AGENDA

IDAHO WATER RESOURCE BOARD

Joint Aquifer Stabilization and Finance Committee Meeting No. 1-25
July 11, 2025
2:00 PM (MT) / 1:00 PM (PT) or Upon Adjournment of
Special Board Meeting No. 8-25

Water Center
Conference Rooms 602 C & D
322 E. Front St.
BOISE

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

1. Introductions and Attendance
2. Flood Management Grant Recommendations *
3. Surface Water Operational Efficiencies Projects *
4. ESPA Recharge Conveyance Fees and Structure *
5. ESPA Recharge Infrastructure Projects *
6. Other Items
7. Adjourn

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

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

* 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
The meeting will be held in person and online. If you require special accommodations to attend, participate in, or understand the meeting, please make advance arrangements by contacting Department staff by email jennifer.strange@idwr.idaho.gov or by phone at (208) 287-4800.

322 East Front Street • P.O. Box 83720 • Boise, Idaho 83720-0098
Phone: (208) 287-4800 Fax: (208) 287-6700 Website: idwr.idaho.gov/IWRB/

Memorandum

To: Idaho Water Resource Board

From: Neeley Miller, Planning & Projects Bureau

Date: July 9, 2025

Re: Flood Management Grant Applications and Ranking

Action: Make a funding recommendation for the IWRB to consider

FY 2026 Flood Management Grant

Staff received a total of eight (8) applications. The applications were evaluated, scored, and ranked according to criteria adopted by Board. Staff will discuss the application scores with the Finance Committee.

Attachment(s):

Flood Management Grant score and ranking spreadsheet

2026 Flood Management Grant

Entity	Project	IWRB District	Score (125 points)	Funds Requested	Total Project Costs
Camas Conservation District	Corral Creek Crossing Repair Project	3	102	$63,225	$126,401
FCD # 9 Lake Creek 75 Project	Lake Creek 75 Erosion Reduction Project	3	93	$200,000	$427,584
FCD # 10 Bass Lane	High Flow Side Channel Project	2	91	$33,447	$66,894
FCD #10 Eagle Island Split	NF Log Jam Project	2	89	$33,140	$66,280
FCD #10 Phillips	Bank Stabilization Project	2	87	$38,662	$77,324
FCD #10 Stiburek	Dry Creek Bank Repair Project	2	86	$10,700	$22,600
Twin Lake Flood Control District	Rathdrum Creek Clean-up Project	1	84	$9,472	$23,680
City of Victor	Trail Creek Channel Repair Project	4	81	$72,000	$144,000
Total Funds Requested				**$460,646**	**$954,763**

Grant Funds By IWRB District:

District 1	$9,472	2.06%
District 2	$115,949	25.17%
District 3	$263,225	57.14%
District 4	$72,000	15.63%
	$460,646	100.00%

MEMO

To: Idaho Water Resource Board

From: Justin Ferguson

Date: July 11, 2025

Subject: Twin Falls Canal Company – Surface Water Efficiencies Program

REQUESTED ACTION: Approve funding request for $26,340,915

1.0 INTRODUCTION

The Twin Falls Canal Company (TFCC) is requesting funding support to implement water conservation and system efficiency improvement projects. The request is made up of three distinct sub-parts: line approximately 10 miles of the High Line earthen canal with HDPE geomembrane, develop a recharge basin to help mitigate local aquifer concerns and groundwater availability, and enhance their return flow network measurement & telemetry equipment.

2.0 PROPOSED PROJECT

The funding proposal comprises three major sub-projects: lining portions of the existing canal system, developing a recharge basin, and improving the return flow monitoring system.

TFCC is working on installing an HDPE liner across several miles of the existing canal. This proposal would focus on the Rock Creek area south of Hansen, ID, as well as the Lateral 1 (4HL) south of Castleford, ID. Both projects would reduce the amount of seepage the canal experiences annually, reducing the amount of water needed for deliveries. The work has been split into 5 phases, with one phase being completed each year during the non-irrigation season. Figures 1, 2, 3 & 4 (*Pages 6 – 9 TFCC Project Proposal*) provide a map of the reach to be lined.

The second sub-project, the construction of an off-canal recharge basin, has been identified by the TFCC to help mitigate local aquifer concerns. The basin would be used at times when the company had an influx of water into the High Line Canal, generally in the early and late periods of the irrigation season. The proposed basin is an existing gravel pit estimated at approximately 30 acres located along the High Line Canal (*Figure 5, Page 11 – TFCC Project Proposal*)

The third portion of the proposal is the installation of replacement or updated telemetry equipment and the construction of new concrete structure to better monitor return flows. The TFCC has identified 28 individual locations to update or improve (*Figure 6, Page 12 – TFCC Project Proposal*).

3.0 PROJECT IMPLEMENTATION SCHEDULE & COST ESTIMATE

The TFCC estimates that this proposal would be split into 8 phases, with one phase completed each year. The company would like to pursue bulk purchasing and on-site storage, which could reduce costs and possibly allow more work to be completed each year.

Detailed cost estimates were provided in the proposal package.

4.0 EFFICIENCY RESULTS LIKELY TO BE ACHIEVED & 2024 SWC AGREEMENT IMPACTS

In lining the existing High Line earthen canal, the TFCC estimates that between 19,000 and 68,000 acre-feet of water would be saved. Details on the estimated agreement impacts were provided by the TFCC, including loss calculations using Acoustic Doppler Current Profiler data beginning on Page 12 of the proposal document.

To address impacts to the local groundwater table, the proposed recharge basin would capture water during periods of high flow, allowing the water to percolate back into the regional aquifer.

The return flow network allows the TFCC to monitor the water leaving the system as it drains from agricultural areas into urban areas. Adding new monitoring stations and updating the existing stations will help the TFCC continue to improve operational conditions.

5.0 CONCLUSION AND RECOMMENDATION

As a Surface Water Coalition member and holder of some of the most senior water rights within the ESPA, the Twin Falls Canal Company is one of the first systems to be impacted by annual modeled shortfalls. Through these efficiency projects, the TFCC can reduce the volume of water needed for the system via reduced seepage and improved flow monitoring into urban areas. Through these projects, the TFCC can also help mitigate impacts to the local aquifer via the proposed recharge basin.

Staff would recommend the approval of this funding request, and would recommend that, as future projects are identified, the TFCC continue to work with the IWRB to further improve the system where possible.

Attachments:

- TFCC Proposal Document

BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF THE TWIN FALLS CANAL COMPANY SURFACE WATER EFFICIENCY PROGRAM FUNDING REQUEST	RESOLUTION TO AUTHORIZE FUNDING FOR COSTS RELATED TO CANAL LINING, MONITORING EQUIPMENT INSTALLATION, AND SYSTEM IMPROVEMENTS

WHEREAS, the Twin Falls Canal Company (Company) submitted a funding proposal to the Idaho Water Resource Board (IWRB) in the amount of $26,340,915 to improve surface water operations within their canal system; and

WHEREAS, the Company was established in the 1900s and currently delivers irrigation water across 202,000 acres, serving shareholders in Murtaugh, Kimberly, Hansen, Filer, Buhl, Castleford, and Twin Falls; and

WHEREAS, the proposal is requesting funds to line existing canals, develop an off-canal recharge basin, and install updated monitoring equipment to measure return flows; and

WHEREAS, the Company estimates that the project will take approximately years to complete; and

WHEREAS, the Company is a member of the Surface Water Coalition and a party to the 2024 SWC agreement; and

WHEREAS, the proposed project will increase the efficiency of surface water operations and will help further the goals of the 2024 SWC agreement.

NOW THEREFORE BE IT RESOLVED that the IWRB approves the funding request not to exceed $26,340,915 to the Twin Falls Canal Company to improve canal efficiencies and surface water operations.

NOW THEREFORE BE IT FURTHER RESOLVED that the IWRB provides authority to the Chairman of the Idaho Water Resource Board, or his designee, to enter into contracts with the Company on behalf of the IWRB.

NOW THEREFORE BE IT FURTHER RESOLVED that funding under this resolution may be allocated in installments contingent upon legislative appropriations.

DATED this 11th day of July, 2025.

_____
JEFF RAYBOULD, Chairman
Idaho Water Resource Board

ATTEST _____
DEAN STEVENSON, Secretary

Grant Funding Request

for inclusion in the

Regional Water Sustainability List Projects

July 24, 2025

Project:

Twin Falls Canal Company
Lining, Recharge Basin, and Return Flow Monitoring Sustainability Projects

Twin Falls Canal Company Inc.
357 6th Avenue West
PO Box 326
Twin Falls, Idaho 83301

Application for:
Idaho Water Resources Board
Regional Water Sustainability List Project Funding Program

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1.0 Project Background

The Twin Falls Canal Company (TFCC) is located in southcentral Idaho along the south side of the Snake River. TFCC is requesting funding support for an overall water sustainability project with three distinct subparts located within its irrigation service area. First, TFCC proposes to line approximately ten (10) miles of an earthen canal within the TFCC system (High Line Canal) with a High-Density Polyethylene (HDPE) geomembrane liner. Second, TFCC seeks to establish a strategic recharge basin to help mitigate for local aquifer concerns and maintain local groundwater availability. Third, TFCC seeks to enhance its existing return flow network measurement and telemetry equipment. In total, TFCC is requesting **$26,340,915.00** in Idaho Water Resource Board Grant Funding. The requested funds will provide TFCC with the necessary financial assistance to implement the proposed water conservation and system efficiency improvement projects.

Canal Lining

It is expected that the 10 miles of liner will help TFCC conserve between 19,000 and 68,000 acre-feet (AF) on an annual basis, depending upon operations and system conditions. The section of the High Line Canal runs along gravels pits and fractured basalt which allows for seepage loss throughout the irrigation season. This liner project will help conserve water, which enables better water reliability for TFCC farmers that receive delivery downstream of this location, which leads to better crop production and economic viability. Moreover, this project would provide the water user community time to address the sustainability and reliability of Snake River flows in the Blackfoot -Milner reach which relies directly on Eastern Snake Plain Aquifer (ESPA) discharges during critical periods of the irrigation season. Water savings are not intended to replace required mitigation actions upstream on the Snake River and ESPA.

Recharge Basin

Next, the proposed local recharge basin is located along the High Line Canal and will be used to help reregulate water in higher flow timeframes. This recharge basin is intended to help reduce any local impacts to the adjacent area and local aquifer.

Return Flow Network Enhancement

Finally, the proposed return flow network enhancements will allow TFCC to modernize its current network of water measurement and data collection. This return flow network will allow TFCC to monitor return flows during the irrigation season, and also seep water during the non-irrigation season, which helps account for water outside of TFCC's control.

2.0 Project Sponsor(S)

a. *Type of Organization:*

Canal Company

Twin Falls Canal Company Inc. (TFCC)
357 6th Ave. E
Twin Falls, ID 83301

b. History of the Sponsoring Entity:

The Carey Act of 1894 allowed states to reclaim desert lands through irrigation and agricultural settlement. This act allowed Ira B. Perrine, along with a group of investors, the opportunity to establish the rights to irrigate the arid ground on the southside of the Snake River canyon. The Twin Falls Land and Water Company was established in 1900 and, by 1905, started to delivery water to the arid ground on the southside of the Snake River Canyon. The Twin Falls Canal Company (TFCC) was later established in 1909 and is located in Twin Falls, Idaho. TFCC diverts water out of the Snake River at Milner Dam under an October 11, 1900, natural flow water right for 3,000 cubic feet per second (cfs). TFCC also has two other natural flow water rights of 600 cfs and 180 cfs with later priority dates for an additional 780 cfs. TFCC also holds storage rights in American Falls Reservoir and Jackson Lake for a total of 248,368 acre-feet. TFCC controls the water delivery to an area of approximately 202,000 acres in Twin Falls County. TFCC serves shareholders in the cities of Murtaugh, Kimberly, Hansen, Filer, Buhl, Castleford, and Twin Falls, and also the area of Twin Falls County.

c. *Identification of Revenue Sources*

TFCC levies an annual assessment on each share of water for operations and maintenance of the system. This assessment rate is discussed during the budget cycle, and the TFCC Board ratifies the assessment amount each year. Annual assessment notices are billed at the beginning of the budget cycle every November.

d. A Description of the Current Operations.

TFCC's primary source of water supply is natural flow from the Snake River diverted at Milner Dam. Once diverted from Milner Dam, water flows to Murtaugh Lake approximately eight (8) miles downstream of Milner Dam. Downstream of Murtaugh Lake is the Forks Diversion. The Forks diversion splits the canal system into the High Line Canal and Low Line Canal. TFCC has over 110 miles of major canals and approximately 1,000 miles of smaller laterals. TFCC controls approximately 5,300 service gates (turnout gates) for water delivery. TFCC has 4,782 shareholders. Currently, TFCC has sixty-five (65) full-time employees and two part-time

seasonal employees. TFCC operates two divisions within the organizations: the East-end division based out of Twin Falls, and the West-end division based in Buhl.

3.0 Project Description

a. **Project Description**

High Line Canal and Lateral 1 (4HL) Liner

The Twin Falls Canal Company (TFCC) is working on the installation of several miles of High-Density Polyethylene (HDPE) liner. This request focuses on two major areas of canal lining; both located in the High Line Canal. The first is located near Rock Creek south of Hansen, ID and the second location is on Lateral 1 (4HL) south of Castleford, ID. Each of these lining projects aim to minimize the seepage loss of the canal system.

TFCC has been lining its canals since the canal company was formed. Lining projects were developed to not only increase efficiency, but also to address land use issues on neighboring fields. Certain portions of the High Line Canal along this 10-mile stretch have conditions of high bank concerns. These high banks present safety issues for adjacent property owners should the banks fail during the irrigation season. Failure of banks during irrigation season create a potential for property damage and crop loss. TFCC has had a bank failure and seepage through these banks historically, and they have areas of constant observation. Over the years, TFCC has used a variety of liners and materials to help reduce canal seepage in areas that are more prone to seeping. TFCC has used concrete, clay, and other impervious materials over the years. Due to advancement in material sciences, TFCC has recently turned to using HDPE liners. These liners have proven to provide the necessary advantages to help control seepage loss.

Starting in 2019, TFCC installed the first mile of HPDE liner about two miles up the High Line Canal to the east of the proposed area. This was considered the first phase of a multi-phase project. In 2021 TFCC installed HDPE liner on the Low Line Canal in an area of historical seepage. TFCC returned to the High Line Canal in 2023 and lined approximately another mile of the canal with HDPE liner (phase two). Over the past several decades, TFCC has spent millions of dollars to help extent the water supply for our shareholders. In more recent years, TFCC has installed liners and other equipment to help protect this water supply.

The High Line Canal liner portion of this Sustainability Project starts at the end of phase two described above and continues approximately nine (9) miles to the west. This remaining nine (9) mile section is broken up into five additional phases. These phases are represented on Figure 1. The color differences show the general phasing. TFCC anticipates the total project will take approximately five years to complete given limited work time during the non-irrigation season. This timeframe is based upon the previous projects that TFCC has performed.

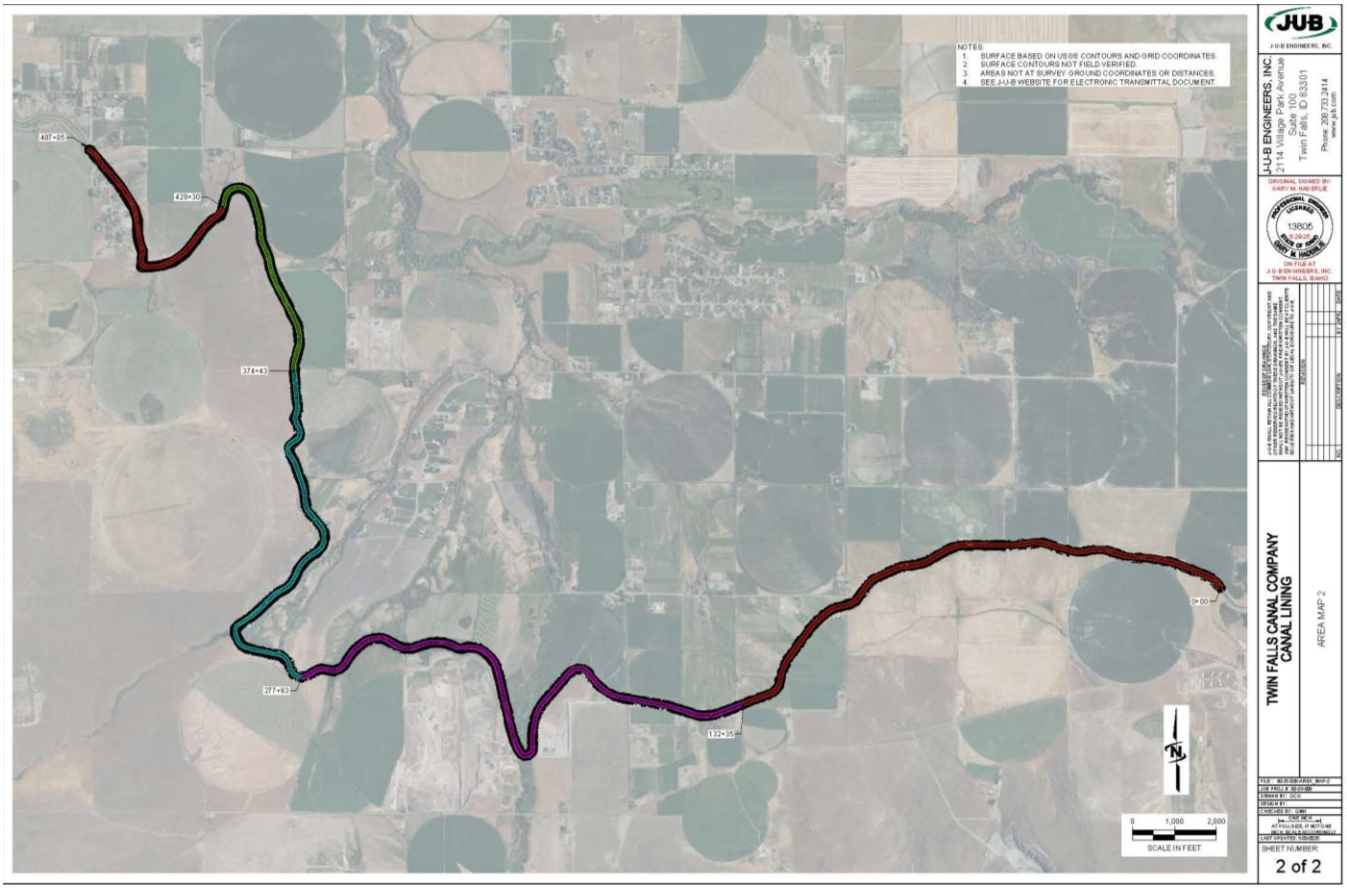


Figure 1: Rock Creek Phase of the High Line Canal Liner and Sustainability Project.

The Rock Creek High Line Canal Liner Sustainability Project is located in Twin Falls County, Idaho. It is approximately seven (7) miles south of the intersection of Idaho State Highway 30 and Hansen, Idaho. Figure 2. shows the general location of the starting point of phase three.

The project starts at latitude 42°25'59.19"N and longitude 114°18'40.05"W. TFCC plans to install nine (9) miles of prefabricated geomembrane HDPE liner in the High Line Canal as shown in Figure 1. This canal lining project requires nine (9) miles of geomembrane liner with an approximate width of 120-feet.

Excavation will consist of removing existing canal material from the bottom and side slopes. 2-foot by 2-foot keyways will be excavated along the top of the canal banks to anchor the liner. The liner will be unrolled along the canal bottom and then unfolded to allow for placement of the liner panel across the entire width of the canal. The liner will be temporarily held in place using sand bags. The edges of the liner will be placed in the keyway and backfill material placed in the keyway to anchor the liner. Keyways will also be excavated at the upstream and downstream ends of the liner project extents. Back fill material will be placed on top of the liner along the bottom and sides. The material initially excavated will be used as backfill. The canal bottom and sides will be re-established to pre-project widths and slopes. Once the liner joint seams are

welded, the backfilling process will advance, and the final grad of the canal bottom will be re-established.

Figure 2: Location of Rock Creek High Line Liner and Sustainability Project.

The second area on the High Line is Lateral 1 (4HL) near Castleford. Figure 3 below shows the general project alignment of Lateral 1 (4HL). This project is proposing to line a portion of the lateral, but also use HDPE pipe for another section. The purpose of piping a portion of this section is due to the basalt rock that the lateral runs through. HDPE pipe is more suitable to lay on the basalt rock sublayer with minimal bedding beneath it.

The Lateral 1 (4HL) portion of the project will line about 1.35 miles and pipe 0.75 mile in the initial phase of this request. TFCC would propose additional phases to pipe or line an additional 3.0 miles to help conserve additional water in the future. This would also require some additional funding to help plan for future projects not only along Lateral 1 (4HL) but other areas within the TFCC service boundaries.

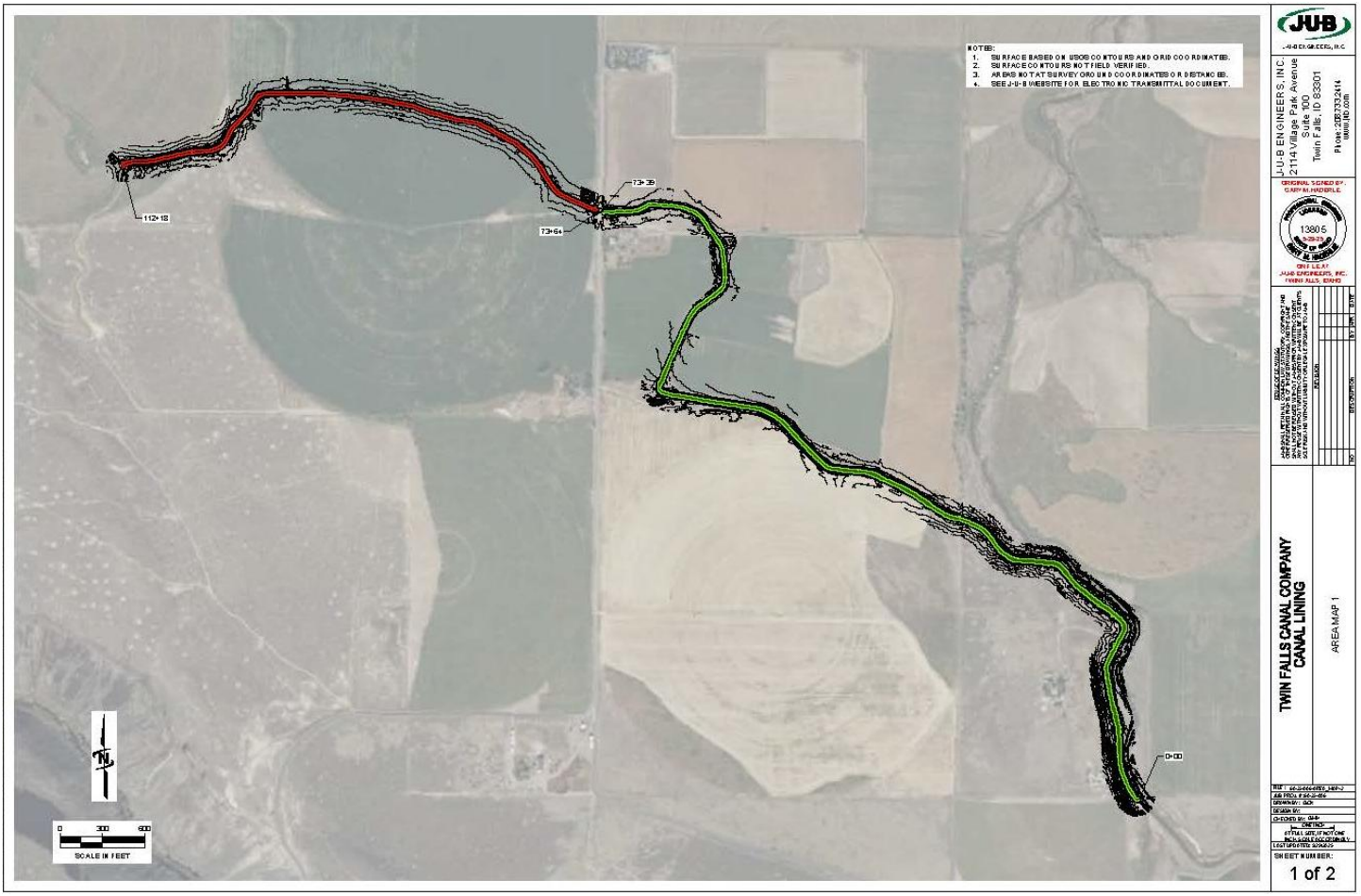


Figure 3: Lateral 1 (4HL) Phase of the High Line Canal Liner and Sustainability Project

The Lateral 1 (4HL) High Line Canal Liner Sustainability Project is located in Twin Falls County, Idaho. It is approximately four (4) miles south of Castleford, Idaho. Figure 4. shows the general location of the starting point of this phase of the project.

The project starts at latitude 42°27'33.38"N and longitude 114°51'16.62"W. TFCC plans to install 1.35 miles of prefabricated geomembrane HDPE liner in the lateral as shown in Figure 3. This canal lining project requires 1.35 miles of geomembrane liner with an approximate width of 50-feet. Resulting in approximately 519,280 square feet of total geomembrane liner required. This project also proposes to use 0.75 miles of HDPE pipe.

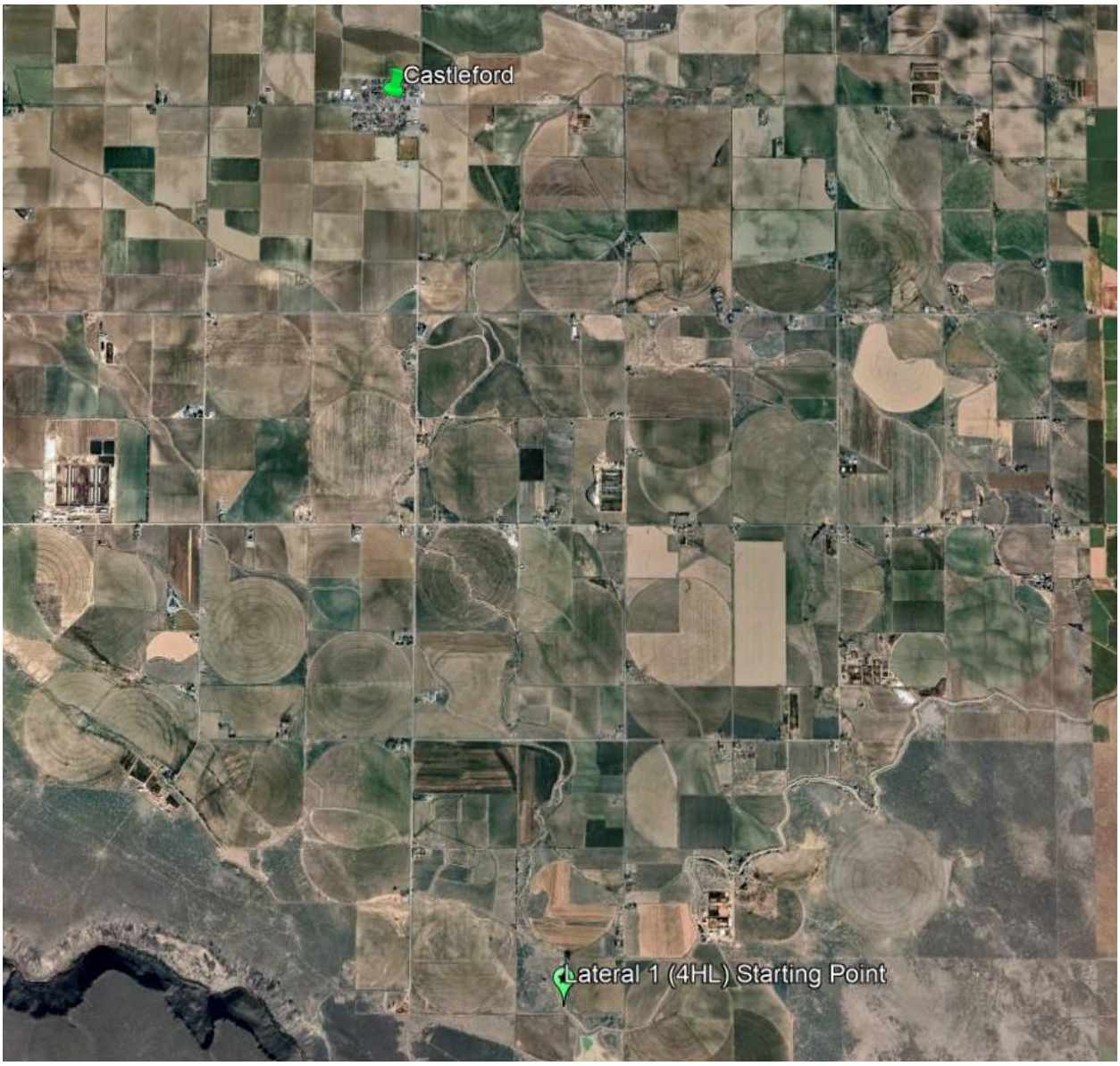


Figure 4: Location of Lateral 1 (4HL) High Line Liner and Sustainability Project.

TFCC has started preliminary conversations with adjacent landowners in the area to talk about construction staging and desired outcomes of the lining project. Since the work happens within the alignment of the canal, TFCC will be working within the easement of the canal. Should work need to go beyond the canal easements, TFCC will work with the adjacent landowners on any ingress/egress issues. Since TFCC has received certain funding in the past from both the Idaho Water Resources Board (IWRB) and the U.S. Bureau of Reclamation's WATERSmart program, TFCC does not anticipate or expect any environmental issues to arise during the installation of the liner.

TFCC estimates that between 19,000 and 68,000 acre-feet of water will be saved following completion of the High Line Canal Liner Projects through the identified sections of the canal

system. This estimated range is based upon previous lining projects, and the use of equipment to measure canal flow and the difference between two points of measurement. Current water losses within this reach of the High Line Canal are attributable to seepage into the ground through the canal sides and bottom during the irrigation season. This canal reach was constructed through coarse alluvium. Numerous large gravels and paving companies operate pits adjacent to the canal. These adjacent gravel pits fill with water each year when irrigation water starts flowing through the High Line Canal. Figure 2 shows the proposed project near these gravel pits.

Recharge Basin

As TFCC has been working on the High Line Liner project and how this might impact the local groundwater table TFCC identified a location for an off-canal basin to help mitigate some of the local aquifer concerns. This basin would be utilized at times of the year when there is an influx of water in the High Line Canal. In periods of high flow through the High Line Canal this basin would be filled with water to then percolate into the ground and support the local aquifer. This would typically be in the early and late periods of the irrigation season when weather patterns and flow conditions are fluctuating. The surface area of the basin would be approximately 30 acres and slope towards to High Line Canal. This location is along the High Line Canal in an old gravel pit area and would be a good location based upon the locations in the system. Figure 5 shows the locations of the recharge basin in relation to the starting point and ending point of phase 4 of the High Line Liner project.

Figure 5: Location of Lateral 1 (4HL) High Line Liner and Sustainability Project.

Return Flow Measurement Network

Over the years, TFCC has installed monitoring equipment on several flow returns to help TFCC operate the system more effectively. This return flow network has allowed TFCC to monitor the water that is leaving the system as it drains from agricultural areas (e.g. fields, seepage drains, etc.) and urban areas. TFCC is proposing to replace and update; or install new concrete structures with updated telemetry equipment to better monitor and measure these return flows. The following figure shows the twenty-eight (28) identified sites that TFCC is requesting be part of the overall water sustainability project. There are additional sites such as Rock Creek returns and Cedar on the Low Line Canal that can be added as TFCC continues to work on better operational conditions.

Figure 6: Return Flow Measurement Network.

b. **Conceptual Plan and Design Features**

The liner installation project will be performed in three main steps: (1) excavation, (2) liner placement, and (3) backfill. Each of these construction steps will be performed in succession for each liner panel section and construction will advance incrementally through the canal reach. Excavation will consist of removing existing canal material from the bottom and side slopes. 2-foot by 2-foot keyways will be excavated along the top of the canal banks to anchor the liner. The liner will be unrolled along the canal bottom and then unfolded to allow for placement of the liner panel across the entire width of the canal. The liner will be temporarily held in place using sand bags. The edges of the liner will be placed in the keyway and backfill material placed in the keyway to anchor the liner. Keyways will also be excavated at the upstream and downstream ends of the liner project. Back fill material will be placed on top of the liner along the bottom and sides. The material initially excavated will be used as backfill. The canal bottom and sides will be re-established to pre-project withs and slopes. Approximately 10 feet will be left exposed at the end of each panel section to allow welding of the adjoining section seams. Once the liner joint seams are welded, the backfilling process will advance, and the final grad of the canal bottom will be re-established.

The High Line Canal operates at 1,400 cubic feet per second (cfs). Throughout the irrigation season, the flow through the High Line Canal can range from 1,050 cfs to 1,450 cfs depending

on demand. The overall loss of water due to seepage can change throughout the season depending on the flow through the High Line Canal.

The project canal reach has an existing seepage rate of 5 – 25 cfs per mile. To be conservative with the loss calculation, TFCC will use 18 cfs as the basis of the seepage loss. TFCC contracts with a local firm to measure seepage loss at various locations in the canal system using Acoustic Doppler Current Profiler (ADCP) technology. The measurement of 18 cfs loss correlates to a flow through the High Line Canal of 1,054 cfs. It is not uncommon for the High Line Canal to reach flows of 1,400 cfs during the irrigation season, which would result in greater seepage losses. TFCC conveys irrigation water through this canal reach for 190 days on average. The resultant annual water loss using the 18 cfs would be 6,800 AF per year. Should the reach only lose 10 cfs per mile, that would equate to 3,770 AF per year. The seepage loss at 25 cfs would be 9,400 AF per year. The supporting calculation is demonstrated below:

$$\frac{18\ ft^3}{1\ sec} * \frac{1\ acre}{43{,}506\ ft^2} * \frac{60\ sec}{1\ minute} * \frac{60\ minutes}{1\ hour} * \frac{24\ hours}{1\ day} * \frac{190\ days}{1\ Irrigation\ Season}$$

Losses along various stretches of TFCC's system are verified each year using the ADCP technology. TFCC also visually monitors the system each week by driving the canal banks to look for seepage through the canal banks. The seepage loss is based upon historical data per mile of canal. This seepage loss can and will vary per mile of canal. The range of seepage loss for the canal system could be between 1,900 AF to 6,800 AF per mile, or 19,000 AF to 68,000 AF for the ten miles of proposed liner annually. If you compare this against TFCC historical annual average diversion of 1,100,000 AF. This proposed project is to help assist in the sustainability of TFCC's water supply and not intended to replace required mitigation actions intended to help maintain TFCC's water supply through conjunctive administration. These projects are intended to allow time for the water user community to address other sustainability and reliability issues throughout the Eastern Snake Plan Aquifer (ESPA).

The preliminary concept for the recharge basin is based upon other projects and actions taken by the Idaho Water Resource Board in other areas of the State. This project will continue to need some refinement and planning to better understand the dynamics of the basin.

The return flow measurement and telemetry network will be based upon the historical structures and designs TFCC has implemented in the past. Using general engineering practice along with other hydraulic measurements principles (e.g. weirs, flumes, etc.). TFCC has engaged the vendor for the data loggers and has received preliminary information on the cost associated with the telemetry devices.

4.0 Cost Estimate and Budget

TFCC has been working with our supplier of HDPE liner and the supplier's excavation company to provide a foundation for the budget. The estimate that TFCC has received for this phase of the Rock Creek Liner and Lateral 1 (4HL) liner and pipe project will cost **$19,626,286.00.** See

Attachment A for a cost breakdown of each section an option associated with the liner. TFCC has estimated the recharge basin portion of the project would cost **$2,500,000.00** based upon other recharge basins recently funded by the IWRB. This estimate allows TFCC to continue to work with individuals in the local area on issues, and could change based upon future demands. It should be noted, that the current property owner would prefer to enter into a long-term lease with TFCC rather than sale the property. This would reduce the cost of this portion of the project. The return flow measurement network estimates are based upon equipment suppliers and TFCC historical construction practices for concrete structures. It is estimated that the return flow network cost would be $**1,820,000.00.** Please see Attachment B for the cost estimates for each of the sites. TFCC has also included some contingency to allow for other unforeseen items that arise during construction projects. The proposed projects are anticipated to cost **$26,340,915.00**. As TFCC continues to identify other projects that fall within this proposal, TFCC would also like to return to the IWRB to request additional funds for additional sustainability lining projects and system planning studies.

5.0 Implementation Schedule

TFCC anticipates the above referenced subparts to be completed as a multi-year project. TFCC estimates that this project can be completed within eight (8) phases over an eight (8) year timespan. However, if TFCC was able to purchase and store the liner at the initial phases, the HDPE lining material could potentially be purchased at reduced cost due to bulk purchasing. TFCC would be able to store and house all the product should TFCC be allowed to purchase bulk liner. The excavation company and liner supplier are ready to start in the winter of 2025-2026. This would then proceed during the following winters months until the project is completed. Again, this is anticipated to be an eight (8) phase project. The contractor has indicated; that they would like to install as much liner each season as possible.

6.0 Financial Feasibility Analysis

TFCC is requesting the assistance of the IWRB in the amount of **$26,340,915.00.** This funding would allow TFCC to hire a private contractor to help excavate and install the liner. This is important to TFCC since our crews will be performing other necessary maintenance activities during the installation of the liner.

Attachment A – Liner Budgetary Estimates

GEOSYNTHETIC ADVISORS, LLC.

Wednesday, May 14, 2025

Michael Brady
Earth Work Solutions
2506 Little Powder River Road
Gillette, WY 82716

Dear Michael:

Thank you for inviting us to quote you for the Canal lining project Twin Falls, ID . The products to be installed will vary depending on the section of canal in question and are delineated below. The prices quoted below are estimated based upon data available at the time of the quote and may change as additional factors/conditions are explored prior to final bid. Prices are for turnkey excavation and lining of the canal. See terms and conditions below. We look forward to working with you on this project.

CONTRACT PRICE

Material Quoted*	Qty Estimate***	Materials & Installation	Prices Total

Stafford's Bend

Geomembrane Portion:

60 mil HDPE Liner Single Sided Textured (8oz Nonwoven Textile, Geocomposite or GCL for cushioning where needed)	856,091 ft2	$970,689.00

Civil Portion:

Excavation Dirt Work (SEE ATTACHED DETAIL OF SCOPE OF WORK)	4673 Ln. Ft.	$537,031.00

TOTALCOST OF STAFFORD'S BEND SECTION	$1.507,720.00
TOTAL PRICE PER SQUARE FOOT 856,091 ft2	$1.76/ft2

-Continued-

Williams Siphon

Geomembrane Portion:

60 mil HDPE Liner	807,744 ft2	$888,518.00
Single Sided Textured		
(8oz Nonwoven Textile, Geocomposite or GCL for cushioning where needed)		

Civil Portion:

Excavation Dirt Work	5,487 Ln. Ft.	$647,344.00
(SEE ATTACHED DETAIL OF SCOPE OF WORK)		

TOTAL COST OF WILLIAM'S SIPHON SECTION	$1.535,862.00
TOTAL PRICE PER SQUARE FOOT 856,091 ft2	$1.90/ft2

Cottonwood Canyon HL

Geomembrane Portion:

Non-rock sections

60 mil HDPE Liner	1,229,410 ft2	$1,352,351.00
Single Sided Textured		
(8oz Nonwoven Textile, Geocomposite or GCL for cushioning where needed)		

Blasted Rock Section

60 mil HDPE Liner	149,089 ft2	$163,998.00
Single Sided Textured		
(8oz Nonwoven Textile, Geocomposite or GCL for cushioning where needed)		
TOTAL FOR LINING SECTION	1,378,499	$1,516,349.00

Civil Portion:

Non-rock sections

Excavation Dirt Work	9647 Ln. Ft.	$1,138,132.00
(SEE ATTACHED DETAIL OF SCOPE OF WORK)		

Blasted Rock Section

Blasting and widening Canal	1,100 ln. ft.	$ 321,890.00
(SEE ATTACHED DETAIL OF SCOPE OF WORK)		
(To allow for a proper slope and subgrade for lining)		

TOTAL FOR THE CIVIL SECTION $1,460,022.00

TOTAL COST OF COTTONWOOD SECTION $2.976,371.00
TOTAL PRICE PER SQUARE FOOT 1,378,499 ft2 $2.16/ft2

KINSEY SECTION

Geomembrane Portion:

60 mil HDPE Liner 2,097,884 ft2 $2,307,672.00
Single Sided Textured
(8oz Nonwoven Textile, Geocomposite or GCL for cushioning where needed)

Civil Portion:

Excavation Dirt Work 14,554 Ln. Ft. $1,672,578.00
(SEE ATTACHED DETAIL OF SCOPE OF WORK)

TOTAL COST OF KINSEY SECTION $3.980,250.00
TOTAL PRICE PER SQUARE FOOT 2,097,884 ft2 $1.90/ft2

GRAVEL PIT SECTION

Geomembrane Portion:

60 mil HDPE Liner 1,961,404 ft2 $2,157,544.00
Single Sided Textured
(8oz Nonwoven Textile, Geocomposite or GCL for cushioning where needed)

Civil Portion:

Excavation Dirt Work 13,962 Ln. Ft. $1,604,544.00
(SEE ATTACHED DETAIL OF SCOPE OF WORK)

TOTAL COST OF GRAVEL PIT SECTION $3.762,088.00
TOTAL PRICE PER SQUARE FOOT 1,961,404 ft2 $1.92/ft2

LATERAL 1 SECTION 1

Geomembrane Portion:

60 mil HDPE Liner 160,916 ft2 $ 177,008.00
Single Sided Textured
(8oz Nonwoven Textile, Geocomposite or GCL for cushioning where needed)

Civil Portion:

Excavation Dirt 3837, Ln. Ft. $ 167,549.00
(SEE ATTACHED DETAIL OF SCOPE OF WORK)

TOTAL COST OF LATERAL 1 SECTION 1 $ 344,557.00
TOTAL PRICE PER SQUARE FOOT 160,916 ft2 $2.14/ft2

LATERAL 1 SECTION 2

Geomembrane Portion:

60 mil HDPE Liner 358,364 ft2 $ 394,201.00
Single Sided Textured
(8oz Nonwoven Textile, Geocomposite or GCL for cushioning where needed)

Civil Portion:

Excavation Dirt Work 7,338, Ln. Ft. $ 384,315.00
(SEE ATTACHED DETAIL OF SCOPE OF WORK)
(Includes 100' of concrete Pipe)

TOTAL COST OF LATERAL 1 SECTION 2 $ 778,516.00
TOTAL PRICE PER SQUARE FOOT 358,364 ft2 $2.17/ft2

TOTAL LATERAL 1 BOTH SECTIONS $1,123,073.00
TOTAL PRICE PER SQUARE FOOT 519,280 ft2 $2.16/ft2

MULLIN CREEK BYPASS DITCH

Civil Portion:

Excavation Dirt Work 2,913 ln. ft. $ 60,687.00
(SEE ATTACHED DETAIL OF SCOPE OF WORK)

HIGH LINE NORTH COVER IMPORT

OPTION ONE: Excavate Nearby Hillside

Excavation Dirt Work estimated 72,000 tons. $ 630,400.00
(SEE ATTACHED DETAIL OF SCOPE OF WORK)

OPTION Two: Purchase from Nearby Gravel Pit

Excavation Dirt Work estimated 72,000 tons. $ 940,800.00
(SEE ATTACHED DETAIL OF SCOPE OF WORK)

PIPING OF LATERAL ONE EXTENSION

Civil Portion:

36" PIPE OPTION

36" HDPE SUPPLIED AND INSTALLED 13,500 ln. ft. $2,529,885.00
(SEE ATTACHED DETAIL OF SCOPE OF WORK)

42" PIPE OPTION

42" HDPE SUPPLIED AND INSTALLED 13,500 ln. ft. $3,190,035.00
(SEE ATTACHED DETAIL OF SCOPE OF WORK)

HIGH LINE NORTHROCK BLASTED STRETCH

Civil Portion:

Blasting and widening Canal 1,100 ln. ft. $ 321,890.00
(SEE ATTACHED DETAIL OF SCOPE OF WORK)
(To allow for a proper slope and subgrade for lining)

MISCELLANOUS ITEMS

Civil Portion:

1. Mobilization/Demobilization Per Year $78,390.00
   (SEE ATTACHED DETAIL OF SCOPE OF WORK)
2. Construction & Removal of Temporary Diversion Dams $23,000.00
3. Fencing $57,480.00
4. First Year Deposit $68,640.00

Miscellaneous items are per year for the first two years and are due as deposits prior to mobilization. Item number 4 will be credited off the first mile invoiced each year.

Liner will be invoice upon shipment and balance is due upon arrival on site. The liner will be invoiced at 85% of installation price/ft2 upon receipt on site and the remaining balance will be invoiced upon completion of installation or in progress payments per each mobilization.

Please call with any questions or concerns. Thank you for your business.

GEOSYNTHETIC TERMS AND CONDITIONS:

- Material is due upon delivery at 85% of sq. ft price. on liner and installation costs of the balance is due 15 days from completion or progress to date weekly. Credit cards are not accepted. A late charge of 1.5% per month will be accessed on delinquent invoices. A notice of the right to lien property will accompany all invoices.
- No retainage will be allowed on the invoices.

- Prices are contingent upon the customer supplied estimated quantity sq. footage to be a minimum of 7,647,255 ft2 in not to exceed Three Year Period. If the square footage varies more than +/- 5% we reserve the right to re-quote the price. If the size of the job reduces after the liner is ordered by Geosynthetic Advisors, LLC Construction, Inc, Contractor, or Owner, signing below is responsible for purchasing any left-over liner □

- Price does not include bonding costs, if any.
- In the event of non-payment, the customer agrees to pay reasonable fees incurred by Geosynthetic Advisors, LLC in collection of the amount owing. Note: Special orders and liners that are pre-cut are not subject to cancellation. All material is guaranteed by the manufacturer to be as specified. All work to be completed in a workmanlike manner according to standard practices. Any alteration or deviation from the above specifications involving extra costs will be executed only upon written orders and will become an extra charge over and above the estimate.
- Project Rescheduling: Geosynthetic Advisors, LLC will attempt to accommodate any scheduling by the Owner or General Contractor. However, there may be occasions where we cannot meet the schedule due to other previous commitments. This is especially possible in the months of November through April when the majority of our geosynthetic material installations are scheduled. Under these circumstances, Geosynthetic Advisors, LLC will mobilize as close as possible to the scheduled start date but will not be responsible for any potential costs associated with the delay.
- The Canal company shall describe the real property, and ownership thereof upon which the goods and materials shall be installed. Such a description shall be furnis
- hed before any goods and materials shall be delivered hereunder.
- A late payment nullifies any manufacturer or installer warranty.
- This price quote does not reflect “prevailing wages” (union wages). If prevailing wages and certified payrolls apply to the project, Geosynthetic Advisors, LLC reserves the right to re-quote the project to reflect the appropriate costs or if project lining as commenced prior to notification, customer/contractor will be billed for the difference in costs.

CIVIL CONSTRUCTION TERMS AND CONDITIONS:

Scope and terms of work:

High line North, Safford’s Bend ,RED
Remove and replace fencing in areas where needed .Install temp fence if required to keep livestock in .
Remove all lava boulders from canal section and stockpile along canal bank.
Over excavate the entire canal where possible and stockpile for liner cover .
Slope correction on slopes grading to a 2to1 slope where possible .
Excavate the top bench ,and anchor trench.
Fine grade and compact needed areas in preparation for liner.
Support Geosynthetic Advisors in the lining prosses with equipment and operators.
Backfill anchor trench and place over ex /imported material to cover liner area.
Clean up finished work area by regrading canal access roads and blending surrounding property .

High Line North , William’s siphon, LIME GREEN
Remove and replace fencing in areas where needed .Install temp fence if required to keep livestock in .
Remove all lava boulders from canal section and stockpile along canal bank.
Over excavate the entire canal where possible and stockpile for liner cover .
Slope correction on slopes grading to a 2to1 slope where possible .
Excavate the top bench ,and anchor trench.
Fine grade and compact needed areas in preparation for liner.
Support Geosynthetic Advisors in the lining prosses with equipment and operators.
Backfill anchor trench and place over ex /imported material to cover liner area.
Clean up finished work area by regrading canal access roads and blending surrounding property .

High Line North ,Cottonwood Canyon-Rock section, Aqua Blue
Remove and replace fencing in areas where needed .Install temp fence if required to keep livestock in .
Over excavate the entire canal where possible and stockpile for liner cover .
Slope correction on slopes grading to a 2to1 slope where possible .
Excavate the top bench ,and anchor trench.
Fine grade and compact needed areas in preparation for liner.
Support Geosynthetic Advisors in the lining prosses with equipment and operators.
Backfill anchor trench and place over ex /imported material to cover liner area.
Clean up finished work area by regrading canal access roads and blending surrounding property .

High Line North , Kinsey Section , Pink
Remove and replace fencing in areas where needed .Install temp fence if required to keep livestock in .
Water pumping included if needed.
Over excavate the entire canal where possible and stockpile for liner cover .
Slope correction on slopes grading to a 2to1 slope where possible .
Excavate the top bench ,and anchor trench.
Fine grade and compact needed areas in preparation for liner.
Support Geosynthetic Advisors in the lining prosses with equipment and operators.
Backfill anchor trench and place over ex /imported material to cover liner area.
Clean up finished work area by regrading canal access roads and blending surrounding property .

High Line North ,Gravel Pit HL ,Blue
Remove and replace fencing in areas where needed .Install temp fence if required to keep livestock in .
Over excavate the entire canal where possible and stockpile for liner cover .
Slope correction on slopes grading to a 2to1 slope where possible .
Excavate the top bench ,and anchor trench.
Fine grade and compact needed areas in preparation for liner.
Support Geosynthetic Advisors in the lining prosses with equipment and operators.
Backfill anchor trench and place over ex /imported material to cover liner area.
Clean up finished work area by regrading canal access roads and blending surrounding property .

McMullen Creek bypass ditch
Over excavate existing lateral/bypass ditch.
Grade and dig anchor trench.
Support the lining process with equipment and operators.
Backfill anchor trench and liner.

High line North , Rock section blasting option
1000 ft of canal in the Cottonwood canyon section will be drilled and blasted to the West approximately 20 ft to allow for imported material to be added to the banks to get a line able slope and anchor trench for liner.
All rock will be stockpiled near the canal bank.

High Line North , Material import details
Fill/ liner cover is expected to be used in sections where the excavated material is not suitable for cover ,Sections where rock prevents excavation of backfill material, and where material import is required for slope correction.
Estimated 72,000 tons needed ,and included
Option #1 excavated from nearby hill/area.
Option #2 purchase from nearby gravel pit.
Prices include transport to needed locations for placement.

High Line Lateral, section 1 RED
Remove and replace fencing in areas where needed .Install temp fence if required to keep livestock in .
Over excavate the entire canal where possible and stockpile for liner cover .
Slope correction on slopes grading to a 2to1 slope where possible .
Excavate the top bench ,and anchor trench.

Fine grade and compact needed areas in preparation for liner.
Support Geosynthetic Advisors in the lining prosses with equipment and operators.
Backfill anchor trench and place over ex /imported material to cover liner area.
All fill extra fill needed will be transported from deep creak reservoir ex out stockpile.
Clean up finished work area by regrading canal access roads and blending surrounding property .

High line Lateral, section 2 GREEN
Remove and replace fencing in areas where needed .Install temp fence if required to keep livestock in .
Over excavate the entire canal where possible and stockpile for liner cover .
Slope correction on slopes grading to a 2to1 slope where possible .
Excavate the top bench ,and anchor trench.
Fine grade and compact needed areas in preparation for liner.
Support Geosynthetic Advisors in the lining prosses with equipment and operators.
Backfill anchor trench and place over ex /imported material to cover liner area.
All fill extra fill needed will be transported from deep creek reservoir ex out stockpile.
Install 100 ft of 56in reinforced concrete pipe, RCP, with "poured in place" concrete wing walls at the headwater of lateral just downstream from diversion dam.
Clean up finished work area by regrading canal access roads and blending surrounding property .

Pipe section
Install 13,500 Ln Ft of HDPE pipe
Excavating existing ditch as low as rock will allow us to maintain as consistent a flowline as possible .
Pipe will be installed in as straight of a section as possible to reduce fittings.
If angle fittings are needed, then we will place concrete box in said location .
Concrete boxes will be a 5ft-by-5ft square that is 6 ft tall with rubber boots to create a perfect seal. Also, all pipes will be grouted into the box to prolong the longevity of seal. All boxed will be completed with a expanded metal lid anchored to the top.
Included in the pipe install price is pipe backfill material transported from the deep creek reservoir stockpile.
There is a budget of $120,000 included for 15,000 yards of dirt to be transported placed and compacted ,for pipe spanning if required to detour BLM property. Material will come from deep creek reservoir excavation stockpile.
36 in HDPE
Fusion equipment and Technicians
Pipe handling equipment and installation including imported fill
Purchase and installation including rubber boots grouting and lids
15,000 yards of imported dirt

42 in HDPE
Fusion equipment and Technicians
Pipe handling equipment and installation including imported fill
Purchase and installation including rubber boots grouting and lids
15,000 yards of imported dirt

Notes
All work to be completed in a workmanlike manner according to standard practice ,and work conditions
Two temporary diversion Dams are included in pricing.
All work completion timeline is weather contingent.

Proposal does not include:
No permitting required for construction is included.
No hammering or blasting if rock is encountered not mentioned specifically in the quote.
No concrete work is included.
No compaction testing included
No installation and/or maintenance of silt fence, rock socks, straw tubes, or any other SWPPP requirements are included in the proposal.

Payment schedule as follows . All invoices need to be paid within 15 days .
Mobilization/down payment invoice to be sent 15 days before mobilization date .
Invoicing will happen every 15 days after the project start date.
Civil Construction items will be invoiced by LF of canal or pipe finished or partially finished . Geomembrane items will be billed on a square foot supplied or installed. The initial cut can be invoiced 25% of LF total price .Grading and slope correction will equal 25% of LF total price. Liner install support will invoice 25% of total LF price. Liner cover and cleanup will reflect the final 25%.

Sincerely,

Robert Annalora

Robert Annalora
Member

Acceptance Of Proposal: The above prices, specifications and conditions are satisfactory and are hereby accepted. Geosynthetic Advisors, LLC is authorized to do the work as specified. Payment will be made as outlined.

Signature:_____

Jay Barlogi : Authorized Representative

Title: General Manager

Date:_____

Attachment B – Return Flow Network Budgetary Estimates

Return Flow Network					
28 Rubicon/ Campbell Return Flow Network	28 X $35,000 Meters & $30,000 Structures	28			
Totals					

Campbell Scientific Inc.
815 W 1800 N
Logan, UT 84321-1784
(435) 227-9000
www.campbellsci.com
FED I.D.#87-0305157

Quotation No.	CUS-Q1004126
Revision	0
Quotation Date	Jul 29, 2024
Expiry Date	Sep 27, 2024
Customer Reference	
Salesperson	Tyler Laudenklos
Page	1 of 2

Sales Quotation

Quote To	Ship To
Twin Falls Canal Company	Twin Falls Canal Company 357 6th Ave W Twin Falls, ID 83301 United States

Contact	Louis Zamora	Payment Terms	PPD
Phone	208-733-6851	Delivery Terms	FOB-OR-NC
Email	lzamora@tfcanal.com	Delivery Mode	BESTWAY

Notes

Line	Item	Description	Unit	Qty	Unit Price	Discount	Line Total
1	41859	Aspen10-US-ST Aspen10 Edge (IoT) Device for a Single Sensor US Aspen10-US-ST	EA	30	$790.00	$2,370.00	$21,330.00
2	40636	12-Month, Prepaid, Single-Channel IoT Subscription	EA	30	$225.00	$0.00	$6,750.00
3	42660	RangeVue15 Radar Water Level Sensor, Range 49.2ft (15m) w/o Cable	EA	30	$1,975.00	$5,925.00	$53,325.00
4	39874	VUECBL2-L3 Aspen Conversion Cable (For SoilVUE10, HygroVUE10, ClimaVUE50, SnowVUE10, and RainVUE20) -3 w/3ft Cable per Sensor	EA	15	$40.00	$0.00	$600.00
5	39875	VUECBL2-L10 Aspen Conversion Cable (For SoilVUE10, HygroVUE10, ClimaVUE50, SnowVUE10, and RainVUE20) -10 w/10ft per Sensor	EA	15	$70.00	$0.00	$1,050.00
6	42460	Mounting Bracket Assembly for RangeVue	EA	30	$65.00	$0.00	$1,950.00

Terms and conditions with Campbell Scientific Inc. are governed by the terms found at https://www.campbellsci.com/terms
Any alternate terms and/or conditions are declined unless agreed to, in writing, by Campbell Scientific, Inc.
A 3.5% Convenience Fee may be assessed to invoices paid via credit or charge card
** GSA catalog item | Contract # GS-07F-9255S

Campbell Scientific Inc.
815 W 1800 N
Logan, UT 84321-1784
(435) 227-9000
www.campbellsci.com
FED I.D.#87-0305157

Quotation No.	CUS-Q1004126
Revision	0
Quotation Date	Jul 29, 2024
Expiry Date	Sep 27, 2024
Customer Reference	
Salesperson	Tyler Laudenklos
Page	2 of 2

Subtotal	$85,005.00
Taxes	$5,100.30
Total	$90,105.30

Campbell Scientific Inc.
815 W 1800 N
Logan, UT 84321-1784
(435) 227-9000
www.campbellsci.com
FED I.D.#87-0305157

Quotation No.	CUS-Q1004498
Revision	0
Quotation Date	Aug 1, 2024
Expiry Date	Sep 30, 2024
Customer Reference	
Salesperson	Tyler Laudenklos
Page	1 of 1

Sales Quotation

Quote To	Ship To
Twin Falls Canal Company	Twin Falls Canal Company 357 6th Ave W Twin Falls, ID 83301 United States

Contact	Louis Zamora	Payment Terms	PPD
Phone	208-733-6851	Delivery Terms	FOB-OR-NC
Email	lzamora@tfcanal.com	Delivery Mode	BESTWAY

Notes

Line	Item	Description	Unit	Qty	Unit Price	Discount	Line Total
1	31932	CR1000X-ST-CC Measurement & Control Module (Operating Range -40 to +70C) ** -ST -40 to +70C -CC Campbell Calibration	EA	1	$2,100.00	$0.00	$2,100.00

Subtotal	$2,100.00
Taxes	$126.00
Total	$2,226.00

Terms and conditions with Campbell Scientific Inc. are governed by the terms found at https://www.campbellsci.com/terms
Any alternate terms and/or conditions are declined unless agreed to, in writing, by Campbell Scientific, Inc.
A 3.5% Convenience Fee may be assessed to invoices paid via credit or charge card
** GSA catalog item | Contract # GS-07F-9255S

Example Quote - Budgetary Estimate

Pricing:

Qty	Product	Product Model	Description	FY25 Unit Price (US$)	Total (US$)
1	SlipMeter	SMB-1200-2400-C	Rubicon SlipMeter, equipped with a 48" x 48" meter box/gate and a maximum wall mounting height of 8'. 11.25° sensor pattern. Minimum flow of 4.3 CFS, maximum flow of 101 CFS. Equipped with partial-full level sensor. Fully integrated solution.	$33,260	$33,260
1	Software	SiteConnect Live	SiteConnect Live Starter Kit (includes a cellular modem, antenna, cabling), as well as account and site configuration on Rubicon's cloud-based SCADA system. One-time fee.	$1,000	$1,000
1	Software	SiteConnect Live	SiteConnect Live, Control Site - Annual subscription fee, per site. Includes cloud hosting and cellular service.	$500	$500
1	Service	Supervision & Commissioning	Supervision & Commissioning Per Gate (1 gate)	$3,300	$3,300
			Total (Excluding Taxes)		**$38,060**

SlipMeter Description:

Each SlipMeter includes the following items:

- The SlipMeter is a combination automated undershot control gate and precision flow meter that measures fully submerged flows (and partial-full flow in partial-full models) and mounts directly to a headwall with no straight pipe requirements. It is provided as a complete turnkey installation.
- Each SlipMeter comes equipped with a separate standalone control pedestal which includes a display and keypad, solar panel power system and a 16 ft mast for mounting of communication antenna; RTUs, radio and antenna by others.
- The SlipMeter comes complete with an integrated power supply comprising a solar panel, a solar regulator, and a 12-volt deep cycling battery pack. Note, the batteries must be removed from the meter and charged if the gates are not installed within four weeks of delivery.
- The SlipMeter comes equipped with an internal and external frame c/w stainless steel anchors, epoxy capsules and polyurethane sealant.
- Standard Rubicon local controller software, including automatic local/remote flow control mode, local/remote gate position mode and local manual mode.

SiteConnect Description:

Rubicon's SiteConnect is a cloud-based SCADA system that gives users full remote control of their sites. Data is transmitted through cellular networks to both send commands to the sites as well as gather all data, including flows, levels, alarms etc. Included in SiteConnect:

- Full remote monitoring and control of sites. Note access can be varied depending on password for different officers of the irrigation district (full control versus monitoring only).
- Alarming functions can be sent through email or text.
- All data pertinent to each site can be viewed on the site's historian, or downloaded in .CSV format for storage or reporting.

Note regarding SCADA / Remote Connectivity:

Automated devices are designed to provide continuous operation without human intervention. However, remote connectivity is a feature available on all Rubicon gates and meters that enhances the manageability of the device, giving operations team 24/7 live access in order to better manage the system. As is the case in any automated system, electro-mechanical systems can be subject to upsets beyond their control that

Example Quote - Budgetary Estimate

Pricing:

Qty	Product	Product Model	Description	FY25 Unit Price (US$)	Total (US$)
1	SlipMeter	SMB-450-450-3900-4300-C **(Special-Non-Standard)**	Rubicon SlipMeter, equipped with an 18" x 18" meter box/gate and a maximum wall mounting height of 14'. 11.25° sensor pattern. Minimum flow of 0.6 CFS, maximum flow of 14 CFS. Equipped with partial-full level sensor. Fully integrated solution.	$21,488	$21,488
1	Software	SiteConnect Live	SiteConnect Live Starter Kit (includes a cellular modem, antenna, cabling), as well as account and site configuration on Rubicon's cloud-based SCADA system. One-time fee.	$1,000	$1,000
1	Software	SiteConnect Live	SiteConnect Live, Control Site - Annual subscription fee, per site. Includes cloud hosting and cellular service.	$500	$500
1	Service	Supervision & Commissioning	Supervision & Commissioning Per Gate (1 gate)	$3,300	$3,300
			Total (Excluding Taxes)		**$26,288**

SlipMeter Description:

Each SlipMeter includes the following items:

- The SlipMeter is a combination automated undershot control gate and precision flow meter that measures fully submerged flows (and partial-full flow in partial-full models) and mounts directly to a headwall with no straight pipe requirements. It is provided as a complete turnkey installation.
- Each SlipMeter comes equipped with a separate standalone control pedestal which includes a display and keypad, solar panel power system and a 16 ft mast for mounting of communication antenna; RTUs, radio and antenna by others.
- The SlipMeter comes complete with an integrated power supply comprising an 85W solar panel, a solar regulator, and a 12-volt deep cycling battery pack. Note, the batteries must be removed from the meter and charged if the gates are not installed within four weeks of delivery.
- The SlipMeter comes equipped with an internal and external frame c/w stainless steel anchors, epoxy capsules and polyurethane sealant.
- Standard Rubicon local controller software, including automatic local/remote flow control mode, local/remote gate position mode and local manual mode.

SiteConnect Description:

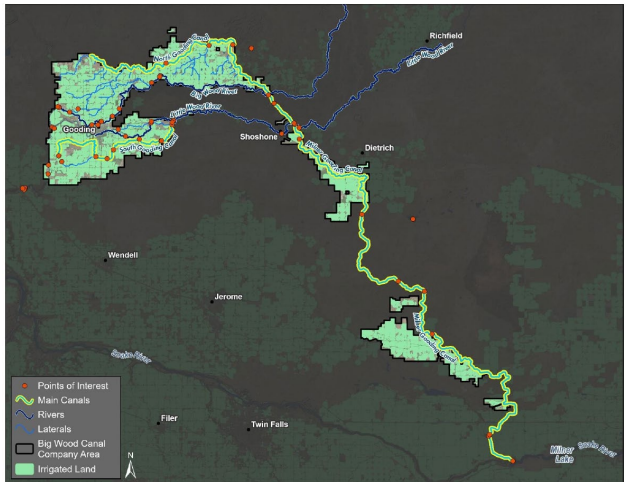
Rubicon's SiteConnect is a cloud-based SCADA system that gives users full remote control of their sites. Data is transmitted through cellular networks to both send commands to the sites as well as gather all data, including flows, levels, alarms etc. Included in SiteConnect:

- Full remote monitoring and control of sites. Note access can be varied depending on password for different officers of the irrigation district (full control versus monitoring only).
- Alarming functions can be sent through email or text.
- All data pertinent to each site can be viewed on the site's historian, or downloaded in .CSV format for storage or reporting.

Note regarding SCADA / Remote Connectivity:

Automated devices are designed to provide continuous operation without human intervention. However, remote connectivity is a feature available on all Rubicon gates and meters that enhances the manageability of the device, giving operations team 24/7 live access in order to better manage the system. As is the case

American Falls Reservoir District 2 Proposal
for an
Engineering Efficiency Study of the Canal System
submitted under:
Surface Waters Efficiency Program



Goal: AFRD2 proposes to study the canal system to determine possible design and operational efficiency improvements that would result in less surface water diversion demand and less water spilled back to the Snake River.

Action: AFRD2 would contract with an engineering firm to study the entire AFRD2 system for operational efficiency improvements that would result in water savings.

Cost: $991,600

Request: Board Subcommittee Review, Comment and Consideration for Submission to the Water Board.

Neal Farmer, IDWR Recharge Program – AFRD2 Canal Efficiency Project Manager
7/11/2025

Memorandum

Date: July 25, 2025
To: Idaho Water Resource Board
Re: ESPA Managed Recharge – Proposed Changes to Conveyance Fee Contracts

REQUIRED ACTION: The Idaho Water Resource Board (IWRB) Aquifer Stabilization Committee will consider recommending the proposed changes to recharge conveyance fees.

I. Background

The IWRB discussed renewing the Recharge Program Conveyance Contracts during the Aquifer Stabilization Committee (Committee) on August 8th, 2024 (No. 2-24). Staff recommended evaluating the term limitations of the contracts and the differing fee schedules of the Upper Valley and Lower Valley. Additionally, staff reported that partners had requested that the IWRB evaluate whether the conveyance fee structure could be changed to limit fluctuations in payments from year to year. During the meeting, Board members also noted that limiting fluctuations in payments would be beneficial to both the Board's and partners' budgeting processes. The Aquifer Stabilization Committee directed staff to evaluate the conveyance current fee structure and present proposed changes to the Committee before the 2025-2026 recharge season. After evaluation and discussion with partners, staff are proposing three changes.

II. Current Conveyance Fee Structure

The current conveyance fee payment structure is set by Board resolution and is based on the volume of recharge completed by a partner each season. The current rates are listed in the table below.

Lower Valley		Upper Valley	
Aug. 1 – Nov. 15	$7 / AF	>40% Retention	$6 / AF
Nov. 16 – Feb. 15	$10 / AF	20-40% Retention	$5 / AF
Feb. 16 – Jul. 31	$5 / AF	15-<20% Retention	$4 / AF
		Cold Weather Incentive: +$1/AF between Dec. 1 – Mar. 31	
		Delivery Incentive: +$1/AF if operator delivers more than 75% of days when IWRB water right is in priority	

III. Overview of Proposed Changes

5-Year Term for All Conveyance Contracts

The current resolutions controlling conveyance contracts were passed in 2016 for the Upper Valley and 2019 for the Lower Valley. These resolutions authorize conveyance contracts with a term limit of one year in the Upper Valley and five years in the Lower Valley. It is proposed that the term limits for conveyance contracts be set to five years for the Upper Valley.

Flat Fee for Conveyance Fees

To address the differing payment structures between the Upper Valley and Lower Valley and to better accommodate variability in water availability, partnerships, and program goals, it is proposed that the conveyance fee for Idaho Water Resource Board Managed Recharge be set at a flat fee per acre-foot of recharge accomplished. It is proposed that the flat fee be set at $7.50 / acre-foot. This rate would be a slight increase on average for most partners compared to what they have received in the past.

Annual Limit for Conveyance Fees

Staff evaluated three different methods for a new payment structure that could potentially decrease the fluctuations in conveyance fee payments based on recommendations from the Aquifer Stabilization Committee Meeting. The three methods evaluated include:

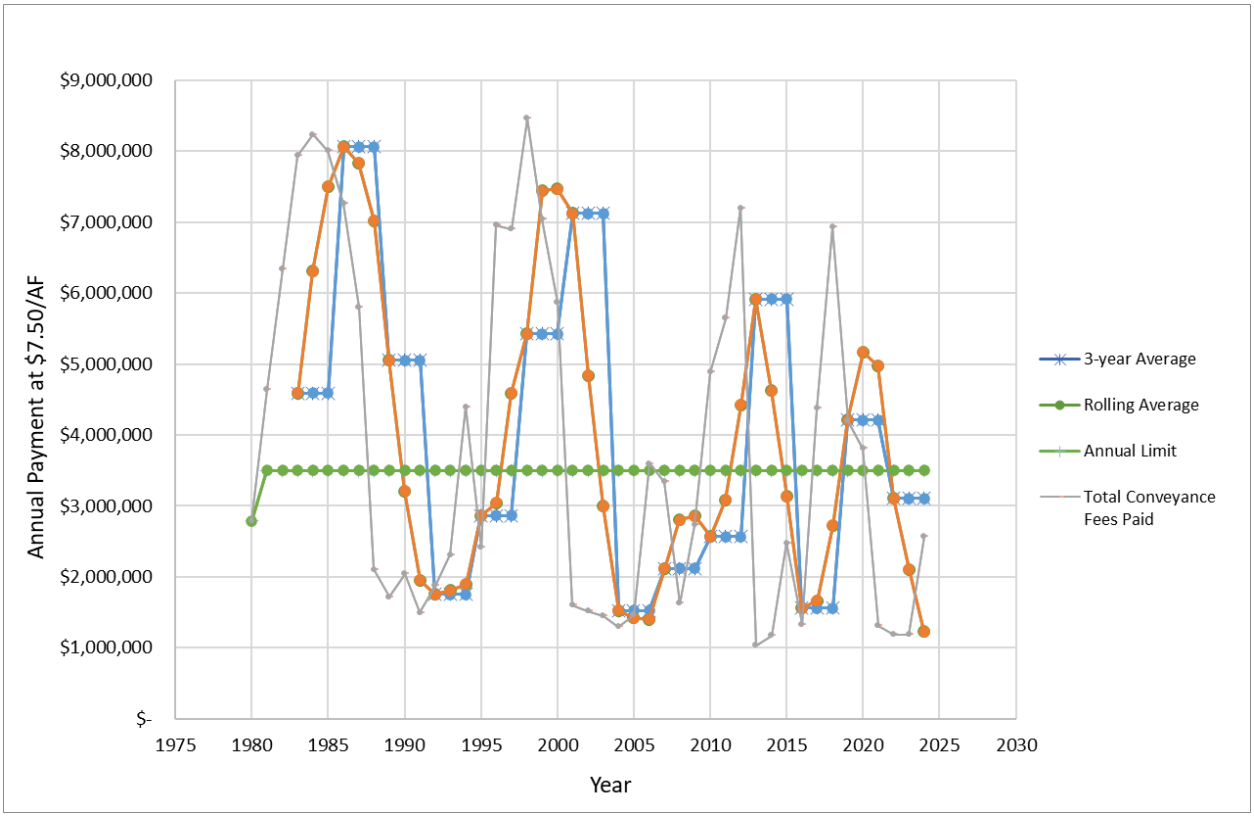
1. 3-Year Average
    - Every three years, the average payment received by a partner during the previous three years would be calculated
    - Partners would be paid this average amount for the next three years

2. Rolling Average
    - Every year, the average payment received by a partner during the previous three years would be calculated
    - Partners would be paid this average amount that year

3. Annual Limit (Recommended Method)
    - At the beginning of a conveyance contract period, an annual conveyance fee limit would be set based on IWRB and partner preferences
    - Partners would still receive payments for all of the recharge they accomplished, but if the amount accomplished in a year is greater than the set limit, the overage would be carried over to be paid in subsequent years when the limit is not met

The evaluation found that the Annual Limit method would best address the challenges that staff, partners, and IWRB members identified with the current structure. This method is also most effective at limiting large fluctuations in payment amounts from year to year (Figure 1).

Figure 1. Comparison of Conveyance Fee Methods



IV. Initial Partner Feedback

Board members requested that staff obtain feedback on the proposed $7.50/AF fee and annual limit changes from some of the Recharge Program's partners. Staff contacted and received feedback from representatives of American Falls Reservoir District No. 2 (AFRD2), North Side Canal Company (NSCC), and Southwest Irrigation District (SWID) in the Lower Valley and representatives of Fremont-Madison Irrigation District (FMID) and New Sweden Irrigation District (NSID) in the Upper Valley. The comments received are summarized below:

- Most partners were positive about the proposed fee change. SWID commented that in the future, the IWRB may want to consider setting conveyance fees based on the costs associated with different methods of recharge.
- No partners opposed setting an annual limit on paymnets as long as the conveyance contract clearly states that the full amount earned will eventually be paid.
- Several partners stated that they did not have any concerns with the current structure, but could see the benefit for the IWRB and other partners, and did not oppose the proposed annual limit.

Memorandum

Date: July 25, 2025
To: Idaho Water Resource Board
Re: ESPA Managed Recharge – Proposed Recharge Project Update

REQUIRED ACTION: The Idaho Water Resource Board (IWRB) Aquifer Stabilization Committee will consider recommending funding for the proposed recharge projects.

I. Existing Projects Update

The IWRB has been actively developing managed recharge capacity throughout the Eastern Snake Plain Aquifer (ESPA) since the start of the full-scale Program in 2014. The intent of the IWRB is to develop a program that can achieve the goals set by the Legislature and ensure the ESPA remains a sustainable water supply for Idaho. The current focus is developing capacity in multiple geographic areas to provide both short- and long-term benefits to the aquifer and surface flows. Over the past ten years, the IWRB has added over 2,300 cfs of recharge capacity across the ESPA, with 2,000 cfs in the Lower Valley and 300 cfs in the Upper Valley above American Falls.

Table 1. Summary of Current IWRB ESPA Managed Recharge Projects

	Projects	Capacity (cfs)	Funding
Complete	3	111	$7,270,000
Active	10	381	$18,317,634
Total	13	492	$25,587,634

Table 2. Current IWRB ESPA Managed Recharge Projects

IWRB Partner	Project Name	Project Type	Status	Capacity (cfs)	IWRB Funding	Year Funded	Scheduled Completion	Description and Key Items
Minidoka I.D.	Goyne Sump Recharge Project	Construction	Active	100	$3,387,047	2022	Fall 2026	Improvement of Infrastructure • Build diversion channel, improve pumps, and additional infrastructure during winter months 2023-2026.
Southwest I.D.	Lambert Recharge Wells	Construction	Active	22	$245,000	2022	Spring 2026	Additional Recharge Well(s) • Contract & easements – Fall 2024 • Well drilled - Winter 2025 • Well does not recharge sufficient water
Enterprize Canal Co.	Swan Hwy Recharge Project	Construction	Active	32	$3,400,000	2022	Fall 2025	Site Construction & Improvement of Infrastructure • Canal improvements complete - Spring 2024 • Construction of 2 basins complete - Spring 2025 • IDEQ processing delay
Enterprize Canal Co.	55th Road Recharge Site	Construction	Complete	30	$1,700,000	2023	Spring 2024	Site Construction • Recharge capacity is unclear • IWRB used in 2024.
New Sweden I.D.	Head of Basalt Recharge Site	Construction	Complete	15	$1,330,000	2023	Fall 2023	Site Construction • Monitor well installed - March 2025
Butte & Market Lake Canal Co.	Poitivan Recharge Wells	Construction	Active	27	$571,000	2024	Spring 2025	Two Recharge Wells • Wells drilled – December 2024 • Diversion complete – Winter 2025 • Construction complete • Recharge and water quality test 2,000 AF - September 2025
Progressive I.D.	South Fork I Recharge Site	Construction	Complete	66	$4,240,000	2024	Spring 2025	Site Construction • Basin constructed - Fall 2024

IWRB Partner	Project Name	Project Type	Status	Capacity (cfs)	IWRB Funding	Year Funded	Scheduled Completion	Description and Key Items
								• Diversion works complete – Spring 2025 • IWRB used 2025 – Recharged 66 cfs
Egin Bench Canal Co.	Egin Recharge Well Complex	Construction	Active	100	$7,388,500	2024	Winter 2026	Site Construction & Improvement of Infrastructure • Install 6 monitoring wells – Summer 2025 • 30-day Recharge test, water quality monitoring, dye test with AF – September 2025.
Enterprize Canal Co.	55th Road Recharge Site Expansion	Construction	Active	50	$2,388,587	2024	Fall 2025	Expansion of Current Site • Basin expansion complete – Winter 2025 • No recharge in 2025
Aberdeen-Springfield Canal Co.	Vanderford Test Recharge Well	Construction	Active	10	$296,500	2024	Fall 2025	Test Recharge Well • Test well to determine feasibility of recharge wells in this area • Conducted background water quality sampling • UIC permitting delay
Peoples Canal Co.	Moreland Test Recharge Well	Construction	Active	10	$135,000	2024	Fall 2025	Test Recharge Well • Test well to determine feasibility of recharge wells in this area. • Conducted background water quality sampling. • UIC permitting delay
New Sweden I.D.	Great Western / Osgood Test Recharge Well	Construction	Active	20	$250,000	2024	Fall 2025	Test Recharge Well • Test well to determine feasibility of recharge wells in this area • Conducted background water quality sampling. • UIC permitting delay
New Sweden I.D.	Head of Basalt Recharge Well	Construction	Active	10	$256,000	2024	Spring 2025	Test Recharge Well • UIC permit issued

IWRB Partner	Project Name	Project Type	Status	Capacity (cfs)	IWRB Funding	Year Funded	Scheduled Completion	Description and Key Items
								• Test well to determine feasibility of recharge wells in this area. • Conducted background water quality sampling. • Well drilled - January 2025 • Monitor well drilled - March 2025 • Need pump installed in monitoring well to collect background water quality sample

II. New Projects Summary

Several irrigation entities have submitted proposals to the IWRB for aquifer recharge projects. These projects will support the IWRB goal of recharging 350,000 acre-feet on an average annual basis. This section provides a summary of these proposed projects.

Figure 1. Locations of New Proposed Recharge Projects.

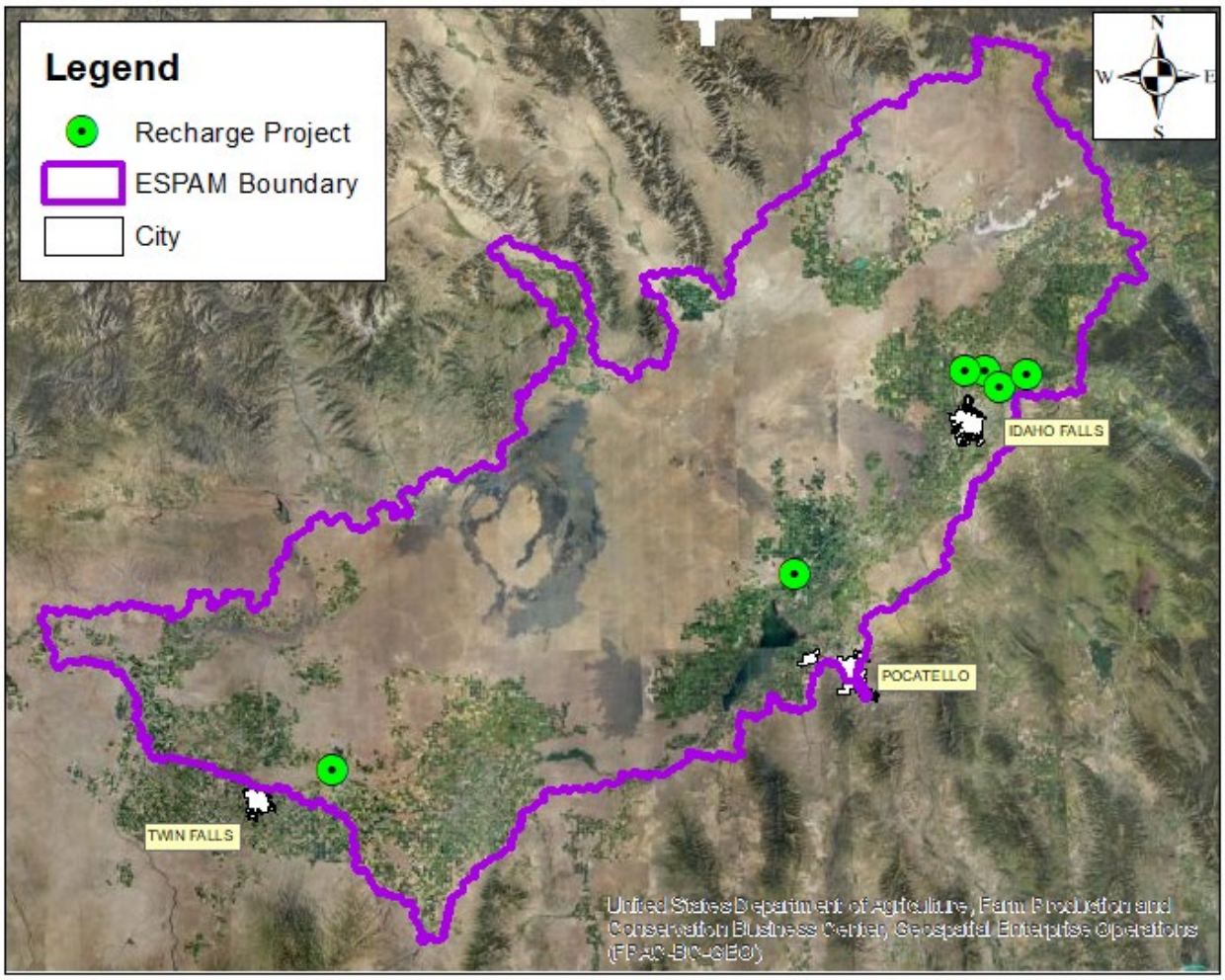


Table 3. Summary of New Proposed Recharge Projects.

Proposed Recharge Project	Cost[1]	Estimated Cost Per Acre-Foot Recharged[2]	Estimated Recharge Capacity (cfs)	Type	5-Year Retention in Aquifer	50% Response Time (Months)[3]	Percent Return to Snake River
Aberdeen Springfield Canal Company - Hilton Well	$535,000[4]	$33	12	Recharge Well	21%	12-13	Shelley to Near Blackfoot 18% Near Blackfoot to Neeley 73%
Burgess Canal Company - Recharge Complex	$2,250,000	$33	50[5]	30-Acre Basin Recharge Well	24%	24-28	Heise to Shelley 33% Shelley to Near Blackfoot 25% Near Blackfoot to Neeley 34%
Harrison Canal Field Pilot Project	$735,000	$13-$29[6]	140	280 Acres of Agricultural Fields	20%	20-24	Heise to Shelley 44% Shelley to Near Blackfoot 27% Near Blackfoot to Neeley 23%
Progressive Irrigation District - Big Basin	$11,500,000	$79	90	52-Acre Basin	19%	20-24	Heise to Shelley 38% Shelley to Near Blackfoot 28% Near Blackfoot to Neeley 28%
Progressive Irrigation District - South Fork Phase II	$3,400,000	$63	28	15-Acre Basin	14%	12-16	Heise to Shelley 60% Shelley to Near Blackfoot 18% Near Blackfoot to Neeley 18%

[1] Capital costs plus conveyance costs over a 20-year time period.
[2] Estimated cost per acre-foot recharged over a 20-year time period. Assumed 90 days of recharge available in 50% of the years. Used a conveyance fee of $7.50 / acre-foot.
[3] The time required for 50% of the recharged water to discharge to the Snake River
[4] This is the cost of Phase 1. If the test recharge well in Phase 1 achieves a satisfactory recharge flow rate, Aberdeen Springfield Canal Company will propose Phase 2 of the project. Phase 2 will involve constructing more recharge wells at an estimated cost of $2,000,000.
[5] Average of the 25-80 cfs recharge capacity range listed on the proposal.
[6] Assuming 90 days of recharge available in 50% of the years = $12 / AF. Limiting recharge to before the irrigation season (April 1-April 22) and assuming recharge available in 50% of the years = $26 / AF.

Table 4. Examples of Existing Recharge Projects.

Site Name	Cost[1]	Estimated Cost Per Acre-Foot Recharged[2]	Estimated Recharge Capacity (cfs)	Type	2015-2024 Actual Cost Per Acre-Foot Recharged
Upper Valley					
Butte Market Lake – Poitevin Well	$1,103,302	$31	20	Recharge Well	---
Fremont Madison – Egin Lakes	$3,295,477	$15	125	Basin	$14
Fremont Madison – Egin Well	$7,618,500	$50	100	Recharge Wells	---
Progressive - 55th Road	$4,088,587	$84	30	Basin	---
Progressive – South Fork 1	$5,278,000	$52	66	Basin	---
Lower Valley					
AFRD2 - MP 29	$9,458,465	$8	650	Basin	$16
AFRD2 - MP 31	$12,638,253	$12	600	Basin	$17
Big Wood Canal Company - Richfield Site	$496,881	$14	20	Basin	$47
Minidoka Irrigation District - Goyne Sump	$3,354,820	$26	100	Recharge Well	---
Northside Canal Company - Wilson Canyon	$7,624,232	$9	450	Basin	$11
Southwest Irrigation District	$1,514,431	$17	50	Recharge Wells	$17

[1] Capital costs plus conveyance costs over a 20-year time period.
[2] Estimated cost per acre-foot recharged over a 20-year time period.

III. Site Characterization Summaries for the Proposed Projects

This section includes a memorandum for each proposed project summarizing the project cost, impact on the aquifer, impact on the Snake River, site hydrogeology, and nearby potential sources of contamination.

Memorandum

Date: July 25, 2025
To: Idaho Water Resource Board
From: Josh Morell
Re: ESPA Managed Recharge – Progressive Irrigation District South Fork Phase II Recharge Site

REQUIRED ACTION: The Idaho Water Resource Board (IWRB) will consider funding the Progressive Irrigation District's South Fork Phase II Recharge Proposal.

The Progressive Irrigation District (PID) submitted a proposal for a recharge basin. The development of this recharge basin is to 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 complex.

I. Project Proposal

PID is requesting $ 3,400,000 in funding to support the development of a 15-acre recharge basin. The cost of the project includes the design and construction of the recharge basin. The breakdown of requested funds is as follows:

Table 1. Proposal Expenses

Expense Category	Estimated Cost
15' Excavation	$2,041,595
Diversion Structure	$290,000
Road Repairs	$400,000
Engineering	$50,000
20% Contingency	$556,319
Total Proposal Cost	**$3,400,000**
Excavated Phase I Material Royalty	$135,540
Excavated Phase II Material Royalty	$450,000
Total Project Cost After Royalties	$2,815,000

PID proposes excavating a 15-acre recharge basin adjacent to the South Fork Phase I recharge basin. The proposed basin would be 15 feet deep and has an estimated recharge capacity of 28 cubic feet per second (cfs),which is based on the 1.78 cfs/acre steady-state recharge rate achieved by Phase I. PID has indicated that all materials hauled from the excavated basin would be purchased by local contractors and that a royalty would be given back to the IWRB. This will be a 100% haul off project, with material trucked off the site as it is excavated. PID will also comply with all Bonneville County Aquifer Recharge Basin Development ordinance. Therefore, $400,000 is requested for road repairs and other associated contingencies.

PID is requesting the full $3,400,000 for the recharge basin. The cost per acre-foot (AF) of recharged water for this recharge basin is $63 at this full price. This cost per AF was calculated based on the

estimated AF of recharge over 20 years and includes a $7.50/AF conveyance fee. Full calculation details can be found in the Appendix. Upon completion of this recharge basin, the IWRB would have the first right of use when IWRB water is available.

II. MAR Site Summary

Est. Recharge Capacity:	28 cfs	Operator:	Progressive Irrigation District
Size (ac):	15 ac	Delivery System:	Anderson Canal
5-yr Retention:	14%	50% Response Time:	12 – 16 months
Depth to Water:	40-100 ft	Ownership:	PID

ESPAM 2.2 and ETRAN V3.4 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: Heise to Shelley reach (60%), Shelley to Near Blackfoot reach (18%), and Near Blackfoot to Neeley reach (18%). The time required for 50% of the recharged water to be discharged to the Snake River is 12-16 months.

III. Hydrogeology Summary

Table 2. Generalized Geology Below Site

Depth	Subsurface Geology
0-120 Feet Below Ground Surface	Sand/Gravel/Clay
Beyond 120 Feet Below Ground Surface	Basalt/Fractured Basalt

The subsurface geology, based on nearby well logs, generally shows sand, gravel, and clay from 0 to 120 feet below ground surface and basalt below 120 feet. Well logs indicate scattered clay layers throughout the area around the proposed basin. The subsurface geology should be favorable for a recharge basin if clay layers are not present beneath the basin. If clay layers are found beneath the basin, they could substantially decrease infiltration rates. Figures 2 and 3 are geologic cross sections for the proposed site.

IV. Site Vicinity

To obtain an approved groundwater monitoring plan from the Idaho Department of Environmental Quality (IDEQ), a review of facilities and potential areas of concern is typically required. A review of IDEQ's Source Water Assessment and Protection map shows the following potential contaminants within a 2-mile radius of the proposed recharge basin:

- Two managed aquifer recharge sites:
  - 200 feet south and downgradient of the site
  - 3,782 feet west and downgradient of the site
- Three sewage drain fields:

        - 4,100 feet west and downgradient of the site
        - 4,800 feet west and downgradient of the site
        - 1.1 miles northeast and upgradient of the site
    - A feedlot 4,500 feet east and upgradient of the site
    - An underground storage tank 1.8 miles west and downgradient of the site
    - A Resource Conservation and Recovery Act (RCRA) contamination site 1.9 miles west and downgradient of the site.

An additional water quality consideration for the IDEQ is the locations of Public Water Systems (PWS) near the site. The site is within multiple 3-year or less time of travel (TOT) for an IDEQ PWS. Below are the PWS that overlap the proposed site:

- 3 year-Yellowstone Plastics (PWS #7100188)
- 3 year- HK Contractors (PWS #7100190)
- 3 year-Brookhaven Water ASSN (PWS #7100012)
- 3 year-School District 91 York School (PWS #7100123)
- 3 year- City of Ammon (PWS #7100004)
- 3 year-Sunnyside Park Utilities (PWS #7100196)

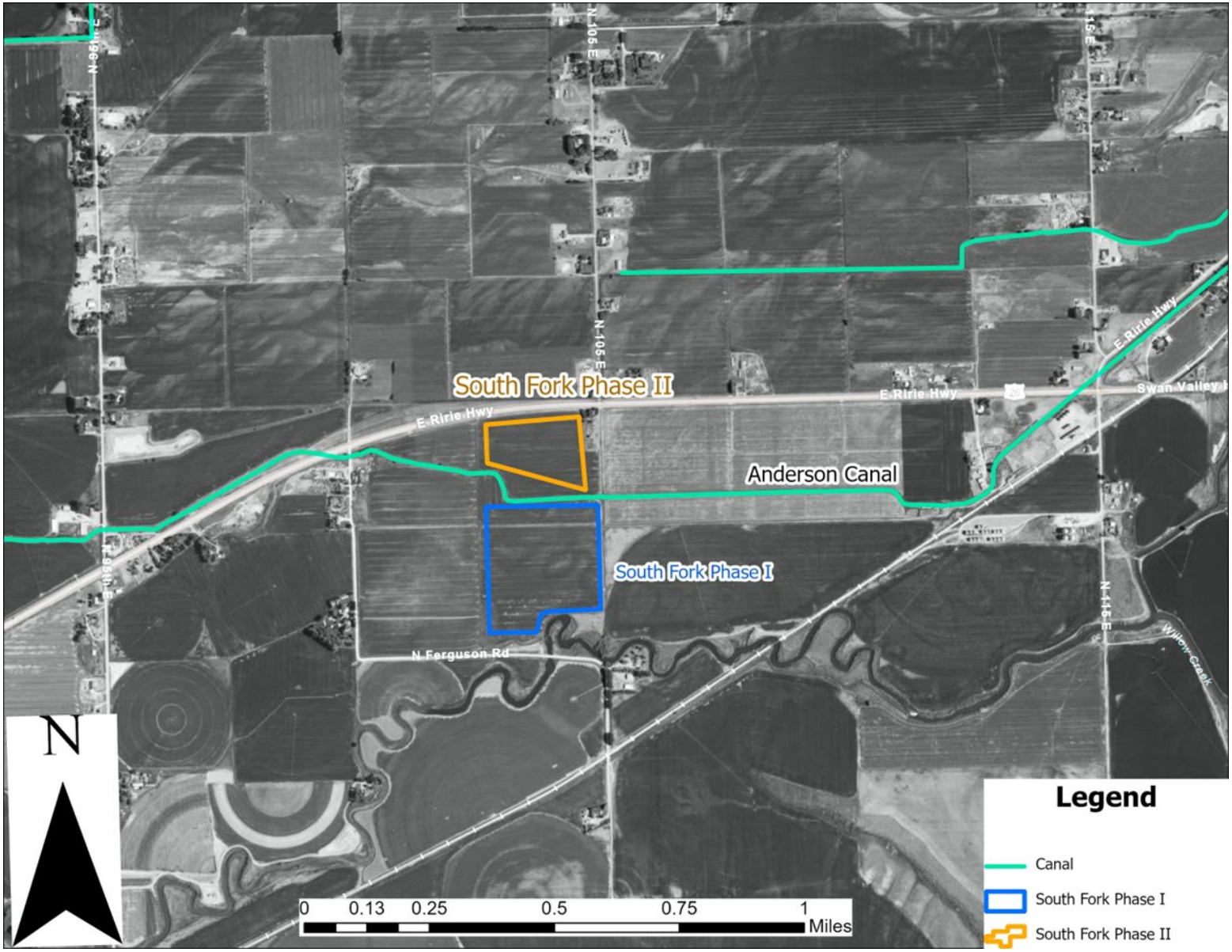


Figure 1. Locations of the proposed site and the South Fork Phase I site

V. Appendix

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

Volume Recharged = (Days/year * Acre-feet Recharged / day) * 20 years

= 45 days /year * 56 acre-feet / day * 20 years

= 50,400 acre-feet

$$\text{Cost} = \frac{\text{Capital Development Costs} + \text{Conveyance Cost for 20 Years}}{\text{20 years (Period of IWRB First Right of Refusal)}}$$

$$= \frac{\$2{,}815{,}000 + (50{,}400 \text{ acre-feet} * \$7.50 / \text{acre-foot})}{}$$

= $3,193,000

$$\text{Cost Per AF} = \frac{\text{Cost}}{\text{Volume Recharged}}$$

$$= \frac{\$3{,}193{,}000}{50{,}400 \text{ acre-feet}}$$

= $63 / 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 20 years
  - This is the length of time IWRB has the First Right of Refusal for sites it develops.
- The cost is the capital cost plus the conveyance costs.

Memorandum

Date: July 25, 2025
To: Idaho Water Resource Board
From: Josh Morell
Re: ESPA Managed Recharge – Progressive Irrigation District Big Basin Recharge Site

REQUIRED ACTION: The Idaho Water Resource Board (IWRB) will consider funding the Progressive Irrigation District's Big Basin Recharge Proposal.

The Progressive Irrigation District (PID) submitted a proposal for a recharge complex. The development of this complex is to 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 complex.

I. Project Proposal

The Progressive Irrigation District is requesting $ 11,500,000 in funding to support the development of a 52-acre recharge basin, the location of which is shown in Figure 1. The cost of the project includes the purchase, design, and construction of the recharge basin. The breakdown of requested funds is as follows:

Expense Category	Estimated Cost
Land	$1,377,000
15' Excavation	$8,118,804
Diversion Structure	$320,000
Road Work	$500,000
Engineering and Fences	$147,500
10% Contingency	$1,000,000
Total Proposal Cost	**$11,500,000**
Excavated Material Royalty	$1,050,000
5-Acre Buyback-Progressive	$105,000
3.3-Acre Buyback	TBD
Total Projected Cost After Royalties and Buybacks	**$10,335,000**

The proposed project includes purchasing a 65.9-acre parcel of land for $20,905/acre. The price was derived from Uniform Agricultural Appraisal Report. Currently, the land is agricultural land, so the PID proposes excavating 52-acres of the parcel into a recharge basin. PID has informed the IWRB that they would buy back 5-acres of the remaining 13.9 acres. Another 3.3 acres could also be sold with proceeds going back to the IWRB. The proceeds from the 3.3 acres are not known at this time but should be at least $68,986.50 (3-acres * $20,905). The remaining 5.6 acres lie south and east of Willow Creek and will remain unused because the channel of Willow Creek cannot be moved.

The proposed basin would be 15 feet deep and has an estimated recharge capacity of 90 cfs, which is based on the 1.78 cfs/acre steady-state rate achieved at the South Fork Recharge Basin 5 miles to the northeast in similar geology. PID can deliver greater than 90 cfs to the location before, during, and after the irrigation season due to the parcel's location on Willow Creek. PID has indicated that all materials hauled from the excavated basin would be purchased by local contractors and that this royalty would be reimbursed to the Idaho Water Resource Board (IWRB). PID informed the IWRB that Bonneville County may request some of the material for use at a county landfill for no royalty to the IWRB. This will be a 100% haul off project, with material trucked off the site as it is excavated. PID will also comply with all Bonneville County Aquifer Recharge Basin Development ordinance. Therefore, $500,000 is requested for road repairs and other associated contingencies.

PID is requesting the full $11,500,000 for the recharge basin. At this full price, the estimated cost of recharged water for this recharge basin is $79 per acre-foot (AF). This cost per AF was calculated based on an estimated AF of recharge in 20 years. Full calculation details can be found in the Appendix. Upon completion of the complex, the IWRB would have the first right of use when IWRB water is available.

II. MAR Site Summary

Est. Recharge Capacity:	90 cfs	Operator:	Progressive Irrigation District
Size (ac):	52 ac	Delivery System:	Willow Creek
5-yr Retention:	19%	50% Response Time:	20 – 24 months
Depth to Water:	100-120 ft	Ownership:	Private

ESPAM 2.2 and ETRAN V3.4 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: Heise to Shelley reach (38%), Shelley to Near Blackfoot reach (28%), and Near Blackfoot to Neeley reach (28%). The time required for 50% of the recharged water to be discharged to the Snake River is 20-24 months.

III. Hydrogeology Summary

Table 1. Generalized Geology Below Site

Depth	Sub Surface Geology
0-120 Feet Below Ground Surface	Sand/Gravel/Clay
Beyond 120 Feet Below Ground Surface	Basalt/Fractured Basalt

The subsurface geology, based on nearby well logs, generally shows sand, gravel, and clay from 0 to 120 feet below ground surface and basalt below 120 feet. Well logs indicate scattered clay layers throughout the area around the proposed basin (Figures 3 & 4). The subsurface geology should be favorable for a recharge basin if clay layers are not present beneath the basin. If clay layers are found beneath the basin, they could substantially decrease infiltration rates. Figures 3 and 4 are geologic cross sections for the proposed site.

IV. Site Vicinity

To obtain an approved groundwater monitoring plan from the Idaho Department of Environmental Quality (IDEQ), a review of facilities and potential areas of concern is typically required. A review of IDEQ's Source Water Assessment and Protection map shows the following potential contaminants within a 2-mile radius of the proposed complex:

- 500 feet west and downgradient of site is an underground storage tank
- 4,300 feet east and upgradient of the site is a dairy
- Four sewage drain fields:
  - 1.2 miles northwest and downgradient of site
  - 1.7 miles northeast and upgradient of site
  - 2 miles east and upgradient of site
  - 2 miles southwest and downgradient of site
- Three mines (sand/gravel):
  - 2,719 feet southeast and upgradient of the site
  - 1.3 miles southeast and upgradient of the site
  - 1.7 miles north and cross gradient of the site
- 1.3 miles southeast and upgradient of the site is a Resource Conservation and Recovery Act (RCRA) contamination site
- 2 miles south and cross gradient of the site is a landfill

An additional water quality consideration for the IDEQ is the locations of Public Water Systems (PWS) near the site. The site is within multiple 3-year or less time of travel (TOT) for an IDEQ PWS. Below are the PWS that overlap the proposed site:

- 1 year-HK Contractors (PWS #7100190)
- 1 year- Andco Management (PWS #7100194)
- 3 year- Greenfeild Water and Sewer (PWS #6060026)
- 1 year-Sargents Water (PWS #710031)
- 1 year- City of Idaho Falls (PWS #7100039)
- 1 year-Bonneville Highschool (PWS #7100167)
- 1 year- Valley Trailer Court (PWS #7100102)
- 1 year- Pinewood Estates (PWS #7100071)
- 1 year- Sunnyside Park Utilities (PWS #7100196))
- 1 year- Bonneville High School (PWS #7100010)
- 1 year-DJ Parker Well (PWS #7100200)
- 3 year-American Heritage Charter School (PWS #7100219)
- 1 year-Iona Water Department (PWS #7100041)
- 3 year- City of Ammon (PWS #7100004)
- 2 year- Evolution Plaza (PWS #7100213)
- 3 year-Falls Water Company (PWS #7100030)
- 2 year-Bonneville Acres Water Users (PWS #7100059)
- 2 year-Shady Rest RV Park (PWS #7100106)

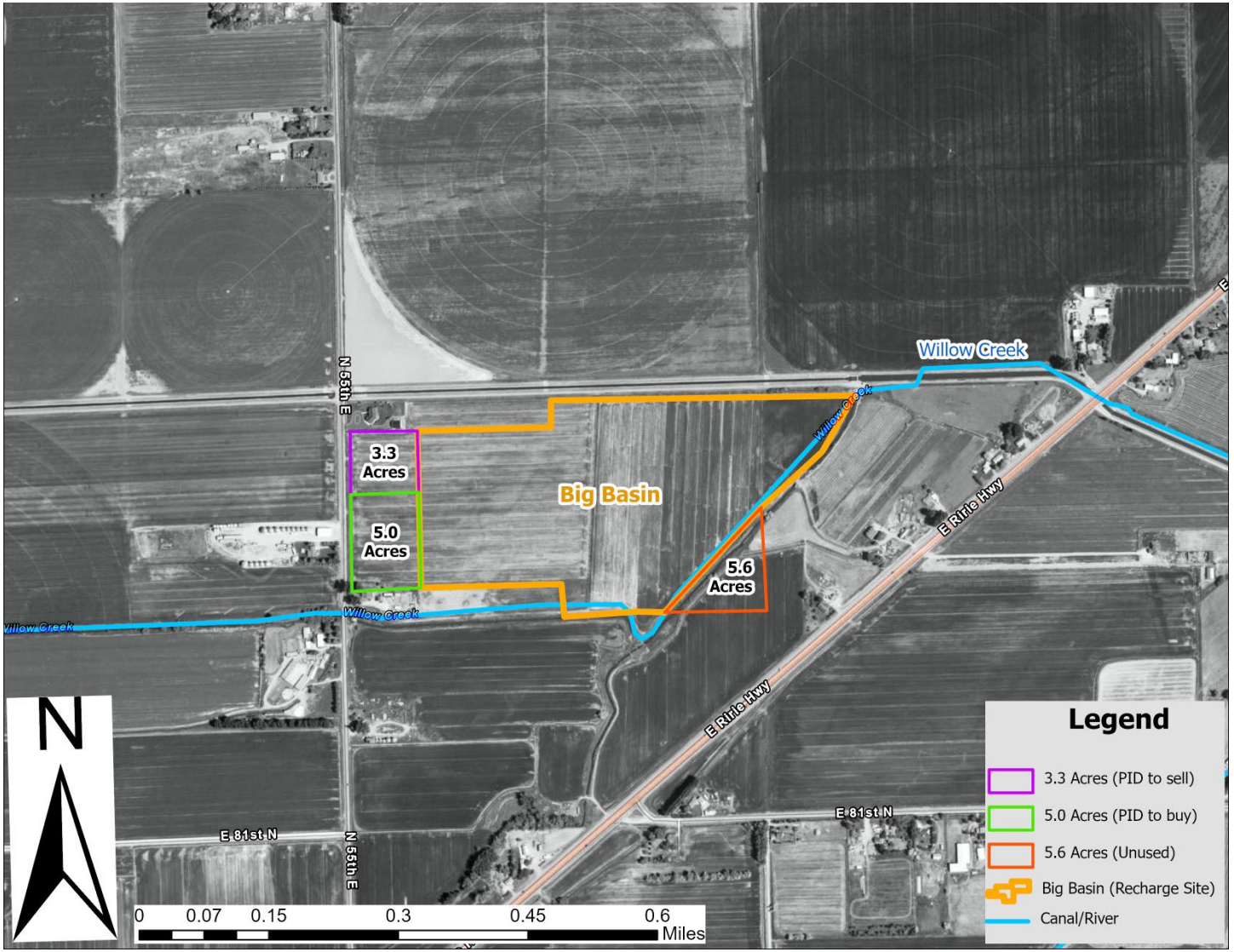


Figure 1. Locations of proposed recharge basin and parcels of land.

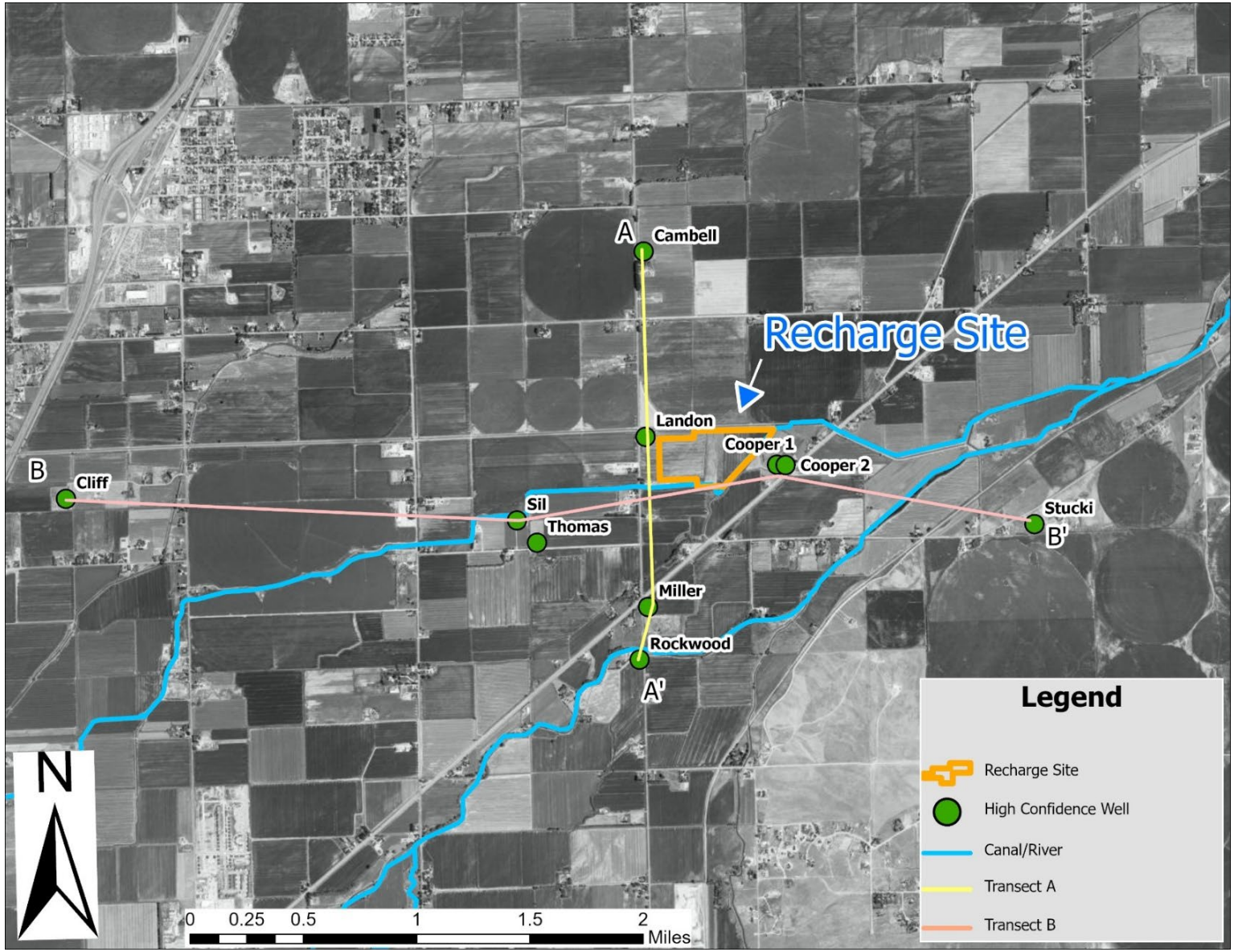


Figure 2. Locations of the proposed site and the wells used in geology analysis.

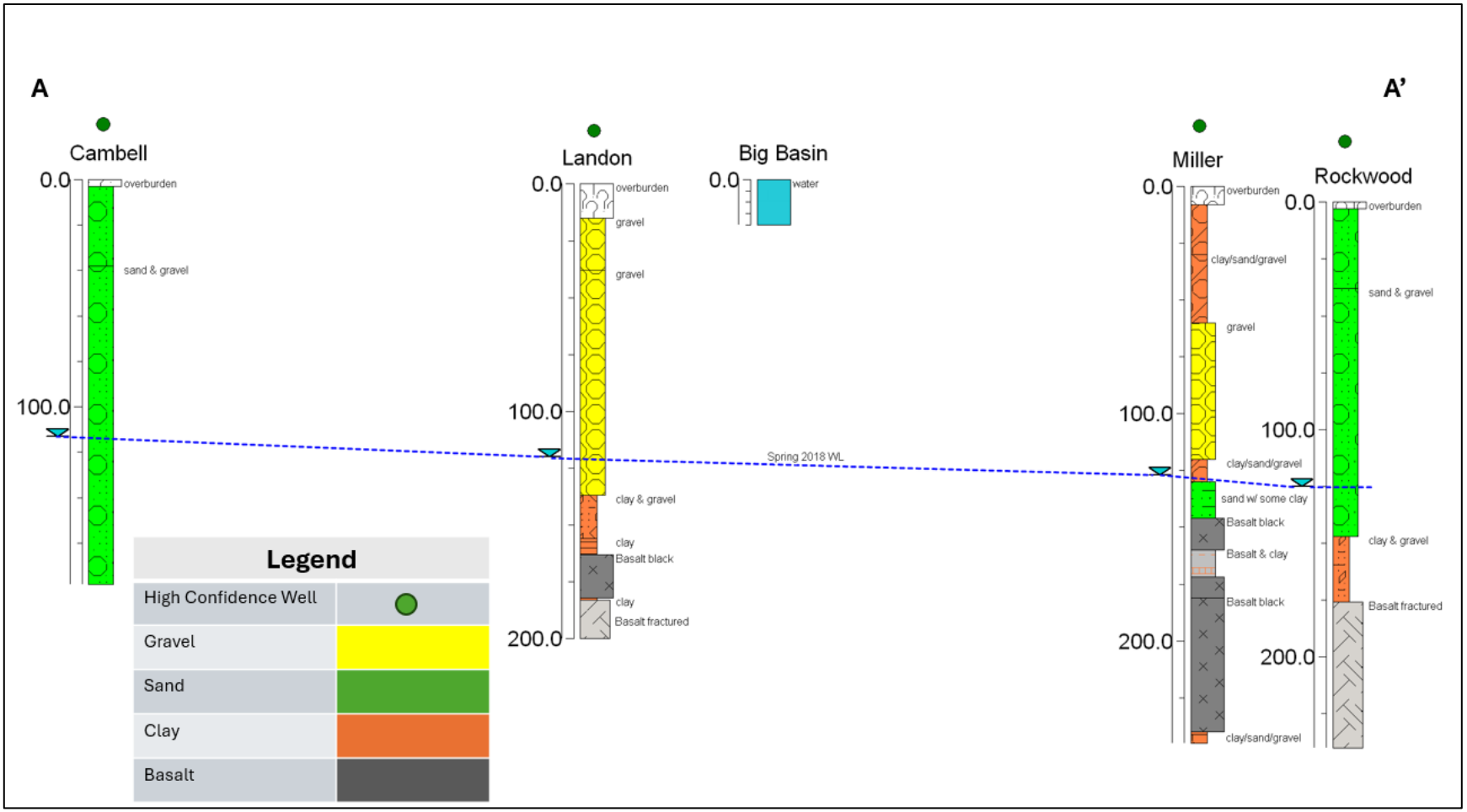


Figure 3. Geologic cross-section from north to south.

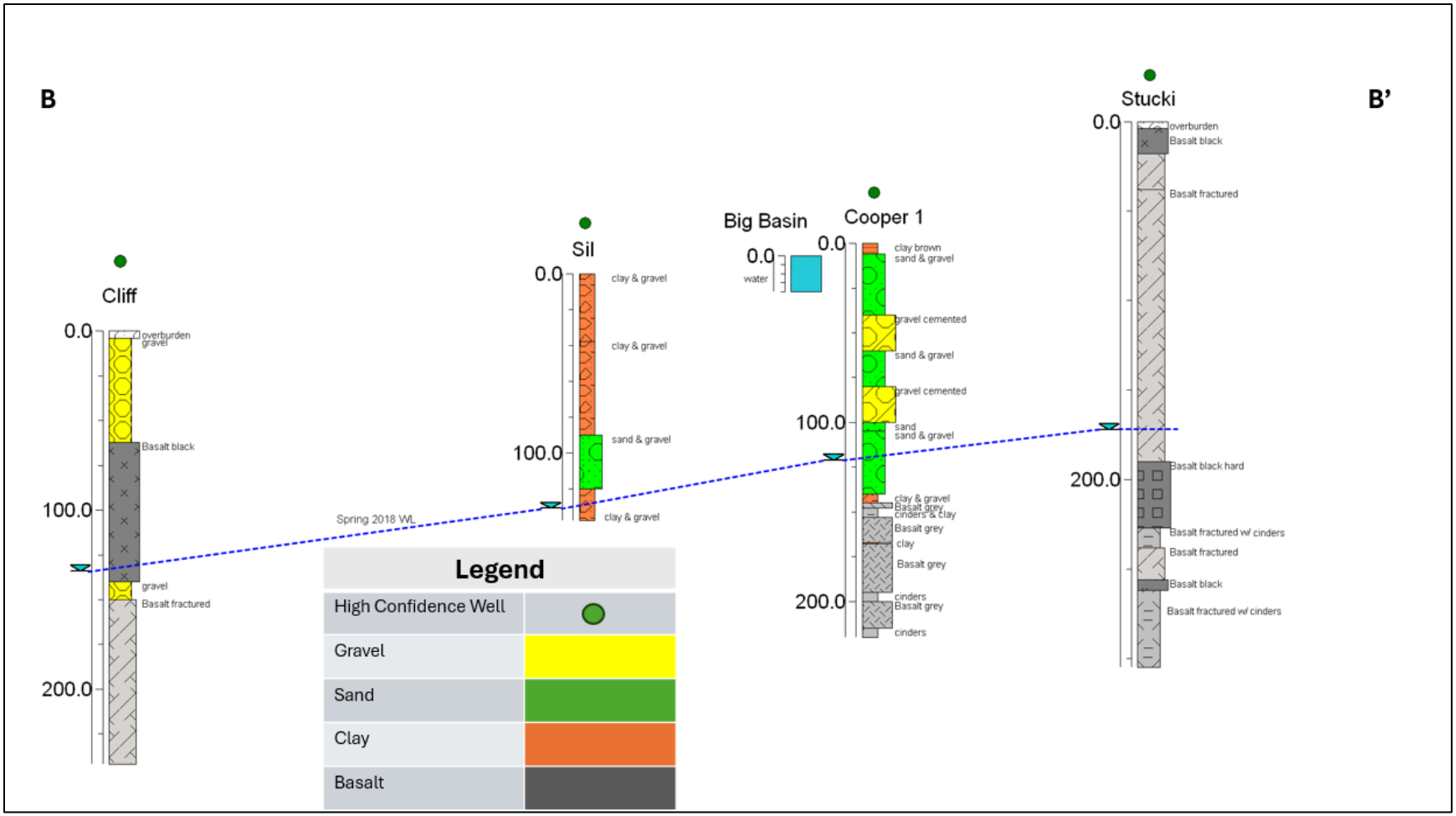


Figure 4. Geologic cross-section from west to east.

V. Appendix

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

Volume Recharged = (Days/year * Acre-feet recharged / day) * 20 years

= (45 days /year * 180 acre-feet / day) * 20 years

= 162,000 acre-feet

Cost = Capital Development Costs + Conveyance Cost for 20 Years

= $11,500,000 + (162,000 acre-feet * $7.50 / acre-foot)

= $12,725,340

Cost Per AF = $\frac{\text{Cost}}{\text{Volume Recharged}}$

= $\frac{\$12,725,340}{162,000 \text{ acre-feet}}$

= $79 / 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 20 years
    - This is the length of time IWRB has the First Right of Refusal for sites it develops.
- The cost is the capital cost plus the conveyance costs.

Memorandum

Date: July 25, 2025
To: Idaho Water Resource Board
From: Josh Morell
Re: ESPA Managed Recharge – Burgess Canal Company Recharge Complex Proposal

REQUIRED ACTION: The Idaho Water Resource Board (IWRB) will consider funding the Burgess Canal Company Recharge Complex Phase I Proposal.

The Burgess Canal Company submitted a proposal for a recharge complex. The development of this complex is to 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 complex.

I. Project Proposal

The Burgess Canal Company is requesting $ 2.25 million in funding to support the development of the recharge complex. This complex includes the acquisition of a 38-acre parcel, which contains a ~30.5-acre excavated gravel pit that will serve as a basin, construction of test recharge well, and a ground water monitoring network. This proposal includes purchasing the land, design, and construction of the recharge complex. The breakdown of requested funds is as follows:

Expense Category	Estimated Cost
Land Acquisition (38 acres)	$504,000
Channel Upgrades/Excavation/Measurement Devices	$497,000
Basin Clean Up	$240,000
Burgess Incidentals	$255,000
Total Basin Cost	**$1,496,000**
Recharge Well	$200,000
Headgate Structure (including meter)	$100,000
Five Monitoring Wells	$200,000
30% Contingency	$520,000
Total Complex Cost	**$2,250,000**

The proposed project includes purchasing a 38-acre parcel which includes an existing 30.5 acre excavated gravel pit ranging from 20 to 25 feet deep. The gravel pit will be re-purposed into a recharge basin with a test recharge well (up to 400 feet deep) constructed on the basin's bank. If the test recharge well achieves a recharge flow rate that the IWRB finds satisfactory, the Burgess Canal Company will propose a "Phase II" of the project that will include the construction of more recharge wells. The long-term goal of this complex is to have a recharge capacity of 125 cfs through a combination of basin infiltration and recharge well injection. Additionally, this proposal includes funding for a network of up to five monitoring wells to monitor ground water levels and water quality around the proposed recharge complex.

The proposed site is situated on the main Burgess Canal after the last irrigation diversion point on the system. This canal will need to be improved to accommodate increased flows to the recharge complex. The existing gravel pit will also need some improvements and modification to be an effective recharge basin. These improvements include removing concrete, excavation, and slope stabilization.

The Burgess Canal Company is requesting the full $2,250,000 for Phase I of the project. The estimated cost of recharged water for Phase I of this recharge complex is $33 per acre-foot (AF), including conveyance fees. This cost per AF was calculated based on an estimated acre-feet of recharge in 20 years. Full calculation details can be found in the Appendix. Upon completion of the complex, the IWRB would have the first right of use when IWRB water is available.

II. MAR Site Summary

Est. Recharge Capacity:	25 - 80 cfs	Operator:	Burgess Canal Company
Size (ac):	30.5 ac	Delivery System:	Burgess Canal
5-yr Retention:	24%	50% Response Time:	24 – 28 months
Depth to Water:	100 ft – 140 ft	Ownership:	Private

ESPAM 2.2 and ETRAN V3.4 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; Near Blackfoot to Neeley reach (34%), Heise to Shelley reach (33%), and Shelley to Near Blackfoot reach (25%). The time required for 50% of the recharged water to be discharged to the Snake River is 24-28 months.

III. Hydrogeology Summary

Table 1. Generalized Geology Below Site

Depth	Sub Surface Geology
0-50 Feet Below Ground Surface	Sand Gravel
50-150 Feet Below Ground Surface	Basalt
Beyond 150 Feet Below Ground Surface	Fractured Basalt

The subsurface geology, based on nearby well logs, generally shows sand and gravel from 0 to 50 feet below ground surface and basalt below 50 feet. Well logs also indicated the presence of increasingly fractured basalt deeper below the ground surface. Well logs north of the basin showed some scattered clay layers.

The Burgess Canal Company informed the IWRB that clay was brought into the existing gravel pit, which is why there is ponding in the basin. Once these materials are removed from the basin, the subsurface geology should be favorable for both a recharge basin and recharge well(s). Figures 2 and 3 are geological cross sections for the proposed site.

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 Well program (UIC) program, a review of facilities and potential areas of concern is normally required. A review of IDEQ's Source Water Assessment and Protection map showed the following potential contaminants within a 2-mile radius of the proposed complex:

- 1-mile northwest and down gradient of the site is an underground storage tank
- 1.5 miles south and cross gradient of the site is a feedlot, and a second feedlot is 1.2 miles northeast and upgradient of the site
- 1.7 miles northeast and upgradient of the site is a remediation site from a sulfuric acid spill
- 1.7 miles west and downgradient of the site is a chemical Tier II site
- 1.9 miles northeast and upgradient of the site is an RCRA site

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 not within the 3-year time of travel zone for any Public Water Systems. The following Public Water Systems have 3- year time of travel zones within 1-mile of the site.

- GPod of Idaho (PWS #6060102)
- Basic American Food (PWS #6060020)
- Bear Island Water (PWS #7260002)
- Riverside Estates (PWS #6060059)

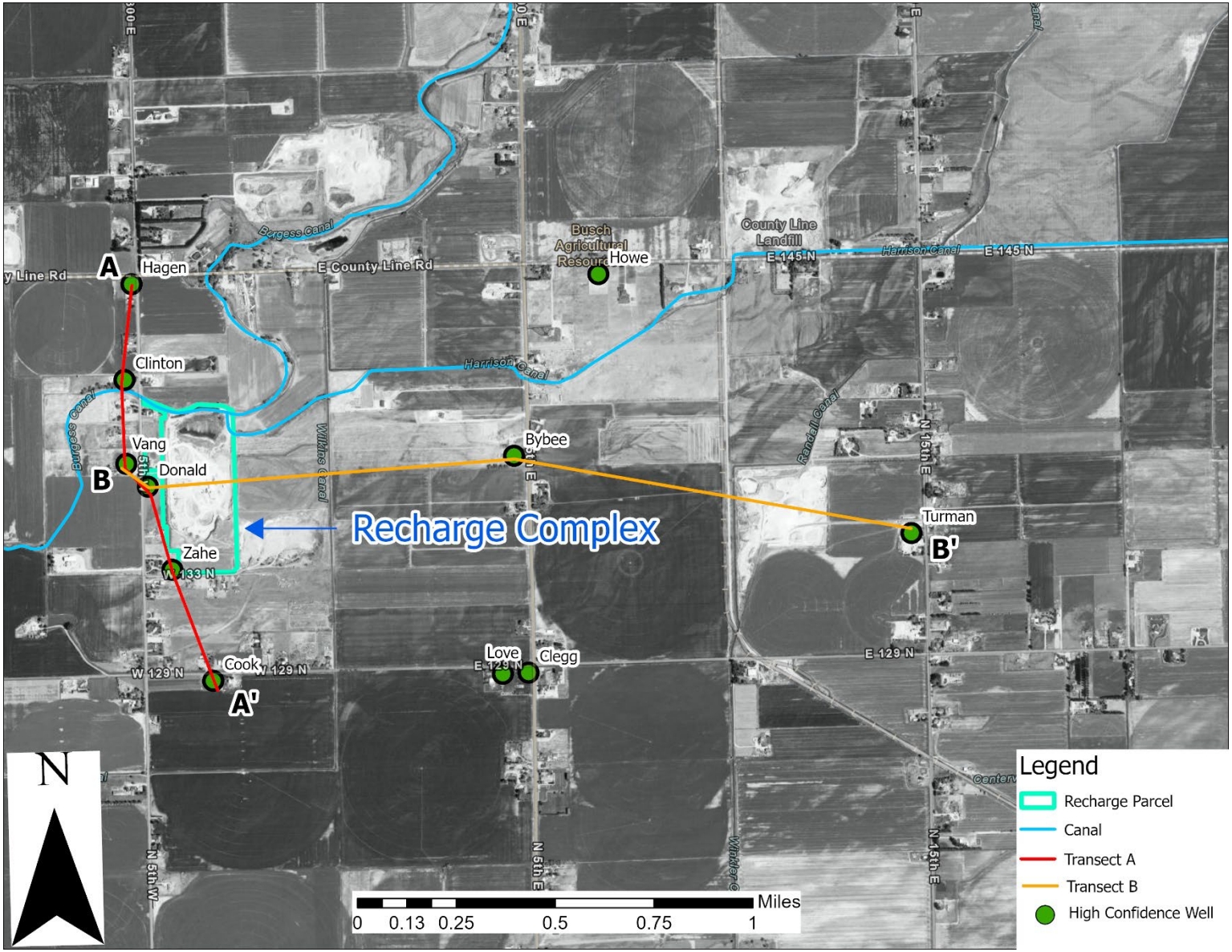


Figure 1. Locations of the proposed site and the wells used in geology analysis.

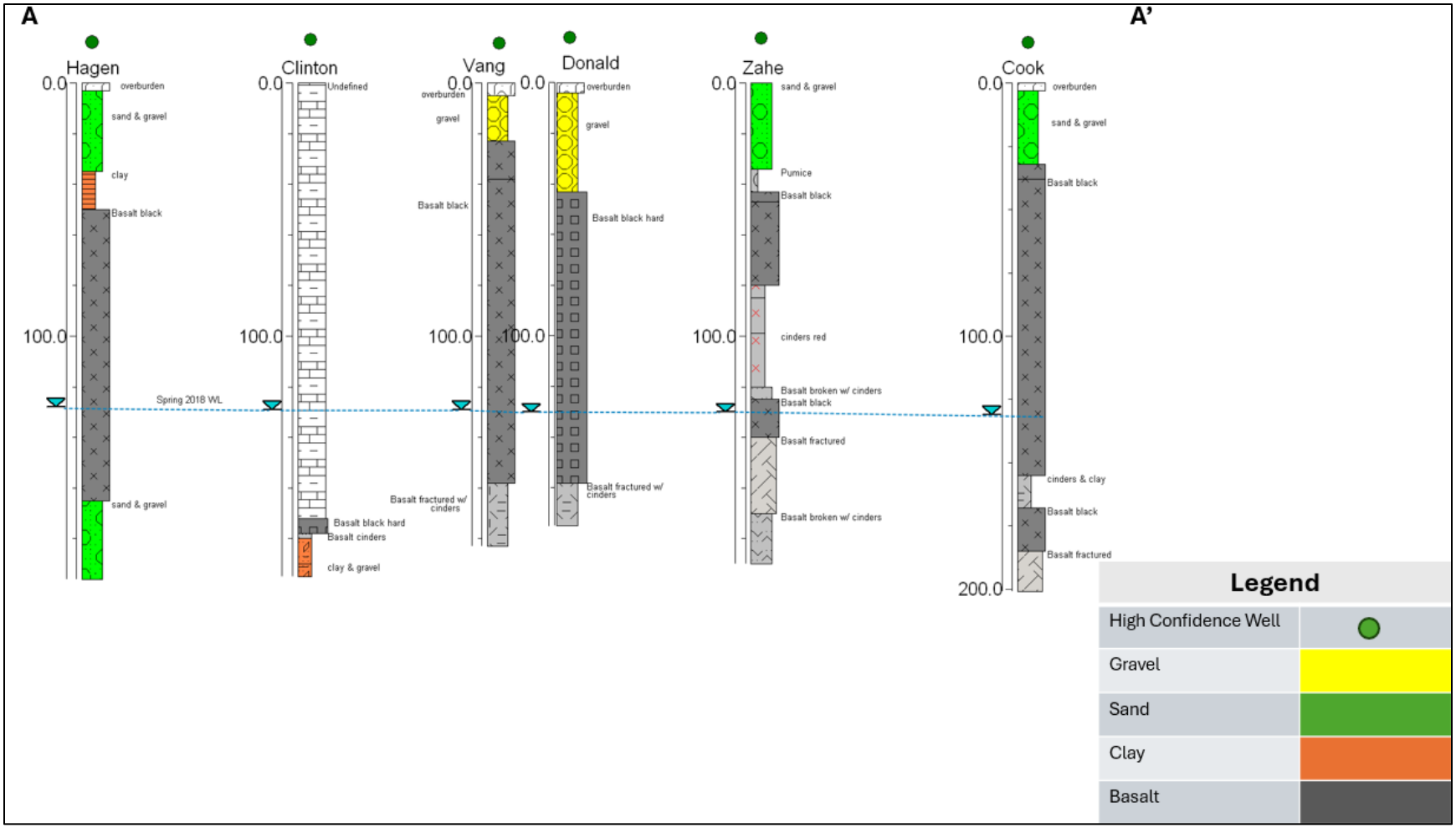


Figure 2. Geologic cross-section from north to south.

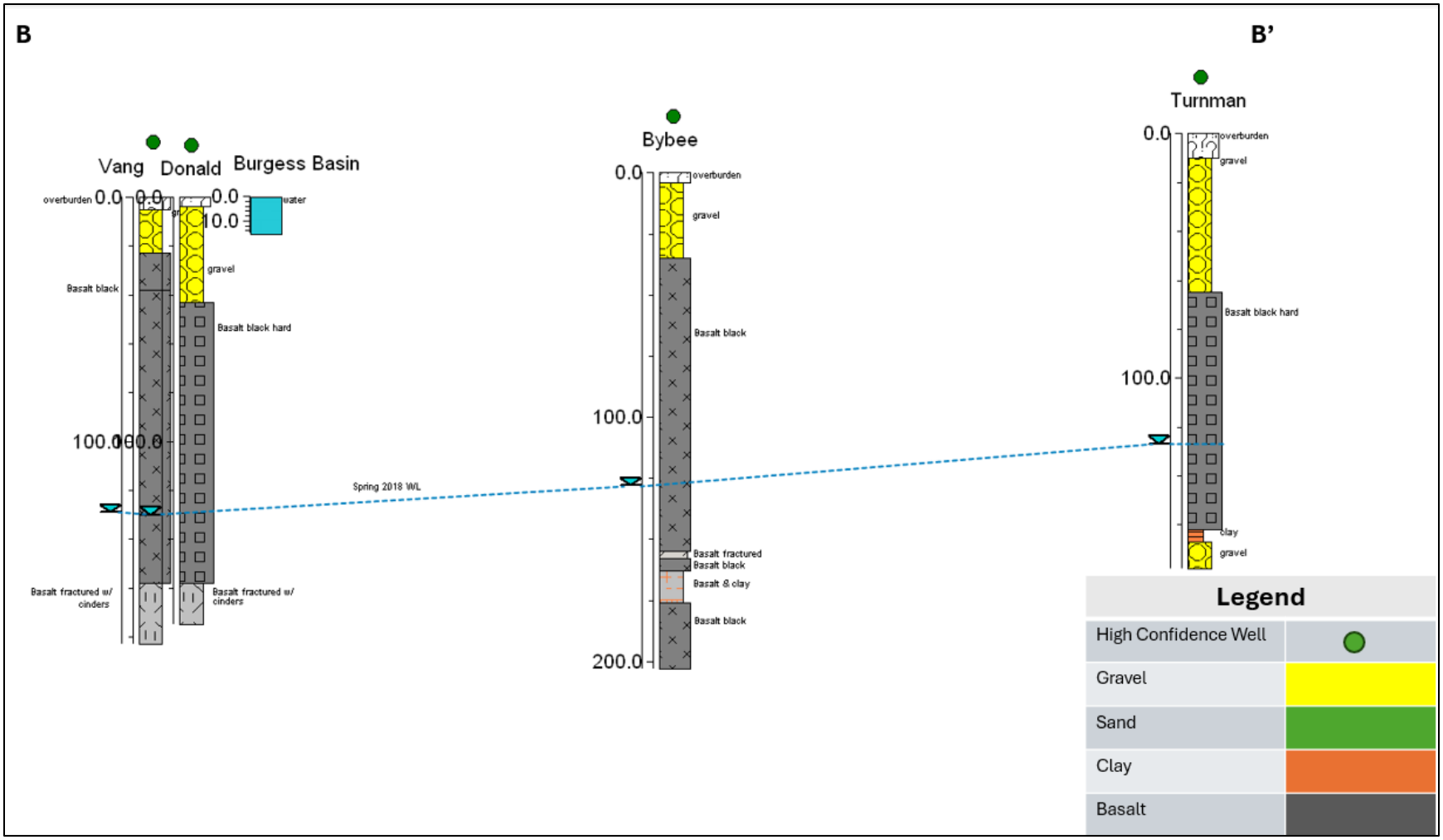


Figure 3. Geologic cross-section from west to east.

V. Appendix

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

Volume Recharged = (Days/year * Acre-feet recharged / day) * 20 years

= (45 days /year * 100 acre-feet / day) * 20 years

= 90,000 acre-feet

Cost = Capital Development Costs + Conveyance Cost for 20 Years

= $2,250,000 + (90,000 acre-feet * $7.50 / acre-foot)

= $2,925,000

$$\text{Cost Per AF} = \frac{\text{Cost}}{\text{Volume Recharged}}$$

$$= \frac{\$2{,}925{,}000}{90{,}000 \text{ acre-feet}}$$

= $33 / acre-foot

Assumptions:

- Estimated recharge capacity 50 cfs
  - Range for this site is 25-80 cfs.
- 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 20 years
  - This is the length of time IWRB has the First Right of Refusal for sites it develops.
- The cost is the capital cost plus the conveyance costs.

Memorandum

Date: July 25, 2025

To: Idaho Water Resource Board

From: Cooper, F., Farmer, N., Kienholz, M.

Re: ESPA Managed Recharge – Aberdeen Springfield Canal Co. Hilton Spill Recharge Well Proposal

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REQUIRED ACTION: The Idaho Water Resource Board (IWRB) will consider funding the Aberdeen Springfield Canal Company Hilton Spill Recharge Well Proposal.

The Aberdeen Springfield Canal Company submitted a proposal for a recharge well. The development of this well is to 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 well.

I. Project Proposal

The Aberdeen Springfield Canal Company is requesting $535,000 in funding to support the development of a test recharge well at the Hilton Spill recharge site. This proposal includes the design and construction of a test recharge well, four groundwater monitoring wells, and diversion works. The breakdown of requested funds is as follows:

Expense Category	Estimated Cost
Recharge Well	$220,000
Four Monitoring Wells	$133,000
Headgate Structure (including meter)	$57,000
Consulting Fees	$25,000
Contingency	$100,000
Total Complex Cost	**$535,000**

The proposed project includes the construction of a test recharge well (up to 400 feet deep) located between the Hilton Spill canal and recharge basin. If the test recharge well achieves a recharge flow rate that the IWRB finds satisfactory, the Aberdeen Springfield Canal Company will propose "Phase II" of the project, which will include the construction of more recharge wells. The long-term goal of this complex is to have a recharge capacity of 100 cfs or more through a combination of basin infiltration and recharge wells. Additionally, this proposal includes a network of up to four monitoring wells to monitor ground water levels and quality around the proposed recharge complex.

The Aberdeen Springfield Canal Company is requesting the $535,000 for Phase I of the project. The cost of recharged water for Phase I of this recharge project is estimated to be approximately $32.50 per acre-foot, depending on the rate of recharge achieved by the test well. This cost per acre-foot was calculated based on the estimated acre-feet of recharge that will occur over 20 years. Full

calculation details can be found in the Appendix. Upon completion of the complex, the IWRB would have the first right of use when IWRB water rights are in priority.

II. MAR Site Summary

Est. Recharge Capacity:	12 cfs	Operator:	Aberdeen Springfield Canal Co.
Size (ac):	N/A	Delivery System:	Aberdeen Springfield Canal
5-yr Retention:	21%	50% Response Time:	12-13 months
Depth to Water:	30-60 ft	Ownership:	Private (ASCC)

ESPAM 2.2 and ETRAN V3.4 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: Near Blackfoot to Neeley reach (73%) and Shelley to Near Blackfoot reach (18%). The time required for 50% of the recharged water to be discharged to the Snake River is 12-13 months.

III. Hydrogeology Summary

Table 1. Generalized Geology Below Site

Depth	Subsurface Geology
0-50 Feet Below Ground Surface	Clay & Basalt
50-150 Feet Below Ground Surface	Basalt & Cinders
Beyond 150 Feet Below Ground Surface	Basalt & Gravel*

*Data only available from one well log.

The subsurface geology, based on nearby well logs, generally shows clay (primarily at the surface) and basalt from 0 to 50 feet below ground surface and basalt with some cinders below 50 feet. Two well logs from the southwest to northeast cross section show a possibility of a clay layer closer to 100 ft below ground surface (Figure 3). Well logs also indicated the presence of increasingly fractured basalt deeper below the ground surface. Figures 2, 3, and 4 are geological cross sections for the proposed site. The injection well open interval is proposed to be from 160 feet below ground surface to the bottom of the well which may be as deep as 400 feet. Casing and seal are assumed to in place from 0 to 160 feet below land surface.

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 Well program (UIC) program, a review of facilities and potential areas of concern is typically required. 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:

- Feedlot approximately 0.5 miles to the south

- Feedlot approximately 2 miles to the northwest
- Feedlot approximately 2 miles northeast
- Feedlot approximately 2 miles to the southwest
- Resource Conservation and Recovery Act (RCRA) contamination site approximately 2 miles to the north

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 not within the 3-year time of travel zone for any PWS. The following PWS have 3- year time of travel zones within a 2-mile radius of the site:

- Pingree Elementary School (PWS #6060054) – approx. 1.75 miles to east
- City of Springfield (PWS #6060080) – approx. 1.75 miles to west

There is a domestic well 450 feet to the southwest of the site (downgradient) and likely five total domestic wells within 0.5 miles of the site.

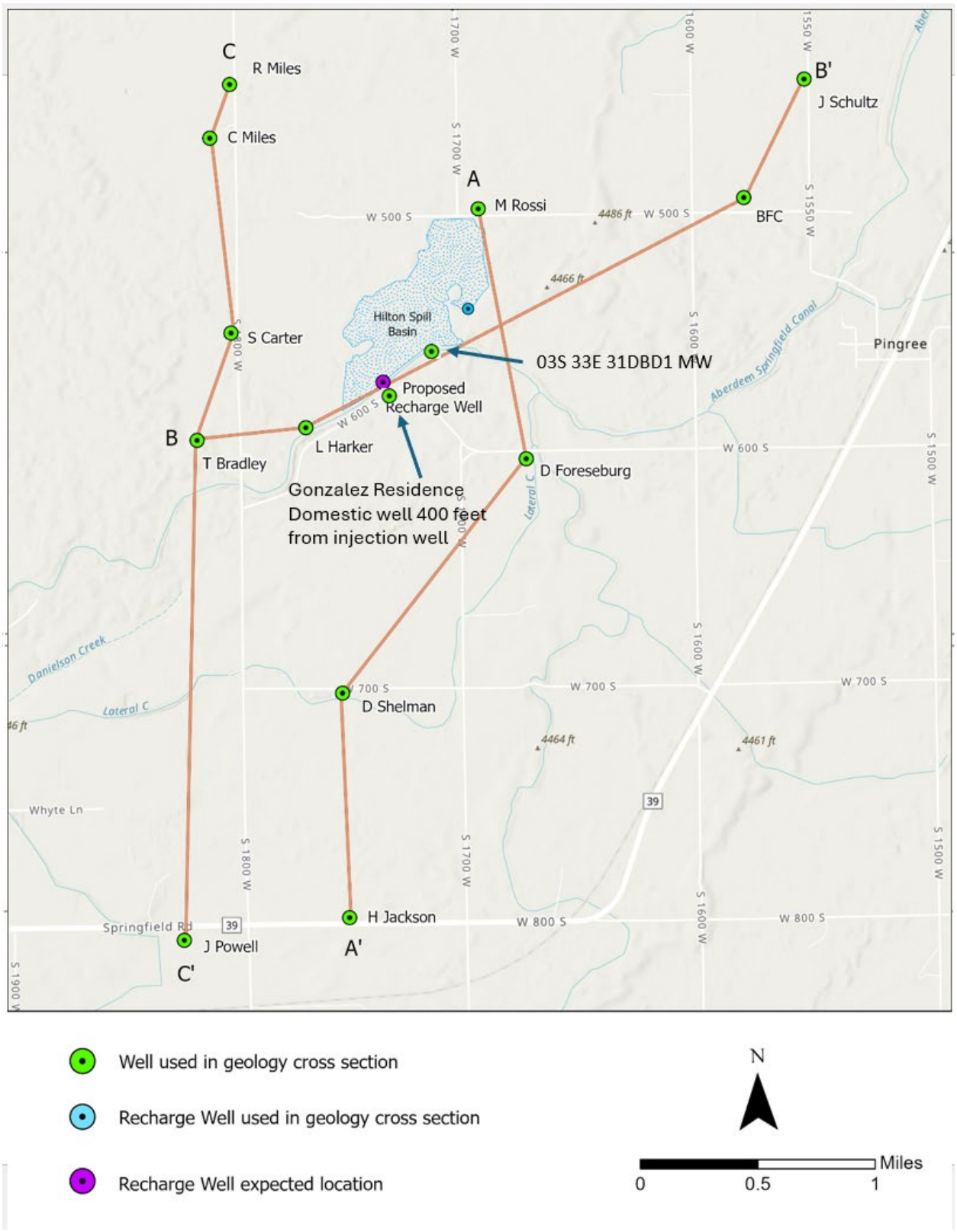

Figure 1. Locations of the proposed site and wells used for geologic cross-sections.

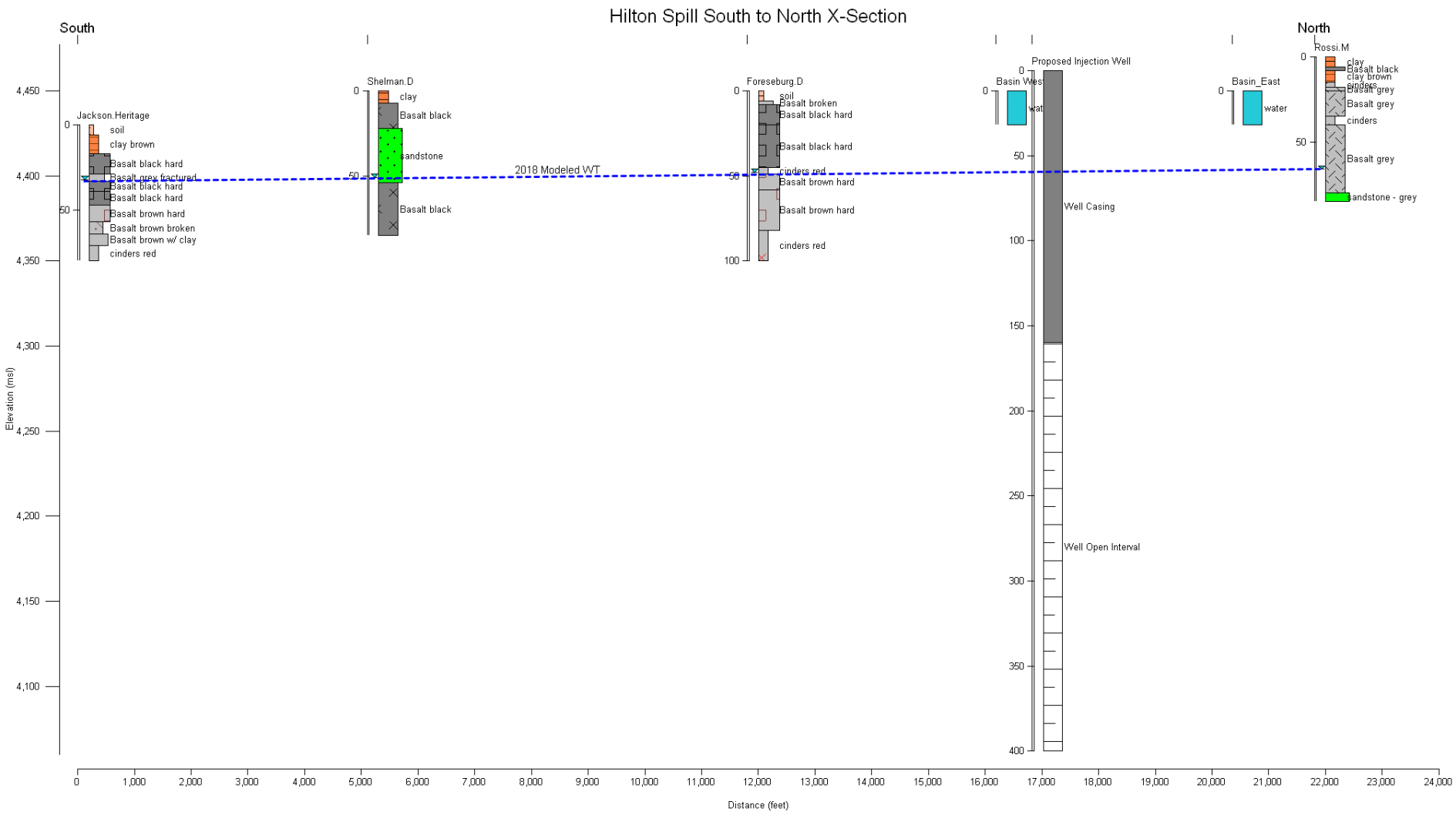

Figure 2. Geologic cross-section from north to south.

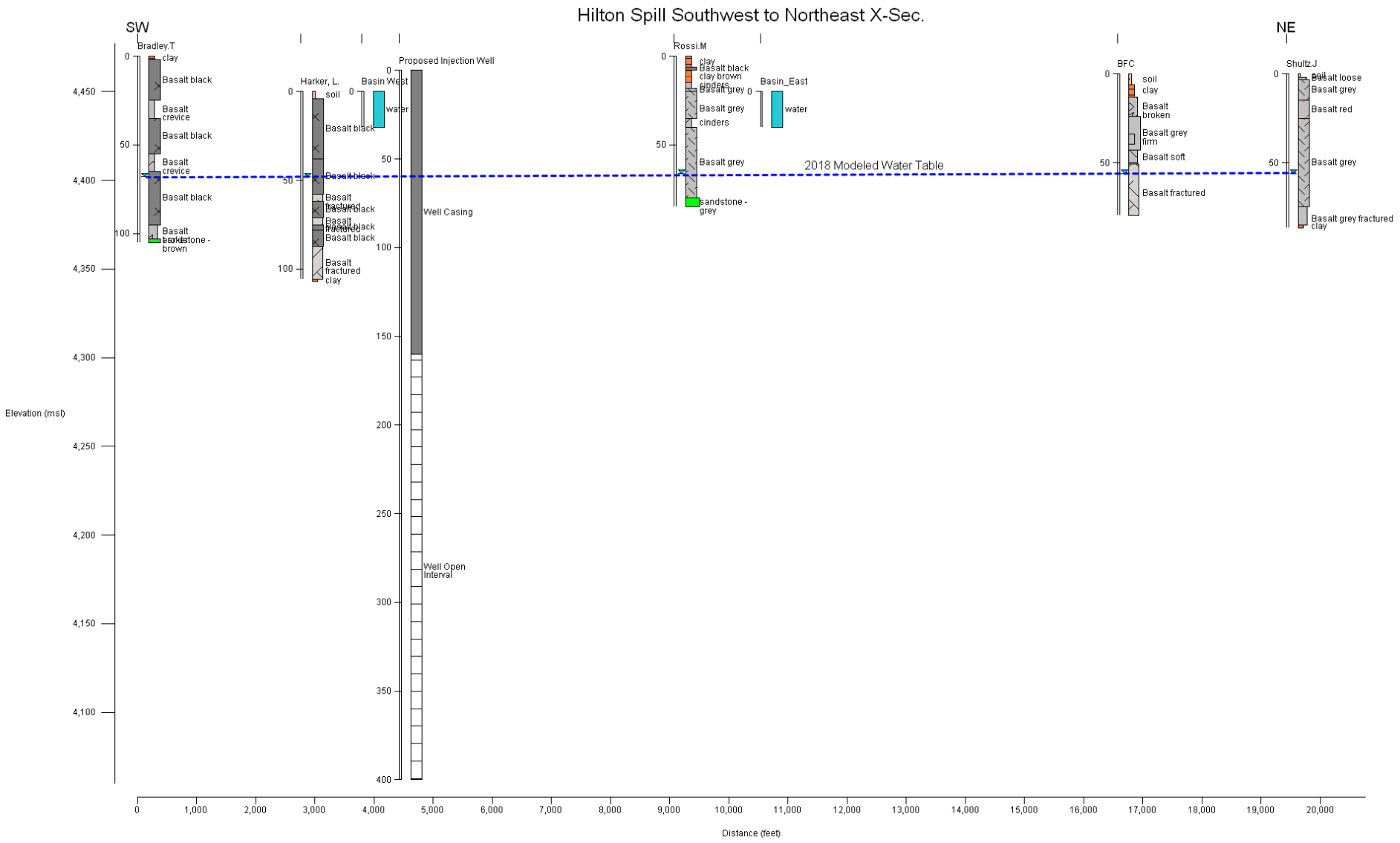

Figure 3. Geologic cross-section from southwest to northeast.

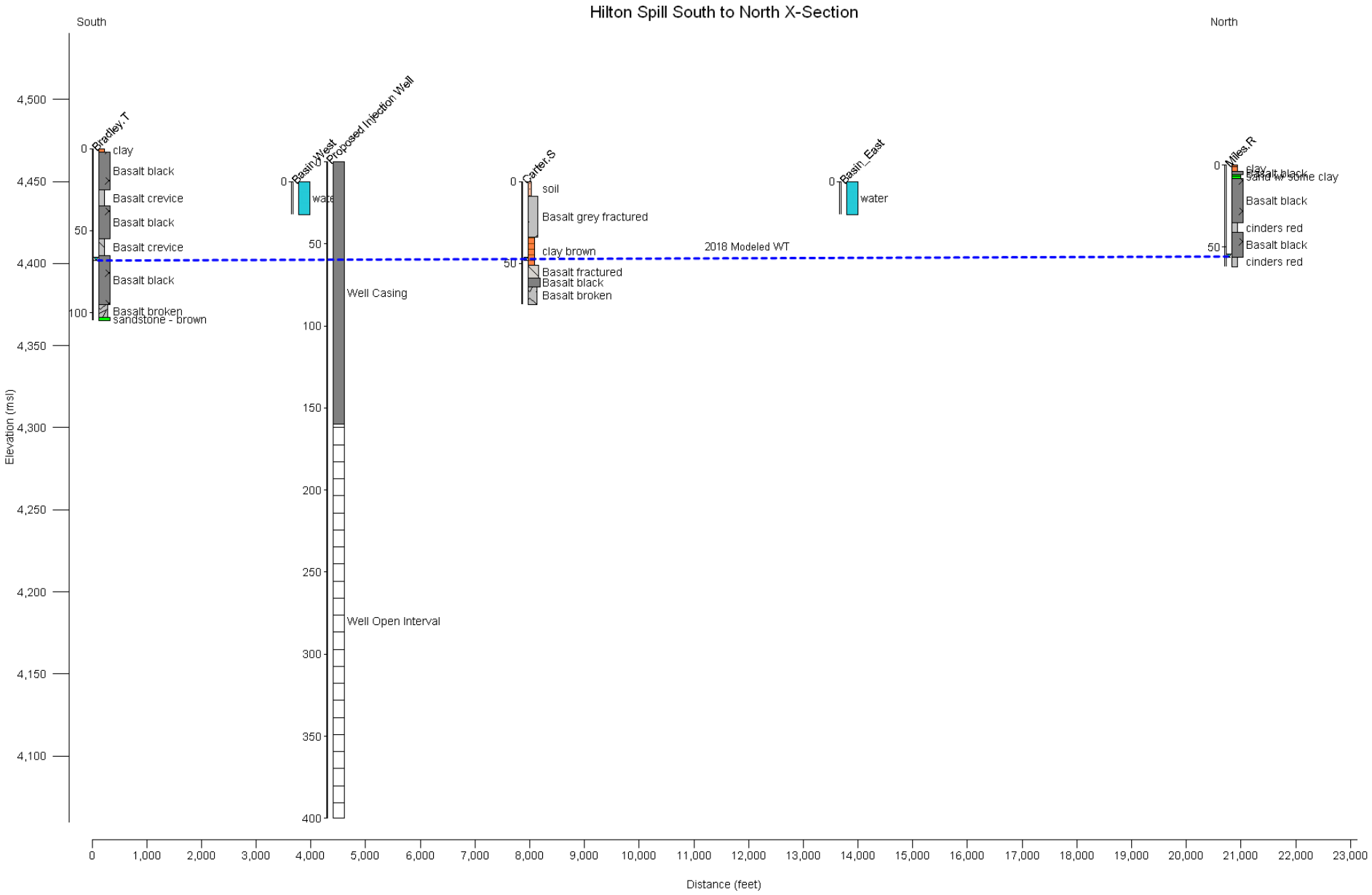

Figure 4. Geologic cross-section west of proposed site from north to south.

V. Appendix

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

Volume Recharged = (Days/year * Acre-feet recharged / day) * 20 years

= (45 days /year * 23.8 acre-feet / day) * 20 years

= 21,420 acre-feet

Cost = Capital Development Costs + Conveyance Cost for 20 Years

= $535,000 + (21,420 acre-feet * $7.50 / acre-foot)

= $695,650

Cost Per AF = $\frac{\text{Cost}}{\text{Volume Recharged}}$

= $\frac{\$695,650}{21,420 \text{ acre-feet}}$

= $32.50 / 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 20 years
  - This is the length of time IWRB has the First Right of Refusal for sites it develops.
- The cost is the capital cost plus the conveyance costs.

ESPA Recharge Project Review

Date: July 11, 2025

To: Idaho Water Resource Board

From: Cooper, F., Farmer, N., Kienholz, M.

Re: ESPA Managed Recharge – Harrison Canal Company Field Recharge Pilot Project

REQUIRED ACTION: The Idaho Water Resource Board (IWRB) will consider funding the Harrison Canal Company Field Recharge Pilot Project

The Harrison Company submitted a proposal for a pilot project for conducting recharge using agricultural fields. The goal of this pilot project is to determine the feasibility of this method to 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 well.

I. Project Proposal

Harrison Canal Company delivered water in 2025 to the 18-acre Harrison Field located 1.5 miles north of Ucon (Figure 1) starting on April 11th and ending on April 28th. The purpose was to flood an agricultural field and determine the infiltration rate. A flow measurement device measured the inflow to the field. Earth berms were installed to block any water from flowing from the field. Harrison Canal Company calculated the infiltrated volume to be 357 acre-feet for the 18-day test.

The Harrison Company submitted a proposal for a pilot project for conducting recharge using agricultural fields. This pilot project would attempt to expand the 2025 test to 280 acres of agricultural land. The following memo provides a summary of the proposal and a staff review of the proposed recharge well.

Table 1. Proposal Expenses

Expense Category	Estimated Cost If No Recharge Occurs During 5 Years	Estimated Cost If Recharge Occurs Every Year During 5 Years
Measuring Device and Delivery Lateral Improvements	175,000	175,000
$75/acre yearly standby fee (no recharge) @ 280 acres for 5 years.	105,000	
$400/acre yearly rental fee if used for recharge @ 280 acres for 5 years		560,000
Total Cost	**280,000**	**735,000**

II. MAR Site Summary

Location: Harrison Field Site is in Bonneville County, Township 03 North, Range 28 East, Section 3, SE corner. IDTM coordinates 2,663,919 meters and 1,381,435 meters.

Est. Recharge Capacity:	140 cfs	50% Response Time:	20-24 Months (ESPAM 2.2)
Size (ac):	280 ac	Delivery System:	Great Feeder Canal Company
5-yr Retention:	19.9% (ESPAM 2.2)	Canal:	Harrison Canal
Depth to Water:	110 ft. – 130 ft.	Ownership:	Private

ESPAM 2.2 and ETRAN V3.4 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 the following reaches of the Snake River: Heise to Shelley (44%), Shelley to Near Blackfoot reach (23%), and Near Blackfoot to Neeley reach (27%). The time required for 50% of the recharged water to be discharged to the Snake River is 20-24 months.

III. Hydrogeology Summary

A review of the subsurface hydrogeology was completed. Figure 1 shows the locations of well drilling logs, a North-South cross-section line (Figure 2), and West-East (Figure 3) cross-section line. There is approximately 75 feet of alluvium overlying basalt in each well. The water table is generally located in the basalt, approximately 125 feet below the land surface. At the location of Harrison Field, it is inferred from the nearby geologic logs that no clay unit exists between the land surface and the basalt.

Table 2. Generalized Geology Below Site

Depth	Subsurface Geology
0-5 ft.?	Soil – Well Drained (USDA, 1981)
5-75 ft.	Sand & Gravel Alluvium
75-250 ft.	Basalt w/ Clay Interbeds

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 Well program (UIC) program, a review of facilities and potential areas of concern is typically required. A review of IDEQ's Source Water Assessment and Protection map shows the following potential contaminants within a 2-mile radius of the proposed recharge basin:

- Several sewage drainfields including two within 1 mile north of the site
- A remediation site approximately 0.3 miles to the southeast
- A gravel pit approximately 0.75 miles to the southeast and 3 additional within 2 miles of site
- A Resource Conservation and Recovery Act (RCRA) site approximately 1 mile to the east
- Multiple agricultural runoff waste deep injection wells within 1-2 miles to the west
- City of Ucon is between 1 and 2 miles south of the site and includes:
    - Four RCRA sites
    - Six closed feedlots and one open
    - One toxic release inventory site
    - Three storm runoff shallow injection wells

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 the Andco Management PWS (PWS #7100194).

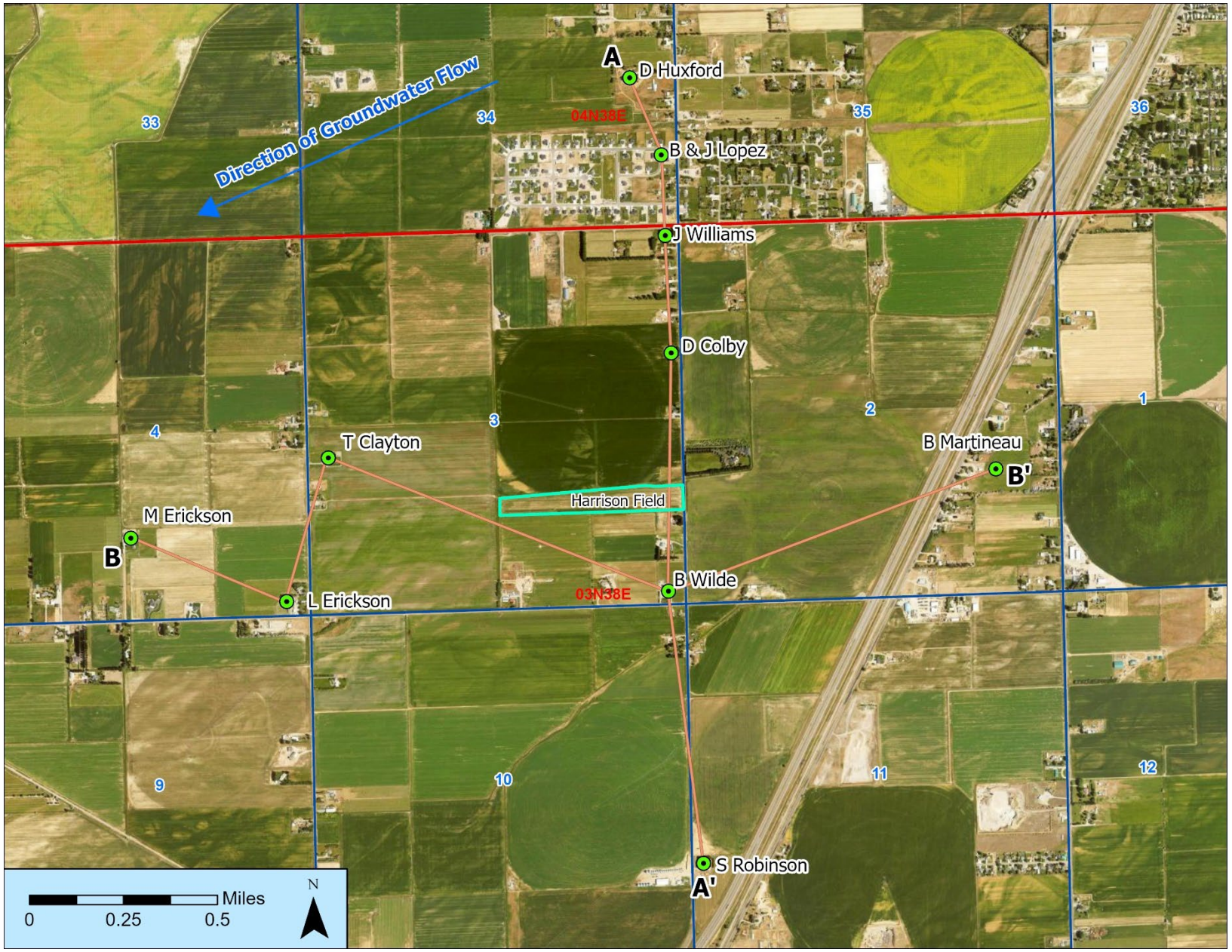

Figure 1. Locations of proposed site and wells used for geology cross-sections.

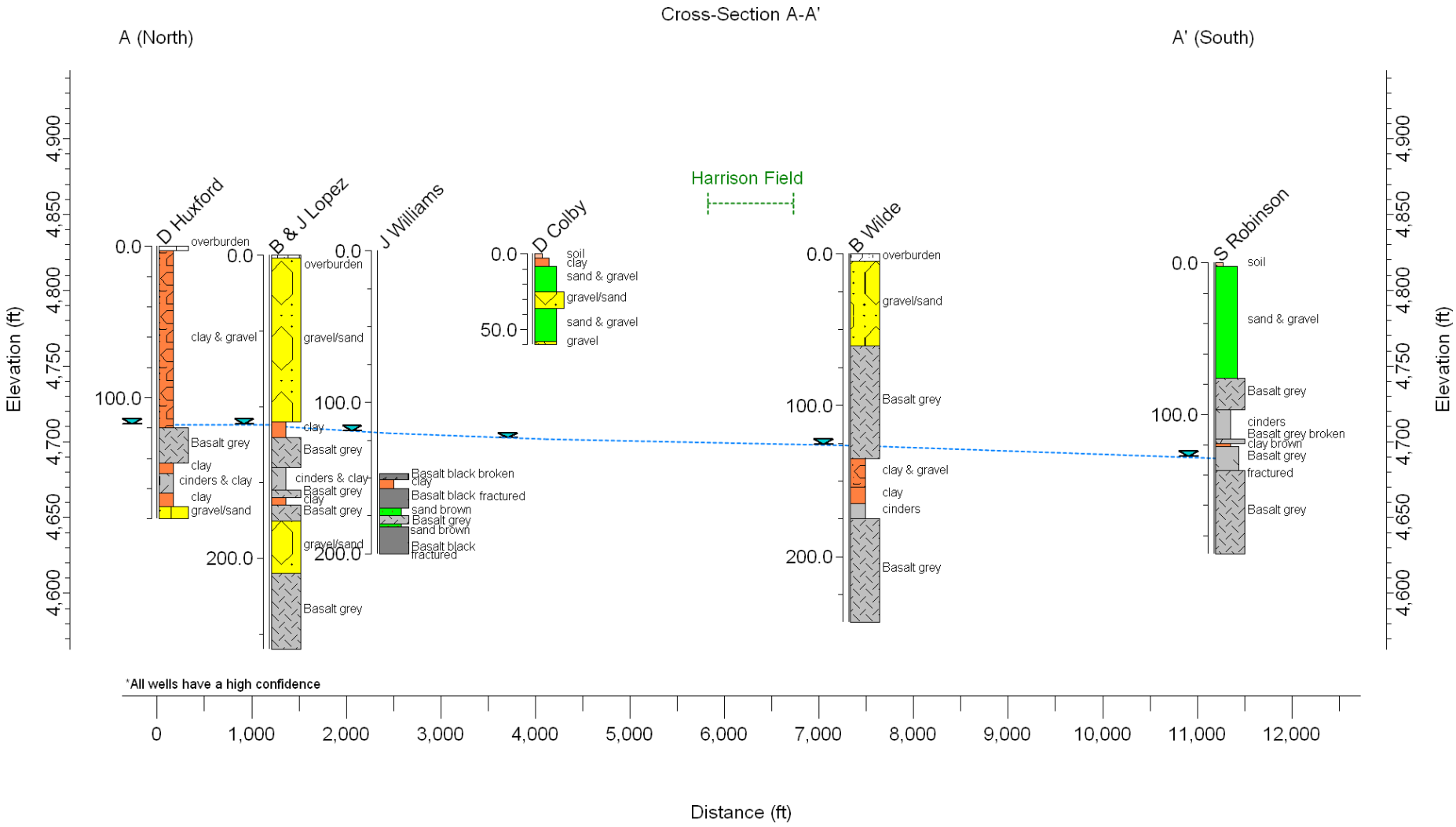

Figure 2. Geology cross-section from north to south.

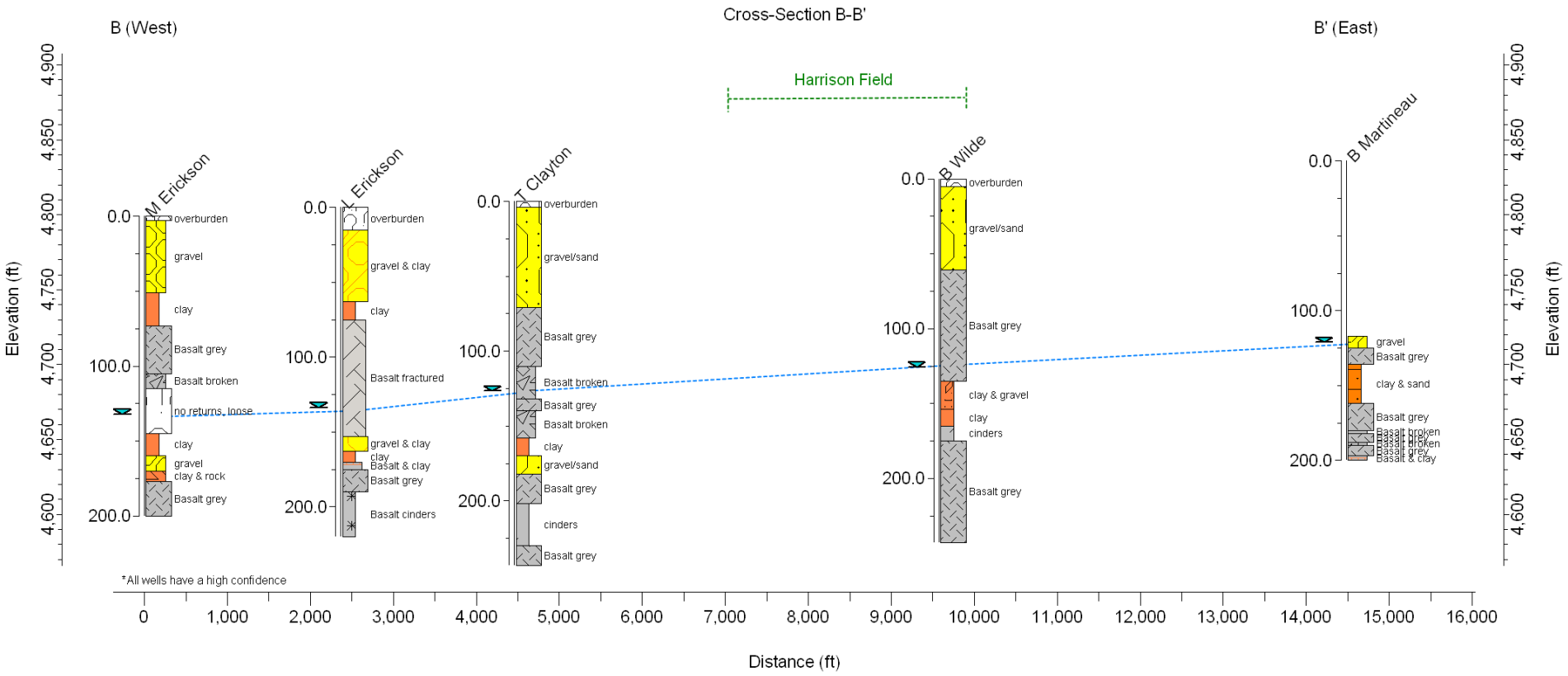

Figure 3. Geology cross-section from west to east.

I. Appendix

Volume Recharged = (Days / year * Acre-feet recharged / day) * 20 years

= (11 days / year * 280 acre-feet / day) * 20 years

= 61,600 acre-feet

Cost = Capital Development Costs + Rent Site Not Used 10 years + Rent Site Used 10 years + Conveyance Cost for 20 Years

= $175,000 + (280 acres * $75 * 10) + (280 acres * $325 * 10) + (61,600 acre-feet * $7.50 / acre-foot)

= $175,000 + $210,000 + $910,000 + $462,000

= $1,757,000

Cost Per AF = $\frac{\text{Cost}}{\text{Volume Recharged}}$.

= $\frac{\$1,757,000}{61,600 \text{ acre-feet}}$.

= $29 / acre-foot

Assumptions:

- 11 days of recharge each year
    - Limited recharge to the period before the irrigation season. Used from April 1 to April 22.
    - Flood control occurs in about 50% of the years.
- The time period is 20 years
    - This is the length of time IWRB has the First Right of Refusal for sites it develops.
- The cost is the capital cost plus the conveyance costs.

Volume Recharged = (Days / year * Acre-feet recharged / day) * 20 years

= (45 days / year * 280 acre-feet / day) * 20 years

= 252,000 acre-feet

Cost = Capital Development Costs + Rent Site Not Used 10 years + Rent Site Used 10 years + Conveyance Cost for 20 Years

= $175,000 + (280 acres * $75 * 10) + (280 acres * $325 * 10) + (252,000 acre-feet * $7.50 / acre-foot)

= $175,000 + $210,000 + $910,000 + $1,890,000

= $3,185,000

Cost Per AF = $\frac{\text{Cost}}{\text{Volume Recharged}}$.

= $\frac{\$3,185,000}{252,000 \text{ acre-feet}}$.

= $13 / 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 20 years
    - This is the length of time IWRB has the First Right of Refusal for sites it develops.

- The cost is the capital cost plus the conveyance costs.