AGENDA

IDAHO WATER RESOURCE BOARD

Aquifer Stabilization Committee No. 3-26
Thursday, July 23, 2026
9:00 a.m. (MT) / 8:00 a.m. (PT)

Water Center
Conference Rooms 602 C – D
322 E. Front Street
BOISE

Livestream available at https://www.youtube.com/@iwrb

1. Introductions and Attendance
2. Eastern Snake Plain Aquifer Recharge Infrastructure *
3. Other Items
4. Adjourn

Committee Members:
Chair Dean Stevenson, Al Barker, Brian Olmstead, and Pat McMahon.

Finance Committee No. 5-26
Begins upon adjournment of the Aquifer Stabilization Committee No. 3-26

1. Introductions and Attendance
2. Flood Grant Awards*
3. Idaho Water Resource Board Facility Maintenance Fund *
4. Fiscal Year 2027 ARPA Spending Plan*
5. Regional Water Sustainability Project Priority List Applications *
6. Other Items
7. Adjourn

Committee Members:
Chair Jo Ann Cole-Hansen, Jeff Raybould, Dean Stevenson, Dale Van Stone, and Marc Gibbs.

***Action Item: A vote regarding this item may be made at this meeting. Identifying an item as an action item on the agenda does not require a vote to be taken on the item. **Americans with Disabilities Act**: If you require special accommodation to attend, participate in, or understand the meeting, please contact the Department no later than five days before the meeting. To request an accommodation, please send an email to milin.ream@idwr.idaho.gov or call (208) 287-4800.

MEMO

To: IWRB Aquifer Stabilization Committee (Committee)
From: Mackenzie Kienholz, IDWR Hydrogeologist
Date: July 20, 2026
Subject: ESPA Managed Recharge – Snake River Valley Irrigation District Sugar Factory Recharge Basin Proposal

REQUESTED ACTION: The Idaho Water Resource Board (IWRB) will consider funding the Snake River Valley Irrigation District Recharge Basin Proposal.

The Snake River Valley Irrigation District submitted a proposal for the construction of a recharge basin referred to hereafter as the Sugar Factory Basin. The development of this basin would support the IWRB goal of recharging 350,000 acre-feet on an average annual basis. The following memo provides a summary of the proposal and a staff review of the proposed recharge basin.

I. Project Proposal

The Snake River Valley Irrigation District (SRVID) proposes to construct an 85-acre managed aquifer recharge infiltration basin located approximately one mile southeast of Shelley, Idaho (Figure 1) at a total cost of $8,070,000. The proposal includes purchasing a 119-acre parcel and easements for an underground pipeline through two adjacent parcels (Figure 2). The parcel is owned by SLT Properties, LLC, which has agreed to sell the 119-acre parcel for its appraised value of $2,676,905. SRVID proposes to excavate the topsoil across the basin footprint and use the material to construct berms around the basin perimeter. The proposal also includes constructing a delivery pipeline, installing two monitor wells, and purchasing seed and irrigation equipment for the berms.

The subsurface geology of the site consists of approximately two feet of topsoil overlying sand and gravel, based on a test pit at the proposed basin location. Excavation would be completed to a depth of 2.5 to 3.0 feet over 85 acres of the 119-acre parcel. Approximately 370,000 cubic yards of material would be excavated and used to construct berms surrounding the basin. The berms are proposed to be 9 feet high and 150 feet wide along most of the basin perimeter, and 200 feet wide near parcels with domestic residences. Excavating to a depth of 2.5 to 3.0 feet over the basin footprint will ensure the full topsoil horizon is removed, maximize basin depth, adhere to Bonneville County's recommendations for berms (10-foot height maximum), and eliminate the need to haul off excavated material. The berms will be designed by a licensed third-party professional engineer. The proposal includes costs associated with planting seed on the berms, as is required by Bonneville County. No vegetation will be planted on the basin floor. The proposal also includes a project management fee to compensate a Snake River Valley Irrigation District board member who serves on a volunteer basis. The project management cost was calculated using an estimated 350 hours of project management time at a rate of $71.50 per hour.

Water would be delivered to the basin via the west branch of the Snake River Valley Canal, which is located approximately 0.5 miles to the west of the basin. SRVID proposes constructing 3,080 feet of pipeline to divert water from the canal to the basin. Construction of the pipeline will require easements from three landowners and installation under a roadway. The proposal cost includes landowner compensation for easements of $15,000 for each of the neighboring landowners and $17,000 for SLT Properties, LLC. Water delivered through the Snake River Valley Canal is diverted from the Snake River approximately four miles north of the site. SRVID estimates that approximately 200 cubic feet per second (cfs) could be delivered during the non-irrigation season, and approximately 75 cfs could be delivered during the irrigation season when water is available. Based on the geology of the site and a single-stage infiltration test performed at a site near Ririe, the infiltration rate of the site is estimated to be between 73 and 106 cfs, for an average of 90 cfs (179 acre-feet (AF) per day). However, delivery to the site will be limited to 87 cfs (173 AF/day) by the capacity of the proposed pipeline.

The breakdown of requested funds is as follows:

Table 1. Project Budget

Expense Category	Estimated Cost
Land Purchase (119 acres at $22,495 per acre)	$2,676,905
Land Appraisal & Survey	$6,000
Excavation (370,000 cubic yd at $4.15 per cubic yd)	$1,535,500
Delivery Pipeline (3,080 linear feet at $660 per linear foot)	$2,032,800
Road Repaving for Pipeline	$10,000
Easement Payments	$47,000
Check, Outlet, Inlet Structure, Measuring Device & Pipeline Engineering	$822,500
Engineering Consultant for Cut & Fill	$10,000
Two Monitoring Wells	$70,000
Berm Seed & Irrigation Equipment	$100,000
SRVID Project Management Fee*	$25,000
Contingency (~10%)	$734,295
Total Cost	**$8,070,000**

**To be paid upon project completion.*

To estimate recharge costs, a delivery rate of 87 cfs (173 AF/day) was assumed for the entire recharge period. Under this assumption, the estimated cost of recharge is $28 per acre-foot. This value is based on the estimated total acre-feet of recharge over a 50-year period and includes the $7.50 wheeling fee. Full calculation details are provided in the appendix.

Upon completion of the site, the IWRB would have the first right of use for IWRB water rights, when in priority, for a period of 50 years.

II. MAR Site Summary

Est. Recharge Capacity:	87 cfs	Operator:	Snake River Valley I.D.
Basin Size:	85 acres	Ownership:	Private
5-yr Retention:	19%	50% Response Time:	19 months
Depth to Water:	60-150 ft	Delivery System:	Snake River Valley Canal

Canal Avg. Diversion Rate: Snake River Valley Canal averaged 380 cfs in May 2025 and 391 cfs in May 2026 and had a maximum diversion rate of 603 cfs (July 2019) in the past 10 years.

The Eastern Snake Plain Aquifer Model (ESPAM) 2.2 and Eastern Snake Plain Aquifer Model Transfer Spreadsheet (ETRAN) 3.4 were used to determine the 5-year retention, 50% response time, and percent return to the various reaches of the Snake River. The water recharged at this site would primarily return to three reaches of the Snake River: Shelley to Near Blackfoot reach (53%), Near Blackfoot to Neeley reach (32%), and Heise to Shelley (11%). The time required for 50% of the recharged water to be discharged to the Snake River is approximately 19 months.

III. Hydrogeology Summary

The subsurface geology, based on nearby well logs, generally consists of mixed sand and gravel underlain by basalt (Table 2). The alluvial sand and gravel layer is primarily present to the south and west (direction of groundwater flow), extending in depth from 35 feet to more than 150 feet below ground surface over a distance of approximately 0.5 miles. Underlying the alluvial layer, and to the northeast of the site where well logs indicate no alluvial layer is present, is basalt with indications of fractures. The basalt contains the water table, indicating that perching or charge water under the recharge site is unlikely to occur (Figures 4-6). The three well logs closest to the site (not included in Figures 4–6) indicate that the proposed basin is underlain by at least 35 feet of sand and gravel, which in turn overlies basalt.

Table 2. Generalized Geology Below Site

Depth (feet Below Ground Surface)	Subsurface Geology
0 – 5	Soil
5 – 100	Alluvium (Sand & Gravel)
100 - 200+	Fractured Basalt

The water table is generally observed at 90-130 feet below ground surface. However, wells in the area show seasonal fluctuations with the water table approximately 60 feet below ground surface.

The average linear groundwater velocity was calculated to be approximately 15.7 feet/day. The resulting estimated 1-, 3-, and 6-month time of travel for recharge water at the site and the number of domestic residences within each zone are summarized in Table 3 and visualized in

Figure 3. Residences within the City of Shelley's municipal place of use were not included in these estimates.

Table 3. Estimated Time of Travel and Domestic Residences Near Site

Time of Travel Zone	Estimated Travel Distance	Estimated Number of Domestic Residences
1-month	471 ft.	5
3-month	1,413 ft.	10
6-month	2,826 ft.	40

The average linear groundwater velocity was calculated utilizing the following equation,

$$v = \frac{K}{n_e}\frac{dh}{dl}$$

where v is the average linear groundwater velocity, K is the horizontal hydraulic conductivity, dh/dl is the hydraulic gradient, and n is the porosity. Based on groundwater contours from the Idaho Department of Water Resources (IDWR) 2023 Synoptic Well Measurement (IDWR, 2023), the hydraulic gradient of the site is estimated to be 0.0014 feet per foot towards the west-southwest (Figure 1). Hydraulic conductivity values were obtained from ESPAM (IDWR, 2021). The calibrated hydraulic conductivities in the nine model cells surrounding the site have an average value of 879.5 feet/day. Due to the characteristics of the Eastern Snake Plain Aquifer (ESPA), for this analysis it was assumed that specific yield values could be considered representative of effective porosity. The specific yield value from the site's ESPAM cell was used in place of effective porosity (IDWR, 2021). The specific values used to calculate the 1-month, 3-month, and 6-month travel times from the site are listed in Table 4.

Table 4. Parameters Used in Time of Travel Calculations

Substrate	Horizontal Hydraulic Conductivity	Hydraulic Gradient	Effective Porosity (Specific Yield)
ESRP Basalts	879.5 ft/day	0.0014 ft/ft	0.078443

IV. Site Vicinity

The primary land uses immediately surrounding the site are residential and irrigated crops. The closest domestic residence downgradient of the site is immediately adjacent to the site and would possibly only be separated by the 200-foot-wide berm (Figure 3). There are also several domestic residences within 0.25 miles to the northeast, southeast, southwest, west, and northwest of the site. This site would rely on constructed berm setbacks to separate the basin from nearby domestic residences.

To obtain an approved groundwater monitoring plan from the Idaho Department of Environmental Quality (IDEQ) or to permit an injection well from the Idaho Department of Water Resources (IDWR) Underground Injection Well program (UIC), a review of facilities and potential areas of concern is typically required. Most potential contaminants in the vicinity of the site are due to its proximity to the City of Shelley, which is upgradient of the site. A review of IDEQ's Source Water Assessment and Protection map showed the following potential sources of contamination within a 2-mile radius of the proposed site:

Upgradient (northeast of site):

- Four locations with construction stormwater permits within one mile to the north
- One general waste site is approximately one mile to the north
- Approximately 13 Underground Storage Tank sites to the north/northwest
- Two RCRA Sites to the north/northwest

Cross or downgradient (southwest of site) is primarily agricultural. Potential contaminants within two miles include:

- One gravel pit approximately 1.1 miles to the southwest
- One dairy, approximately two miles to the southwest

An additional water quality consideration for both IDEQ and the UIC Program is the locations of Public Water Systems (PWS) near the site. This site is within the 3-year time-of-travel zone of one or more wells associated with the following PWS:

- City of Basalt (PWS # 6060004)
- City of Firth (PWS # 6060016)

There are eight source water locations within two miles of the site associated with the following PWS. All eight source locations are north or northwest (up/cross gradient) of the site, the closest being the LDS Camp well, approximately 2,000 ft north of the site.

- LDS Camp Pasa La Coma (PWS # 6060072)
- City of Shelley (PWS # 6060071)
- Basic American Food (PWS # 6060020)
- GPOD of Idaho (PWS # 6060102)

V. References

Ackerman, D., 1995. USGS Water-Resources Investigations Report 94-4257: Analysis of Steady-State Flow and Advective Transport in the Eastern Snake River Plain Aquifer System, Idaho. DOE/ID-22120.

Bear, J., 1972. Dynamics of Fluids in Porous Media. Dover Publications. ISBN 0-486-65675-6.

Idaho Department of Water Resources (IDWR), 2023. *Synoptic Groundwater Contours of* 2023.

Idaho Department of Water Resources (IDWR), 2021, Model Calibration Report Eastern Snake Plain Aquifer Model Version 2.2

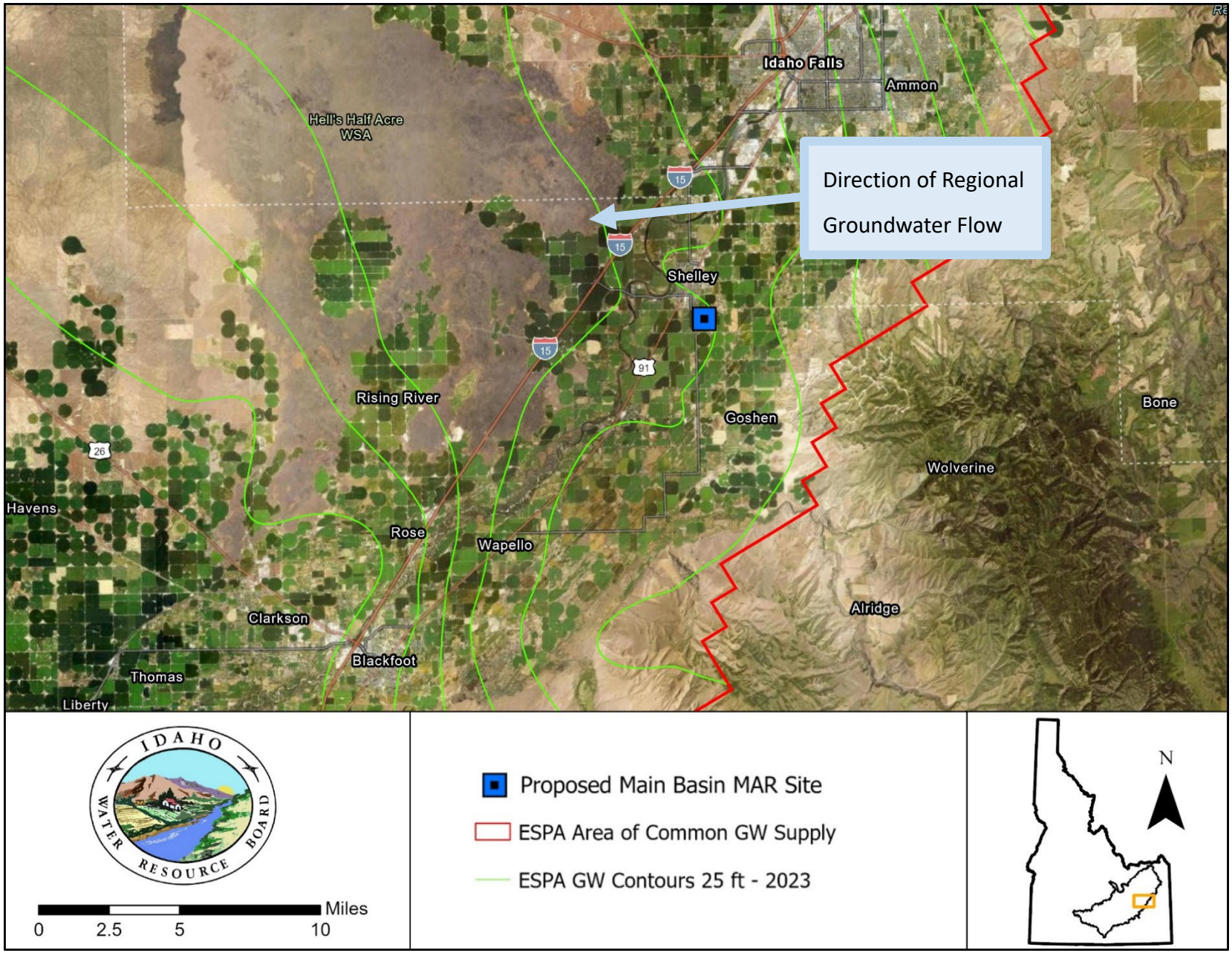


Figure 1. Proposed SRVID Sugar Factory recharge site location.

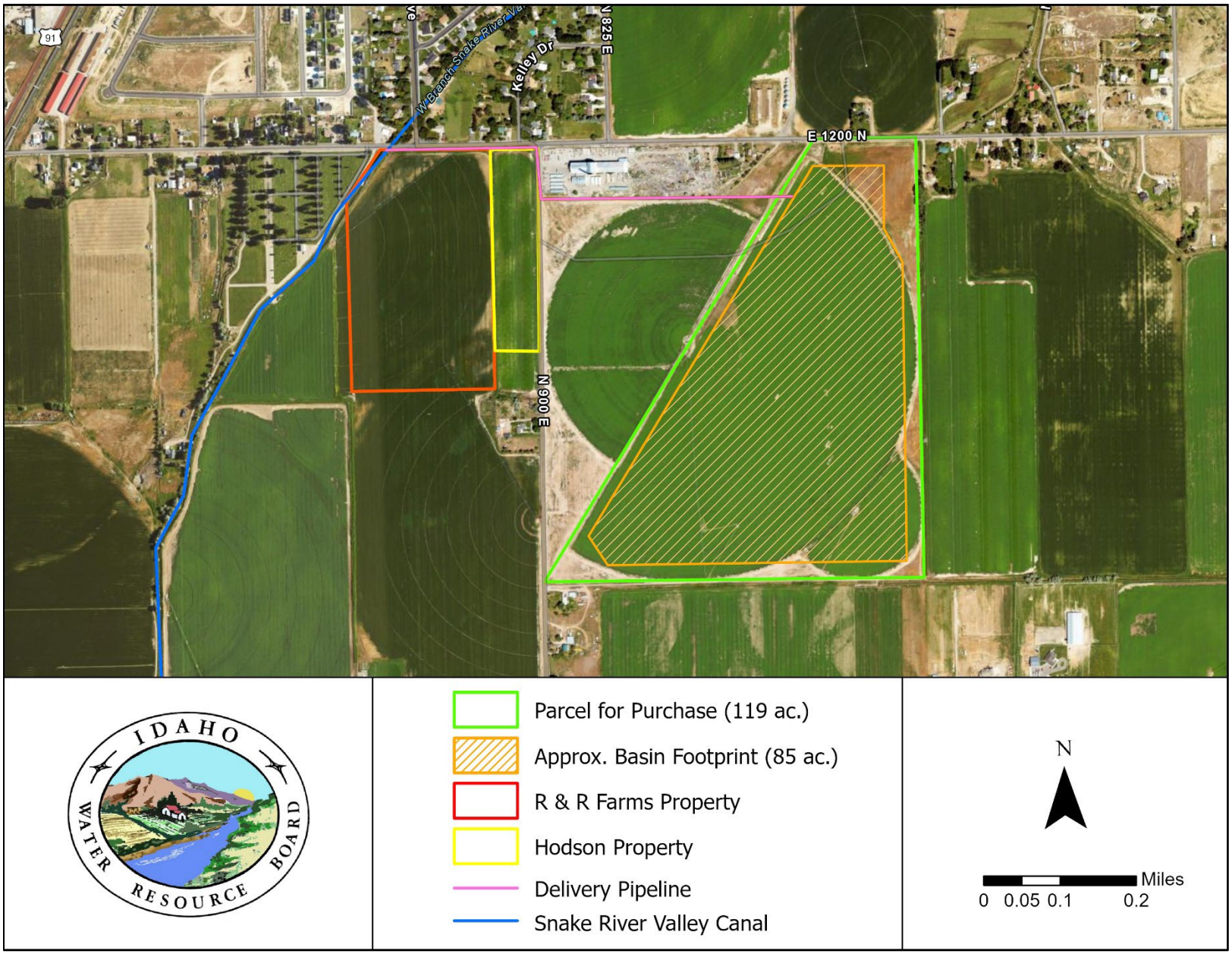


Figure 2. SRVID Sugar Factory Basin recharge site proposal components.

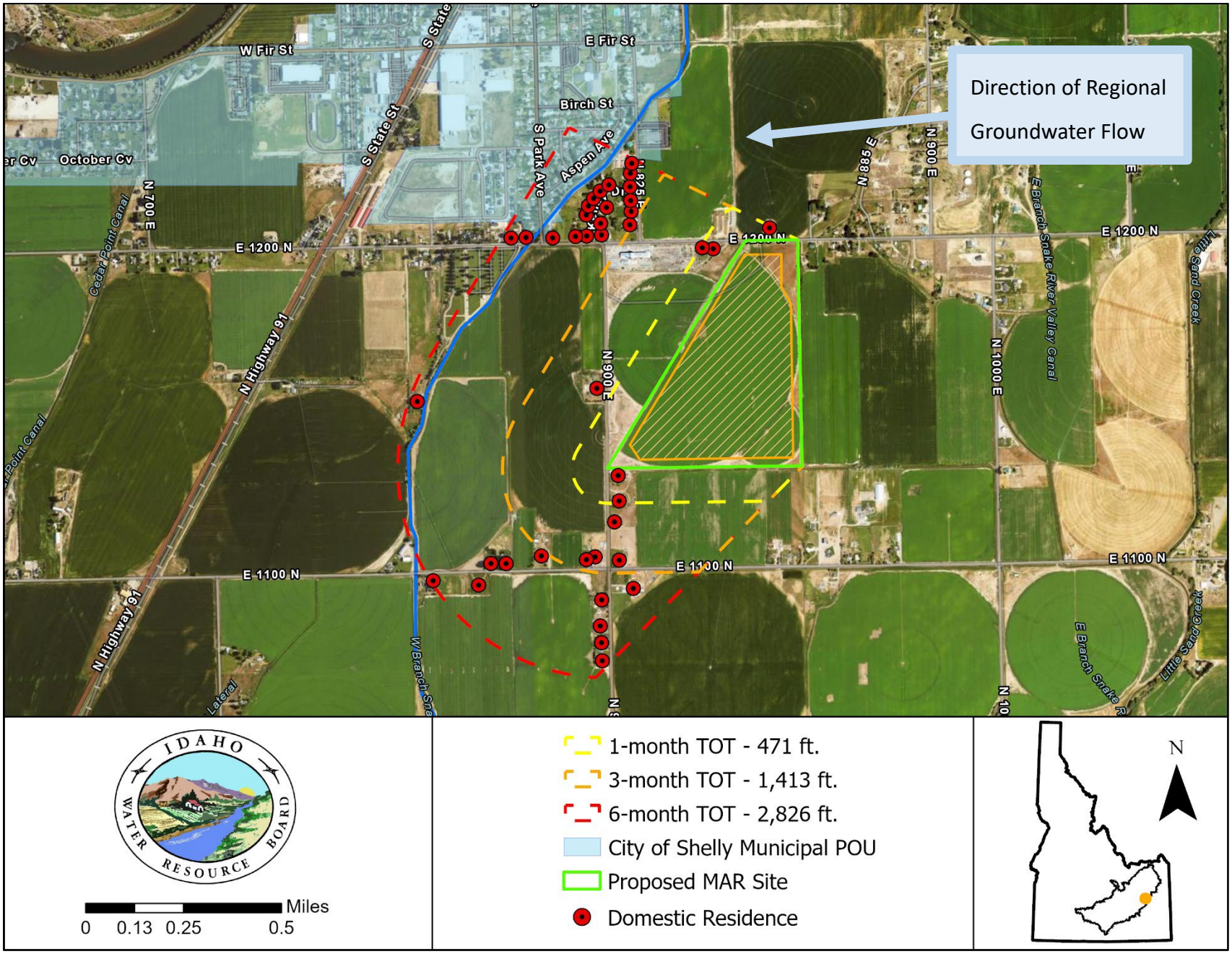


Figure 3. Domestic residences within the estimated time of travel delineations.

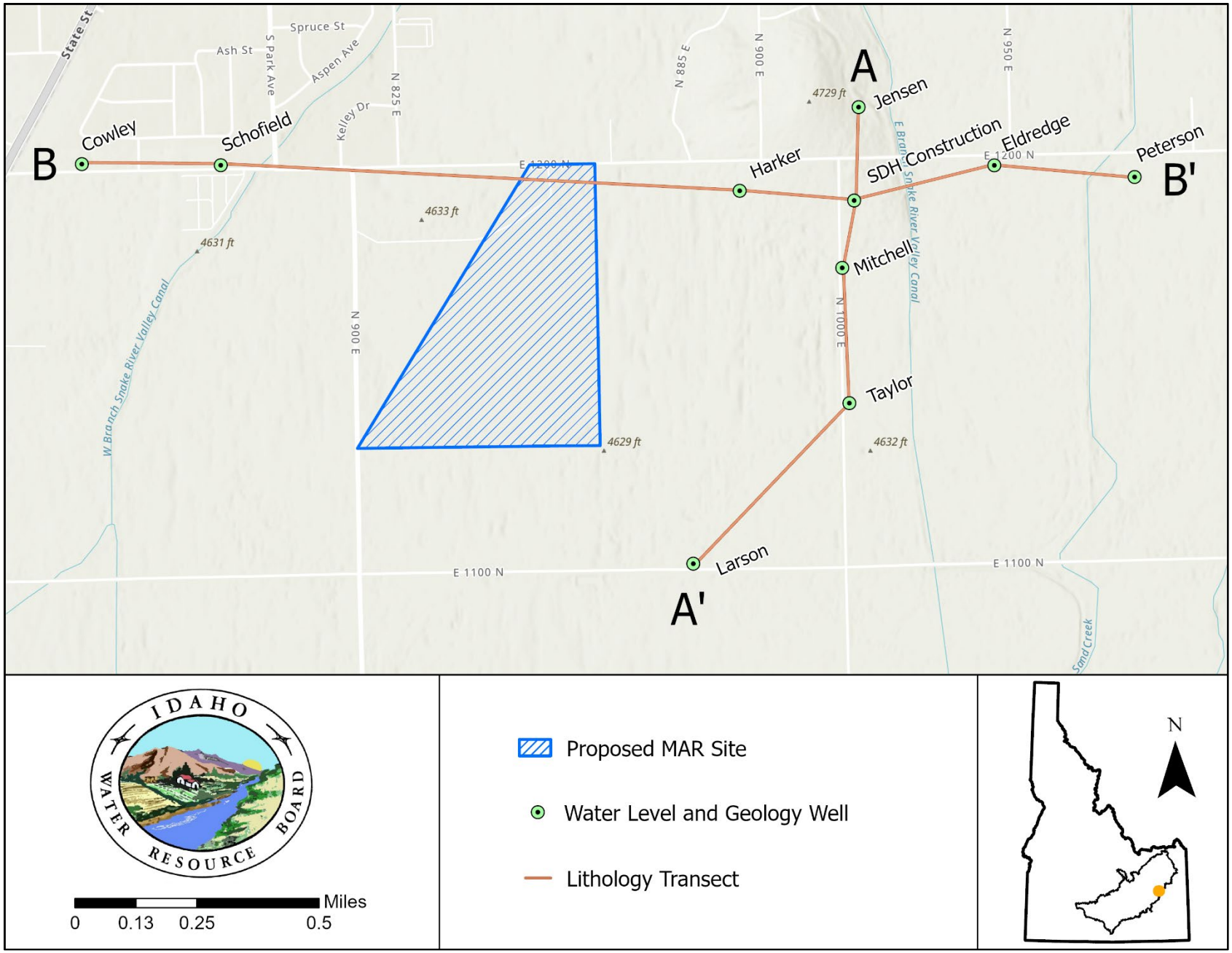


Figure 4. Locations of the proposed site and wells used for geologic cross-sections.

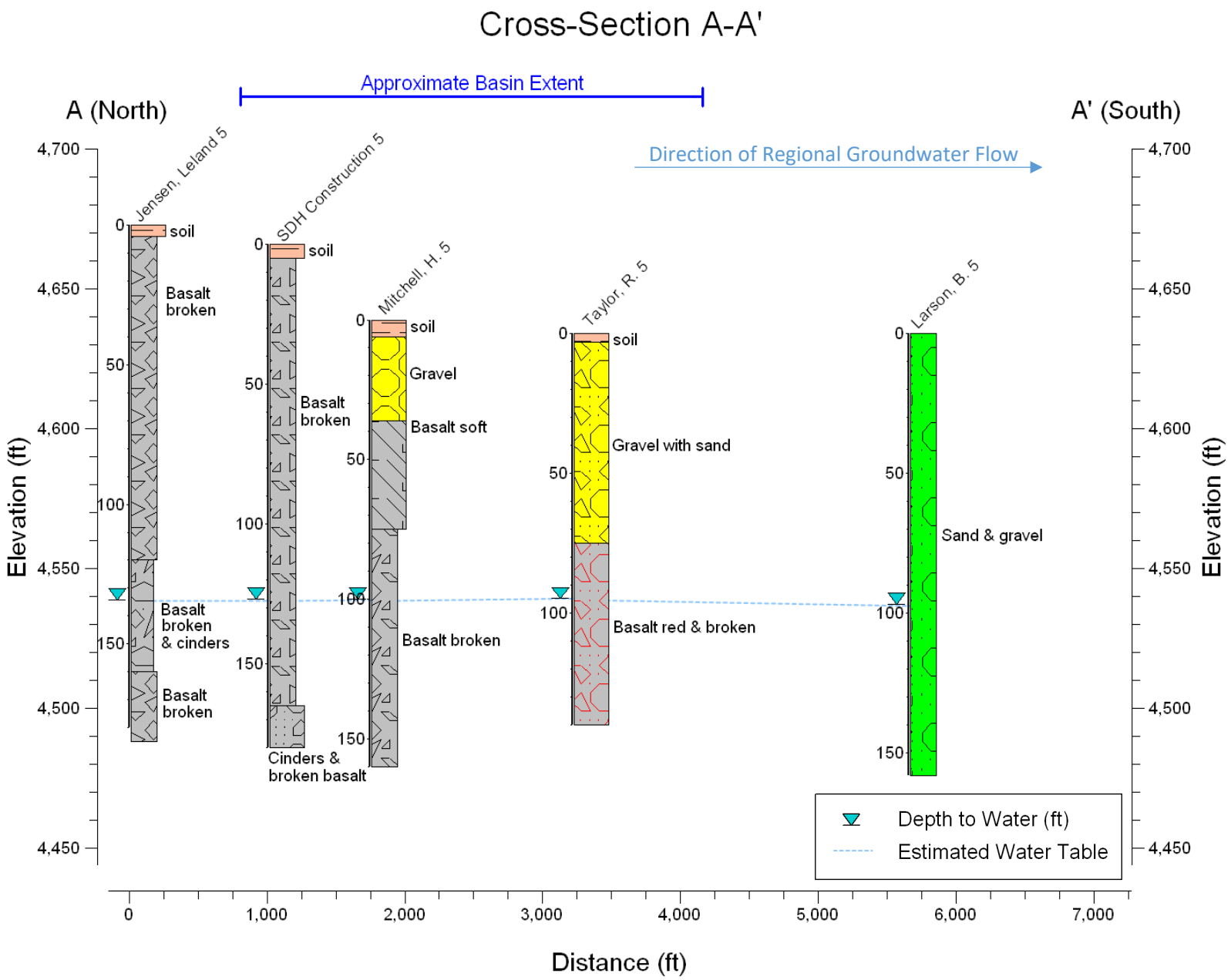


Figure 5. Geologic cross-section from north to south.

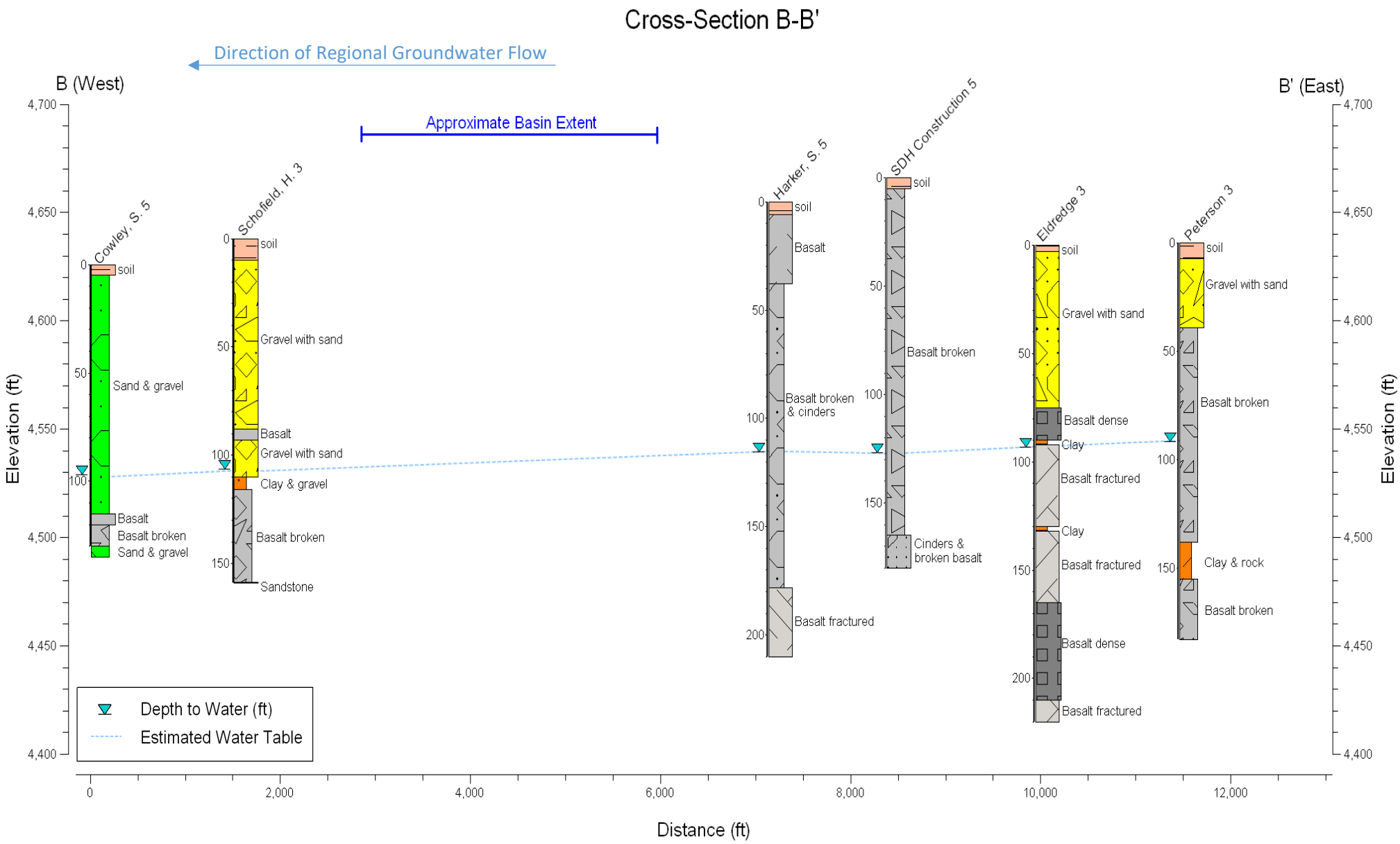


Figure 6. Geologic cross-section from west to east.

VI. Appendix

Cost per acre-foot (AF) of recharge calculation:

Volume Recharged = (Days/year * Acre-feet recharged / day) * 50 years

= (45 days /year * 173 acre-feet / day) * 50 years

= 388,270 acre-feet

Cost = Capital Development Costs + Conveyance Cost for 50 Years

= $8,070,000 + (388,270 acre-feet * $7.50 / acre-foot)

= $10,982,026

Cost Per AF = Cost / Volume Recharged

= $10,982,026 / 388,270 acre-feet

= $28 / acre-foot

Assumptions:

- 45 days of recharge each year
    - Recharge lasts approximately 90 days during flood control.
    - Flood control occurs in about 50% of the years.
- The time period is 50 years
    - This is the length of time IWRB will have the First Right of Refusal for this proposed site.
- The cost is the capital cost plus the conveyance costs.

Attachment(s):

- *PowerPoint Presentation*

MEMO

To: IDWR Aquifer Stabilization Committee (Committee)

From: Max Deckman, IDWR Research Associate

Date: July 20, 2026

Subject: ESPA Managed Recharge – Bingham Groundwater District Weggland Ditch Recharge Basin Proposal

REQUESTED ACTION: The Idaho Water Resource Board will Consider Funding the Bingham Groundwater District Weggland Ditch Recharge Basin Proposal.

The Bingham Groundwater District submitted a proposal to construct two recharge basins on one parcel. The development of these basins would support the IWRB goal of recharging 350,000 acre-feet on an annual basis. The following memo provides a summary of the proposal and a staff review of the proposed recharge basin.

I. Project Proposal

The Bingham Groundwater District (BGWD) proposes to construct two managed recharge-infiltration basins totaling 64 acres, located west of Rose, at a cost of $6,310,000. The proposal includes purchasing a 110-acre parcel, excavating two basins, constructing a dedicated delivery pipeline, improving a canal, and purchasing grass seed and irrigation infrastructure for the associated berms (Figure 1). The 110-acre parcel is currently owned by Jacob and Kylie Harris, who have agreed to sell the land to the BGWD for $2,420,000 ($22,000/acre).

The subsurface geology consists of 1.2 feet of topsoil overlying 80 feet of sand and gravel containing intermittent, non-contiguous clay layers, based on a January 2026 test pit at the proposed location and an analysis of wells drilled in the surrounding area (Figures 2–3). Throughout the analyzed area, sand-gravel and clay layers are encountered in the first 100 feet of previously drilled wells. Most wells have 0–50 feet of this alluvial sediment, with isolated clay layers that are not laterally extensive. To the east of the proposed site, clay layers are more common and are more laterally extensive. Based on groundwater flow contours from the 2023 Eastern Snake Plain Aquifer (ESPA) well measurement campaign, groundwater flows to the south and west. These clay layers are therefore unlikely to cause extensive perching of recharged water.

Construction of the two basins would require shallow excavation. Because the 110-acre parcel is bisected by the Weggland Lateral, the project would consist of two separate 32-acre basins. Excavation to a depth of 2.6 feet below ground surface is proposed to accommodate areas where topsoil may exceed the observed 1.2-foot thickness and to accommodate any necessary leveling. The volume of excavated material is estimated to be between 270,000 and 275,000 cubic yards, with an estimated excavation cost of $4.25 per cubic yard. All excavated material would remain on site and be used to construct a berm approximately 100 feet wide (expanding to 200 feet in width adjacent to the nearby residence) and 9 feet high with 3:1 side slopes. The basin and berm will be in compliance with all relevant county ordinances and designed by a licensed third-party professional engineer.

The delivery system for both basins is Weggland Lateral. Water delivered to the Weggland Lateral is diverted from the Snake River via the main branch of the People's Canal. The People's Canal has committed to delivering water to the Weggland Lateral and will retain all wheeling fees associated with water delivered to the site. The Weggland Lateral Ditch Company has agreed to allow its canal to be piped directly from the People's Canal to the proposed recharge site in exchange for approximately $250,000 in canal improvements downstream of the diversion. Because the Weggland Lateral does not currently have the capacity to convey approximately 75 cubic feet per second (cfs) to the recharge basins, two pipelines (one serving each basin) will be constructed to provide the necessary delivery capacity. Pipeline design and construction will be overseen by a licensed third-party professional engineer. Two monitor wells will be drilled (one for each basin) to test groundwater quality near the recharge site.

The BGWD proposes to plant native grasses over the outer slopes of the constructed berms for aesthetic appeal and dust reduction. The grass would be irrigated with canal water. The cost of planting and irrigation infrastructure for the grass is $130,000.

The breakdown of requested funds is as follows:

Table 1. Project Budget

Expense Category	Quantity	Unit	Estimated Cost
$22,000/acre	110	Acres	$2,420,000
Excavation ($4.25/cy)	271,040	Cubic Yards	$1,151,920
Cut and Fill Engineering			$10,000
Pipeline 1 (1,500 ft)	1,500	Linear Feet	$337,500
Pipeline 2 (2,500 ft)	2,500	Linear Feet	$562,500
County Road Repair, Diversion & Inlet Structure, Telemetry, Meter, Contingency, Engineering			$770,000
Weggland Lateral Cleaning Below Recharge Diversion			$250,000
Monitoring Wells	2		$100,000
Berm Irrigation & Seed			$130,000
~10% Contingency			$552,000
Total Cost			**$6,310,000**

The two basins are conservatively estimated to recharge approximately 67 cfs based on the results of a single stage-infiltration test performed at a basin constructed in similar alluvium, which indicates recharge rates could range from 55–80 cfs. Based on a recharge rate of 67 cfs, the estimated cost of

recharge is $29 per acre-foot. This value includes a $7.50 wheeling fee and is based on the estimated total acre-feet of recharge over a 50-year period. Full calculation details are provided in the Appendix.

Upon completion of the site, BGWD would own and maintain the site, and the IWRB would have the first right of refusal for its recharge water rights, when in priority, for a period of 50 years.

II. MAR Site Summary

Est. Recharge Capacity:	67 cfs	Operator:	Bingham GWD
Basin Size:	64 acres (East Basin = 32 acres) (West Basin = 32 acres)	Delivery System:	Weggland Ditch (People's Canal)
5-yr Retention:	16.8%	50% Response Time:	8–12 months
Depth to Water:	75–85 ft	Ownership:	Bingham GWD

Canal Avg. Diversion Rate: People's Canal averaged 232 cfs in May 2025 and 279 cfs in May 2026. The Canal had a maximum diversion rate of 355 cfs (June 2021) in the past 10 years.

The Eastern Snake Plain Aquifer Model (ESPAM) 2.2 and Eastern Snake Plain Aquifer Model Transfer Spreadsheet (ETRAN) 3.4 were used to determine the 5-year retention, 50% response time, and percent return to the various reaches of the Snake River. The water recharged at this site would primarily return to two reaches of the Snake River: Shelley to Near Blackfoot reach (36%) and Near Blackfoot to Neeley reach (55%). The time required for 50% of the recharged water to be discharged into the Snake River is approximately 8–12 months.

III. Hydrogeology Summary

Subsurface geology, based on nearby wells, transitions from sand and gravel to the north and east of the site to basalt to the south and west (groundwater flow direction) (Table 2). More specifically, in the north–south direction (Figure 2), sand-gravel and clay layers occur at the top of most boreholes and are between 25 and 50 feet in thickness. Some clay layers are thick but do not appear to be laterally extensive, indicating they are unlikely to cause perching of recharge water in the direction of groundwater flow.

Table 2. Generalized Subsurface Geology

Depth	Subsurface Geology
0-40 Feet Below Ground	Alluvium (Sand and Gravel)
Beyond 40 Feet Below Ground	Basalt and Cinders

To the west of the proposed site (Figure 3), basalt is the dominant lithology and contains the water table. There are a few potential confining layers of clay. This is in contrast with the east (upgradient)

of the proposed site, which has thick layers of sand, gravel, and clay noted in the well logs. Clay layers in this vicinity could be interpreted as laterally extensive, which could create a confining layer where recharge water could become perched. The People's Canal, the Aberdeen Springfield Canal, and numerous lateral ditches flow through this vicinity. The Aberdeen Springfield Canal loses 10.6 acre-feet per over the one mile reach adjacent to the proposed basins (Rice thesis, 2018). Well logs indicate that the water table is below the documented clay layers and within the underlying basalt, suggesting that the clay layers might not be laterally extensive and, in any case, likely do not function as perching layers.

Based on groundwater contours from the IDWR 2023 Well Synoptic (IDWR, 2023), the hydraulic gradient of the site is estimated to be 0.0003 foot/foot towards the southwest. The calibrated hydraulic conductivities in the nine ESPA Eastern Snake Plain groundwater flow model (IDWR, 2021) cells surrounding the site range from 814 feet/day to 41,924 feet/day, with an average of 9,442.9 feet/day (IDWR, 2021). These horizontal hydraulic conductivity values suggest that the aquifer under the site consists of fractured and competent basalt, which is consistent with the lithology reported in nearby well logs. The depth of alluvial material near the site appears variable, so two porosity values were used in this analysis, one for gravel and sand (Bear, 1972, Urumović and Urumović, 2016) and another for Eastern Snake River Plain basalts (Ackerman, 1995, IDWR, 2021) to provide a range of high and low estimated travel times. The 1-month, 3-month, and 6-month travel times from the site were calculated using the parameters listed in Table 3.

Table 3. Parameters Used in Time of Travel Calculations.

Substrate	Horizontal Hydraulic Conductivity	Hydraulic Gradient	Effective Porosity
Sand/Gravel	9224.9 ft/day	0.0003 ft/ft	0.35
ESRP Basalts	9224.9 ft/day	0.0003 ft/ft	0.09

Utilizing these parameters and the following average linear groundwater velocity equation,

$$v = \frac{K}{ne}\frac{dh}{dl}$$

where v is the average linear groundwater velocity, K is the horizontal hydraulic conductivity, dh/dl is the hydraulic gradient, and ne is the effective porosity, an average linear groundwater velocity was calculated to be 8.1 to 30.7 feet/day. Utilizing these velocities, a 1-month travel time would be approximately 243 to 921 feet to the southwest, a 3-month travel time would be approximately 728 to 2,763 feet to the southwest, and a 6-month travel time would be approximately 1,456 to 5,526 feet to the southwest (Table 4 and Figure 4). The distances delineated in Figure 4 are estimates from the higher velocity calculation.

Table 4. Estimated Time of Travel and Domestic Residences Near Site

Time of Travel Zone	Estimated Travel Distance	Estimated Number of Domestic Residences
1-month	921	7
3-month	2,763	10
6-month	5,526	63

IV. Site Vicinity

To obtain an approved groundwater monitoring plan from the Idaho Department of Environmental Quality (IDEQ) or to permit an injection well from the Idaho Department of Water Resources (IDWR) Underground Injection Control (UIC) program, a review of facilities and potential areas of concern is typically required. There are 175 wells within one mile of the site, the majority of which are to the south towards Blackfoot (Figure 4). A review of IDEQ's Source Water Assessment and Protection map showed the following potential sources of contamination within a 2-mile radius of the proposed site:

- Dairy Location site 0.3 miles to the southeast
- Dairy Location site 0.4 miles to the northwest
- RCRA site 0.6 miles to the south
- Deep Injection Well 0.9 miles to the southeast
- Shallow Injection Well 1.0 miles to the southeast
- Deep Injection Well 1.2 miles to the south
- Deep Injection Well 1.4 miles to the northeast
- Gravel Pit 1.7 miles to the southeast
- Well 1.7 miles to the east
- Feedlot 1.9 miles to the northwest
- Basic American Foods Water Reuse site and Underground Storage Tank (UST) ~2 miles to the southwest

An additional water quality consideration for both IDEQ and the UIC Program is the locations of Public Water Systems (PWS) near the site. This site is within the 3-year time-of-travel zone of three PWS:

- Riverview Acres 2 (PWS #6060062)
- Riverview Acres Water ASSN 1 (PWS #6060063)
- Sunset SUBD (PWS #6060082)
- Town and Country Mobile Home Park (PWS #6060085)
- Blackfoot City (PWS #6060007)

The following PWS have one or more source locations within two miles downgradient (southwest) of the site:

- Riverside Estates (PWS #6060059)
- Johnson Mobile Village (PWS #6060039)
- Moreland Water and Sewer District (PWS #6060117)
- East Moreland Water Company (PWS #6060014)

- JSD Water (PWS #6060037)
- Riverstone Subdivision (PWS #6060121)
- Idle Wheels MHP CAT LLC (PWS #6060035)
- Nonpareil Dehydrated Potatos (PWS #6060050)
- Nonpareil Office Complex (PWS #6060111)
- Basic American Foods (PWS #6060002)
- Groveland Elementary School DIST 55 (PWS #6060028)
- Riverview Villa (PWS #6060057)
- Rose Garden Mobile Home Park (PWS #6060067)
- Basic American Ingredients INC Flakes (PWS #6060051)
- Snake River View Estates (PWS #6060099)
- Moreland School (PWS #6060048)
- Pioneer Acres (PWS #6060056)
- Youngs Country Court (PWS #6060049)

V. References

Ackerman, D., 1995. USGS Water-Resources Investigations Report 94-4257: Analysis of Steady-State Flow and Advective Transport in the Eastern Snake River Plain Aquifer System, Idaho. DOE/ID-22120.

Bear, J., 1972. Dynamics of Fluids in Porous Media. Dover Publications. ISBN 0-486-65675-6.

Idaho Department of Water Resources (IDWR), 2023*. Synoptic Groundwater Contours of* 2023

Idaho Department of Water Resources (IDWR), 2021, Model Calibration Report Eastern Snake Plain Aquifer Model Version 2.2

Rice, H.M., 2018. *Considering Regional Aquifer Effects of Seepage Losses from the Aberdeen-Springfield Canal While Measuring the System Under Maximum Demand Conditions* (Doctoral dissertation, University of Idaho-College of Graduate Studies).

Urumović, K. and Urumović Sr, K., 2016. The referential grain size and effective porosity in the Kozeny–Carman model. *Hydrology and Earth System Sciences*, *20*(5), pp.1669-1680.

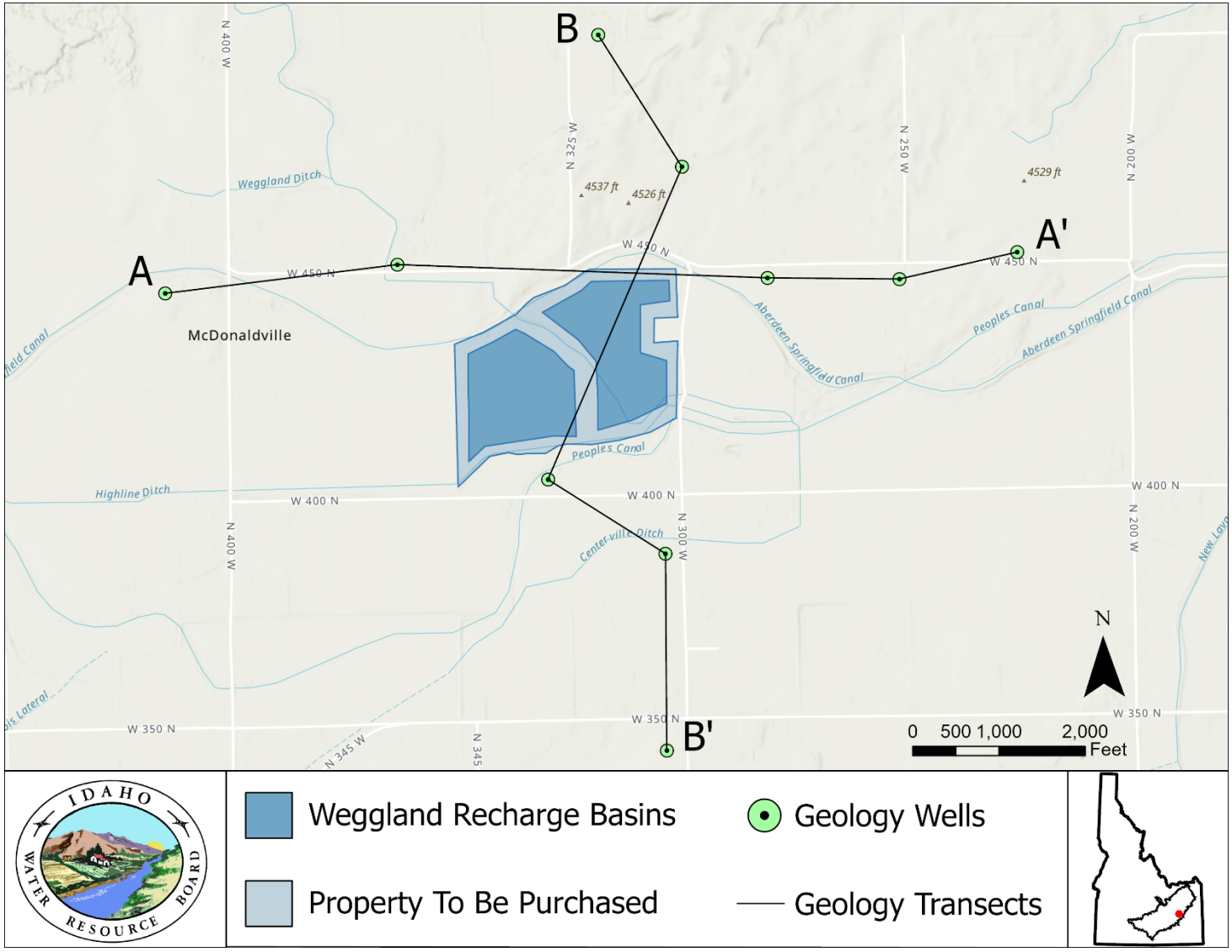


Figure 1. Map of proposed BGWD Recharge site with wells and geologic cross-sections shown

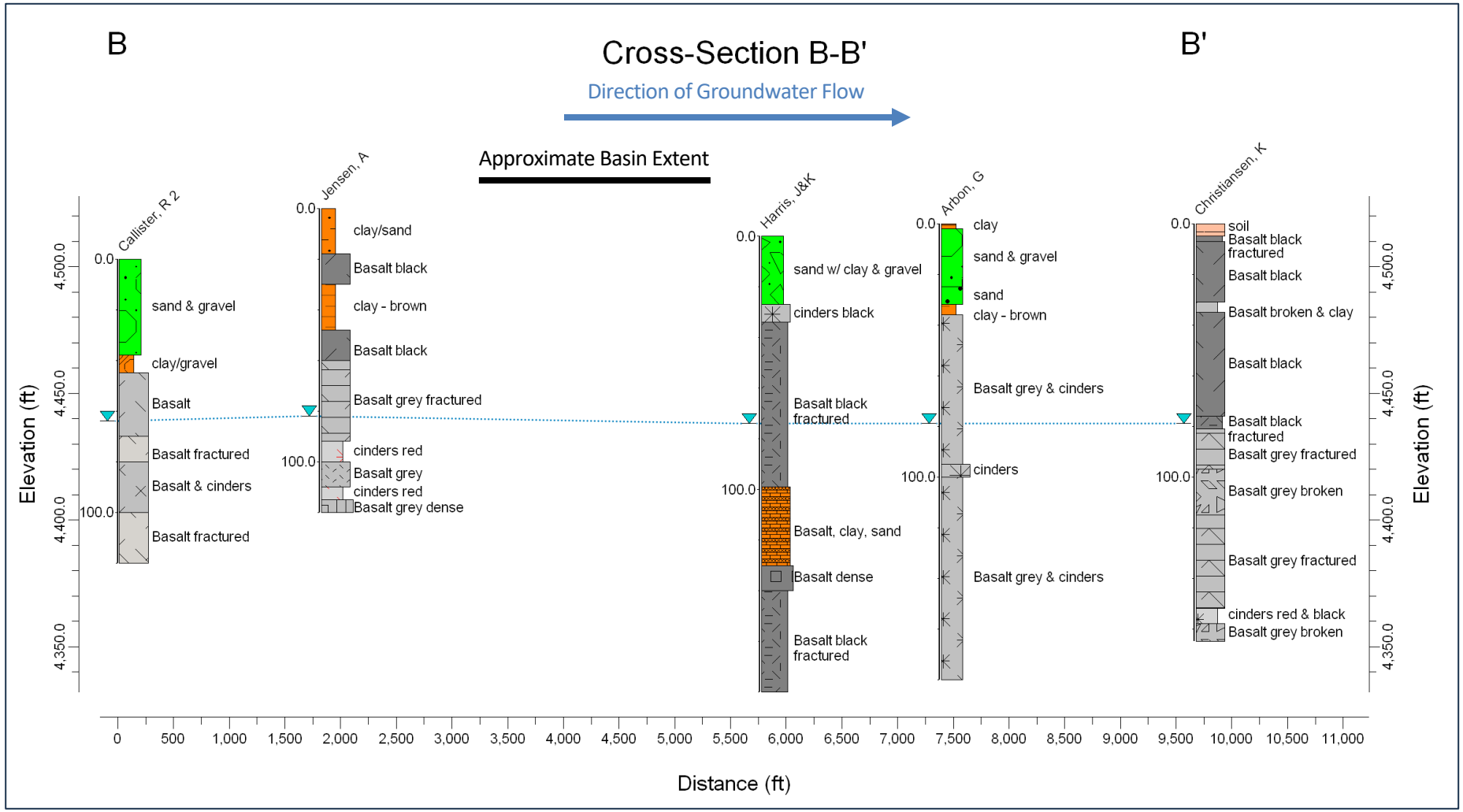


Figure 2. Geologic cross-section going from north (B) to south (B')

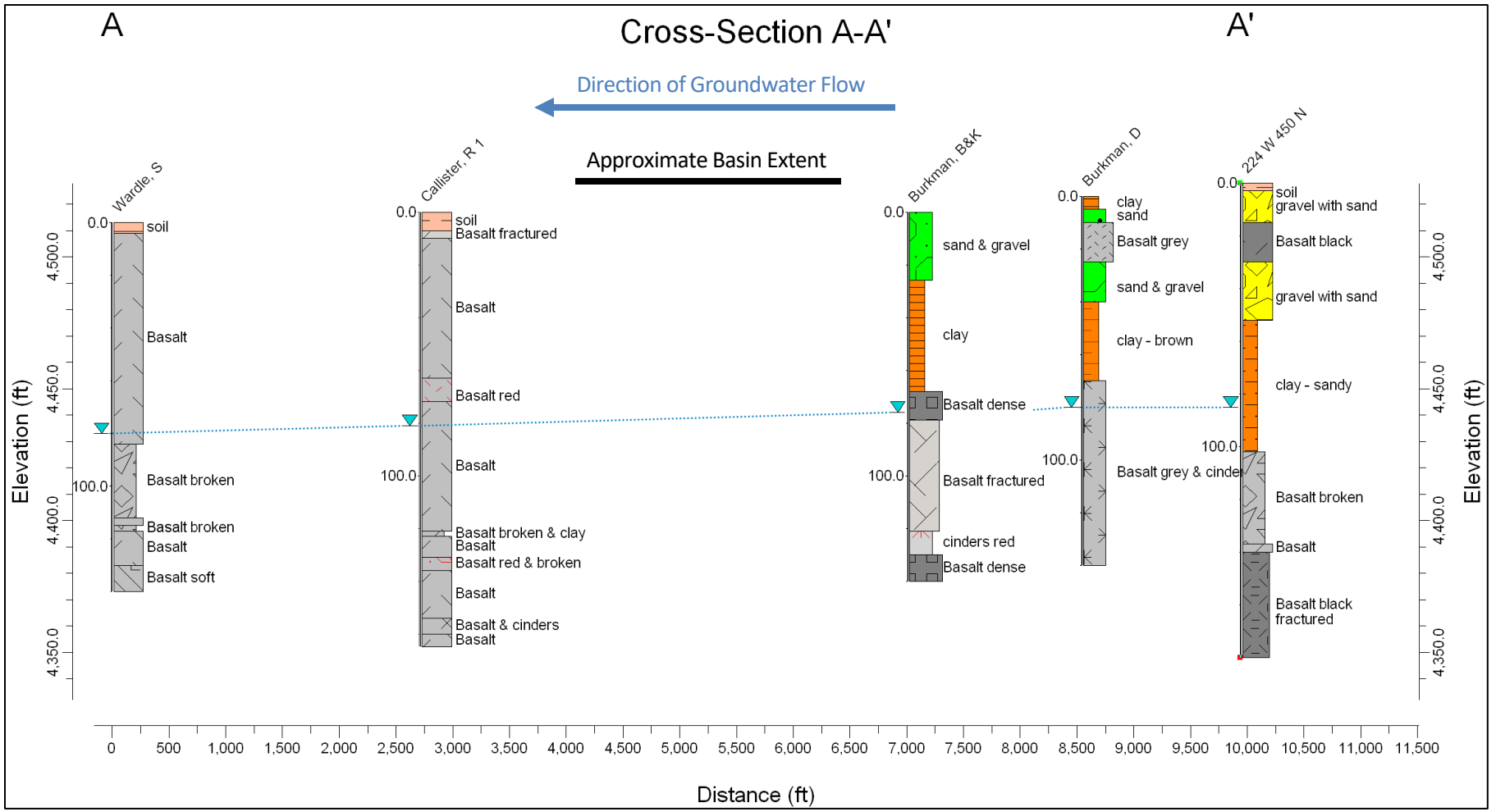


Figure 3. Geologic cross-section going from west (A) to east (A')

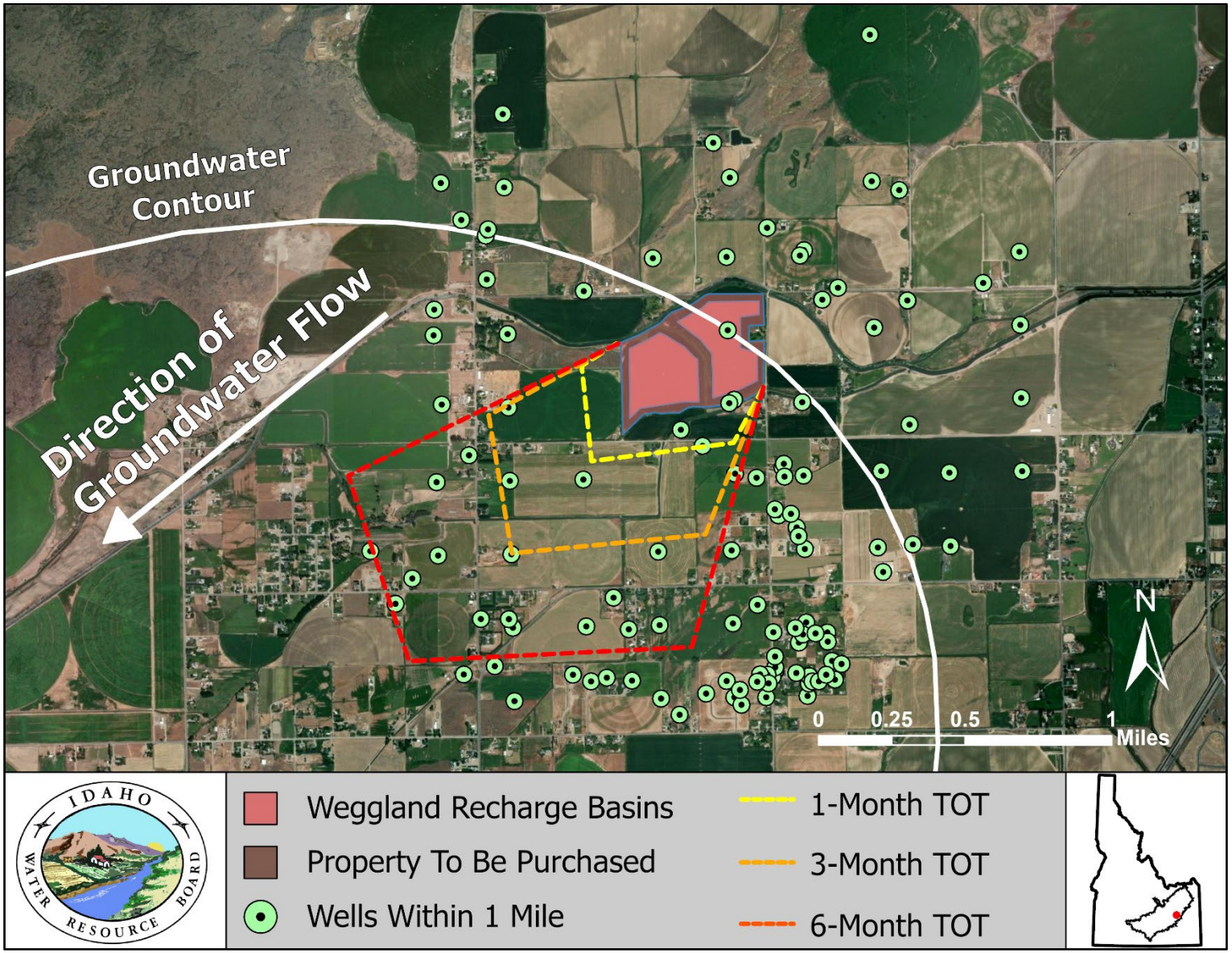


Figure 4. Map of site with direction and high-velocity estimates of time-of-travel of groundwater flow. Wells within one mile distance of site shown.

VI. Appendix

Cost per acre-foot (AF) of recharge calculation

Volume Recharge	=	(Days/year	*	Acre-feet / day) * 50 years
	=	(45 days/year	*	133 acre-feet / day) * 50 years
	=	299,000 acre-feet		

Cost	=	Capital Development Costs	+	Conveyance Cost for 50 years
	=	$6,310,000 + (299,000 acre-feet	*	$7.50 / acre-foot)
	=	$8,552,500		

Cost per Acre-foot	=	Cost	/	Volume Recharged
	=	$8,552,500 /		299,000 acre-feet
	=	$29 / acre-foot		

Assumptions:

- 45 days of recharge each year
    - Recharge lasts approximately 90 days during flood control.
    - Flood control occurs in about 50% of the years.
- The time period is 50 years
    - This is the length of time IWRB will have the First Right of Refusal for this proposed site.
- The cost is the capital cost plus the conveyance costs.

Attachment(s):

- *PowerPoint Presentation*

Managed Aquifer Recharge – Proposed Projects

Cooper Fritz
Water Planning and Projects Section

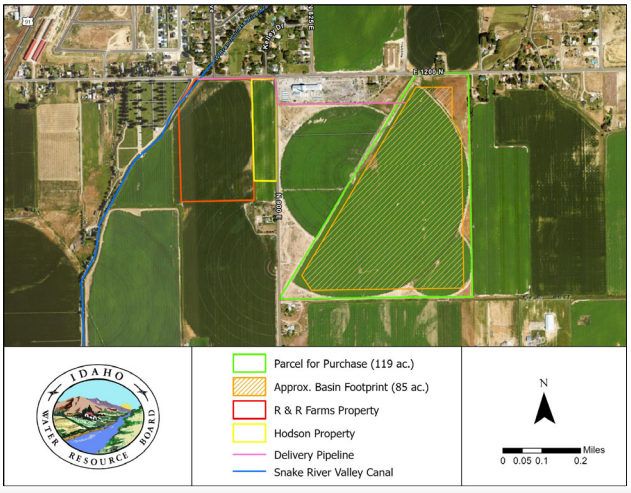
July 23, 2026

1

IDAHO Water Resource Board

Snake River Valley I.D. – Sugar Factory Basin

- Owned by Snake River Valley Irrigation Dist.
- 85-acre basin, 0.5 miles southeast of Shelley
- Depth of topsoil: 2 ft, Depth of excavation: 2.7 ft
- Berms: 9 ft high & 150 ft wide (No haul)
- Available conveyance capacity in May 2025 was 220 cfs
- Depth to groundwater is 60-150 feet

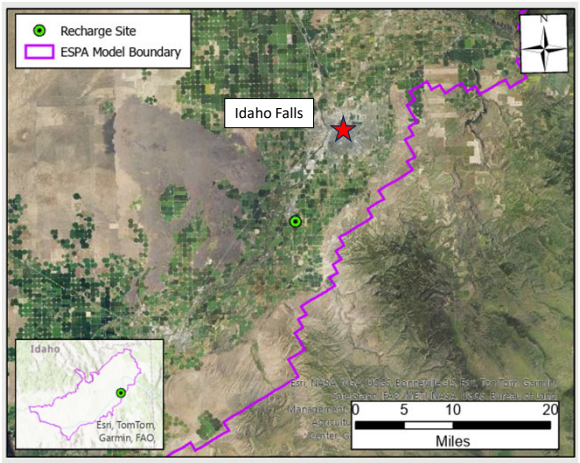


2

IDAHO Water Resource Board

Snake River Valley ID – Sugar Factory Basin

• Type	85 Acre Basin
• Cost	$8,070,000
• Estimated Capacity	87 cfs
• 50-Year Estimated Cost	$28 / AF
• 5-Year Retention	19%
• 50% Response	19 months
• Return to Snake River	
• Heise to Shelley	11%
• Shelley to Near Blackfoot	53%
• Near Blackfoot to Neeley	32%

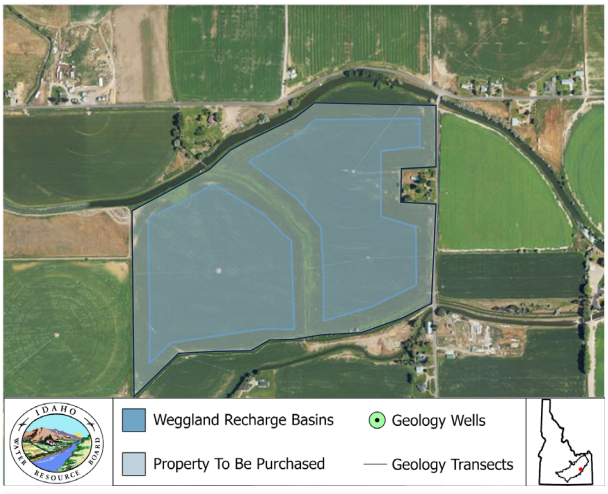


3

IDAHO Water Resource Board

Bingham GWD – Weggland Basin

- Owned by Bingham Groundwater District
- Two 32-acre basins, 5 miles north of Blackfoot
- Depth of topsoil: 1.2 ft, Depth of excavation: 2.6 ft
- Berms: 9 ft high & 100 ft wide (no haul)
- Available conveyance capacity in May 2025 was 100 cfs
- Depth to groundwater is 75-85 feet

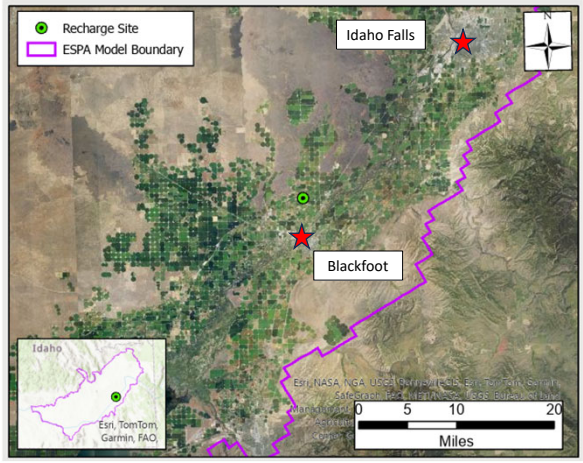


4

IDAHO Water Resource Board

Bingham GWD – Weggland Basin

- Type — 64 Acre Basin
- Cost — $6,310,000
- Estimated Capacity — 67 cfs
- 50-Year Estimated Cost — $29 / AF
- 5-Year Retention — 17%
- 50% Response — 8-12 months
- Return to Snake River
  - Shelley to Near Blackfoot — 36%
  - Near Blackfoot to Neeley — 55%



5

IDAHO Water Resource Board

Summary of New Proposed Recharge Projects

Proposed Recharge Project	Type	Capital Cost	Estimated Cost Per Acre-Foot Recharged[1]	Estimated Recharge Capacity (cfs)	5-Year Retention in Aquifer	50% Response Time (Months)[2]	Percent Return to Snake River
Snake River Valley ID – Sugar Factory Basin	85 Acre Basin	$8,070,000	$28 (50 years)	87	19%	19	Heise to Shelley 11% Shelley to Near Blackfoot 53% Near Blackfoot to Neeley 32%
Bingham Groundwater District – Weggland Ditch Basin	64 Acre Basin	$6,310,000	$29 (50 years)	67	17%	8-12	Shelley to Near Blackfoot 36% Near Blackfoot to Neeley 55%

[1] Assumed 90 days of recharge available in 50% of the years. Used a conveyance fee of $7.50 / acre-foot.
[2] The time required for 50% of the recharged water to discharge to the Snake River

6

IDAHO Water Resource Board

Questions?

7

MEMO

To: IWRB Aquifer Stabilization Committee (Committee)

From: Planning and Projects Bureau Staff

Date: July 20, 2026

Subject: Other Items

INFORMATIONAL ITEM

This item is included to allow the Committee an opportunity to bring forward and discuss any other matters.

Attachment(s):

- *None*