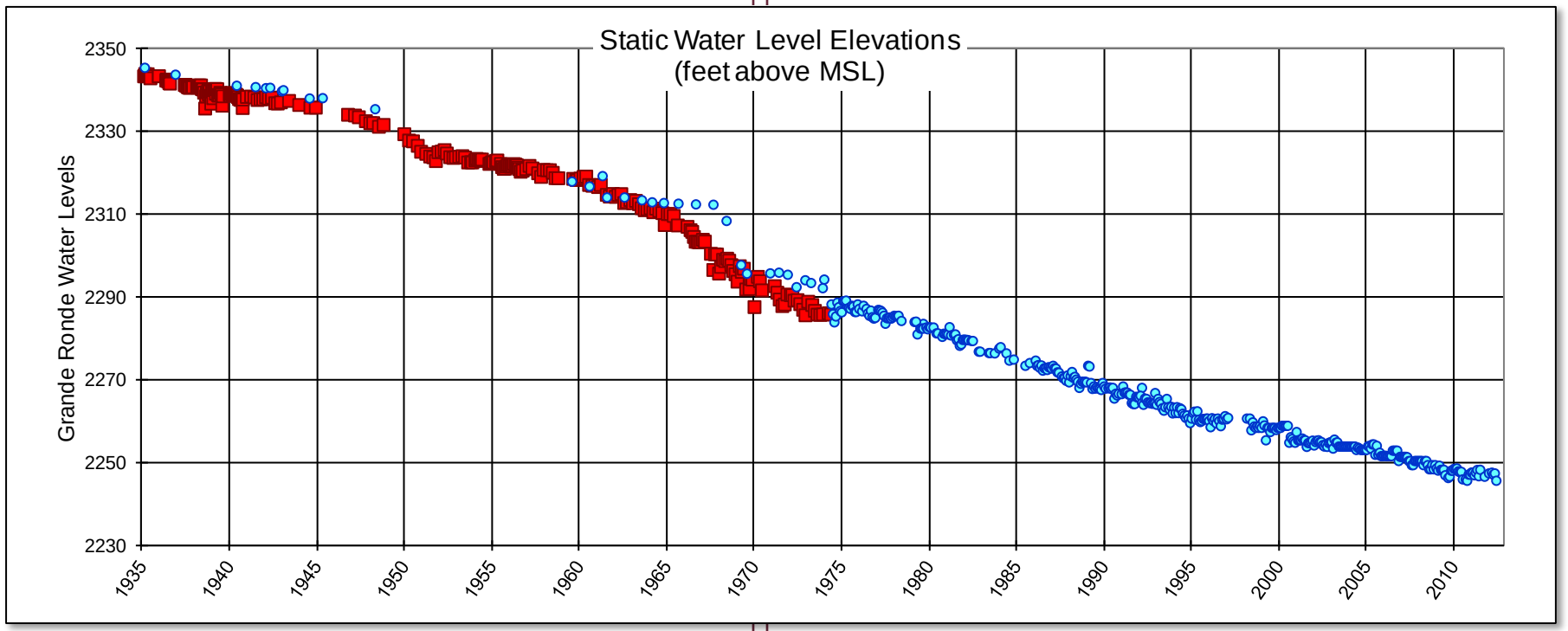
Figure 49. Map showing the Columbia River flood basalt province and areal extent of the Columbia River Basalt Group (gray, modified from Reidel and others, 2013 and Ludington and others, 2006 [2007]) and other major physiographic features (from Bush and others, 2016, Figure 1.)

Bush et al. 2018 ttps:// www.idahogeology.org/ product/t-18-3




PULLMAN
MOSCOW
The Palouse Basin is made up of a complex, layered system of basalts and sediments. The sediments hold water within the multiple aquifers formed millions of years ago. Impermeable rocks like granite prevent groundwater from escaping and surround much of the eastern and southern portions of the basin.
Basalt
Sediments
Basement rock
Well
(unsurveyed)
An aquifer is a body of porous rock or sediment that contains water.
A groundwater basin is a system of one or more aquifers with a well-defined bottom and sides.

1890 Water Level



2023 Water Level

PALOUSE BASIN AQUIFER committee

CITY OF Pullman WASHINGTON

Whitman County

CITY OF MOSCOW 1887 IDAHO

LATAH COUNTY 1888 IDAHO

DEPARTMENT OF ECOLOGY State of Washington

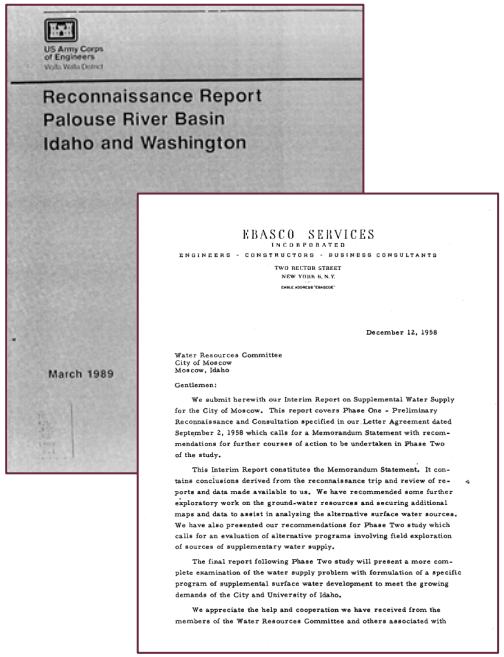
WASHINGTON STATE UNIVERSITY

IDAHO DEPARTMENT OF WATER RESOURCES

University of Idaho

WATER SUPPLY ALTERNATIVES TIMELINE

1958 – 2013


US Army Corps of Engineers
Walla Walla District

Reconnaissance Report
Palouse River Basin
Idaho and Washington

March 1989

EBASCO SERVICES
INCORPORATED
ENGINEERS - CONSTRUCTORS - BUSINESS CONSULTANTS
TWO RECTOR STREET
NEW YORK 6, N.Y.

December 12, 1958

Water Resources Committee
City of Moscow
Moscow, Idaho

Gentlemen:

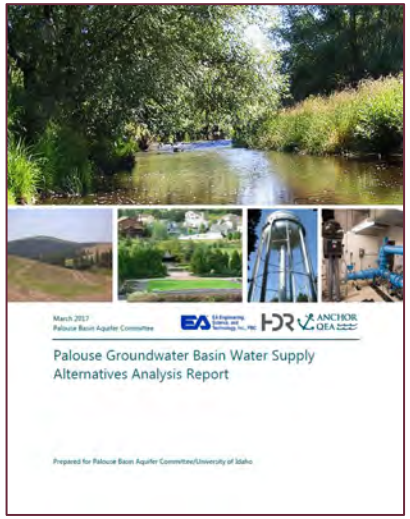
We submit herewith our Interim Report on Supplemental Water Supply for the City of Moscow. This report covers Phase One - Preliminary Reconnaissance and Consultation specified in our Letter Agreement dated September 2, 1958 which calls for a Memorandum Statement with recommendations for further courses of action to be undertaken in Phase Two of the study.

This Interim Report constitutes the Memorandum Statement. It contains conclusions derived from the reconnaissance trip and review of reports and data made available to us. We have recommended some further exploratory work on the ground-water resources and securing additional maps and data to assist in analyzing the alternative surface water sources. We have also presented our recommendations for Phase Two study which calls for an evaluation of alternative programs involving field exploration of sources of supplementary water supply.

The final report following Phase Two study will present a more complete examination of the water supply problem with formulation of a specific program of supplemental surface water development to meet the growing demands of the City and University of Idaho.

We appreciate the help and cooperation we have received from the members of the Water Resources Committee and others associated with

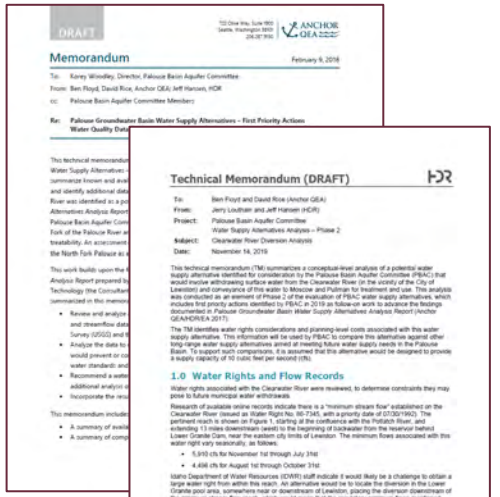
2015 - 2017


March 2017
Palouse Basin Aquifer Committee

Palouse Groundwater Basin Water Supply Alternatives Analysis Report

Prepared for Palouse Basin Aquifer Committee/University of Idaho

2017 – 2020


DRAFT

Memorandum

February 9, 2016

Technical Memorandum (DRAFT)

To: Ben Floyd and David Roe (Anchor QEA)
From: Jerry Louthain and Jeff Hansen (HDR)
Project: Palouse Basin Aquifer Committee
Water Supply Alternatives Analysis – Phase 2
Subject: Clearwater River Diversion Analysis
Date: November 14, 2019

1.0 Water Rights and Flow Records

2020 - 2022


Alta Science & Engineering, Inc.

FINAL REPORT

Prepared For:
Palouse Basin Aquifer Committee

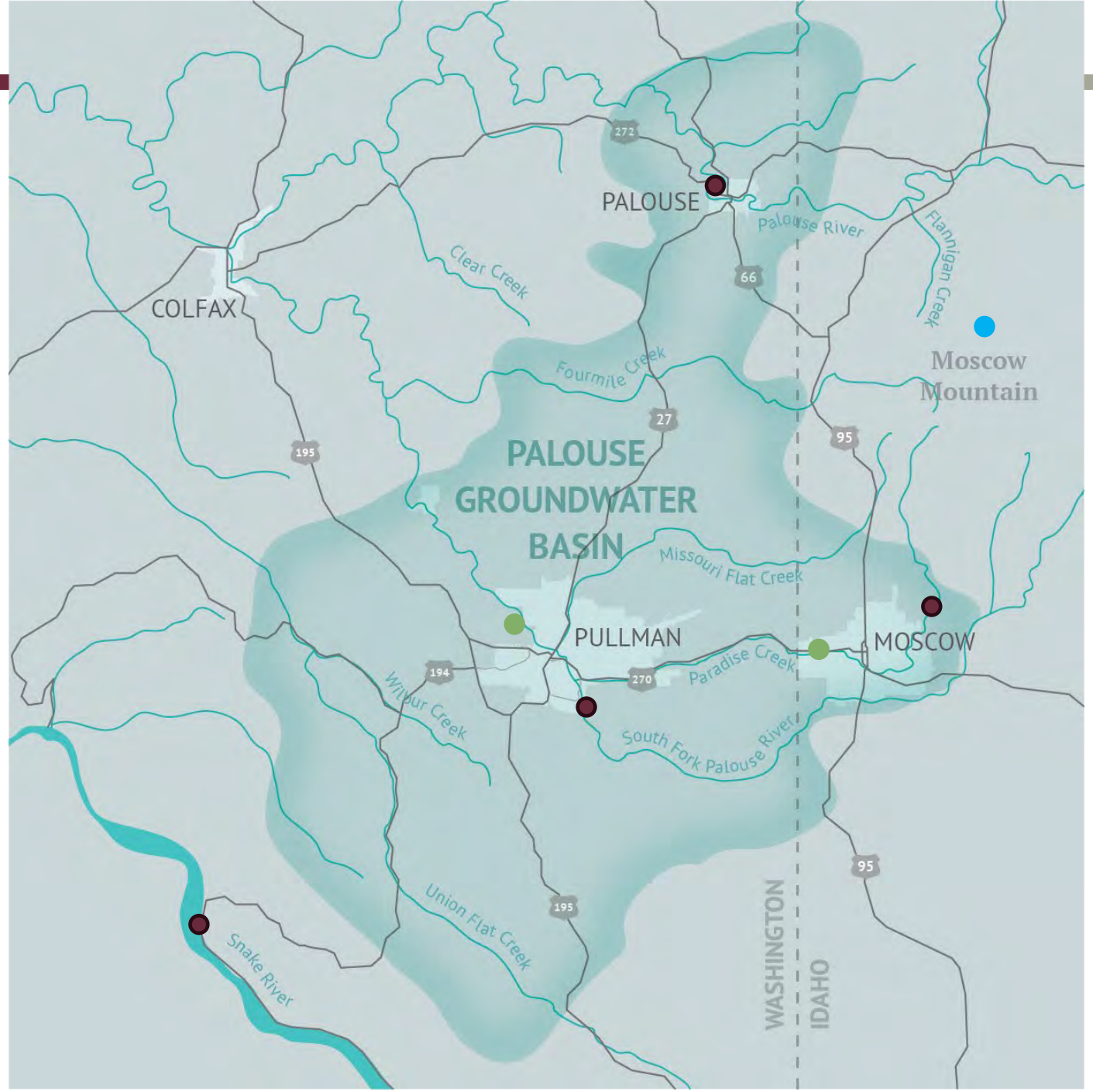
Palouse Groundwater Basin Water Supply Alternatives Report

Jacobs

August 13, 2022

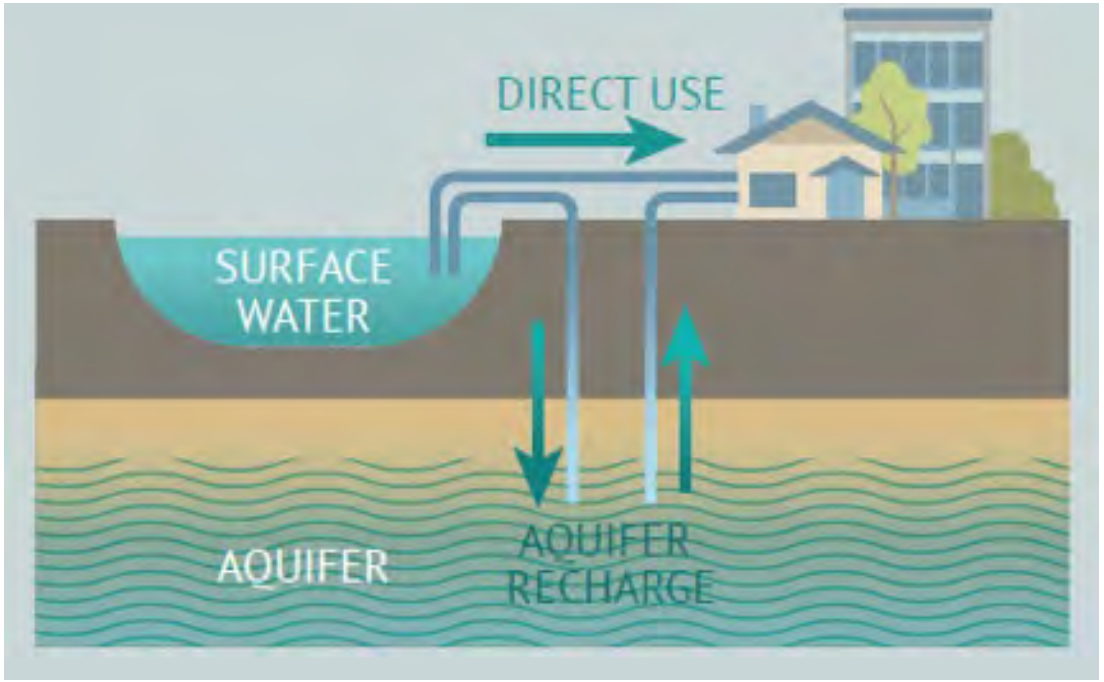
PALOUSE BASIN AQUIFER committee

Alta Science & Engineering, Inc.



- Diversion
- Treated wastewater
- Reservoir

SOURCE USES



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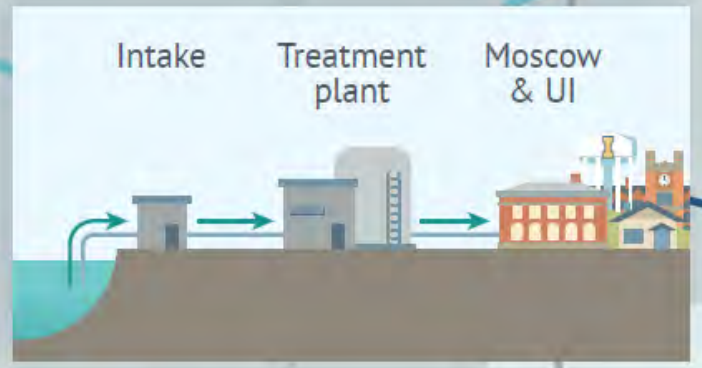
Paradise/South Fork Direct Use:

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

Paradise Creek

MOSCOW

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.

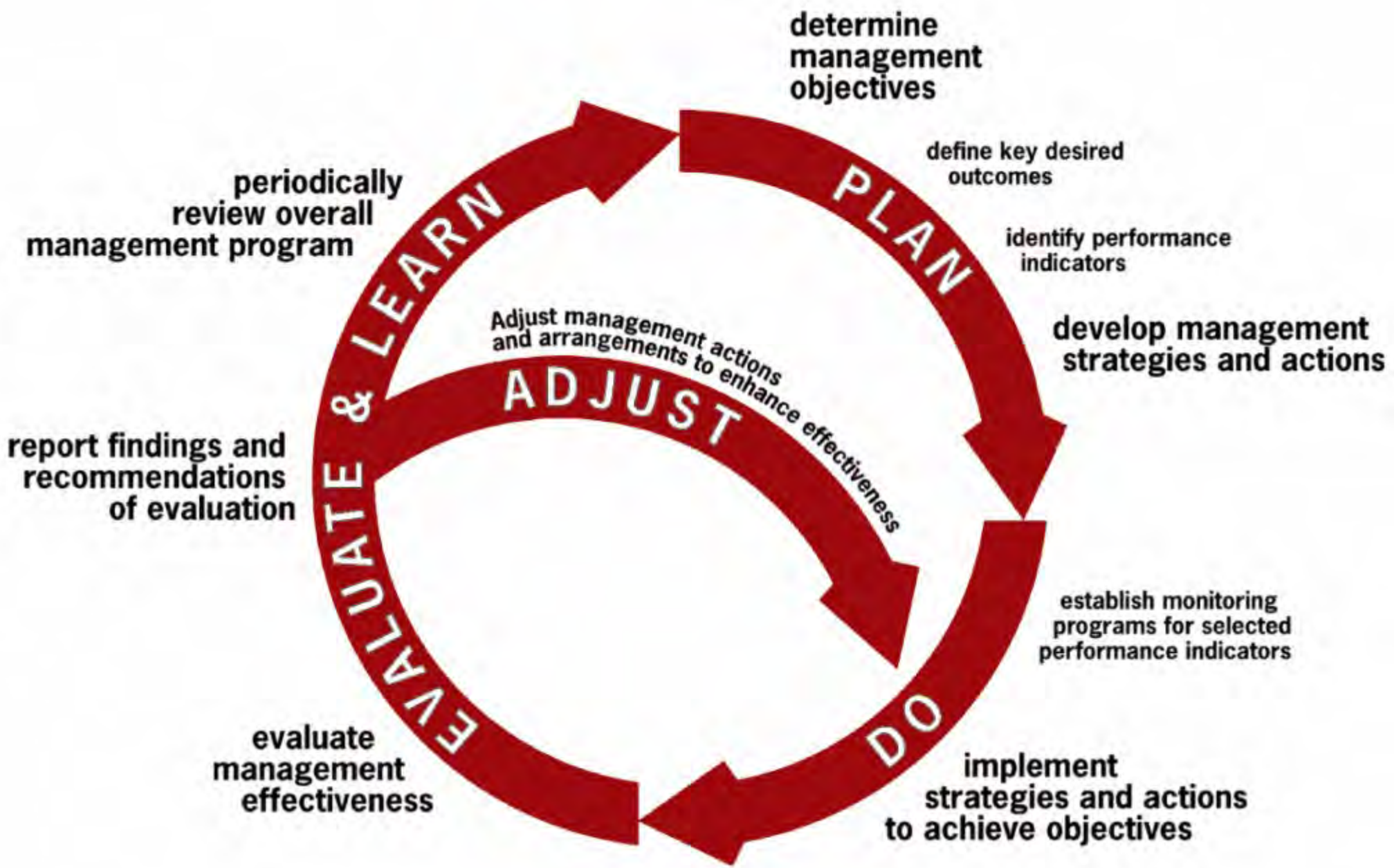
South Fork Palouse River

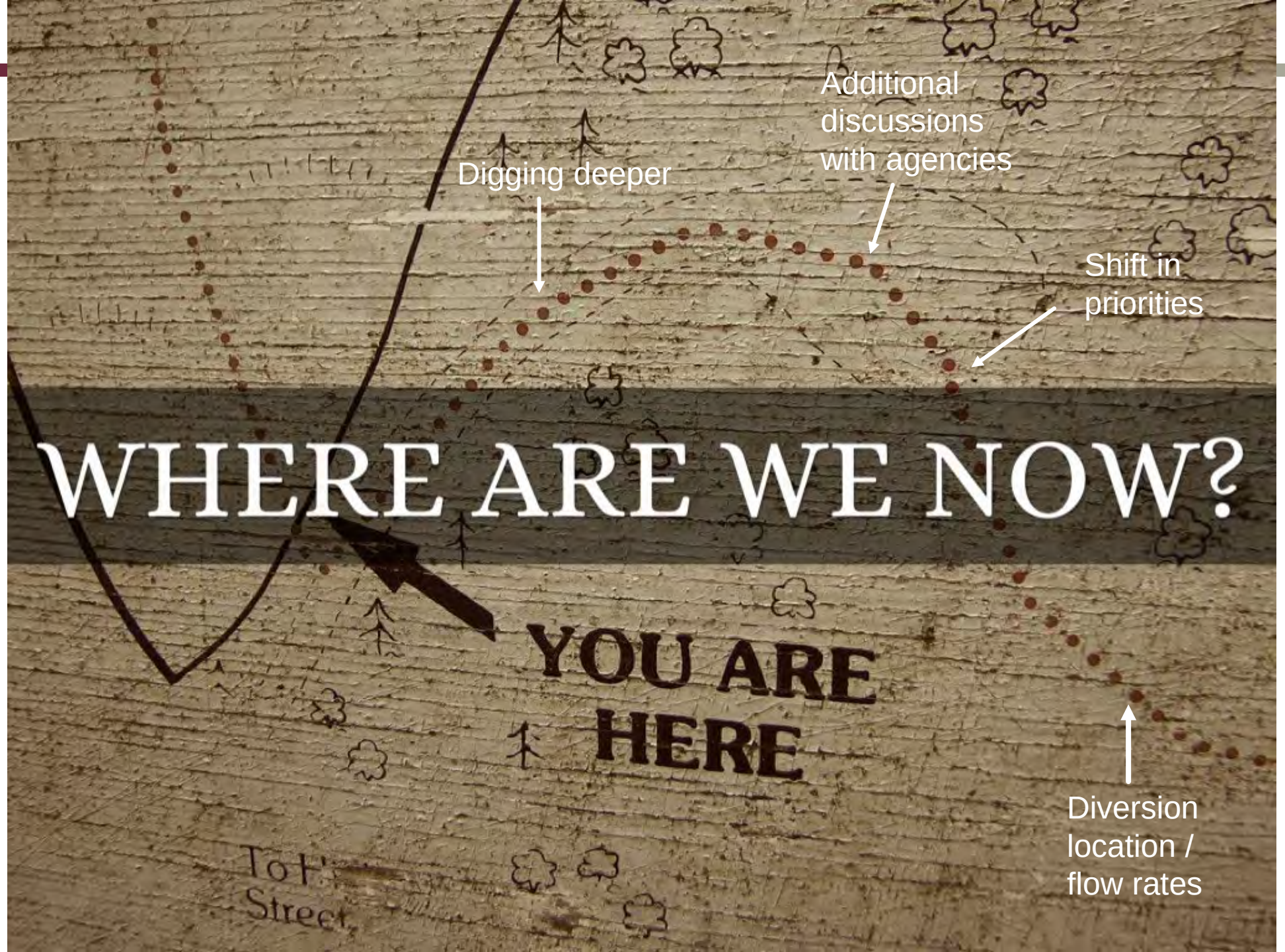
Direct Use of the South Fork of the Palouse River
Surface water would be diverted from the South Fork of the Palouse River, treated, and then conveyed into the existing municipal water system for Pullman and WSU.

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 Paradise/South Fork Direct Use project, visit palousebasin.org

PALOUSE BASIN AQUIFER committee

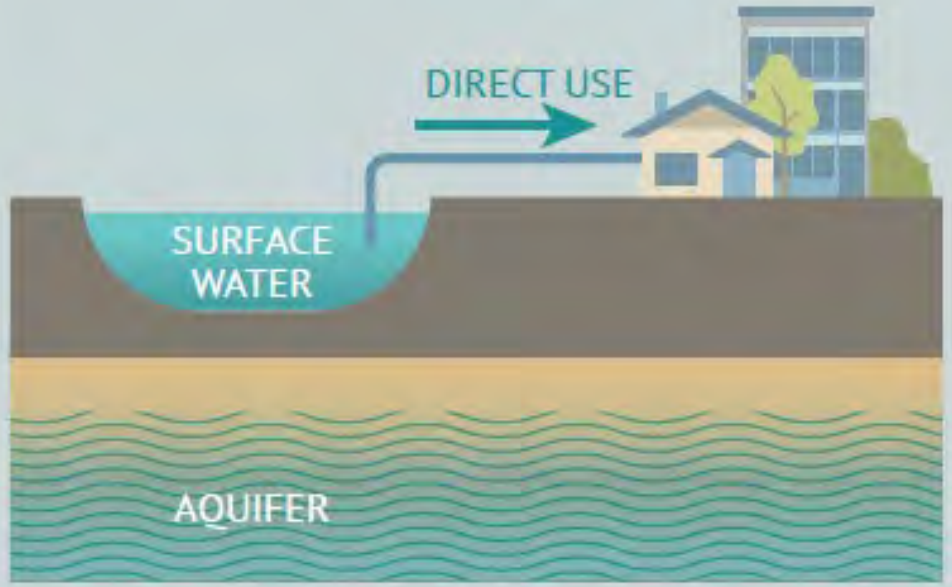

determine management objectives
define key desired outcomes
identify performance indicators
develop management strategies and actions
PLAN
establish monitoring programs for selected performance indicators
implement strategies and actions to achieve objectives
DO
evaluate management effectiveness
EVALUATE & LEARN
periodically review overall management program
report findings and recommendations of evaluation
ADJUST
Adjust management actions and arrangements to enhance effectiveness

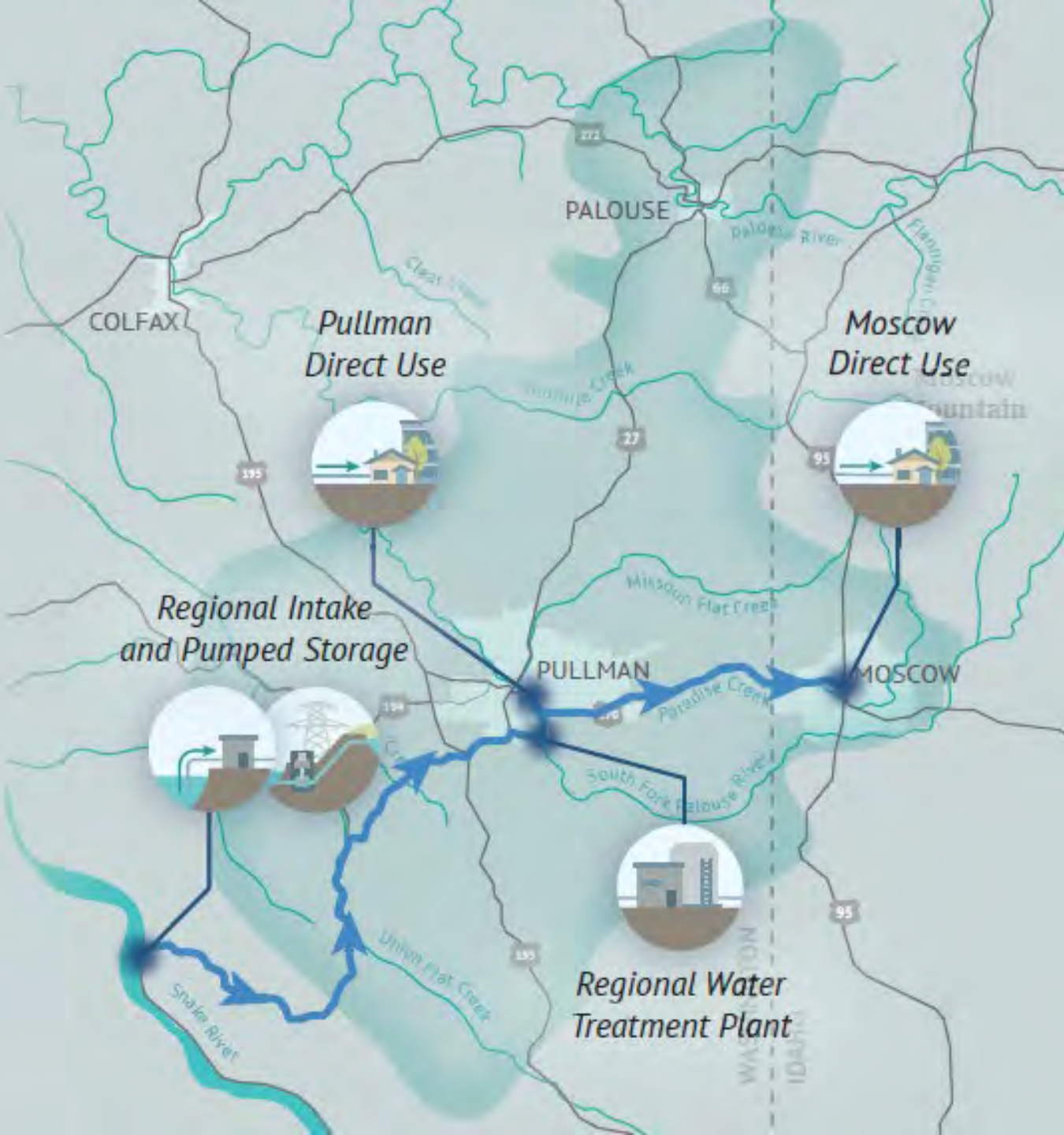

Additional discussions with agencies
Digging deeper
Shift in priorities
WHERE ARE WE NOW?
YOU ARE HERE
Diversion location / flow rates

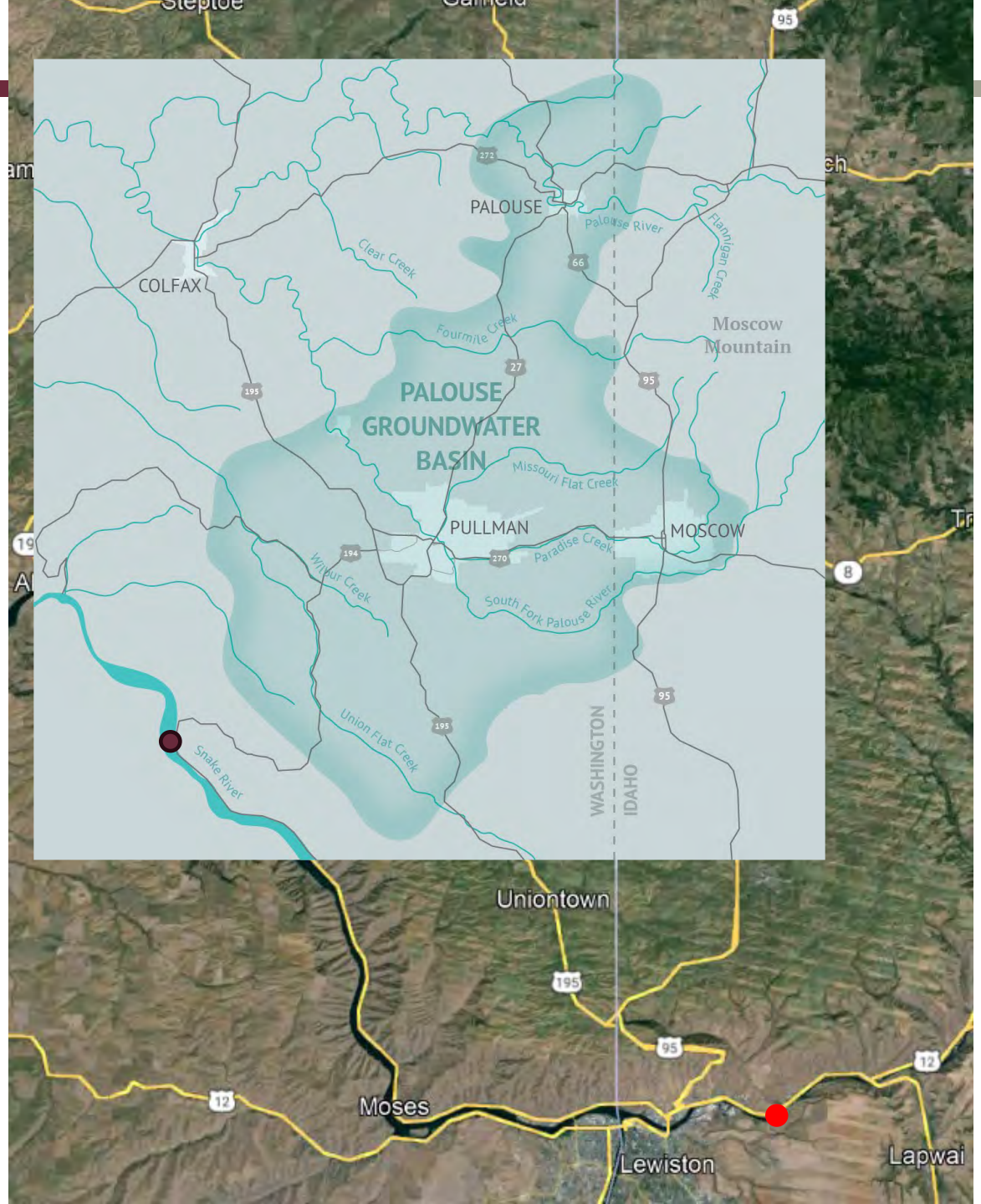
Alternative 1

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.





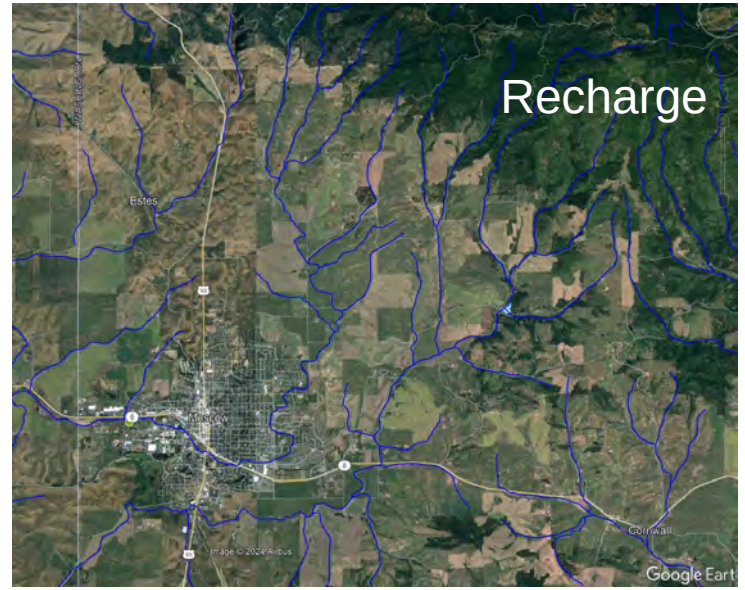

PALOUSE
COLFAX
PULLMAN
MOSCOW
Moscow Mountain
PALOUSE GROUNDWATER BASIN
Palouse River
Clear Creek
Flannigan Creek
Fourmile Creek
Missouri Flat Creek
Paradise Creek
South Fork Palouse River
Wilbur Creek
Union Flat Creek
Snake River
WASHINGTON
IDAHO
Uniontown
Moses
Lewiston
Lapwai

Water Rights

Water Conservation

Diversion Location & Water Treatment

Recharge



CONSIDERATIONS

- Multi city, university, county, state
- Multiple agencies involved
- Differing priorities
- Advocate needs
- Fish in the pond
- Funding and fairness
- Water rights
- Moving water across state line
- Source-use decisions


Q
A