



# AGENDA

## IDAHO WATER RESOURCE BOARD

---

**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

### **Joint Aquifer Stabilization & Planning Committee Meeting No. 2-19**

**June 26, 2019 at 10:00 a.m.**

Idaho Fish & Game  
324 S 417 E Ste #1  
Large Conf Room  
Jerome, Idaho

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1. Introductions and Attendance
2. ESPA CAMP Progress Report
  - a. Background on letter sent from Speaker Bedke
  - b. Proposed process and schedule
  - c. Brief discussion of progress towards targets included in the CAMP
  - d. CAMP Funding/Expenditures
  - e. Overview of SWC Settlement and progress towards meeting targets
3. ESPA Recharge Payment Structure
4. Adjourn

Aquifer Stabilization Committee Members: Bert Stevenson (Chair), Al Barker, Jeff Raybould, Roger Chase, & Vince Alberdi

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Planning Committee Members: Jeff Raybould (Chair), Al Barker, Bert Stevenson, Jo Ann Cole-Hansen, & Pete Van Der Meulen

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#### 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 [nikki.regent@idwr.idaho.gov](mailto:nikki.regent@idwr.idaho.gov) or by phone at (208) 287-4800.

SCOTT C. BEDKE  
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CASSIA & MINIDOKA COUNTIES



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## House of Representatives State of Idaho

SPEAKER OF THE HOUSE

May 8, 2019

Roger Chase, Chairman  
Idaho Water Resource Board  
PO Box 83720  
Boise, ID 83720-0098

Dear Mr. Chairman and Board Members,

Pursuant to Legislative authorization (see: 2006 SCR #136, 2007 HCR #28 and I.C. Section 42-1779), the Idaho Water Resource Board (IWRB) was directed to develop a Comprehensive Aquifer Management Plan (CAMP) for the Eastern Snake Plain Aquifer (ESPA). The IWRB completed that task and adopted the ESPA CAMP, in January 2009. Subsequently, the 2009 Legislature approved the ESPA CAMP as a component of the comprehensive State Water Plan, directing that all state agencies exercise their duties in a manner consistent with the ESPA CAMP (2009 HB #264). That legislation also directed the IWRB to prepare and submit to the Legislature for approval any subsequent proposed changes to the ESPA CAMP and also directed that the IWRB, in implementing the CAMP, should seek to optimize outcomes for irrigation, municipalities, fish and wildlife, recreation, hydropower, aquaculture and other uses.

As stated in the ESPA CAMP document, the overall goal is to "*sustain the economic viability and social and environmental health of the Eastern Snake Plain Aquifer by adaptively managing a balance between water use and supplies.*" This goal was to be achieved through specific objectives, which included managing the overall demand for water within the ESP, and increasing recharge to, and reducing withdrawals from, the aquifer. The CAMP also provided for the establishment of an Implementation Committee to assist the IWRB in the prioritization, development, implementation, monitoring and evaluation of CAMP management actions, and also an adaptive management component to support improved decision-making and water management actions over time. Finally, the CAMP directed the IWRB to conduct an evaluation of the CAMP after 10 years of implementation and make planning recommendations to the Legislature and the Governor's office.

By this letter, I am requesting the IWRB to complete this 10-year review and submit appropriate planning recommendations to the Legislature and the Governor's office by the start of the next regular legislative session. If this review and the time necessary to complete it is extended beyond this time frame, please make the IWRB available to provide



an update on the review and its progress. Please recognize the urgency in completing this review and address, among other things, the issues outlined below:

1. The ESPA CAMP establishes a long-term goal of 600,000 acre-feet (600 kaf) average annual change to the aquifer water budget with implementation to occur over a 30-year period. This water budget change was determined to be an appropriate long-term goal considering the then present and future water needs.
  - a. What progress has been made over the past 10 years toward achieving this long-term goal? Please identify how this progress has addressed the aquifer levels and river reach gains while allowing for assessment/airing of hydrologic, economic and environmental issues. Further, how has public involvement through the Implementation Committee been established?
  - b. Does the IWRB still consider this 600 kaf average annual water budget change to be an appropriate long-term goal? If not, what would be an appropriate long-term goal and what has changed or what new information has been developed to support the re-evaluation and re-setting of the long-term goal?
2. The ESPA CAMP adopted a mix of strategies, or actions, which it considered a "balanced approach" to modifying the aquifer water budget, and set hydrologic targets for each of these strategies. These included: ground water to surface water conversions (approximately 100 kaf/year), aquifer recharge (approximately 150/250 kaf/year), demand reduction (approximately 250-350 kaf/year) and a pilot weather modification program (initial Phase I target of 50 kaf/year with no long-term target).
  - a. What has been the progress in the implementation of each of these strategies and what is the current status of each?
  - b. Should changes or adjustments to the strategies be considered? If so, what adjustments does the IWRB recommend, and why?
  - c. With respect to aquifer recharge, has or should the IWRB consider private recharge as well as Board funded recharge in attaining the long-term goal?
3. The Legislature has provided \$5,000,000 in ongoing annual funding, as well as periodic one-time appropriations as funds were available, to the IWRB for, among other things, the implementation of the above CAMP strategies. Please provide an accounting of the funds expended in the implementation of each of these strategies in the first 10 years of CAMP implementation and an explanation regarding how funds were distributed.
4. Over the past several years, Idaho has experienced relatively good water years and a significant portion of the appropriated funds for CAMP have been expended on aquifer recharge. With reference to the IWRB recharge efforts:
  - a. Provide an assessment of the overall efficacy of the recharge program, including IWRB efforts to ensure that the various recharge events (IWRB or private) undertaken are reasonable in relationship to other uses and interests. In this context, reasonable is intended to mean:
    - i. That the specific recharge event provides sufficient benefit to the aquifer and the overall goal of achieving the 600 kaf annual change to

the water budget to justify the expenditure of funds on the recharge event, and

- ii. In considering the recharge event, the IWRB has sought to optimize outcomes for irrigation, municipalities, fish and wildlife, recreation, hydropower, aquaculture and other uses.

I look forward to hearing from you and continuing our cordial, collaborative and productive relationship.

Sincerely,

A handwritten signature in blue ink that reads "Scott Bedke". The signature is fluid and cursive, with the first and last names being clearly legible.

Scott Bedke  
Speaker

SB:mlm

cc: Office of the Governor  
Pro Tem Brent Hill  
Director Gary Spackman  
Deputy Director Mat Weaver  
Paul Arrington, Idaho Water Users Association  
Rep. Marc Gibbs, Chairman, House Resources & Conservation Committee  
Sen. Lee Heider, Chairman, Senate Resources & Environment Committee  
Sen. Steve Bair, Chairman, Senate Finance Committee  
Brian Patton, IWRB

# Eastern Snake Plain Aquifer (ESPA)

## Comprehensive Aquifer Management Plan



ADOPTED BY **Idaho Water Resource Board**

JANUARY 2009



BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF THE )  
EASTERN SNAKE PLAIN AQUIFER )  
COMPREHENSIVE AQUIFER MANAGEMENT )  
PLAN )  
\_\_\_\_\_ )  
RESOLUTION

WHEREAS, the Idaho Water Resource Board (IWRB), pursuant to its planning authorities in Article XV, Section 7 of the Idaho Constitution, and Idaho Code 42-1734A, has completed a Comprehensive Aquifer Management Plan for the Eastern Snake Plain Aquifer as requested by Senate Concurrent Resolution 136 passed and approved by the 2006 Idaho Legislature; and

WHEREAS, the Board is directed to identify goals and objectives, as well as make recommendations for improving, managing, developing or conserving the water resources of the aquifer in the public interest; and

WHEREAS, the Board has sought and received substantial public participation and comment throughout the planning process.

NOW, THEREFORE, BE IT RESOLVED that the IWRB hereby adopts the attached Comprehensive Aquifer Management Plan and directs that it be submitted to the Idaho Legislature.

DATED this 29h day of January, 2008.



TERRY T. UHLING, Chairman  
Idaho Water Resource Board



ATTEST  
BOB GRAHAM, Secretary

Attachment 1 to Meeting 3-09  
Date 1-29-09  
Idaho Water Resource Board

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## ACRONYMS & KEY TERMS

*Table 1 – Acronyms & Key Terms*

Committee	Eastern Snake Plain Aquifer Comprehensive Aquifer Management Plan Advisory Committee
BOR	United States Department of Interior Bureau of Reclamation
CAMP	Comprehensive Aquifer Management Plan
cfs	Cubic feet per second
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
ESPA	Eastern Snake River Plain Aquifer or Eastern Snake Plain Aquifer
EQIP	Environmental Quality Incentive Program
IDWR	Idaho Department of Water Resources (also abbreviated as “Department”)
IWRB	Idaho Water Resource Board (also abbreviated as “Board”)
kaf	Thousand acre-feet
M&E	Monitoring and Evaluation
Plan	Eastern Snake Plain Comprehensive Aquifer Management Plan
TEMP	Temperature Enhancement Management Program







## INTRODUCTION

House Concurrent Resolution No. 28, adopted in 2007, directed the Idaho Water Resource Board (Board) to pursue, with support from the Idaho Department of Water Resources (Department), development of a comprehensive aquifer management plan based on the recommendations made in the Eastern Snake River Plain Comprehensive Aquifer Management Plan Framework (Framework). The Framework was adopted by the Board in 2006 and set forth the overarching goals and objectives for the management of the Eastern Snake Plain Aquifer (ESPA).

This document presents a Comprehensive Aquifer Management Plan (Plan) for the ESPA. At the direction of the Governor and the Board, the Plan was developed collaboratively by the ESPA Advisory Committee (Committee).

This Plan in no way modifies or diminishes existing state water law, including the prior appropriation doctrine, or the power and duties of the Director of the Department.



## 1.0 EXECUTIVE SUMMARY

The ESPA region produces approximately 21 percent of all goods and services within the State of Idaho resulting in an estimated value of \$10 billion annually. Water is the critical element for this productivity.

The Plan establishes a long-term program for managing water supply and demand in the ESPA through a phased approach to implementation, together with an adaptive management process to allow for adjustments or changes in management techniques as implementation proceeds. Due to the inherent complexities in the management and responses of the river and aquifer to water budget changes, a very deliberate choice was made to incrementally implement the various mechanisms proposed in this Plan. The long-term objective of the Plan is to incrementally achieve a net ESPA water budget change of 600 thousand acre-feet (kaf) annually. It is projected that this hydrologic goal can be achieved by the year 2030 through implementation of a mix of management actions including, but not limited to, aquifer recharge, ground-to-surface water conversions, and demand reduction strategies. The Plan sets forth actions which stabilize and improve spring flows, aquifer levels, and river flows across the Eastern Snake Plain.

The goal of the Plan is to:

*"Sustain the economic viability and social and environmental health of the Eastern Snake Plain by adaptively managing a balance between water use and supplies."*

The objectives of the Plan are to:

1. Increase predictability for water users by managing for a reliable supply.
2. Create alternatives to administrative curtailment.
3. Manage overall demand for water within the Eastern Snake Plain.
4. Increase recharge to the aquifer.
5. Reduce withdrawals from the aquifer.

Immediate implementation of the Plan is necessary to achieve the stated goal and objectives.

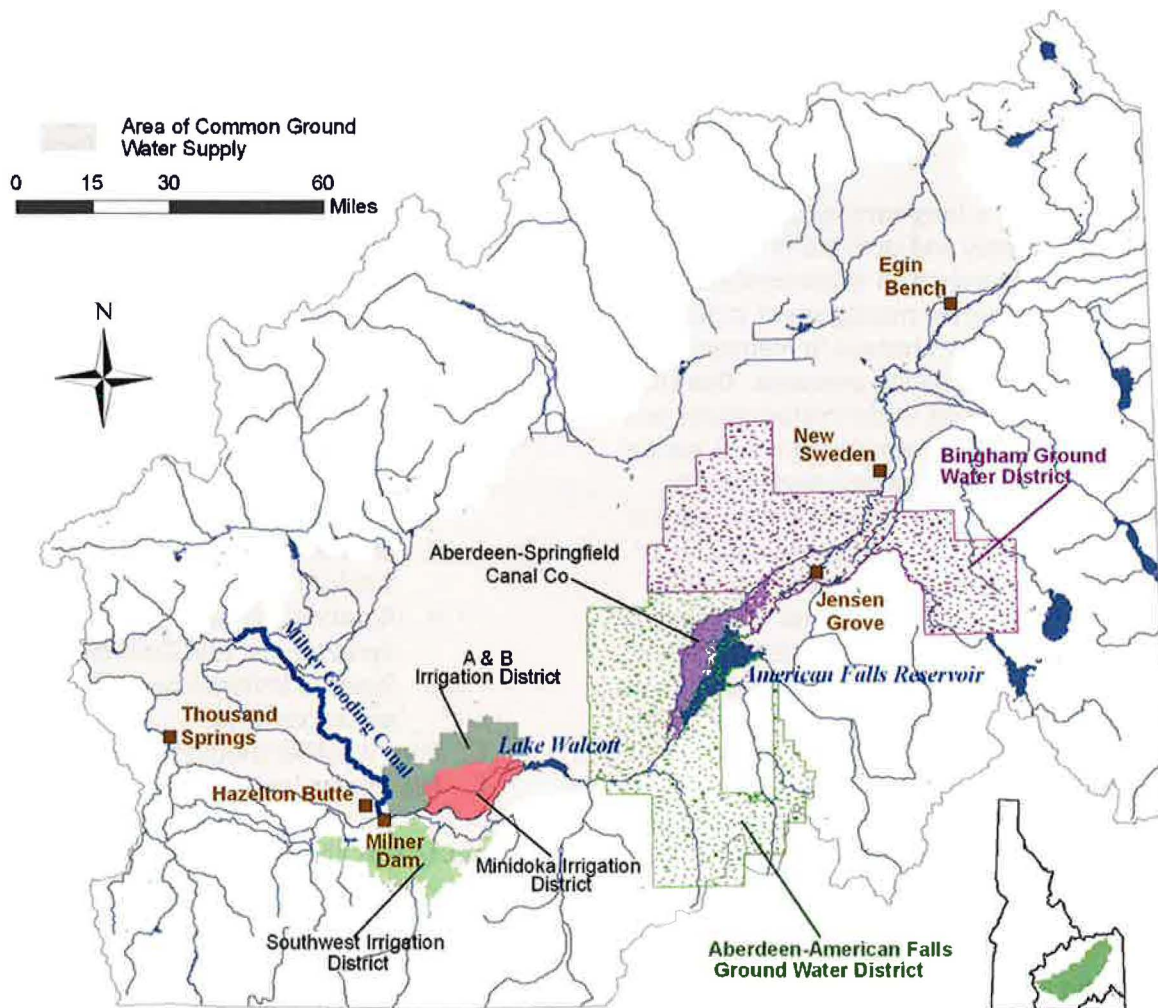
The Plan approaches the 600 kaf target in phases. The Plan Phase I (1-10 years) hydrologic target is a water budget change between 200 kaf and 300 kaf. Phase I includes site-specific implementation actions based on the anticipated hydrologic effect of those actions, as outlined in Section 3.2.1. The water budget adjustment mechanisms include:

- A. Ground water to surface water conversions.
- B. Managed aquifer recharge.
- C. Demand reduction, including:
  1. Surface water conservation.
  2. Crop mix modification in the Aberdeen/Bingham groundwater district.
  3. Buyouts, buy-downs, and/or subordination agreements.
  4. Rotating fallowing, dry-year lease agreements, and Conservation Reserve Enhancement Program (CREP) enhancements.
- D. Pilot weather modification program.
- E. Minimizing loss of incidental recharge.

To ensure that the valuable input of stakeholders continues during the implementation of Phase I and the design and implementation of subsequent phases, this Plan establishes an Implementation Committee. This committee will provide recommendations to the Board concerning Phase I implementation, assessment of Phase I effectiveness, definition of subsequent phases, and coordination of activities necessary for implementation. This committee will also evaluate the effectiveness and viability of continuing Plan implementation during Phase I. The Implementation Committee will include representation, at a minimum, from all interest groups currently represented on the ESPA Advisory Committee.



Figure 2 – Eastern Snake Plain Aquifer Region Key Locations



Although the Plan is built upon a substantial base of technical information and knowledge, it is recognized that present-day solutions may be refined and improved as new information and technologies are developed. Accordingly, the Plan includes an adaptive management component which requires ongoing coordination between the Board's staff and the Implementation Committee. The Plan provides for continued effort to identify and address all water use needs affected by this Plan, including the integration of environmental considerations in decision making.

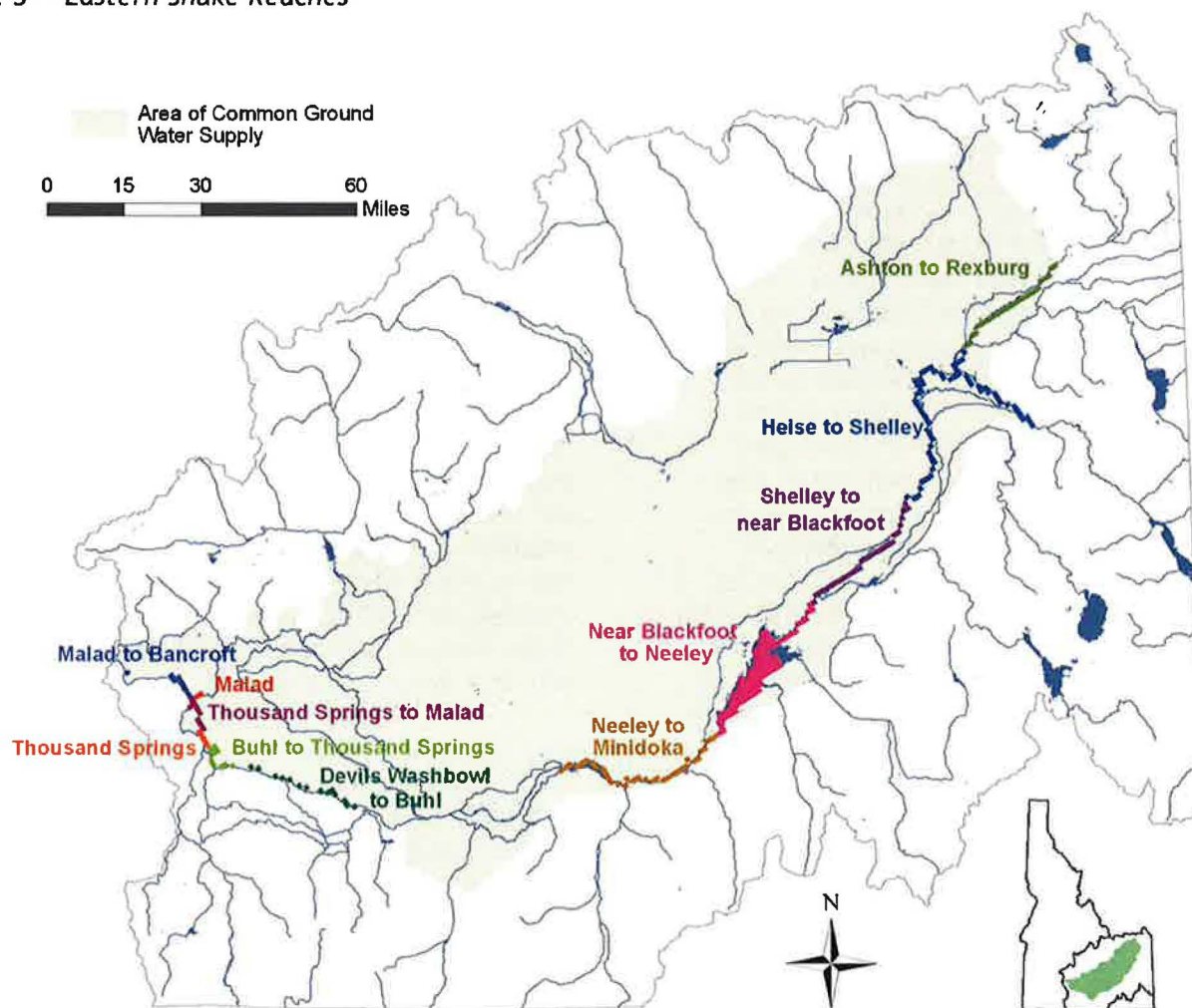
Full implementation of Phase I (10 years) is estimated to cost between \$70 million - \$100 million, or an estimated cost of \$7 - \$10 million annually. Subsequent phases and funding needs will be recommended by the Implementation Committee to the Board. Implementation funding will come from ESPA water users, state, federal, and private sources. This Plan is not designed to provide mitigation credit for any individual group, although it is expected that Plan implementation should reduce the demand for administrative solutions.

## 2.0 BACKGROUND

In response to declining aquifer levels and spring discharges and changing Snake River flows that resulted in insufficient water supplies to satisfy existing beneficial uses, the Idaho Legislature passed Idaho Senate Concurrent Resolution No. 136 in April 2006, and requested that the Board prepare and submit a comprehensive aquifer management plan for the ESPA. From the beginning, plan development took place in a public forum. After a series of public meetings with stakeholders, the Board presented the ESPA Plan Framework (Framework) to the Legislature on February 14, 2007.

The Framework recognized that supply of, and demands for, water are out of balance in the Eastern Snake River Plain and the connected Snake River, making more deliberate and coordinated management of surface waters of the Snake River and the underground waters of the ESPA a necessity. The Framework sets forth the overarching goal and objectives adopted by the Board for the management of the ESPA.

Figure 3 – Eastern Snake Reaches





As stated in the Framework, the goal of the Plan is to:

*“Sustain the economic viability and social and environmental health of the Eastern Snake Plain by adaptively managing a balance between water use and supplies.”*

The objectives of the Plan are to:

1. Increase predictability for water users by managing for a reliable supply.
2. Create alternatives to administrative curtailment.
3. Manage overall demand for water within the Eastern Snake Plain.
4. Increase recharge to the aquifer.
5. Reduce withdrawals from the aquifer.

The Framework outlined a process for development of the Plan that called for an advisory committee to prepare and recommend a plan to the Board. To that end, and pursuant to House Bill 320, the Board, in collaboration with the Governor, appointed stakeholder representatives to the ESPA Advisory Committee (see **Appendix A**). Beginning in May 2007, the Committee held monthly meetings. To ensure the process was transparent and inclusive, all meetings were open to the public and all related materials were posted on the ESPA website ([www.esaplan.idaho.gov](http://www.esaplan.idaho.gov)). In February 2008, the Board, with Committee recommendations, provided a Progress Report to the Natural Resources Interim Legislative Committee and outlined recommendations for initial water management actions (see **ESPA Plan technical documents at [www.esaplan.idaho.gov](http://www.esaplan.idaho.gov)**). The Board and Committee worked together to complete this Plan for submission to the 2009 Legislature.

### *2.1 Management Alternative Analysis*

Guided by the goal and objectives in the Framework, the Committee identified and

considered opportunities for managing available water supply and demand to address current and future water use needs including, but not limited to, those for irrigated agriculture, aquaculture, industry, hydropower, municipalities, real estate development, and domestic users and to protect environmental values. The Committee conducted a comparative analysis to assess the potential effects of a range of management options, including:

- Managed and incidental recharge.
- Groundwater to surface water conversions.
- Demand reduction strategies including but not limited to:
  - CREP.
  - Dry-year leasing and rotating fallowing.
  - Crop mix changes.
  - Buy-outs and subordination agreements.
  - Water conservation measures.
- Additional surface water storage.<sup>1</sup>
- Weather modification.
- Acquisition of water supplies below Milner Dam to meet Upper Snake River salmon flow augmentation obligations.

Working with the Committee, the Department developed alternative packages comprising a mix of these management options and analyzed each to ascertain the effects on reach gains and aquifer levels. The Department studied a range of potential water budget changes between 300 kaf and 900 kaf (see **ESPA Plan technical documents at [www.esaplan.idaho.gov](http://www.esaplan.idaho.gov)**). In addition, six packages of management strategies were examined to provide a comparison of the hydrologic benefit, economic consequences, and potential environmental impact of pursuing such actions.

### *2.2 Plan Implementation Benefits*

Water is a unifying and critical feature of the region. About one-third of Idaho's population resides on the Eastern Snake Plain. The ESPA is the sole source of drinking water for both cities and

<sup>1</sup>The Idaho Legislature and Board are evaluating the feasibility of additional surface water storage across the state in order to increase available water supply. Ongoing studies will outline the benefits, costs, alternatives and impacts of such projects.



most rural residents. Agriculture is the largest segment of the local economy and the largest consumptive user of water. There are roughly 2.1 million irrigated acres on the ESPA (about 60% of Idaho's total). Of the 2.1 million irrigated acres, 871,000 acres are irrigated from surface water, 889,000 acres are irrigated from ground water, and 348,000 acres are irrigated from both sources. Beyond irrigated agriculture, food processing and aquaculture facilities (both public and private) depend on an ample supply of ground water. Springs discharging from the ESPA also sustain fish and wildlife habitat and provide water quality benefits. Hydroelectric power generation, recreation, and fisheries are also dependent on river flows. Though small relative to agricultural uses, DCMI (domestic, commercial, municipal, industrial) water use is also increasing. Providing for these DCMI uses is vital to the future growth of state and local economies. The value of the goods and services produced in the ESPA region was estimated at \$10 billion in 2006.<sup>2</sup> This amounts to approximately 21 percent of all the goods and services produced in the State of Idaho.

Implementation of the Plan will meet the goal and objectives outlined in the Framework by:

- Improving aquifer levels (stabilization and potential enhancement).
- Increasing gains in some river reaches.
- Increasing water supply certainty for all users.
- Decreasing demand for litigation and administrative remedies.
- Allowing for municipal and industrial growth.
- Providing an ongoing public process for assessing the hydrologic, economic, and environmental issues related to the implementation of aquifer management strategies.

Implementation of the ESPA Plan will also provide a template of a collaborative planning process

that can be used in other regions in Idaho. In addition, proactive management of water supplies will help address variability in climatic conditions, including drought. The expected changes in the water budget, resulting from implementation of the management plan, should provide flexibility for future water management.

### *2.3 Consequences of Inaction*

The continued viability of irrigated agriculture, aquaculture, industry, hydropower, municipalities, future development, domestic uses and environmental resources will be adversely impacted if the current water supply trends continue on the ESPA. Implementation of the Plan is expected to change these trends and help protect the economic viability of Idaho as a whole.

Without increased precipitation and an adaptive plan to manage a balance between water use and supply in the ESPA, the following scenarios are expected:

- An escalation of conflict between water users.
- Increased litigation.
- Increased likelihood of ground water curtailment.
- Limited opportunities for community growth.
- More expensive water for industries and increased power costs, resulting in limited opportunities for economic and community growth.
- Adverse impact to the health of the state economy.

Inaction will result in continued uncertainty and instability for water users, increased vulnerability to changes in yearly supply, and less water for the expansion of municipal, industrial and commercial uses. Implementation of the Plan will provide certainty and stability and also provide a

<sup>2</sup>This figure was approximated by subtracting transfer payments from personal income on a county-level basis, using data published by the Bureau of Economic Analysis. This approach was recommended by Michael Ferguson, Idaho Chief Economist. Using this approach, the estimated value of goods and services produced in the ESPA region was \$10 billion in 2006.

mechanism for taking advantage of periodic wet years and high flow events when surplus water may be available. Without the additional infrastructure recommended by the Plan, the region will not have the ability to take advantage of wet years and high flow. This could mean lost opportunities for municipal, industrial, and commercial growth. It could also mean increased vulnerability to changes in yearly supply, especially a problem as available water is stretched to cover more needs.

The State of Idaho and the Board, by implementing a collaborative approach to water management, have demonstrated that different interests that depend on the aquifer, springs, and the river can work together to develop a comprehensive water management plan. Therefore, it is essential that the State and the Board continue to provide direction and financial support to implement the Plan. Those involved in the Plan process devoted significant time and effort toward educating

each other about their concerns and the ways in which different interests are affected by water management decisions. This process was vital to the development of the Plan and will continue through the establishment of an Implementation Committee that will assist the Board as it moves forward.



## 3.0 RECOMMENDATIONS

### 3.1 Long-Term Hydrologic Goal

The Plan establishes a long-term goal of 600 kaf average annual change to the aquifer water budget with implementation occurring over a 20-year period. A 600 kaf water budget change is considered an appropriate long-term goal considering present and future water needs, hydrologic impacts, and cost. It is currently estimated that achieving the long-term 600 kaf goal will cost more than \$600 million. Full implementation of the long-term goal is dependent on many variables including water availability and funding. As such, specific actions will need to be developed by the Board after consideration of the recommendations submitted by the Implementation Committee. The Plan, by adopting a mix of

strategies, represents a balanced approach to modifying the water budget. Specifically, the Plan includes aquifer recharge, groundwater to surface water conversions, and demand reduction efforts. Careful consideration was given to the following factors in the development of the long-term goal:

- Ability to target actions to accomplish specific hydrologic goals in specific locations.
- Time frame and ease of implementation.
- Environmental and economic impacts.
- Practicality, including financing and public and political acceptance.

The Plan provides for the implementation of the following management strategies:

<b>Ground Water to Surface Water Conversions</b>	Approximately 100 kaf/year annual average (by acquiring water supplies below Milner Dam to replace water required from the Upper Snake River for salmon flow augmentation).
<b>Aquifer Recharge</b>	Approximately 150-250 kaf/year (using the Board's natural flow water permit and storage water when available).
<b>Demand Reduction</b>	Approximately 250-350 kaf/year (using voluntary mechanisms based on the principle of willing seller/willing buyer to reduce aquifer and spring flow demands, including CREP, purchases, subordination agreements, fallowing and crop mix changes, and other mechanisms).
<b>Pilot Weather Modification Program</b>	Implement a 5-year pilot weather modification project in the Upper Snake River Basin and potentially the Wood River system, with state, local and other agency support. Include a detailed monitoring program for the weather modification program.

Table 2 – Plan Hydrologic Targets

PLAN HYDROLOGIC TARGETS		
ACTION	PHASE I TARGET (KAF)	LONG-TERM TARGET (KAF)
Ground Water to Surface Water Conversion	100	100
Managed Aquifer Recharge	100	150-250
Demand Reduction		250-350
<i>Surface Water Conservation</i>	50	
<i>Crop Mix Modification</i>	5	
<i>Rotating Fallowing, Dry-Year Lease Agreements and CREP Enhancements.</i>	40	
<i>Buy Outs, Buy Downs, and/or Subordination Agreements</i>	No Target (Opportunity-Based)	
Weather Modification	50*	No Target
<b>TOTAL</b>	<b>200-300</b>	<b>600</b>

\*50 KAF was used in hydrologic modeling, based on a conservative estimate provided in the Upper Snake Weather Modification Feasibility Study.

### 3.2 Phase I Hydrologic Targets

The Phase I (1 - 10 years) hydrologic target is an average annual water budget change between 200 kaf and 300 kaf. Hydrologic analysis of Phase I implementation demonstrates significant hydrologic benefit across the ESPA. Phase I recommendations include site-specific implementation actions and the expected hydrologic effect of those actions. While implementing Phase I, it will be important to identify any unintended adverse consequences of such actions.

The following hydrographs provide an example of the benefits of Phase I actions. These hydrographs

simulate the river reach gains and ground water level changes that would have occurred had Phase I actions been implemented in water years 1980 through 2005. Actual changes in the water budget will vary depending upon future climatic conditions and when the actions are implemented.

Monitoring and evaluation is an important component of each action. Monitoring and evaluation is required to assess the progress and effectiveness of each action and will assist in the development and implementation of future actions. In implementing Phase I, the Board will continue to solicit advice and recommendations from the Implementation Committee and the public.



Figure 4 – Snake River: Ashton to Minidoka Reach

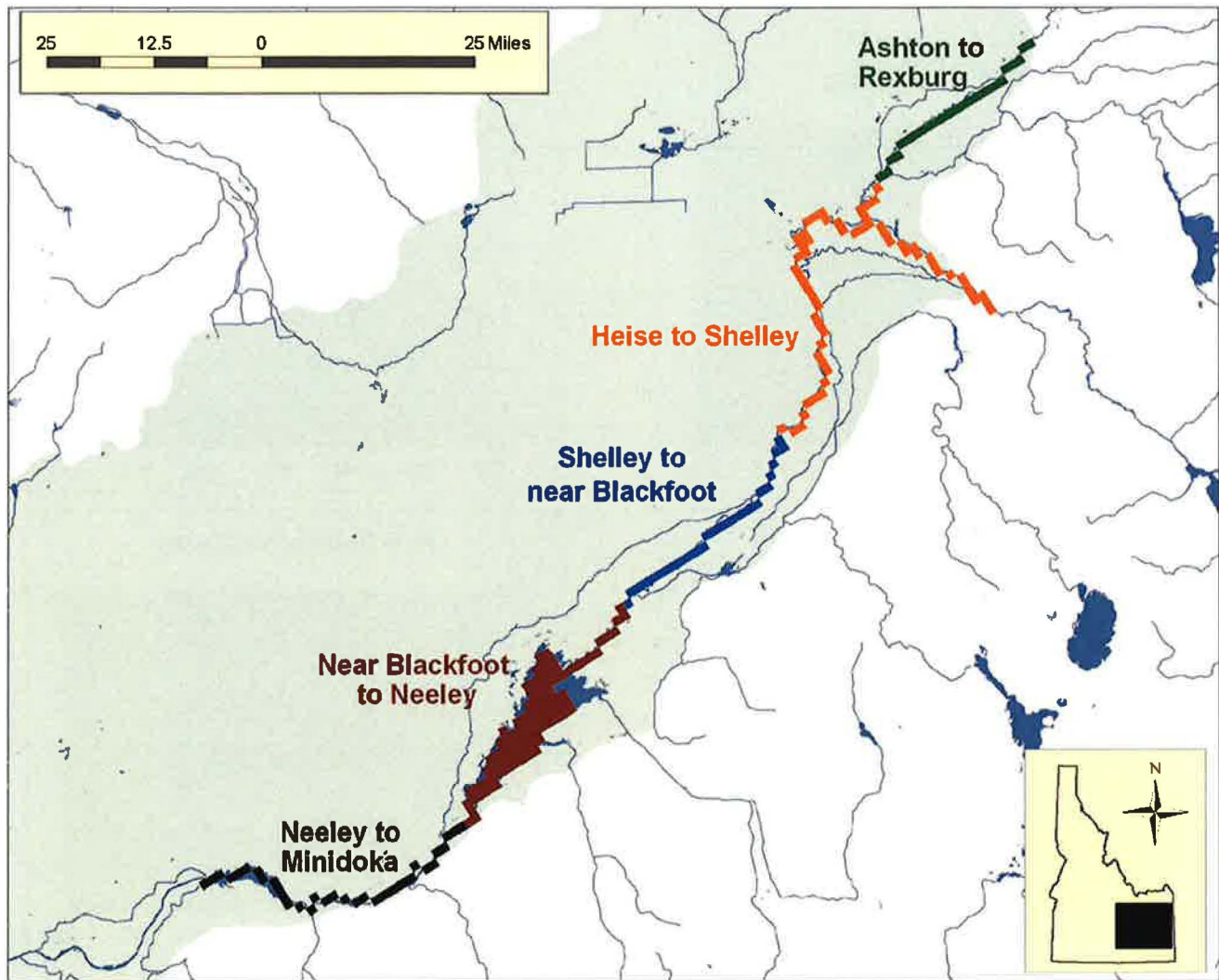


Figure 5 – Hydrographs of Simulated River Reach Gains Resulting from Phase I Implementation, in the Ashton to Minidoka Reach

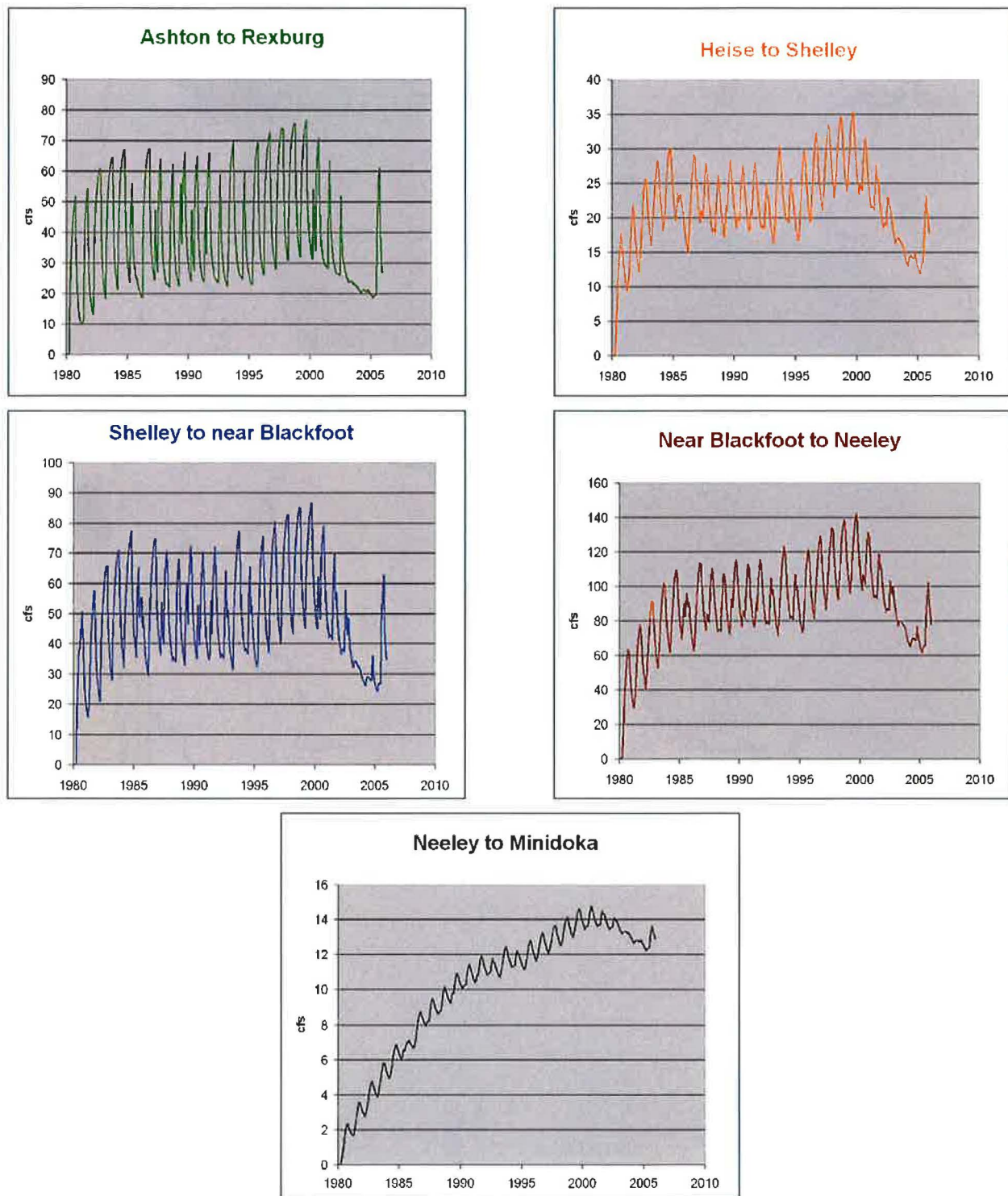


Figure 6 – Snake River: Devils Washbowl to Bancroft Reach

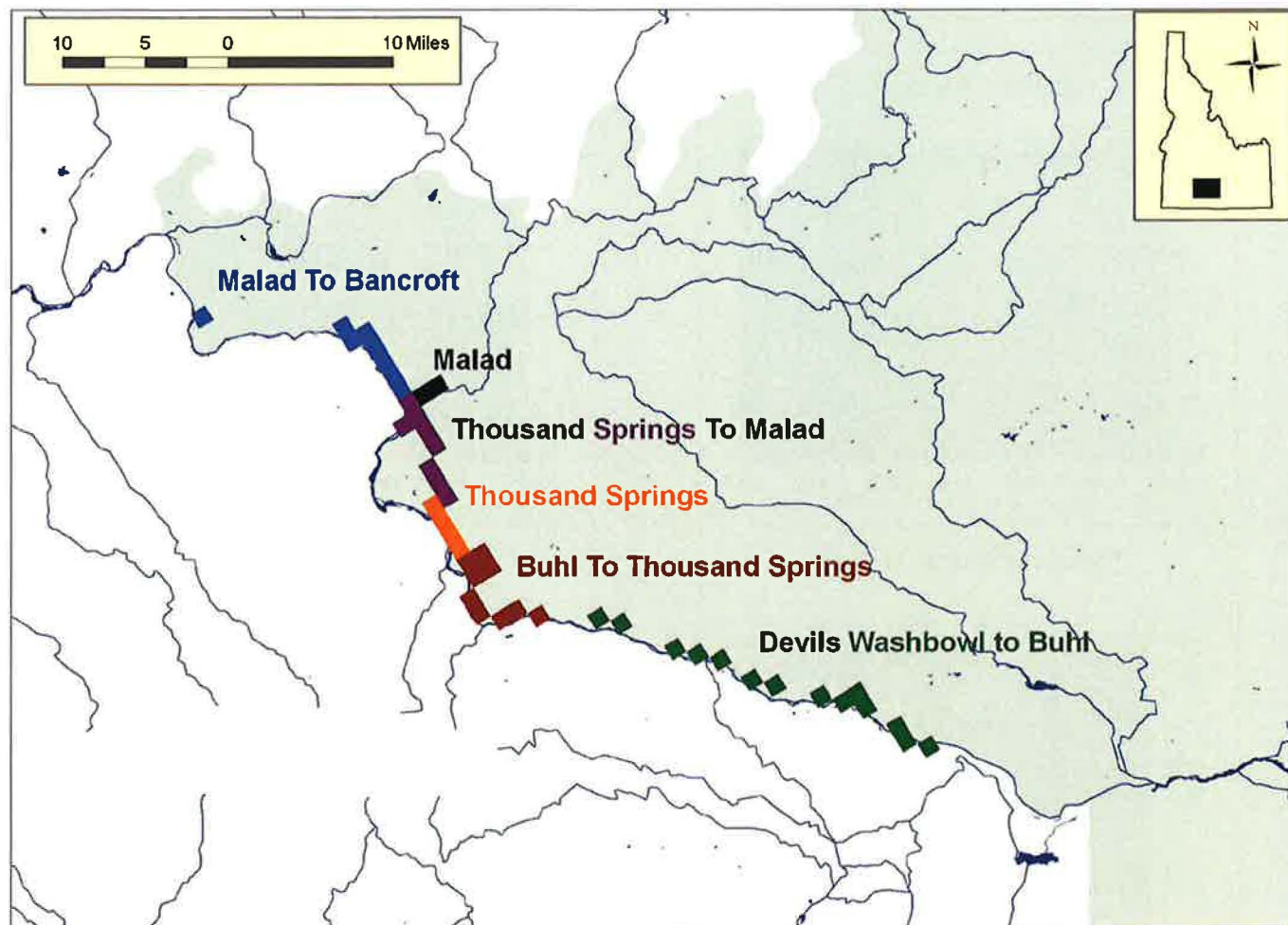




Figure 7 – Hydrographs of Simulated River Reach Gains Resulting from Phase I Implementation in the Devils Washbowl to Bancroft Reach

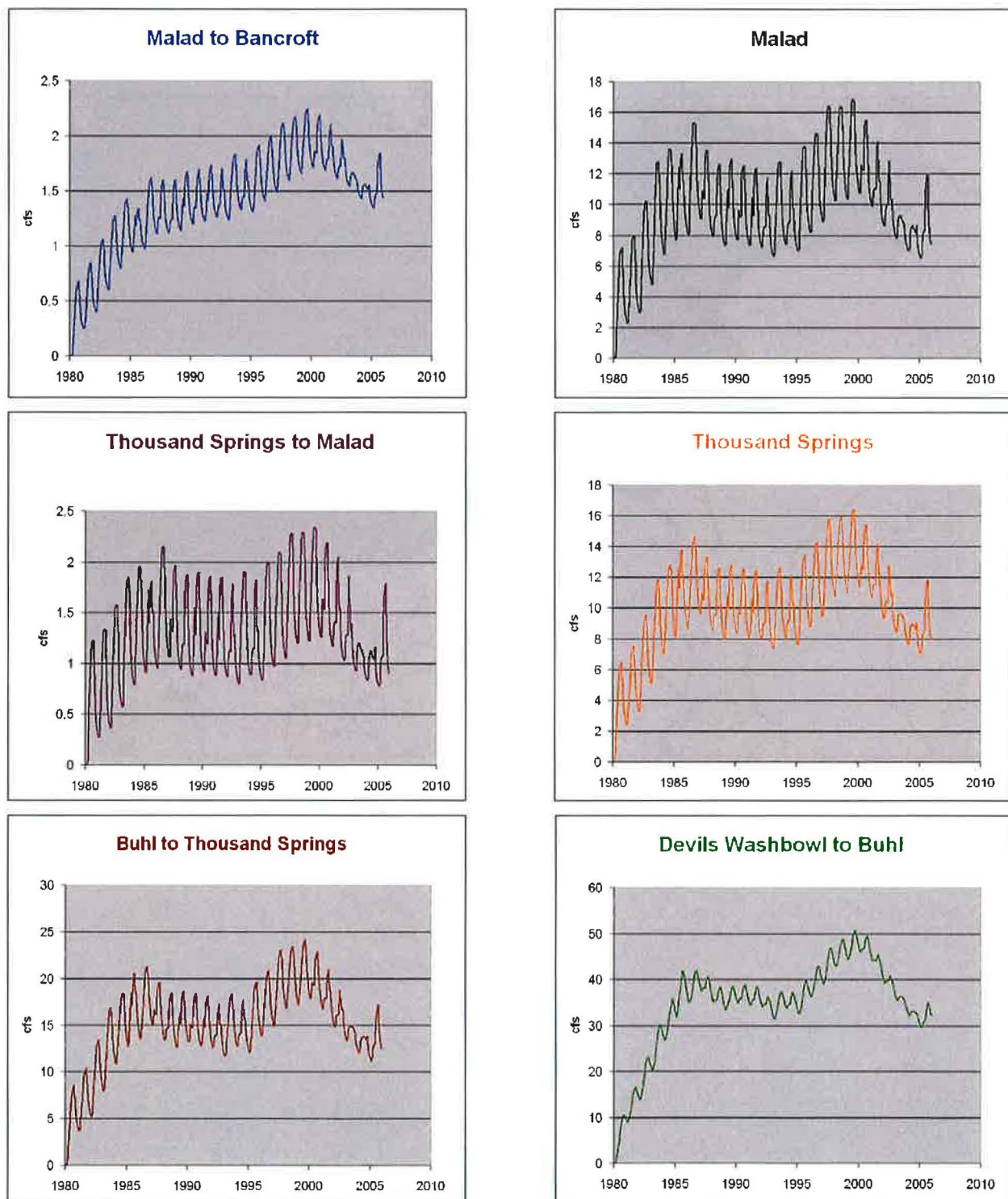


Figure 8 – Locations of Hydrographs Shown in Figure 9

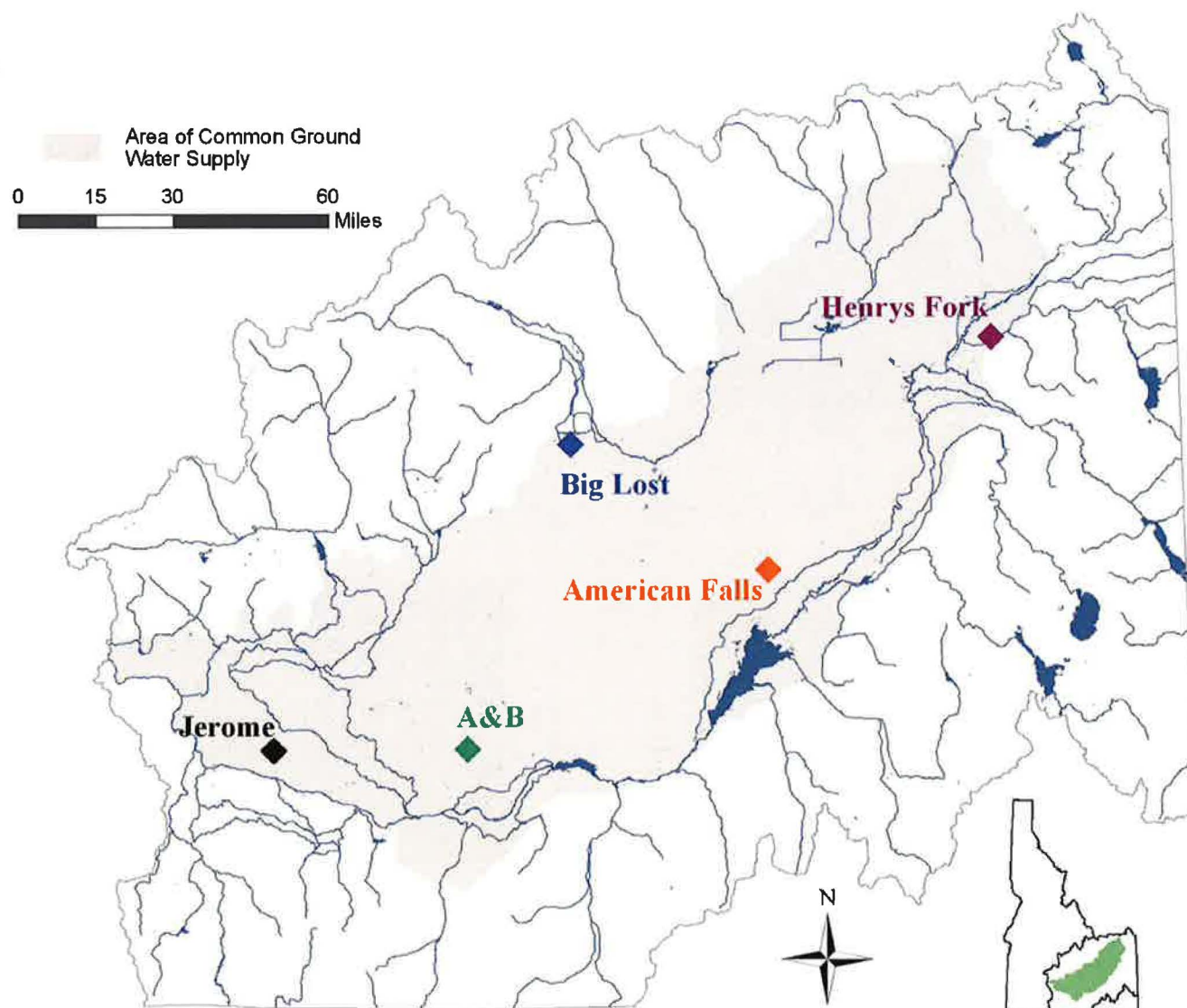
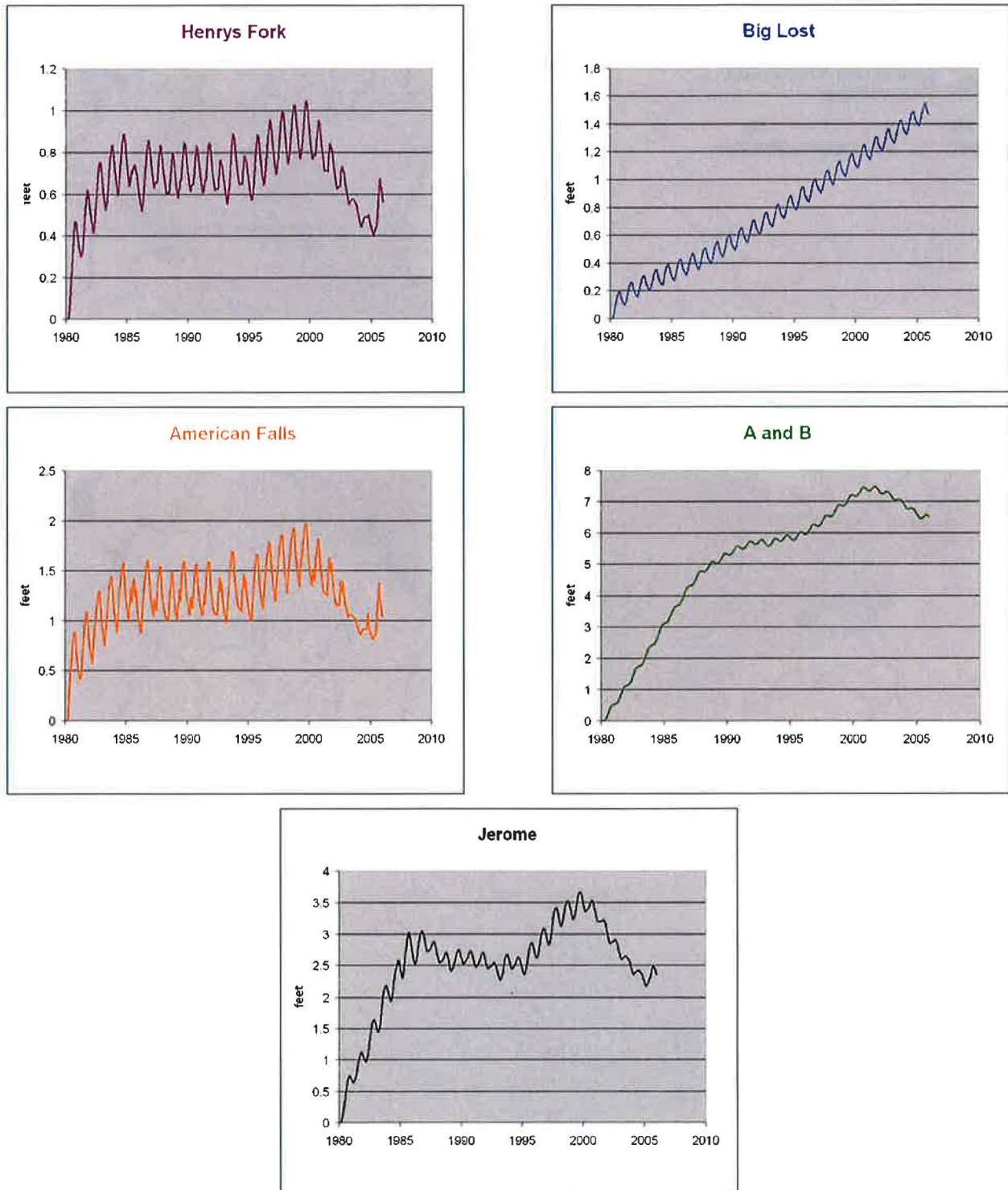


Figure 9 – Hydrographs of Simulated Groundwater Level Changes at Selected Locations Resulting from Phase I Implementation





### 3.2.1 Phase I Actions

#### A. Ground Water to Surface Water Conversions

GOAL:	IMPLEMENT 100 KAF ANNUAL AVERAGE BY YEAR 5
Actions:	<ul style="list-style-type: none"><li>• Opportunistically pursue conversions equally above and below American Falls.</li><li>• Conversion opportunities include Hazelton Butte (estimated 9,000 acres); A&amp;B service area through Milner Gooding canal and Minidoka Irrigation District; Aberdeen Springfield (lower end of system); South side of Minidoka (WD 140); Southwest Irrigation District, and others.</li></ul>
Issues:	<ul style="list-style-type: none"><li>• Examine capacity above American Falls for conversions (new wells in the last 40 years) on land previously using surface water.</li><li>• Opportunistically acquire Snake River water below Milner Dam, or from other tributary basins, to be exchanged for flow augmentation water with consideration of potential third party impacts including but not limited to impacts on water quality, aquatic resources, and hydropower.</li><li>• Opportunistically acquire upstream surface water rights on flow-limited streams and transfer them downstream to achieve both conversions and stream flow restoration.</li><li>• Execute conversions during the spring and fall shoulder seasons as well as during irrigation season as capacity allows.</li><li>• Coordinate with the United States Department of the Interior, Bureau of Reclamation (BOR) operations and other interested parties to plan for conversions and optimize outcomes for fish and wildlife, surface water quality, and recreation.</li><li>• Identify sites and conduct engineering during winter 2009, focusing on high-lift pump areas.</li><li>• Implement initial conversions by 2010 crop year.</li><li>• Assume that a portion of costs may be born by irrigators who benefit from conversion (e.g., reduced power costs and value of water "on the land"). This is potentially the least expensive option available, although incentives will likely be needed to implement conversions.</li><li>• Evaluate impact on surface water availability and the reservoir system operations.</li></ul>

## B. Managed Aquifer Recharge

GOAL:	IMPLEMENT 100 KAF ANNUAL AVERAGE BY YEAR 5
Actions:	<ul style="list-style-type: none"><li>• 20 kaf of recharge above Blackfoot on the Egin Bench including both fall and spring recharge efforts. Evaluate results of fall 2008 recharge pilot project using storage water. Consider further recharge efforts in consultation with the Committee of Nine and with consideration of Henry's Fork winter flows.</li><li>• 30 kaf of recharge above American Falls on Jensen Grove, Aberdeen Springfield Canal, and New Sweden systems, and with consideration of South Fork Snake River springtime flows.</li><li>• 30 kaf of recharge that impacts the Thousand Springs Reach on the North Side Canal Company, Milner Gooding Canal. Explore opportunities for small scale targeted recharge in the Thousand Springs reach.</li><li>• Explore recharge options on the north side of Lake Walcott.</li><li>• 20 kaf estimated to maximize use of the Board's recharge water permit, Wood River Legacy transactions, and/or flood control releases on the Wood River system.</li><li>• Develop and implement a detailed monitoring plan to assess the efficacy of recharge efforts.</li></ul>
Issues:	<ul style="list-style-type: none"><li>• Attempt to maximize recharge efforts on an annual basis unless recharge significantly impacts available supply for conversions or adversely effects ground water quality.</li><li>• Prioritize the continued study of a recharge site at Lake Walcott. A recharge site in this area is expected to have positive effects on spring discharge above American Falls and at Thousand Springs. Use measurement and monitoring tools to demonstrate reach gain benefits.</li><li>• Coordinate with BOR operations and other interested parties to plan for recharge efforts and optimize outcomes for fish and wildlife, surface and ground water quality, hydropower and recreation.</li><li>• Develop long-term contracts with canal companies to deliver recharge water when the Board's permit is in priority.</li><li>• Opportunistically acquire upstream surface water rights on flow-limited tributary streams and transfer them downstream to achieve both ground water recharge and stream flow restoration.</li></ul>

## C. Demand Reduction

### 1. Crop Mix Modification in the Aberdeen/Bingham Groundwater District

<b>GOAL:</b>	<b>5 KAF PER YEAR AFTER YEAR FIVE</b>
<b>Actions:</b>	<ul style="list-style-type: none"><li>• Implement a pilot project, administered through Aberdeen-American Falls and Bingham Groundwater Districts that targets a reduction of groundwater use through alternate cropping patterns (e.g., exchanging hay for grain).</li><li>• The program targets a reduction in ground water use of an average of 5 kaf annually by Year 5. Year 1 includes a 1 kaf target and the target increases 1 kaf per year until Year 5.</li><li>• Aberdeen/Bingham Groundwater District will determine most effective methods to accomplish targets.</li></ul>

### 2. Surface Water Conservation

<b>GOAL:</b>	<b>MOST EFFICIENT USE OF AVAILABLE SURFACE WATER SUPPLY, 50 KAF</b>
<b>Actions:</b>	<ul style="list-style-type: none"><li>• Evaluate opportunities for surface water conservation measures.</li><li>• Construct check structures and automated gates, equalizing reservoirs and pump backs and investigate reducing transmission loss at specific areas where transmission loss does not benefit a ground water user or spring water user without impacting incidental recharge, thereby reducing return flows and saving water to be used for additional conversions.</li><li>• Explore federal grants to leverage state monies and reduce cost to canal companies.</li></ul>
<b>Issues:</b>	<ul style="list-style-type: none"><li>• All conservation efforts will be site specific and examined on a case-by-case basis to ensure desired results.</li><li>• Hydrologic effects of conservation actions could include an increase in natural flow and storage, and may provide water supply for conversions.</li><li>• Pursue incentives for conservation activities and quantify hydrologic benefits, including water quality benefits from reduced return flows.</li></ul>



### 3. Buyouts, Buy-downs and/or Subordination Agreements

GOAL:	NO PHASE I TARGET - OPPORTUNITY-BASED
Actions:	<ul style="list-style-type: none"><li>• Opportunistically pursue buyouts, buy-downs, and/or subordination agreements across the ESPA, including in the Thousand Springs reach.</li><li>• Set aside financial resources to enable transactions.</li><li>• Pursue opportunities for environmental enhancements as a component of such agreements.</li></ul>

### 4. Rotating Fallowing, Dry-Year Lease Agreements and CREP Enhancements

GOAL:	NO PHASE I TARGET BUT ASSUMING CONTINUATION OF THE 40 KAF THAT HAS ALREADY BEEN ACHIEVED THROUGH CREP
Actions:	<ul style="list-style-type: none"><li>• Implement dry-year lease options proportionally above and below American Falls.</li><li>• Develop a predictable and defined system to implement rotating fallowing program.</li><li>• Employ Dry-year Lease Options that use storage water to provide water supply and incentives for conversions.</li><li>• Pursue opportunities to leverage federal resources by providing additional incentives to increase CREP participation. Pursue other opportunities to increase CREP enrollment.</li><li>• Utilize the State Water Fund, or other sources as available, to provide seed money for demand reduction projects.</li><li>• Pursue opportunities for environmental enhancements as a component of such agreements.</li></ul>
Issues:	<ul style="list-style-type: none"><li>• Develop specific demand reduction program to implement and generate funds by the end of 2009.</li><li>• Explore programs that may reduce ground water demands during dry years and programs that would have an impact on river flows during the growing season.</li></ul>

#### D. Pilot Weather Modification Program

<b>GOAL:</b>	<b>SURFACE WATER SUPPLY ENHANCEMENT, UNDETERMINED QUANTITY</b>
<b>Actions:</b>	<ul style="list-style-type: none"><li>• Implement a cooperative 5-year pilot weather modification project designed to increase winter snowpack in the Upper Snake River Basin and potentially the Wood River system.</li></ul>
<b>Issues:</b>	<ul style="list-style-type: none"><li>• Develop plan in 2009 and implement during winter 2010.</li><li>• Design and implement a detailed monitoring and evaluation program.</li><li>• Idaho Power Company has agreed to work with the State and interested counties to implement the experimental project.</li><li>• Coordinate with the State of Wyoming regarding potential program partnership.</li><li>• Develop procedures to suspend weather modification activities during heavy precipitation periods when additional rain or snow may increase the risk of flooding, or have adverse consequences for fish and wildlife resources and the public safety.</li></ul>

#### E. Incidental Recharge

<b>GOAL:</b>	<b>NO REDUCTION IN INCIDENTAL RECHARGE OVER THE ESPA DURING THE 10 YEAR PHASE I PLAN</b>
<b>Action:</b>	<ul style="list-style-type: none"><li>• Recognize the role of incidental recharge.</li><li>• Work with canal managers and funding agencies that are implementing water conservation measures to offset the effects of conservation to the aquifer.</li></ul>

#### F. Plan Implementation and Growth

<b>GOAL:</b>	<b>IDENTIFY AND ADDRESS IMPEDIMENTS TO MUNICIPAL, INDUSTRIAL, AND COMMERCIAL GROWTH.</b>
<b>Actions:</b>	<ul style="list-style-type: none"><li>• Review administrative rules and processes that may be an impediment to growth and implementing Plan management actions; take administrative steps to assure that water is available to sustain future economic growth.</li></ul>



### 3.2.2 Additional Plan Components

In addition to the overall hydrologic goal and Phase I implementation steps, the Plan includes the following actions to enhance coordination, decision making, and aquifer management.

#### **A. Plan Implementation Committee –**

The Board will establish an Implementation Committee to assist in the implementation of the Plan. The Implementation Committee will assist the Board in the prioritization, development, implementation, and monitoring and evaluation of management actions. The Implementation Committee will consider and recommend actions and objectives to stabilize and improve spring flows and aquifer levels and effect changes in river flows. The Implementation Committee will include, but not be limited to, interest groups currently represented on the Advisory Committee. The Implementation Committee will also establish a coordination process that provides for the sharing of information on river and aquifer management actions and provides opportunity for public involvement. The Implementation Committee will serve at the pleasure of the Board and provide a forum for public participation. Board's staff and/or contractors will facilitate the work of the Implementation Committee and provide the technical information needed for its deliberations. The Board will continue to make all final decisions concerning Plan project priorities, implementation, and funding.

#### **B. Environmental Considerations –**

The Plan integrates environmental and other considerations into the decision-making and implementation process. With the advice of the Implementation Committee, the Board, through implementation of the Plan, will seek to optimize outcomes for fish and wildlife, recreation, hydropower, municipalities,

irrigation, aquaculture, and other uses. Where feasible, the Board will pursue opportunities for cooperative program and funding arrangements that may expand resources available for optimizing environmental resources.

#### **C. Clearinghouse –**

During implementation of Phase I, options for implementing a flexible mechanism that connects willing participants in the implementation of ESPA water management projects will be considered as well as strategic approaches to implement recharge, conversion, and demand reduction strategies using a clearinghouse structure.

#### **D. Outreach and Education –**

During Phase I, the Implementation Committee will help develop and recommend funding mechanisms for a broad water education and outreach effort, building on existing water user outreach efforts and programs, with an initial emphasis on local governments, domestic well owners, and consumptive water users.

#### **E. Management Flexibility & Innovation –**

The Board will pursue and implement the most cost effective water management tools that achieve the overall goals and objectives for improving the ESPA. In addition, innovative approaches that can improve water supplies available for conversion, recharge, and/or enhancement of surface supplies will be identified for consideration.

#### **F. Downstream Transfer Policy –**

Opportunities for providing water for recharge and conversion projects through downstream transfers of surface water rights to the ESPA in a manner that enhances flows in flow-limited tributaries will be identified. Such transfers should be consistent with state law, policy and programs and utilize the water supply bank wherever appropriate.



### 3.3 Phase I Implementation Plan

A Phase I Implementation Plan will be developed within the first year of Plan approval. The Implementation Plan will outline the sequence of implementation steps and identify research and funding requirements and sources, required legislation and monitoring and evaluation protocols. The Implementation Plan will also describe an operating protocol to ensure continued public involvement and participation. The

Board's staff and/or contractors will work with the Implementation Committee and the Board to finalize and approve the Implementation Plan.

The proposed plan outlined in the following table represents a multi-pronged approach for funding the Phase I actions over a 10-year period (see **Appendix B**). The Implementation Plan will further define the outlined necessary funding strategies and mechanisms. Funding participation targets are identified for each water user category.

Table 3 – Phase I Funding Participation Targets

WATER USER CATEGORY	PHASE I FUNDING PARTICIPATION TARGETS
Irrigated Agriculture (groundwater and surface water)	\$3 million annually (based on participation of \$2 million annually for ground water users and \$1 million annually for surface water users)
Idaho Power Company/Co-Ops	\$1 million - \$1.5 million annually (for projects that qualify for TEMP) <sup>3</sup>
Municipalities	\$700,000 annually (includes commitment to address rules and statutes that may inhibit municipal growth)
Spring Users	\$ 200,000 annually (based on cfs)
Industrial/Commercial Users (not in municipalities or groundwater districts)	\$150,000 annually (based on estimated 15 kaf annually)
State of Idaho	\$3 million annually
Federal	Pursue EQIP/Water America Initiative/CREP and other funding opportunities
Recreation/Conservation	Pursue grants and other funding opportunities

<sup>3</sup>In connection with the relicensing of the Hells Canyon hydroelectric project, Idaho Power Company has proposed to implement a Temperature Enhancement Management Program (TEMP) as part of the Clean Water Act Section 401 water quality certification process. Through the TEMP, Idaho Power Company intends to develop, fund and implement watershed management and enhancement projects that will assist in ameliorating Snake River water temperature conditions. Idaho Power Company will work with the Implementation Committee and Board to identify Plan actions that qualify for inclusion in the TEMP. The § 401 application is currently pending before the Idaho Department of Environmental Quality and has not yet been approved.

It is estimated that \$70 million - \$100 million dollars will be needed to implement the Phase I, 200-300 kaf annual change in the ESPA water budget.<sup>4</sup> The ESPA water users<sup>5</sup> have conceptually agreed to contribute 60% of the required funds, with the State of Idaho contributing the balance. In addition, other potential sources of funding, including federal and private sources, will be identified and secured to advance implementation of the Plan.

All fees and assessments collected for Plan implementation and accrued interest will be deposited into a dedicated sub-account within the Board's Revolving Development Fund. The Board, with consideration of the recommendations of the Implementation Committee, legislature, and Governor's office, will make all final decisions concerning project priorities and implementation and allocation of funds from the dedicated sub-account.

<sup>4</sup>Not including operations and maintenance costs.

<sup>5</sup>Including consumptive and non-consumptive industries and municipalities.



## 4.0 ADAPTIVE MANAGEMENT

This section sets forth an adaptive management strategy for implementation of the Plan. The goal of adaptive management is to support improved decision-making and performance of water management actions over time.

Key principles fundamental to this approach include:

1. Anticipating possible future uncertainties and contingencies during planning.
2. Employing science-based approaches to build knowledge over time.
3. Designing projects that can be adapted to uncertain or changing future conditions.

Adaptive management involves taking actions, testing assumptions, and then monitoring and adapting/adjusting the management approach as necessary. It is a way of taking action - even in the face of uncertainty - in a complex system with many variables and constant change. Developing perfect knowledge concerning any system, including the ESPA, is impossible, and therefore an adaptive management approach is critical to the successful attainment of the qualitative and quantitative goals set forth in the Plan. Successful adaptive management requires patience and long-term commitment, as acquiring enough data to make decisions about program changes takes time.

The adaptive management strategy will allow the Board to:

- Develop protocols for revising management actions and/or quantitative targets as necessary.
- Compare costs and impacts of different actions to manage and improve the water budget in the ESPA.
- Adjust funding allocation between projects to get the most “bang for the buck.”
- Concentrate funding on management actions that show results.

- Make adjustments and revisions to the Plan as new information becomes available or in response to changing water supply and demand needs.
- Proceed with flexibility depending on results and analysis of monitoring and measurement data.

### *4.1 Coordination & Implementation*

Management of the ESPA affects numerous stakeholders and the State of Idaho. Effective implementation of the Plan will require the participation and cooperation of stakeholders and governmental entities with jurisdictional authorities and responsibilities. The Implementation Committee will be charged with providing guidance and recommendations concerning the implementation of management strategies and review of goals and objectives. The Implementation Committee will provide a forum for discussing Phase I implementation, establishing benchmarks for evaluating the effectiveness of actions, coordinating with water users and managers, evaluating and addressing environmental issues and identifying and pursuing funding opportunities.

The Implementation Committee will include interest groups currently represented on the ESPA Advisory Committee. In addition, the Board will appoint at least one of its members to serve as a liaison between the Committee and the Board. The Implementation Committee will serve at the pleasure of the Board and provide a forum for public participation. Board’s staff will facilitate the work of the Implementation Committee and provide the technical information needed for its deliberations. The Board will make all final decisions concerning Plan project priorities, implementation, and funding.



#### *4.2 Monitoring & Evaluation*

A monitoring plan has been funded and developed for the ESPA, but additional monitoring and evaluation will likely be required beyond the existing program. The ground water model (and other modeling tools) are subject to technical review by the Eastern Snake Hydrologic Modeling Committee on a periodic basis. As various water budget adjustment programs are implemented, additional monitoring or modifications to the modeling program will likely be needed, e.g., specific projects may require site specific measurement and analysis, which are not currently provided. Additional modeling scenario analysis will likely be required to assist the Board and the Implementation Committee in the implementation process. Additionally, increased measurement of water use across the ESPA and an increased understanding of the hydrogeologic complexity of the aquifer are necessary to inform and raise public awareness about this valuable resource during the planning and management process.

With data gathered through the monitoring process, the Implementation Committee and Board's staff will be able to assess the impacts of each management activity. In some cases, it may take a number of years to obtain sufficient data to achieve a comprehensive understanding of the effects of particular actions. Regardless, the success of the Plan depends upon the development and maintenance of state-of-the-art monitoring and evaluation tools that provide the information necessary to make sound planning decisions for the future.

#### *4.3 Legislative Reporting and Plan Revision*

The Board will provide periodic reports to the legislature documenting the progress made on the implementation of the Plan. The Board will evaluate the Plan after 10 years of implementation for Phase I, and make planning recommendations to the legislature and Governor's office.

## 5. APPENDICES

### PLAN TECHNICAL DOCUMENTS

Technical documents were used to design Phase I actions and these and other technical information will guide the Implementation Committee. These and all Plan-related materials can be found at [www.esaplan.idaho.gov](http://www.esaplan.idaho.gov) in the Technical Document folder.

#### APPENDIX A – Advisory Committee Membership List

	REPRESENTATIVE	ALTERNATE
MUNICIPALITIES/COUNTIES	Mayor Lance Clow, City of Twin Falls Mayor Fuhrman, City of Idaho Falls	Mayor Correll, City of Jerome Mayor Roger Chase, City of Pocatello
BUSINESS	Alex S. LaBeau, IACI President	
LAND DEVELOPERS	Rebecca Casper, Ball Ventures LLC	Bob Muffley, Board of Realtors/ Mid-Snake Commission
SURFACE WATER USERS	Jeff Raybould, Fremont-Madison Irrigation District Randy Bingham, Burley Irrigation District Vince Alberdi, Twin Falls Canal Company	Lloyd Hicks, Rigby Steve Howser, Aberdeen-Springfield Canal Company Albert Lockwood, Northside Canal Company
GROUND WATER USERS	Don Parker, Water District 110-100 Tim Deeg, Water District 120 Dean Stevenson, Water District 130-140	Scott Clawson, Water District 110-100 Craig Evans, Water District 120 Lynn Carlquist, Water District 130
SPRING WATER USERS	Randy MacMillan, Clear Springs Foods, Inc.	Linda Lemmon, Thousand Springs Water Users Association
HYDROPOWER	James Tucker, Idaho Power Company	Dee Reynolds, Fall River Electric
DOMESTIC WELL OWNERS	George Katseanes, Blackfoot	

	REPRESENTATIVE	ALTERNATE
ENVIRONMENTAL AND CONSERVATION INTERESTS	Kim Goodman, Trout Unlimited	Will Whelan, The Nature Conservancy
MIXED-USE INTEREST	Dan Schaeffer, A&B Irrigation District	Stan Standal, Spring Water User
COUNTY ASSESSOR	Max Vaughn, Minidoka County	Steven Seer, Bonneville County

AGENCY PARTICIPANTS	
IDAHO DEPARTMENT OF WATER RESOURCES	Hal Anderson, Administrator – Planning and Technical Services Division
IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY	Barry Burnell, Water Quality Administrator
IDAHO WATER AND ENERGY RESOURCES RESEARCH INSTITUTE	Roy Mink, Former Director
IDAHO FISH AND GAME	Dave Parish
BUREAU OF RECLAMATION	Richard Rigby, Special Assistant to Regional Director
US FISH AND WILDLIFE SERVICE	Damien Miller
GOVERNOR'S OFFICE	John Chatburn



## APPENDIX B – Phase I Funding Recommendations

The following table outlines a recommended funding approach for Phase I implementation, including participation targets. These participation categories have been discussed and conceptually agreed to, but necessary mechanisms have yet to be finalized. As noted above, the estimated funding required for Phase I implementation is \$70 million - \$100 million (\$7 - \$10 million per year for 10 years).

WATER USER CATEGORY	PHASE I FUNDING PARTICIPATION TARGETS
<b>Irrigated Agriculture (groundwater and surface water)</b>	\$3 million annually (based on participation of \$2 million annually for ground water users and \$1 million annually for surface water users and conceptually agreed to)
<b>Idaho Power Company/Co-Ops</b>	\$1 million - \$1.5 million annually (for projects that qualify for TEMP) <sup>3</sup>
<b>Municipalities</b>	\$700,000 annually (includes commitment to address rules and statutes that may inhibit municipal growth)
<b>Spring Users</b>	\$200,000 annually (based on cfs)
<b>Industrial/Commercial Users (not in municipalities or groundwater districts)</b>	\$150,000 annually (based on estimated 15 kaf annually)
<b>State of Idaho</b>	\$3 million annually
<b>Federal</b>	Pursue EQIP/Water America Initiative/CREP and other funding opportunities
<b>Recreation/Conservation</b>	Pursue grants and other funding opportunities

The proposed funding approach seeks to raise the needed funds through a flexible strategy that is broad-based, provides for equitable benefits and efficient revenue collection, and minimizes interest expenses. Potential funding strategies are set forth below for further discussion and consideration.

<sup>3</sup>In connection with the relicensing of the Hells Canyon hydroelectric project, Idaho Power Company has proposed to implement a Temperature Enhancement Management Program (TEMP) as part of the Clean Water Act Section 401 water quality certification process. Through the TEMP, Idaho Power Company intends to develop, fund and implement watershed management and enhancement projects that will assist in ameliorating Snake River water temperature conditions. Idaho Power Company will work with the Implementation Committee and Board to identify Plan actions that qualify for inclusion in the TEMP. The § 401 application is currently pending before the Idaho Department of Environmental Quality and has not yet been approved.

**A. ESPA Water Users Component:**

**1. Pay-As-You-Go.**

Pay-As-You-Go is a financial policy that funds capital outlays from current revenues rather than through incurring debt. Modified Pay-As-You-Go is an approach that funds some improvements from current revenues and others by incurring debt.

**2. Idaho Water Resource Board Contract.**

Using the existing Board's authority to issue revenue bonds, in which principal and interest are payable entirely from the revenue received (ultimately by the people and businesses that benefit by the facility). This approach would be potentially taxable.

**3. Water Management Improvement District (WMID).**

This approach allows for the assessment of a fee to defray part or all of the costs of a specific improvement or service. Legislative action would be required to grant the Board's authority to establish a WMIDs.

**B. State Component:**

**1. State Water Management Project.**

General Fund Appropriations from kilowatt per hour (kwh) power franchise fee, a state sales or property tax, special product or service tax, etc.) would be used to pay for the state portion of the management plan.

**2. State Water Fund.**

Develop a state-wide water fund, funded through a state water management project, to authorize and fund such projects. The Board would request annual appropriations to fund proposed projects.

Based on an analysis of the alternatives developed, a combination of funding strategies may represent the most viable approach to effectuate implementation of the Plan. This approach, using a pay-as-you-go strategy, the Board's existing loan and grant program, and the establishment of WMIDs will undergo further review by the Board for consideration by the legislature. Together, these strategies could finance the water user component of Plan implementation costs. The inclusion of a pay-as-you-go strategy would eliminate interest rate exposure. Board's authority to establish WMIDs would:

1. Simplify administration and collection of water-user contributions.
2. Reduce interest rate expense.
3. Augment the ability to raise funds from specific geographic areas within the ESPA.
4. Increase the likelihood of public acceptance of Plan fees.

The Board will also take under consideration the feasibility of establishing a state water project fund. Power franchise fees, sales tax, product tax, or other sources could be collected and deposited in the state water project fund and matched with contributions by water users and other partners. Where water users and implementation partners secure their 60% funding for a project or group of projects, the Board would request that the legislature authorize matching funds for the proposed projects. A collection approach that should be further evaluated involves using water districts as vehicles for collecting contributions from water user groups, including irrigated agriculture, municipalities, spring-users, and industrial/commercial users.







# Memorandum



To: Idaho Water Resource Board (IWRB)  
From: Neeley Miller, Planning & Projects Bureau  
Date: June 24, 2019  
Re: Proposed ESPA CAMP Progress Report

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## Background

In 2006 Idaho Legislature passed Idaho SCR 136 which requested the Idaho Water Resource Board (IWRB) prepare and submit a comprehensive aquifer management plan (CAMP) for the Eastern Snake Plain Aquifer (ESPA). By 2007, the IWRB appointed an advisory committee to prepare and recommend a plan. The IWRB and the Advisory Committee worked together to develop and submit the ESPA CAMP to the 2009 Idaho Legislature where it became effective as a part B of the Idaho State Water Plan upon adoption of HB 264.

## Legislative Request for a Plan Review

On May 8, 2019 the IWRB received a letter from Idaho House Speaker Scott Bedke requesting the IWRB complete a 10-year review of the ESPA CAMP and to submit appropriate planning recommendations to the Legislature and the Governor's office by the start of the next regular legislative session.

On June 3, 2019 the IWRB received a letter from the Idaho Power Company (Company). The Company indicated in the letter it continues to support the CAMP and its overall goal of sustaining the ESPA and Idaho's water resources. In 2009 the State of Idaho and the Company entered into an agreement to cooperate on the development of a managed recharge program. The Company also indicated that it supports the request for the 10-year evaluation of the CAMP.

## Process & Schedule - Joint Aquifer Stabilization & Planning Committee meetings

Staff proposes a series of Joint Aquifer Stabilization & Planning Committee meetings between now and the next legislative session to undertake this effort:

### June 26<sup>th</sup>; Jerome Fish and Game Offices

Agenda Items: Letter from Speaker Bedke, Idaho Power Letter, proposed process for ESPA Progress Report, schedule, discussion of where we think we are at in terms of meeting the plan targets, CAMP funding, and discussion of ESPA settlements

July (Wednesday the 24<sup>th</sup>) in Rexburg

Agenda Items: Aquifer storage analysis, reach gains upstream of Milner, spring flows downstream of Milner, sentinel wells

September (target 18<sup>th</sup>) in Boise

Agenda Items: Managed Recharge (Where we are at now, average annual calculations) Weather Modification/Cloud Seeding (how much from program contributes to aquifer water budget change/aquifer management)

November (target 13<sup>th</sup>) in Boise

Agenda Items: Report Conclusions, Wrap-up items, Draft Report

December

Complete Final Report in preparation of submission to legislature in January 2020



## ESPA CAMP Progress Report – DRAFT OUTLINE

### ESPA Progress Report

- Letter to Idaho House Speaker from IWRB Chairman

### Executive Summary

- Simple, short, communicates conclusions

### Background

- Description of problem
- History of Litigation
- Consequences of inaction

### ESPA CAMP Plan Goals

- Goal: Sustain the economic viability and social and environmental health of the ESPA by adaptively managing a balance between water use and supplies.
- Phase One Target (10 year target): 200 – 300 KAF average annual change
- Long-term Goal (20+ year target): 600 KAF average annual change
- Evolution of implementation: limited implementation to full implementation
- ESPA CAMP Recommended Actions & Targets

<b>ACTION</b>	<b>PHASE ONE TARGET</b>	<b>LONG-TERM TARGET</b>
Managed Recharge	100 KAF	150 - 250 KAF
Demand Reduction	95 KAF	250 - 350 KAF
GW to SW Conversions	100 KAF	100 KAF
Weather Mod/Cloud Seeding	50 KAF	No Target
<b>TOTAL</b>	<b>200 – 300 KAF</b>	<b>600 KAF</b>

- Total Average Annual Aquifer Water Budget Change - See attached summary table in Tab C.

### Results/Aquifer Response after 10 years of aquifer management

- Building Momentum: 3 years of full implementation; prior 7 years were limited implementation
- Aquifer storage analysis - Consider timeline overlay on aquifer storage chart
- River reach gains upstream of Milner, spring flows downstream of Milner, Murphy gage
- Select spring hydrographs
- Sentinel well results

### ESPA CAMP Funding

- ESPA CAMP Plan Estimated \$70 - \$100—million to implement phase one
- Funding during implementation evolved over time (initially limited → later Cigarette Tax & General Fund)
- Acknowledge contributions of water users (over the 10 year implementation)
- Secondary Aquifer Planning, Management & Implementation Fund – show funding picture over 10 years for ESPA and Statewide
- Relevant Revolving Development items
- Costs associated with ESPA Measurement Program

### Looking Forward/adaptive management

- Is the plan working?
- Emerging Issues?
- Is any refinement needed? If so, what?
- Continued success will require continued funding

June 3, 2019

RECEIVED

JUN 07 2019

DEPARTMENT OF  
WATER RESOURCES

Mr. Roger Chase, Chairman  
Idaho Water Resource Board  
PO Box 83720  
Boise, ID 83720-0098

Subject: 10-Year Review and Evaluation of the Eastern Snake Plain Aquifer Comprehensive  
Aquifer Management Program

Dear Mr. Chairman and Board Members,

The Idaho Power Company (Company) has obtained a copy of the May 8, 2019 letter from the Honorable Scott Bedke, Speaker of the Idaho House of Representatives, to the Board regarding the 10-year review and evaluation of the Eastern Snake Plain Aquifer Comprehensive Aquifer Management Program (ESPA CAMP). As you know, the Company was a member of the CAMP Advisory Committee as well as a member of the Implementation Committee that was to be established pursuant to CAMP provisions. Also, subsequent to the development of CAMP, the Company, the Board and the State of Idaho entered into a Memorandum of Agreement (May 2009), as a component of the 2009 Framework Reaffirming the Swan Falls Agreement, providing for the cooperative implementation of CAMP, including the development and implementation of a managed recharge program that achieves to the extent possible benefits for all uses, including hydropower. The Company continues to support the CAMP and its overall goal of sustaining the ESPA and Idaho's water resources.

Speaker Bedke's letter asks the Board to complete the 10-year evaluation provided for by CAMP provisions and provide recommendations to the Legislature and the Governor's Office. The



Company supports this effort and would like to actively participate in a meaningful way in the Board's review process. The Company would appreciate being advised of the process that the Board intends to initiate to complete this review and evaluation and of opportunities for the Company to engage in that process.

Sincerely,

A handwritten signature in cursive script, appearing to read "Tessia Park".

Tessia Park

Vice President of Power Supply

cc: Governor Brad Little  
Speaker Scott Bedke  
Director Gary Spackman  
Deputy Director Mat Weaver  
Brian Patton, IWRB

## MEMORANDUM OF AGREEMENT

WHEREAS, the Swan Falls Settlement recognized that the resolution of Idaho Power Company's water rights and the recognition thereof by the State of Idaho, together with the State Water Plan, provided a sound comprehensive plan best adapted to develop, conserve, and utilize the water resources of the Snake River in the public interest; and

WHEREAS, the Swan Falls Settlement provided that the State shall enforce the State Water Plan and shall assert the existence of water rights held in trust by the State; and

WHEREAS, the Swan Falls Settlement reconfirmed that the minimum daily flow at Milner Dam shall remain at zero, and that for the purposes of the determination and administration of rights to the use of the waters of the Snake River or its tributaries downstream from Milner Dam, no portion of the waters of the Snake River or surface or ground water tributary to the Snake River upstream from Milner Dam shall be considered; and

WHEREAS, the Swan Falls Settlement recognized that the establishment of a zero minimum flow at Milner Dam allowed existing uses above Milner to continue and for some additional development above Milner, and further recognized that the zero minimum flow means that river flows downstream from Milner Dam to Swan Falls Dam at times may consist almost entirely of ground-water discharge and that therefore the Eastern Snake Plain Aquifer (ESPA) must be managed as an integral part of the Snake River; and

WHEREAS, the Swan Falls Settlement recognized that the amount of development that can take place without affecting the average daily flows of 3,900 CFS from April 1 to October 31 and 5,600 CFS from November 1 to March 31 as measured at the Murphy Gaging Station would depend on the nature and location of each new development, as well as the implementation of new practices to augment the stream flows; and

WHEREAS, the Swan Falls Settlement recognized that maintenance of inexpensive hydropower resources contributes to a positive economic climate for the creation of new jobs for Idahoans and thus future water rights allocation decisions should weigh the benefits to be obtained from each development against the probable impact it will have on hydropower resources; and

WHEREAS, the Swan Falls Settlement recognized methods that enhance stream flows, such as in-stream storage and aquifer recharge projects, benefit both agricultural development and hydropower generation and deserve study to determine their economic potential, their impact on the environment, and their impact on hydropower generation; and

WHEREAS, flows passing Milner Dam provide opportunities for hydropower generation and under the Swan Falls Settlement the Idaho Power Company has a right to use such flows when available at its facilities; and

WHEREAS, the State, through the Eastern Snake Plain Aquifer Comprehensive Aquifer Management Plan (ESPA CAMP), a component of the State Water Plan, intends to implement managed recharge as part of a series of comprehensive measures to enhance the water supply of the ESPA and the Snake River; and

WHEREAS, it is important that the effects of implementation of managed recharge be understood in order to permit the State to make informed water management and planning decisions that are in the public interest as provided by chapter 17 title 42 Idaho Code; and

WHEREAS, the Idaho Power Company participated in the development of the ESPA CAMP and as part of the Phase I actions is cooperating with the implementation of a recharge program between Milner Dam and American Falls; and

WHEREAS, the coordination and consideration of the respective interests of the State and Idaho Power Company with regard to managed recharge furthers their mutual interest in honoring the commitments made as part of the Swan Falls Settlement.

NOW THEREFORE, the parties agree as follows:

1. It is in the mutual interest of the parties to work cooperatively to uphold and implement the principles established by the Swan Falls Settlement.
2. ESPA CAMP, as adopted by the Idaho Water Resource Board (January 2009) and approved by the Idaho Legislature as a component of the state water plan, establishes a long-term hydrologic target for managed aquifer recharge from 150,000 to 250,000 acre feet on an average annual basis. Amendment of this long-term hydrologic target for managed recharge shall constitute a change in the state water plan as contemplated by Article 15, § 7 of the Idaho Constitution and the legislation approving CAMP, and therefore must be adopted pursuant to Idaho Code § 42-1734B, as it currently exists or as it may be amended hereafter.
3. The purpose of this memorandum of agreement is to recognize that implementation of managed recharge will have an effect on the flow characteristics of the Snake River above and below Milner Dam and to confirm that the relative merits of recharge proposals in addition to or different than that provided for in Phase I of ESPA CAMP will be considered through the adaptive management process set forth in Section 4 of ESPA CAMP. If the Board proposes to increase the 100,000 acre-foot average annual ESPA CAMP Phase I target for managed aquifer recharge by more than 75,000 acre-feet prior to January 1, 2019, the Board must obtain legislative approval for such increase.



The Board and the Director will consider, in accordance with state law, any information received in determining whether a managed recharge proposal is in the public interest.

4. Further, the parties recognize it is in their mutual interest to work cooperatively to explore and develop a managed recharge program for the Snake River Basin above Swan Falls Dam that achieves to the extent possible benefits for all uses including hydropower and therefore agree that in connection with the development and consideration of proposals for managed recharge that may be in addition to or different than that provided for in Phase I of the ESPA CAMP, the State of Idaho, through the Idaho Water Resource Board (the Board):
  - a. will provide notice to Idaho Power Company of such managed recharge proposals together with an opportunity to meet and confer with the Board on the potential costs and benefits of such proposals and ways to implement managed recharge to achieve the mutual interests of the State and Idaho Power Company; and
  - b. will provide an opportunity for Idaho Power Company to appear before the Board and present information relative to any concerns the Company may have about a managed recharge proposal;
5. The State, through the Governor and the Idaho Water Resource Board, will in good faith cooperate with and support Idaho Power Company in any regulatory proceeding before the Idaho Public Utilities Commission to address any rate, or other impacts directly attributable to the implementation of managed recharge.
6. Idaho Power Company acknowledges that the decision of whether to proceed with the implementation of managed recharge is fundamentally a public policy decision of the State of Idaho and that nothing in this memorandum of agreement shall be construed to limit or interfere with the authority of the State of Idaho to authorize managed recharge in accordance with applicable state law.
7. Nothing in this memorandum of agreement shall be construed to preclude Idaho Power Company from exercising any rights it may have under state law to challenge the State's implementation of managed recharge. While Idaho Power Company retains its right under the Swan Falls Settlement to contest any appropriation of water, including but not limited to appropriations for recharge, in accordance with State law, the Company shall not have a right to assert that implementation of managed recharge is precluded by the Swan Falls Settlement.

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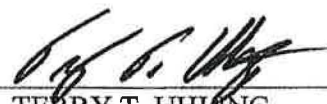
DATED this 6<sup>TH</sup> day of May 2009.

STATE OF IDAHO

By:   
C.L. "BUTCH" OTTER  
Governor of the  
State of Idaho

IDAHO POWER COMPANY

By:   
J. LAMONT KEEN  
President  
and Chief Executive Officer

By:   
TERRY T. UHLING  
Chairman  
Idaho Water Resource Board

## Estimated Progress Towards ESPA CAMP Targets: DRAFT FOR DISCUSSION

### MANAGED RECHARGE

		AF
IWRB Recharge	Current Average Annual natural flow recharge capacity (verify)	190,000
SWID Recharge	SWID-SWC Settlement - in addition to IWRB recharge (verify)	6,550
SUB-TOTAL		196,550

### DEMAND REDUCTION

IGWA-SWC Settlement Agreement	Reduction via SWC Settlement (verify)	240,000
SWID-SWC Settlement Agreement	2,378 acres set-aside results in about 5,200 AF (2.2 AFA) (verify)	5,200
CREP acres	prior to 2015 settlement included here; from SWC: 16, 266 acres	32,532
SUB-TOTAL		277,732

### GW-SW CONVERSIONS

SWID Conversions	SWID-SWC Settlement Agreement (verify)	64,350
A&B ID Conversions	ABID-SWC Settlement (verify) - conversions on 3,000 acres results in about 6600AF	6,600
NSGWD Conversions	Conversions existing in NSGWD prior to IGWA-SWC Settlement an were included in the NSGWD baseline (verify)	21,305
SUB-TOTAL		92,255

### CLOUD SEEDING

Cooperative Cloud Seeding Program	How much from Upper Snake and Wood contributes to Aquifer?	??
SUB-TOTAL		??

### OTHER

Storage Water from SWC-IGWA Settlement	up to 50,000 AF contributed for recharge if not needed by SWC - assume 1/3 on average provided for recharge (verify)	17,000
Storage Water from SWC-Cities-IGWA Settlement	average of 7,650 AF provided for recharge	7,650
SUB-TOTAL		24,650

**TOTAL 591,187**

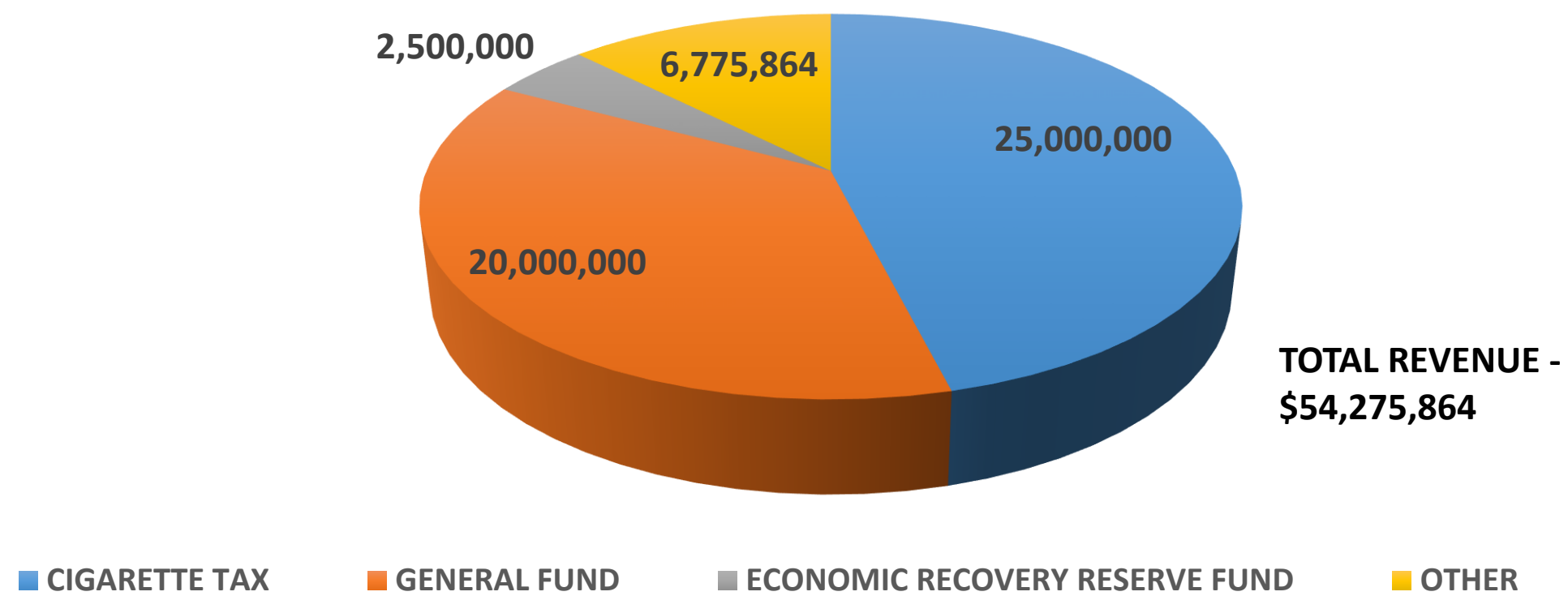


# **SECONDARY AQUIFER PLANNING MANAGEMENT & IMPLEMENTATION FUND**

**A TEN YEAR REVIEW OF REVENUES, EXPENDITURES, &  
COMMITMENTS**

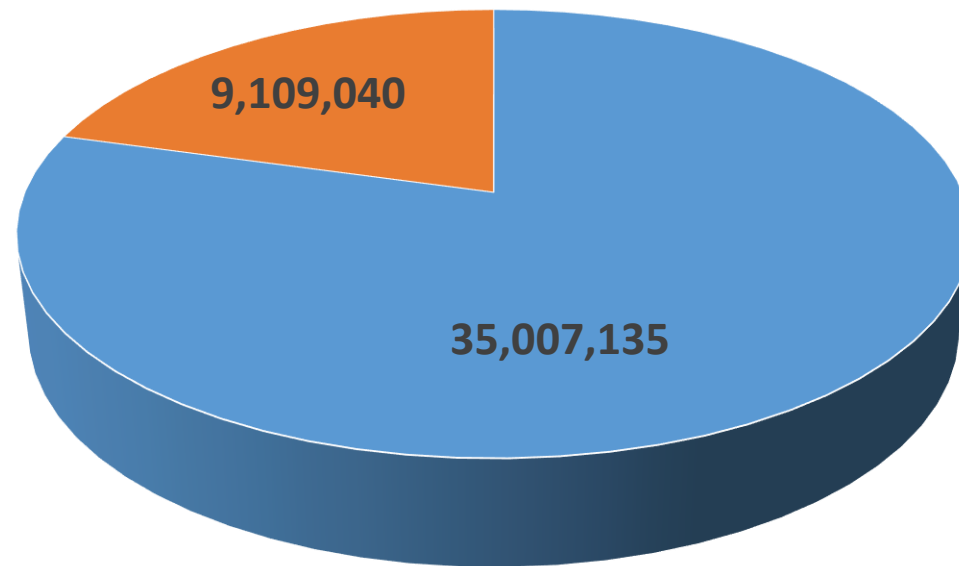
**JUST THE HIGHLIGHTS**

# SECONDARY AQUIFER PLANNING MANAGEMENT & IMPLEMENTATION FUND REVENUE



Data from July 1, 2008 - June 30, 2019

# SECONDARY AQUIFER PLANNING MANAGEMENT & IMPLEMENTATION FUND EXPENDITURES & COMMITMENTS



■ ESPA ■ OTHER

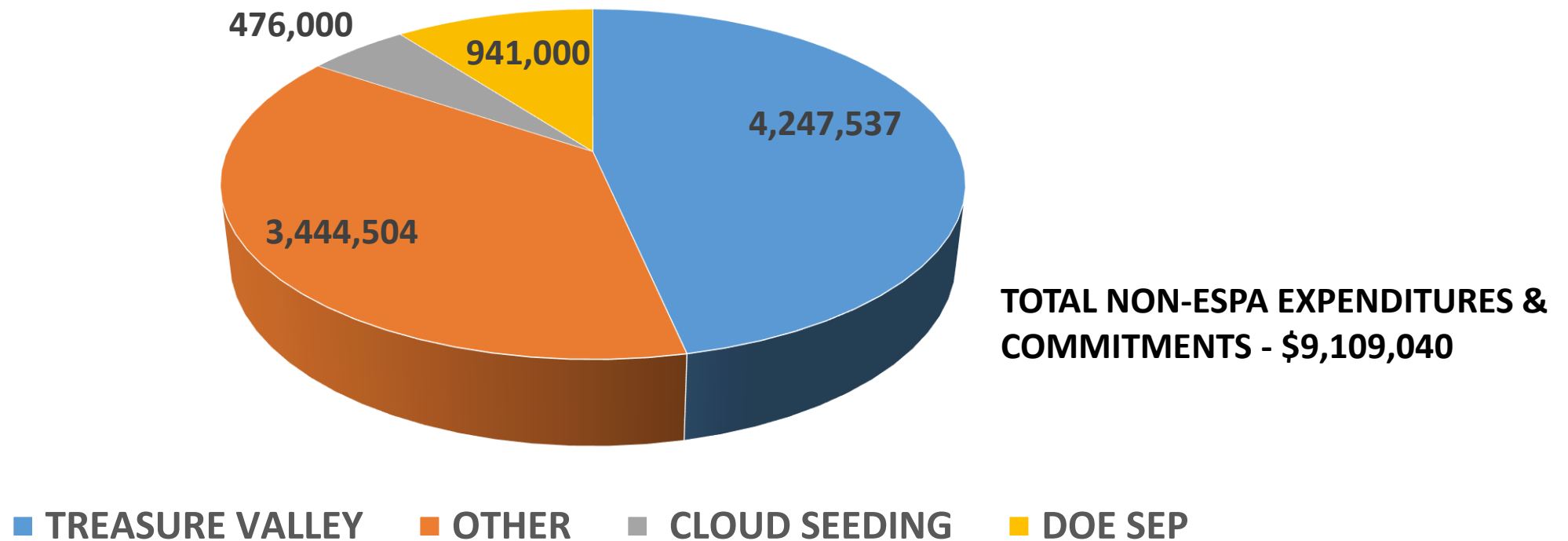
**TOTAL EXPENDITURE &  
COMMITMENTS - \$44,039,807**

Data from July 1, 2008 - June 30, 2019



# SECONDARY AQUIFER FUND

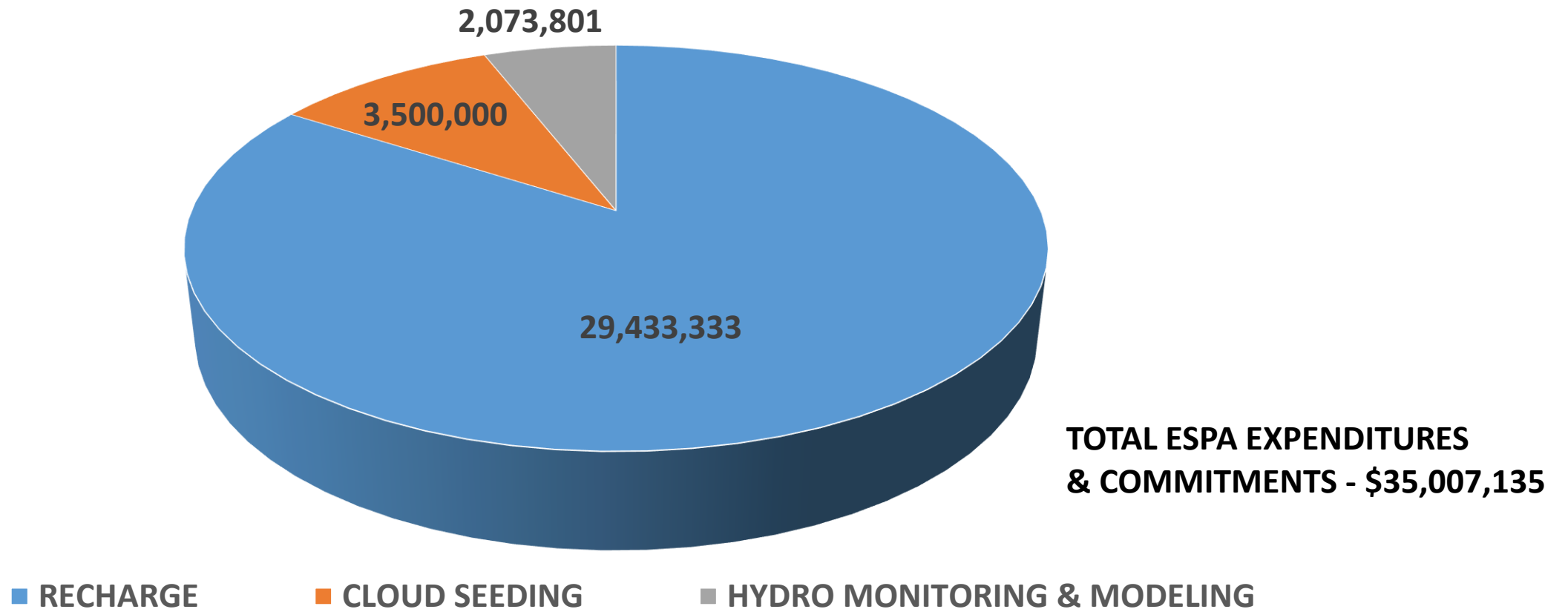
## NON-ESPA EXPENDITURES & COMMITMENTS



Data from July 1, 2008 - June 30, 2019

# SECONDARY AQUIFER FUND

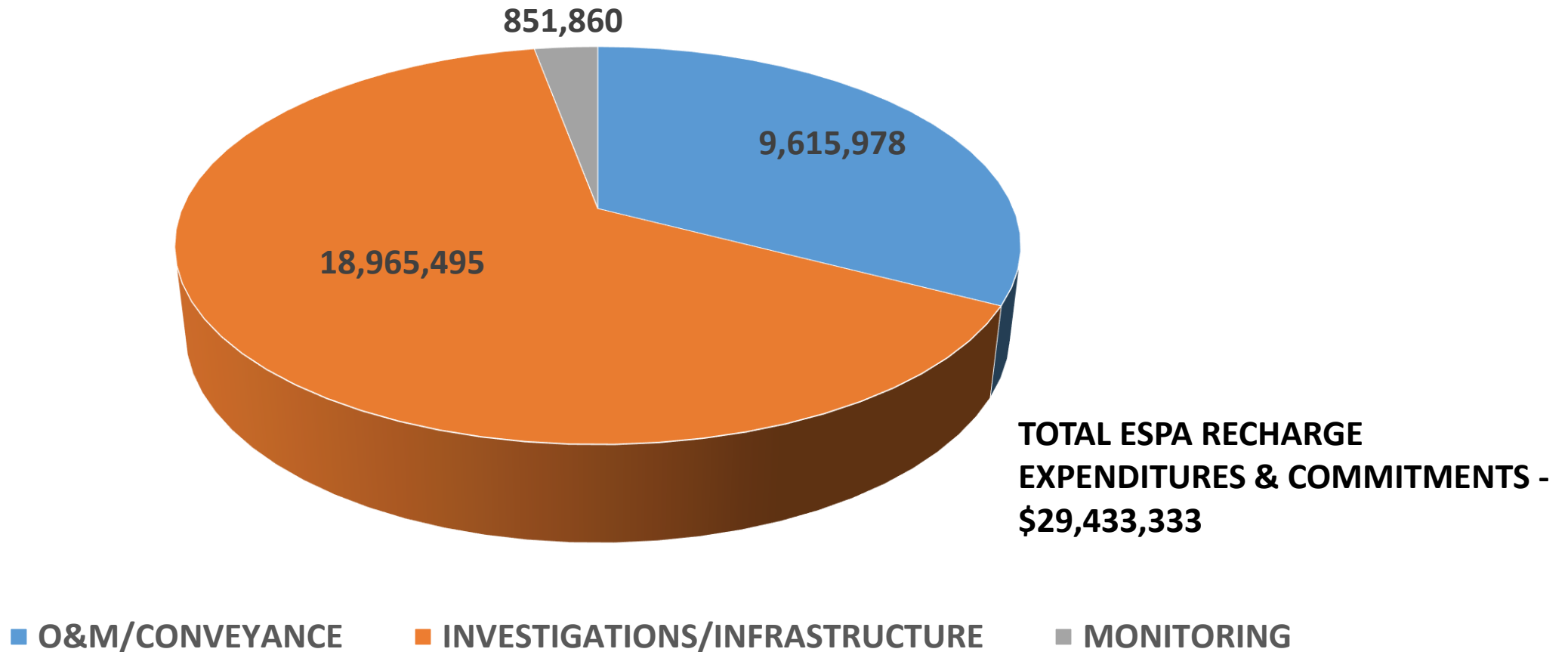
## ESPA EXPENDITURES & COMMITMENTS



Data from July 1, 2008 - June 30, 2019

# SECONDARY AQUIFER FUND

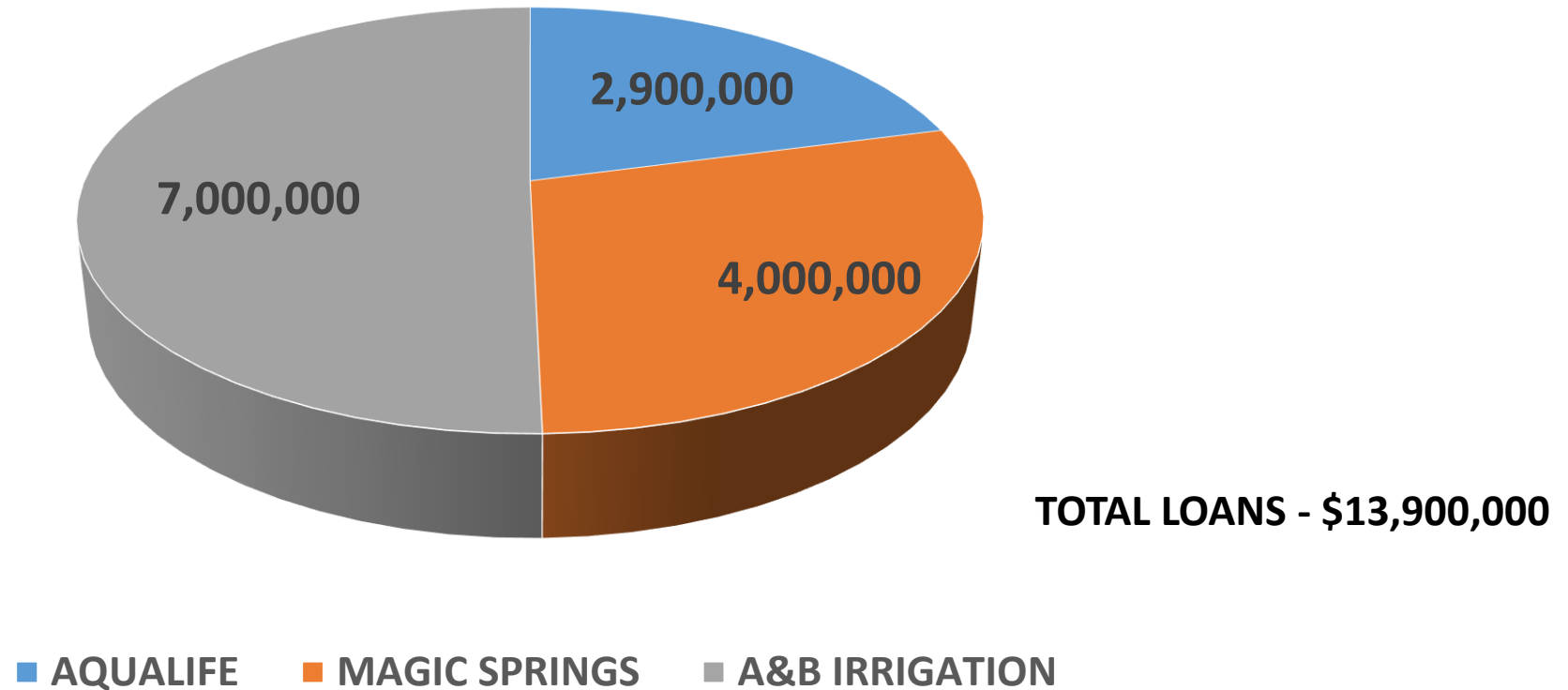
## ESPA RECHARGE EXPENDITURES & COMMITMENTS



Data from July 1, 2008 - June 30, 2019



# REVOLVING DEVELOPMENT FUND – ITEMS OF NOTE - A&B IRRIGATION & GWD LOANS



Data from July 1, 2008 - June 30, 2019



# SWC Delivery Call

## SWC-IGWA Settlement Agreement

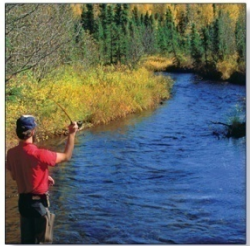
### ESPA Measurement Order

Brian Ragan  
Water Distribution Section  
June 26, 2019



## Outline

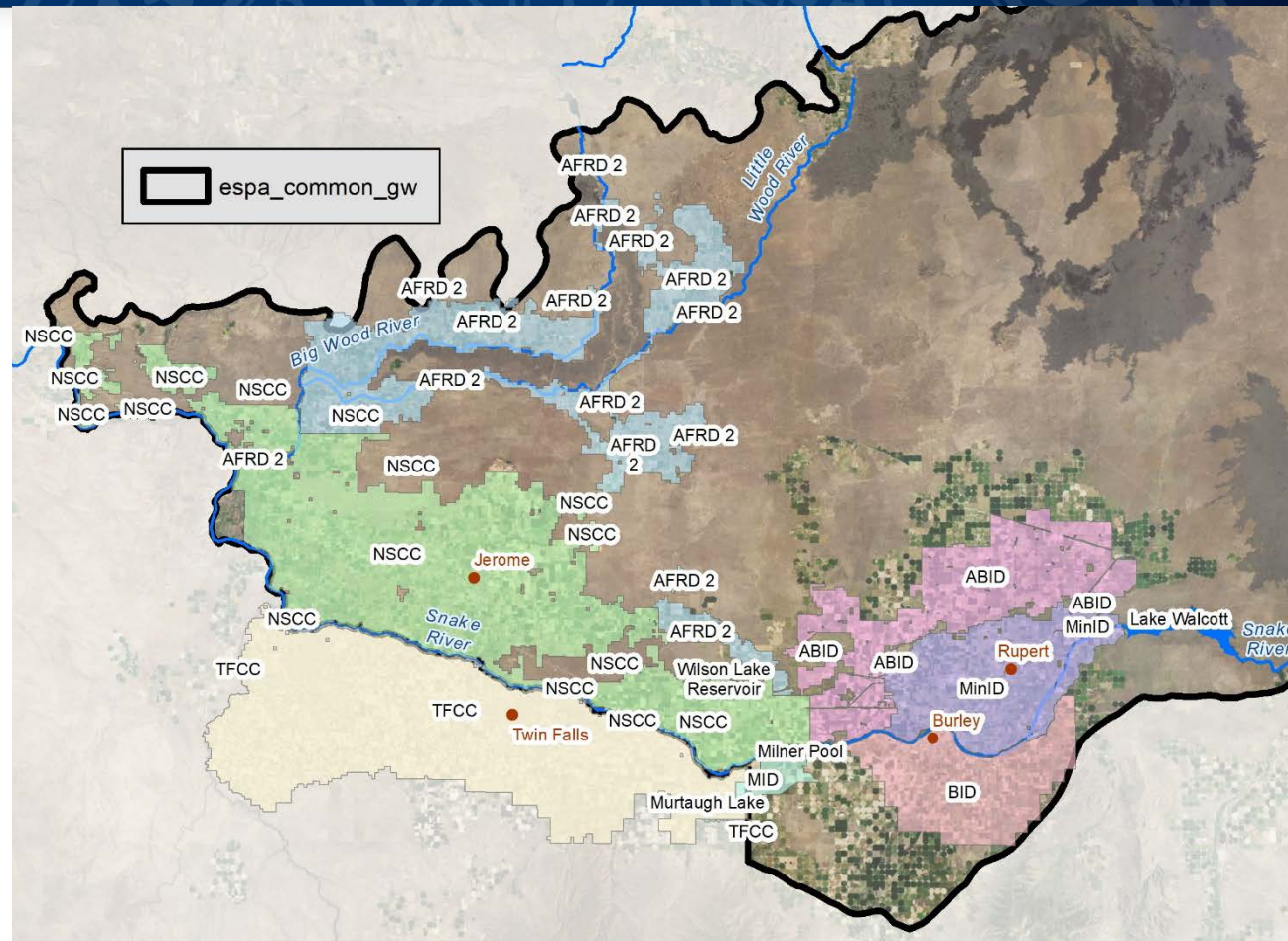
- ◆ Surface Water Coalition Delivery Call
- ◆ Determining Injury: Prelude
- ◆ SWC – Idaho Ground Water Appropriators Settlement Agreement
- ◆ Determining Injury: SWC Delivery Call Curtailments
- ◆ East Snake Plain Measurement Order





## SWC Delivery Call

- January 14, 2005
- Injury due to GW pumping from ESPA
- Methodology Order to determine “in-season” and “carry over” injury
- USBR & USACE joint forecast at Heise gage
- Conservative calculations built in



## Summary of Demand Shortfall Projections on May 3, 2015

	April As-Applied Order (4/16/15)	April As-Applied w/ May 1 Forecast	July As-Applied w/ April Div. & BLY	July As-Applied w/ April Div. & 2012 Analog Yr.
A&B	0	0	0	0
AFRD2	-15,300	-35,464	-54,728	-67,938
BID	0	0	0	0
Milner	0	0	0	0
Minidoka	0	0	0	0
NSCC	0	0	-26,327	-184,543
TFCC	-73,700	-90,250	-170,259	-318,387
<b>Total</b>	<b>-89,000</b>	<b>-125,714</b>	<b>-251,314</b>	<b>-570,868</b>
Approx. Curtailment Priority Date	1982	1980	1974	1957
Approx. Curtailed Acres	86,000	121,000	259,000	594,000

These numbers are calculated using the 3<sup>rd</sup> Amended Methodology Order for the Surface Water Coalition Delivery Call. Natural flow supplies are predicted using the NRCS's May 1 50% Exceedance Forecast of April-July Runoff Volume at the Heise Gage (i.e. 2,239,000 AF).

# Settlement Agreement: SWC & IGWA

What: Private agreement

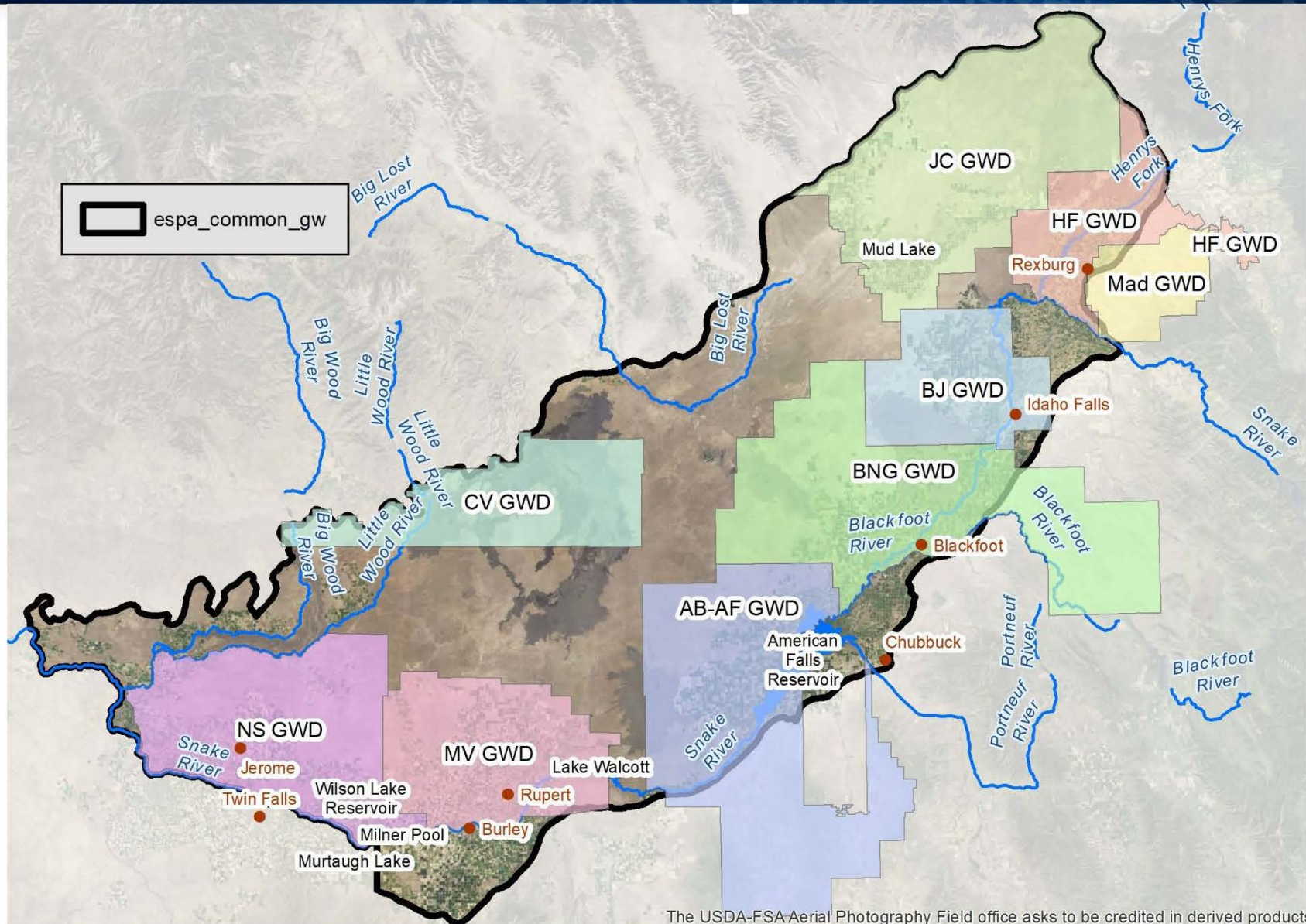
Why: Negotiated “solution” to the SWC Delivery call filed in 2005

When: October 19, 2015

Where: ESPA Ground Water Districts

Purpose: avoid large-scale curtailment of GW rights  
bring predictability to the mitigation burden on IGWA  
increase water levels in the ESPA  
increase flows in the Snake River





# Settlement Agreement: Long Term Practices

## To begin in 2016:

- ◆ Consumptive use reduction of ground water by 240,000 AF
- ◆ Annual storage water delivery of 50,000 AF
- ◆ Irrigation season limits: April 1 – October 31
- ◆ Mandatory Measurement Devices by 2018
- ◆ Support state sponsored recharge program of 250 KAF annually
- ◆ Additional support for the following: NRCS conservation programs; new conversion projects; management of Trust Water Rights; and participation in review and possible recommendations of changes to IDWR administrative processes on the ESPA.

# Settlement Agreement: Goal and Benchmarks

## ◆ Goal

- ◆ “stabilize and ultimately reverse the trend of declining ground water levels and return ground water levels to levels equal to the average ground water levels from 1991-2001”

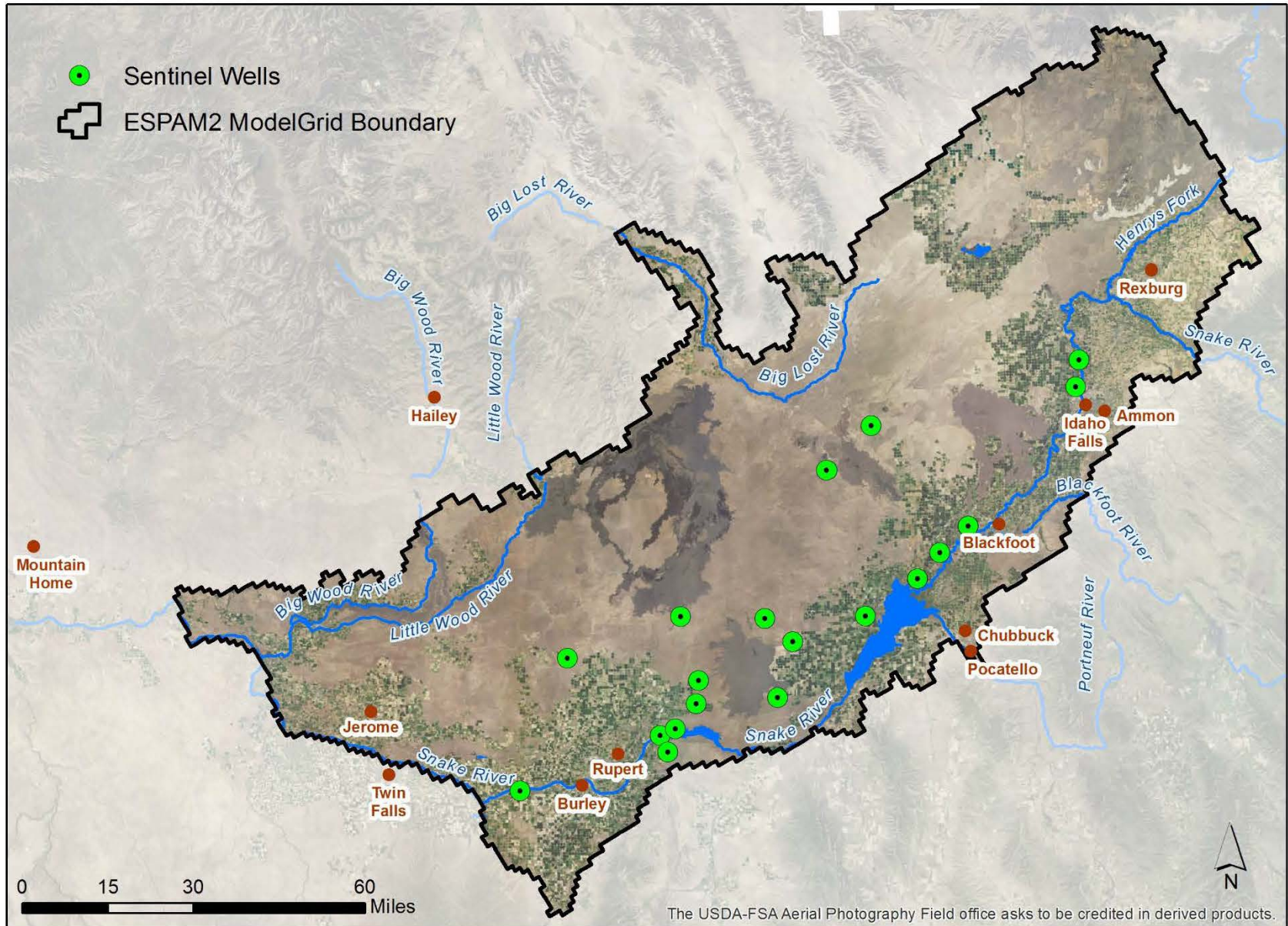
## ◆ Benchmarks:

- ◆ (1) by 2020 ground water levels will equal ground water levels in 2015
- ◆ (2) by 2023 ground water levels will be halfway between 2015 ground water levels and goal
- ◆ (3) by 2026 goal is reached and ground water levels equal or exceed 1991-2001 average.

- ◆ Metrics: ground water levels as measured in 20 mutually agreed to “sentinel” observation wells



# Sentinel Well Locations: SWC - IGWA Settlement Agreement



# Settlement Agreement: IDWR Role

- ◆ Collect / house / publish GW level data from Sentinel wells
- ◆ Objectively verify each GWD's diversion, reduction, recharge data
  - ◆ Baseline (2010-2014): changes year to year (GWDs membership fluctuations, revising historic data)
  - ◆ Withdrawal: changes year to year
  - ◆ Reduction: baseline minus withdrawal
  - ◆ Recharge: wet water versus contract verification

# Data Analysis Process:

## Baseline, Usage and Recharge

### Baseline and Usage

1. Extract annual diversion volume data from WMIS
2. Join IGWA WMIS #'s to the master WMIS record table

Results: Diversion volume data for specified WMIS records desired timeframe

Two exceptions:

- FMID and Teton River exchange wells: data comes from the WD01 WR Accounting Database
- WD31 data comes from the Watermaster Annual Report

### Recharge

1. Manually review WD01 rental/lease contracts and amounts
2. Compare them to IGWA's submission



# Curtailment: SWC 4<sup>th</sup> Methodology Order

- ◆ Injury evaluation is required EVERY year
  - ◆ despite snowpack, natural flow, rules of thumb, gut feeling or Farmer's Almanac
- ◆ Conservative nature of Methodology = injury during “good” water year
- ◆ Not all GW users are members of GWD's
  - ◆ § IC 42-5214                      GW irrigators within GWD boundary are members (must opt out)
  - GW non-irrigators within GWD boundary are not members (must opt in: wholly or for mitigation only)

## Result:

Notice of Pending Curtailment sent to WR owners not on GWD member list

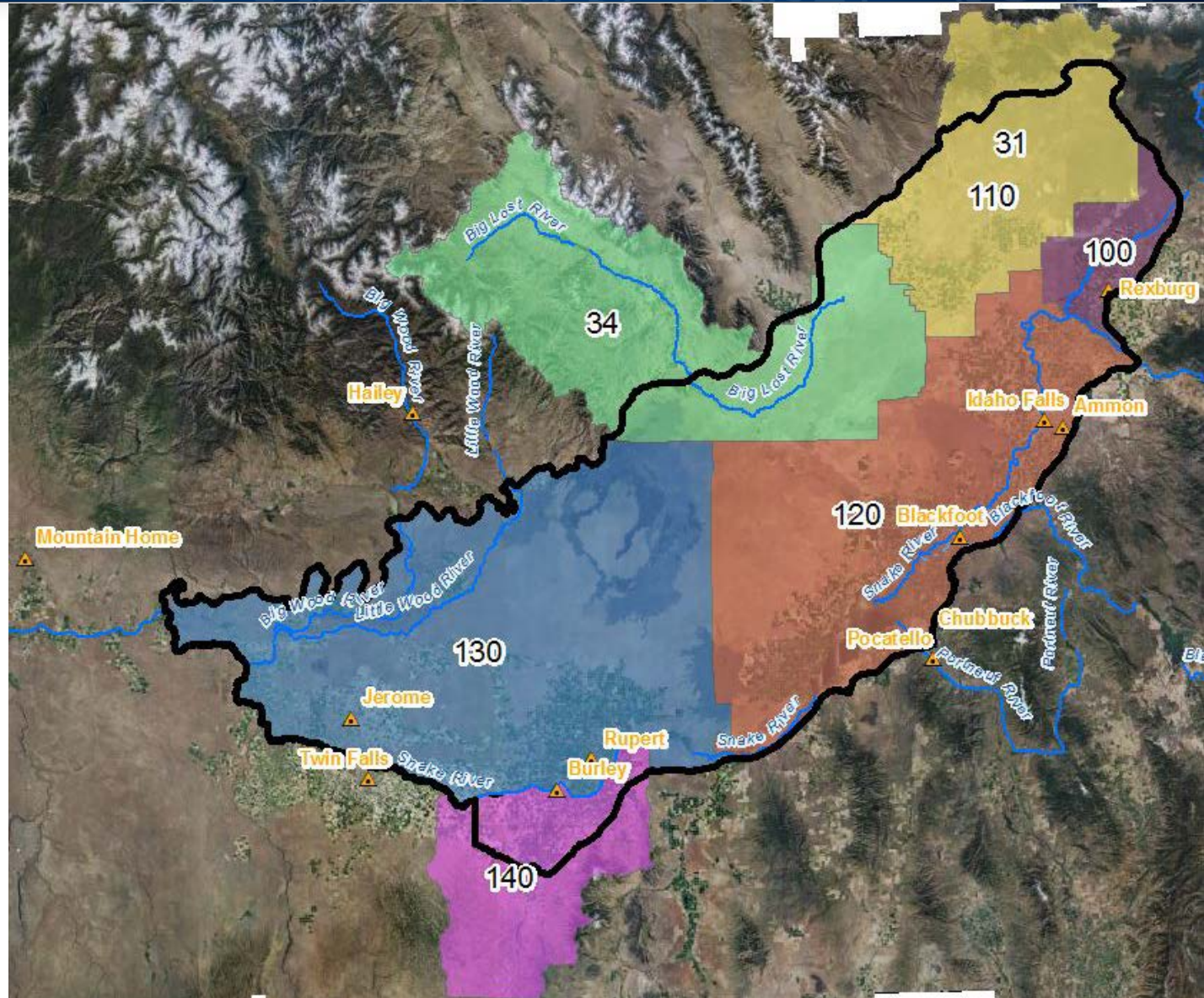
- ◆ Join nearest GWD
- ◆ Curtail use
- ◆ Submit mitigation plan

## Eastern Snake Plain Aquifer

- July 22, 2016
- 2018 deadline
- ~5,700 wells
- ~3,000+ rights

### Excludes:

- Dom/stock (I.C. 42-111)
- Irr  $\leq 5$  acres
- Non-Irr  $\leq 0.24$  CFS





# Measurement Order Compliance

**96%** (+/- 1%)

241 out of 5,770 wells

Based on WMIS records and approved variances.





# Questions?



# Settlement in the Works: Update on the SWC/IGWA Settlement Agreement

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Jaxon Higgs



# Settlement Terms

- 50,000 acre-feet of storage delivered to SWC
- 240,000 acre-feet reduction in pumping
- Installation of flowmeters
  - Accompanied by IDWR measurement order
- April 1 start and Oct. 31 end of irrigation
- Ground water level targets
  - “Sentinel Well Index”
  - Benchmarks at 2020, 2023, 2026
  - Accompanied by efforts to increase accuracy of reach gain measurement



# Settlement Agreement Participating GWD

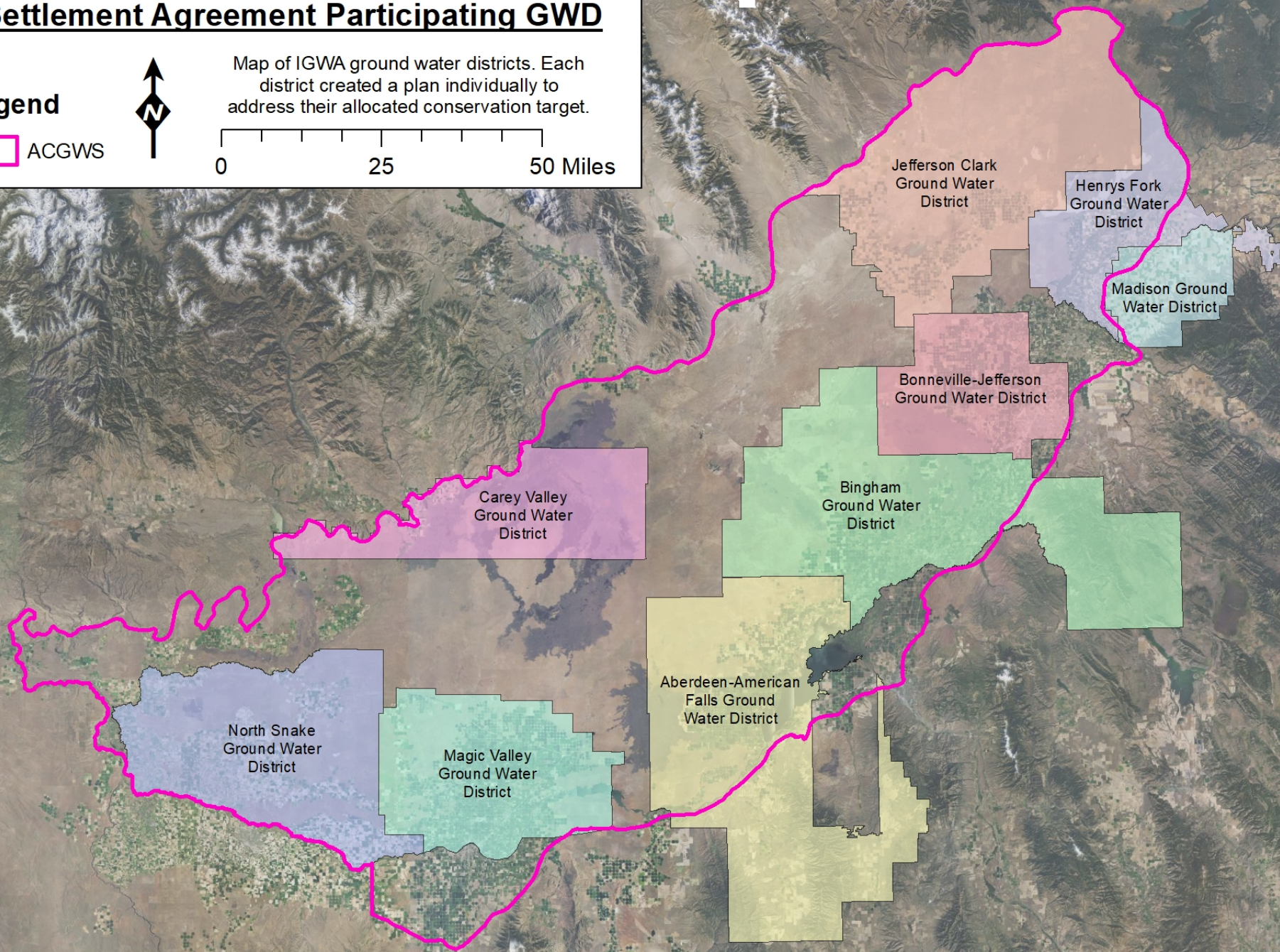
## Legend

ACGWS



Map of IGWA ground water districts. Each district created a plan individually to address their allocated conservation target.

0 25 50 Miles





# Settlement Agreement Participant Diversions

## Legend

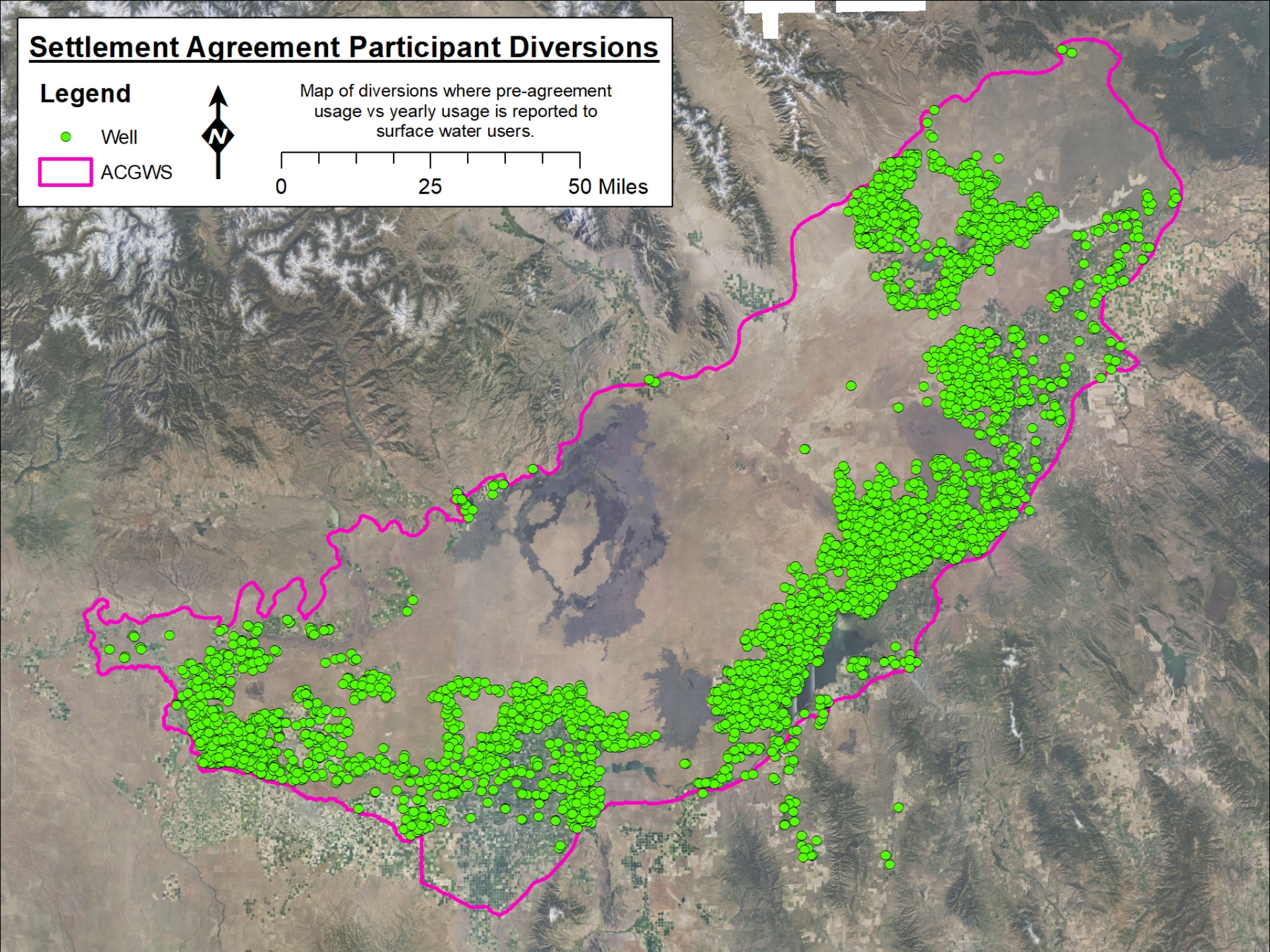
● Well

□ ACGWS



Map of diversions where pre-agreement  
usage vs yearly usage is reported to  
surface water users.

0 25 50 Miles





# Settlement Agreement Participants

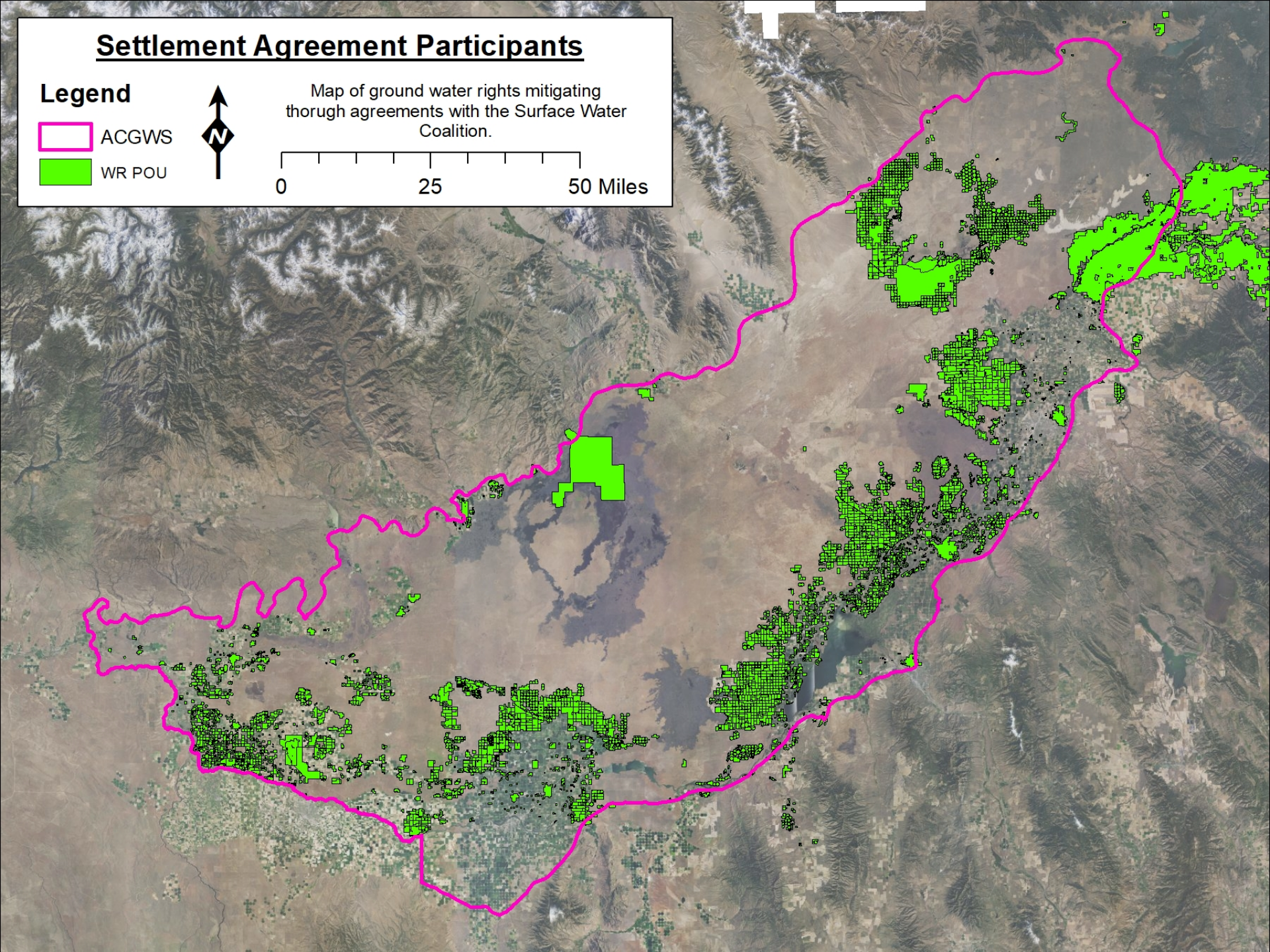
## Legend

- ACGWS
- WR POU



Map of ground water rights mitigating  
through agreements with the Surface Water  
Coalition.

0 25 50 Miles





# Baseline Determination

- General baseline 2010-2014
- North Snake GWD
  - 21,205 acre-feet average conversions from 2010-2014
  - Added this number to their baseline
- Carey Valley GWD
  - All wells supplemental to surface water
  - 2015 baseline
- Henry's Fork GWD (Fremont Madison ID)
  - FMID wells used in 2013 only
  - 2013 baseline

# Performance Summary Table Example

<b>2018 Performance Summary Table</b>							
(all values in acre-feet)							
	<b>Diversion Baseline</b>	<b>Target Conservation</b>	<b>2018 Usage</b>	<b>Diversion Reduction</b>	<b>Accomplished Recharge</b>	<b>Total Conservation</b>	<b>2018 Mitigation Balance</b>
Aberdeen - American Falls GWD	292,784	33,715	282,272	10,512	56,267	66,779	33,063
Bingham GWD	281,918	35,015	249,324	32,594	20,500	53,094	18,079
Bonneville - Jefferson GWD	155,718	18,264	134,853	20,865	11,500	32,365	14,101
Carey Valley GWD	5,671	703	1,387	4,284	0	4,284	3,581
Jefferson - Clark GWD	441,092	54,373	371,537	69,555	17,101	86,656	32,283
Henry's Fork GWD <sup>1</sup>	66,337	5,391	16,467	49,870	7,151	57,021	51,630
Magic Valley GWD	257,019	32,462	217,824	39,195	6,100	45,295	12,833
A&B ID <sup>3</sup>	-	21,660	-	-	-	-	-
North Snake GWD <sup>2</sup>	206,777	25,474	168,162	38,614	3,822	42,436	16,962
Southwest ID <sup>3</sup>	-	12,943	-	-	-	-	-
Total:	1,707,315	<b>240,000</b>	1,441,826	265,489	122,441	422,533	182,533

- Submitted yearly to SWC
- Reviewed by SWC and IDWR
- Presented at annual Steering Committee Meeting

# Three-Year Summary of IGWA Member Efforts

Year	Diversion Reduction	Recharge	Total Efforts
2016	146,846	104,868	251,714
2017	287,303	208,081	495,384
2018	265,489	122,441	387,930
Total:	699,638	435,389	1,135,027
Average:	233,213	145,130	378,342

\*All Values in Acre-Feet



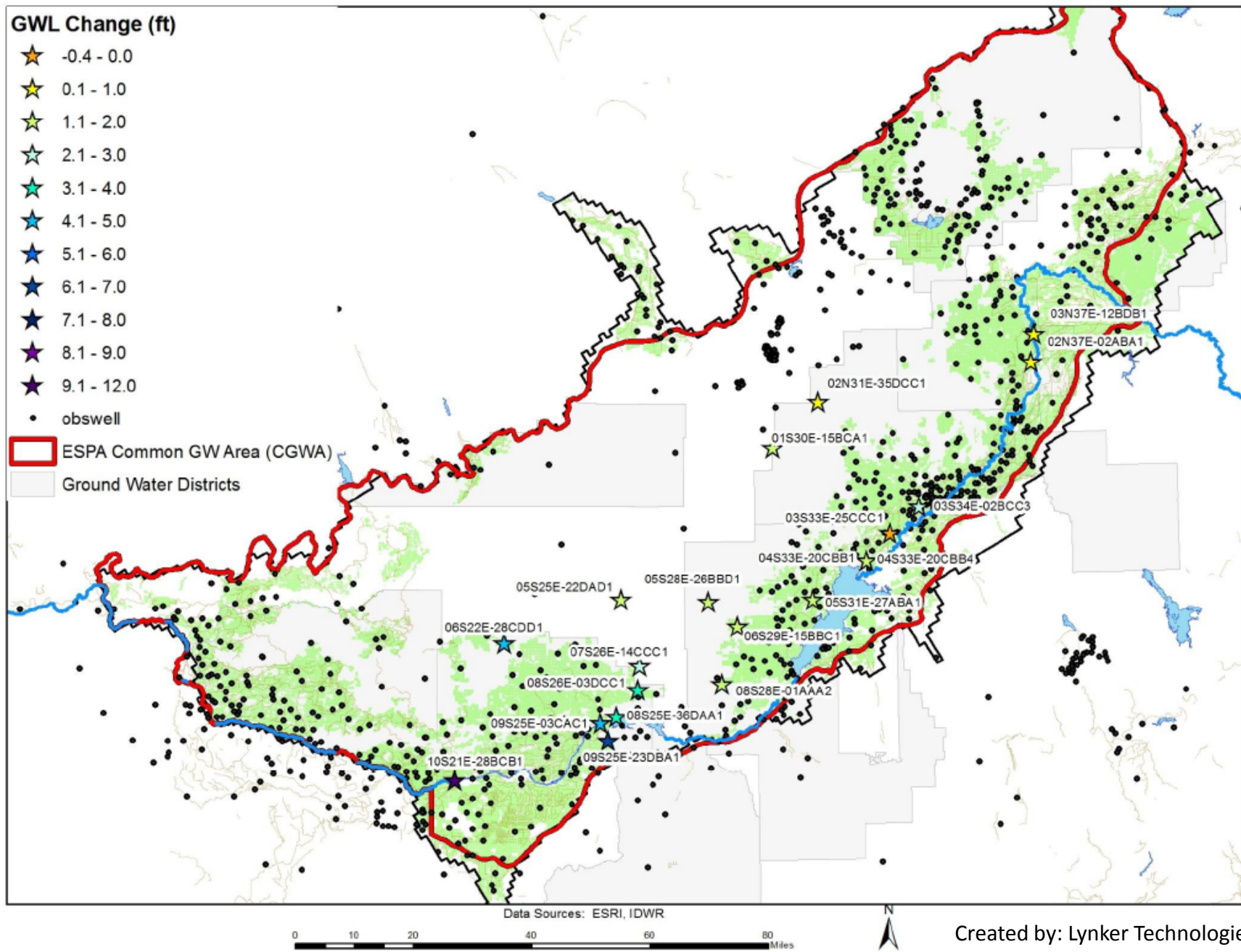
# Soft Conversion Programs

District	3-Year Diversion Reduction	Conversion Volume	% of Total
North Snake	107,248	63,915*	60.0%
Magic Valley	92,178	17,581	19.1%
Total:	199,426	81,496	
Avg.	66,475	<b>27,165</b>	

\*Actual volume greater than reported here because of baseline accounting.

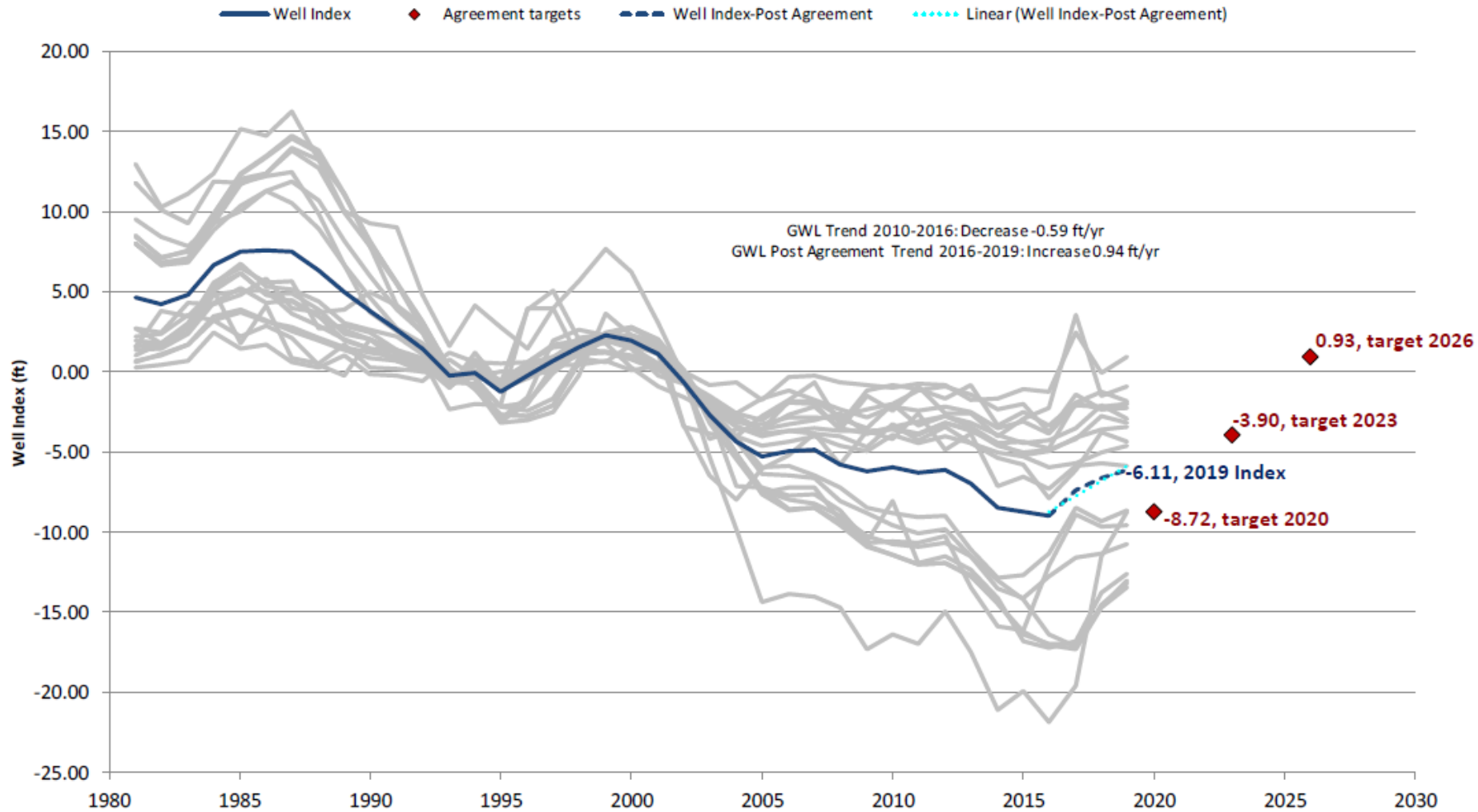
## Estimated Conversions by Shareholders

District	3-Year Diversion Reduction	Conversion Volume	% of Total
Henry's Fork	107,294	107,671	100%
Carey Valley	13,718	13,718	100%
Jeff-Clark	160,007	50,000	31.2%
Magic Valley	92,178	3,406	3.7%
North Snake	107,248	29,403	27.4%
Bingham	96,706	?	-
Bonn – Jeff	44,767	1,756	3.9%
AmFalls – Aberdeen	77,721	2000	2.6%
Total:	699,638	207,954	
Avg.	233,213	69,318	





# 05/20/2019 SENTINEL WELL INDEX



# Conclusions

- Groundwater users have accomplished a considerable task in a relatively short period of time
- District chairmen and board members deserve recognition for their efforts
- IDWR & IWRB support and state funding essential to aquifer recovery
- Thanks to Surface Water Coalition for their support and efforts

# Memorandum

To: Aquifer Stabilization Committee

From: Wesley Hipke

Date: June 25, 2019

Re: ESPA Managed Recharge Program – Potential Recharge Water Distribution Plan and Conveyance Payment Structure



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## Introduction

The intent of this memorandum is to provide the Aquifer Stabilization Committee (ASC) with information about the IWRB's Managed Recharge Program's (Program) conveyance payment schedules and potential options for managing distribution of recharge water especially when supply is limited (distribution plan). The 2018-2019 recharge season represents the fifth year of full-scale program operation and new five-year conveyance agreements with a number of entities are required for the next recharge season. Therefore, the ASC and IWRB need to approve a payment schedule(s) for the new agreements and consider potential standards for distribution and apportionment of available water supply. The information presented in this memo is provided for reference and discussion purposes.

## Background

The Eastern Snake Plain Aquifer (ESPA) Comprehensive Aquifer Management Plan (CAMP) and the Idaho State Water Plan recognized managed recharge as an appropriate mechanism to enhance ground and surface water supplies, help maintain and increase aquifer levels, and change the timing and availability of water supplies to meet demand.

The conditions for conducting managed recharge differ in the Upper Valley (above Minidoka Dam) compared to the Lower Valley (below Minidoka Dam). Therefore, different conveyance fee structures and distribution plans were developed. The original fee structures and distribution plans were designed to meet the goals of the Program and to assist in establishing the Program. With the data gathered since the start of the full-scale Program and especially during the last three years when significant volumes of water has been available for managed recharge provides an opportunity to evaluate and adjust these plans to better match the IWRB's goals for the Program.

## Lower Valley:

The Lower Valley (downstream of Milner Dam) has relatively large off-canal recharge sites and generally has water available for managed recharge throughout the winter. The minimum amount available for managed recharge in the Lower Valley is 500 cfs. Figure 1 at the end of the memo shows the median amount of water available per month based on data from 1991 through 2017. Over the past three years, at least 500 cfs has regularly been available for recharge at the beginning of the recharge season and increased to greater than 1,000 cfs after the first of the year.



In addition, the IWRB has significantly increased winter-time recharge capacity in the Lower Valley over the last five years. The following table provides a summary of recharge capacity and the average 5-year retention rates (as determined by the ESPAM 2.1 groundwater flow model) of the entities that currently conduct managed recharge for the IWRB.

Entity	Managed Recharge Area(s)	Recharge Capacity (cfs)	5-yr Retention
Southwest ID	Injection wells	60	54%
Twin Falls Canal Co	Canal only	30	43%
North Side Canal Co	Canal & 1 recharge site <sup>1</sup>	230	40%
Big Wood Canal Co	Canals & 2 recharge sites	157	40%
American Falls Reservoir Dist. #2	Canal & 3 recharge sites <sup>2</sup>	1,160	35%

<sup>1</sup> Wilson Canyon estimated recharge capacity of 100 cfs.

<sup>2</sup> MP 29 estimated recharge capacity of 300 cfs.

## **Potential Lower Valley Distribution Plan**

In the Lower Valley, a minimum rate of flow (500 cfs) is available during the non-irrigation season. This provides a level of certainty regarding availability of natural flow. The ability to convey and perform recharge can vary from year to year and during the recharge season. Weather conditions and infrastructure maintenance can significantly impact an entities' ability to deliver managed recharge water. In addition, the current managed recharge capacity using water from the Snake River is significantly greater than the minimum 500 cfs. Therefore, a plan for distribution or apportionment of available water is proposed below based on prioritization of areas in higher retention zones and the potential to apply water across a greater or more dispersed surface area.

**The following is a proposed plan for distribution of water under IWRB's natural flow recharge water rights based on retention rates and current recharge capacity:**

- 1) Available IWRB recharge water (first 660 cfs) will be distributed to the following entities in the order and rates listed:
  - a. Southwest Irrigation District 60 cfs.
  - b. Twin Falls Canal Company 30 cfs.
  - c. North Side Canal Company 130 cfs.
  - d. American Falls Reservoir District #2 440 cfs
- 2) Any additional water available for IWRB recharge greater than the diversions listed in no. 1 will first be made available to other entities **not** listed in no. 1 and based on the following criteria:
  - a. A maximum diversion rate of 50 cfs delivered to each entity
  - b. Prioritized based on higher retention rate
- 3) Excess IWRB recharge water not assigned through criteria 1 and 2 will be distributed to all entities based on retention rate.

## **Lower Valley Conveyance Fee Plan**

### **Current Fee Structure:**

The current Lower Valley conveyance fee structure is a sliding scale which increases the payment per acre-foot of recharge based on the number of days managed recharge is conducted:

<b><u>Fee Structure</u></b>	<b><u>“Normal” Time Period</u></b>
• 1 - 25 days = \$3/af	late-Oct to mid-Nov
• 26 - 50 days = \$5/af	mid-Nov to early/mid-Dec
• 51 – 80 days = \$7/af	mid-Dec to mid-Jan
• 81 – 120 days = \$10/af	mid-Jan to late-Feb
• >120 days = \$14/af	late-Feb to end of season

Under the current pay structure, the lowest rate is applied when water is usually less plentiful, in the fall and early winter. Over the last five years, the most challenging period for conducting managed recharge has typically occurred in the Lower Valley between late November and late February due to freezing conditions. Under the current fee structure, payments for recharge typically range from \$5 to \$10 per acre-foot when freezing conditions can occur. The highest cost per acre-foot for IWRB recharge typically occurs in the spring, which usually coincides with large volumes of water available for recharge.

### **Potential Winter Incentive Fee Structure:**

After reviewing a number of alternative payment options, the following recharge conveyance payment plan is provided for consideration by the ASC. Under this structure, the highest amount of compensation for recharge would occur during the winter months, December 16<sup>th</sup> through February 15<sup>th</sup>, when water delivery conditions are generally the most challenging. A flat rate would be applied for periods outside of the interval.

- Aug. 1<sup>st</sup> – Dec. 15<sup>th</sup> = \$5/af
- Dec. 16<sup>th</sup> – Feb. 15<sup>th</sup> = \$12/af
- Feb. 16<sup>th</sup> – Jul. 31<sup>st</sup> = \$5/af

### **Lower Valley - Comparison of Payment Structures:**

To compare the difference between the current and alternative payment structure, three scenarios were evaluated based on a maximum, “normal”, and minimum volume of recharge.

- 1) Maximum Capacity – This scenario assumes sufficient water is available for the current canals to run at full recharge capacity (1,420 cfs) from late October through most of March. When this occurs, there is typically water available for managed recharge past the irrigation season. For this scenario, managed recharge was continued through mid-May to off-canal sites, and accounting for reduced capacity in the canals due to the delivery of irrigation water.
- 2) “Normal” Water Availability – This scenario represents a more typical year with minimum water availability at the start of the recharge season, increased availability throughout the recharge season, and termination of the season in late March.

- 3) Minimum water Availability – This scenario assumes the minimum of 500 cfs is available throughout the recharge season from the end of October through most of March.

Lower Valley Conveyance Plan Comparison Table						
	Maximum Capacity		“Normal” Water Availability		Minimum Availability	
<b>Recharge Volume</b>	463,000 af		250,000 af		150,000 af	
<b>Fee Structure</b>	<b>Cost (\$)</b>	<b>\$/af</b>	<b>Cost (\$)</b>	<b>\$/af</b>	<b>Cost (\$)</b>	<b>\$/af</b>
Current	\$4,034,000	\$8.71	\$3,285,000	\$13.14	\$1,220,000	\$8.13
Winter Incentive	\$3,538,000	\$7.64	\$1,996,000	\$7.98	\$1,174,000	\$7.83

Figure 3, at the end of this memo, compares the two fee structures for the Lower Valley based on historic water availability.

## Upper Valley

Conducting managed recharge in the Upper Valley is highly unpredictable. The volume and timing of natural flow water available for recharge can change quickly. In addition, delivery of recharge water is heavily dependent on weather conditions and the canal entity’s ability to conduct annual infrastructure maintenance.

Water availability for managed recharge in the Upper Valley can range from zero (historically, this occurs for 50% of the years) to over 6,000 cfs during “wet” years. Figure 2 at the end of this memo is a graph showing the median amount of water available per month using data from 1991 through 2017 for the “wet” years.

If water is available before the irrigation season, the canals can recharge a significant volume of water. However, there are limited off-canal sites for managed recharge after irrigation deliveries start. The following table provides a summary of recharge capacity, in-canal and offsite, plus the average five-year retention rates of the entities that currently conduct managed recharge for the IWRB.

Entity	Managed Recharge Area(s)	Canal Recharge Capacity (cfs)	Off-Canal Capacity (cfs)	5-yr Retention
<b>Aberdeen-Springfield Canal Co.</b>	Canal & recharge site	500	80-200	22%
<b>New Sweden ID</b>	Canal & recharge site	180	30	22%
<b>Snake River Valley ID</b>	Canal & recharge site	160	40	19%
<b>Idaho ID</b>	Canal only	30	-	20%
<b>Progressive ID</b>	Canal only	180	-	19%
<b>Farmers Friend Irrigation Co.</b>	Canal & recharge site	100	15	20%
<b>Enterprize Canal Co.</b>	Canal only	40	-	19%
<b>Great Feeder Canal Co.</b>	Canal only	600	-	17%
<b>Sunnydell ID</b>	Canal only	35	-	27%
<b>Reid Canal Co.</b>	Canal only	25	-	39%
<b>Fremont-Madison ID</b>	Canal & recharge site	470	100-150	46%



## **Upper Valley Distribution Plan**

The proposed distribution plan for the Upper Valley prioritizes recharging in areas located in higher retention zones when possible. The retention zones in the Upper Valley can vary significantly from below 5% to over 50%. The IWRB's current policy is to recharge in areas with a five-year retention period of greater than 15%. It should be noted that not all of the entities listed in the above table have long-term agreements to conduct managed recharge for the IWRB.

The following plan is intended to optimize managed recharge in the following order of priorities:

- 1) Recharging in areas of higher retention,
- 2) Recharging excess water that would otherwise flow out of the system to enhance surface water supplies or storage through return flows to the river, and
- 3) Distribute the water equably throughout the Upper Valley.

In addition, preference will be given to entities with long-term contracts to conduct managed recharge with the IWRB, particularly when water supply for recharge is limited.

### **IWRB's natural flow water will be distributed for recharge in the Upper Valley as follows:**

- 1) When IWRB's recharge water right comes into priority, the available natural flow water will be distributed as follows:
  - Preference given to the highest five-year retention
  - Preference given to entities with long-term conveyance contracts with the IWRB
  - Diversion rate for the initial distribution will be determined based on the entity's capacity to divert (maximum diversion rate) at that time of distribution.
- 2) As entities are able to increase the diversion rate or new entities are able to conduct managed recharge, any excess natural flow water not already assigned will be distributed on a first come basis based on the criteria listed in no. 1.

## **Upper Valley Conveyance Fee Plan**

Performing managed recharge in the Upper Valley is challenging due to variability of available flow and accessibility of canals and recharge sites. Diversion of water through the canals can be difficult during the winter months due to snow, and canal capacity be limited in the spring once water is diverted to meet irrigation demand. However, a significant volume of water can be diverted for recharge purposes when the canals are accessible.

Historically the majority of the water available for managed recharge occurs after the irrigation season has begun. Over the last several years, canal managers have maximized recharge in the fall after diversions are terminated, shut down the canal system during the winter, and optimized recharge in the spring by delaying irrigation deliveries as long as possible. There has been limited development of off-canal sites that could be used during the peak natural flow periods.

The five-year retention rates in most of the areas where infrastructure capable of delivering recharge water (canals) currently exists are below 25%. The lower retention rates suggest that recharge in these areas would have less long-term benefit to the aquifer. However, by diverting excess water for recharge in the areas with lower five-year retention rate will provide some benefit to the aquifer as well as benefit to the river and reservoir system through delayed return flows.

### Current Fee Structure:

The current IWRB conveyance fee structure in the Upper Valley is based on the five-year retention rate (as determined by the ESPAM 2.1 groundwater flow model), along with timing and duration of recharge performance. An initial base rate is determined by the five-year retention percentage. The rate is increased by one dollar per acre-foot if the recharge occurs in the winter months (January through March) to address the challenges of winter operational conditions, and an additional dollar per acre-foot if the entity recharges 75% of the period from the notice to proceed to the date when water ceases to be available for recharge. The current base rate per the five-year retention is:

<u>5-yr Retention</u>	<u>Fee Structure</u>
• >40% =	\$6/af
• 20% to <40% =	\$5/af
• 15% to <20% =	\$4/af

### Potential Winter/High Retention Fee Structure:

The following alternative recharge conveyance payment plan is provided for consideration by the ASC based on review of a number of different options. This plan assumes recharge with IWRB water in the fall and winter is limited to areas with 20% or greater five-year retention rates since managed recharge in these areas has the greatest potential long-term benefit to the aquifer. The overall cost per acre-foot (af) is increased for the winter period to compensate entities for the challenges of operating canal systems under winter condition. The spring/summer period includes a payment for five-year retention rates 15% or greater to encourage diversion of excess natural flow water that would otherwise leave the basin/state.

• Aug. 1 <sup>st</sup> – Nov. 15 <sup>th</sup> :	
i. >40% =	\$7/af
ii. 20% to <40% =	\$6/af
• Nov. 16 <sup>th</sup> – Mar. 15 <sup>th</sup> :	
i. >40% =	\$14/af
ii. 20% to <40% =	\$10/af
• Mar. 16 <sup>th</sup> – Jul. 31 <sup>st</sup> :	
i. >40% =	\$7/af
ii. 20% to <40% =	\$6/af
iii. 15% to <20% =	\$3/af

### **Upper Valley - Comparison of Payment Structures:**

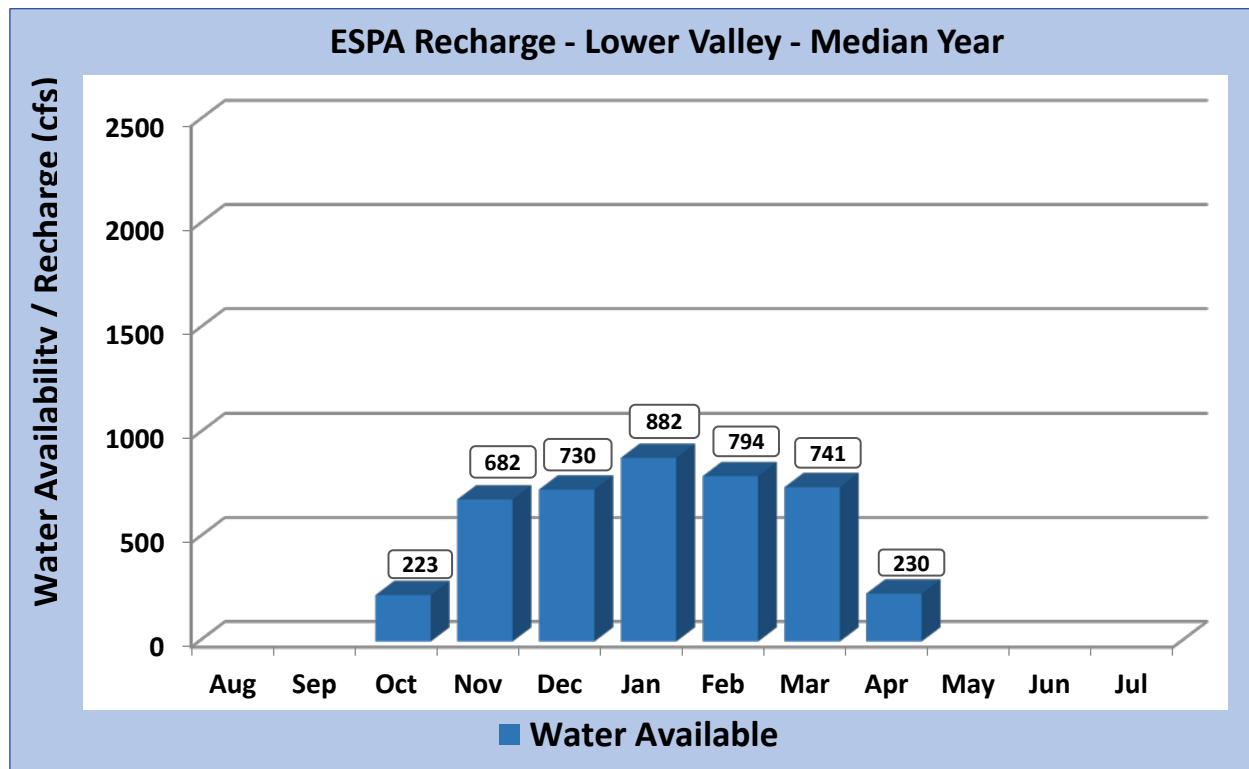
The evaluation of the Upper Valley conveyance payment structures includes two scenarios based on a maximum and “normal” recharge volumes. In most cases water is available for recharge in the Upper Valley historically 50% of the time. Therefore, the scenarios assume a larger than normal recharge season continuing into mid-May. The scenarios incorporate recharging storage water from late August through October.

- 1) **Maximum Capacity** – This scenario assumes that there would be sufficient water available for the current canals to run at full recharge capacity from the later part of October through mid-April and only off-canal sites from mid-April through mid-May.
- 2) **“Normal” Water Availability** – This scenario represents a more typical “wet” year and assumes water is not available for recharge until mid-February and only off-canal sites from mid-April to mid-May.

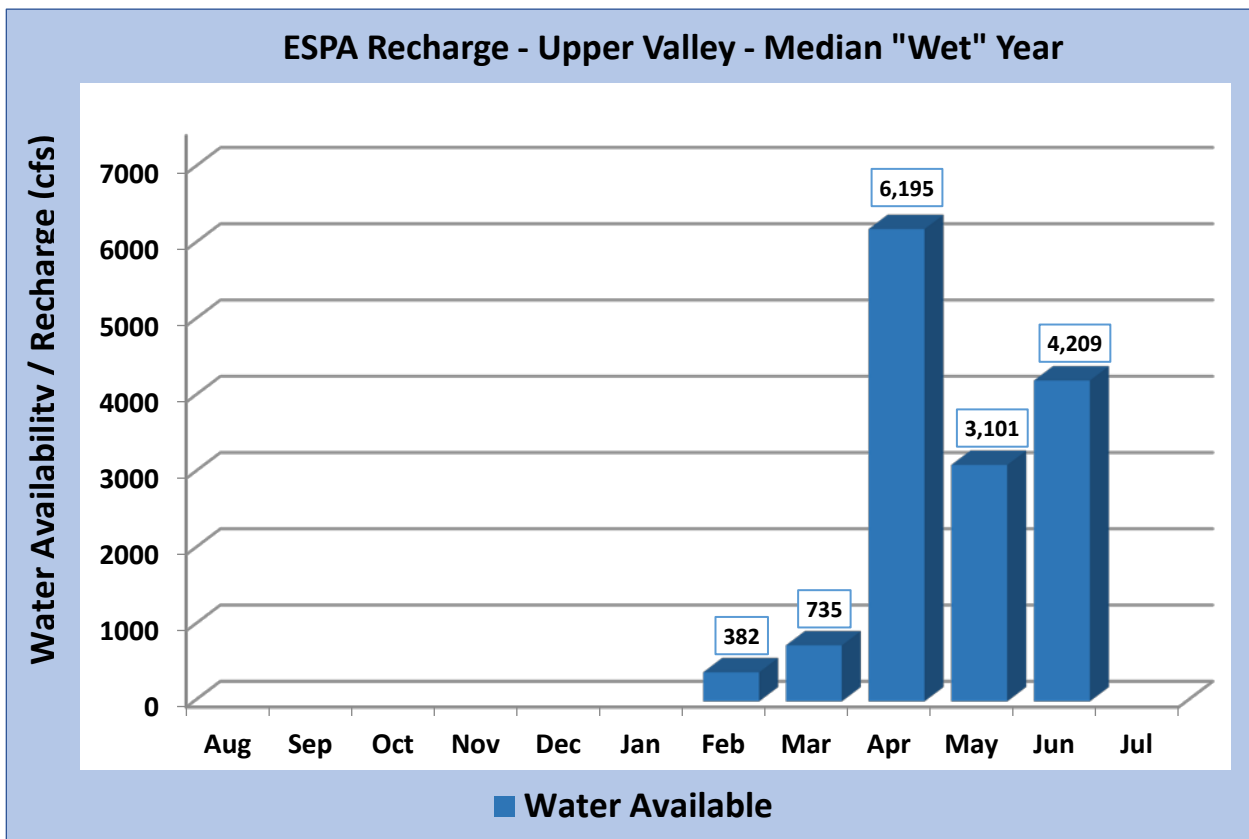
Upper Valley Conveyance Plan Comparison Table						
	Maximum Capacity			“Normal” Water Availability		
Payment Plan	Recharge Volume (af)	Cost (\$)	\$/af	Recharge Volume (af)	Cost (\$)	\$/af
Current	393,000	\$2,460,000	\$6.26	170,000	\$1,071,000	\$6.30
Winter/High Ret.	308,000	\$2,190,000	\$7.11	166,000	\$908,000	\$5.47

Figure 4 at the end of this memo compares the two fee structures for the Upper Valley using historic water availability.

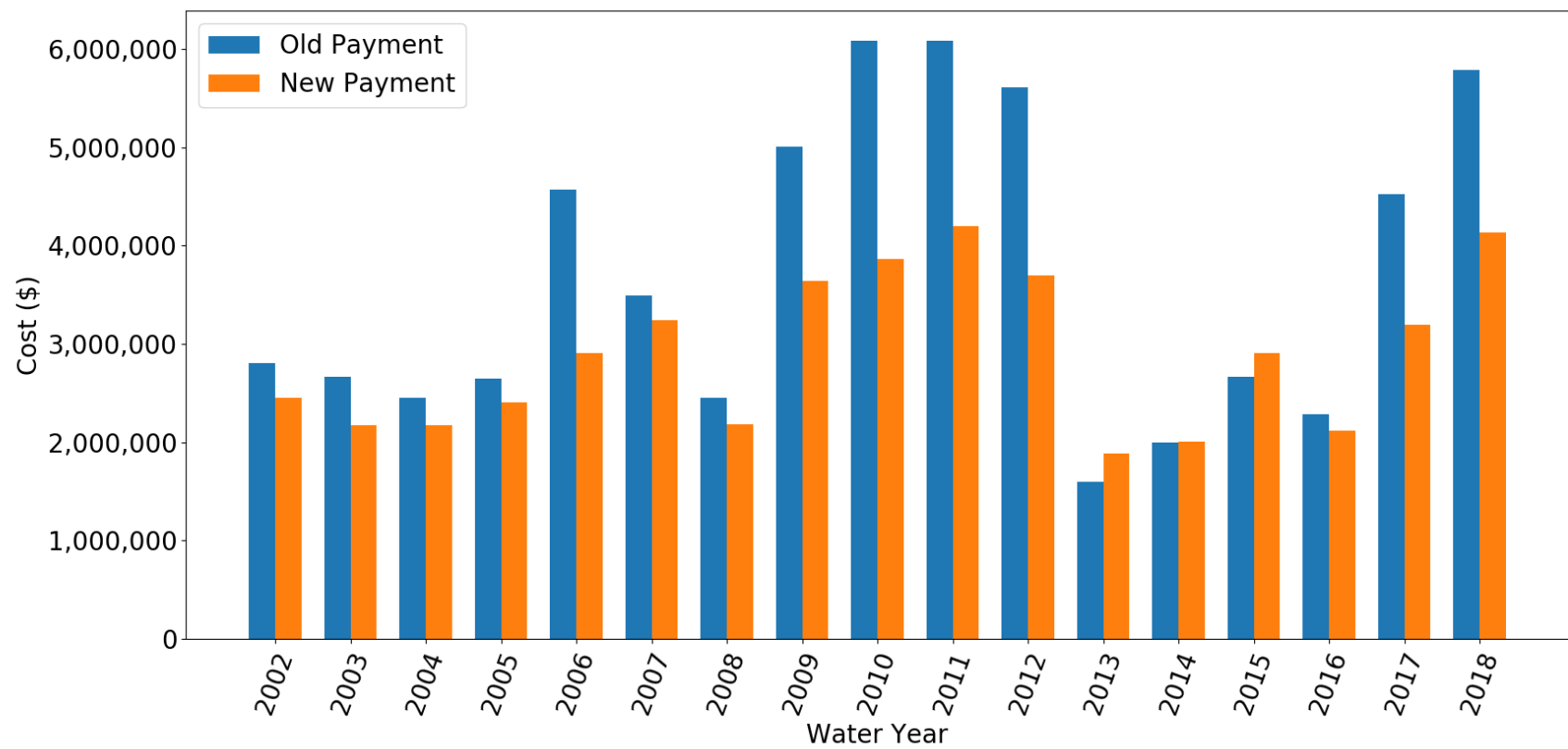




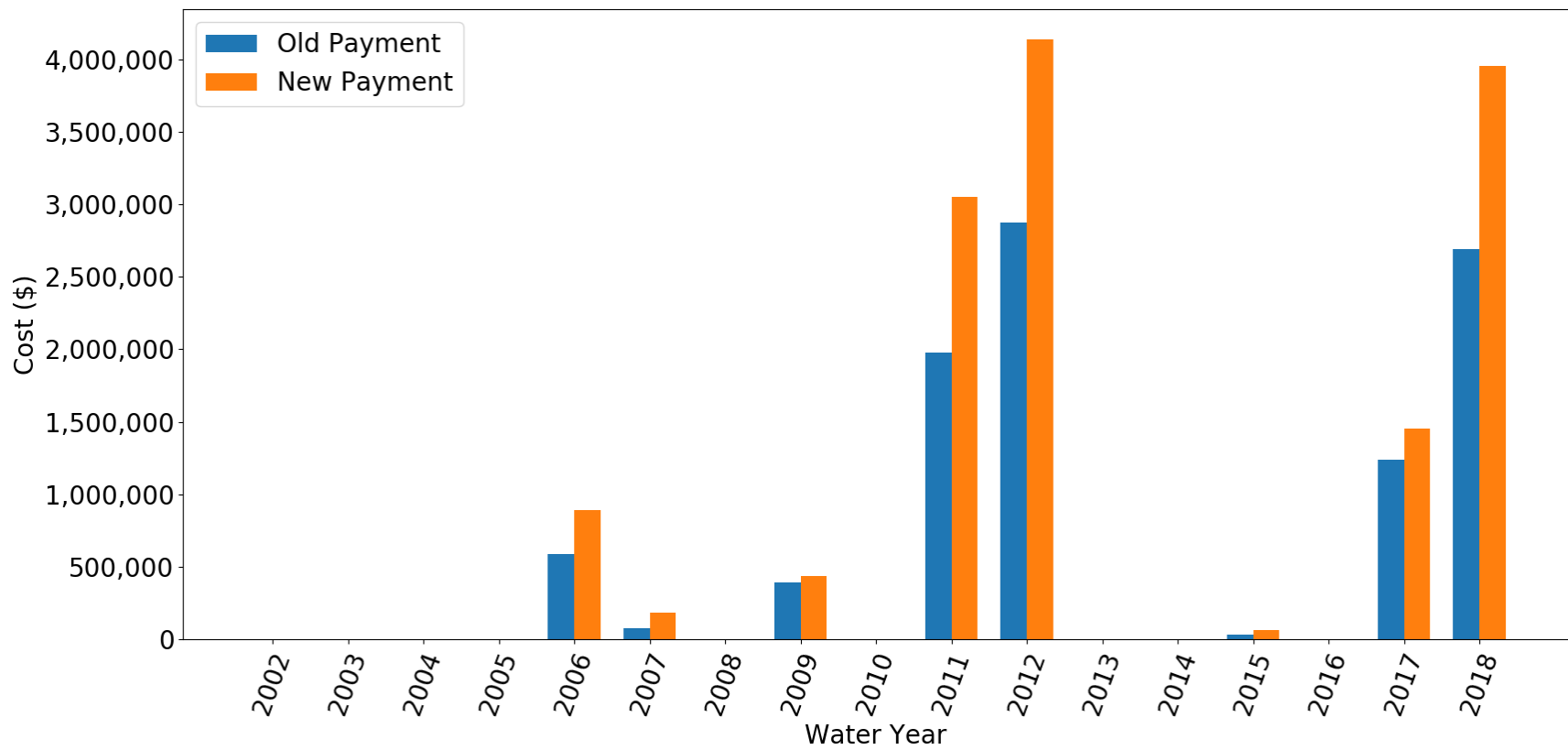
**Figure 1:** Median water available per month using data from 1991 through 2017 for the “median” years in the Lower Valley.



**Figure 2:** Median water available per month using data from 1991 through 2017 for the “wet” years in the Upper Valley.



**Figure 3:** Lower Valley Fee Structure Comparison using historic water availability.



**Figure 4:** Upper Valley Fee Structure Comparison using historic water availability.





# ESPA Managed Recharge Program

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## Aquifer Stabilization Committee Meeting

**Wesley Hipke**

IWRB Recharge Program Manager

June 26, 2019



## ESPA Managed Recharge Program

- **Lower Valley:**
    - Distribution Plan
    - Conveyance Payment Plan
  - **Upper Valley:**
    - Distribution Plan
    - Conveyance Payment Plan
- ### Intent
- Gather feedback & direction



## ESPA - IWRB Managed Recharge Program

- **ESPA CAMP – Managed Recharge - appropriate tool:**
  - Enhancing ground and surface water supplies,
  - Help maintain and increase aquifer levels,
  - Change the timing and availability of water supplies to meet demands.
- **Goal**
  - Develop a program to recharge, on average, 250,000 af/yr in the ESPA.
- **Strategies:**
  - Prioritize recharge in areas of high retention that will have the most benefit to the aquifer.
  - Maximize the use of natural flow water that would otherwise leave the area / state.



# ESPA Managed Recharge Program - Implementation

## Lower Valley

- Significant volume of water available all winter
- Good retention time in the areas used for managed recharge
- Develop new sites and improve infrastructure for winter deliveries
- Incentivize canals to maximize managed recharge diversions



## Lower Valley – Current Fee Structure

### Fee Structure

- 1 - 25 days = \$3/af
- 26 - 50 days = \$5/af
- 51 – 80 days = \$7/af
- 81 – 120 days = \$10/af
- >120 days = \$14/af

### “Normal” Time Period

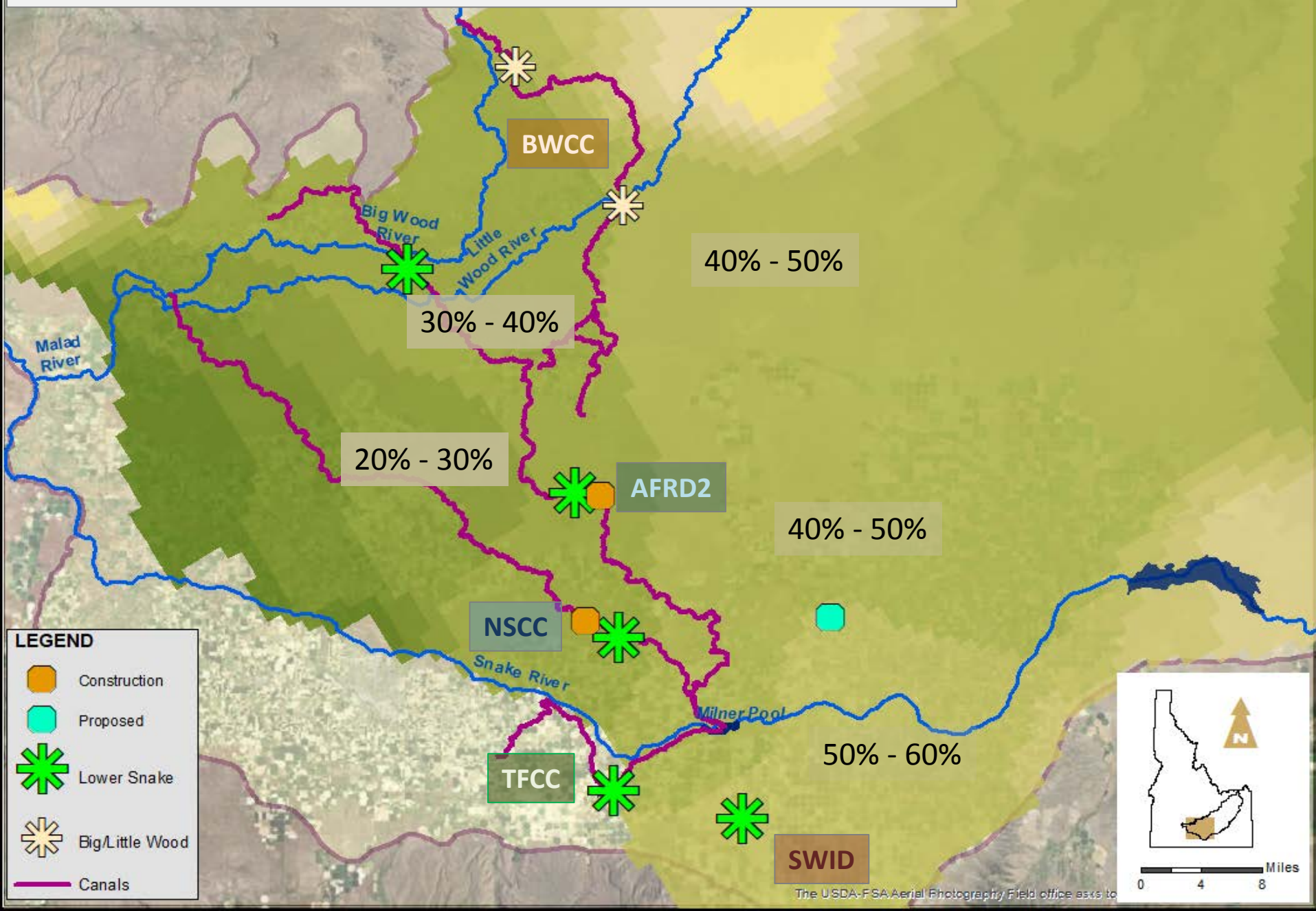
late-Oct to mid-Nov  
mid-Nov to early/mid-Dec  
mid-Dec to mid-Jan  
mid-Jan to late-Feb  
late-Feb to end of season

### Intent:

- Encourage the canals to conduct as much managed recharge as possible for the IWRB when water is available.
- Compensate the canals for the additional labor, maintenance, and operational expenses accrued when conducting managed recharge for the IWRB.

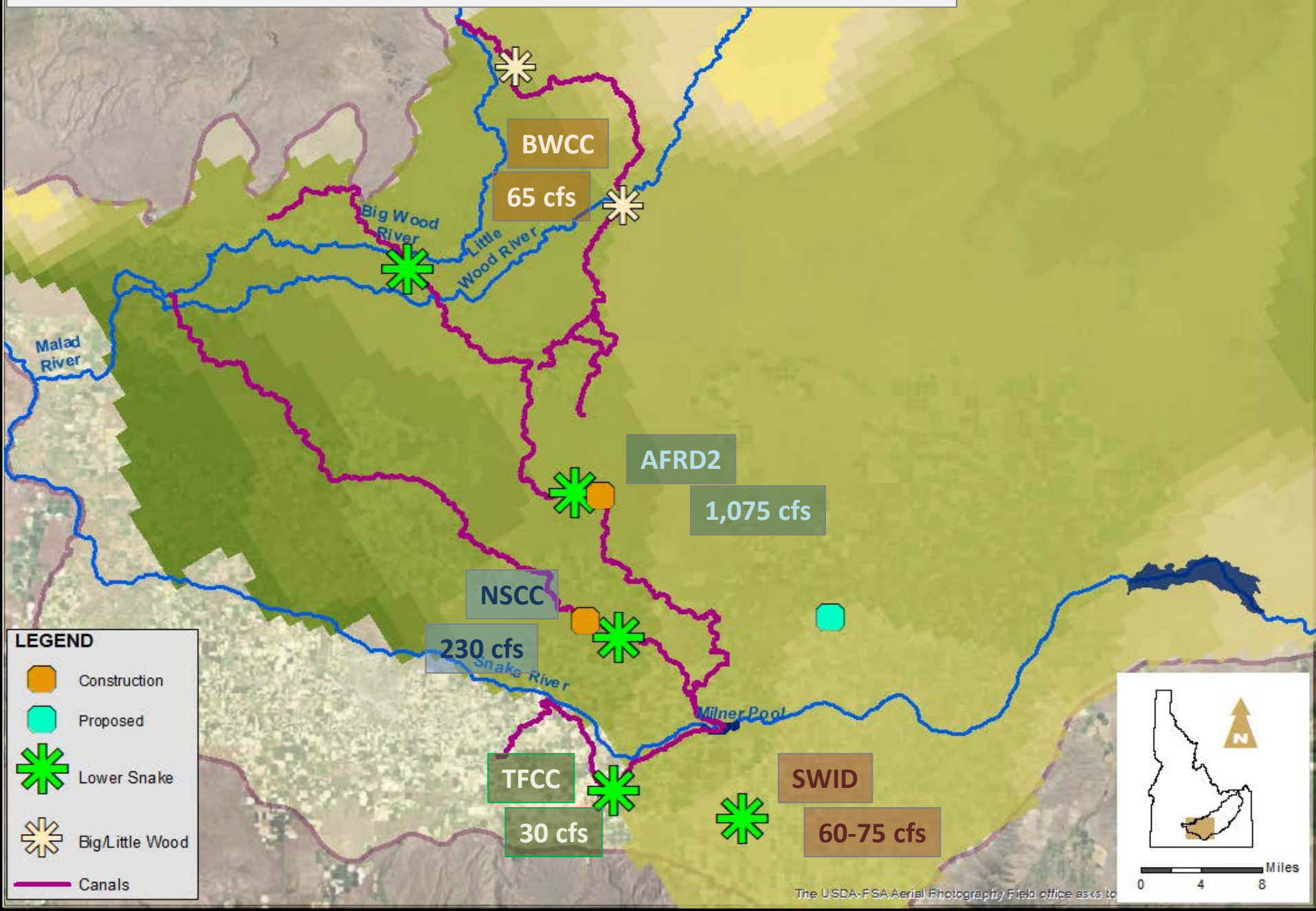


# IWRB Lower Valley Recharge Retention





# IWRB Lower Valley Recharge Capacity



## Lower Valley – Potential Distribution Plan

### Intent:

- Maximize the effectiveness of the Program
- Prioritize areas of higher retention

### Potential Distribution Plan:

- 1) The first **660** cfs would be distributed as follows:

		<b><u>Ret:</u></b>	
a)	Southwest ID	60 cfs	54%
b)	Twin Falls Canal	30 cfs	44%
c)	North Side Canal	130 cfs	40%
d)	American Falls Reservoir Dist. #2	440 cfs	35%
- 2) Above 660 cfs distributed using the following priorities:
  - a) Other entities not listed – with a 50 cfs limit,
  - b) Recharge areas with the highest retention rate.

## Lower Valley – Canals Suggested Protocol

### Protocol:

- Lower Valley Meeting concerning IWRB recharge in early October
- Payment based on volume not days
- Entities having time for maintenance

### Example:

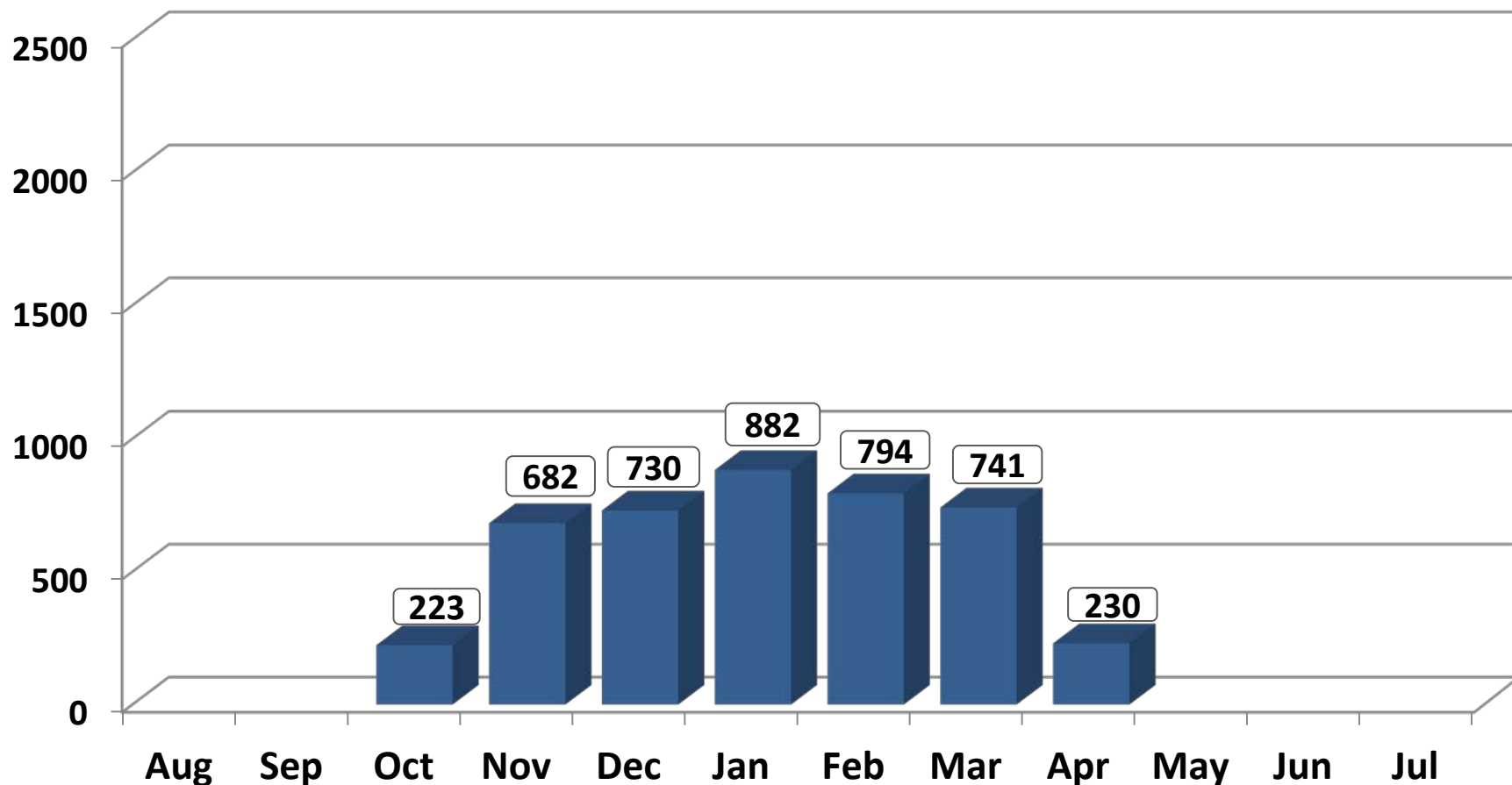
#### 1) Assuming 500 cfs available

a)	American Falls Reservoir Dist. #2	500 cfs	Nov 1 – Jan 15
		140 cfs	Jan 15 – Mar 31
b)	North Side Canal	230 cfs	Jan 15 – Mar 31
c)	Southwest ID	70 cfs	Jan 15 – Mar 31
d)	Twin Falls Canal	40 cfs	Jan 15 – Mar 31
e)	A&B ID	20 cfs	Jan 15 – Mar 31



## Lower Valley – Water Availability – Median

Water Availability / Recharge (cfs)



■ Water Available

## Lower Valley – Conveyance Fee Structures

### Current Structure:

	<u>\$/af</u>	<u>“Normal” Time Period</u>
• 1 - 25 days =	\$3	late-Oct to mid-Nov
• 26 - 50 days =	\$5	mid-Nov to early/mid-Dec
• 51 – 80 days =	\$7	mid-Dec to mid-Jan
• 81 – 120 days =	\$10	mid-Jan to late-Feb
• >120 days =	\$14	late-Feb to end of season

### Winter Incentive:

• Aug. 1 <sup>st</sup> – Dec. 15 <sup>th</sup> :	\$5/af
• Dec. 16 <sup>th</sup> – Feb. 15 <sup>th</sup> :	\$12/af
• Feb. 16 <sup>th</sup> – Jul. 31 <sup>st</sup> :	\$5/af

## Lower Valley – Fee Structure Comparison

**Comparison Table**

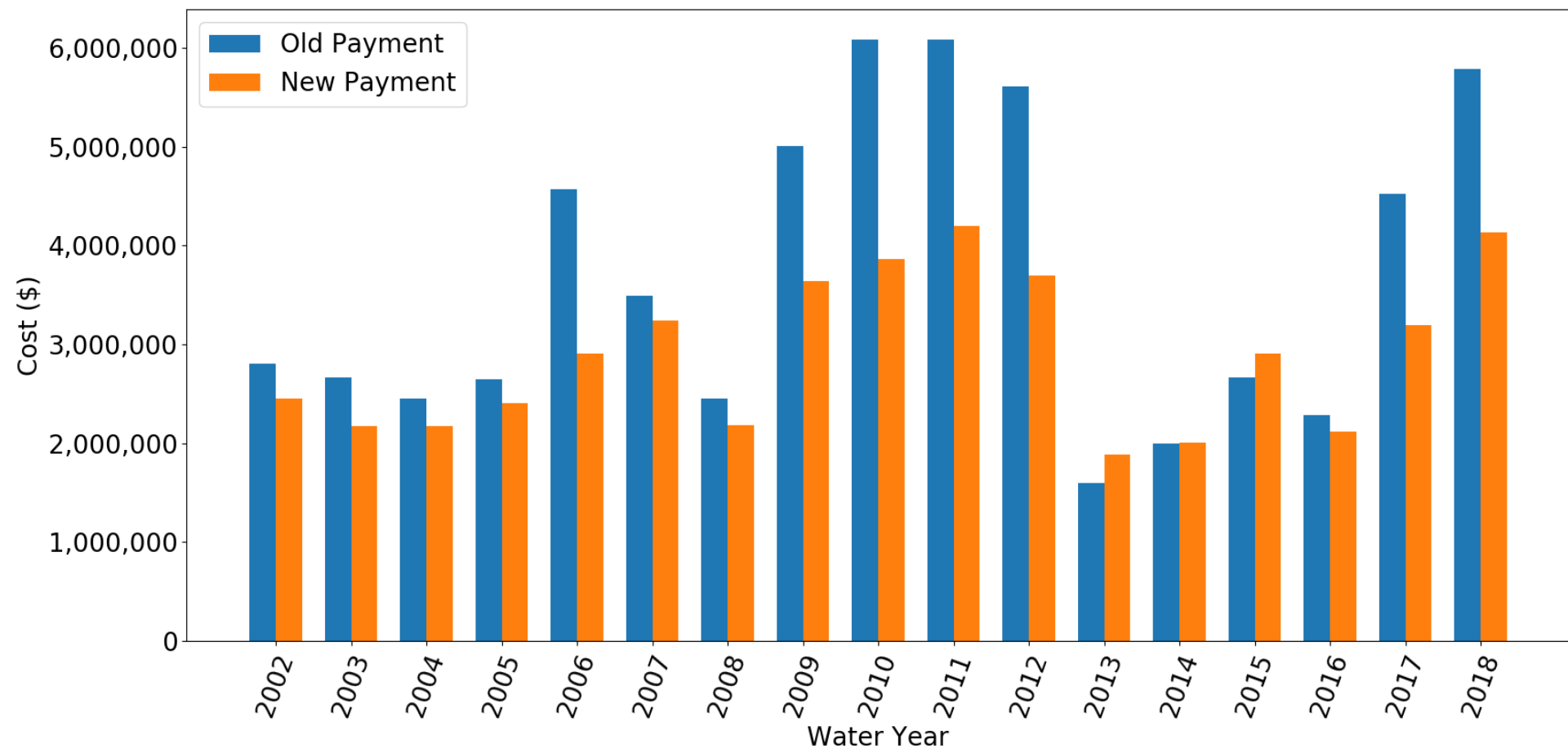
	Maximum Capacity		“Normal” Water Availability		Minimum Availability	
Recharge Volume	463,000 af		250,000 af		150,000 af	
Payment Plan	Cost (\$)	\$/af	Cost (\$)	\$/af	Cost (\$)	\$/af
Current	\$4,034,000	\$8.71	\$3,285,000	\$13.14	\$1,220,000	\$8.13
Winter Incentive	\$3,538,000	\$7.64	\$1,996,000	\$7.98	\$1,174,000	\$7.83

- Significant cost reduction due to reducing Cost/af in the spring



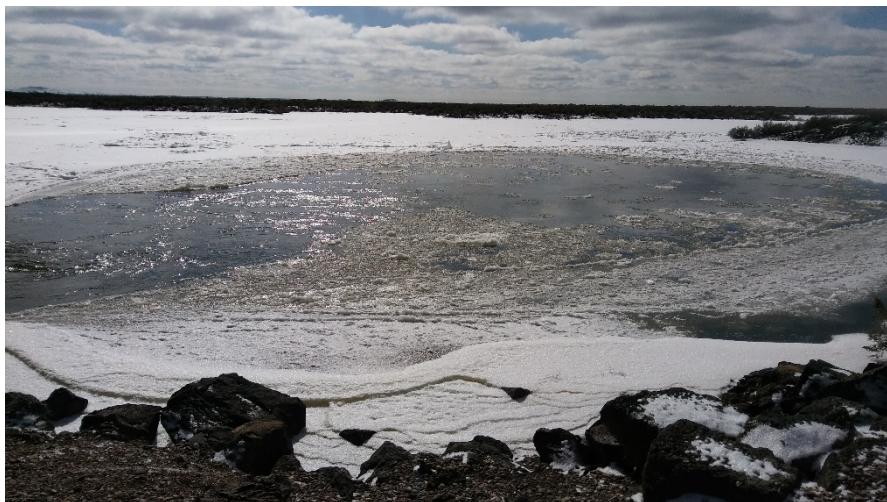
## Lower Valley – Fee Structure Comparison

- Max Reduction of \$2 Million (~\$6 M to ~\$4 M)



## Lower Valley

Questions?  
Discussions / Suggestions





## ESPA Managed Recharge Program - Implementation

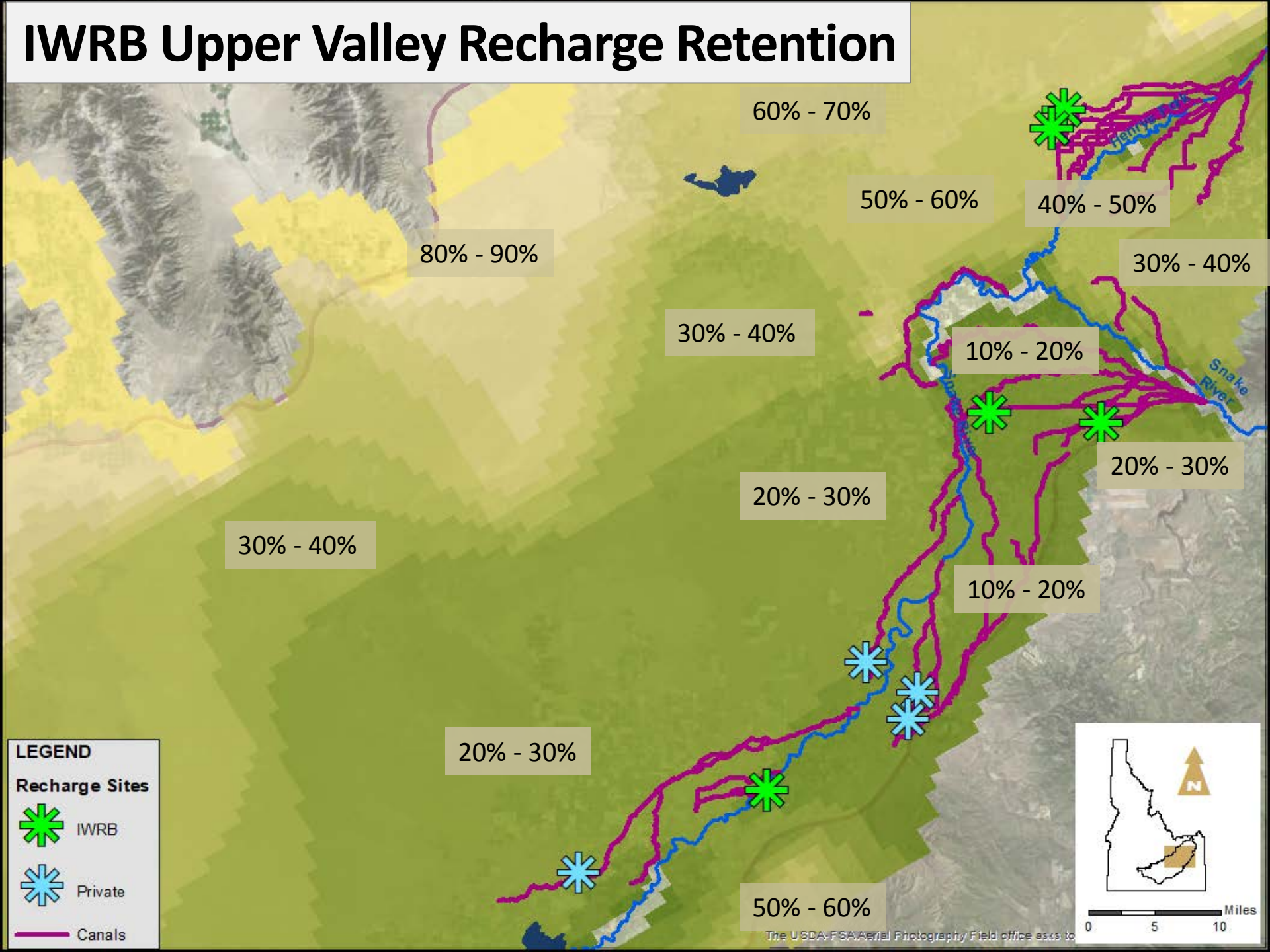
### Upper Valley

- Water only available approximately 50% of the years
- Large volumes of water when available
- Wide range of retention rates – prioritize recharge in high retention areas
- Develop new sites and improve infrastructure for recharge deliveries
- Incentivize canals to conduct managed recharge when available



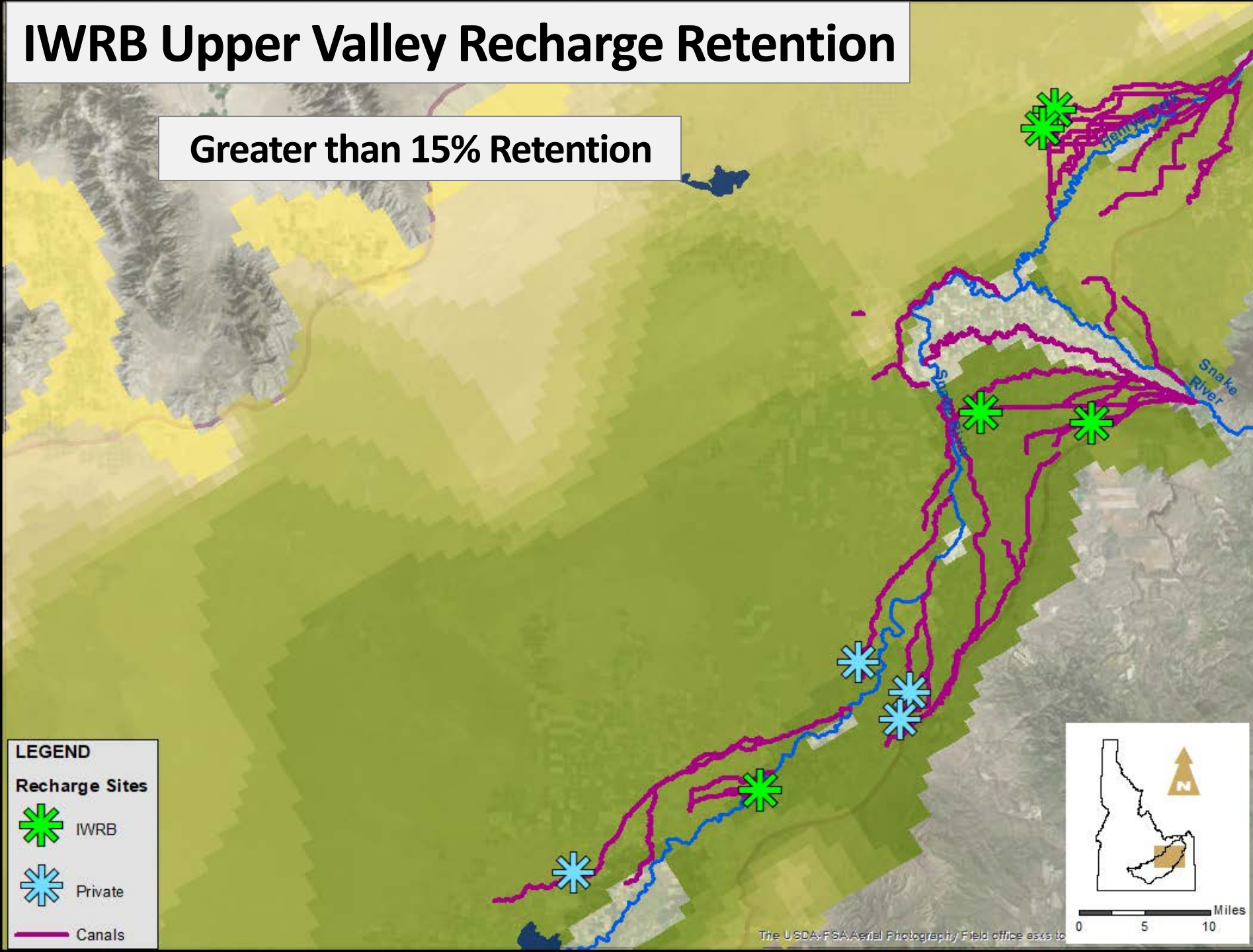


# IWRB Upper Valley Recharge Retention



# IWRB Upper Valley Recharge Retention

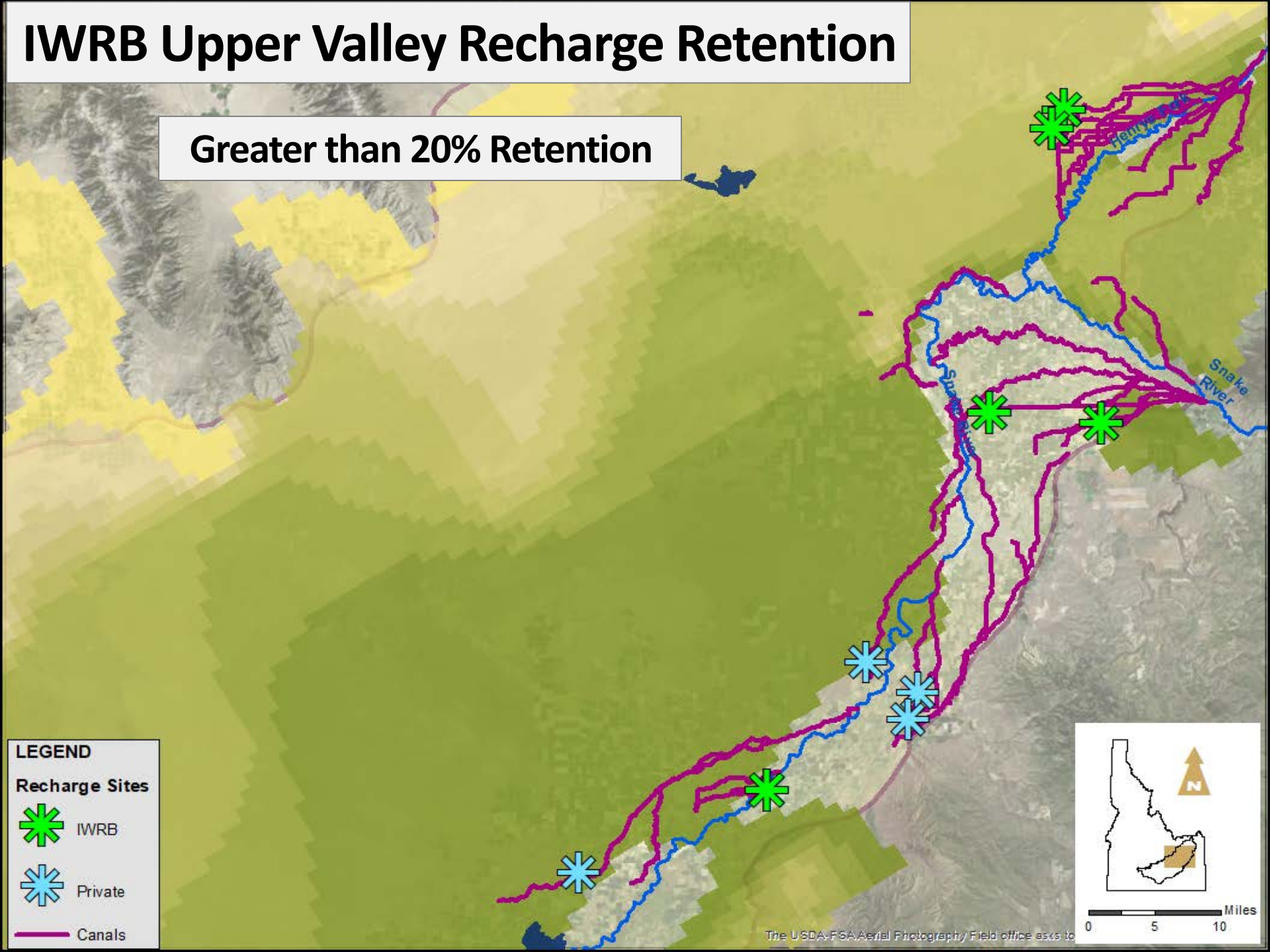
Greater than 15% Retention





# IWRB Upper Valley Recharge Retention

### Greater than 20% Retention

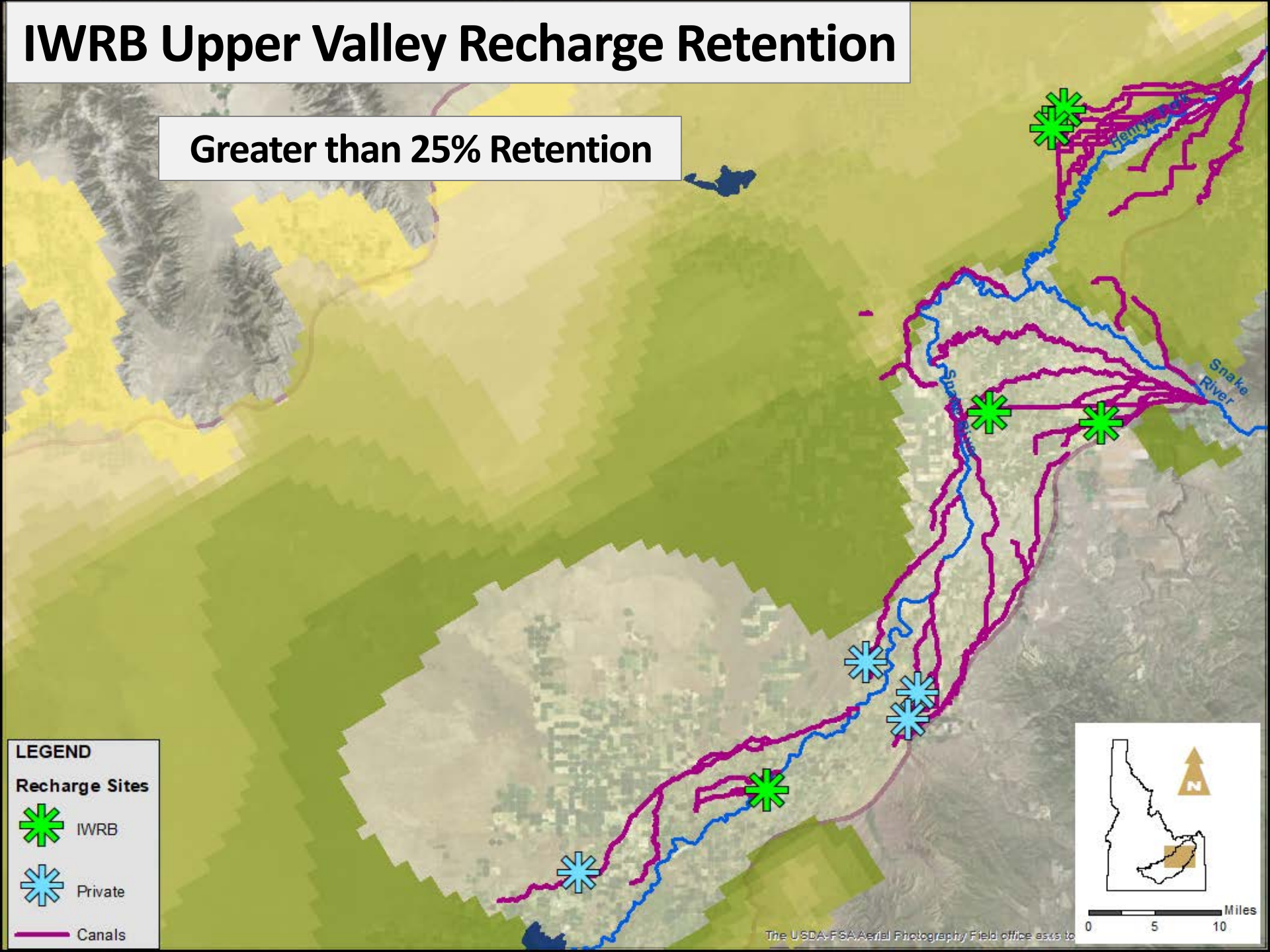


The USDA-FSA Aerial Photography Field office aspires to



# IWRB Upper Valley Recharge Retention

Greater than 25% Retention



## LEGEND

### Recharge Sites



IWRB



Private



Canals



0 5 10 Miles

The USDA-FSA Aerial Photography Field office exists to

# IWRB Upper Valley Recharge Capacity - Canals

Current Canal Capacity  
2,320 cfs

IWRB Canal Capacity  
450 cfs

Winter to Mid-April

Henry's Fork

470 cfs

South Fork

980 cfs

Middle Snake

870 cfs

Snake River

## LEGEND

### Recharge Sites



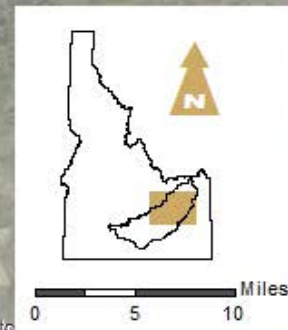
IWRB



Private



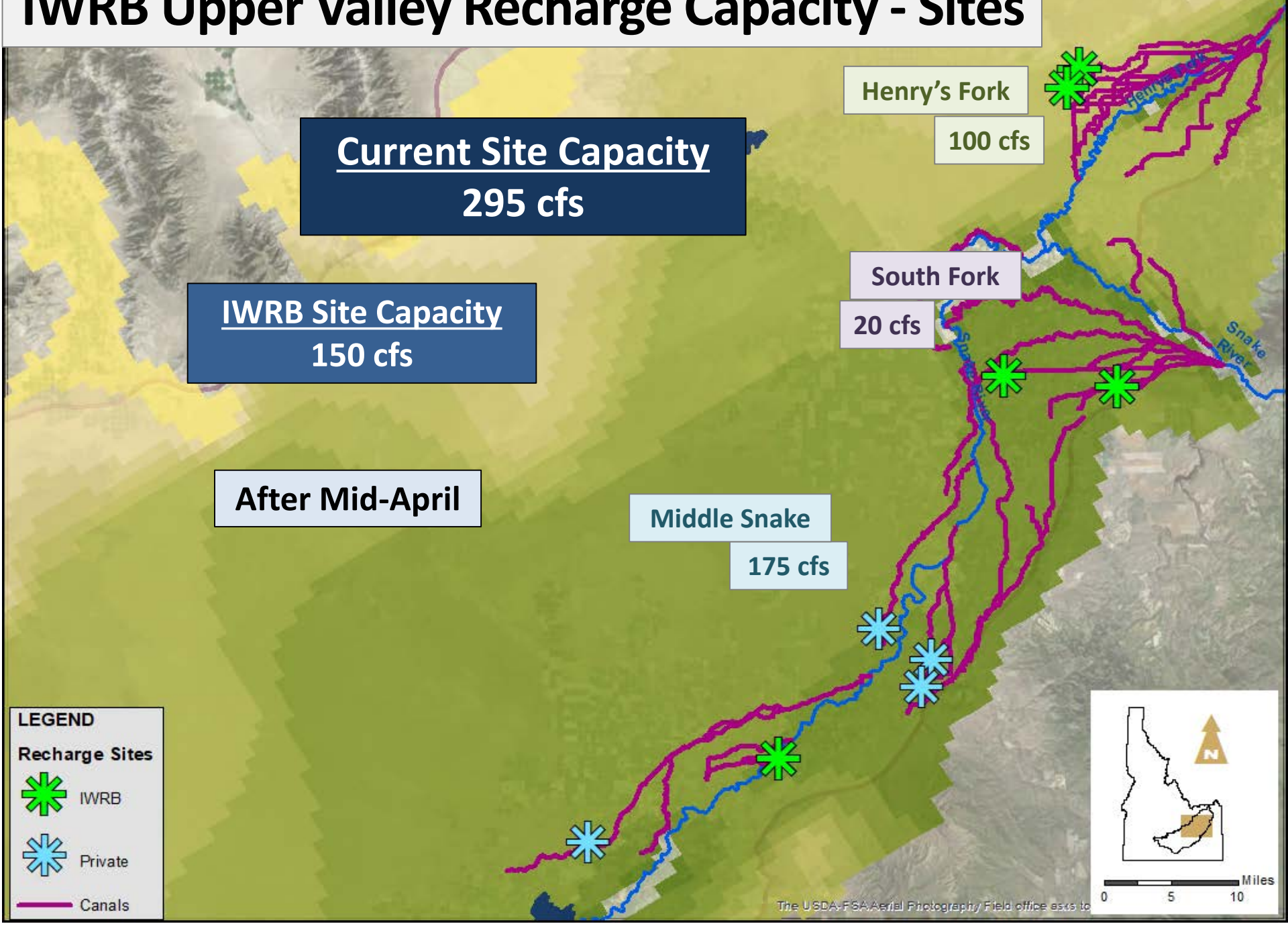
Canals



The USDA-FSA Aerial Photography Field office exists to



# IWRB Upper Valley Recharge Capacity - Sites





## Upper Valley – Current Fee Structure

### 5-year Retention

### \$/af

- >40%
- 20% - 40%
- 15% - 20%

\$6  
\$5  
\$4

### Additional Incentives:

- Cold Weather Incentive \$1/af
  - Dec. 1<sup>st</sup> to Mar. 31<sup>st</sup>
- Delivery Incentive \$1/af
  - >75%

### Intent:

- Incentivize recharging in areas of higher retention rates
- Encourage the canals to conduct as much managed recharge as possible for the IWRB when water is available.
- Compensate the canals for the additional labor, maintenance, and operational expenses accrued when conducting managed recharge for the IWRB.

## Upper Valley – Potential Distribution Plan

### Intent:

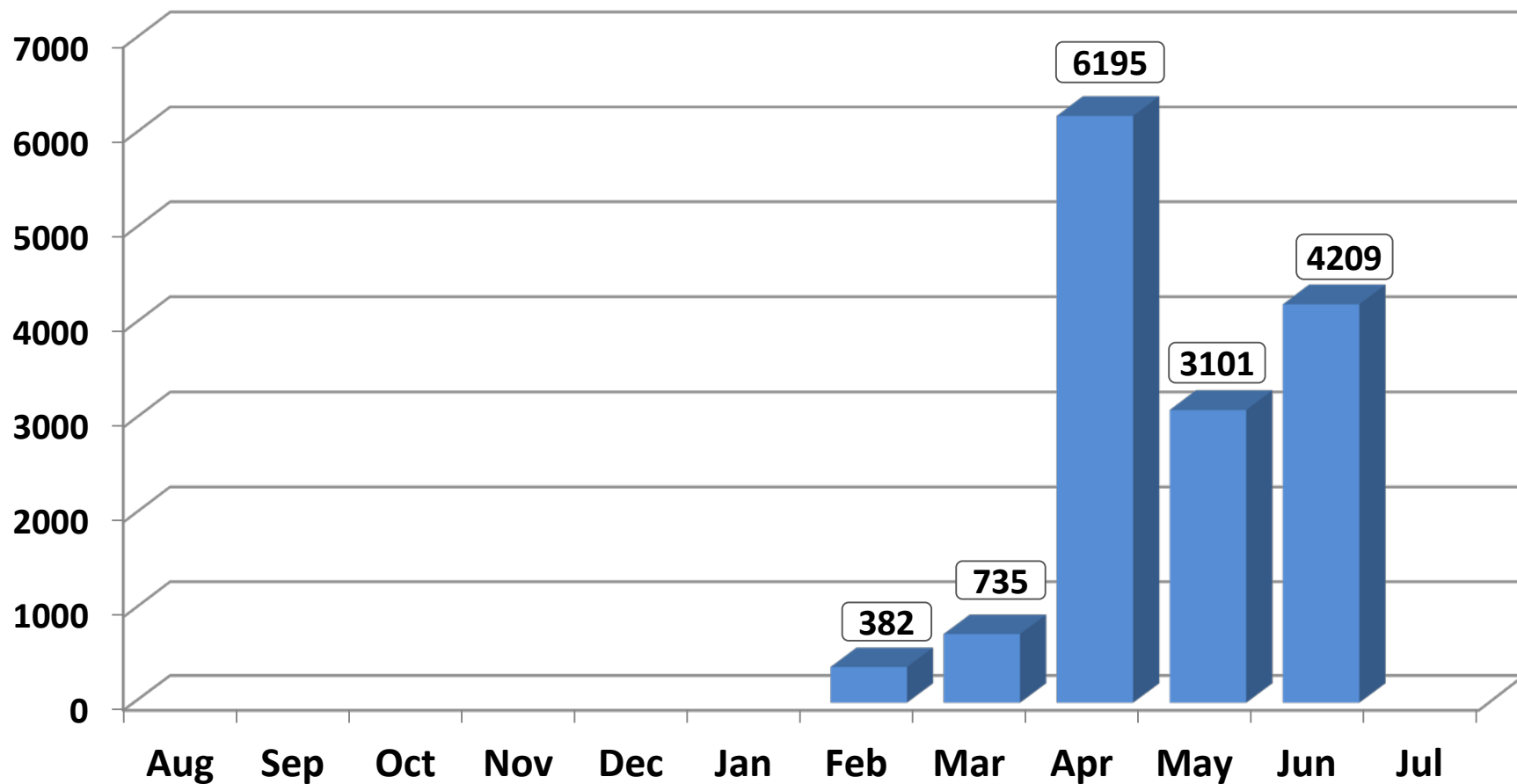
- Maximize the effectiveness of the Program in a very unpredictable system
- Prioritize areas of higher retention

### Potential Distribution Plan:

- 1) 1<sup>st</sup> priority is to the areas with the highest retention.
- 2) 2<sup>nd</sup> priority is to entities with long-term IWRB conveyance contracts.
- 3) Diversion rates per entity will be determined by the maximum rate the entity can do at the time.
- 4) Increases in diversion rates or new entities will be allocated remaining IWRB natural flow water on a “first come” bases with high retention and IWRB long-term contracts being given priority.

## Upper Valley – Water Availability – “Wet” Year

Water Availability / Recharge (cfs)



■ Water Available



## Upper Valley – Conveyance Fee Structures

### 5-year Retention

\$/af

- >40%
- 20% - 40%
- 15% - 20%

\$6  
\$5  
\$4

### Additional Incentives:

- Cold Weather Incentive \$1/af
  - Dec. 1<sup>st</sup> to Mar. 31<sup>st</sup>
- Delivery Incentive \$1/af
  - >75%

### Winter / High Ret. Incentive:

\$/af

Aug. 1<sup>st</sup> – Nov. 15<sup>th</sup> :

>40% = \$7  
20% to <40% = \$6

Nov. 16<sup>th</sup> – Mar. 15<sup>th</sup>:

>40% = \$14  
20% to <40% = \$10

Mar. 16<sup>th</sup> – Jul. 31<sup>st</sup>:

>40% = \$7  
20% to <40% = \$6  
15% to <20% = \$3

# Upper Valley – Fee Structure Comparison

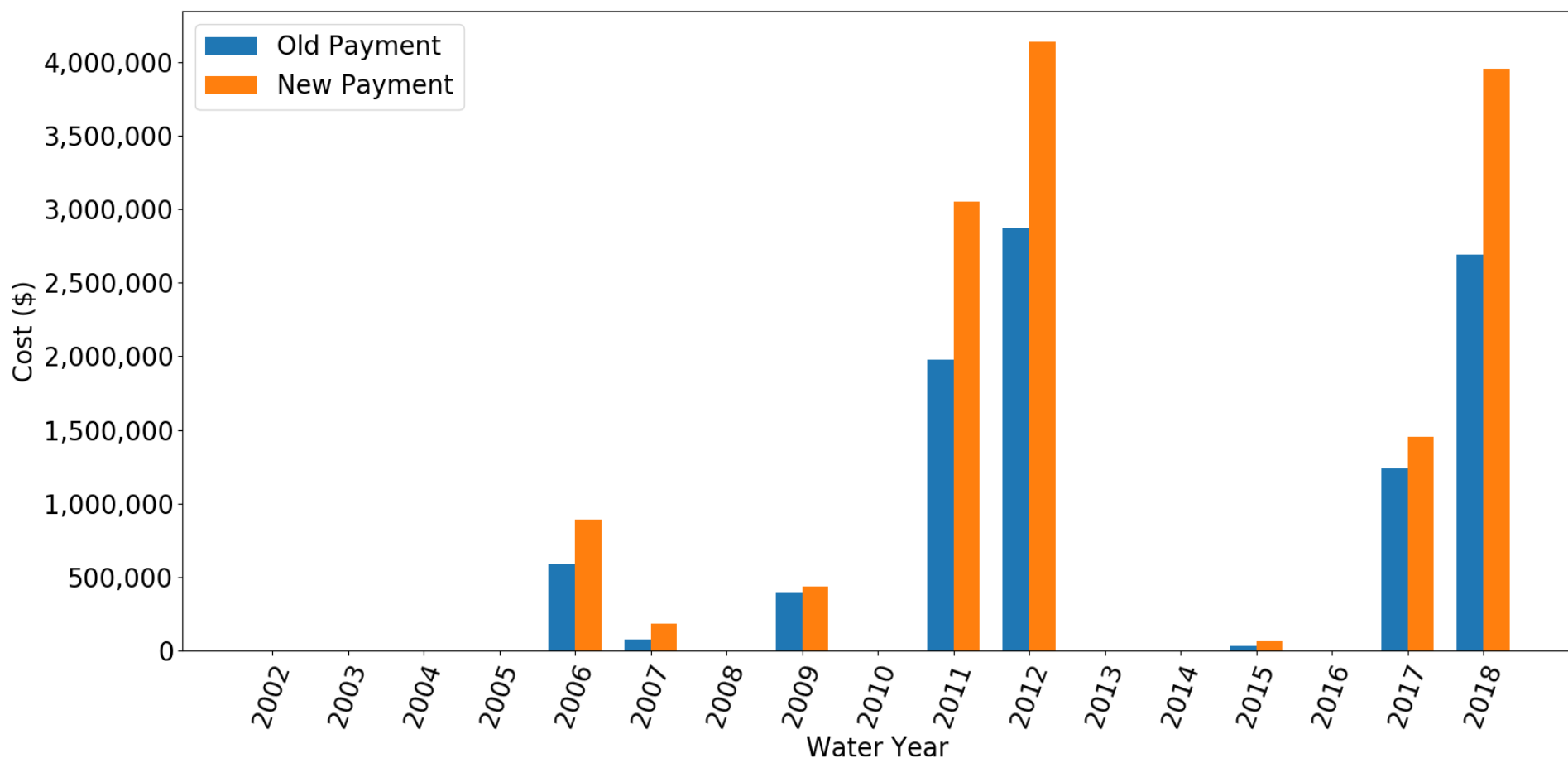
**Comparison Table**

	Maximum Capacity			“Normal” Water Availability		
Payment Plan	Recharge Vol. (af)	Cost (\$)	\$/af	Recharge Vol. (af)	Cost (\$)	\$/af
Current	393,000	\$2,460,000	\$6.26	170,000	\$1,071,000	\$6.30
Winter/High Ret.	308,000	\$2,190,000	\$7.11	166,000	\$908,000	\$5.47

- Reduced recharge as a result of limiting managed recharge in areas below 20% except for in the spring.

## Upper Valley – Fee Structure Comparison

- Variable times and volumes for managed recharge.





## Upper Valley

Questions?  
Discussions / Suggestions





# Questions

