

# IDAHO WATER RESOURCE BOARD

## MEETING NO. 1-20



January 23-24, 2020

Idaho Water Center  
322 E. Front Street  
Conference Rooms 602B, C, & D  
BOISE



Snowpack measurements from Bogus Basin snow course. 12-30-2019  
Credit: Danny Tappa, NRCS Idaho Snow Survey

# Media



# AGENDA

## IDAHO WATER RESOURCE BOARD

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### Work Session for Board Meeting No. 1-20

January 23, 2020

2:30 p.m.

Water Center

Conference Room 602 B, C & D

322 E. Front St.

BOISE

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**Brad Little**  
Governor

**Roger W. Chase**  
Chairman  
Pocatello  
District 4

**Jeff Raybould**  
Vice-Chairman  
St. Anthony  
At Large

**Vince Alberdi**  
Secretary  
Kimberly  
At Large

**Peter Van Der Meulen**  
Hailey  
At Large

**Albert Barker**  
Boise  
District 2

**John "Bert" Stevenson**  
Rupert  
District 3

**Dale Van Stone**  
Hope  
District 1

**Jo Ann Cole-Hansen**  
Lewiston  
At Large

1. Roll Call
2. Treasure Valley Managed Recharge Study
3. Executive Session – Board will meet pursuant to Idaho Code §74-206(1) subsection (f), for the purpose of communicating with legal counsel regarding legal ramifications of and legal options for pending litigation, or controversies not yet being litigated but imminently likely to be litigated. Topic: Northern Idaho Adjudication and Lemhi River.  
Executive Session is closed to the public.
4. Adjourn

#### Americans with Disabilities

The meeting will be held in facilities that meet the accessibility requirements of the Americans with Disabilities Act. 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](mailto:jennifer.strange@idwr.idaho.gov) or by phone at (208) 287-4800.

# Memorandum

To: Idaho Water Resource Board  
From: Emily Skoro  
Date: January 23, 2020  
Re: Treasure Valley Managed Recharge Feasibility Study



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**REQUIRED ACTION:** No action is required at this time.

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## **Project Intent**

The Treasure Valley Managed Recharge Feasibility Study (Study) was designed to provide decision-makers with a preliminary understanding of the potential for managed aquifer recharge (MAR) throughout the Treasure Valley. It included an evaluation of a few key issues associated with MAR such as the volume and timing of available water, identification of potential viable recharge areas, and development of conceptual ranges of capital costs required to implement MAR.

## **Background**

Projections indicate the Treasure Valley population could increase to 1.57 million people by 2065. Future demand for water supply is also expected to increase for Domestic, Commercial, Municipal and Industrial (DCMI) uses by approximately 158,000 acre-feet. Water users in the Boise River basin rely heavily on the existing reservoir system as well as the snowpack to store and manage water supply. Despite existing reservoirs and additional storage provided by the higher elevation snowpack, an average of 1.1 million acre-feet of surface water leaves the Boise River basin annually. Groundwater is also an important source of water supply in the basin. However, groundwater rights are limited in some areas and the interconnectivity between ground and surface water has resulted in restrictions on new groundwater development in parts of the Treasure Valley.

In addition, climate projections indicate temperatures may increase and that more precipitation may occur in the form of rain and less as winter snow in the future, reducing water stored in the snowpack. MAR may be an option to offset the loss of water stored in the snowpack, provide additional storage during wet years, and provide additional water in areas with limited groundwater supply.

The Idaho Water Resource Board (IWRB) was directed by the Idaho Legislature to identify and implement projects to stabilize and enhance groundwater supplies throughout Idaho. Therefore, the IWRB commissioned the Study to better understand the feasibility of MAR as a long-term water management tool throughout the Treasure Valley.

## **Project Summary**

The Study was broken into three phases and was designed to provide a high-level assessment of the feasibility of MAR in the Treasure Valley with the understanding that development of a specific MAR project would require more detailed site investigation and design.

### **Phase 1: Water Availability for Managed Recharge**

An analysis of water availability was conducted to identify potential sources and volume of water available for MAR within the study area. Potential source waters included the Boise River, Snake River, Payette River, and municipal reuse. The analysis of the potential volume of water available for recharge considered timing, magnitude, location, and water right priorities.

## Phase 2: Managed Recharge Physical Feasibility Analysis

Key physical characteristics that influence the feasibility of recharging water to the aquifer were evaluated across the study area. Physical characteristics included depth to groundwater, aquifer transmissivity, land slope, surface geology, land use designation, surface water features, contaminated sites, and flood risk designation. A geographic information system-based prioritization model (GIS Model) was developed to compile available physical data and evaluate whether an area would be conducive for MAR. The GIS Model is a tool that can be updated and customized by others based on the specific objectives for the recharge and other unique requirements.

## Phase 3: Infrastructure Requirements to Develop Managed Recharge Areas

Based on the information compiled in phases 1 and 2, the consultant identified potential infrastructure requirements and developed a range of associated capital costs to implement MAR. Phase 3 analysis considered the different sources and availability of water, delivery scenarios, and recharge methods to compare hypothetical MAR projects. A conceptual-level estimate of the costs and key development constraints was identified to allow water managers to compare and contrast options for MAR implementation in the Treasure Valley. The development of actual projects will require more detailed site-specific investigations and analysis.

The final report summarizes the three phases and conclusions from the analyses. This document is intended to be a resource for the IWRB and stakeholders within the Treasure Valley to evaluate whether MAR can help meet specific water management needs.

The draft final report executive summary and study area map are provided for additional information. A presentation of the study findings will be given at the January 23, 2020 IWRB Work Session.

### **Attachments:**

1. Draft Project Final Report Executive Summary
2. Project Study Area Map



# Executive Summary

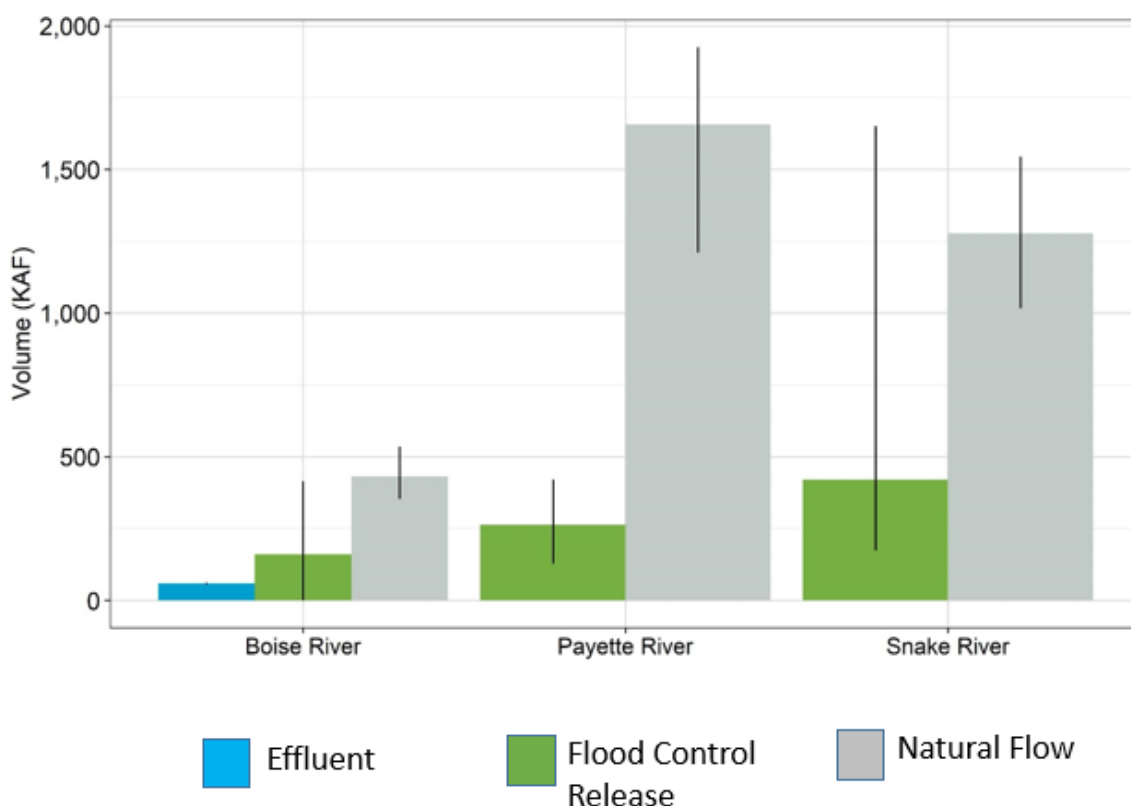
The Idaho Water Resource Board (IWRB) contracted Brown and Caldwell (BC) to perform the Treasure Valley Managed Recharge Feasibility Study (Study). The Study was proposed to develop a better understanding of the feasibility of managed aquifer recharge (MAR) as a management tool to enhance groundwater supplies in the Treasure Valley. The Study consisted of the following four components:

- Task 1: Evaluate source water availability for recharge
- Task 2: Identify physically favorable and unfavorable areas for recharge
- Task 3: Evaluate infrastructure requirements and associated costs
- Task 4: Develop a technical report to synthesize Tasks 1–3

This Executive Summary is provided as a high-level overview of the key findings from tasks 1-3. It also outlines the potential limitations to MAR and identifies future areas of study and the process to implement a MAR project in the Treasure Valley. The major conclusion of this Study is that MAR can be accomplished in the Treasure Valley. There is adequate water supply available and favorable recharge locations exist. The infrastructure requirements and cost to convey available water to favorable recharge locations were evaluated for several scenarios. Since this Study was intended to provide an overview of areas within the Treasure Valley that are conducive to MAR, additional investigation and design would be required to develop a MAR project.

## Water Availability Analysis

BC evaluated water availability in the Boise River, Payette River, and Snake River as either natural flow, water released during flood control operations, or wastewater effluent (Boise River only). Water is potentially available in all basins and all reaches evaluated. In general, water availability increases in downstream reaches. Available water quantities and timing vary by location from seasonally available to continuously available. The Payette River has the greatest water availability while the Boise River has the least availability (Figure ES-1). The upper reaches of the Boise and Payette systems are more water supply limited than the downstream reaches. Daily flow rates and monthly volume in the water supply limited reaches seasonally go to zero. Continuous water availability can be expected when sourced from the lower reaches of the Boise and Payette Rivers below Middleton and Letha, respectively, and from the Snake River below the Murphy gage. Within this report, the water availability location, timing, and quantity are discussed followed by a brief overview of factors that could affect water availability for a MAR program.



**Figure ES-1. Median annual water availability by basin and water category**

### Recharge Physical Feasibility

BC evaluated recharge feasibility based on eight physical factors including depth to groundwater, aquifer transmissivity, land slope, surface geology, land use designation, surface water features, contaminated sites (plumes), and flood risk designation. BC built a geographic information system (GIS) based prioritization model to generate a composite recharge feasibility score for each 1-mile cell in the study area. This model provides a screening tool to assist water managers in determining what areas have the most potential for developing a MAR project. Model results are shown as ranked locations by score to identify favorable MAR areas and were presented on a score-by-cell map in the final report. Cells with a similar range of scores were grouped into zones (Figure ES-2). Favorable zones were identified on the northern and southern extents of the study area outside of the Boise River corridor. The Boise River immediately downstream of Lucky Peak Dam traverses the northeast margin of Zone 6. This is a water limited reach but does have seasonal availability and existing infrastructure to deliver water to Zone 6 via the New York Canal. The greatest water availability in the Boise River is downstream of Middleton, which could supply all favorable recharge zones with substantial capital and operational cost to convey water upgradient over longer distances. Some of the favorable areas are located near the reaches of the Payette River (Zones 2 and 3) or the Snake River (Zones 6 and 7) where available water was identified.

The groundwater table along the Boise River corridor is relatively high and is a major limitation to MAR; although, some cells in the corridor scored moderately high and could warrant further

investigation. The largest favorable zone for MAR was south and southeast of the Boise River corridor primarily due to a deeper groundwater table and higher transmissivity of the aquifer. The results from the model showing physical feasibility for conducting MAR can then be combined with other pertinent information to refine potential MAR project locations. For example, the largest favorable zone from the model, Zone 6, is proximal to source water (via the New York Canal) and the recharged water would have a longer residence time in the aquifer. Additionally, the central portion of the Treasure Valley north of the Boise River corridor exhibited high scores; plus, it is proximal to the Payette River, and geographically there could be a need for stored water there due to development. BC identified a favorable area south of Lake Lowell with proximity to the Snake River as a potential source, but the distance to Lake Lowell as a large surface water body has some disadvantages including potentially short residence times. The results of this model are for screening purposes only. With more detailed investigations, potential MAR sites could be located in areas with low scores. Reversely, specific areas within high scores zone could be unsuitable for a MAR project.

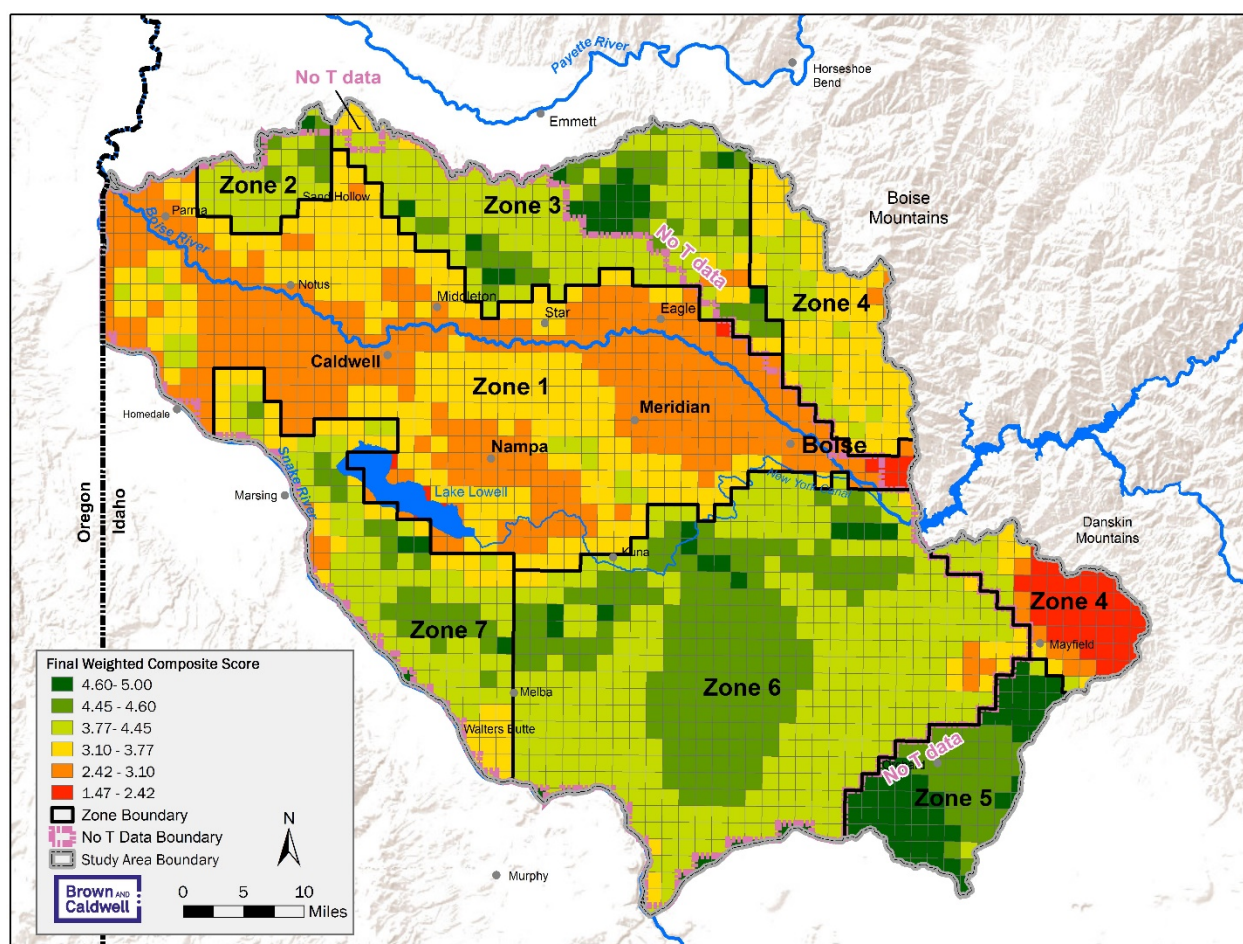


Figure ES-2. Physical Recharge Feasibility

## Infrastructure Requirements and Cost

Using the information identified in the previous tasks, BC developed six implementation scenarios that illustrate a range of options for the source water and recharge areas in the study area. These options incorporated a range of feasible potential future project elements including two recharge mechanisms (underground injection control [UIC] well and infiltration basin), three source waterbodies (Payette, Boise, and Snake Rivers), and two recharge zones near anticipated population

growth areas. BC developed Conceptual Level (Class 5) capital costs for each scenario to show a range of planning level costs as well as parametric costs of scenarios by recharge mechanism per volume of water available. Scenario 3 shows the lowest cost per acre-foot largely from shorter conveyance and pumping needs because of a short distance and less elevation gain which is due to utilizing existing infrastructure. The remaining scenarios all require new construction.

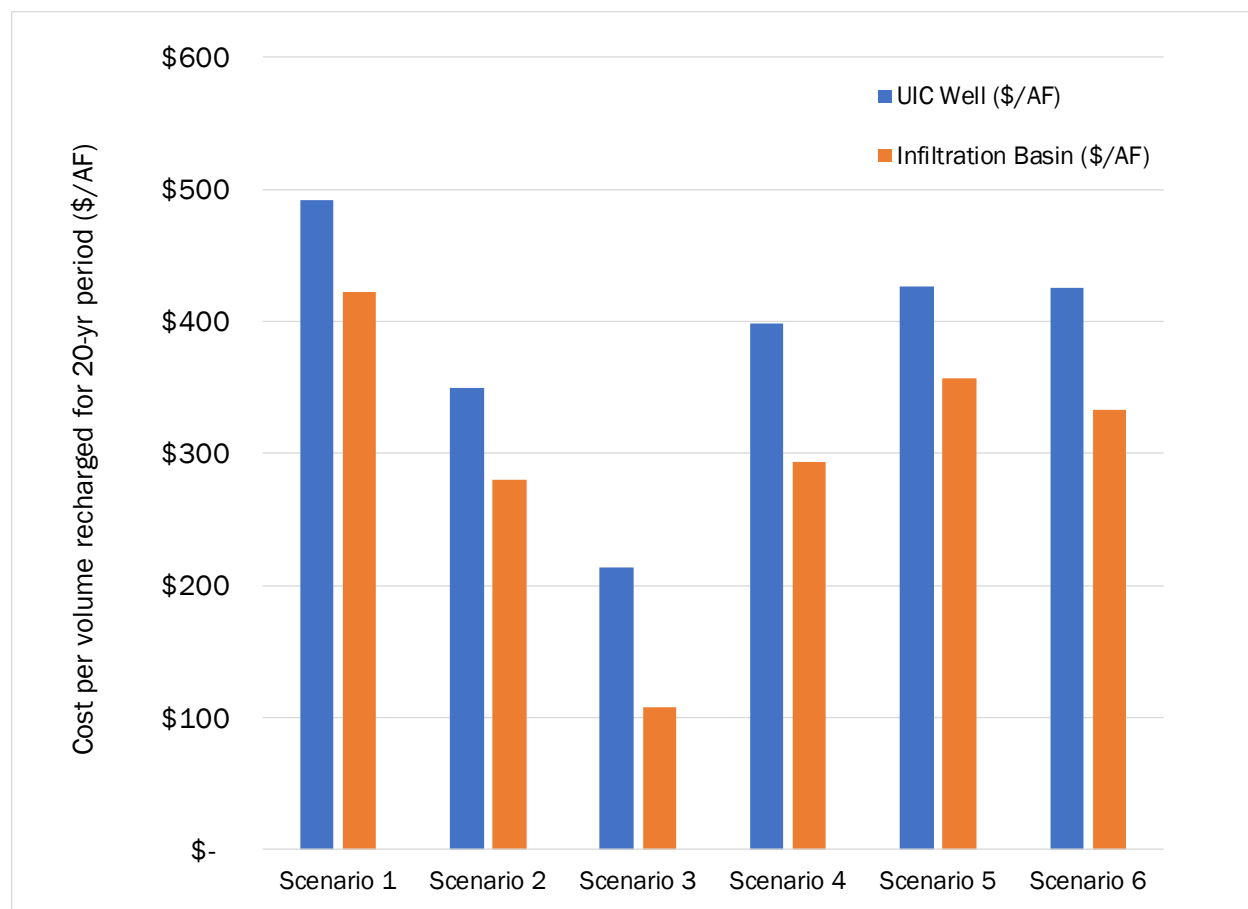
Table 1-1 provides a description summary for the six scenarios.

Table 1-1. Scenario Description Summary				
Scenario	Water Source/Intake Location	Calculated Scenario Water Volume Recharged (Annual KAF) <sup>a, b</sup>	Period of Water Availability <sup>b</sup>	Pumped Flow Volume (cfs)
1	Payette River (below Letha)	36	Jan-Dec	50
2	Payette River (below Letha)	72	Jan-Dec	100
3	Boise River/New York Canal	48	Sep-Apr	100
4	Boise River (below Diversion Dam)	48	Sep-Apr	100
5	Boise River (near Caldwell)	72	Jan-Dec	100
6	Snake River (below Murphy)	54	Nov-Jul	100

KAF = kilo acre foot.

- a. Annual volume available pumped 24 hours per day 7 days a week during annual period of availability for specified flow rate.  
 b. Source: Water Availability Analysis TM (BC 2019b).

Figure ES-3 shows the parametric costs (scenario cost per volume recharged) for the UIC well and infiltration basin recharge mechanisms per scenario.



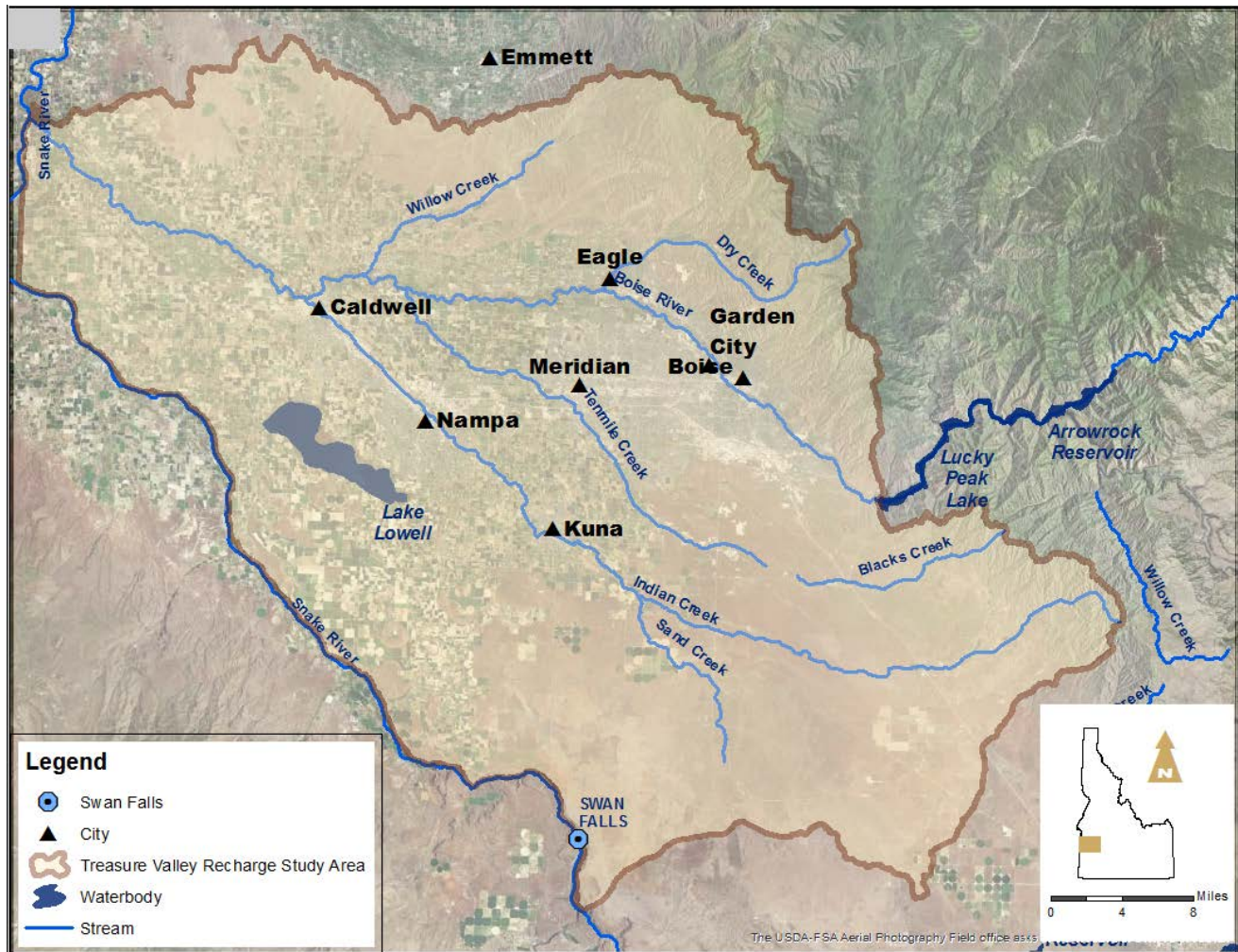
**Figure ES-3. Parametric cost, scenario cost per volume recharged (\$/acre-foot)**

BC identified a variety of additional implementation considerations that should be carefully reviewed to understand and optimize the project team's efforts in implementing a MAR project.

This Study concludes that MAR in the Treasure Valley is viable. Water availability was evaluated in many reaches throughout the Boise River and neighboring basins. Availability was identified in all reaches evaluated with timing and quantity varying by location. Favorable recharge areas were identified with the most favorable areas in the Treasure Valley generally outside of the Boise River corridor. Infrastructure cost estimates were developed for six scenarios and provides a range of applicable costs. The scenarios identified are conceptual and were intended to provide a cost comparison of various infrastructure configurations and flow rates. The alignments presented are not recommendations. MAR project recommendations will require collaboration with an entity interested in MAR to develop goals, priorities, and scope. Recommendations for further study and next steps to develop a MAR program in the Treasure Valley are presented in the last section of this technical report. This Study was scoped to be a high-level evaluation of the feasibility of a MAR program in the Treasure Valley. Identified next steps include a detailed study of MAR program permitting and administration, a planning level study, additional project-scale refinement of water availability, recharge location, and engineering evaluations.



## Treasure Valley Recharge Study Area



# Treasure Valley Managed Recharge Feasibility Study

January 23, 2020





# TV Managed Recharge Feasibility Study

1. Project Team Introduction
2. Project Overview
3. Water Availability Analysis
4. Managed Recharge Physical Feasibility Analysis
5. Infrastructure Requirements and Costs Analysis
6. Study Conclusion



# BC Project Team

# Introductions and Project Roles



**Abbi Dorn**

Infrastructure  
Requirements  
Lead



**Brandon McLean**

Physical Feasibility  
Analysis Lead



**Dan Stanaway**

Water Availability Analysis  
Lead, Project Manager

////////////////////////////////////  
[Margaret Ales](#) // Infrastructure Requirements support  
[Holly Ellis](#) // Infrastructure Requirements support  
[Catherine Drummer](#) // Cost Estimating  
[Larry Williams](#) // Physical Feasibility Analysis Senior Advisor  
[Gillian AvRuskin](#) // GIS support and Physical Feasibility Analysis modeler  
[Jeremiah Thomas](#) // Former Project Manager

[Josh Ekhoft](#) // Physical Feasibility Analysis Support  
[June Bowman](#) // Physical Feasibility Analysis Support  
[Zach Wengrovius](#) // Water Availability Analysis support  
[Matt Lindburg](#) // Water Availability Analysis Senior Advisor  
[Matt Gregg](#) // Technical Advisor  
[Mary Moiso](#) // Project Analyst



# Project Overview

# Project Overview and Objectives

Develop a better understanding of the feasibility of managed recharge as a management tool to enhance groundwater supplies in the Treasure Valley

- Study is high level intended to inform the potential for managed recharge
- Study concludes that managed recharge is a viable option to enhance groundwater supply in the Treasure Valley

Water Availability



Recharge Feasibility

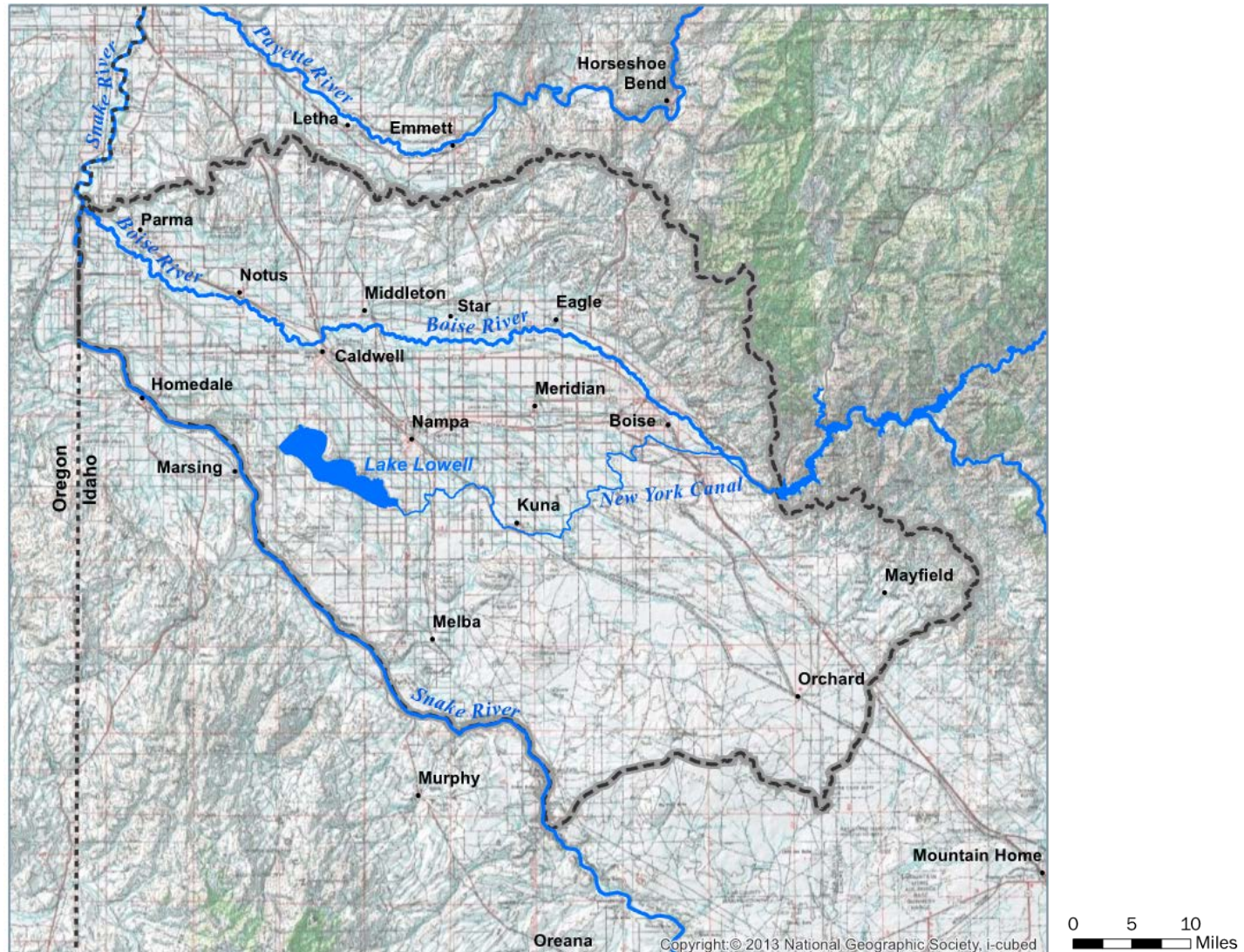


Infrastructure Requirements and Cost





# Project Overview: Study Area





# Water Availability for Recharge

Dan Stanaway



# Water Availability

Location  
Quantity  
Timing

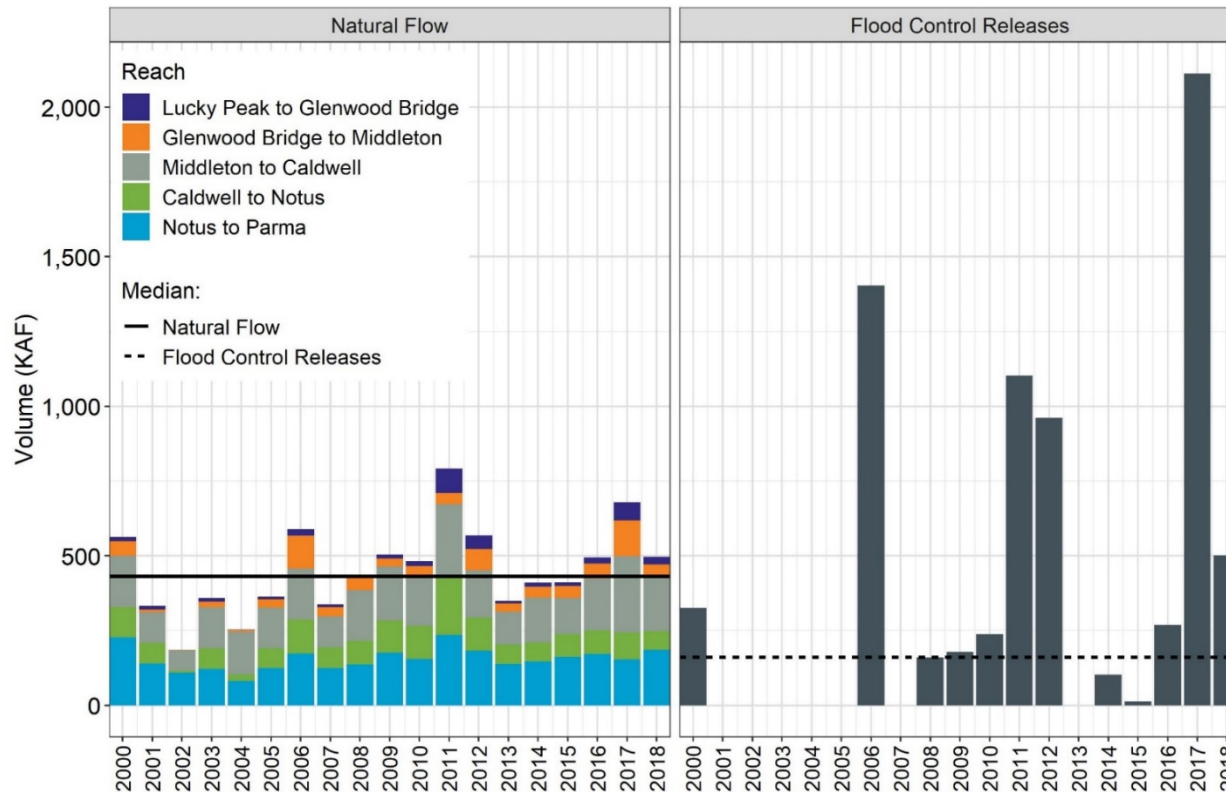
- Study scope: quantity, timing and location of water available for aquifer recharge
- Boise River, Payette River and Snake River availability evaluated
- Natural flow, flood control releases and municipal effluent (Boise) quantified
- WRA data, gage data and proprietary municipal data analyzed
- Water right priority is implicitly recognized because WRA data was utilized
- Ear-marked water removed from analysis

# Water Availability: Boise River

- Water availability quantified in 5 WRA reaches spanning Lucky Peak to Parma
- Projected impact of WD63 Contested Case Refill 1 water right considered – reach gains below Lucky Peak quantified
- Flow control release dates were estimated by IDWR and BoR and are quantified using flow at Parma
- Boise River has the least availability and is most water limited in the Lucky Peak to Middleton reaches

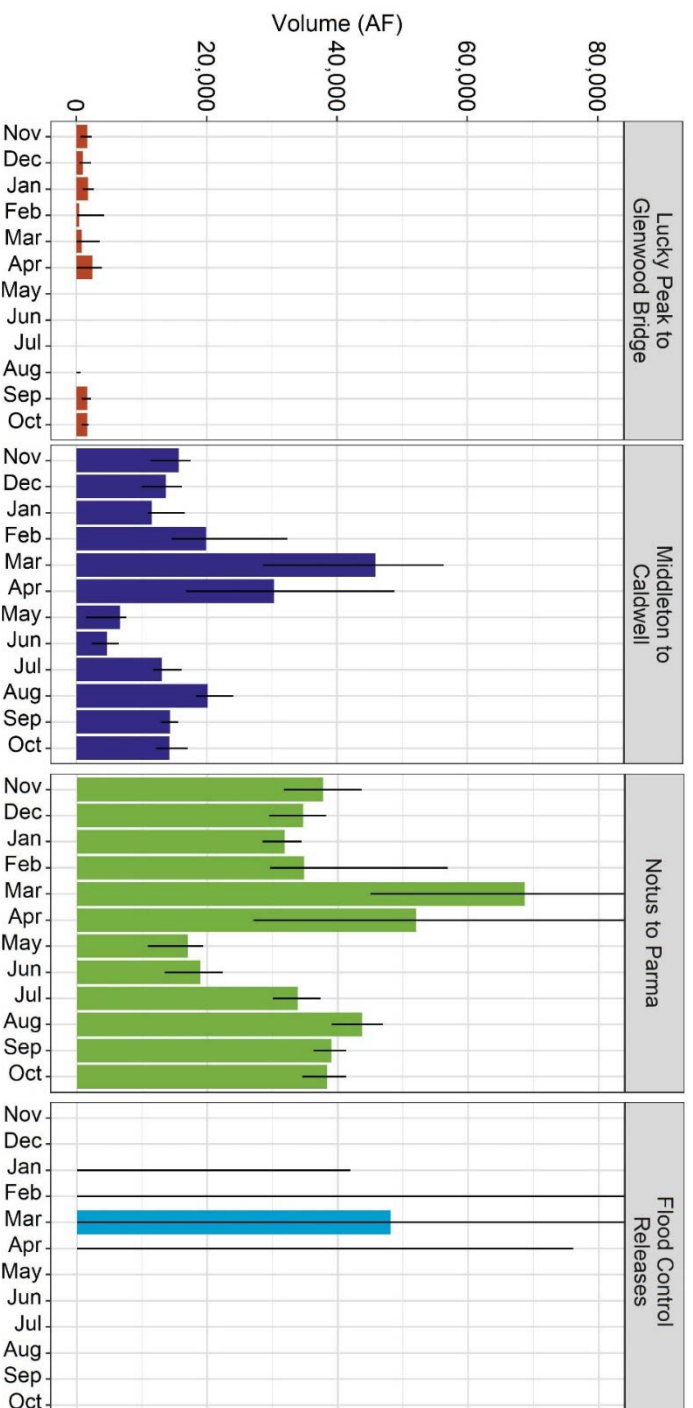
# Water Availability: Boise River

- Natural flow available in every year evaluated
- Flood control releases available in most years



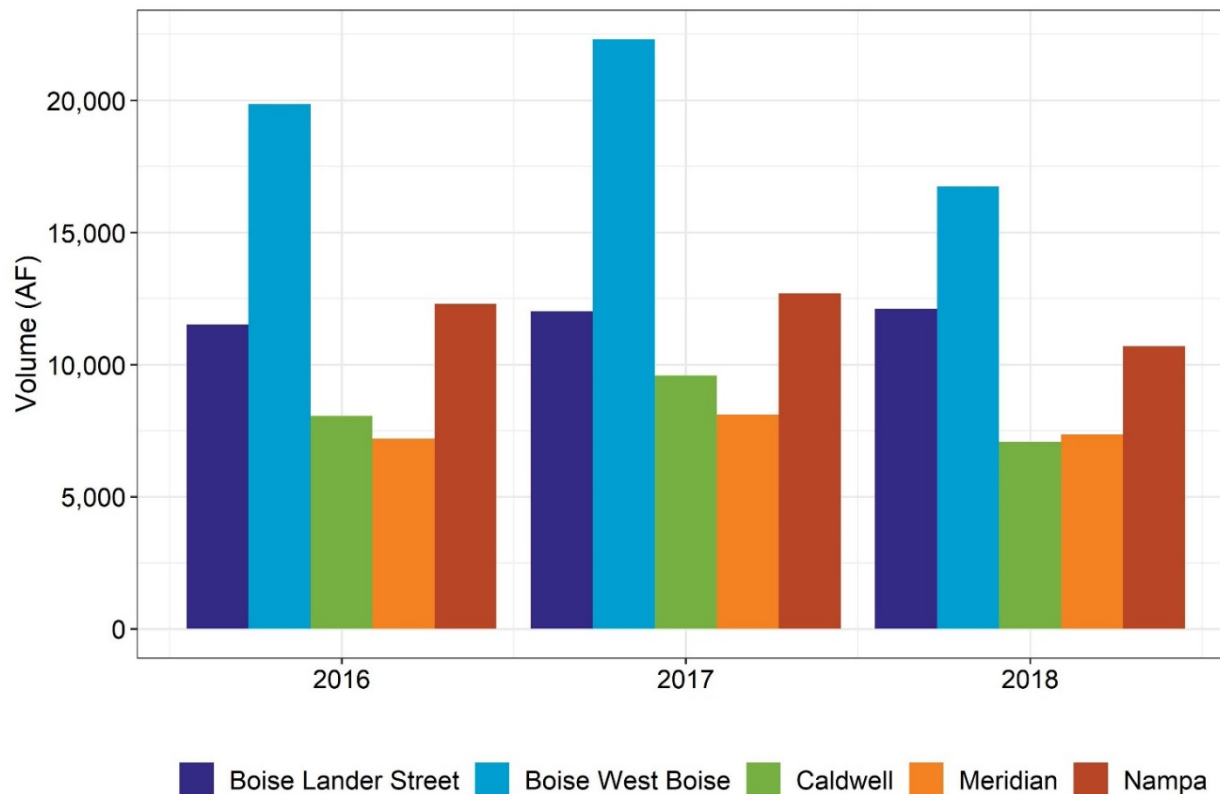
# Water Availability: Boise River

- Water availability increases in downstream reaches
- Lucky Peak to Middleton reaches seasonally water limited
- Continuous water availability below Middleton
- Flood control releases are seasonal and variable



# Water Availability: Boise River

- Municipal reuse volumes available
- Consistent flows available continuously

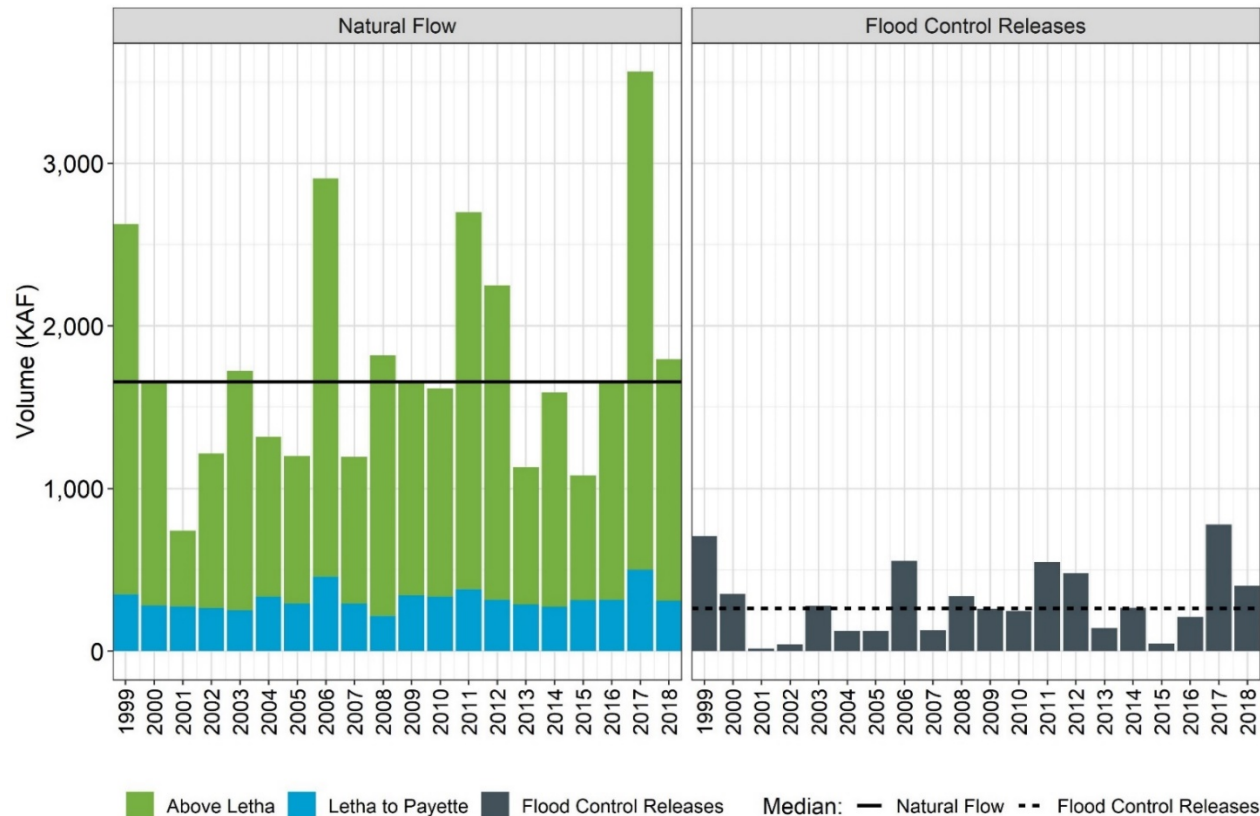


# Water Availability: Payette River

- Natural flow quantified as non-appropriated natural flow at Letha and Payette
- Natural flow quantified above and below Letha
- Flood control releases estimated with gage data

# Water Availability: Payette River

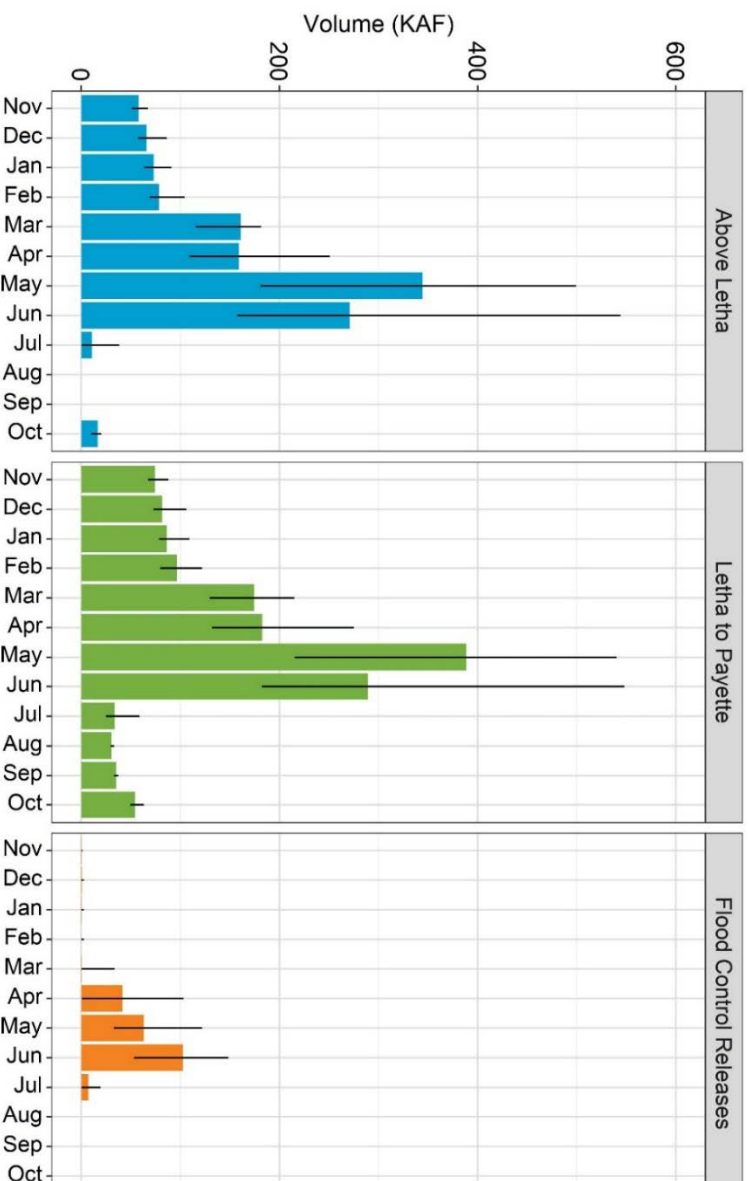
- Natural flow available in every year evaluated
- Flood control releases available in all years evaluated





# Water Availability: Payette River

- Above Letha is seasonally water limited
- Continuous water availability below Letha
- Flood control releases are seasonal

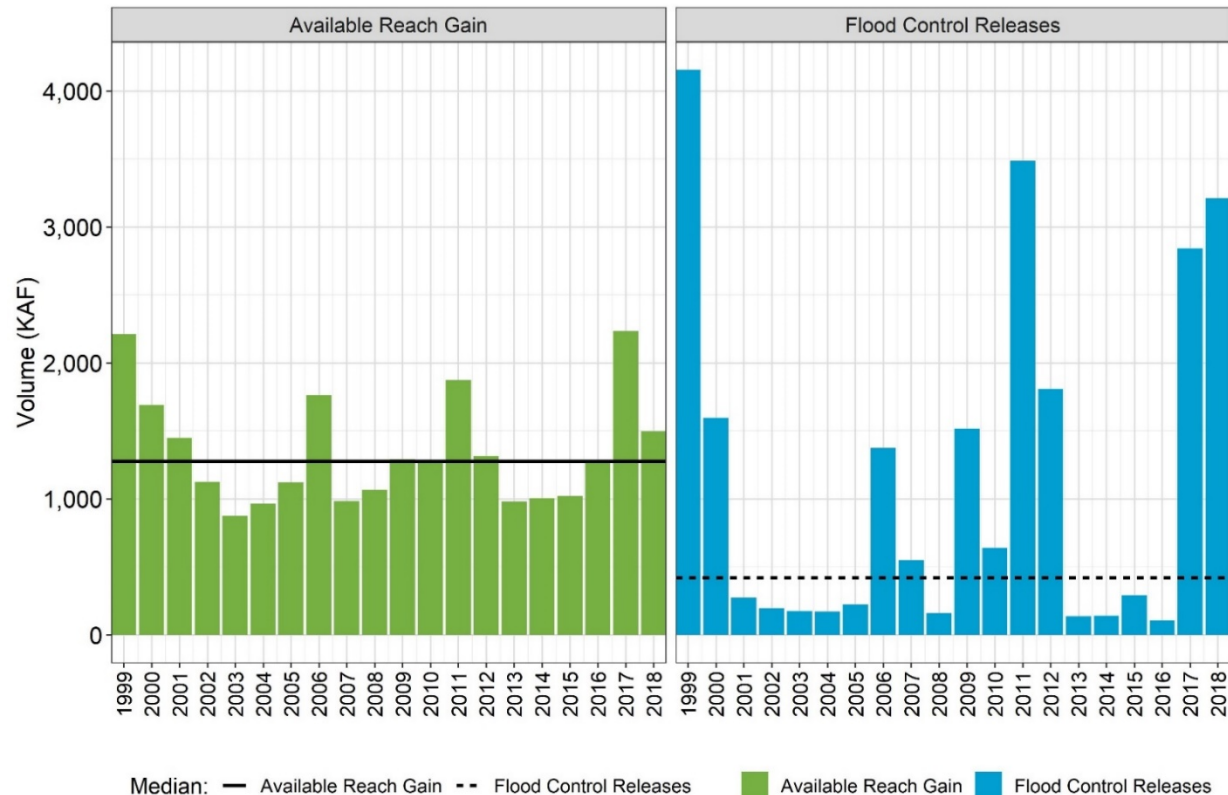


# Water Availability: Snake River

- Available reach gains quantified as gains between Milner Dam and the Murphy gage in excess of Swan Falls minimum streamflows
- Available flow quantified at Snake River near Murphy gage
- Flood control releases quantified as Milner releases not resulting from flow augmentation or IPCo power generation

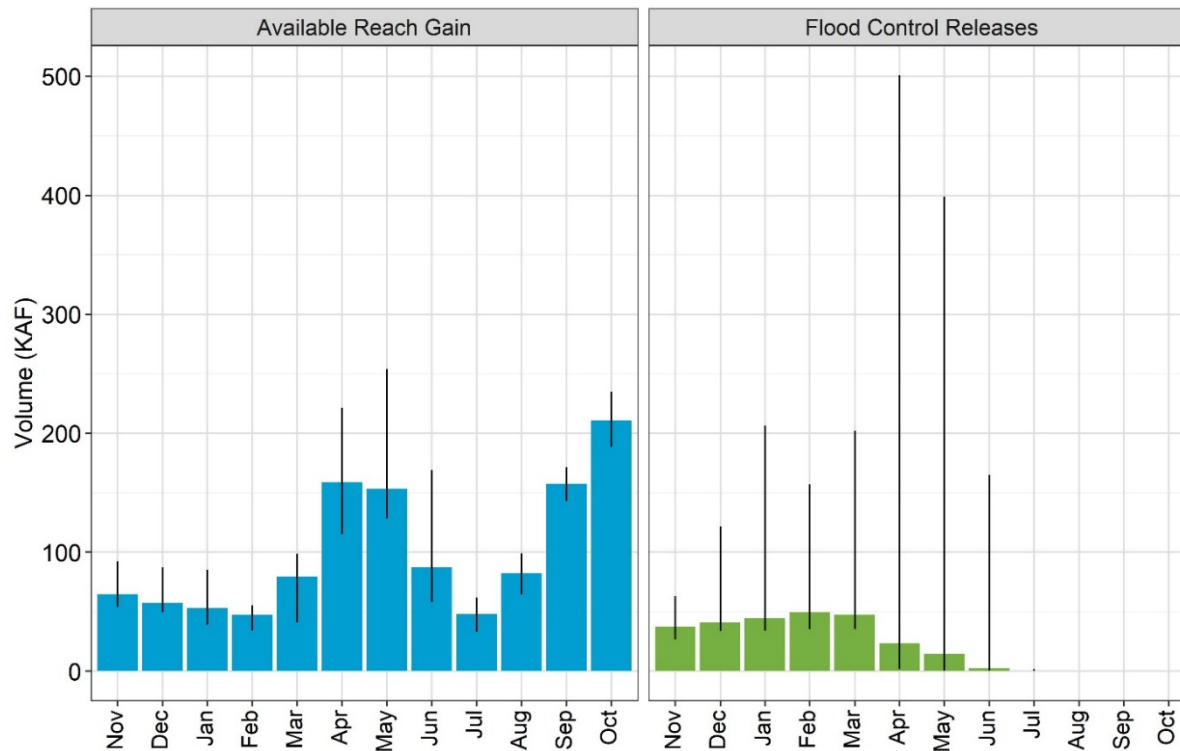
# Water Availability: Snake River

- Reach gains available in every year evaluated
- Flood control releases available in every year evaluated



# Water Availability: Snake River

- Reach gain continuously available
- Available reach gain volume has two annual peaks
- Available releases over Milner from November through May



# Water Availability: Conclusions

- Water is available in all basins evaluated but availability varies yearly and by location
- Water is seasonally limited above Middleton and Letha and continually available below Middleton and Letha
- The Boise basin has the least availability
- The Payette basin has the greatest volume of available natural flow
- The Snake basin has the greatest volume of flood control releases and continually available reach gains below Murphy

Location  
Quantity  
Timing



# Managed Recharge Physical Feasibility

Brandon McLean, R.G.

# Recharge Physical Feasibility - Objective

**OBJECTIVE:** Identify favorable vs. unfavorable locations within the Treasure Valley study area for managed aquifer recharge (MAR) based on select physical factors

- Engage IDWR:
  - Active collaboration/discussions
  - Develop physical factors specific to Treasure Valley
  - Locating robust data sets/sources

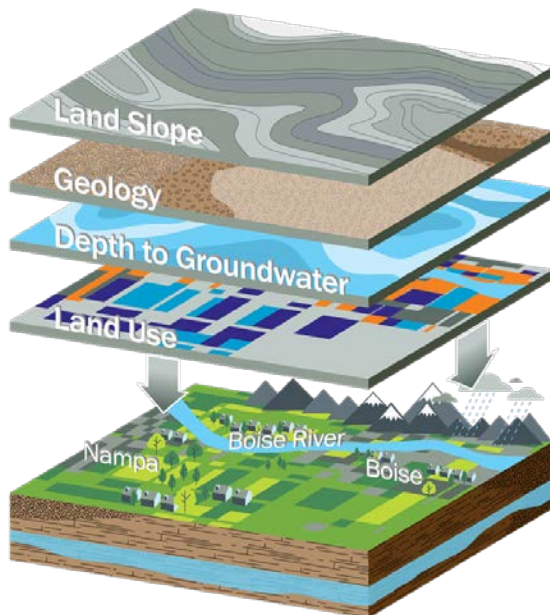
Potential  
Recharge Area  
Locations



# Recharge Physical Feasibility - Approach and Methods

## APPROACH:

- Build Prioritization Model in GIS using robust datasets for select physical factors.



## METHODS:

- Identify and select physical factors and compile data layers into GIS geodatabase.
- Develop scoring methodology and weight factors specific to each factor.
- Perform sensitivity and calibration analysis on each factor and total cell scores and re-run model as necessary
- Final output from model is **score-by-cell map**.
- Review results and group areas into favorable vs. unfavorable **zones**.

# Recharge Physical Feasibility - Physical Factors

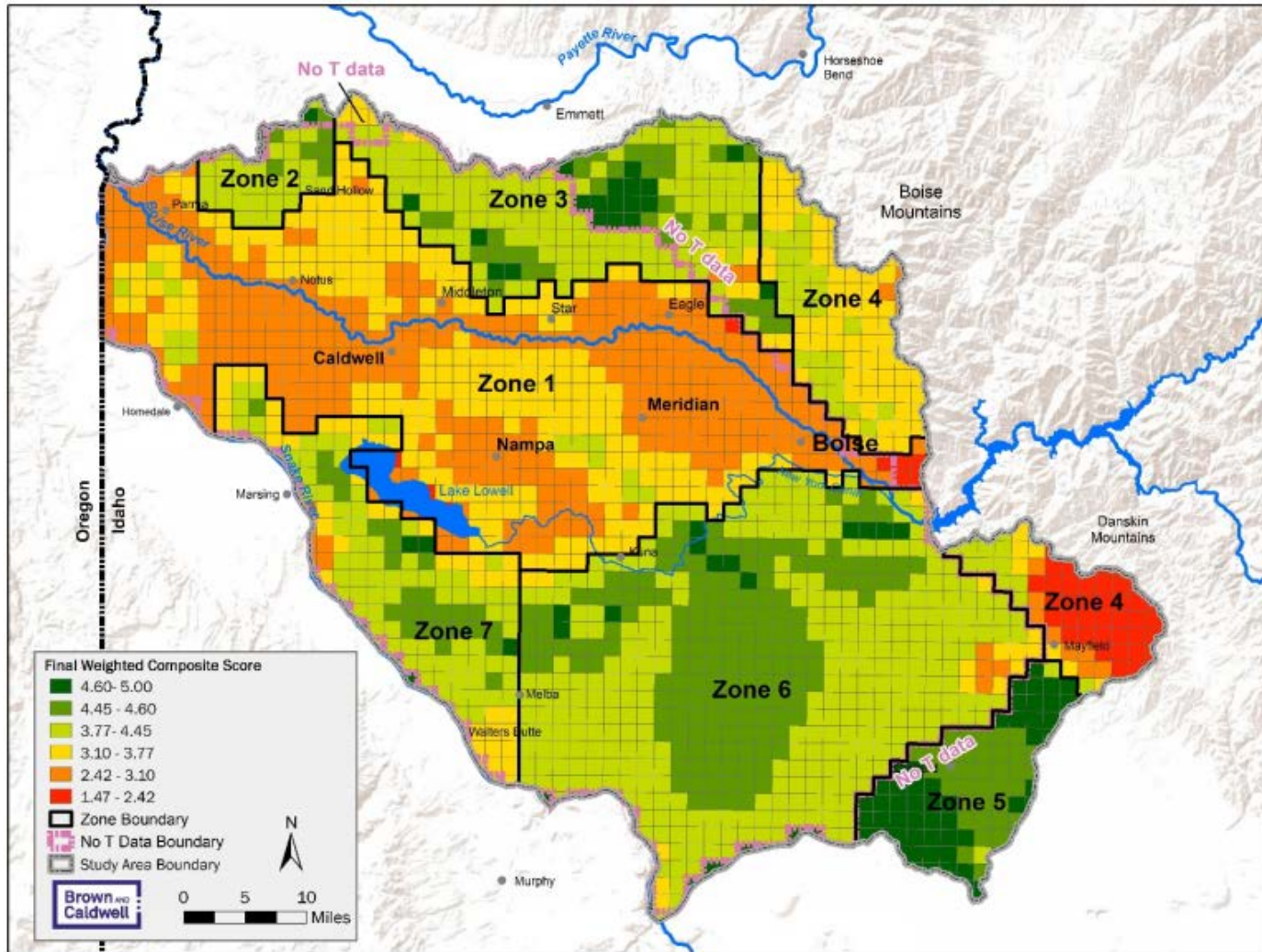
Physical Factor	Data Sources	Rationale/Need
Surface Geology	IGS	Proxy for subsurface geology; impacts permeability and infiltration rates
Aquifer Transmissivity	TVHP Groundwater Flow Model	Permeability of aquifer, disperse vs. mounding from recharge; identified data gap
Depth to Water (DTW)	IDWR Well Records	Proxy for available storage in aquifer; available space for recharge
Surface Water Features	IHF	“Natural” recharge sources, shallow depth to water and reduced residence times nearby
Floodplain	FEMA	Construction/permitting obstacles and same as above along with flooding risk
Contaminated Sites	IDEQ/US EPA	Potentially adverse impacts to remedial actions/efforts at nearby groundwater plumes
Land Use	NLCD	Certain land use designations are conducive to recharge facilities while others are not; constructability and permitting
Land Slope	National Elevation Dataset DEM	Landslide risk; constructability issues related to topographic relief

IGS = Idaho Geological Survey  
 TVHP = Treasure Valley Hydrologic  
 Project  
 Brown and Caldwell

IHF = Idaho Hydro Features  
 DEM = Digital Elevation Model

NLCD = National Land Cover Database

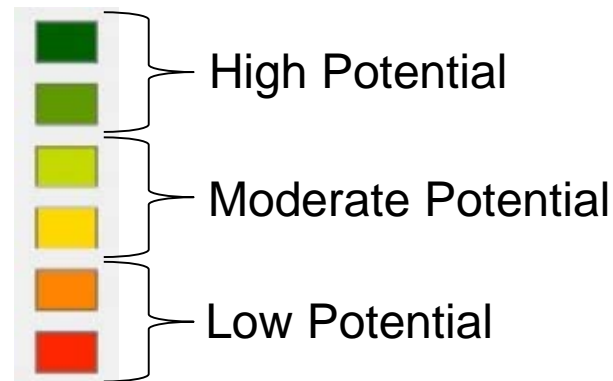
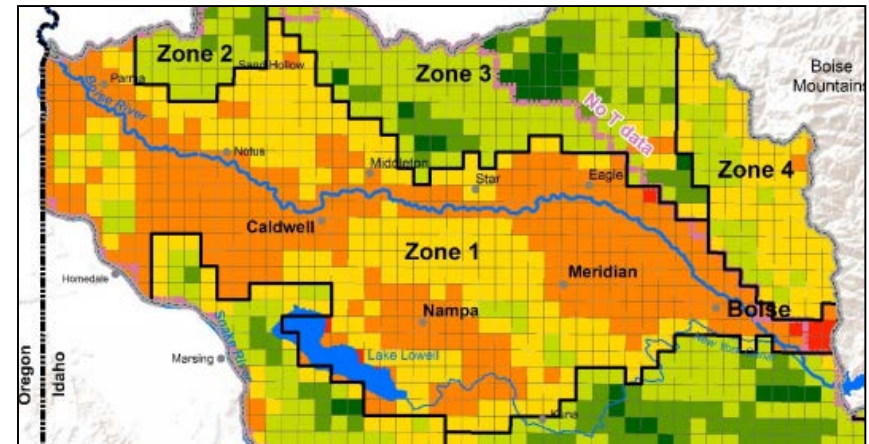
# Model Results – Score-by-Cell Map





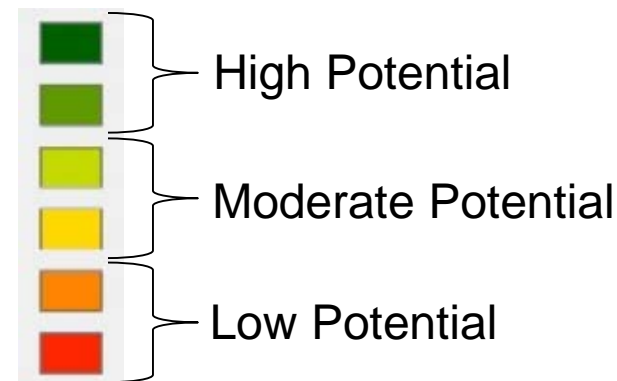
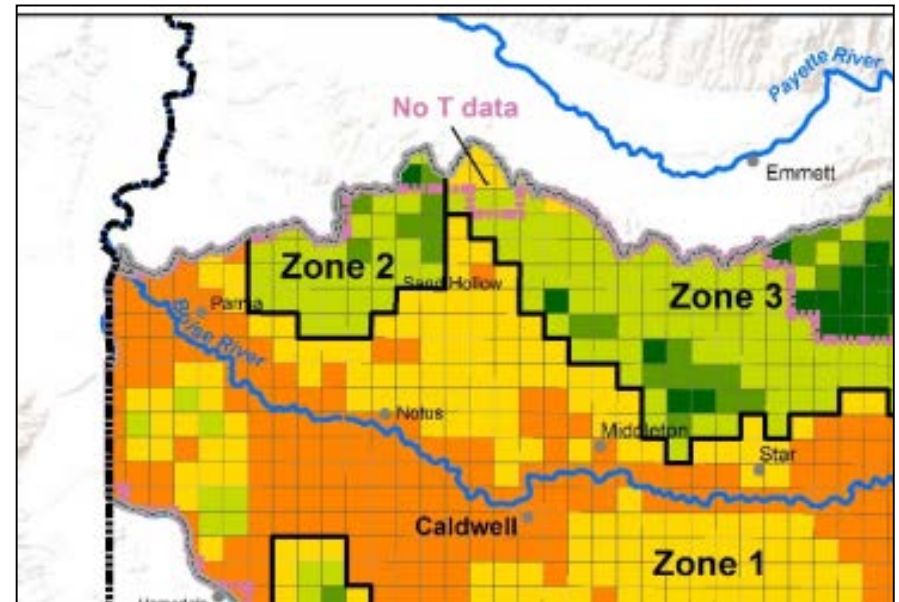
# Zone 1: Boise River Corridor

- Overall moderate-low potential
- Factors contributing to low scores:
  - Shallow DTW associated with proximity to Boise River
  - Proximity to surface water features and floodplain/high flood risk
  - Urban land use
- MAR sites potentially could be developed along edge
- Benefits include proximity to source (New York Canal, Boise R.), centrally located in TV's urbanized core



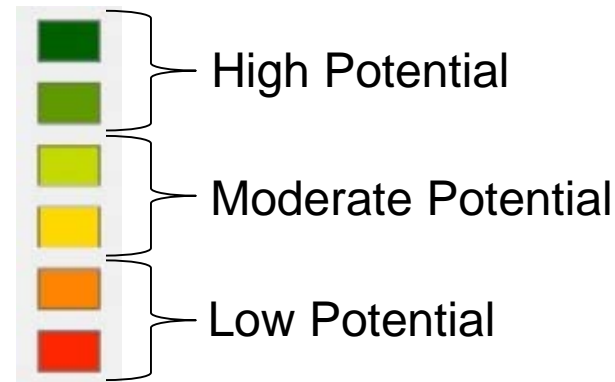
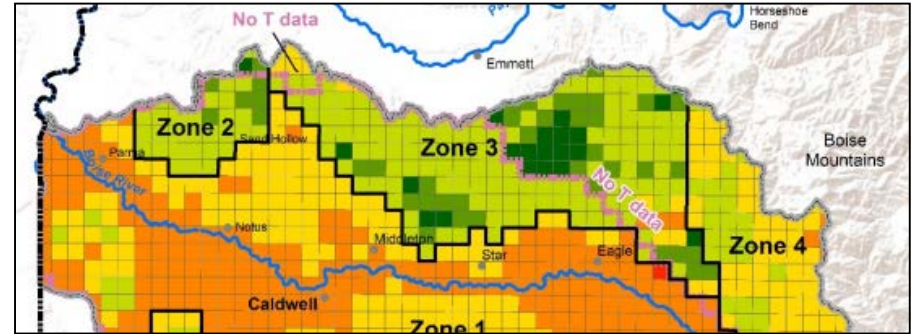
## Zone 2: Northwest TV near Sand Hallow

- Overall moderate-high potential
- Factors contributing to high scores:
  - Deeper DTW
  - Distance to surface water/floodplains
  - Land use
- Factors contributing to low scores:
  - Land slope/topographic relief
  - Surface geology – bedrock or fines
- Need to investigate travel times to State line and Boise R.
- Drawbacks include proximity to basin boundary and downstream location within TV.



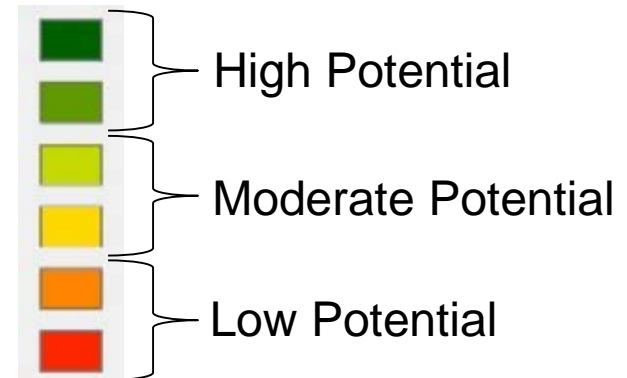
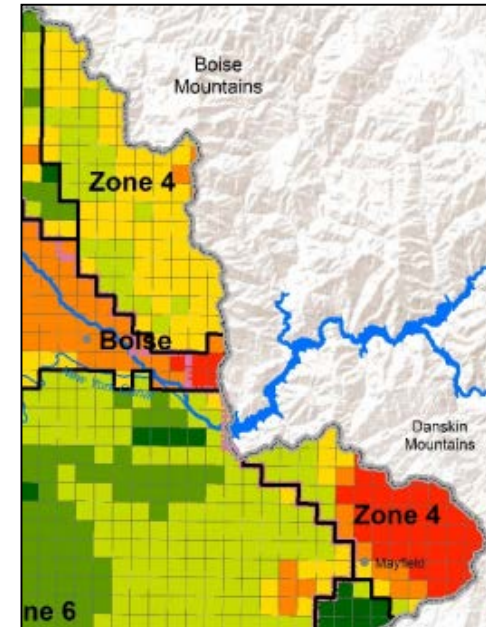
# Zone 3: North Foothills south of Emmett

- Moderate-high potential
- Three areas of interest - Middleton/Star, Eagle and Willow Creek
- Factors contributing to lowering of scores:
  - Land slope/topographic relief
  - Low transmissivity
  - Surface geology – bedrock or fines
- Need to validate aquifer properties in NE portion
- Benefits include proximity to Payette R., central location in TV near urban core



## Zone 4: Boise Foothills and Danskin Mtns.

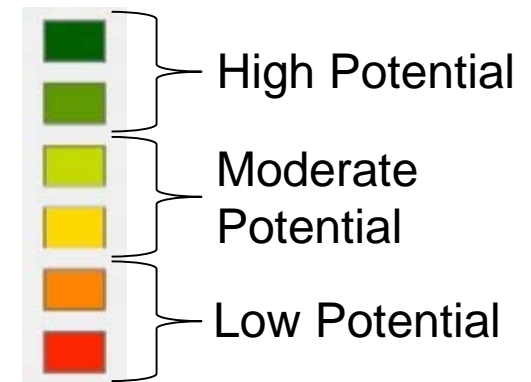
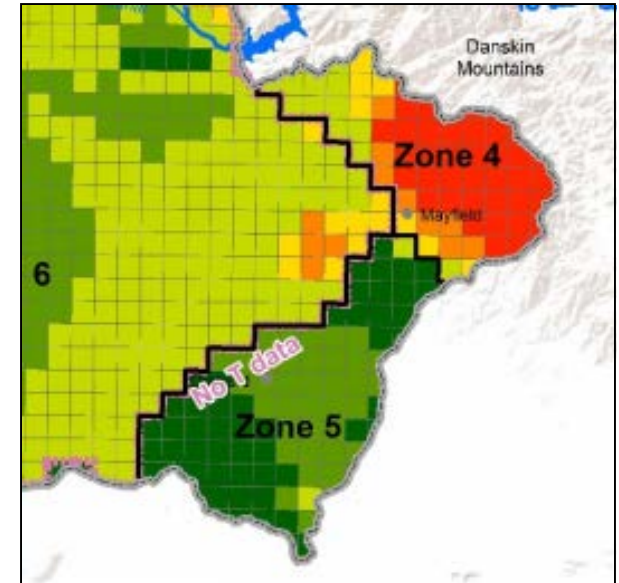
- Overall low-moderate potential
- Factors contributing to low scores:
  - Land slope
  - Surface geology – bedrock
  - Land use
  - DTW (SE portion)
- Need to validate aquifer properties in SE portion
- Drawback - there is little to no water available for recharge in the upstream Boise R. or Payette R.





## Zone 5: Orchard Area

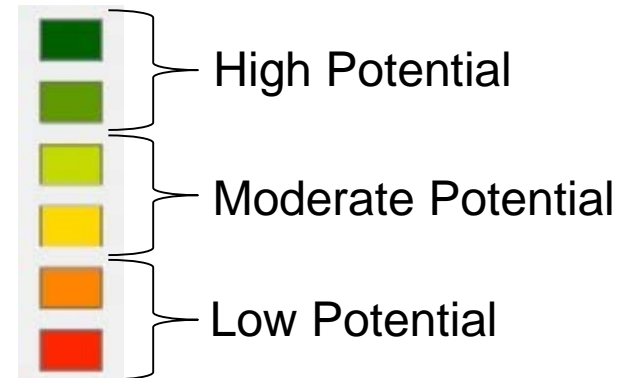
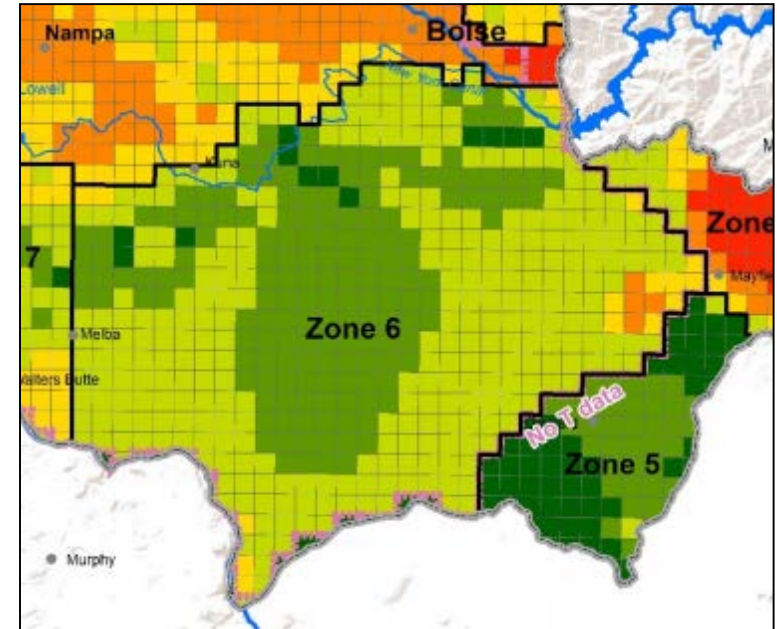
- High potential
- Factors contributing to low scores:
  - Land slope
  - Surface geology (depending on location)
- Need to validate aquifer properties
- Drawback - distal location of the TV, upgradient from urban core





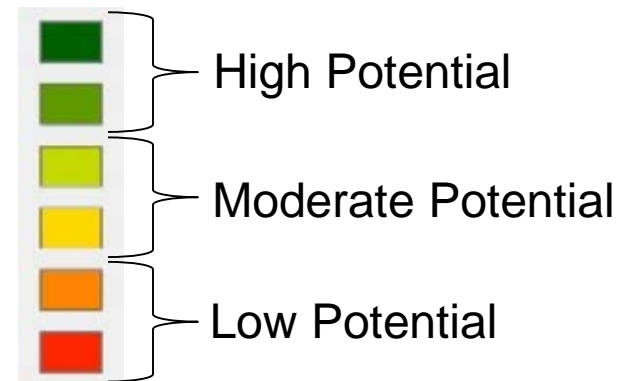
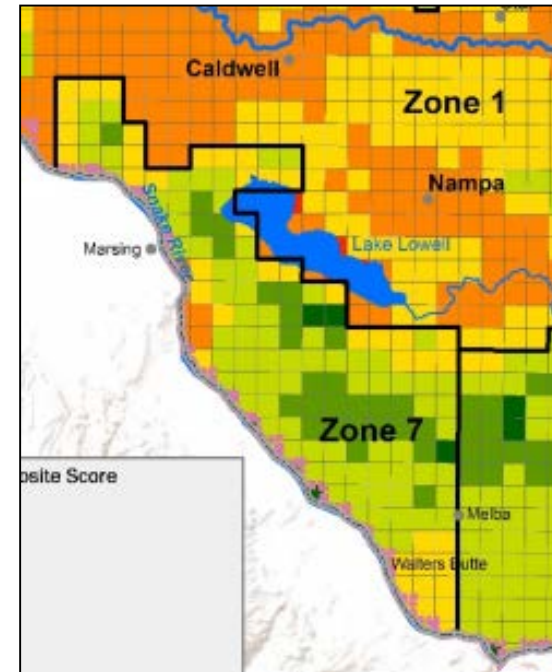
# Zone 6: South of Boise

- Moderate-high potential
- Factors contributing to low scores:
  - Low transmissivity
  - Surface geology (depending on location)
  - Shallow DTW, flood zones, surface water features (near Boise R.)
- Benefits include:
  - Proximity to source water (New York Canal and Boise R.)
  - Upstream geography within TV close to urban core
  - Large area = distance to surface water with presumably longer travel times



# Zone 7: South of Lake Lowell

- Moderate-high potential
- Factors contributing to low scores:
  - Surface geology
  - Low transmissivity
  - Shallow DTW near Snake R.
- Benefits include proximity to the New York Canal and Snake R. as potential source
- Drawbacks include proximity to Lake Lowell limits feasibility due to travel times/low residence time.



# Recharge Physical Feasibility - Summary

- Model results represent a high-level evaluation of MAR feasibility in the study area using select factors
- Identified favorable and unfavorable zones for recharge sites
- Site-specific investigation of priority zones are recommended using additional considerations
- Zones of particular interest include portions of Zone 1, Zone 3, Zone 6 and Zone 7.
- Of these favorable zones, only Zones 3 and 6 were used in the Task 3 – Infrastructure Requirements and Cost analysis discussed next.



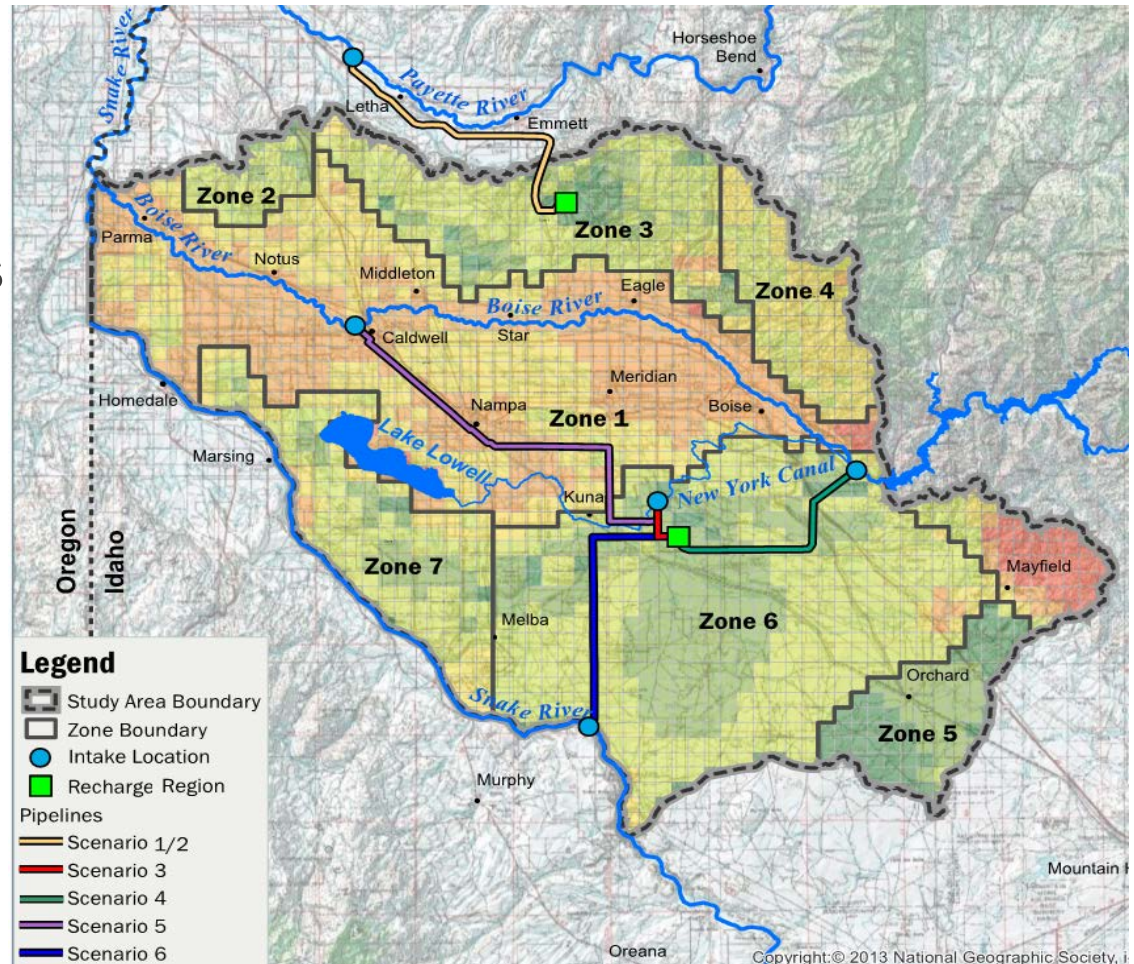
# Infrastructure Requirements and Cost

Abbi Dorn, P.E.



# Infrastructure Reqs and Cost Objectives

- Develop Six Implementation Scenarios
- Develop Class 5\* Costs
- Derive Parametric Costs
- Identify Additional Implementation Considerations



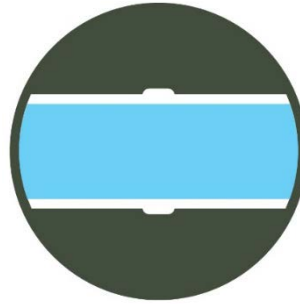
\* As defined by the Association for the Advancement of Cost Engineering International



# Implementation Scenarios Components



River Intake



Pipeline



Pump Station(s)

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## Recharge Method

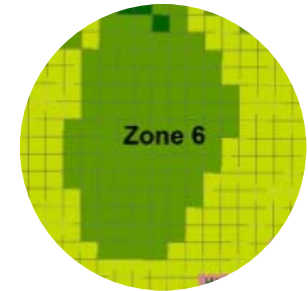
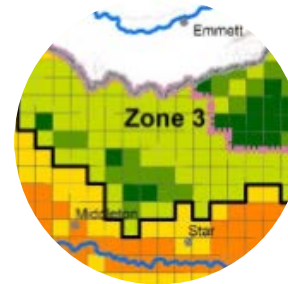


Well



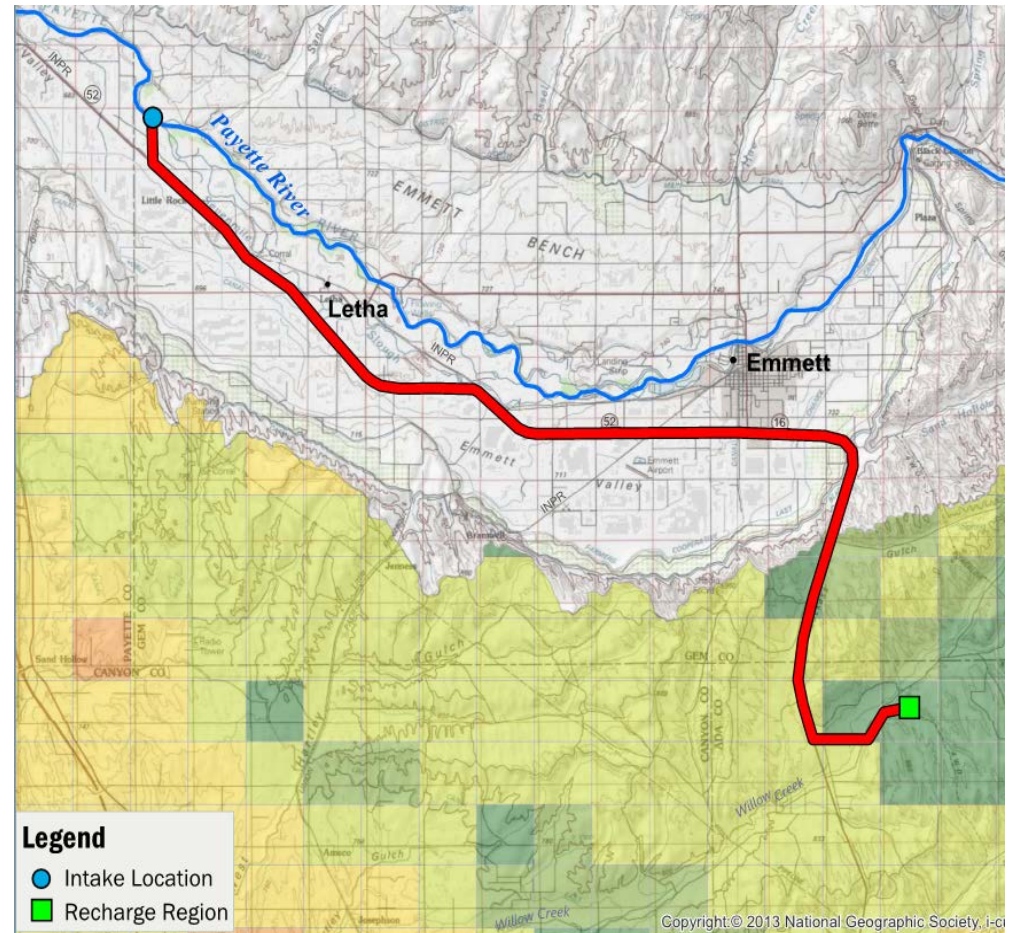
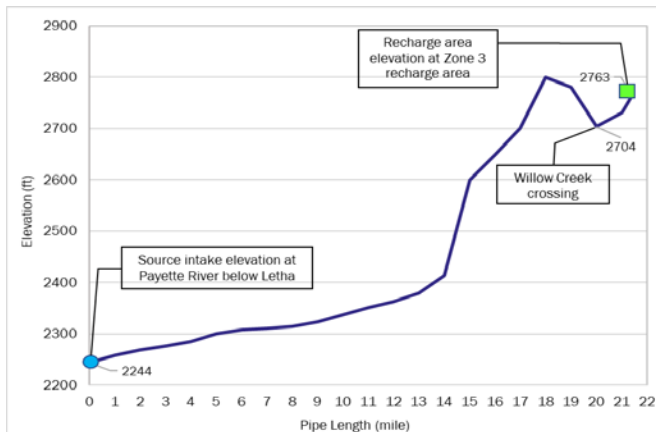
Infiltration Basin

## Recharge Zone



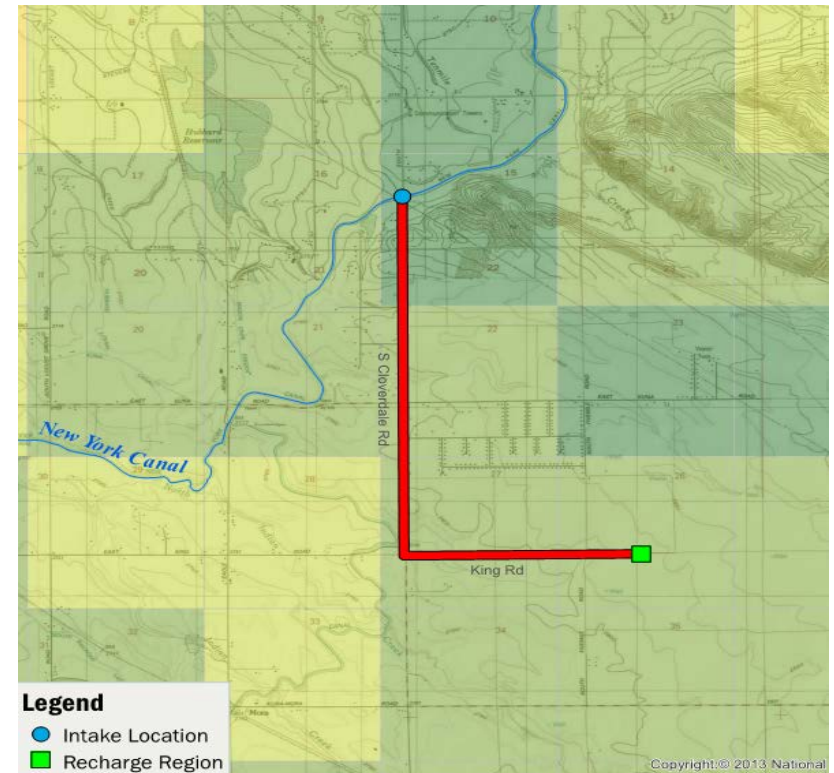
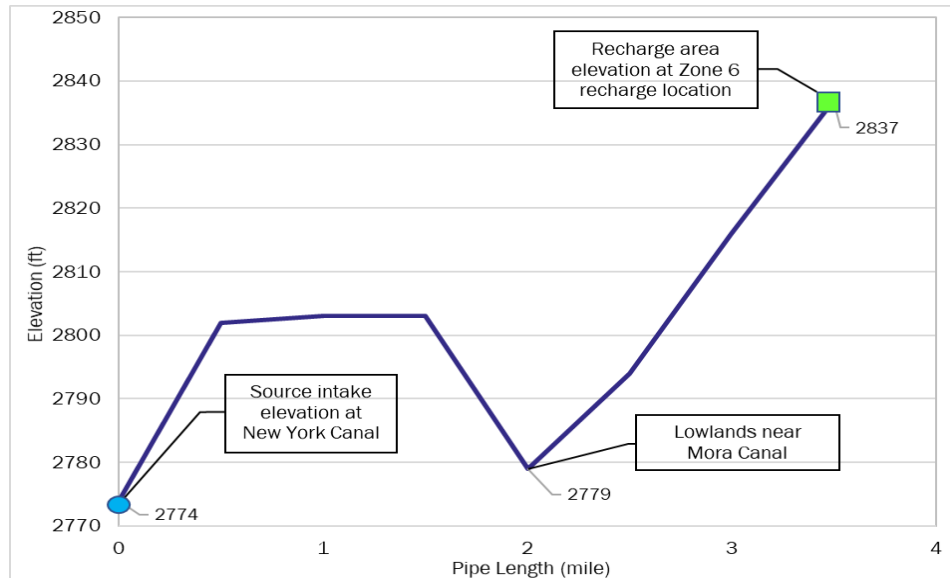
# Implementation Scenarios #1 & #2

- River Intake – Payette River downstream of Letha
- Pipe Alignment – 21.4 miles
- Pump Stations - 4 and 3
- Recharge Zone - #3
- Flow Rates:
  - Scenario #1 = 50 cfs
  - Scenario #2 = 100 cfs



# Implementation Scenarios #3

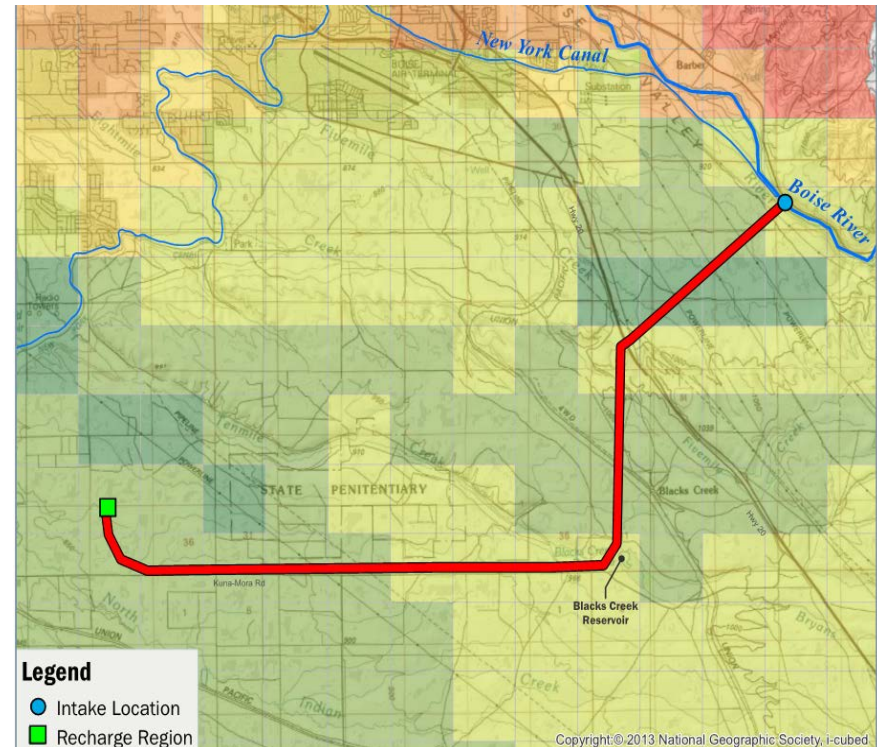
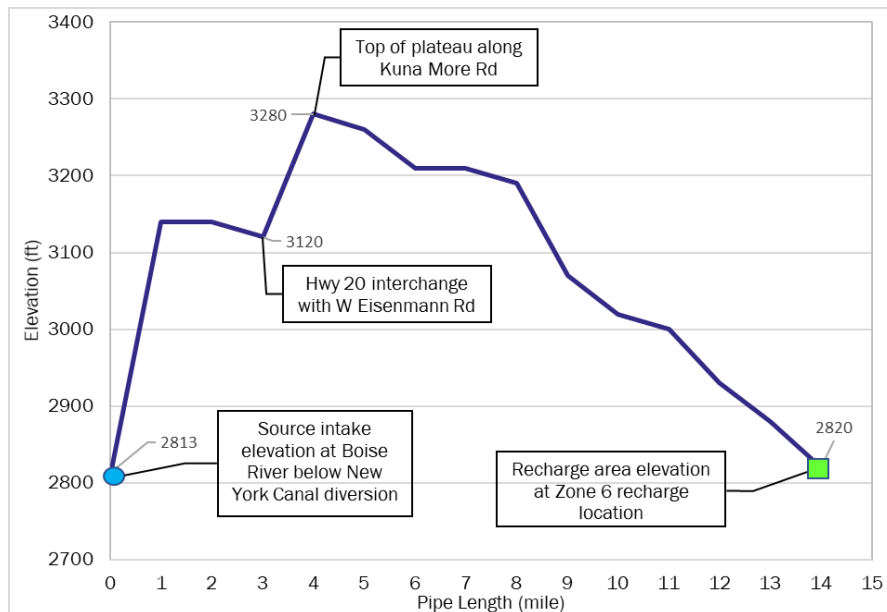
- River Intake – Boise River via New York Canal
- Pipe Alignment – 3.7 miles
- Pump Station - 1
- Recharge Zone - #6
- Flow Rate – 100 cfs





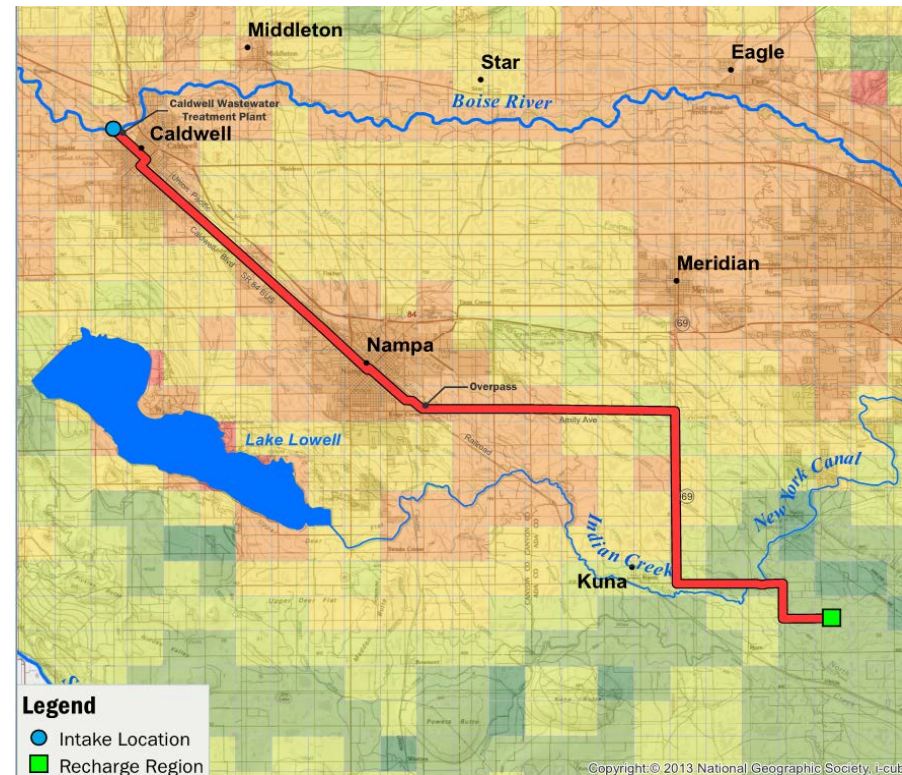
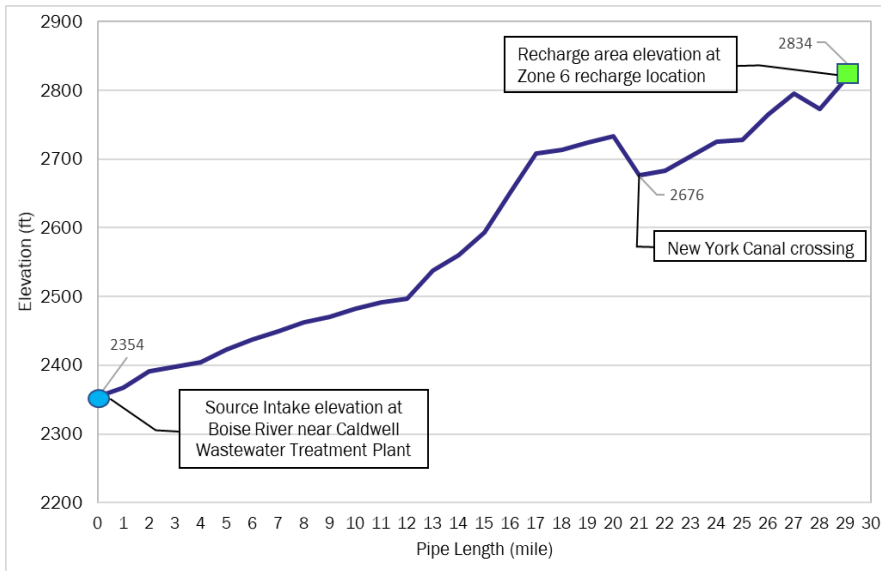
# Implementation Scenarios #4

- River Intake – Boise River upstream of New York Canal
- Pipe Alignment – 15 miles
- Pump Station - 2
- Recharge Zone - #6
- Flow Rate – 100 cfs



# Implementation Scenarios #5

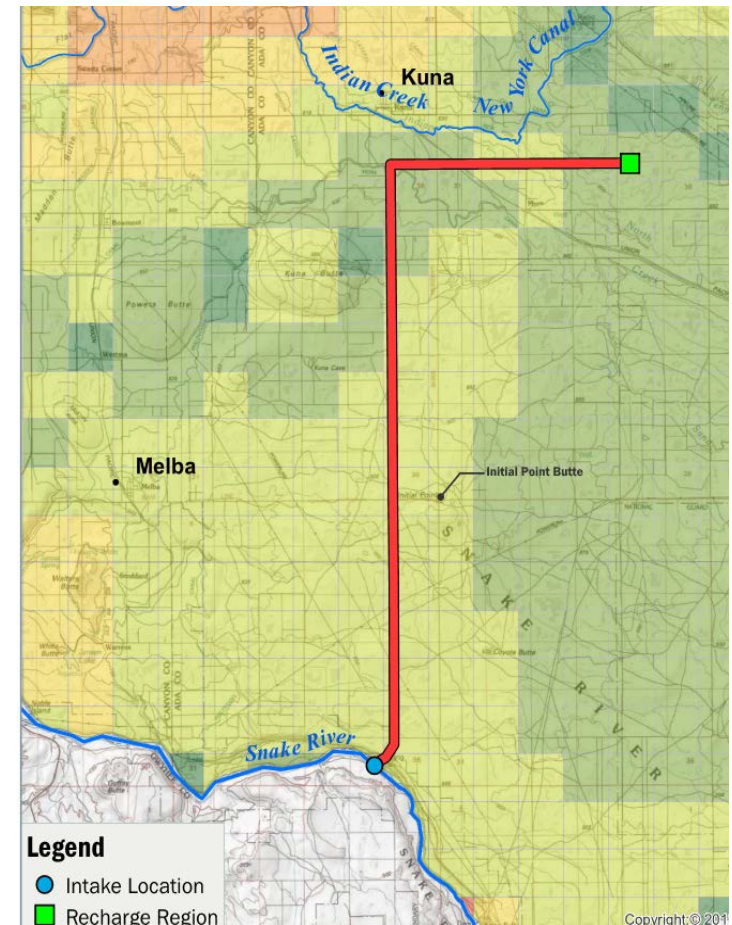
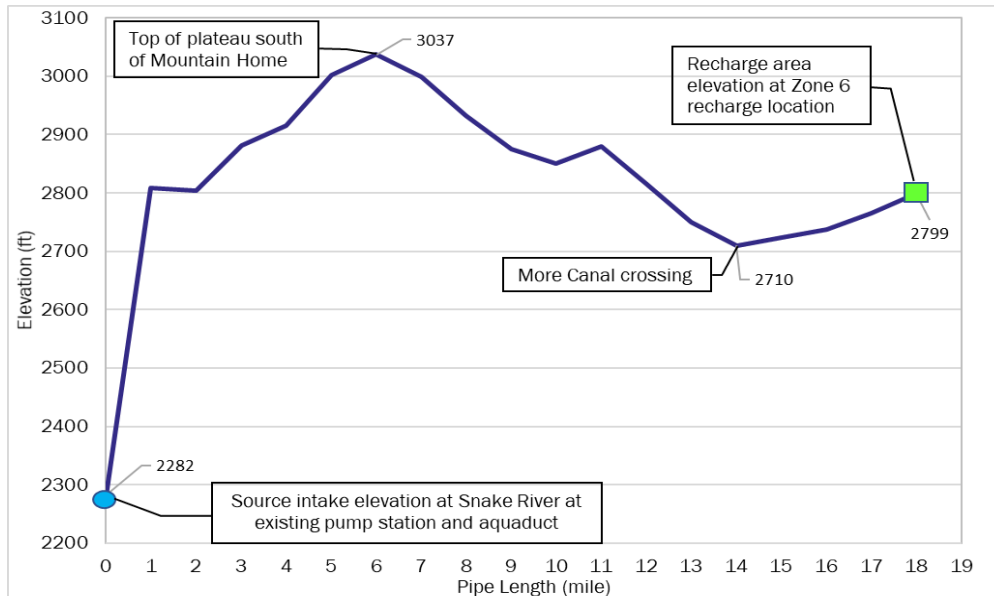
- River Intake – Boise River near Caldwell
- Pipe Alignment – 29.2 miles
- Pump Station - 3
- Recharge Zone - #6
- Flow Rate – 100 cfs



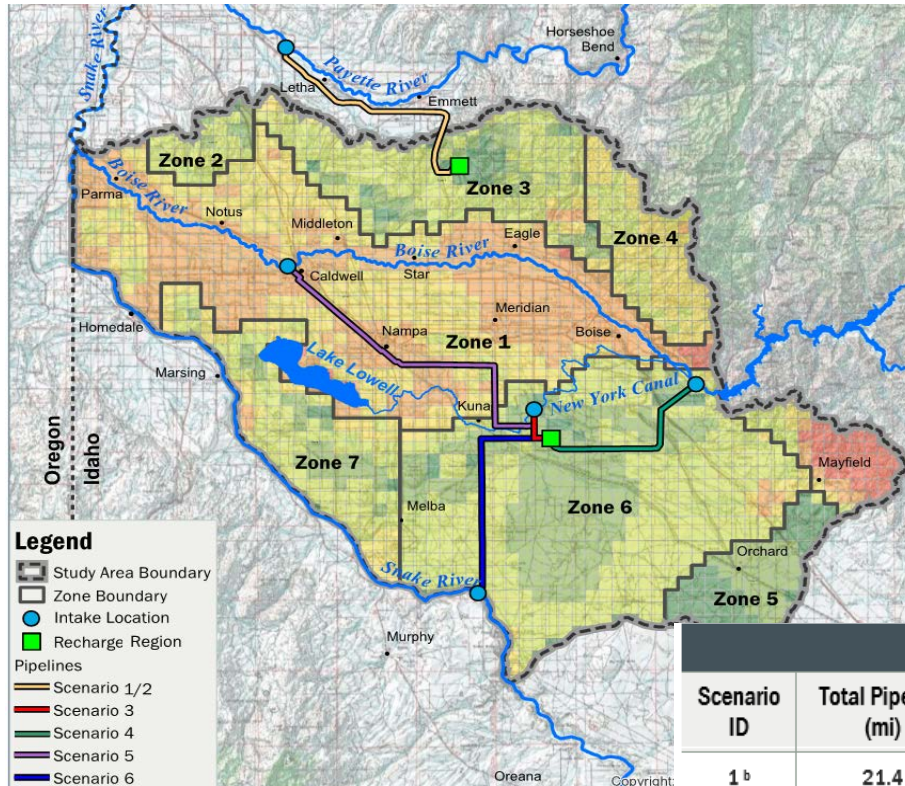


# Implementation Scenarios #6

- River Intake – Snake River southeast of Melba
- Pipe Alignment – 18 miles
- Pump Station - 3
- Recharge Zone - #6
- Flow Rate – 100 cfs



# Implementation Scenarios Summary



**Table 2-2. Scenario Infrastructure Summary**

Scenario ID	Total Pipeline (mi)	Total No. of Pump Stations <sup>a</sup>	Recharge Mechanism	
			Number of UIC wells	Acre ft of Infiltration Basin
1 <sup>b</sup>	21.4	4	65	25
2	21.4	3	129	50
3	3.7	1	129	50
4	15.1	2	129	50
5	29.2	3	129	50
6	18.0	3	129	50

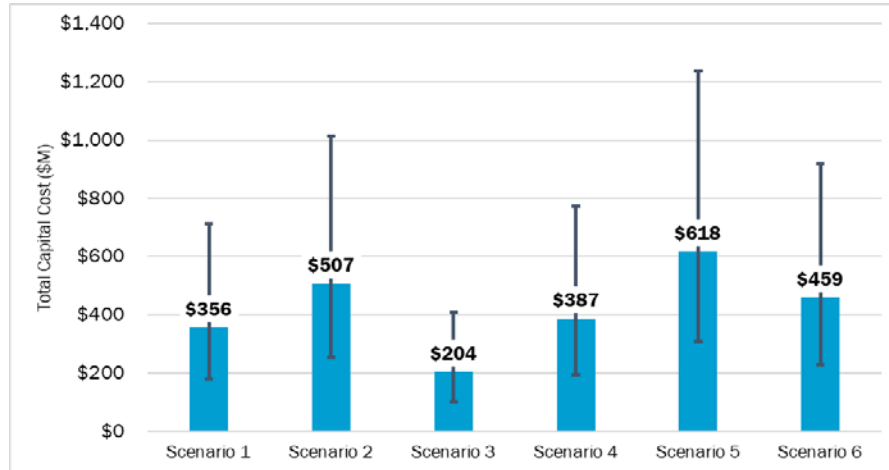
<sup>a</sup> Total includes the one pump station at the source intake.

<sup>b</sup> Smaller forcemain diameter in Scenario 1 results in larger friction head losses and requires four pump stations total.

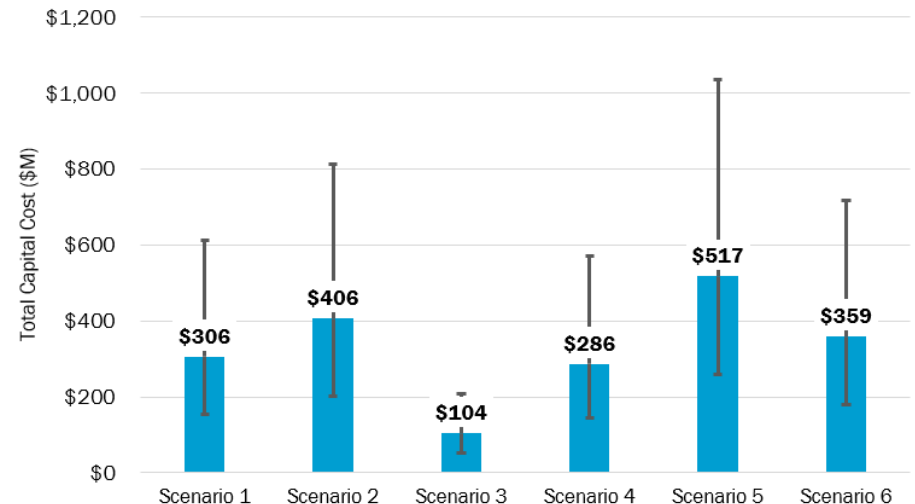
# Class 5 Costs for Scenarios

- Class 5 costs are Conceptual Level or Project Viability Estimates
- Typical ranges from -50 to +100 percent
- UIC well and infiltration basin for each scenario

# Class 5 Costs for Scenarios



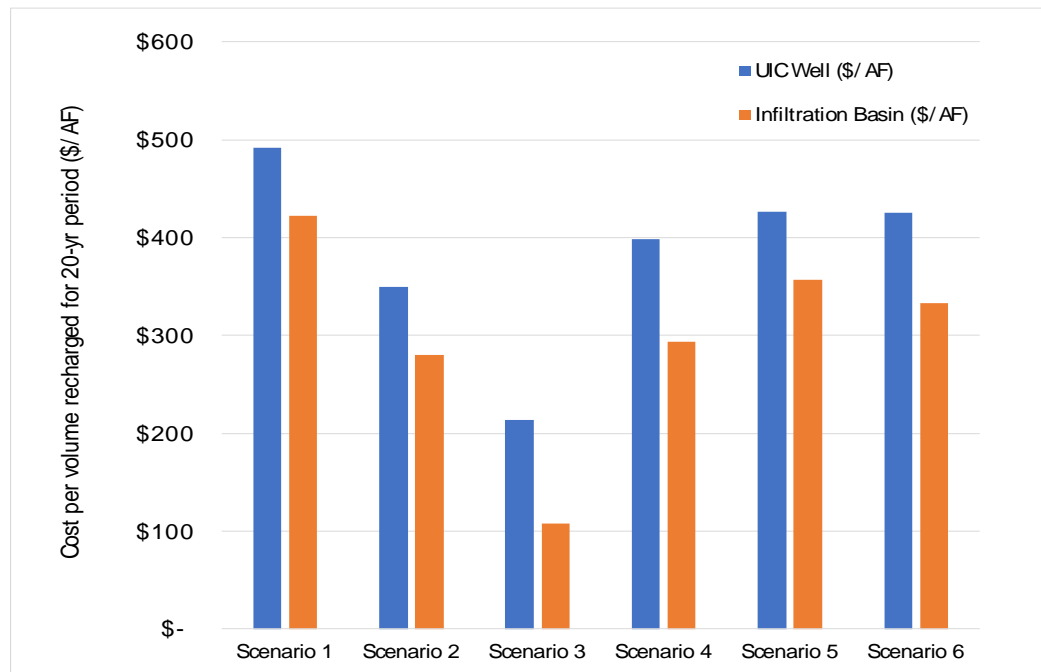
UIC well capital costs, Class 5 Estimate



Infiltration basin capital costs, Class 5 Estimate

# Parametric Costs

- Total capital cost (\$) divided by the annual volume recharged (AF) divided by an assumed project life of 20 years (see columns labeled Scenario Cost per Volume Recharged [\$/AF])





# Additional Implementation Considerations

- Permitting requirements
- Construction method limitations
- Land/easement acquisition
- Agency and stakeholder coordination
- Cost sharing opportunities
- Private entity coordination/collaboration
- Project task schedule
- Maximum volumes for potential recharge
- Operations and Maintenance Costs



# Conclusions

# TV Recharge Feasibility Study Conclusions

- Water is available for recharge in all reaches evaluated. Quantity and timing vary by location.
- The Boise River above Middleton has the least amount of availability and is seasonally limited
- Favorable recharge areas are generally located in less developed areas outside of the Boise River corridor
- Favorable areas can be found within overall unfavorable zones
- Infrastructure costs increase with conveyance distance and elevation gain
- Parametric costs decrease with higher pump rates
- Favorable recharge areas can be distant from high water availability reaches increasing infrastructure costs



Thank you.  
**Questions?**



# AGENDA

## IDAHO WATER RESOURCE BOARD

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### Board Meeting No. 1-20

January 24, 2020

8:30 a.m.

Water Center

Conference Room 602 B, C & D

322 E. Front St.

BOISE

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**Brad Little**  
Governor

**Roger W. Chase**  
Chairman  
Pocatello  
District 4

**Jeff Raybould**  
Vice-Chairman  
St. Anthony  
At Large

**Vince Alberdi**  
Secretary  
Kimberly  
At Large

**Peter Van Der Meulen**  
Hailey  
At Large

**Albert Barker**  
Boise  
District 2

**John "Bert" Stevenson**  
Rupert  
District 3

**Dale Van Stone**  
Hope  
District 1

**Jo Ann Cole-Hansen**  
Lewiston  
At Large

1. Roll Call
2. Public Comment
3. Agenda & Approval of Minutes 10-19 & 11-19\*
4. Financial Report
5. Boise River Feasibility Study
6. ESPA Recharge
7. Priest Lake
8. Bear Lake Update
9. Update from Mark Limbaugh of the Ferguson Group
10. Palouse Basin Aquifer Committee Update
11. Update on Potential Legislation of Interest
12. Director's Report
13. Non-Action Items for Discussion
14. Next Meeting & Adjourn

### Finance Committee Meeting 1-20 upon adjournment of Board Meeting

1. Introductions
2. Goose Lake Reservoir Company Loan
3. Other Items
4. Adjourn

Committee Members: Vince Alberdi (Chair), Roger Chase, Dale Van Stone, Al Barker, and Jo Ann Cole-Hansen

\* Action Item: A vote regarding this item may be made 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 facilities that meet the accessibility requirements of the Americans with Disabilities Act. 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](mailto:jennifer.strange@idwr.idaho.gov) or by phone at (208) 287-4800.





# IDAHO WATER RESOURCE BOARD

**Brad Little**  
Governor

**Roger W. Chase**  
Chairman  
Pocatello  
District 4

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Vice-Chairman  
St. Anthony  
At Large

**Vince Alberdi**  
Secretary  
Kimberly  
At Large

**Peter Van Der Meulen**  
Hailey  
At Large

**Albert Barker**  
Boise  
District 2

**John "Bert" Stevenson**  
Rupert  
District 3

**Dale Van Stone**  
Hope  
District 1

**Jo Ann Cole-Hansen**  
Lewiston  
At Large

## MINUTES MEETING NO. 10-19

Idaho Water Center  
Conference Rooms 602 B, C, D  
322 East Front Street, 6<sup>th</sup> Floor  
BOISE

November 14, 2019

At 8:03 a.m. Chairman Chase called the meeting to order. All members were present.

### Agenda Item No. 1: Roll Call

#### *Board Members Present*

Roger Chase, Chairman  
Vince Alberdi, Secretary  
Bert Stevenson  
Jo Ann Cole-Hansen

Jeff Raybould, Vice-Chairman  
Pete Van Der Meulen  
Dale Van Stone  
Albert Barker

#### *Staff Members Present*

Gary Spackman, Director  
Garrick Baxter  
Cynthia Bridge Clark, Water Projects Section Manager  
Sean Vincent  
Matt Anders  
Neal Farmer  
Emily Skoro  
Justin Shearer  
Jennifer Strange

Brian Patton, Executive Officer  
Mat Weaver, Deputy Director  
Neeley Miller, Water Resource Sr. Planner  
Wesley Hipke  
Rick Collingwood  
Remington Buyer  
Randy Broesch  
Steve Stuebner

#### *Guests Present*

Ann Vonde  
Brian Horsburgh  
Molly McCahon  
Megan Sloan  
Lynn Jaynes  
Lynn Tominaga

Darrell Early  
Scott Campbell  
Craig Hill  
Shaun Parkinson  
Kendra Kaiser

Hal Anderson  
Peter Anderson  
David Blew  
Sarah Lien

### **Agenda Item No. 2: Executive Session**

Mr. Alberdi made a motion to resolve into executive session for the purpose of considering records that are exempt from disclosure. The topic related to Idaho Code §42-1737. Mr. Stevenson seconded. Roll call vote. All ayes. Executive session was closed to the public. No actions were taken.

Mr. Alberdi made a motion to resolve out of executive session. Mr. Van Stone seconded. Voice vote. All in favor.

### **Agenda Item No. 3: Public Comment**

Mr. Barker made a motion to amend the agenda to add "Public Comment" as it had not been included. Mr. Van Der Meulen seconded. Voice vote. All in favor. Motion carried.

Hal Anderson of Idaho Water Engineering provided two updates for the Board. First, he said the Lost Valley Reservoir project has completed a preliminary study associated with the North Idaho Ground Squirrel and that mitigation may be a possibility. The next steps are a need for an environmental impact study and whether there is Board interest in water from the Lost Valley. The other update related to the Cat Creek energy project at Anderson Ranch Reservoir. Water is available in reserve for additional water for the Board if there is interest.

### **Agenda Item No. 4: Agenda & Approval of Minutes 7-19, 8-19 & 9-19**

Mr. Patton presented three sets of minutes for Board approval. Mr. Raybould mentioned a name correction for the 7-19 minutes. No other corrections were suggested. Mr. Raybould moved to adopt the minutes from meetings 7-19, 8-19, and 9-19 with the mentioned correction. Mr. Stevenson seconded. Voice vote. All ayes. The motion carried.

### **Agenda Item No. 5: Financial Report**

Mr. Miller provided an update on the state of the Board's accounts. Mr. Raybould asked if the Aquifer Fund included any of the current year's cigarette tax monies, and Mr. Miller affirmed that it did. Mr. Alberdi asked if all the loans were current, and Mr. Miller stated that they were. Mr. Patton informed the Board that the Goose Creek Reservoir Company has asked the Board to review the interest rate of their loan. A Finance Committee meeting was suggested for discussing this matter.

### **Agenda Item No. 6 Boise River Feasibility Study Update**

Ms. Bridge Clark introduced Brian Horsburgh from the Bureau of Reclamation. He said the public scoping period completed. A graphic related to the comments received was presented to the Board. He listed the other steps in process. Next steps include a draft Feasibility Report and an environmental impact study. Mr. Raybould asked if budget updates come to IDWR staff, and it was stated that the updates are shared at regular meetings. Mr. Horsburgh provided a timeline of future events.

He had an update for the Cat Creek project from the Federal side: the Bureau has received information that needs to be reviewed; a final work plan has yet to be submitted from the project; and BOR has not seen a formal application to FERC.

Ms. Bridge Clark added an update on the Board's water right application related to the Feasibility Study. IWRB re-advertised the application due to problems with statewide publication which extended the protest period. Four protests were filed during the initial protest period from Suez, City of Boise, BLM, and Elmore County.

### **Agenda Item No. 7 Priest Lake Water Management Project**

Mr. Miller provided some background on the Priest Lake Water Management Project. The project is in the third phase and the schedule for this was presented. Mr. Van Stone introduced Molly McCahon, Executive Director of the Lakes Commission and Craig Hill a member on the commission's board. Ms. McCahon provided comments related to the outlet dam. She discussed some changes and the recent history of the lake levels and Priest River flows. Mr. Raybould commented on the chain of events that led to lake water released. She agreed that communication and planning would help. Mr. Van Stone suggested that a set date would be helpful for the winter draw-down. In the letter the Lakes Commission suggested some options to assist in management: such as installing gauges, weather forecasting, and water measurement. Mr. Raybould asked where the funding would come from related to a suggestion for USGS gauges. Ms. McCahon confirmed that the gauges would require an initial plus regular maintenance budget. Mr. Craig Hill offered further information about ways to improve the plan for the lake. He agreed that better communication available to the residents of the lake could help. Mr. Van Stone asked about a website for information for the citizens around the lake. Mr. Patton stated there is an area on the Department's website. Mr. Raybould asked if the Lakes Commission also had a website to provide information. Ms. McCahon stated that they do have a website and we can coordinate in the future Director Spackman shared some information from the Department's point of view.

### **Agenda Item No. 8 Palouse Basin Aquifer Committee Update**

Mr. Patton mentioned that the representatives for the Palouse Basin Aquifer Committee were unable to attend the meeting and have requested a reschedule.

### **Agenda Item No. 9 ESPA Recharge**

Mr. Hipke provided a brief update on the ESPA recharge program, including current and predicted recharge volumes. Forecasted volumes could be impacted by available water, winter snow pack, and weather.

Mr. Broesch and Mr. Farmer presented the findings of an analysis of potential large recharge sites in the upper valley of the Eastern Snake Plain Aquifer. The areas analyzed included Lake Walcott, Aberdeen-Springfield, New Sweden, and the West Market Lake/Sage Junction/ Egin Bench areas. To characterize the sites, staff focused on basin features such as depth to water (DTW) criteria, retention, geologic features, limited land use/no species of concern, no impacts to existing infrastructure, and location on the ESPA. There was some discussion among board members. Mr. Raybould suggested this information go to the Aquifer Stabilization Committee for direction on next steps, with an eye toward whether the projects meet the "large scale" criteria.

Mr. Farmer and David Blew from Idaho Power Company presented a ten-year review of the cooperative ESPA dye tracing program.

### **Agenda Item No. 10 Water Transactions**

Ms. Sarah Lien with Friends of the Teton River provided information and a resolution to fund a project intended to support Yellowstone Cutthroat Trout by increasing base flows in the Teton River and decreasing water temperature. Mr. Raybould asked if the resolution should add information outlined in the memorandum related to the pricing structure. Mr. Barker recommended wording for the resolution.

Mr. Raybould made a motion to accept the resolution as recommended. Mr. Barker seconded the motion. Roll call vote: Alberdi: Aye; Barker: Aye; Cole-Hansen: Aye; Raybould: Aye; Stevenson: Aye; Van Der Meulen: Aye; Van Stone: Aye; Chairman Chase: Aye. Motion passed. The resolution was adopted.

### **Agenda Item No. 11 Potential Legislation of Interest**

Mr. Garrick Baxter provided the Board with information related to upcoming and potential legislation of interest both proposed by IDWR and by other agencies. There was some discussion related to possible legislation for Bear River adjudication.

### **Agenda Item No. 12 Administrative Rules Process Update**

Mr. Weaver updated the Board on the administrative rules process. He provided background on the steps that had occurred. In December, there will be agency training for rule presentation which was required by Division of Financial Management.

### **Agenda Item No. 13 Director's Report**

Director Spackman spoke to the board on a few items. He complimented staff on their presentations and work for the Planning Department. Also, he provided information about IDWR's budgeting process and the financial position of the Board related to the Water Center.

### **Agenda Item No. 14 2020 Proposed Meeting Dates**

Mr. Patton presented the Board with some proposed dates for 2020 regular board meetings. There was some discussion and the dates were accepted.

### **Agenda Item No. 15 Other Items for Discussion**

Mr. Barker thanked the other members and staff for adjusting the meeting times and combining our work session and board meeting days. There was discussion that a special meeting would be needed to adopt the final version of the ESPA CAMP progress report and to hold a Streamflow Committee meeting.

### **Agenda Item No. 16 Next Meeting and Adjourn**

The next regular meeting will be January 23 and 24, 2020 in Boise. Mr. Raybould moved to adjourn. Mr. Alberdi seconded. Voice vote. All in favor. Meeting adjourned.

Respectfully submitted this \_\_\_\_\_ day of January, 2020.

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Vince Alberdi, *Secretary*

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Jennifer Strange, *Administrative Assistant II*

### Board Actions:

1. Mr. Barker made a motion to amend the agenda to add “Public Comment.” Mr. Van Der Meulen seconded. Voice vote. All in favor. Motion carried.
2. Mr. Raybould moved to adopt the minutes from meetings 7-19, 8-19, and 9-19 with the mentioned correction. Mr. Stevenson seconded. Voice vote. All ayes. Motion carried.
3. Mr. Raybould made a motion to accept the resolution as recommended for a water transaction project on the Teton. Mr. Barker seconded the motion. Roll call vote: Alberdi: Aye; Barker: Aye; Cole-Hansen: Aye; Raybould: Aye; Stevenson: Aye; Van Der Meulen: Aye; Van Stone: Aye; Chairman Chase: Aye. Motion passed.





# IDAHO WATER RESOURCE BOARD

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Governor

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**John "Bert" Stevenson**  
Rupert  
District 3

**Dale Van Stone**  
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District 1

**Jo Ann Cole-Hansen**  
Lewiston  
At Large

## MINUTES MEETING NO. 11-19

Idaho Water Center  
Conference Rooms 602 B, C, D  
322 East Front Street, 6<sup>th</sup> Floor  
BOISE

December 10, 2019

At 11:05 a.m. Chairman Chase called the meeting to order. All members were present.

### Agenda Item No. 1: Roll Call

#### *Board Members Present*

Roger Chase, Chairman  
Vince Alberdi, Secretary  
Bert Stevenson- by telephone  
Albert Barker

Jeff Raybould, Vice-Chairman  
Pete Van Der Meulen  
Dale Van Stone- by telephone  
Jo Ann Cole-Hansen- by telephone

#### *Staff Members Present*

Gary Spackman, Director  
Cynthia Bridge Clark, Water Projects Section Manager  
Neeley Miller, Senior Planner

Brian Patton, Bureau Chief

Jennifer Strange, Admin. Assistant

#### *Guests Present*

Ann Vonde

Darrell Early

### Agenda Item No. 2: Executive Session

Mr. Alberdi made a motion to move into Executive Session to communicate with legal counsel regarding legal ramifications of and legal options for pending litigation, or controversies not yet being litigated but imminently likely to be litigated. Mr. Raybould seconded. Roll call vote: All Ayes. The topic discussed by Darrell Early was Federal stock water rights.

Mr. Alberdi made a motion to move out of Executive Session, seconded by Mr. Barker and agreed upon by voice vote in favor.

**Agenda Item No. 3: ESPA CAMP Progress Report**

Mr. Miller updated the Board on the changes recommended in November to the ESPA CAMP Progress Report and accompanying letter to Speaker Bedke. There was some discussion about a few word changes.

Mr. Stevenson made a motion to accept the letter and report with the discussed changes. Mr. Van Der Meulen seconded the motion. Voice vote to adopt. All Ayes.

**Agenda Item No. 4: Non-Action Items for Discussion**

No other items were discussed.

**Agenda Item No. 5 Next Meeting and Adjourn**

Mr. Alberdi made a motion to adjourn. Mr. Van Der Meulen seconded. Meeting adjourned at 12:27 p.m.

Respectfully submitted this \_\_\_\_\_ day of January, 2020.

---

Vince Alberdi, *Secretary*

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Jennifer Strange, *Administrative Assistant II*

Board Actions:

1. Mr. Stevenson made a motion to accept the ESPA CAMP progress report and letter to Speaker Bedke with the discussed edits. Mr. Van Der Meulen seconded. Voice vote. All Ayes. Motion carried.

# Memorandum

To: Idaho Water Resource Board  
From: Brian Patton & Neeley Miller, Planning & Project Bureau  
Date: January 15, 2020  
Re: Financial Status Report

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As of **December 31, 2019** the IWRB's available and committed balances are as follows:

**Secondary Aquifer Fund:**

Committed/earmarked but not disbursed	\$17,059,500
Uncommitted Balance	\$6,598,696

**Revolving Development Account:**

Committed/earmarked but not disbursed	\$21,710,384
Loan principal outstanding	\$26,214,556
Uncommitted Balance	\$4,746,064
Anticipated loanable funds available next 1 year	\$8,246,064

**Water Management Account**

Committed/earmarked but not disbursed	\$21,231,766
Uncommitted Balance	\$420,128

<b>Total committed/earmarked but not disbursed</b>	<b>\$60,001,650</b>
<b>Total loan principal outstanding</b>	<b>\$26,214,556</b>
<b>Total uncommitted balance</b>	<b>\$11,764,887</b>

- The remaining uncommitted balance in the Secondary Aquifer Fund includes \$2.8 M received to-date from the cigarette tax during the current fiscal year to be budgeted for FY 2021.
- The committed/earmarked balance in the Water Management Account includes the remainder of the FY 2018 \$1M legislative appropriation for the Flood Management Grant Program per HB 712. It also includes the \$21M legislative appropriation per HB 285 to the IWRB's Water Management Account for the Anderson Reservoir Enlargement and/or MHAFFB Water Supply Project (\$20 M), the FY 2019 Flood Management Grant Program (\$800K) and for the Mid-Snake Water Quality Monitoring and Modeling effort (\$200K).

Idaho Water Resource Board  
Budget and Committed Funds  
as of December 31, 2019

**SECONDARY AQUIFER PLANNING, MANAGEMENT, & IMPLEMENTATION FUND**

**FYE 2019 Cash Balance..... 20,839,565.33**

**FY 2020 Revenue**

Interest Earned State Treasury.....	270,004.17
HB547 - State Recharge & Aquifer Stabilization (SRAS).....	2,816,664.73
HB256, Section 4 - Water Sustainability.....	5,000,000.00
Department of Energy Grant (\$2.068M).....	216,900.00
<b>TOTAL FY 2020 REVENUE.....</b>	<b>8,303,568.90</b>

**FY 2020 Expenditures**

SRAS Equipment & Supplies - FY 20.....	(19,283.55)
SRAS Conveyance Costs - FY 19.....	(2,171,885.11)
SRAS Conveyance Costs - FY 20.....	(280,060.20)
SRAS Site Monitoring - FY 20.....	(216,474.55)
SRAS Regional Monitoring - FY 19.....	(28,273.98)
SRAS Regional Monitoring - FY 20.....	(44,667.12)
American Falls Reservoir District # 2 (CON01384).....	(282,837.75)
Big Wood Canal Company (CON01281 - Deitrich Drop Power Plant Improvements Project).....	(289,275.02)
Big Wood Canal Company (CON01293 - MP28 Hydro Plant Winterization Project).....	(35,000.00)
Denning Well Drilling (CON01382 - Ucon Monitoring well - Ward well).....	(22,122.50)
Egin Bench Canals Inc (CON01225).....	(159,490.66)
Elsing Drilling & Pump Co Inc (CON01368 - Wilson Canyon Recharge Basin Improvements Projects - monitoring wells).....	(59,961.00)
Floyd Lilly Company (CON01378 - Wilson Canyon Recharge Basin Improvements Projects - monitoring wells).....	(7,782.55)
North Side Canal Company (CON01331 - Wilson Canyon Recharge Basin Improvements Project).....	(113,742.72)
Quadrant Consulting Inc (CON01296 - MP29 Managed Recharge Site Engineering Services).....	(29,216.00)
Quadrant Consulting Inc (CON01337 - MP29 Managed Recharge Site Design Documents & Technical Specs).....	(11,671.72)
The Ferguson Group (FY 2019 Budget).....	(40,068.57)
The Ferguson Group (FY 2020 Budget).....	(1,368.75)
Steve Stuebner (FY 2019 Budget) - Media Services.....	(8,434.94)
Steve Stuebner (FY 2020 Budget) - Media Services.....	(11,077.41)
Clive Strong (CON01371).....	(453.75)
Elizabeth Cresto (CON01390).....	(140,000.00)
Elmore County (CON01251 - Canyon Creek Recharge Site).....	(2,755.20)
Travel Costs for IWRB and staff.....	(13,249.53)
WS Hydrology Monitoring - FY 19.....	(56,622.56)
WS Hydrology Monitoring - FY 20.....	(50,252.11)
USGS - 1663 (Big Wood River Modeling).....	(44,178.05)
Wood River Model Misc Expenditures (room rentals, refreshments, etc.).....	(1,613.00)
USGS - 6605 (Treasure Valley Modeling) FY18.....	(39,883.68)
University of Idaho (CON01210, TV Model).....	(33,424.00)
University of Idaho (CON01341, GIS).....	(5,000.00)
Lost Valley Reservoir Company (CON01282 - Northern Idaho Ground Squirrel Study).....	(1,000,000.00)
Brown & Caldwell (CON01320 - Treasure Valley Managed Recharge Feasibility Study).....	(50,412.64)
Record Steel & Construction Inc (CON01347 - MHAFFB).....	(196,270.23)
City of Idaho Falls (CON01223).....	(53,130.00)
Department of Interior - Boise River Feasibility Study (FY2019).....	(50,412.64)
Department of Energy Grant expenditures (ESPA costs) 29871.....	(196,270.23)
Department of Energy Grant expenditures (Big Lost costs) 29872.....	(53,130.00)
Down Right Drilling & Pump Inc (CON01369, SE Boise GWMA) 29873.....	(50,412.64)
Idaho Power - Cloudseeding Model (CON01254).....	(50,412.64)
Idaho Power - Cloudseeding O&M (CON01334).....	(50,412.64)

**TOTAL FY 2020 EXPENDITURES..... (5,519,938.85)**

**FY 2020 Cash Balance..... 23,623,195.38**



COMMITTED FUNDS THRU FY 2018	Budget	Amended	Obligated	Expenditures	Carry forward	Committed
Cooperative Weather Modification Program (Cloud Seeding - CON01109).....	492,000.00		492,000.00	(354,917.64)		137,082.36
Department of Energy SEP grant (\$251,000).....	200,000.00		251,000.00	(251,000.00)		0.00
Mountain Home Air Force Base (PCA 29800).....	1,000,000.00	900,000.00	1,900,000.00	(1,197,691.65)		702,308.35
Remaining Initial Funds.....	1,692,000.00	900,000.00	2,643,000.00	(1,803,609.29)	0.00	839,390.71
<b>ESPA Managed Recharge Infrastructure</b>						
Milner-Gooding Dietrich Drop hydro plant bypass (CON01281).....	50,000.00	1,450,000.00	1,500,000.00	(497,404.33)		1,002,595.67
Egin Lakes Recharge Project, Phase II (CON01225).....	500,000.00	80,000.00	580,000.00	(234,766.41)		345,233.59
<b>Total ESPA Managed Recharge Infrastructure.....</b>	<b>5,360,436.45</b>	<b>2,330,000.00</b>	<b>7,690,436.45</b>	<b>(4,475,533.29)</b>	<b>(1,867,073.90)</b>	<b>1,347,829.26</b>
<b>STATEWIDE STUDIES &amp; PROJECTS</b>						
<b>TREASURE VALLEY</b>						
Treasure Valley Modeling (USGS 6605) Year 2 of 5.....	500,000.00		500,000.00	(446,610.99)		53,389.01
<b>TREASURE VALLEY TOTAL.....</b>	<b>500,000.00</b>	<b>0.00</b>	<b>500,000.00</b>	<b>(446,610.99)</b>	<b>0.00</b>	<b>53,389.01</b>
<b>WOOD RIVER VALLEY</b>						
Wood River Valley Aquifer GW Model (USGS 6601).....	200,000.00		200,000.00	(200,000.00)		0.00
Elmore County - Canyon Creek Recharge Site (CON01251).....	50,000.00	90,000.00	140,000.00	(140,000.00)		0.00
<b>WOOD RIVER VALLEY TOTAL.....</b>	<b>250,000.00</b>	<b>90,000.00</b>	<b>340,000.00</b>	<b>(340,000.00)</b>	<b>0.00</b>	<b>0.00</b>
<b>WEISER BASIN</b>						
Lost Valley Reservoir - Northern Idaho Ground Squirrel Study (CON01282).....	30,000.00		30,000.00	(24,759.00)		5,241.00
<b>WEISER BASIN TOTAL.....</b>	<b>30,000.00</b>	<b>0.00</b>	<b>30,000.00</b>	<b>(24,759.00)</b>	<b>0.00</b>	<b>5,241.00</b>
<b>NORTHERN IDAHO AQUIFERS</b>						
Lewiston Study Phase II.....	109,351.82		109,351.82	(109,351.82)		0.00
<b>NORTHERN IDAHO AQUIFERS TOTAL.....</b>	<b>109,351.82</b>	<b>0.00</b>	<b>109,351.82</b>	<b>0.00</b>	<b>(109,351.82)</b>	<b>0.00</b>
<b>OTHER STATEWIDE STUDIES &amp; PROJECTS</b>						
Ground water conservation grants in priority aquifers (CON01205 & CON01223).....	200,000.00		200,000.00	(67,484.03)	(112,515.97)	20,000.00
Cloud Seeding Operations & Maintenance (1/3 of total).....	600,000.00	18,000.00	618,000.00	(580,000.00)		38,000.00
NRCS Snow Survey contribution USDA (CON01177).....	100,000.00	100,000.00	200,000.00	(150,000.00)		50,000.00
<b>Total Statewide Studies &amp; Projects.....</b>	<b>900,000.00</b>	<b>118,000.00</b>	<b>1,018,000.00</b>	<b>(797,484.03)</b>	<b>(112,515.97)</b>	<b>108,000.00</b>
<b>TOTAL COMMITTED FUNDS THRU FY 2018.....</b>	<b>8,841,788.27</b>	<b>3,438,000.00</b>	<b>12,330,788.27</b>	<b>(7,887,996.60)</b>	<b>(2,088,941.69)</b>	<b>2,353,849.98</b>
						Adjustments

FY 2019 BUDGET	Budget (as approved - May 2018)	Amendments	Budget (as amended)	Obligated	Expenditures	Carry forward	Committed
<b>ESPA Managed Recharge Operations</b>							
Equipment & Supplies.....	89,000.00		89,000.00	89,000.00	(24,569.14)	(64,430.86)	0.00
Conveyance Cost.....	3,500,000.00		3,500,000.00	3,500,000.00	(2,580,123.11)	(919,876.89)	0.00
Recharge Monitoring.....	554,550.00		554,550.00	554,550.00	(263,712.43)	(290,837.57)	0.00
Regional Monitoring.....	200,000.00		200,000.00	200,000.00	(200,000.00)		0.00
<b>Total ESPA Managed Recharge Operations.....</b>	<b>4,254,550.00</b>	<b>0.00</b>	<b>4,254,550.00</b>	<b>4,254,550.00</b>	<b>(3,043,835.54)</b>	<b>(1,210,714.46)</b>	<b>0.00</b>
<b>ESPA Managed Recharge Infrastructure</b>							
North Side CC - Wilson Canyon Recharge Basin (CON01331, CON01368, CON01378).....	1,750,000.00	150,000.00	1,900,000.00	1,900,000.00	(1,328,310.97)		571,689.03
AFRD2 MP29 Site (CON01384).....	2,150,000.00		2,150,000.00	2,150,000.00	(282,837.75)	(1,500,000.00)	367,162.25
AFRD2 MP28 Hydro Plant Tailbay - Big Wood Canal (CON01293).....	1,000,000.00	400,000.00	1,400,000.00	1,400,000.00	(1,400,000.00)		0.00
South Fork & other small Upper Valley sites (CON01297, CON01298).....	1,000,000.00		1,000,000.00	1,000,000.00	(157,064.15)	(842,935.85)	0.00
Reserved for Additional Recharge Projects.....	500,000.00	(400,000.00)	100,000.00	100,000.00		(100,000.00)	0.00
<b>Total ESPA Managed Recharge Infrastructure.....</b>	<b>6,950,000.00</b>	<b>150,000.00</b>	<b>7,100,000.00</b>	<b>7,100,000.00</b>	<b>(3,168,212.87)</b>	<b>(2,992,935.85)</b>	<b>938,851.28</b>
<b>Managed Recharge Investigations</b>							
North Side CC - Recharge Sites (CON01301).....	200,000.00		200,000.00	200,000.00	(24,500.00)	(175,500.00)	0.00
MP 29 Managed Recharge Site (CON01296 & CON01337).....		85,500.00	85,500.00	85,500.00	(53,954.48)		31,545.52
Reserved for additional investigations and engineering (CON01337).....	300,000.00	(85,500.00)	214,500.00	214,500.00		(214,500.00)	0.00
<b>Total Managed Recharge Investigations.....</b>	<b>900,000.00</b>	<b>0.00</b>	<b>900,000.00</b>	<b>900,000.00</b>	<b>(78,454.48)</b>	<b>(790,000.00)</b>	<b>31,545.52</b>

**ESPA Hydrologic Monitoring**

Hydrologic Monitoring (DOE - Year 1 of 3 = \$928K).....	310,000.00		310,000.00	310,000.00	(102,274.05)		207,725.95
<b>ESPA Hydrologic Monitoring .....</b>	<b>310,000.00</b>	<b>0.00</b>	<b>310,000.00</b>	<b>310,000.00</b>	<b>(102,274.05)</b>	<b>0.00</b>	<b>207,725.95</b>

**TREASURE VALLEY**

Treasure Valley Modeling Year 3 of 5 (USGS 6605).....	500,000.00		500,000.00	500,000.00			500,000.00
Boise River Storage Studies (final payment).....	1,000,000.00		1,000,000.00	1,000,000.00	(1,543,661.63)		(543,661.63)
Southeast Boise Groundwater Management Area Monitoring.....	100,000.00		100,000.00	100,000.00	(53,130.00)		46,870.00
Treasure Valley Recharge Study (CON01320).....	200,000.00		200,000.00	200,000.00	(176,239.53)	(10.00)	23,750.47
<b>TREASURE VALLEY TOTAL.....</b>	<b>2,000,000.00</b>	<b>0.00</b>	<b>2,000,000.00</b>	<b>2,000,000.00</b>	<b>(1,773,031.16)</b>	<b>(200,010.00)</b>	<b>26,958.84</b>

**BIG LOST**

Hydrologic Monitoring (DOE - Year 1 of 3 = \$1.14M).....	380,000.00		380,000.00	380,000.00	(331,933.02)		48,066.98
<b>BIG LOST TOTAL.....</b>	<b>380,000.00</b>	<b>0.00</b>	<b>380,000.00</b>	<b>380,000.00</b>	<b>(331,933.02)</b>	<b>0.00</b>	<b>48,066.98</b>

**STATE-WIDE**

Aquifer monitoring network enhancements in priority aquifers.....	309,351.82		309,351.82	309,351.82	(267,205.66)		42,146.16
Cooperative Cloud Seeding Program							
Operations & Maintenance (1/3 of total).....	800,000.00		800,000.00	800,000.00	(800,000.00)		0.00
Cloud Seeding Modeling Project, CON01254 (Year 2 of 4, Total \$1,470,000).....	874,000.00		874,000.00	874,000.00	(412,052.50)		461,947.50
Operations Costs for add'l generators & Upper Snake aircraft.....	425,000.00		425,000.00	425,000.00		(425,000.00)	0.00
Administrative expenses (public information, staff training, etc).....	80,000.00		80,000.00	80,000.00	(42,486.76)	(37,513.24)	0.00
Professional Assistance for securing Federal Funding.....	100,000.00		100,000.00	100,000.00	(83,887.82)	(16,112.18)	0.00
<b>STATE-WIDE TOTAL.....</b>	<b>2,588,351.82</b>	<b>0.00</b>	<b>2,588,351.82</b>	<b>2,588,351.82</b>	<b>(1,605,632.74)</b>	<b>(478,625.42)</b>	<b>504,093.66</b>

Unspecified Projects in Other Areas or Carry-over.....	505,210.00	(150,000.00)	355,210.00				
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<b>TOTAL FY 2019 BUDGETED FUNDS.....</b>	<b>18,313,111.82</b>	<b>0.00</b>	<b>18,313,111.82</b>	<b>17,957,901.82</b>	<b>(10,103,373.86)</b>	<b>(6,097,285.73)</b>	<b>1,757,242.23</b>
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<b>FY 2020 BUDGET</b>	<b>Budget (as approved - May 2019)</b>	<b>Amendments</b>	<b>Budget (as amended)</b>	<b>Obligated</b>	<b>Expenditures</b>	<b>Carry forward</b>	<b>Committed</b>
<b>ESPA Managed Recharge Operations</b>							-
Equipment & Supplies.....	192,880.00		192,880.00	192,880.00	(19,283.55)		173,596.45
Conveyance Cost.....	3,500,000.00		3,500,000.00				0.00
Recharge Monitoring.....	540,950.00		540,950.00	540,950.00	(216,474.55)		324,475.45
Regional Monitoring.....	200,000.00		200,000.00	200,000.00	(44,667.12)		155,332.88
<b>Total ESPA Managed Recharge Operations.....</b>	<b>4,433,830.00</b>	<b>0.00</b>	<b>4,433,830.00</b>	<b>933,830.00</b>	<b>(280,425.22)</b>	<b>0.00</b>	<b>653,404.78</b>
<b>ESPA Managed Recharge Infrastructure</b>							
North Side CC - Eden Projects.....	2,000,000.00		2,000,000.00				0.00
Large Upper Valley Investigations.....	500,000.00		500,000.00				0.00
Small Upper Valley Sites.....	1,000,000.00		1,000,000.00				0.00
A&B Irrigation - Injection Wells.....	550,000.00		550,000.00				0.00
Reserved for Additional Recharge Projects.....	500,000.00		500,000.00				0.00
<b>Total ESPA Managed Recharge Infrastructure.....</b>	<b>4,550,000.00</b>	<b>0.00</b>	<b>4,550,000.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Managed Recharge Investigations</b>							
Big/Little Wood Sites.....	200,000.00		200,000.00				0.00
Reserved for additional investigations and engineering.....	300,000.00		300,000.00				0.00
<b>Total Managed Recharge Investigations.....</b>	<b>500,000.00</b>	<b>0.00</b>	<b>500,000.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>ESPA Hydrologic Monitoring</b>							
Hydrologic Monitoring (DOE - Year 2 of 3 = \$928K).....	310,000.00		310,000.00	310,000.00			310,000.00



ESPA Hydrologic Monitoring .....	310,000.00	0.00	310,000.00	310,000.00	0.00	0.00	310,000.00
<b>TREASURE VALLEY</b>							
Treasure Valley Modeling Year 4 of 5 (USGS 6605).....	500,000.00		500,000.00	500,000.00			500,000.00
Treasure Valley DCM Water Conservation Study.....	200,000.00		200,000.00				0.00
<b>TREASURE VALLEY TOTAL.....</b>	<b>700,000.00</b>	<b>0.00</b>	<b>700,000.00</b>	<b>500,000.00</b>	<b>0.00</b>	<b>0.00</b>	<b>500,000.00</b>
<b>CAMAS PRAIRIE</b>							
Ground & Surface Water Monitoring.....	15,000.00		15,000.00				0.00
<b>CAMAS PRAIRIE TOTAL.....</b>	<b>15,000.00</b>	<b>0.00</b>	<b>15,000.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>BIG LOST</b>							
Hydrologic Monitoring (DOE - Year 2 of 3 = \$1.14M).....	380,000.00		380,000.00	380,000.00			380,000.00
<b>BIG LOST TOTAL.....</b>	<b>380,000.00</b>	<b>0.00</b>	<b>380,000.00</b>	<b>380,000.00</b>	<b>0.00</b>	<b>0.00</b>	<b>380,000.00</b>
<b>PALOUSE BASIN</b>							
Water Sustainability Projects.....	100,000.00		100,000.00				0.00
<b>PALOUSE BASIN TOTAL.....</b>	<b>100,000.00</b>	<b>0.00</b>	<b>100,000.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>BEAR RIVER BASIN</b>							
Water Sustainability Projects.....	100,000.00		100,000.00	100,000.00	(453.75)		99,546.25
<b>BEAR RIVER BASIN TOTAL.....</b>	<b>100,000.00</b>	<b>0.00</b>	<b>100,000.00</b>	<b>100,000.00</b>	<b>(453.75)</b>	<b>0.00</b>	<b>99,546.25</b>
<b>COOPERATIVE CLOUD SEEDING PROGRAM</b>							
Operations & Maintenance (1/3 of total annual cost for O&M).....	1,170,000.00	(217,736.00)	952,264.00	952,264.00			952,264.00
Capital Expenditures (HPC - Year 1 of 2, Total = \$700K).....	500,000.00		500,000.00	500,000.00			500,000.00
Program Development Activities.....	200,000.00		200,000.00	200,000.00			200,000.00
<b>COOPERATIVE CLOUD SEEDING PROGRAM TOTAL.....</b>	<b>1,870,000.00</b>	<b>(217,736.00)</b>	<b>1,652,264.00</b>	<b>1,652,264.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1,652,264.00</b>
<b>RAFT RIVER BASIN</b>							
Raft River Basin Hydrologic Project (CON01424).....		204,000.00	204,000.00	96,000.00			96,000.00
<b>RAFT RIVER BASIN TOTAL.....</b>	<b>0.00</b>	<b>204,000.00</b>	<b>204,000.00</b>	<b>96,000.00</b>	<b>0.00</b>	<b>0.00</b>	<b>96,000.00</b>
<b>STATE-WIDE</b>							
Administrative expenses (public information, staff training, etc).....	80,000.00		80,000.00	80,000.00	(22,267.55)		57,732.45
Hydrological monitoring hardware and software.....	15,000.00		15,000.00	15,000.00			15,000.00
Professional Assistance for securing Federal Funding.....	100,000.00		100,000.00	100,000.00	(40,068.57)		59,931.43
<u>Aquifer monitoring network enhancements in priority aquifers</u>							
Northern Idaho.....	125,000.00		125,000.00	125,000.00			125,000.00
Southern Idaho (non-ESPA).....	125,000.00		125,000.00	125,000.00			125,000.00
<b>STATE-WIDE TOTAL.....</b>	<b>445,000.00</b>	<b>0.00</b>	<b>445,000.00</b>	<b>195,000.00</b>	<b>(62,336.12)</b>	<b>0.00</b>	<b>132,663.88</b>
<b>Unspecified Projects in Other Areas or Carry-over.....</b>	<b>1,555,170.00</b>	<b>(204,000.00)</b>	<b>1,351,170.00</b>				
<b>TOTAL FY 2020 BUDGETED FUNDS.....</b>	<b>14,959,000.00</b>	<b>(204,000.00)</b>	<b>14,537,264.00</b>	<b>2,418,830.00</b>	<b>(343,215.09)</b>	<b>0.00</b>	<b>2,075,614.91</b>

IDAHO WATER RESOURCE BOARD  
Sources and Applications of Funds  
as of December 31, 2019  
REVOLVING DEVELOPMENT ACCOUNT

Original Appropriation (1969).....		\$500,000.00
Legislative Appropriation FY90-91.....		\$250,000.00
Legislative Appropriation FY91-92.....		\$280,700.00
Legislative Appropriation FY93-94.....		\$500,000.00
Legislative Appropriation 2001, SB1239.....		\$200,000.00
Legislative Appropriation 2004, HB843, Sec 12.....		\$500,000.00
Loan Interest.....	\$11,883,700.13	
Interest Earned State Treasury (Transferred).....	\$2,226,699.80	
Water Supply Bank Receipts.....	\$6,936,010.13	
Transferred to/from Water Management Account.....	\$317,253.80	
Filing Fee Balance.....	\$47,640.20	
Bond Fees.....	\$1,469,601.45	
Series 2000 (Caldwell/New York) Pooled Bond Issuers fees.....	\$43,657.93	
2012 Ground Water District Bond Issuer fees.....	\$369,500.00	
Bond Issuer fees.....	\$21,107.59	
Pierce Well Easement.....	\$2,000.00	
Transfer from Aqualife Hatchery Sub-Account.....	\$1,117,800.85	
Transfer from Pristine Springs Sub-Account.....	\$554,882.10	
Legislative Audits.....	(\$49,404.45)	
IWRB Bond Program.....	(\$15,000.00)	
IWRB Studies and Projects.....	(\$249,067.18)	
Arbitrage Calculation Fees.....	(\$12,000.00)	
Protest Fees.....	(\$995.00)	
Attorney fees for Jughandle LID (Skinner Fawcett).....	(\$3,600.00)	
Attorney fees for A&B Irrigation (Skinner Fawcett).....	(\$4,637.50)	
Lemhi Basin Protest Costs - (Attorney General's Office).....	(\$18,488.50)	
Weiser Galloway Study - US Army Corps of Engineers.....	(\$1,555,450.71)	
Boise River Storage Feasibility Study.....	(\$333,000.00)	
Geotech Environmental (Transducers).....	(\$6,402.61)	
Priest Lake Improvement Study (16-Mar-16).....	(\$370,393.26)	
Treasureton Irrigation Ditch Co.....	(\$5,000.00)	
<b>Mountain Home AFB Water Sustainability Project (29514)</b>		
Legislative Appropriation 2014, HB 479 Sec 1 and 2.....	\$4,000,000.00	
JR Simplot - WR Purchase.....	(\$2,500,000.00)	
LeMoyné Appraisal LLC.....	(\$10,500.00)	
IWRB WSB Lease Application.....	(\$750.00)	
Integrated Delivery Solutions - Mark Alpert.....	(\$34,459.18)	
Brown & Caldwell - Owner's Advisor.....	(\$1,218,298.11)	
SPF Engineering - WR Transfer.....	(\$118,715.75)	
Skinner-Fawcett - Bond Counsel.....	(\$31,602.41)	
Pillsbury, Winthrop, & Shaw - DBO Counsel.....	(\$79,839.30)	
Project Costs (mailings, travel, teleconference calls).....	(\$1,769.91)	
Publishing Costs.....	(\$1,648.16)	
Water District 02 Assessments.....	(\$2,417.18)	
<b>Balance for Mountain Home AFB Water Sustainability Project.....</b>		<b>\$0.00</b>
<b>Galloway Dam &amp; Reservoir Project (29517)</b>		
Legislative Appropriation 2014, HB 479 Sec 1 and 2.....	\$2,000,000.00	
Galloway Dam & Reservoir Project Costs (HB 479).....	(\$124,649.52)	
<b>Balance Galloway Dam &amp; Reservoir Project.....</b>		<b>\$1,875,350.48</b>
<b>Boise River (Arrowrock Enlargement) Feasibility Study (29518)</b>		
Legislative Appropriation 2014, HB 479 Sec 1 and 2.....	\$1,500,000.00	
Boise River (Arrowrock Enlargement) Feasibility Study Costs (HB479).....	(\$1,500,000.00)	
<b>Balance Boise River (Arrowrock Enlargement) Feasibility Study (HB479).....</b>		<b>\$0.00</b>
<b>Island Park Enlargement (29520)</b>		
Legislative Appropriation 2014, HB 479 Sec 1 and 2.....	\$2,500,000.00	
Island Park Enlargement Costs (HB 479).....	(\$174,170.00)	
<b>Balance Island Park Enlargement (HB 479).....</b>		<b>\$2,325,830.00</b>
<b>Water Supply Bank Computer Infrastructure (29519)</b>		
Legislative Appropriation 2014, HB 479 Sec 1 and 2.....	\$500,000.00	
Water Supply Bank Computer Infrastructure Costs (HB 479).....	(\$497,350.75)	
<b>Balance Water Supply Bank Computer Infrastructure (HB 479).....</b>		<b>\$2,649.25</b>
<b>Cash Balance of Legislative Appropriation 2014, HB 479 Sec 1 and 2.....</b>		<b>\$4,203,829.73</b>
<b>Minidoka Dam Enlargement/Teton Dam Replacement Studies (29510)</b>		
Legislative Appropriation 2008, SB1511 Sec 2, Minidoka/Teton Studies.....	\$1,800,000.00	
Legislative Appropriation 2008, SB1511 Sec 2, Minidoka Studies Expenditures.....	(\$1,229,460.18)	
<b>Balance for Minidoka Dam Enlargement/Teton Dam Replacement Studies.....</b>		<b>\$570,539.82</b>
<b>Priest Lake Water Management Project (29521)</b>		
Legislative Appropriation (2018, HB 677 Sec 5).....	\$2,400,000.00	
Legislative Approval (2018, HB 677 Sec 6).....	\$2,419,580.50	
Bonner County Contribution.....	\$160,000.00	
Interest Earned State Treasury.....	\$113,352.81	
Contract Expenditures - Mott MacDonald (CON01290).....	(\$558,544.20)	
<b>Balance for Priest Lake Water Management Project.....</b>		<b>\$4,534,389.11</b>



<b>Bell Rapids Water Rights Sub-Account</b>		
Legislative Appropriation 2005, HB392.....	\$21,300,000.00	
Bureau of Reclamation Payments Received.....	\$29,446,335.46	
Remaining balance in ESPA Sub-Account.....	\$341,759.55	
Interest Earned State Treasury.....	\$698,613.04	
<b>Total Bell Rapids Water Rights Sub-Account Revenue.....</b>		<b>\$51,786,708.05</b>
Bell Rapids Purchase.....	(\$22,041,697.55)	
Transfer to General Fund - P&I.....	(\$22,072,052.06)	
Payment to US Bank for Alternative Financing Note.....	(\$7,118,125.86)	
Payment for Water District 02 Assessments.....	(\$75,882.82)	
Payment for Ongoing Bell Rapids Finance Costs (trustee fees, water bank	(\$6,740.10)	
<b>Total Bell Rapids Water Rights Sub-Account Expenditures.....</b>		<b>(\$51,314,498.39)</b>
<b>Cash Balance Bell Rapids Water Rights Sub-Account.....</b>		<b>\$472,209.66</b>
Committed Funds		
Ongoing Bell Rapids Finance Costs (trustee fees, WD02).....	\$472,209.66	
<b>TOTAL COMMITTED FUNDS.....</b>	<b>\$472,209.66</b>	
<b>Uncommitted Bell Rapids Water Rights Sub-Account Balance.....</b>		<b>\$0.00</b>
<b>Pristine Springs Project Sub-Account</b>		
Rental Payments to be Transferred to Secondary Aquifer Fund.....	\$961,675.10	
Loan Interest.....	\$2,575,569.83	
Loan Principal from Magic Valley & North Snake GWD.....	\$5,530,065.63	
<b>Total Pristine Springs Project Revenue to be Transferred.....</b>		<b>\$9,067,310.56</b>
Total Pristine Springs Project Revenue Transferred to 0129-01.....	(\$5,129,300.00)	
Total Pristine Springs Project Revenue Transferred to 0129.....	(\$3,580,000.00)	
<b>Total Pristine Springs Project Sub-Account Transfers.....</b>		<b>(\$8,709,300.00)</b>
<b>Cash Balance Pristine Springs Sub-Account.....</b>		<b>\$358,010.56</b>
Pristine Springs Committed Funds		
Loan Payments to be transferred to 0129.....	\$358,007.04	
<b>TOTAL COMMITTED FUNDS.....</b>	<b>\$358,007.04</b>	
<b>Loans Outstanding for Purchase of PS Water Rights</b>		
Loan to North Snake & Magic Valley GWD.....	\$10,000,000.00	
Payments from North Snake & Magic Valley GWD.....	(\$5,530,065.63)	
Total Loans Outstanding.....	\$4,469,934.37	
<b>Uncommitted Pristine Springs Sub-Account.....</b>		<b>\$3.52</b>
<b>Rathdrum Prairie CAMP &amp; Treasure Valley CAMP Sub-Account</b>		
Pristine Springs Hydropower and Rental Revenues.....	\$271,672.34	
Interest Earned State Treasury.....	\$573.11	
<b>Rathdrum Prairie CAMP &amp; Treasure Valley CAMP Sub-Account Revenue.....</b>		<b>\$272,245.45</b>
Spokane River Forum.....	(\$23,000.00)	
Treasure Valley Water Quality Summit.....	(\$500.00)	
Kootenai-Shoshone Soil & Water Cons. Dist. - Agrimet Station.....	(\$20,000.00)	
Rathdrum Prairie-Spokane Valley Aquifer Pumping Study (CON00989).....	(\$70,000.00)	
Idaho Washington Aquifer Collaborative.....	(\$10,000.00)	
<b>Rathdrum Prairie CAMP &amp; Treasure Valley CAMP Sub-Account Expenditures.....</b>		<b>(\$123,500.00)</b>
<b>Cash Balance Rathdrum Prairie CAMP &amp; Treasure Valley CAMP Sub-Account.....</b>		<b>\$148,745.45</b>
Committed Funds		
Spokane River Forum.....	\$0.00	
<b>TOTAL COMMITTED FUNDS.....</b>	<b>\$0.00</b>	
<b>Uncommitted Rathdrum Prairie CAMP &amp; TV CAMP Sub-Account.....</b>		<b>\$148,745.45</b>
<b>Upper Salmon/CBWTP Sub-Account</b>		
Water Transaction Projects Payment Advances from CBWTP/Accord.....	\$6,665,043.76	
PCSRF Funds for Admin of Non-Diversion Easements on Lemhi River.....	\$222,457.16	
Interest Earned State Treasury.....	\$313,915.77	
<b>Upper Salmon/CBWTP Sub-Account Revenue.....</b>		<b>\$7,201,416.69</b>
Transfer to Water Supply Bank.....	(\$109,678.19)	
Change of Ownership.....	(\$600.00)	
Appraisals/Closing Costs.....	(\$13,905.98)	
Payments for Water Acquisition.....	(\$2,948,173.36)	
<b>Upper Salmon/CBWTP Sub-Account Expenditures.....</b>		<b>(\$3,072,357.53)</b>
<b>Cash Balance CBWTP Sub-Account.....</b>		<b>\$4,129,059.16</b>
Committed Funds		
Administration of Non-Diversion Easements on Lemhi River.....	\$137,840.61	
Bayhorse Creek (Peterson Ranch).....	\$27,317.73	
Badger Creek (OWBP) WSB.....	\$2,389.10	
Beaver Creek (DOT LLP).....	\$109,430.78	
Big Timber Tyler (Leadore Land Partners).....	\$388,293.79	
Bohannon Creek DJ (Barbara Stokes).....	\$844,973.14	
Bohannon Creek BS (Betty Stokes).....	\$415,520.54	
Canyon Creek/Big Timber Creek (Beyeler).....	\$366,865.77	
Carmen Creek (Bill Slavin).....	\$200,711.39	
Carmen Creek (Bruce Slavin).....	\$125,947.97	
Fourth of July Creek (Defiance Investments).....	\$14,486.34	
Iron Creek (Koncz).....	\$169,266.51	
Kenney Creek Source Switch (Gail Andrews).....	\$21,185.36	
Lemhi - Big Springs (Merrill Beyeler).....	\$52,340.29	
Lemhi River & Little Springs Creek Kauer (McFarland Livestock Co).....	\$17,631.52	
Little Springs Creek (Snyder).....	\$235,821.48	
Lower Eighteenmile Creek (Ellsworth Angus Ranch).....	\$1,777.78	
Lower Lemhi Thomas (Robert Thomas).....	\$900.00	
P-9 Bowles (River Valley Ranch).....	\$227,185.67	
P-9 Charlton (Sydney Downton).....	\$15,090.97	
P-9 Downton (Western Sky LLC).....	\$180,837.82	
P-9 Elzinga (Elzinga).....	\$223,681.59	



Patterson-Big Springs PBSC9 (Silver Bit Angus/S Whitworth)	\$158,152.47	
Pole Creek (Salmon Falls Land)	\$612,837.42	
Pratt Creek (Mulkey)	\$79,287.64	
Spring Creek (Richard Beard)	\$2,070.98	
Spring Creek (Ella Beard)	\$3,030.79	
Whitefish (Leadore Land Partners)	\$132,035.53	
Total Committed Funds	\$4,766,910.98	
<b>Uncommitted CBWTP Sub-Account Balance</b>		<b>(\$637,851.82)</b>
<b>Water Supply Bank Sub-Account</b>		
Interest Earned State Treasury	\$29,714.83	
Payments received from renters	\$4,267,695.70	
Payments made to owners	<b>(\$4,026,443.78)</b>	
<b>Cash Balance Water Supply Bank Sub-Account</b>		<b>\$270,966.75</b>
Committed Funds:		
Owners Share	\$241,251.92	
Total Committed Funds	\$241,251.92	
<b>Uncommitted Water Supply Bank Sub-Account Balance</b>		<b>\$29,714.83</b>
<b>Eastern Snake Plain Sub-Account</b>		
Legislative Appropriation 2005, HB392	\$7,200,000.00	
Legislative Appropriation 2005, HB392, CREP Program	\$3,000,000.00	
Interest Earned State Treasury	\$2,057,875.06	
Loan Interest	\$270,791.25	
Reimbursement from Commerce & Labor W-Canal	\$74,709.77	
Reimbursement from MVGWD & NSGWD-Pristine Springs	\$1,000,000.00	
Reimbursement from Water District 1 for Recharge	\$159,764.73	
Reimbursement from BOR for Palisades Reservoir	\$2,381.12	
Black Canyon Exchange Project Revenues	\$23,800.00	
<b>Eastern Snake Plain Sub-Account Revenue</b>		<b>\$13,789,321.93</b>
Installment payments to Bell Rapids Irr Co.	<b>(\$3,375,180.00)</b>	
Interest Credit due to Bureau of Reclamation (Part of Fourth Installment)	<b>(\$19,860.45)</b>	
Pristine Springs Project Costs	<b>(\$6,863.91)</b>	
Palisades (FMC) Storage Costs	<b>(\$3,521,385.63)</b>	
W-Canal Project Costs	<b>(\$326,834.11)</b>	
Black Canyon Exchange Project Costs	<b>(\$210,112.00)</b>	
2008-2010 Recharge Conveyance Costs	<b>(\$854,064.62)</b>	
Additional recharge projects preliminary development	<b>(\$7,919.75)</b>	
Transfer to Bell Rapids Sub Account	<b>(\$341,759.55)</b>	
Transfer to Pristine Springs Sub Account	<b>(\$1,000,000.00)</b>	
Transfer to Priest Lake Sub-Account (2018 HB 677, Sec 6)	<b>(\$2,419,580.50)</b>	
<b>Eastern Snake Plain Sub-Account Expenditures</b>		<b>(\$12,083,560.52)</b>
<b>Cash Balance Eastern Snake Plain Sub-Account</b>		<b>\$1,705,761.41</b>
Loans and Other Commitments		
Commitment - Additional recharge projects preliminary development	\$337,594.00	
Commitment - Palasades Storage O&M	\$3,221.64	
Commitment - Black Canyon Exchange Project (fund with ongoing revenue)	\$442,252.95	
Total Loans and Other Commitments	\$783,068.59	
<b>Eastern Snake Plain Sub-Account Balance after Commitments</b>		<b>\$922,692.82</b>
CREP Loans Outstanding:		
American Falls-Aberdeen GWD (CREP)	\$47,192.85	
Bonneville Jefferson GWD (CREP)	\$31,612.12	
Magic Valley GWD (CREP)	\$44,981.79	
North Snake GWD (CREP)	\$0.00	
TOTAL ESP CREP LOANS OUTSTANDING	\$123,786.76	
<b>Uncommitted Eastern Snake Plain Sub-Account Balance</b>		<b>\$798,906.06</b>
<b>Dworshak Hydropower Project</b>		
Power Sales & Other	\$11,097,977.73	
Interest Earned State Treasury	\$825,943.70	
<b>Total Dworshak Project Revenue</b>		<b>\$11,923,921.43</b>
Transferred to 1st Security Trustee Account	\$148,542.63	
Construction not paid through bond issuance	\$226,106.83	
First Security Fees	\$314,443.35	
Operations & Maintenance	\$3,006,868.23	
Powerplant Repairs	\$180,409.72	
Bond payoff	\$391,863.11	
Capital Improvements	\$318,366.79	
FERC Payments	\$126,877.99	
<b>Total Dworshak Project Expenditures</b>		<b>(\$4,713,478.65)</b>
<b>Cash Balance Dworshak Hydropower Project</b>		<b>\$7,210,442.78</b>
Dworshak Project Committed Funds		
Emergency Repair/Future Replacement Fund	\$1,965,088.23	
FERC Fee Payment Fund	\$0.00	
Total Dworshak Project Committed Funds	\$1,965,088.23	
<b>Uncommitted Dworshak Hydropower Project Sub-Account Balance</b>		<b>5,245,354.55</b>
<b>TOTAL</b>		<b>\$29,842,469.32</b>
<b>Loans Outstanding:</b>	<b>Amount Loaned</b>	<b>Principal Balance</b>
A&B Irrigation District (Pipeline & Pumping Plant, Dec)	\$3,500,000.00	\$2,828,441.07
A&B Irrigation District (Pipeline & Pumping Plant, Sept)	\$3,500,000.00	\$3,106,407.72
Aberdeen-Springfield Canal Company (WRB-491; Diversion structure)	\$329,761.00	\$11,675.61
Bee Line Water Association (Sep 23, 2014; System Improvements)	\$600,000.00	\$584,615.41
Canyon County Drainage District No. 2 (28-Nov-12; Drain tile pipeline repla	\$35,000.00	\$12,396.42
Chaparral Water Association (21-Jan-11; Well deepening & improvement)	\$68,000.00	\$6,856.77

Clearview Water Company.....	\$50,000.00	\$31,867.94	
Consolidated Irrigation Company (July 20, 2012; pipeline project).....	\$500,000.00	\$429,479.93	
Dalton Water Association.....	\$1,036,900.00	\$801,147.45	
Enterprise Irrigation District (14-Jul-06; Pipeline project).....	\$37,270.00	\$0.00	
Evans Water Corporation & HOA.....	\$20,000.00	\$15,260.86	
Foothill Ranch Homeowners Association (7-oct-11; well rehab).....	\$150,000.00	\$84,366.58	
Goose Lake Reservoir Corp.....	\$320,000.00	\$292,034.30	
Idaho Ground Water Appropriators (IGWA).....	\$3,208,115.35	\$975,597.59	
Jefferson Irrigation Company (9-May-2008 Well Replacement).....	\$81,000.00	\$3,343.26	
Last Chance Canal Company (14-July-2015, diversion dam rebuild).....	\$2,500,000.00	\$1,883,428.89	
Lindsay Lateral Association (Engineering Design Project & Pipeline Study)...	\$19,700.00	\$5,838.02	
Marsh Center Irrigation Company (13-May-05; Hawkins Dam).....	\$236,141.00	\$22,446.02	
Marysville Irrigation Company (18-May-07, Pipeline Project Phase 1).....	\$625,000.00	\$33,269.04	
Marysville Irrigation Company (9-May-08, Pipeline Project Phase 2).....	\$1,100,000.00	\$264,890.37	
North Fremont Canal Company (Pipeline Project Phase 3).....	\$4,300,000.00	\$3,800,000.00	
North Side Canal Company (Phase 1 - canal rehab project).....	\$1,846,092.61	\$1,692,448.59	
North Side Canal Company (Phase 2 & 3 - canal rehab project).....	\$2,711,115.08	\$2,635,311.07	
Outlet Water Association (22-Jan-16; new well & improvements).....	\$100,000.00	\$77,750.03	
Pinehurst Water District (23-Jan-15).....	\$100,000.00	\$47,565.79	
Point Springs Grazing Association (July 20, 2012; stock water pipeline).....	\$48,280.00	\$22,373.06	
Producers Irrigation Company.....	\$102,127.50	\$37,785.38	
St. Johns Irrigating Company (14-July-2015; pipeline project).....	\$1,417,905.22	\$1,297,911.08	
Sunset Heights Water District (17-May-13; Exchange water project).....	\$48,000.00	\$9,962.26	
Twin Lakes Canal Company (Winder Lateral Pipeline Project).....	\$500,000.00	\$132,221.75	
Valley County Local Improvement District No. 1/Jughandle HOA (well projec	\$907,552.00	\$474,142.36	
<b>TOTAL LOANS OUTSTANDING.....</b>			<b>\$21,620,834.62</b>
<b>Loans and Other Funding Obligations:</b>			
Senate Bill 1511 - Teton Replacement and Minidoka Enlargement Studies.....		\$570,539.82	
Weiser-Galloway Study (28-May-10).....		\$444,549.29	
Milner Irrigation District (pipeline replacement).....		\$2,000,000.00	
Monument Ridge Ranch Subdivision HOA.....		\$300,000.00	
North Fremont Canal Company.....		\$500,000.00	
<b>TOTAL LOANS AND OTHER FUNDING OBLIGATIONS.....</b>			<b>\$3,815,089.11</b>
<b>Uncommitted Funds.....</b>			<b>\$4,406,545.59</b>
<b>TOTAL.....</b>			<b>\$29,842,469.32</b>

(1) Actual amount needed may vary depending on final determination of water actually purchased and interest income received.



Idaho Water Resource Board  
Sources and Applications of Funds  
as of December 31, 2019  
**WATER MANAGEMENT ACCOUNT**

Original Appropriation (1978).....		\$1,000,000.00	
Transfer funds to General Account 1101(HB 130, 1983).....		(\$500,000.00)	
Legislative Appropriation (6/29/1984).....		\$115,800.00	
Legislative Appropriation (SB1239, 2001).....		\$200,000.00	
Interest Earned.....		\$122,259.31	
Filing Fee Balance.....		\$2,633.31	
Water Supply Bank Receipts.....		\$841,803.07	
Bond Fees.....		\$277,254.94	
Funds from DEQ and IDOC for Glenns Ferry Water Study.....		\$10,000.00	
Legislative Appropriation (HB988, 1994).....		\$75,000.00	
Reverted to General Account 6/30/95, (HB988, 1994).....		(\$35,014.25)	
Legislative Appropriation (SB1260, 1995, Aquifer Recharge, Caribou Dam).....		\$1,000,000.00	
Legislative Appropriation (SB1239, 2001, Sugarloaf Aquifer Recharge Project).....		\$60,000.00	
Reverted to General Fund 1/22/19, (SB1239, 2001, Sugarloaf Aquifer Recharge Project).....		(\$4,046.31)	
Legislative Appropriation (HB 843 Sec 6, 2004, ESPA Settlement Water Rentals).....		\$520,000.00	
Legislative Appropriation (SB1496, 2006, ESP Aquifer Management Plan).....		\$300,000.00	
Legislative Appropriation (HB 320, 2007, ESP Aquifer Management Plan).....		\$849,936.99	
Lemhi River Water Right Appraisals.....		(\$31,000.00)	
Legislative Audits.....		(\$10,645.45)	
IWRB Appraisal Study (Charles Thompson).....		(\$5,000.00)	
Western States Water Council Annual Dues.....		(\$7,500.00)	
Transfer to/from Revolving Development Account.....		(\$317,253.80)	
Recharge Projects.....		(\$11,426.88)	
Grants Disbursed.....		(\$1,632,755.21)	
Obligated 1994 (HB988).....		(\$39,985.75)	
SB1260, Aquifer Recharge.....		(\$947,000.00)	
SB1260, Soda (Caribou) Dam Study.....		(\$53,000.00)	
Sugarloaf Aquifer Recharge Project (SB1239, 2001).....		(\$55,953.69)	
ESPA Settlement Water Rentals (HB 843, 2004).....		(\$504,000.00)	
ESP Aquifer Management Plan (SB1496, 2006).....		(\$300,000.00)	
ESP Aquifer Management Plan (HB320, 2007).....		(\$801,077.75)	
<b>CASH BALANCE.....</b>			<b>\$119,028.53</b>
<b>Large Projects Program Sub-Account</b>			
Legislative Appropriation (HB 285, Sec 1, 2019).....	\$20,000,000.00		
Interest Earned State Treasury.....	\$294,051.66		
<b>Total Revenue for Large Projects Program Sub-Account.....</b>		<b>\$20,294,051.66</b>	
	\$0.00		
	\$0.00		
<b>Total Expenditures for Flood Management Program Sub-Account.....</b>		<b>\$0.00</b>	
<b>Cash Balance for Large Projects Program Sub-Account.....</b>			<b>\$20,294,051.66</b>
<b>Water Quality Collection Program Sub-Account</b>			
Legislative Appropriation (HB 285, Sec 3, 2019).....	\$200,000.00		
Interest Earned State Treasury.....	\$2,940.51		
<b>Total Revenue for Water Quality Collection Program Sub-Account.....</b>		<b>\$202,940.51</b>	
	\$0.00		
	\$0.00		
<b>Total Expenditures for Water Quality Collection Program Sub-Account.....</b>		<b>\$0.00</b>	
<b>Cash Balance for Water Quality Collection Program Sub-Account.....</b>			<b>\$202,940.51</b>
<b>Flood Management Program Sub-Account</b>			
Legislative Appropriation (HB 712, Sec 1, 2018, Flood Management Program).....	\$1,000,000.00		
Legislative Appropriation (HB 285, Sec 3, 2019, Flood Management Program).....	\$800,000.00		
Interest Earned State Treasury.....	\$16,774.32		
<b>Total Revenue for Flood Management Program Sub-Account.....</b>		<b>\$1,816,774.32</b>	
Grants Disbursed for Leg Approp (HB 712, Sec 1, 2018, Flood Mgmt Pg).....		(\$760,363.64)	
Grants Disbursed for Leg Approp (HB 285, Sec 3, 2019, Flood Mgmt Pg).....		(\$20,537.30)	
<b>Total Expenditures for Flood Management Program Sub-Account.....</b>		<b>(\$780,900.94)</b>	
<b>Cash Balance for Flood Management Program Sub-Account.....</b>			<b>\$1,035,873.38</b>
<b>TOTAL.....</b>			<b>\$21,651,894.08</b>
<b>Grants and Other Funding Obligations</b>			
<b>Flood Management Program grants - Year 1 (HB712, Sec 1, 2018)</b>	<b>Grant Amount</b>	<b>Expenditures</b>	<b>Remaining Balance</b>
<b>Flood Control District 9 (CON01303).....</b>	<b>90,000.00</b>	<b>(84,851.70)</b>	<b>5,148.30</b>
Blaine County (CON01304).....	121,331.00	(98,684.73)	22,646.27
Cassia County (CON01305).....	42,336.38	(19,618.16)	22,718.22
<b>Flood Control District 10 (CON01306 - New Dry Creek River Bank).....</b>	<b>78,400.00</b>	<b>(62,156.50)</b>	<b>16,243.50</b>
<b>Flood Control District 10 (CON01307 - Duck Alley Pit Capture).....</b>	<b>153,550.00</b>	<b>(105,470.43)</b>	<b>48,079.57</b>
<b>Flood Control District 10 (CON01308 - Porter &amp; Mulchay Gravel Removal).....</b>	<b>38,808.00</b>	<b>(35,250.77)</b>	<b>3,557.23</b>
<b>Clearwater Soil &amp; Water Conservation Dist (CON01309).....</b>	<b>155,220.00</b>	<b>(155,219.00)</b>	<b>1.00</b>
<b>Flood Control District 10 (CON01310 - Leighton &amp; Wells Gravel Removal).....</b>	<b>22,000.00</b>	<b>(22,000.00)</b>	<b>0.00</b>
Flood Control District 11 (CON01311).....	57,675.00	(33,700.00)	23,975.00

<b><i>Twin Lakes/Flood Control Dist 17 (CON01312)</i></b> .....	<b><i>7,750.00</i></b>	<b><i>(7,750.00)</i></b>	<b><i>0.00</i></b>
<b><i>Twin Falls Canal Company (CON01327)</i></b> .....	<b><i>85,340.00</i></b>	<b><i>(85,340.00)</i></b>	<b><i>0.00</i></b>
Nez Perce Soil & Water Conservation Dist (CON01328).....	115,460.00	(44,297.35)	71,162.65
<b><i>Riverside Village HOA (CON01329)</i></b> .....	<b><i>6,025.00</i></b>	<b><i>(6,025.00)</i></b>	<b><i>0.00</i></b>
City of Pocatello (CON01330).....	26,105.00	0.00	26,105.00
Carryover from HB712 Year 1 to HB285 Year 2.....	(73,029.60)		(73,029.60)
<b>Flood Management Program grants - Year 2 (HB285, Sec 3, 2019)</b>			
City of Boise (CON01396).....	6,371.00		6,371.00
Blaine County (CON01397).....	100,000.00		100,000.00
Board of Controls Irrigation (CON01398).....	59,050.00		59,050.00
Clearwater Soil & Water Conservation District (CON01399).....	190,492.37		190,492.37
Clearwater Soil & Water Conservation District (CON01400).....	72,727.39		72,727.39
City of Hailey (CON01401).....	50,000.00		50,000.00
Flood Control District No. 10 (CON01402).....	160,000.00		160,000.00
Idaho Soil and Water Conservation District (CON01403).....	159,436.00		159,436.00
Idaho Soil and Water Conservation District (CON01404).....	21,619.50	(20,537.30)	1,082.20
Blaine County (CON01405).....	50,000.00		50,000.00
<b>Committed for Flood Management Grants</b> .....	<b>\$1,796,667.04</b>	<b>(780,900.94)</b>	<b>1,015,766.10</b>
<b>Other Funding Obligations</b>			
ESPA Settlement Water Rentals (HB 843, 2004).....	\$16,000.00		
Legislative Appropriation (HB 285, Sec 1, 2019).....	\$20,000,000.00		
Legislative Appropriation (HB 285, Sec 3, 2019).....	\$200,000.00		
<b>Committed for Other Funding Obligations</b> .....			<b>\$20,216,000.00</b>
Uncommitted Funds.....			<b>\$420,127.98</b>
<b>TOTAL COMMITTED FUNDS BALANCE</b> .....			<b><u>\$21,231,766.10</u></b>

***Bold and italicized indicates that project is completed and entity has received final payment***



IN REPLY REFER TO:

# United States Department of the Interior

## BUREAU OF RECLAMATION

Snake River Area Office

230 Collins Road

Boise, ID 83702-4520



SRA-1304

2.2.4.21

January 10, 2020

VIA ELECTRONIC MAIL ONLY

Mr. Roger Chase  
Chairman  
Idaho Water Resource Board  
322 East Front Street  
Boise, ID 83702

Mr. Roland Springer  
Area Manager  
Snake River Area Office  
230 Collins Road  
Boise, ID 83702

Subject: Boise River Basin Feasibility Study Status Update, Boise Project, Idaho

Dear Messrs. Chase and Springer:

This status update is being sent in preparation for the Idaho Water Resource Board (IWRB) meeting on January 23 and 24, 2020.

The IWRB and the Bureau of Reclamation have partnered to complete a feasibility study of new surface water storage options on the Boise River (Study). The Study initially included an evaluation of small raises of the three large dams on the Boise River system: Anderson Ranch, Arrowrock, and Lucky Peak Dams, and is now focused on Anderson Ranch Dam.

### **Current Status**

Reclamation received a \$500k installment payment from IWRB on December 24, 2019, under the modified Memorandum of Agreement.

- Recent project activities include:
  - November 22, 2019 – Reclamation received the final draft Reservoir Rim Design Technical Memorandum. The Technical Memorandum developed design and cost estimates for the infrastructure around Anderson Ranch Reservoir that would be impacted by a 6-foot raise of Anderson Ranch Dam.



- November 25, 2019 – Reclamation received the final draft Non-structural Alternative Technical Memorandum. The Technical Memorandum developed design and cost estimates for lining of the lower New York and Mora Canals.
- December 2-6, 2019 – Reclamation, IWRB staff, U.S. Army Corps of Engineers, and U.S. Forest Service completed a technical review of the Draft Environmental Impact Statement (EIS).
- December 2-6, 2019 – Reclamation completed a review of the draft Economics Analysis Appendix which will be incorporated into the Feasibility Report.
- January 6, 2019 – Reclamation received a final Draft Biological Assessment for Anderson Ranch Dam Raise and Associated Operations and Maintenance in the Snake River above Brownlee Reservoir. Reclamation will submit to the U.S. Fish and Wildlife Service for consultation in the coming months.
- Ongoing project activities include:
  - Reclamation is completing water modeling of water supply scenarios to analyze potential fill of the new space in Anderson Ranch Reservoir in relation to other potential projects in the area. This information will be used to inform the economics analysis as part of the Feasibility Report.
  - Water modeling efforts are ongoing to analyze potential impact to flow augmentation and target flows at Lower Granite Dam as a result of this project. Modeling results will inform ongoing discussions with the National Oceanic and Atmospheric Administration.
  - Reclamation and Consultant are conducting environmental compliance analyses and consultations in accordance with Secretarial Order 3355.
  - Reclamation and Consultant are working to complete benefits and cost analyses, and feasibility report.
  - Reclamation and IWRB are discussing the approach for identifying potential spaceholders and contracting for space.

The Feasibility Study and EIS are experiencing a schedule delay as Reclamation assesses limited potentially viable project alternatives and flow augmentation considerations. Reclamation is actively working on resolution, which will inform the extent of the delay.

### **Key Milestones**

Nov 2017 - Jan 2019	Reclamation completed initial screening of the three potential dam raise alternatives and developed the Project Management Plan.
July 27, 2018	IWRB passed a resolution supporting the narrowed focus of the Study to a raise at Anderson Ranch Dam.
August 28, 2018	Reclamation and IWRB hosted a Legislative Infrastructure Tour to discuss large water infrastructure projects in Idaho with representatives from Idaho's Congressional delegation.
November 8, 2018	Reclamation and IWRB hosted an informational public open house on the Study in Boise, Idaho.

December 3-7, 2018	Reclamation conducted a Value Planning Study with a final Accountability Report received in February 2019.
December 25, 2018	Reclamation awarded an Indefinite Delivery/Indefinite Quality contract for architect and engineering services to Sundance-EA Joint Venture (Consultant) to complete the Study and environmental compliance activities.
April 30, 2019	Consultant submitted land, structure, infrastructure, and real estate impact assessment (Rim Analysis) Anderson Ranch Reservoir.
June 7, 2019	IWRB filed a water right permit application for the potential additional storage (Water Right No. 63-34753).
June 19, 2019	Reclamation's Technical Service Center completed feasibility-level design and cost estimates completed for Anderson Ranch Dam raise.
August 9, 2019	Reclamation published the Notice of Intent for an EIS in the Federal Register.
August 27-29, 2019	Reclamation conducted Public Scoping Open Houses in Pine, Boise, and Mountain Home, Idaho.

Current planned dates, to be updated pending resolution of issues

February 2020	Draft Feasibility Report and Draft EIS release.
February 3-7, 2020	Reclamation design, estimate, and construction review of the alternatives.
February 2020	Draft EIS Public Comment meetings in Mountain Home and Boise, Idaho.
July 2020	Final Feasibility Report and Environment Impact Statement release.
July 2020 - Aug 2020	Department of the Interior review and approval of the recommended plan.

Thank you for this opportunity to provide an update on the Boise River Basin Feasibility Study project. If you have any questions, please contact me at 208-383-2222 or via email at [msloan@usbr.gov](mailto:msloan@usbr.gov).

Sincerely,

Megan Sloan  
Project Manager

# Memorandum

To: Idaho Water Resource Board  
From: Wesley Hipke  
Date: January 13, 2020  
Re: ESPA Managed Recharge Program Status Report



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**REQUIRED ACTION:** No action is required at the January 24, 2020 IWRB meeting.

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## I. IWRB Managed Recharge Executive Summary

### ESPA Managed Recharge – Natural Flow

The IWRB's Snake River recharge water rights came into priority below Minidoka Dam on October 22 and IWRB recharge activities started on October 24, 2019. Twin Falls Canal Company (TFCC), North Side Canal Company (NSCC), Southwest Irrigation District (SWID) and American Falls Reservoir District #2 (AFRD2) are currently conducting IWRB recharge and plan to continue through the recharge season. Table 1 provides a summary of the Program's natural flow recharge.

**Table 1.** Summary of IWRB Managed Recharge\*

Water Source	Area	Start	# Days	Current Rate (cfs)	Median Rate (cfs)	Total Recharged (Acre-feet)
Snake River	Lower Valley	Oct. 24	81	678	426	74,500

\* As of November 12, 2019 – Reported recharge volumes are preliminary and subject to change.

### Managed Recharge for other Entities

The IWRB supports ESPA stakeholder recharge efforts intended to improve and recover groundwater levels in the ESPA. As such, the IWRB agreed to recharge storage water supplied by the Surface Water Coalition (SWC), the Coalition of Cities (Cities) and Idaho Ground Water Appropriators (IGWA)/ North Snake Groundwater District (NSGD). The IWRB recharged 68,308 af of storage water in the Upper Valley (above Minidoka Dam). Most IWRB's partners assisting with recharging stopped by October 31, however, the Fremont Madison Irrigation District was able to continue until November 26. Table 2 provides a summary of the total volume of storage water the IWRB recharged in 2019. Table 3 provides a summary of the entities and volumes of storage water transferred to the IWRB for recharge.

**Table 2.** Summary of Storage Water Recharged for Other Entities

Water Source	Area	Recharge Dates	# Days	Median Rate (cfs)	Max Rate (cfs)	Total Recharged (Acre-feet)
Storage Water	Upper Valley	Aug 22 – Nov 26	96	339	1,009	68,308

**Table 3.** Summary of Storage Water transferred to IWRB for Recharge

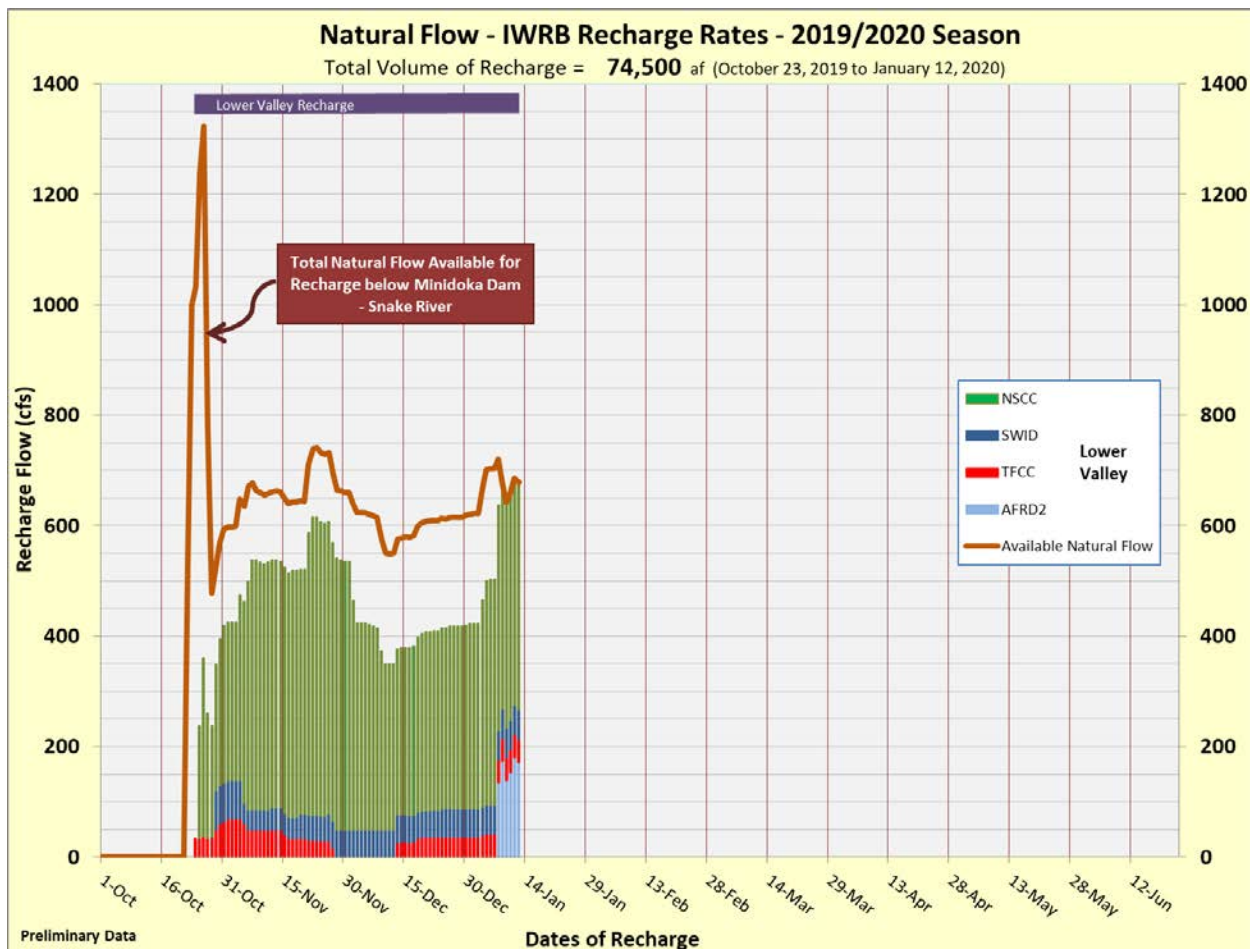
Donating Entity / Contributor	Date Transferred	Storage Water Transferred to IWRB for Recharge (af)
SWC	Aug 22, 2019	58,500
IGWA		50,000
Water Mitigation Coalition		8,500
City of Pocatello	Oct 7, 2019	6,308
IGWA/NSGD	Nov 11, 2019	3,500
<b>Total</b>		<b>68,308</b>

## II. 2019/2020 IWRB Natural Flow Recharge

### **Natural Flow Water Availability:**

The IWRB Snake River recharge water rights came into priority on October 22, 2019 below Minidoka Dam (Lower Valley). The Bureau of Reclamation (USBR) currently plans to keep flows from American Falls and Minidoka Dam at minimal levels (approximately 400 cfs and 550 cfs, respectively). The USBR evaluates operations monthly based upon reservoir fill, snow pack conditions, and other factors. The reservoir system was 48% full at the end of the 2019 irrigation season and is currently 74% full. The volume of water stored in the reservoir system is currently higher than the average for this time of year (132%). Reservoir operations will influence when the IWRB's water rights will come into priority in the Upper Valley (above Minidoka Dam) and whether more than the minimum flow will be available for recharge in the Lower Valley. An update on current and forecasted Snake River operations will be presented at the next Upper Snake River Advisory Committee on January 15, 2020.

The IWRB allowed 200 cfs to flow past Milner during the month of December in response to concerns from interests downstream of Milner, including hydropower generation. Due to low snowpack numbers in the first week of January, the IWRB reduced bypass flow to zero. Conditions will be monitored throughout the recharge season. The figure below summarizes IWRB recharge activities as of January 12, 2019.



**Figure 1.** IWRB daily natural flow recharge flows for the 2019/2020 season.

### **Lower Valley IWRB Recharge Status:**

New five-year conveyance contracts reflecting the new conveyance payment schedule for the Lower Valley were executed with all of the IWRB's current recharge partners in the Lower Valley. At the time of this report, over 650 cfs was being diverted for recharge (550 cfs from the Minidoka pool and approximately 100 cfs of gains to the river between Minidoka Dam and Milner Dam).

**TFCC:** TFCC started IWRB recharge on October 24, 2019 and plans to continue recharge operations throughout the rest of the recharge season. TFCC normally averages recharge over 30 cfs and is currently recharging 42 cfs.

**NSCC:** NSCC began recharge on October 25, 2019, utilizing the main canal and Wilson Lake. Recharge water was diverted into the new Wilson Canyon recharge site, downstream of Wilson Lake, on October 30<sup>th</sup>. To date, the Wilson Canyon site has been capable of recharging at a rate over 300 cfs and has not reached the full capacity of the site. NSCC is currently diverting over 400 cfs for recharge and approximately 250 cfs is being directed into the Wilson Canyon site.

**SWID:** IWRB recharge was started on October 29 and is currently recharging over 50 cfs. SWID plans to continue recharge activities throughout the recharge season.



**AFRD2:** AFRD2 stopped irrigation deliveries on October 15. Recharge activities were not started until January 7, 2020 due to in-canal construction work on the MP29 site and limited water availability. AFRD2 is currently recharging approximately 180 cfs.

At this time, the IWRB's maximum potential recharge capacity in the Lower Valley is estimated to be around 1,300 cfs. Actual recharge rates are dependent upon water availability, weather conditions, canal operations, and other variables the IWRB may take into consideration.

### **III. 2019 Managed Recharge for Other Entities**

Over the past five years the IWRB has developed partnerships, infrastructure, and an administrative structure to conduct managed recharge throughout the ESPA. The IWRB also supports other water user recharge efforts consistent with ESPA aquifer stabilization objectives.

Table 4 and Figure 2 summarize IWRB recharge efforts for the other entities for the Summer/Fall of 2019.

#### **SWC – IGWA Storage Water related to Settlement agreements:**

The SWC receives a total of 58,500 af of storage water from IGWA (50,000 af) and WMC (8,500 af) as part of their settlement agreements. Any of the storage water supplied by this settlement agreement not used for irrigation is to be used for dedicated ground to surface water conversion projects and managed recharge as determined by the parties to the agreements. As in recent years, the storage was not necessary to meet SWC irrigation demands and the IWRB agreed to recharge the water for the parties in the SWC agreement.

Separate from the SWC – IGWA/WMC Settlement agreement, the NSGD requested the IWRB recharge 3,500 af of storage water that was not going to be used for irrigation. IGWA/NSGD turned the storage water over to the IWRB for managed recharge on November 11, 2019. The IWRB agreed to recharge this water under the same conditions as the SWC settlement agreement water with the understanding that the water would be used for aquifer stabilization purposes rather than mitigation for other water uses.

The IWRB worked with eight of its partners in the Upper Valley to recharge the assigned storage water from August 22 through November 26, 2019. Most of the IWRB's partners completed recharge activities by the end of October. In some cases, recharge was terminated when an entity maximized its maximum allotted recharge volume, and in other cases recharge was stopped due to canal maintenance, severe cold weather, and/or terms of the Palisades storage water contract holder's USBR Winter Water Savings stipulation. The Fremont Madison Irrigation District (FMID) continued recharging through November 26, 2019.

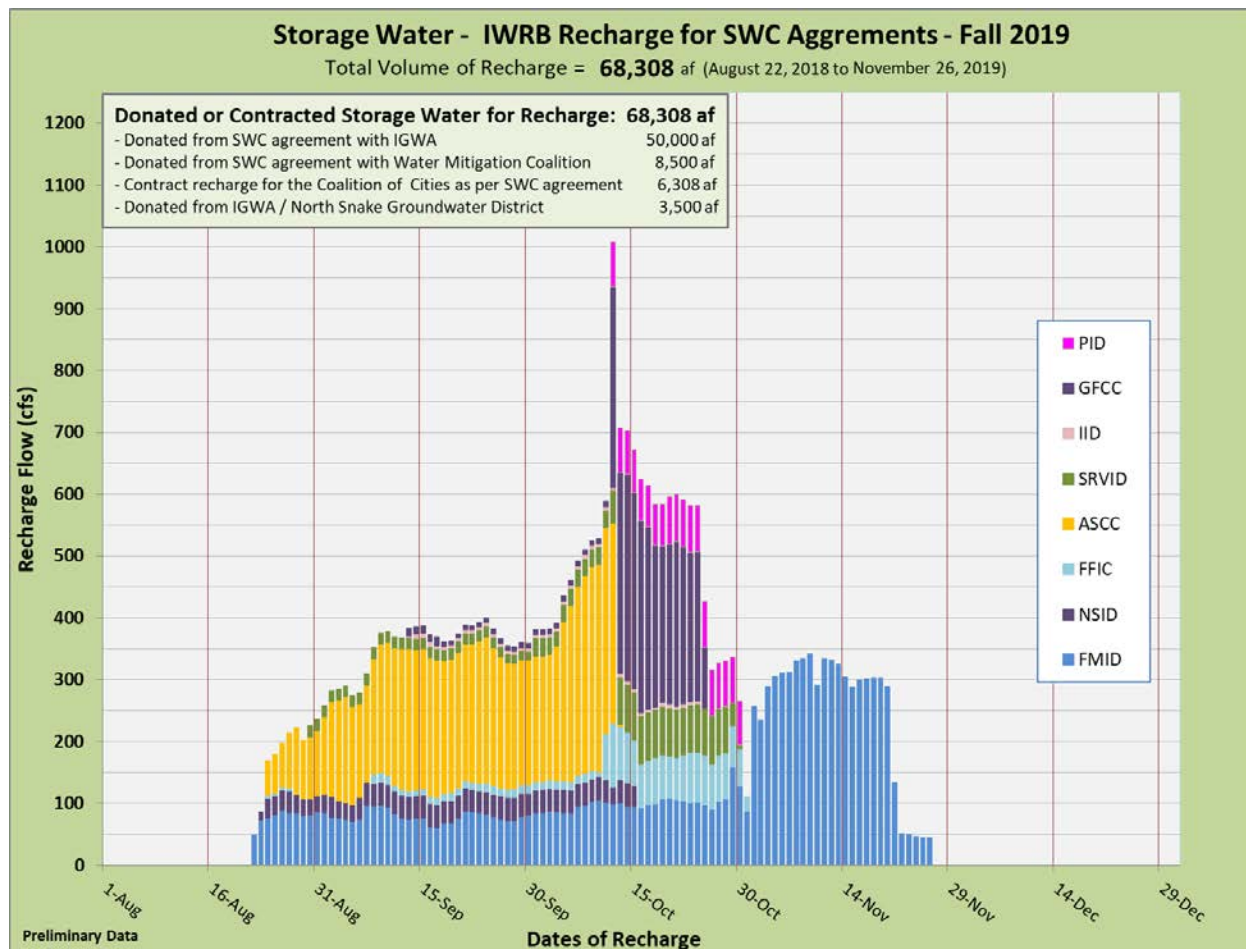
#### **Coalition of Cities-SWC Settlement Agreement:**

The settlement agreement between the Cities and the SWC requires a commitment of 7,650 af on average per year to be used for aquifer enhancement projects on the ESPA. The agreement outlines criteria for various aquifer enhancement projects including providing water to the IWRB for managed recharge. The Cities have contracted with the City of Pocatello to supply storage water as needed to meet the annual requirement. To recharge the storage water the City of Pocatello has contracted with

the IWRB as one of the approved aquifer enhancement projects. This year, Pocatello transferred 6,308 af of storage water to the IWRB for recharge. All of this water was recharged using the FMID system.

**Table 4.** IWRB Recharge - Storage Water for Other Entities

Storage Water Source	IWRB Partner	Start	End	Avg. Rate (cfs)	Total Recharged (af)*
SWC – IGWA/WMC & IGWA/NSGD	Aberdeen-Springfield CC	Aug 24	Oct 13	198	20,000
	New Sweden ID	Aug 23	Oct 15	34	3,681
	Idaho ID	Sept 14	Oct 24	5	432
	Progressive ID	Oct 12	Oct 30	73	2,739
	SNAKE RIVER VALLEY ID	Aug 30	Oct 30	36	4,372
	Farmers Friend IC	Aug 24	Oct 31	28	3,906
	Fremont-Madison ID	Aug 22	Nov 26	111	18,870
	Great Feeder CC	Sept 7	Oct 25	94	8,000
<b>Total</b>					62,000
Cities	Fremont-Madison ID	Oct 7	Nov 9	98	6,308



**Figure 2.** IWRB daily recharge flows for all storage water from other entities, Fall 2019.

## IV. ESPA Recharge Program Monitoring Summary

The IWRB monitors ground water levels and water quality to assess the effects of IWRB managed recharge on the aquifer. The IWRB also utilizes data collected by IDWR and individual entities (e.g. recharge site or facility owners other than the IWRB) for monitoring purposes. Data collection and evaluation generally includes:

- Verification of recharge diversions and return flows at all sites.
- Water level monitoring related to specific managed recharge sites.
- Water quality monitoring including background sampling, water quality sampling during the recharge season in accordance with Idaho Department of Environmental Quality approved monitoring plans, and incorporation of water quality data collected by private recharge site owners (e.g. FMID monitoring of the Egin Lakes recharge site).
- Dye trace studies may be performed at recharge sites conducive for trace tests to document the flow path and help identify locations for the installation of additional monitoring wells as needed. Multiple trace tests have been performed at IWRB recharge sites over the past decade. Most recently, a trace was initiated at the new Wilson Canyon recharge site.

## **V. ESPA Recharge Program Projects and Buildout Activities**

The IWRB has actively supported development of additional recharge capacity throughout the ESPA to meet the managed recharge goal of an average 250,000 af/yr. For managed recharge projects involving infrastructure improvements to which the IWRB provided funding, a Memorandum of Intent (MOI) was developed to establish a long-term agreement (twenty years) between the IWRB and the entity implementing the project. The MOI acknowledges: 1) the IWRB provided financial assistance for a project; and 2) the entity agreed to deliver and prioritize delivery of the IWRB's recharge water as compensation for financial assistance from the IWRB.

### **ESPA Managed Recharge Infrastructure Project Summary:**

The IWRB allocated over \$20 million dollars from 2013 through fiscal year 2020 for infrastructure improvements to increase managed recharge throughout the ESPA. In fiscal year 2020, the IWRB budgeted \$5 million for development of managed recharge infrastructure throughout the ESPA. The status of the current projects in the Lower and Upper Valleys is included in Tables 2 and 3, respectively. A summary of the projected recharge projects is presented in Table 4.

**Table 2. Current IWRB ESPA Managed Recharge Projects - Lower Valley**

<b>IWRB Partner</b>	<b>Project Name</b>	<b>Project Type</b>	<b>Status</b>	<b>Approved Funds</b>	<b>Scheduled Completion</b>	<b>Description / Key Items</b>
AFRD2	Dietrich Drop Hydro Plant Winter By-pass	Design / Construction	Active	\$1,500,000	Jan 2020	<b>Winter recharge by-pass of the Dietrich Drop Power Plant</b> <ul style="list-style-type: none"> <li>Finalize cost and project schedule – May 2018</li> <li>Constr. of tail race gate &amp; bypass improv. – Mar 2019</li> <li>FERC approval for forebay improv. – Sept 2019</li> <li>Construction of forebay improv. – Dec 2019</li> </ul>
AFRD2	MP 28 Hydropower Plant Tailbay Winterization Project	Construction	Complete	\$1,400,000 Final Cost \$1.4 M.	Nov 2019	<b>Tailbay isolation and forebay improvements for winter recharge</b> <ul style="list-style-type: none"> <li>Design Completion – Sept 2018</li> <li>Start Construction – Oct 2018</li> <li>Tailrace Building – Oct/Nov 2019</li> </ul>
AFRD2	MP 29 Recharge Site	Construction	Active	\$640,000	Mar 2020	<b>Construction of new site</b> <ul style="list-style-type: none"> <li>Survey data - Feb 2018</li> <li>Design &amp; Contractor hired – July/Aug 2019</li> <li>GW Quality Monitoring Plan &amp; Wells – Winter 2019</li> <li>Start construction – Oct 2019</li> <li>Construction delayed due to failure of fill around headworks – Jan 2019</li> </ul>
North Side CC	Wilson Canyon Site	Design / Construction	Complete	\$1,900,000 Final Cost \$1.33 M.	Nov 2019	<b>Design &amp; construction of recharge site</b> <ul style="list-style-type: none"> <li>Design completed &amp; Bid advertisement – Sept 2018</li> <li>BLM ROW &amp; constr. outside the canal – Mar 2019</li> <li>Completion of monitor wells – June/July 2019</li> <li>Final Testing of infrastructure – Nov 2019</li> </ul>
TFCC	TFCC Injection Wells	Construction	Active	\$178,000	Fall 2020	<b>Construction of recharge site</b> <ul style="list-style-type: none"> <li>Well Permitting &amp; Easements – Spring 2020</li> <li>Start construction – Spring 2020</li> <li>Testing injection well – Winter 2019/Spring 2020</li> </ul>
A&B ID	A&B Injection Wells	Construction	Active	\$202,000	Spring 2021	<b>Construction of recharge site</b> <ul style="list-style-type: none"> <li>USBR easements / project transfer – Spring 2020</li> <li>Well Permitting – Summer 2020</li> <li>Start Construction – Fall 2020</li> <li>Testing injection well – Winter 2020/Spring 2021</li> </ul>



**Table 3. Current IWRB ESPA Managed Recharge Projects - Upper Valley**

<b>IWRB Partner</b>	<b>Project Name</b>	<b>Project Type</b>	<b>Status</b>	<b>Approved Funds</b>	<b>Scheduled Completion</b>	<b>Description / Key Items</b>
Fremont-Madison ID	Egin Lakes Phase II	Construction	Active	\$580,000	May 2020	<b>Construction of Egin Lakes Phase II - recharge capacity expansion</b> <ul style="list-style-type: none"> <li>• BLM approval – Oct 2018</li> <li>• Finish construction on new areas – May 2019</li> <li>• Testing of Site - Summer/Fall 2019</li> <li>• Constructing Berms in new area – Apr/May 2020</li> </ul>
Great Feeder Canal Co.	Ward Site	Construction	Complete	\$120,000 Final Cost \$51,222	<b>Complete</b> Oct 2019	<b>Construction of recharge site</b> <ul style="list-style-type: none"> <li>• Evaluation of area complete – Jan 2018</li> <li>• Finish of site construction – Apr 2019</li> <li>• Submit GW monitoring plan – Apr 2019 (est. completion Sept 2019)</li> <li>• Drilling &amp; equipping monitor well – Oct 2019</li> </ul>

**Table 4. Projected Lower & Upper Valley - IWRB ESPA Managed Recharge Projects**

<b>IWRB Partner</b>	<b>Project Name</b>	<b>Project Type</b>	<b>Status</b>	<b>Approved Funds</b>	<b>Scheduled Completion</b>	<b>Description / Key Items</b>
North Side CC	Additional Managed Recharge Sites below Wilson Lake	Survey, Design	Planning	None at this time	2020	<b>Preliminary Design of potential recharge site</b> <ul style="list-style-type: none"> <li>• Staff Evaluation and additional survey data – Summer 2018</li> <li>• LiDAR Survey Data – Nov 2018</li> <li>• Analysis of survey – Mar 2019</li> <li>• IWRB feedback on potential sites – Apr 2019</li> <li>• Design and Cost Estimate – After test of Wilson Canyon</li> </ul>
IWRB	Upper Valley – Large Scale Recharge Project	Evaluation	Planning	None at this time	2020?	<b>Evaluation of the Upper Valley to determine the potential of developing a large scale managed recharge project</b> <ul style="list-style-type: none"> <li>• Ranking of best areas – Spring 2019</li> <li>• Field evaluation of potential areas – Summer 2019</li> <li>• IWRB input on potential sites – Nov 2019</li> <li>• Aquifer Stabilization Committee input on potential projects – Mar 2020</li> </ul>
IWRB	Upper Valley – Small Scale Recharge Project	Evaluation	Planning	None at this time	2020?	<b>Evaluation of the Upper Valley small scale potential managed recharge project</b> <ul style="list-style-type: none"> <li>• Reviewing potential project near Idaho Falls – Spring 2020</li> <li>• Reviewing potential project associated with Enterprize Canal Co. near Ririe – Spring 2020</li> </ul>



# IWRB Managed Recharge Program

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## IWRB Board Meeting

**Wesley Hipke**

IWRB Recharge Program Manager

January 24, 2020



# IWRB Natural Flow Managed Recharge – 2019/2020

Total Natural Flow Water Recharged  
**89,073 af**

Start Recharge - Oct 24

Diversion Rate  
Median: 486 cfs

AFRD2

180 cfs

NSCC

410 cfs

TFCC

30 cfs

SWID

50 cfs

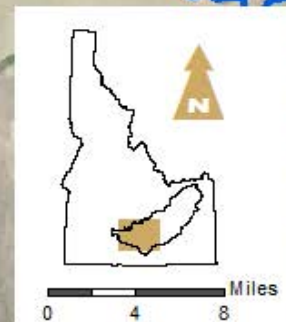
Jerome

Twin Falls

Rupert

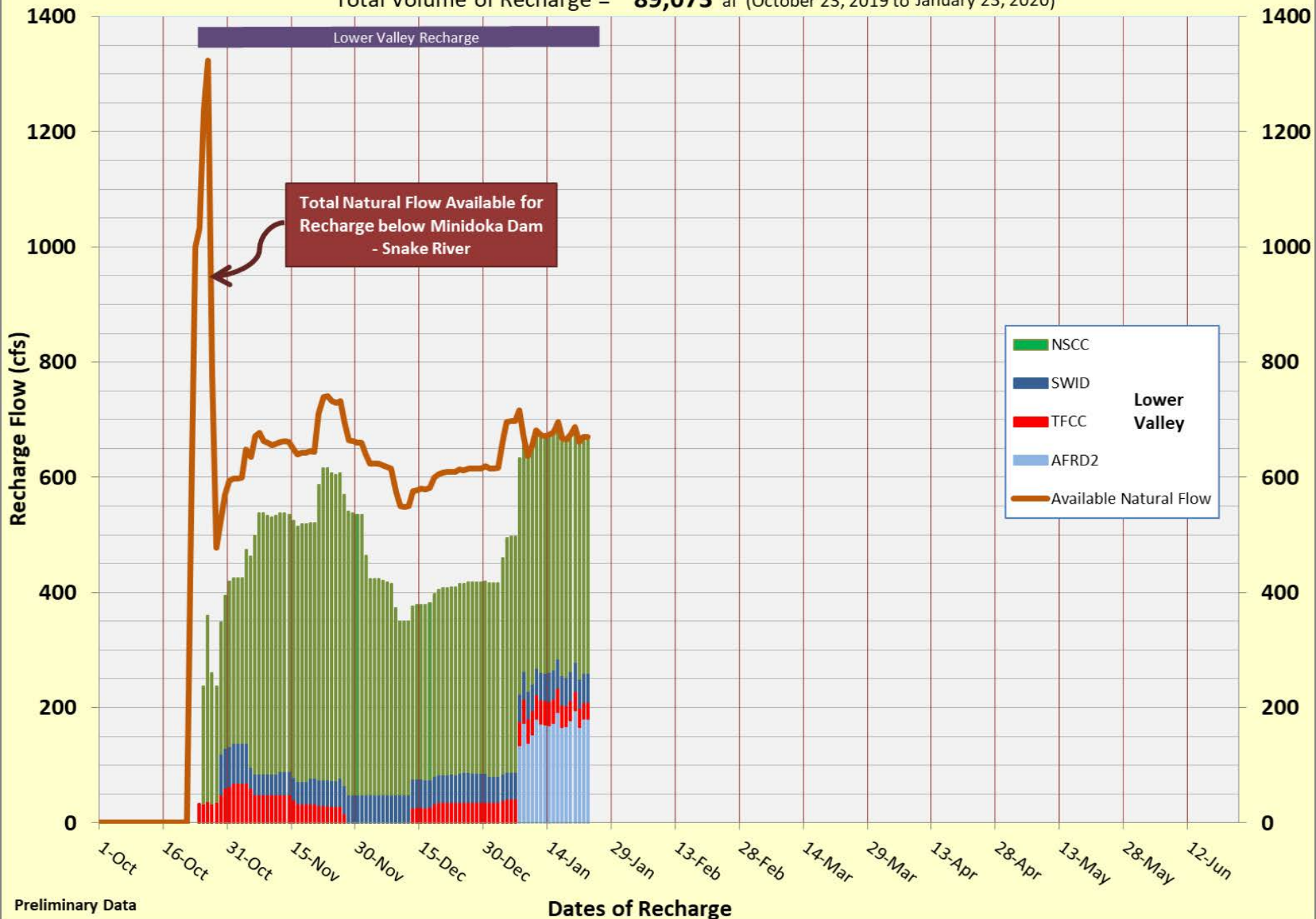
Burley

Milner Pool



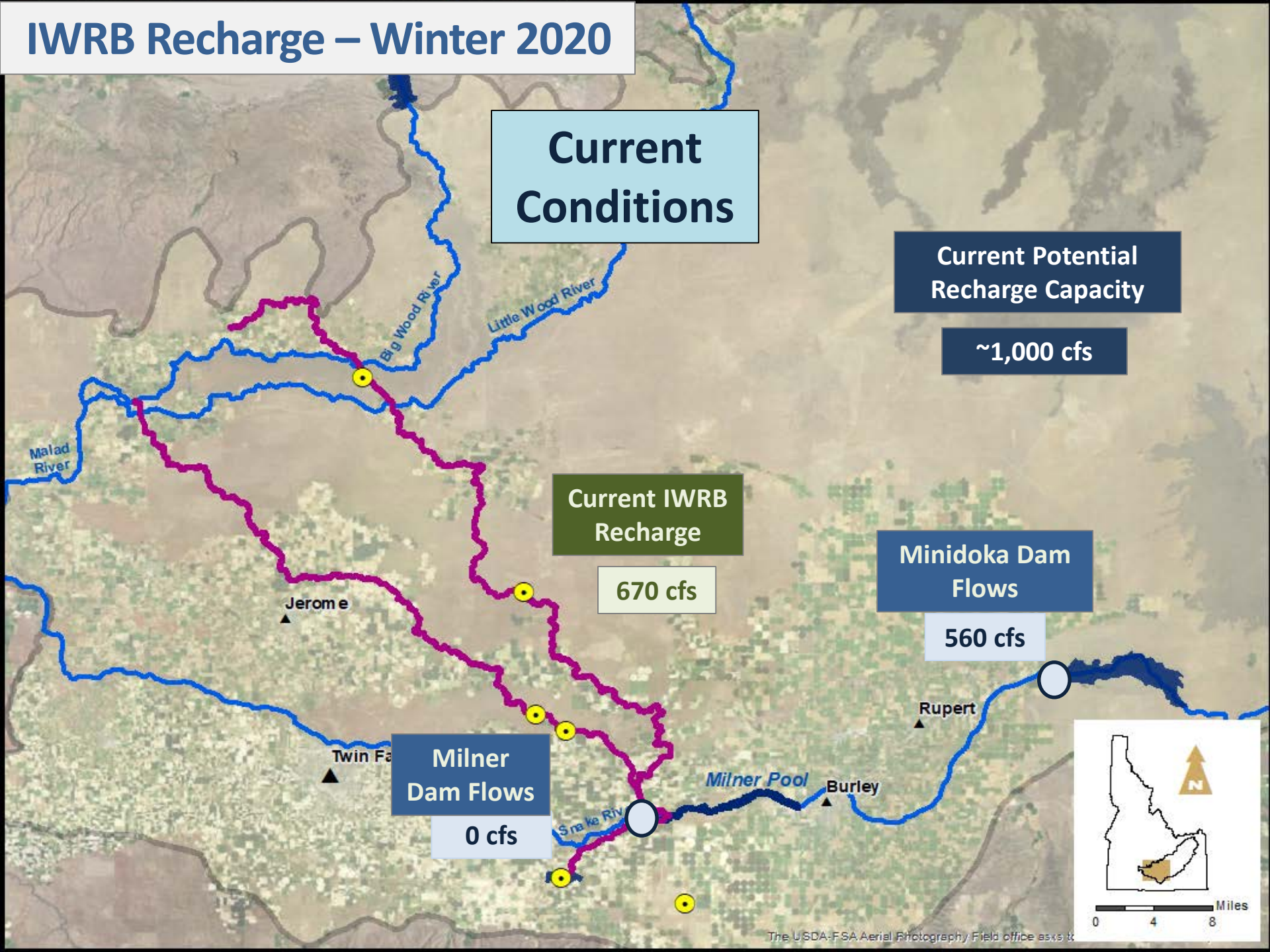
# Natural Flow - IWRB Recharge Rates - 2019/2020 Season

Total Volume of Recharge = **89,073** af (October 23, 2019 to January 23, 2020)





# IWRB Recharge – Winter 2020



**Current  
Conditions**

**Current Potential  
Recharge Capacity**

**~1,000 cfs**

**Current IWRB  
Recharge**

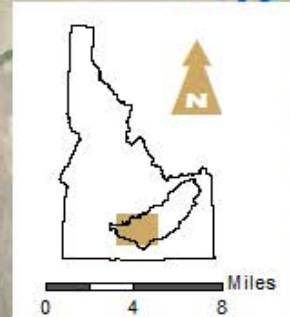
**670 cfs**

**Minidoka Dam  
Flows**

**560 cfs**

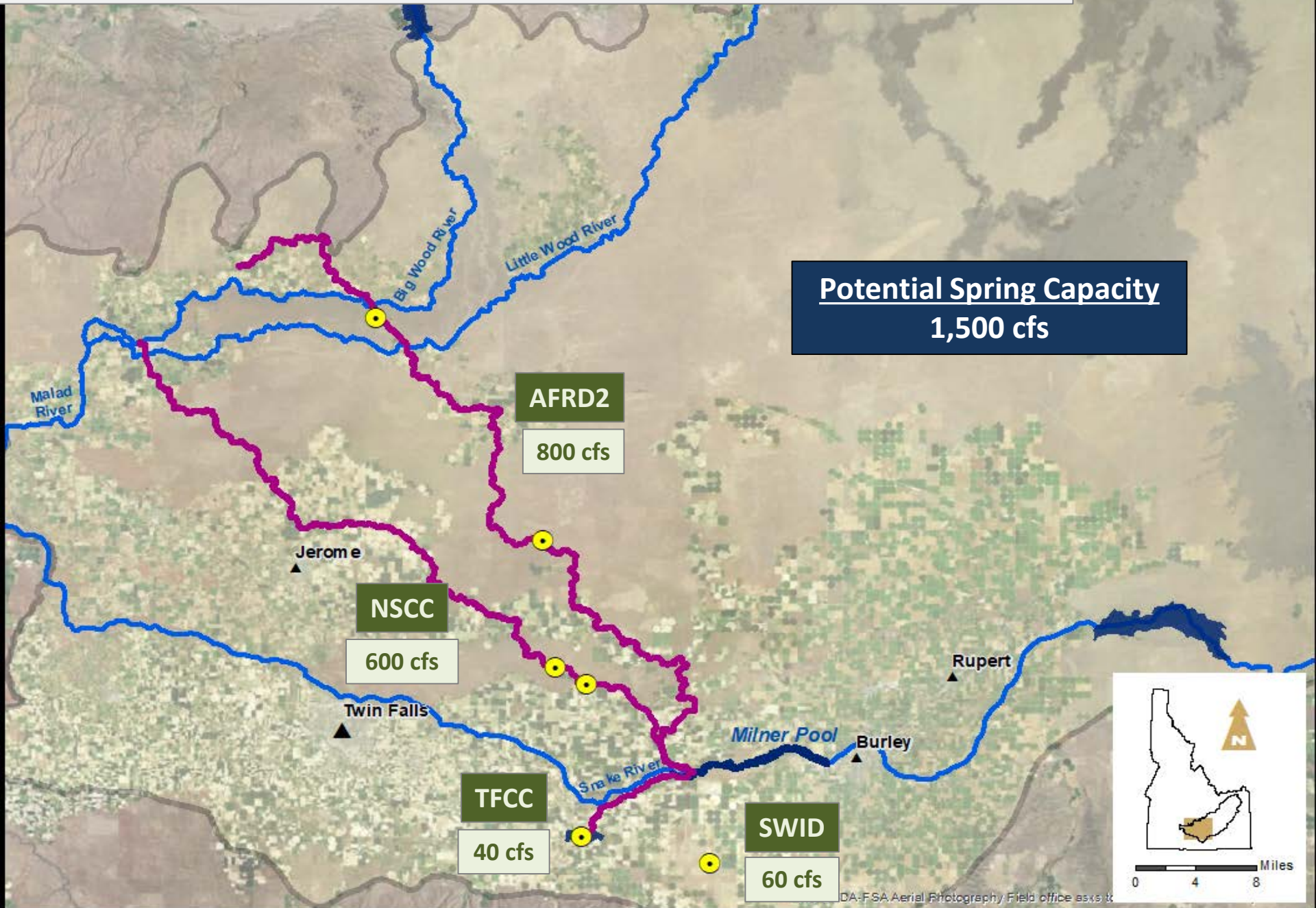
**Milner  
Dam Flows**

**0 cfs**





# IWRB Recharge Capacity Lower Valley – Spring 2020





# IWRB Recharge Capacity Upper Valley – Spring 2020

**Potential Canal Capacity**  
2,400 cfs

**IWRB Canal Capacity**  
450 cfs

Winter to Mid-April




Henry's Fork  
600 cfs

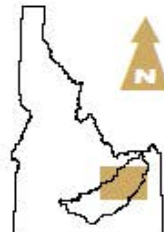
South Fork  
980 cfs

Middle Snake  
870 cfs

**LEGEND**

**Recharge Sites**

-  IWRB
-  Private
-  Canals



0 5 10 Miles

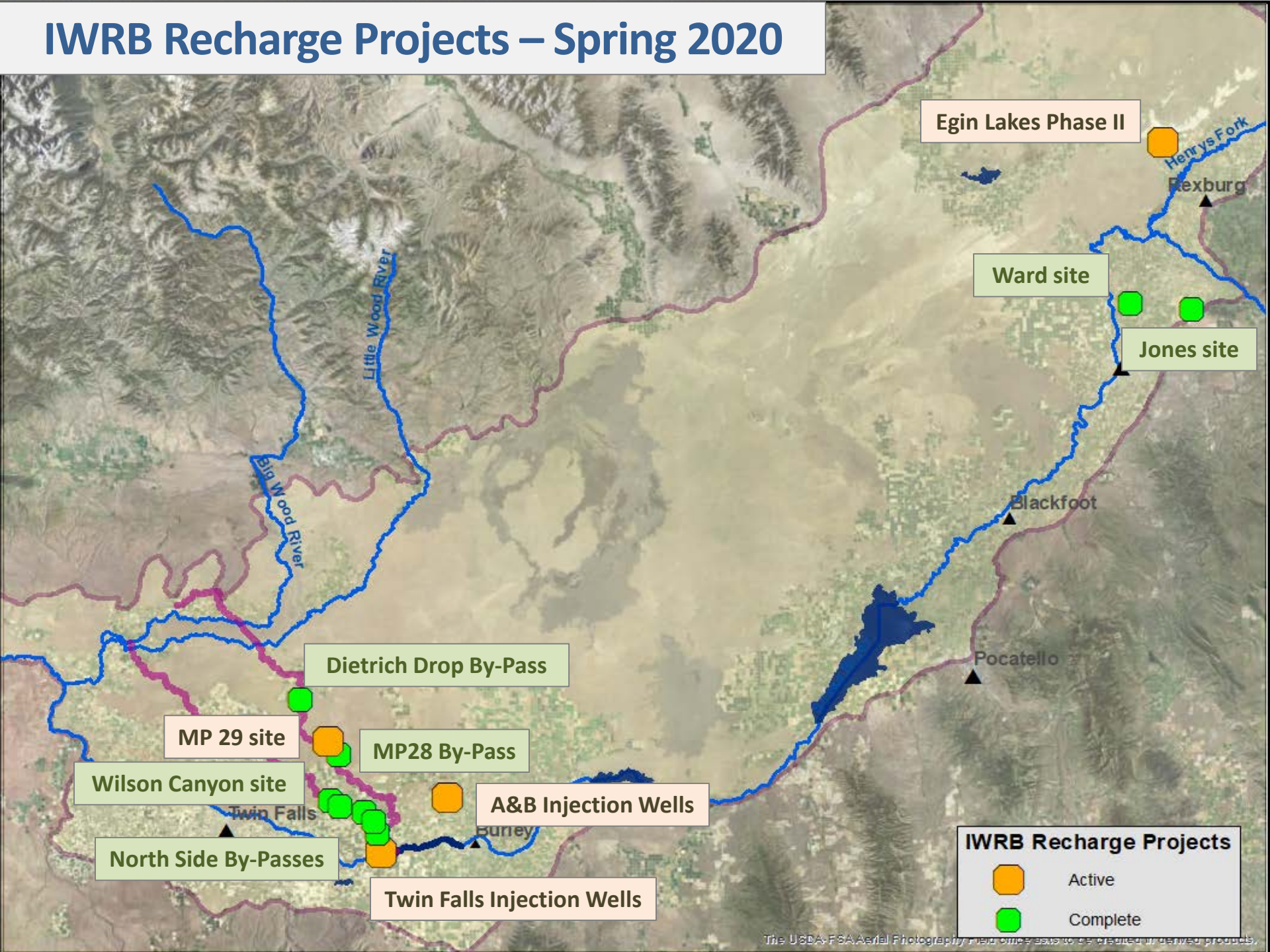
The USDA-FSA Aerial Photography Field office exists to







# IWRB Recharge Projects – Spring 2020





# Questions





# Memorandum



To: Idaho Water Resource Board (IWRB)  
From: Neeley Miller & Rick Collingwood, Planning & Projects Bureau  
Date: January 13, 2020  
Re: Priest Lake Water Management Project Update

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**ACTION: No action requested**

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## **Background**

As a result of limited water supply and drought conditions in northern Idaho in 2015 and 2016 (and 2019) it has been difficult to maintain required lake pool levels and downstream flow in the Priest River during the recreational season.

**Phase 1:** The Priest Lake Water Management Study was completed in February 2018. The study included the following recommendations:

- Temporarily raising the surface level of Priest Lake up to 6 inches during the recreational season for dry years and integrating real-time streamflow data to allow more operational flexibility
- Outlet dam structural and operational improvements
- Replacing the current existing porous breakwater with an impervious breakwater structure and dredging a portion of the Thorofare channel

**Phase 2:** As scheduled, the Priest Lake Water Management Project – Preliminary Engineering & Design concluded in the fall 2019.

## **Update on Phase 3**

Final Engineering & Design which includes finalizing regulatory permitting and bidding assistance began in November 2019.

### **Schedule**

- Nov 2019 to April 2020 – Execution of temporary construction access agreements with Lamb Creek Estates and Sandpiper Shores developments
- Mar/Apr 2020 – Issue RFP for selection of construction management firm for both projects
- Oct 2020 - Mar 2021 – Anticipated construction period for both projects

### **Funding Status**

- \$2,400,000 (Legislature Approved Funding via HB677) + \$2,419,600 (Legislature Repurpose of CREP via HB 677) + \$285,000 (Priest Lake Local Contribution) = **\$5,104,600 Total Project Funding**
- \$600,000 (Phase 2, Preliminary Engineering) + \$652,717 (Phase 3, Final Engineering) + \$2,128,069

(Outlet Dam Construction and Construction Management w/10% contingency) + \$1,985,052  
(Thorofare Improvements Construction and Construction Management w/10% contingency) =  
**\$5,365,838 Total Estimated Funding Needed for Design and Construction**

- **\$261,238 Funding Deficit (+/- \$400K with 10% contingency)**

#### **Outlet Dam Operations Plan**

- IDWR hydrologist developing operations plan, including rule curves for use by the 2021 recreational season (post-construction). IWRB staff plans regular meetings with hydrologists and Doug Jones (Northern Regional manager) to plan for operations during the upcoming season.

# Memorandum

To: Idaho Water Resource Board (IWRB)  
From: Neeley Miller  
Date: January 13, 2020  
Re: Report by Mark Limbaugh of the Ferguson Group



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## No Action Required

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Mark Limbaugh of the Ferguson Group will provide an update to the Board.

# Memorandum

To: Idaho Water Resource Board (IWRB)

From: Neeley Miller

Date: January 13, 2020

Re: Palouse Basin Aquifer Committee (PBAC) Update

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Representatives from the Palouse Basin Aquifer Committee (PBAC) will discuss recent efforts towards developing a long term sustainable water supply.

**MATERIALS MAY BE PROVIDED AT THE  
IWRB MEETING**



**MATERIALS MAY BE PROVIDED AT THE  
IWRB MEETING**