AGENDA

IDAHO WATER RESOURCE BOARD

Aquifer Stabilization Committee Meeting No. 1-20
Tuesday, May 19, 2020
10:30 a.m. (MDT)

(At this time the office location is closed to the public in accordance with Governor Little's Stay Healthy Order issued May 1, 2020 in response to the public health emergency caused by the COVID-19 pandemic.)

Board Members & the Public may participate via Go-To Meeting
Please join the meeting from your computer, tablet or smartphone.
https://www.gotomeet.me/IWRB
You can also dial in using your phone.
United States: +1 (571) 317-3122
Access Code: 673-626-773

In the event of questions, email: Jennifer.strange@idwr.idaho.gov

1. Introductions and Attendance
2. ESPA Recharge Program Update
3. ESPA Managed Recharge Forecasting Tool
4. Potential Recharge Advisory Committee
5. Other Items
6. Adjourn

Committee Members: Bert Stevenson (Chair), Vince Alberdi, Al Barker, Roger Chase, and Jeff Raybould.

* Action Item: A vote regarding this item may be made this meeting. Identifying an item as an action item on the agenda does not require a vote to be taken on the item.

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

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IDAHO
Water Resource Board

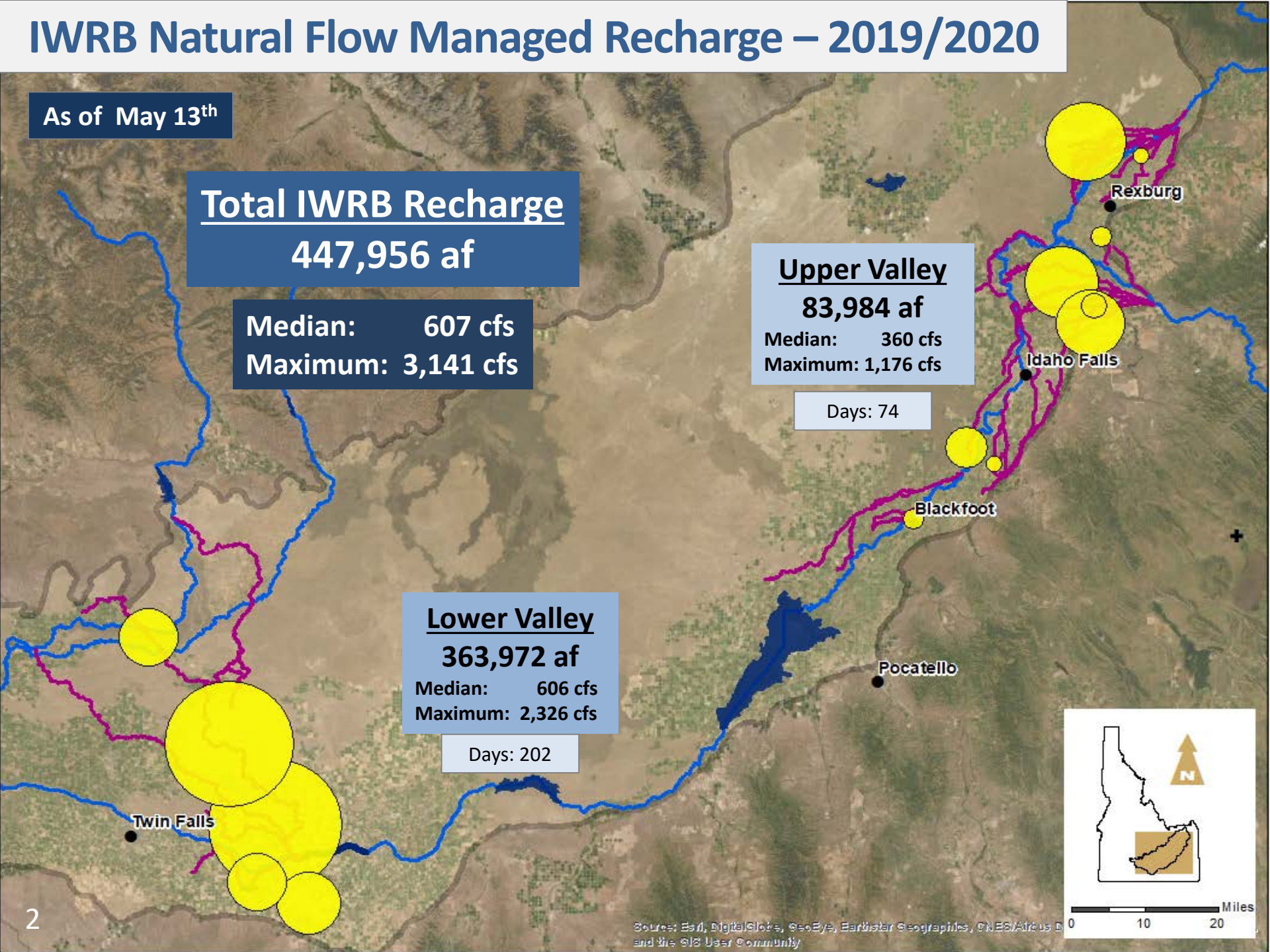
ESPA Managed Recharge Program

IWRB Aquifer Stabilization & Sustainability Committee

Wesley Hipke
IWRB Recharge Program Manager

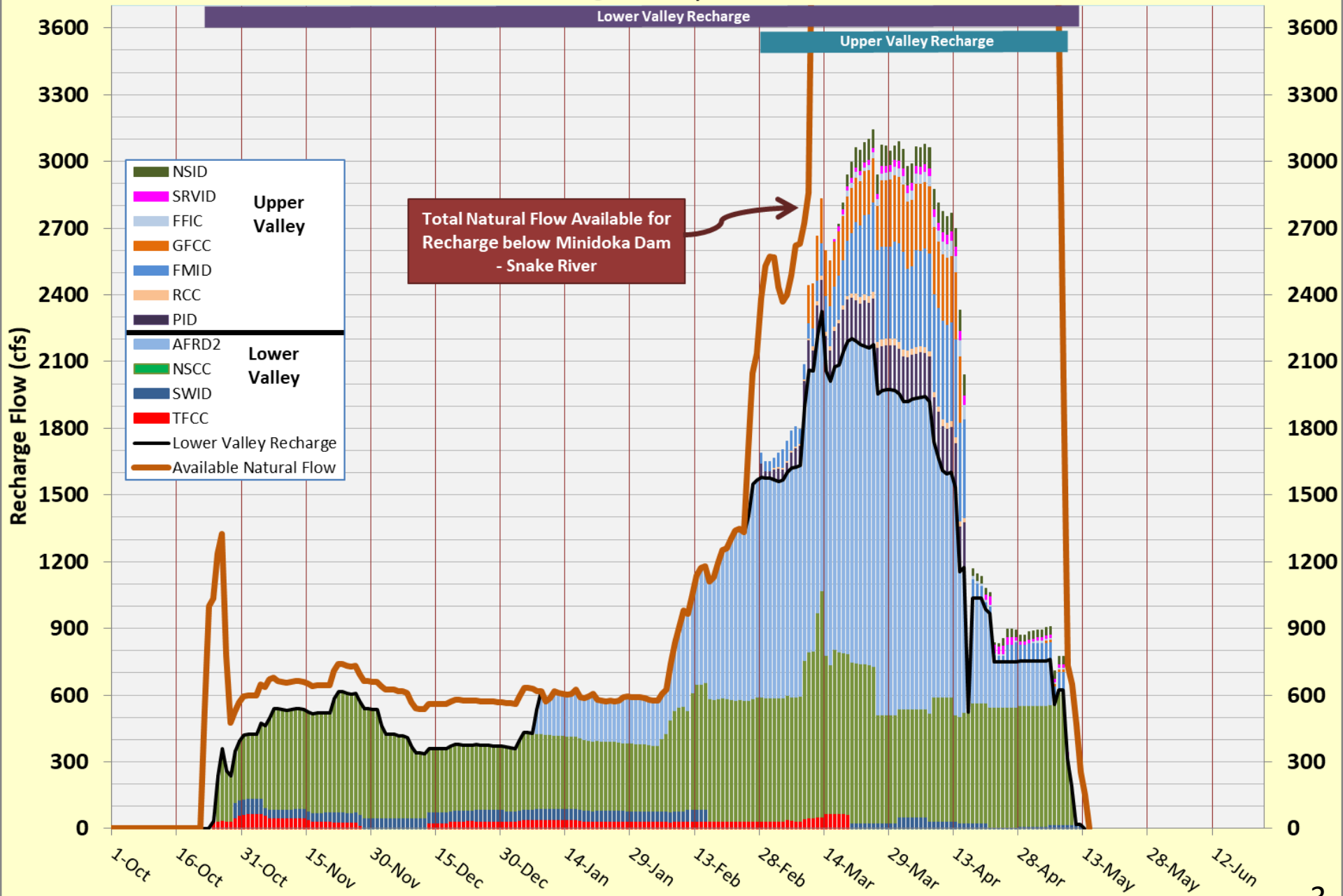
May 19, 2020

IWRB Natural Flow Managed Recharge – 2019/2020



Natural Flow - IWRB Recharge Rates - 2019/2020 Season

Total Volume of Recharge = **447,956** af (October 23, 2019 to May 13, 2020)



Preliminary Data

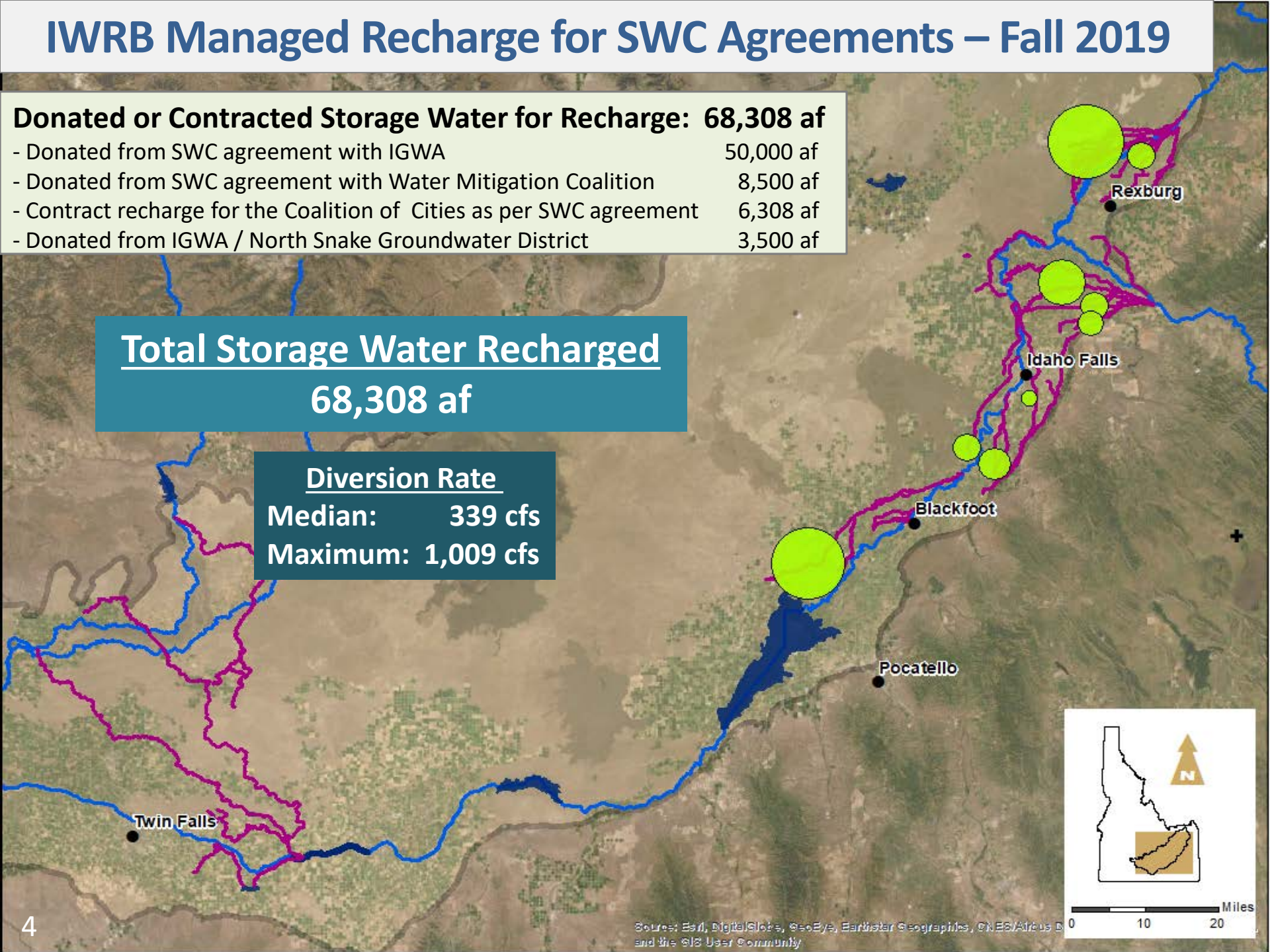
IWRB Managed Recharge for SWC Agreements – Fall 2019

Donated or Contracted Storage Water for Recharge: 68,308 af

- Donated from SWC agreement with IGWA	50,000 af
- Donated from SWC agreement with Water Mitigation Coalition	8,500 af
- Contract recharge for the Coalition of Cities as per SWC agreement	6,308 af
- Donated from IGWA / North Snake Groundwater District	3,500 af

Total Storage Water Recharged
68,308 af

Diversion Rate
Median: 339 cfs
Maximum: 1,009 cfs

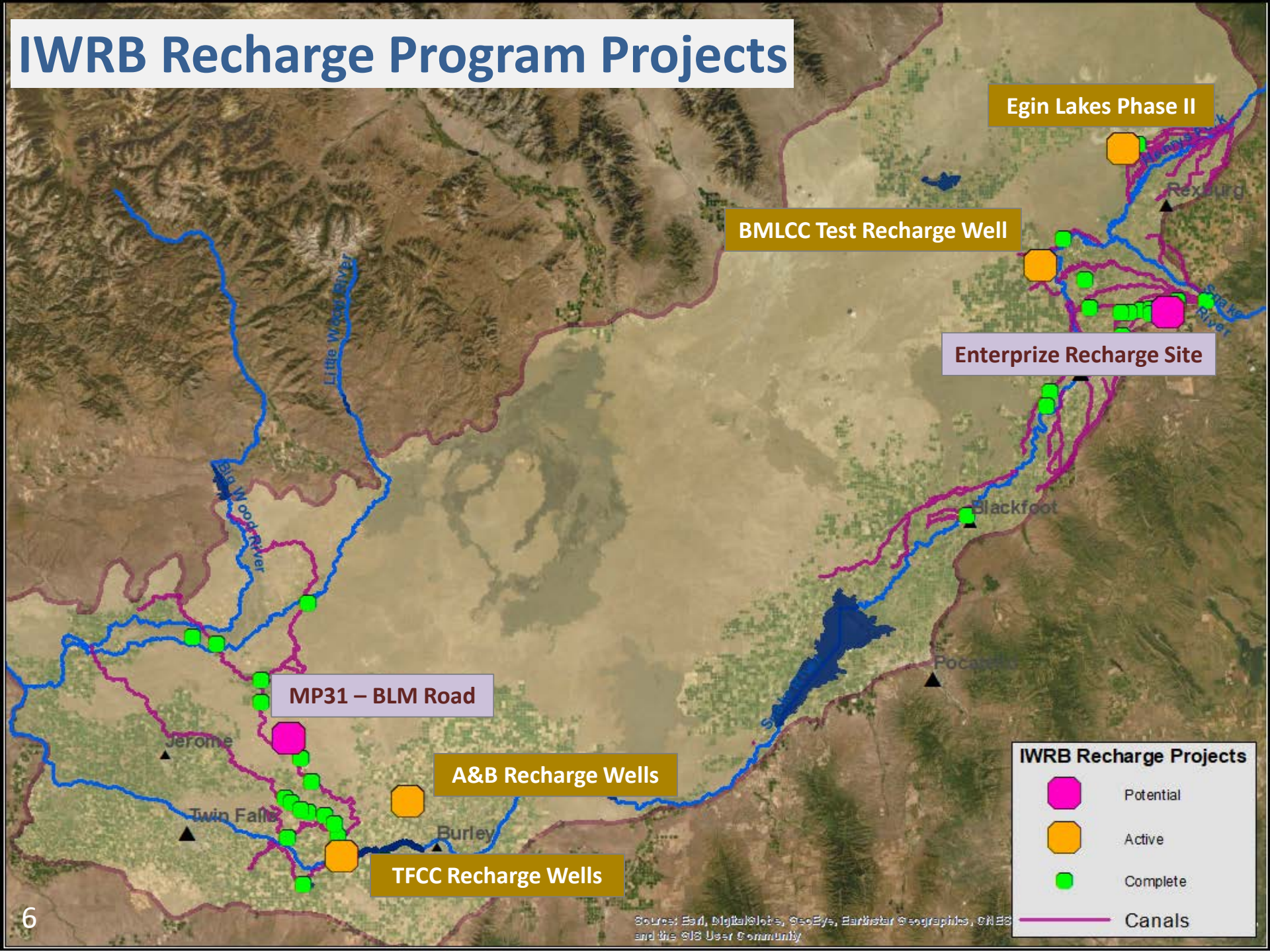


IWRB ESPA Recharge 2019/2020

Water Source	Area	Volume Recharged (Acre-feet)*	IWRB Delivery Cost*	Cost per Acre-foot
Natural Flow	Lower Valley	363,972	$2,354,526	$6.47
	Upper Valley	83,984	$529,662	$6.31
	Natural Flow Total	**447,956**	**$2,884,188**	**$6.44**
Storage Water	**Upper Valley**	**68,308**	**$416,737**	**$6.10**
	TOTAL	**516,171**	**$3,466,462**	**$6.39**

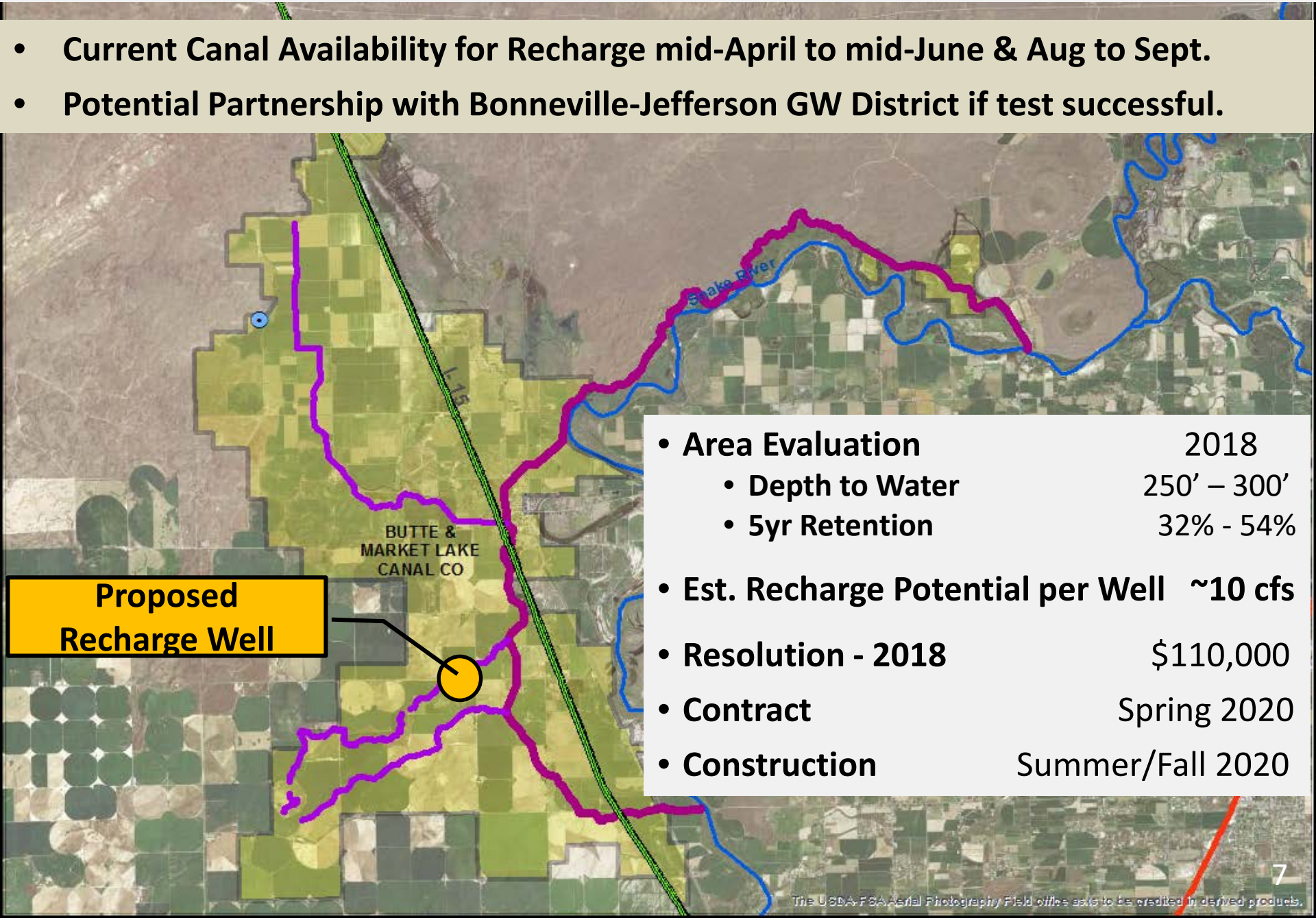
***Subject to Revision - not all Data is Final**

IWRB Recharge Program Projects



Butte Market Lake Canal – Test Recharge Well

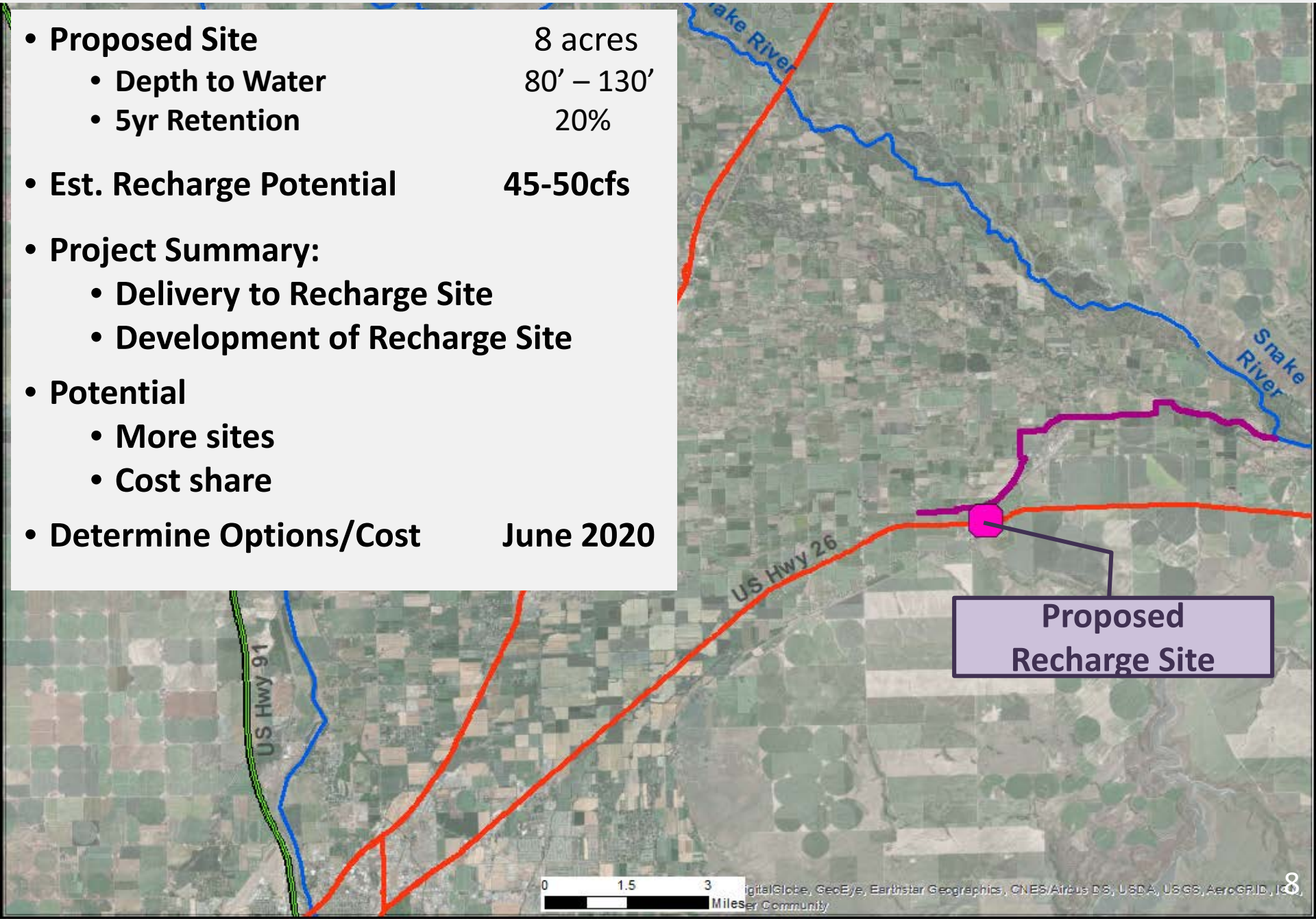
- Current Canal Availability for Recharge mid-April to mid-June & Aug to Sept.
- Potential Partnership with Bonneville-Jefferson GW District if test successful.



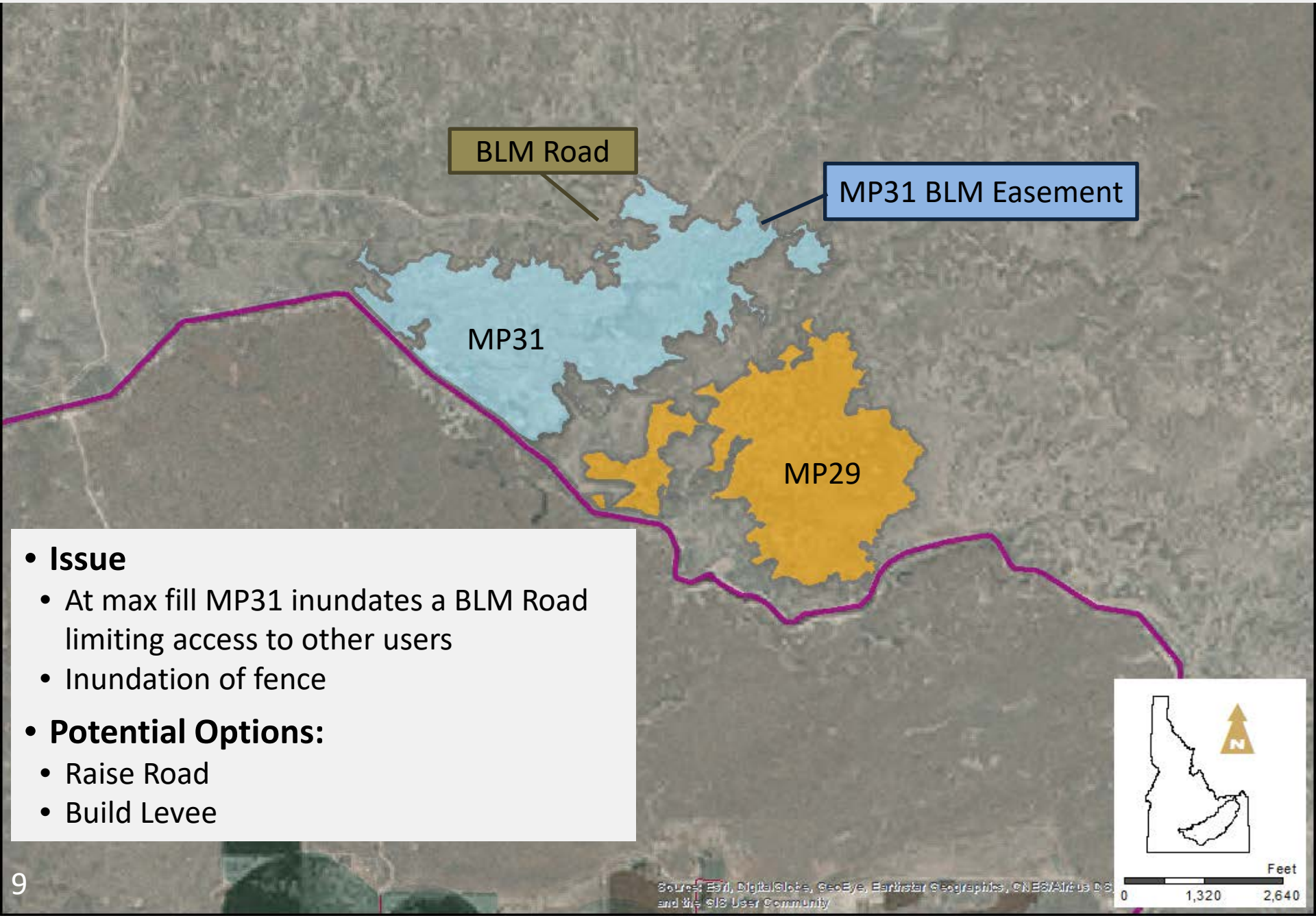
• **Area Evaluation**	2018
• **Depth to Water**	250’ – 300’
• **5yr Retention**	32% - 54%
• **Est. Recharge Potential per Well**	**~10 cfs**
• **Resolution - 2018**	$110,000
• **Contract**	Spring 2020
• **Construction**	Summer/Fall 2020

Enterprize Canal – Swan Valley Highway Site

- **Proposed Site** 8 acres
  - **Depth to Water** 80’ – 130’
  - **5yr Retention** 20%
- **Est. Recharge Potential** **45-50cfs**
- **Project Summary:**
  - **Delivery to Recharge Site**
  - **Development of Recharge Site**
- **Potential**
  - **More sites**
  - **Cost share**
- **Determine Options/Cost** **June 2020**

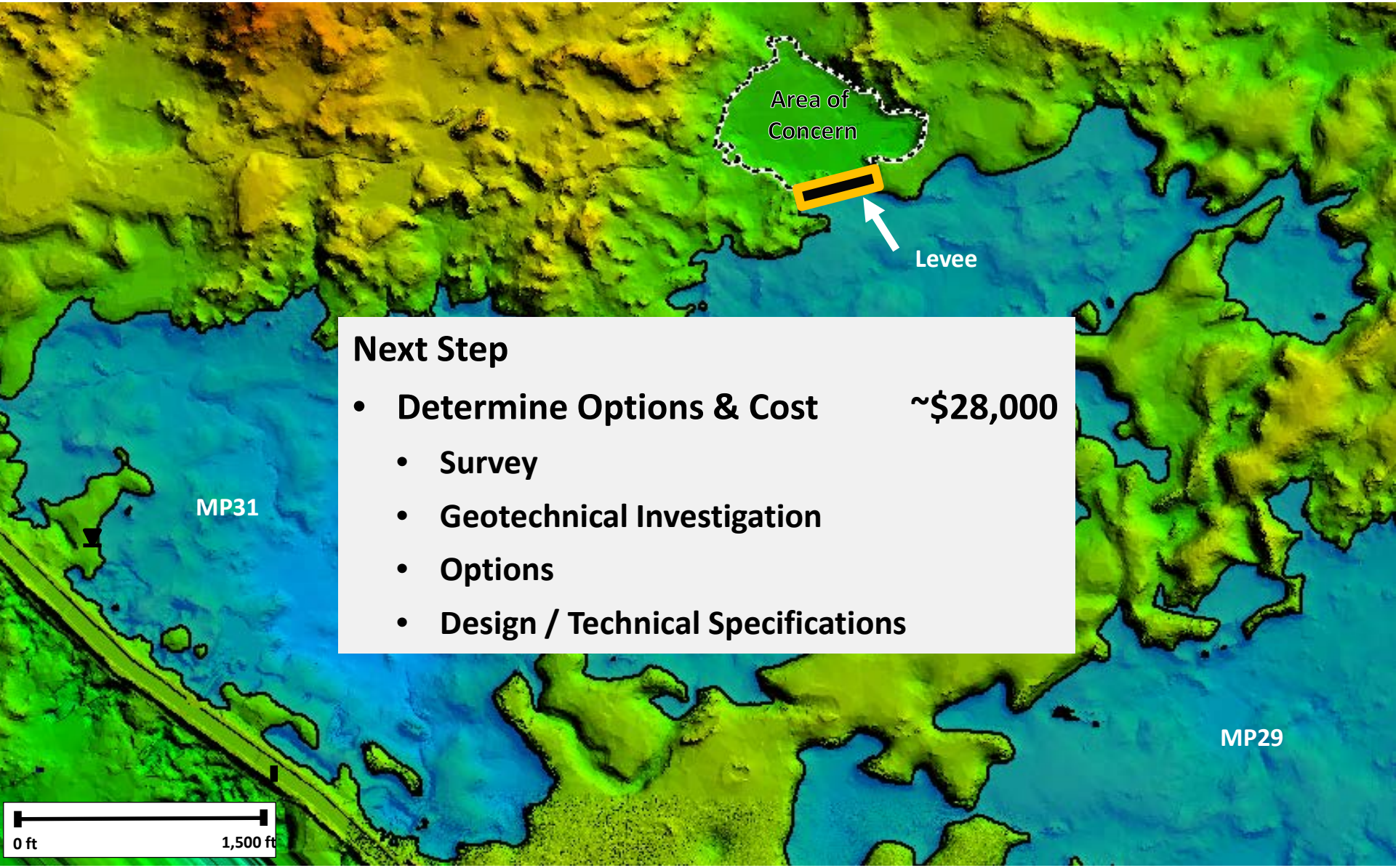


Mile Post 31 – BLM Road



- **Issue**
  - At max fill MP31 inundates a BLM Road limiting access to other users
  - Inundation of fence
- **Potential Options:**
  - Raise Road
  - Build Levee

Mile Post 31 – BLM Road



Next Step

- **Determine Options & Cost ~$28,000**
  - **Survey**
  - **Geotechnical Investigation**
  - **Options**
  - **Design / Technical Specifications**

ESPA Managed Recharge Program 2019/2020

Summary

- **Significant increase in Managed Recharge Capacity**
  - Unknown long-term potential of sites / systems
- **4 consecutive years with above average water availability**

Priorities

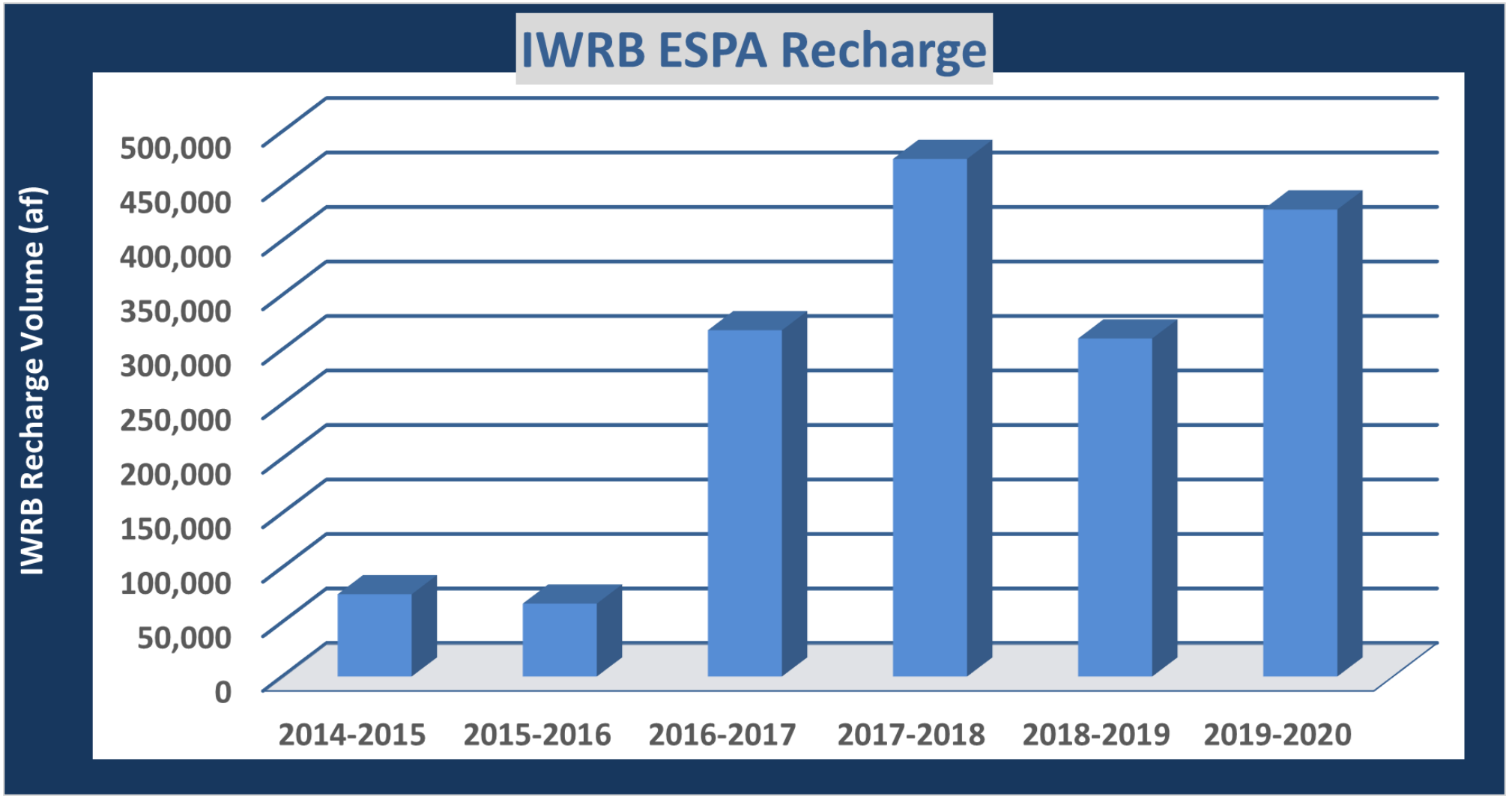
- **Developing tools to forecast & assist in operations of the Program**
- **Standards & Procedures – Prioritizing for next season**
  - Shut-off / Turn-on dates
  - Managing recharge in canals diverting other water
- **Maintenance & Operations**
  - Monitoring Plans
  - Site Maintenance

Questions

ESPA Managed Recharge Forecasting Tool

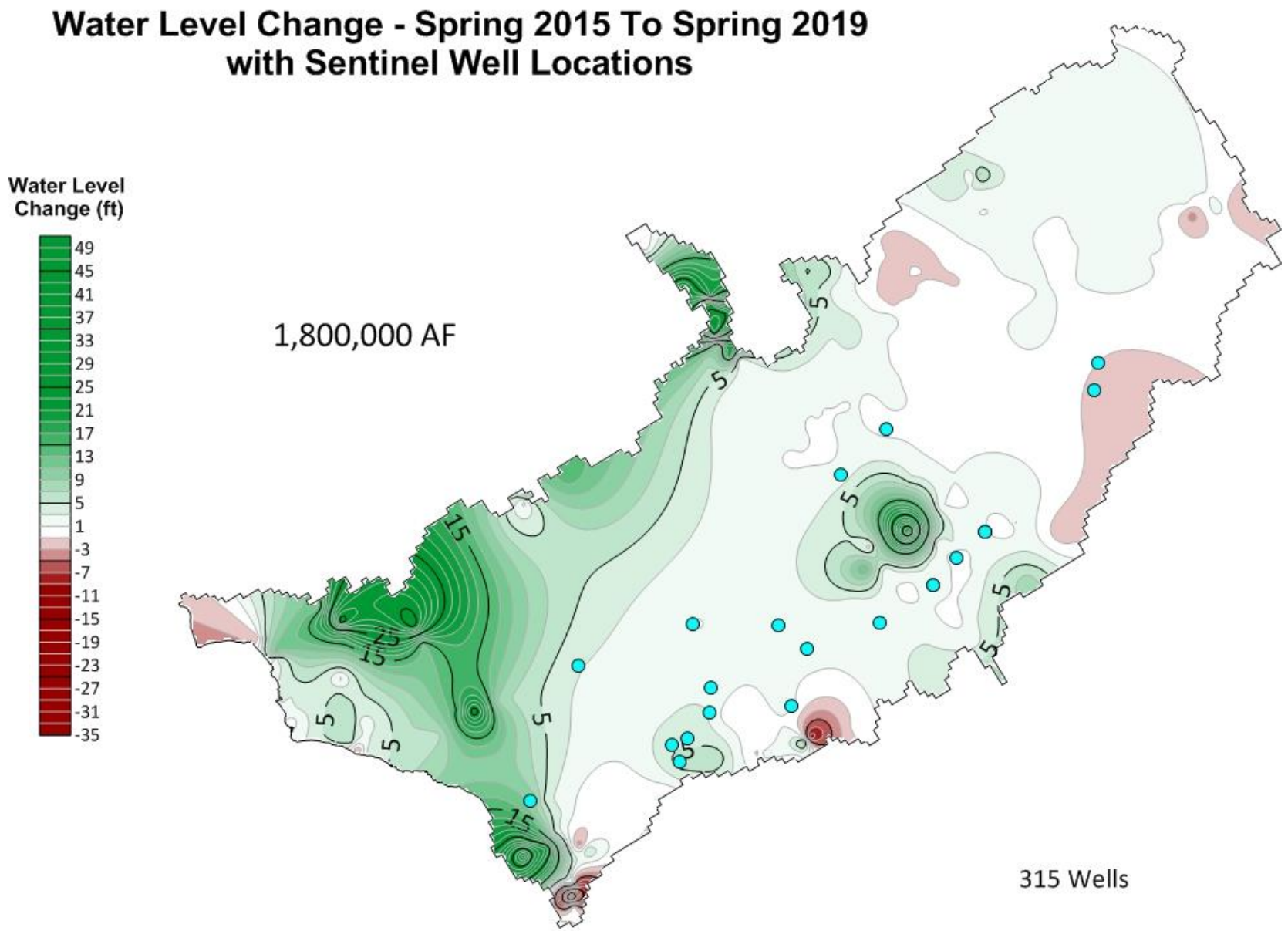
By Noah Stewart-Maddox, IWWRI

Over the past several years, the managed recharge program has been very successful

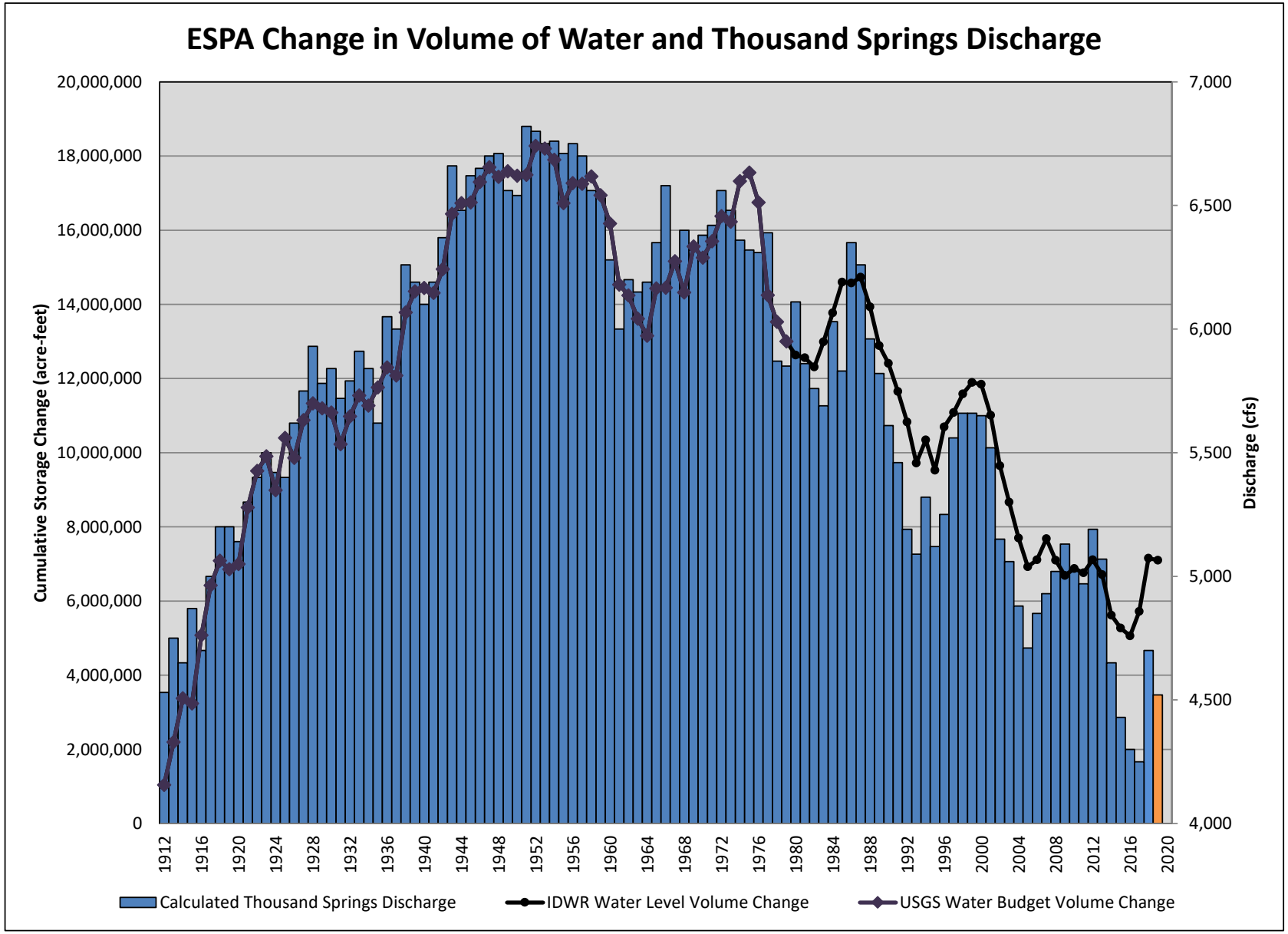


New projects have significantly increased our recharge capacity

Aquifer levels throughout the ESPA have risen



Where will we be in the next decade? The decade after that?



The Snake River is a highly variable system

- Water availability on the Snake River can wildly vary from year to year
- There have been long periods of historical drought and wetness
- Because it's so difficult to know what the weather will be over the next several years, a flexible approach to forecasting is required

Purpose of these Forecasting Tools

- A better tool to predict the key variables and assess their impacts on the operations of the managed recharge program

- Using the tool to optimize operations of the Managed Recharge Program:
  - Determine need for additional recharge capacity to reach annual average target
  - Evaluate impacts of new system demands
  - Evaluate impact of different scenarios to aquifer

- Additional questions this tool can provide information to:
  - Defining average time period

Phased Analysis

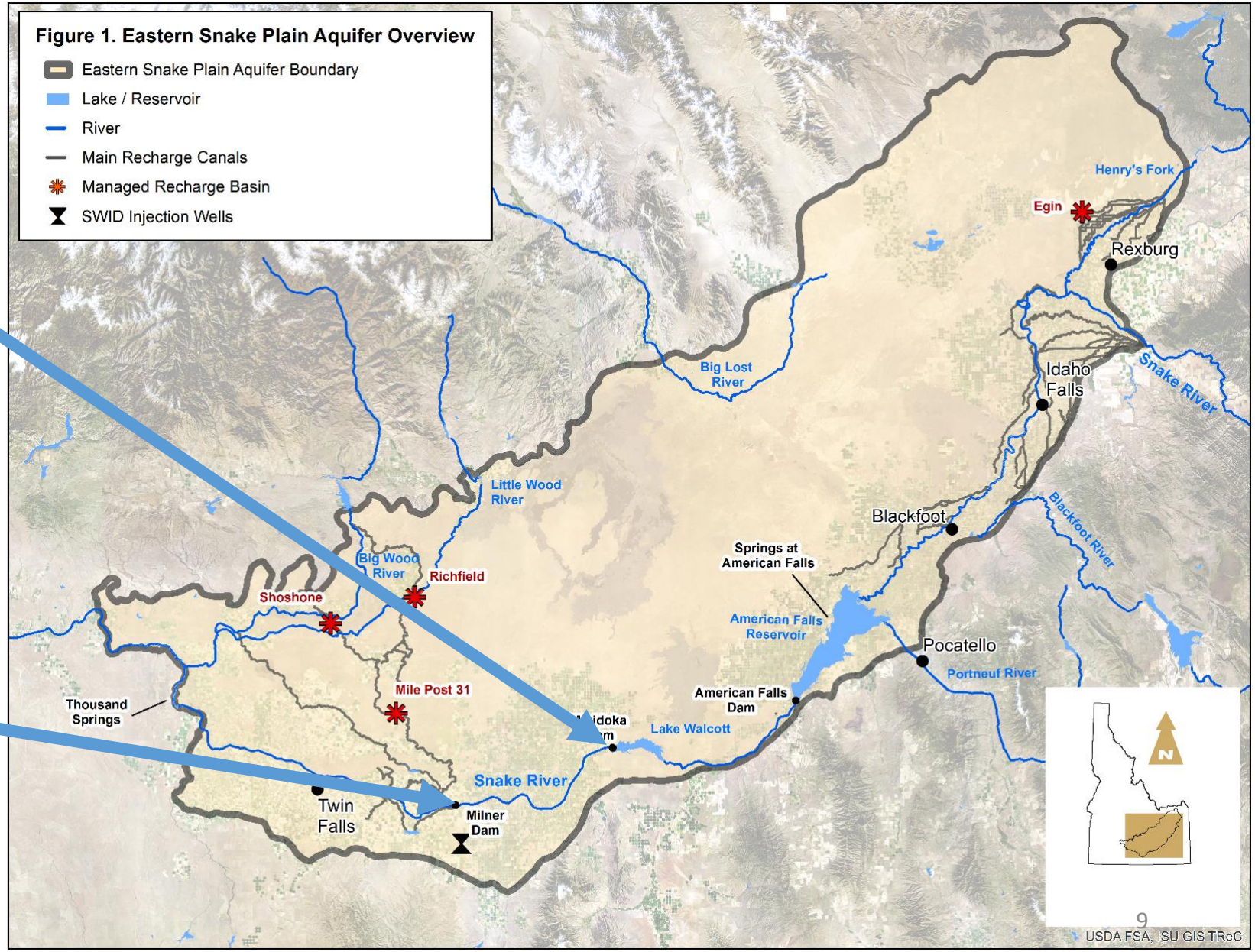
- Phase I – Preliminary Forecasting Tool
  - Will be completed this summer
  - Plan to test it on 2021 recharge season

- Phase II – Refined Forecasting Tool
  - Will be completed in next 2-3 years
  - Improve analysis by incorporating Riverware and ESPAM models
  - Can be used for long-term planning analysis

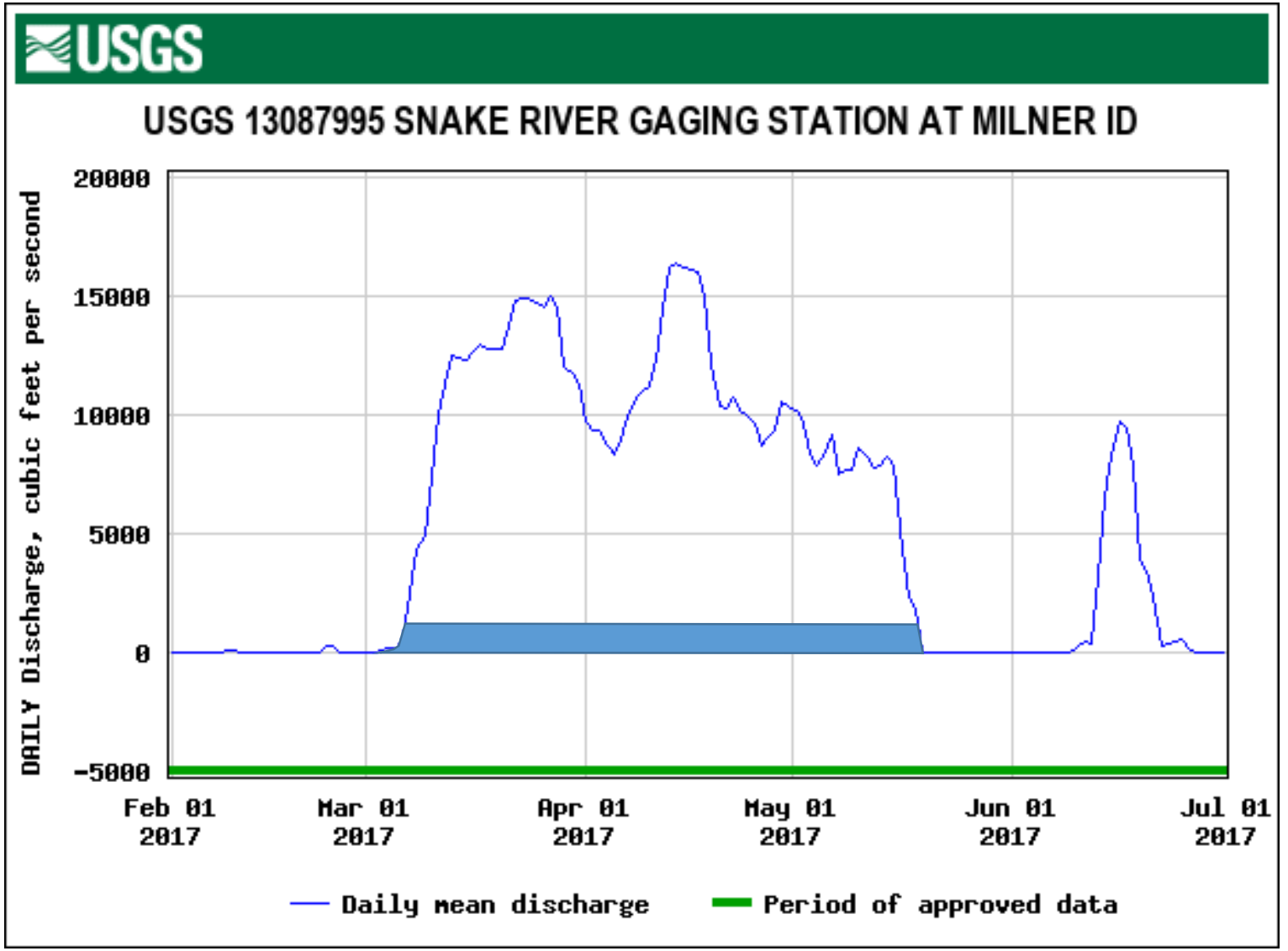
How much water is available for recharge?

Managed Recharge can occur in the Upper Valley when the Board's water right is in priority and 2,700 CFS is flowing past Minidoka

Managed Recharge can occur in the Lower Valley when the Board's water right is in priority and water is spilling past Milner



Of this water, how much can we consistently recharge?

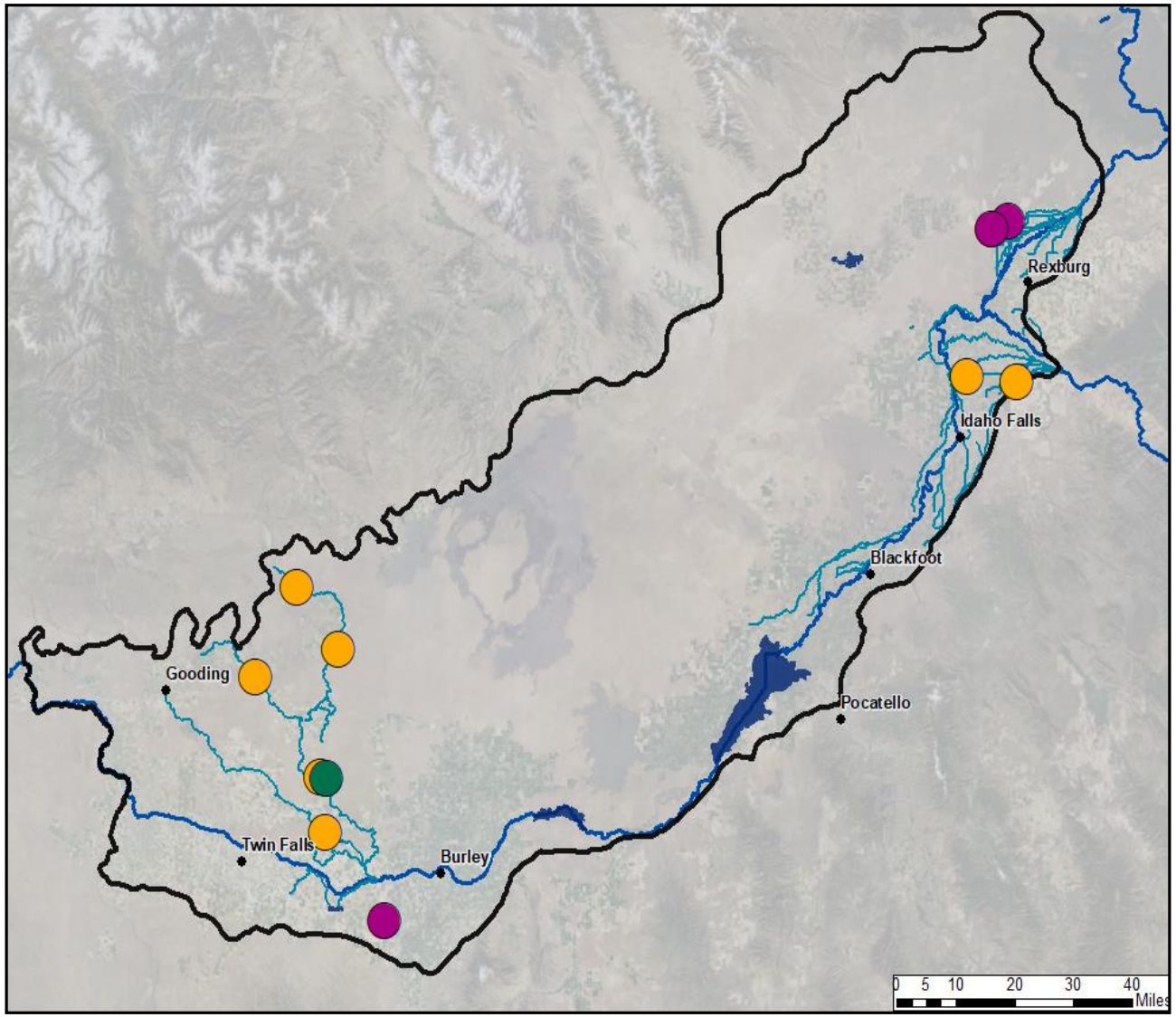


What is our required reliable recharge capacity?

- SCR 136 – “Develop the capacity to achieve 250,000 acre-feet of average annual managed recharge on or before December 31, 2024”
- What data should we use to evaluate how to meet this goal?
- How can we tell if we’ve reached this goal?
  - We can use historical information to determine the long-term average of IWRB’s managed recharge
  - If IWRB’s current capacity was already in place in the past, how much recharge could have been done?

Roadblocks to Determining Reliable Capacity

- Our two largest roadblocks to determining our long-term capacity are as follows:
  - Current site by site recharge capacity for different seasons
  - Long-term uptime



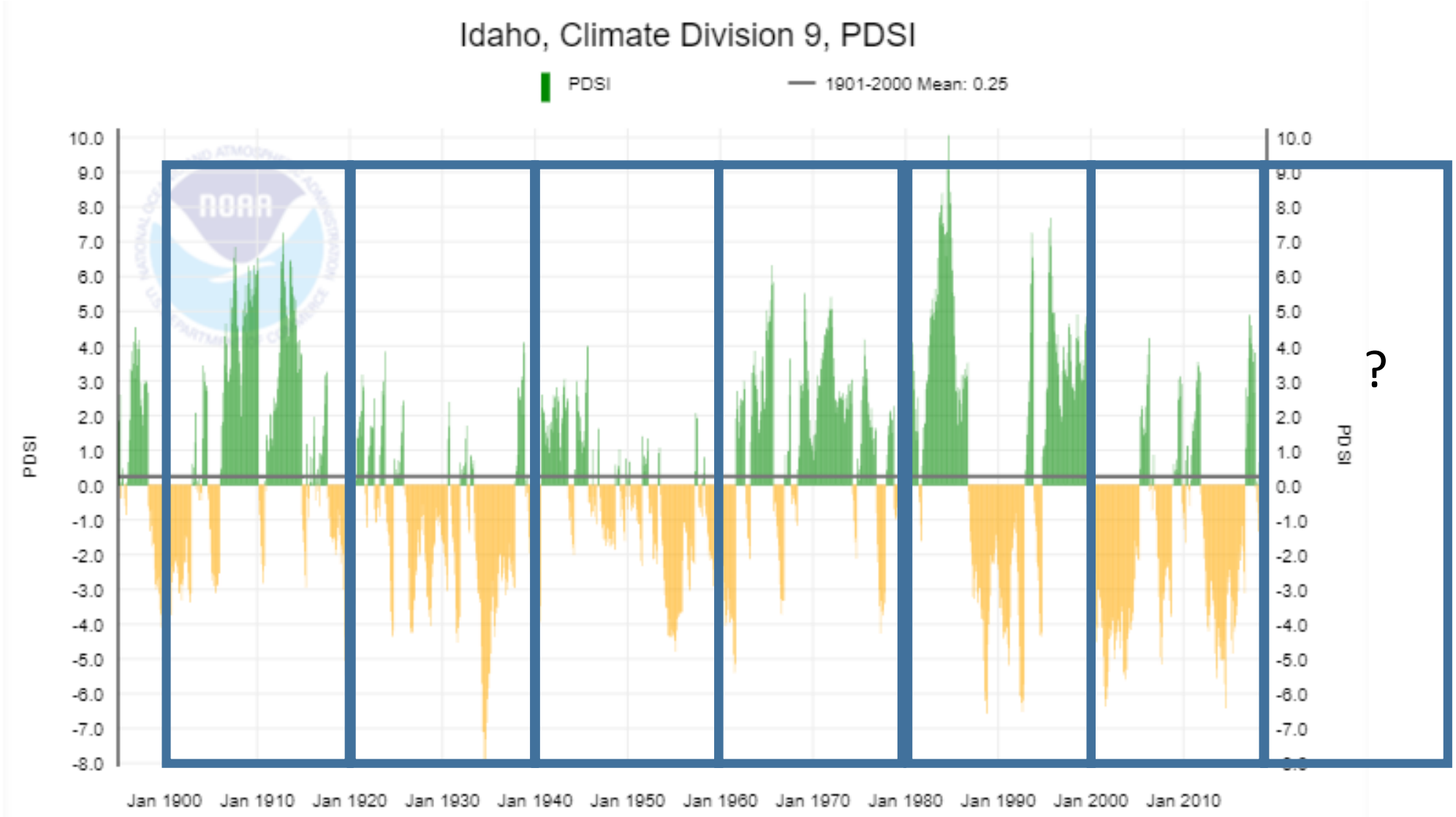
Site Capacity

- Can be determined using:
  - Diversion Data
  - Interviews with Canal Managers
  - Experiences with Similar Sites
- Some seasonal considerations are required
- As we collect more data, we will need to update these estimates

Uptime

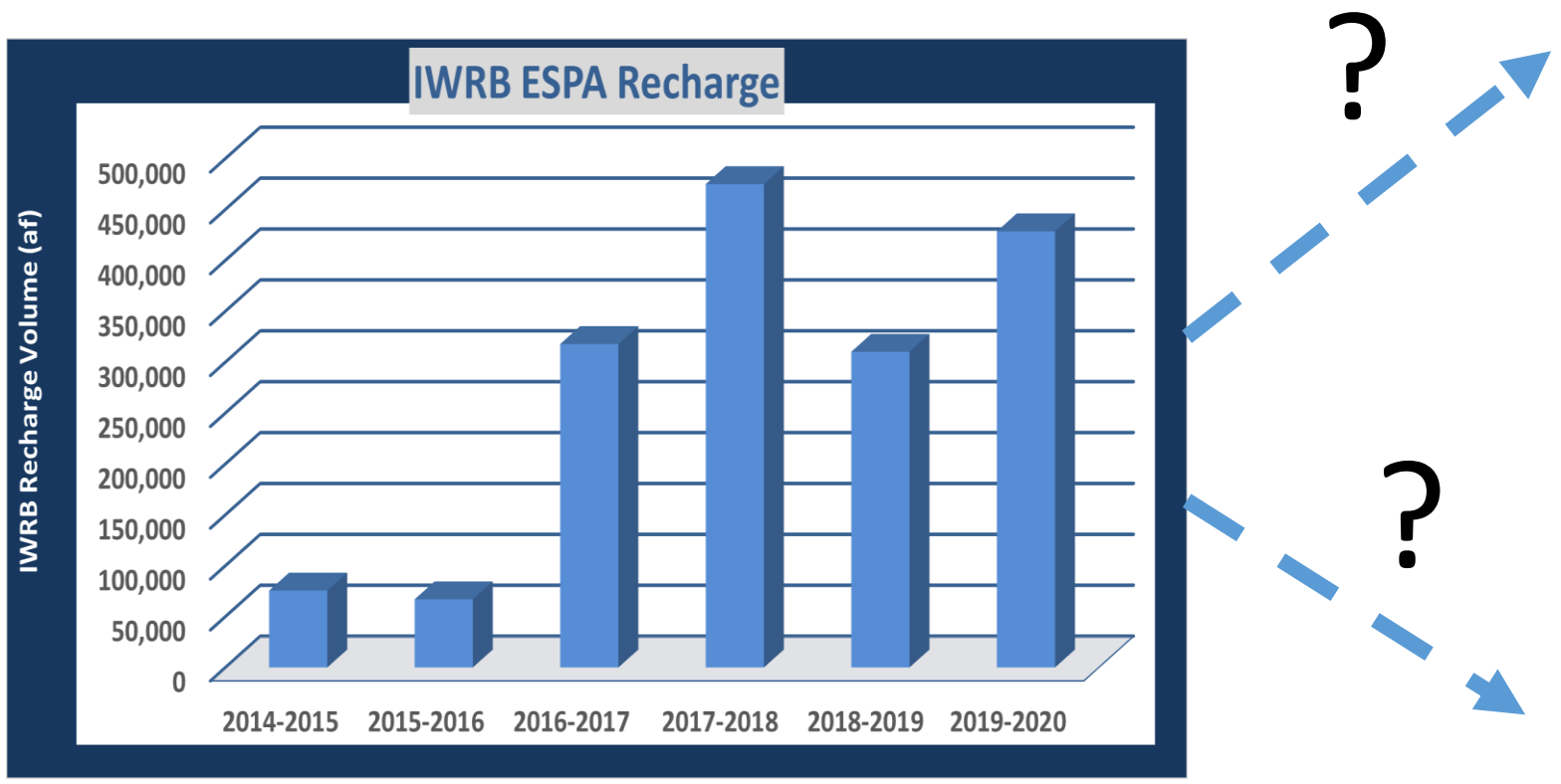
- We only have six years of data
- If canals are operating non-stop for the next ten years, how often will they need to go down for maintenance?

Using historical information can help us understand the future, but we need to carefully choose what time period to use



Long-term Forecasting Tools

- How much do we “need” to recharge each year to reach the 250 KAF goal?
- We need to recharge more during wet years to make up for dry years
  - How much do we need to make up for dry years?
- This tool will allow decision makers to assess risk levels and determine how much they need to recharge

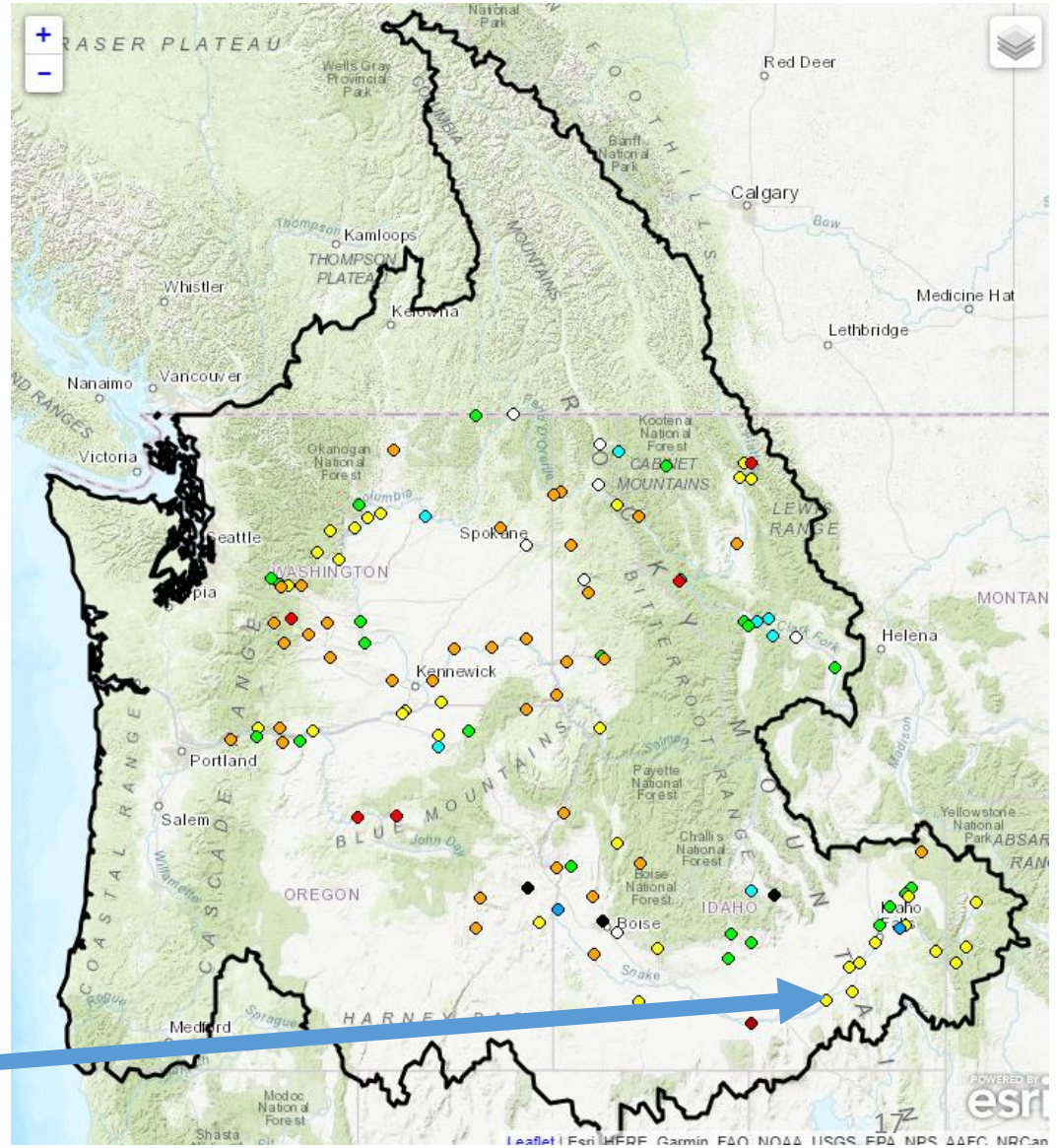


How much recharge can occur in a given year?

- We can leverage existing forecasts for real-time recharge forecasting
  - Determine how much recharge will occur during given season

- Data used in NOAA 120 day streamflow forecast:
  - Channel conditions
  - Soil moisture
  - Snow accounting
  - Reservoir regulation
  - Diversions

Forecasted inflow at American Falls



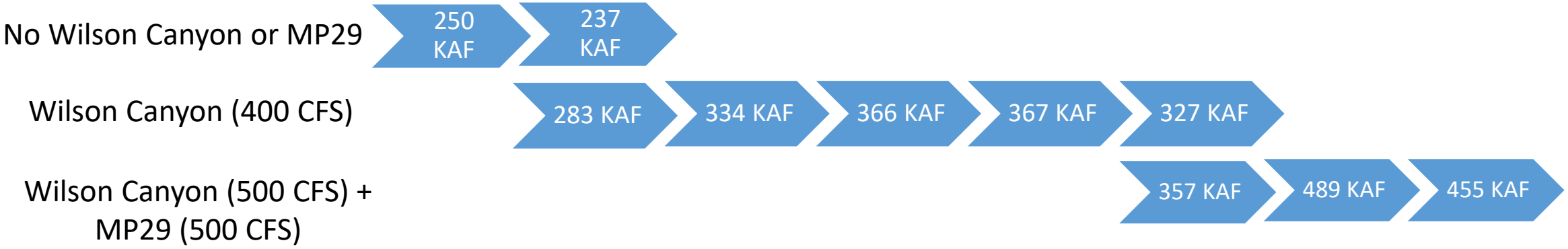
These forecasting tools can be used for a variety of applications

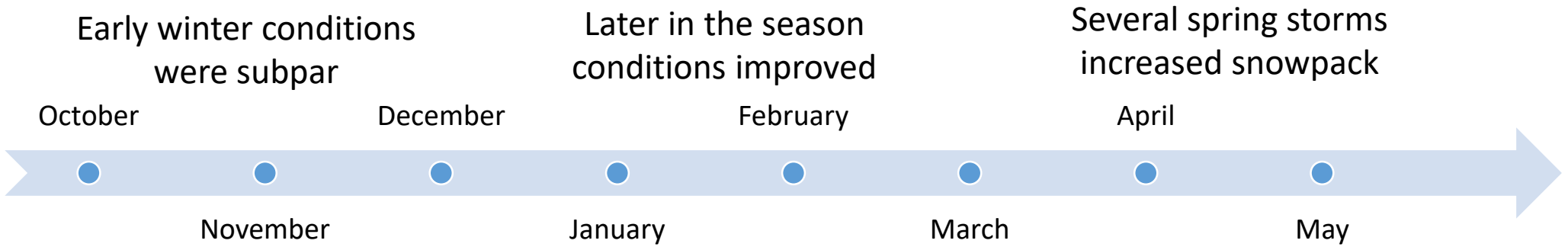
- Long-term benefits of Managed Recharge to aquifer
  - If Managed Recharge were to continue for 20 years, what would the aquifer look like?
  - Determining benefits to stream and spring flow due to recharge

- Where should we focus on building additional capacity to handle system redundancies
  - Working to ensure we have sufficient capacity

- Best managing available water resources

2019/2020 Prototype Example





Provisional Results

This is a decision making framework

- This analysis is highly flexible and can be adapted as new information and analysis becomes available

- The flexibility of this framework to new information is a large benefit
  - Changes are accounted for by the short-term and long-term forecasts
  - Short-term changes such as canal maintenance and construction projects
  - Long-term changes such as increases or decreases in site capacity

Phase I Analysis Timeline

- June – Meet with stakeholders/interested parties to develop consensus on critical parameters
  - Site Capacity
  - Long-term Uptime
  - Average Time Period
- June/July – Continue gathering feedback on analysis techniques
  - Continue working with:
    - IDWR Hydrology staff
    - IPC technical staff
    - ERTWG
    - Henry's Fork Foundation
    - WD01
    - Other Stakeholders
- July/August – Update analysis based on feedback and prepare forecasting tools for 2021 recharge season
- September – Present update to IWRB and seek future guidance
- 2021 Recharge Season – Pilot Test Forecasting Tools

Phase II Analysis – Long-term Planning Tool

- Incorporating USBR Riverware model
  - Reduces forecasting uncertainty
- Modeling aquifer response to managed recharge
  - Helps incorporate impacts from aquifer to streamflow
- Update Phase I framework with more detailed analysis
  - Provides better data for better results
- Running scenarios to determine effects of different possible water management strategies
- Will be developed over a 2-3 year time period

Forecasting Tool Goals

- Use the phase I tool during the next recharge season to forecast available water supply and track recharge conditions to make operation decisions

- Providing the best tools and information to IWRB to implement recharge and optimize resources to benefit the state of Idaho

Questions?

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Potential Recharge Advisory Committee

IWRB Aquifer Stabilization Committee

May 19, 2020

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Background of Implementation Committee Concept

CAMP document states: "*The Board will establish an Implementation Committee to assist in Implementation of the Plan. The Implementation Committee will assist the Board in the prioritization, development, implementation, and monitoring of management actions. The Implementation Committee will 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 in 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. The 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.*"

Background of Implementation Committee Concept

- Implementation Committee was based on idea that water users would be assessed to pay for CAMP Implementation
- Idea was that assessed funds would flow to the Board's Secondary Aquifer Fund
- Implementation Committee would then help Board prioritize spending for aquifer management
- Draft assessment legislation (never passed) makes link clear
- Implementation Committee was to also serve other functions: public participation, provide information, build stakeholder support, etc.

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Background of Implementation Committee Concept

- Advisory Committee that helped develop CAMP was largely continued over as the Implementation Committee after Legislature approved the CAMP in 2009
- Implementation Committee met throughout 2009 to work on the assessment legislation and other items
- The assessment legislation was not passed by the 2010 Legislature
- Implementation Committee lost momentum and stopped meeting

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Implementation of Aquifer Management Actions

Aquifer management actions being implemented, but differently than proposed in CAMP document

- ✓ Managed Recharge – state paying for and managing the recharge program
- ✓ Demand Reduction – GW users implementing reduction of use per IGWA-SWC Settlement
- ✓ GW-SW Conversions – being installed by water users where it makes sense
- ✓ Cloud Seeding – joint program paid for by Idaho Power, State, and water users

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Implementation Committee

Re-establishment of CAMP Implementation Committee has been requested by several parties, including:

- ✓ Idaho Power
- ✓ A&B Irrigation District
- ✓ North Side Canal Company
- ✓ Clear Springs Foods
- ✓ Burley Irrigation District
- ✓ Twin Falls Canal Company
- ✓ City of Twin Falls
- ✓ Trout Unlimited

Implementation Committee

- Given changed conditions, however, does the Implementation Committee envisioned in the CAMP document make sense?
  - ✓ Don't have central management of aquifer management actions
  - ✓ IWRB only has management over recharge and partial management over cloud seeding
- Other Committees working on parts of ESPA management exist:
  - ✓ IGWA-SWC Settlement Agreement Steering Committee
  - ✓ Recharge Program Environmental-Technical Working Group
  - ✓ Pending Committee – ESPA Ground Water Management Area Advisory Committee formed by Director after final establishment of GWMA

Implementation Committee

- Do these other committees (partly) fill the role envisioned by the CAMP Implementation Committee?
- What does IWRB want the CAMP Implementation Committee to do? What is its function?
- Would the CAMP Implementation Committee create "Committee Overload" given the existing and pending committees working on ESPA matters?
- What are risks in activating CAMP Implementation Committee?
- What would gained by activating the CAMP Implementation Committee?

Implementation Committee

- What would be lost if CAMP Implementation Committee not activated?
- What do the requesting stakeholders want from the CAMP Implementation Committee?
- Would a committee with a more limited scope -- like a Recharge Program Advisory Committee -- be sufficient?

Recharge Program Advisory Committee?

- Given major state investment and expectations for program, an Advisory Committee may be a good idea

- Make up from representatives of key stakeholders, at a minimum:

    - IGWA
    - SWC
    - Spring Users
    - IPCO
    - Environmental Interests
    - Others?

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Recharge Program Advisory Committee?

- "Big tent" committee or small, manageable committee?
- IWRB's expectations of Committee?
- Deliverables of Committee?
- How would Committee interface with other committees, including Environmental Technical Working Group? Steering Committee?

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Questions and Discussion

Feedback from IWRB Aquifer Stabilization Committee?