

DRAFT

GROUND WATER MANAGEMENT PLAN

Big Wood River
Ground Water Management Area

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October 29, 2021

Prepared by:
South Valley Ground Water District
Galena Ground Water District

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This is a draft and is not intended to be a final representation of the work done, recommendations made, or management actions to be taken by the South Valley and Galena Groundwater Districts. It should not be relied upon as a final product; consult the final report.

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1.0 INTRODUCTION AND PURPOSE

This document is the ground water management plan (“Management Plan”) for the Big Wood River Ground Water Management Area (“BWRGWMA”) issued pursuant to Idaho Code § 42-233b. The Management Plan supersedes and replaces the *Management Policy for the Big Wood River Ground Water Management Area* IDWR issued on June 28, 1991, (“1991 Policy”) in connection with IDWR’s order designating the Big Wood River Ground Water Management Area (“Management Area Order”).

The 1991 Policy limited the processing and approval of water right applications for new consumptive uses of surface water and ground water in the BWRGWMA. This Management Plan maintains the restriction on new consumptive water uses and implements additional measures to manage the effects of ground water withdrawals on the aquifers within the BWRGWMA and on hydraulically connected sources of water.

The South Valley Ground Water District (SVGWD) and Galena Groundwater District (GGWD) have worked cooperatively to draft this Management Plan.

1.1 BACKGROUND

The following three findings of fact from the Management Area Order summarize IDWR’s reasons for establishing the Big Wood River Ground Water Management Area (“BWRGWMA”):

1. The surface and ground waters of the Big Wood River drainage are interconnected. Diversion of ground water from wells can deplete the surface water flow in streams and rivers. New ground water uses can also deplete available supplies for other users.
2. There are several Applications for Permit to Appropriate Water pending before the department which propose additional consumptive uses of ground water within the Big Wood River drainage.
3. Injury could occur to prior surface and ground water rights including the storage right in Magic Reservoir if the flows of streams, rivers and ground water underflow in the Big Wood River Basin are intercepted by junior priority ground water diversions.

The Management Area Order contained the 1991 Policy, which stated IDWR would not approve a new application for consumptive use unless the use proposed by the application would not injure existing water rights. Approvals of new applications to appropriate ground water for consumptive uses other than domestic largely ceased after issuance of the Management Area Order and the 1991 Policy.

1.1.1 Activities Related to the Management Area Order

Because of continued concerns about the impact of ground water diversions on both ground water and surface water sources in the Wood River Basin, IDWR, in coordination with the water users in the Wood River Basin, has initiated or addressed the following activities since issuance of the Management Area Order:

- 2010 – In cooperation with the U.S. Geological Survey, began a program to expand the existing hydrologic monitoring network in the Wood River Valley with the installation of four stream gages in the Wood River Valley.

- September 21, 2011 – Issued order (a) creating the Upper Wood Rivers Water Measurement District, and (b) requiring all ground water users to install measuring devices prior to the 2014 irrigation season.
- 2012 – In cooperation with the U.S. Geological Survey, began work on development and calibration of a numerical groundwater-flow model for the Wood River Valley, including Silver Creek and ground water underlying the Bellevue Triangle.
- September 17, 2013 – Issued order (a) combining water districts for the Big Wood River, the Little Wood River, and Silver Creek; and (b) adding ground water rights from the Upper Big Wood River valley above Magic Reservoir and the Silver Creek drainage to the water district (Water District 37), and (c) abolishing the Upper Wood Rivers Water Measurement District.
- February 2015 to June 2016 – First conjunctive management delivery call by surface water users against ground water users dismissed on procedural grounds.
- 2016 – Published final report documenting version 1.0 of the Wood River Valley Groundwater-Flow Model.
- March 2017 to June 2017 – Second delivery call dismissed on procedural grounds
- 2018 through 2020 – Proposals for Ground Water Management Plans submitted by ground water users to Director of IDWR
- 2019 – Published final report documenting recalibrated version 1.1 of the Wood River Groundwater-Flow Model.
- 2019 - Published a summary of groundwater conditions in the BWRGWMA and a summary of Silver Creek Flow Measurements by IDWR staff between 2014 and 2018.
- 2020 – Published a summary of seepage surveys by IDWR staff between 2017 and 2019 on Trail Creek near Ketchum.

In September of 2020, the Galena Ground Water District (“GGWD”) and the South Valley Ground Water District (“SVGWD”) submitted a rough draft proposal for a ground water management plan for the BWRGWMA. In October of 2020 the Big Wood/Little Wood Water User’s Association (“BWLWWUA”) submitted an alternate proposal for administration of water rights in the BWRGWMA. In response to the two proposals, IDWR Director Gary Spackman formed an advisory committee to draft a new management plan for the BWRGWMA. The twelve members of the advisory committee represent ground water users from GGWD, SVGWD, the Camas Prairie, and Wood River Valley municipalities and users of surface water from the Big Wood River, Silver Creek, and Little Wood River drainages. From the fall of 2020 through the spring of 2021 the advisory committee met approximately biweekly. At these committee meetings, analyses of the hydrology and hydrogeology of the Wood River Basin were presented by experts and by those who had personally observed facts related to water availability and use.

On May 4, 2021, in response to severe drought conditions causing water supply shortages in the Wood River Basin, Director Spackman initiated administrative proceedings for the Wood River Basin. On July 1, 2021, Director Spackman curtailed junior ground water rights in the Bellevue Triangle area of the BWRGWMA to increase the supply of water to senior water right holders in the Silver Creek and Little Wood River drainages. On July 8, 2021, Director Spackman approved the ground water users’ mitigation plan and stayed the curtailment order. Prior to submitting the mitigation plan, the parties to the administrative proceedings -- including GGWD, SVGWD, and BWLWWUA -- signed a settlement document that included, among other things, a commitment to work with the advisory committee to submit a proposed ground water management plan for the BWRGWMA to the Director by December 1, 2021. The advisory committee resumed meeting on August 9, 2021.

2.0 ENVIRONMENTAL SETTING

2.1 GEOHYDROLOGY OF THE BIG WOOD RIVER BASIN

The relationship between ground water and surface water flowing in the Big Wood River, Silver Creek and the Little Wood River is a central focus of the Management Plan. A description of the hydrology of the Upper Big Wood River Basin is necessary to understand the hydrologic relationships between ground water and surface water in Silver Creek and the Little Wood River.

The Upper Big Wood River Basin hydrologic system is comprised of three main arterial streams: the Big Wood River, Silver Creek, and Camas Creek.

Silver Creek originates from various springs emitting from the shallow aquifer underlying an area of irrigated cropland south and east of the community of Bellevue, Idaho.

See Figure 1, Big Wood River Basin map – map to be included.

Figure 1: BWRGWMA Map

The following description of basin hydrology and water development is excerpted from “Hydrology of the Wood River Basin” 6/28/2021 Final Order, IDWR (cite).

2.1.1 Big Wood River

The Big Wood River begins in the Smokey Mountains near Galena, Idaho. The river flows mostly south and occasionally east to the community of Ketchum. At Ketchum, Trail Creek flows into the Big Wood River from the east through Sun Valley, Idaho. Other streams drain snowmelt to the Big Wood River from the Boulder and Pioneer Mountains, located to the east, and the Smoky Mountains located to the west. The Big Wood River gathers flow as it courses south through the communities of Hailey and Bellevue. Just south of Bellevue, the Big Wood River Valley broadens into an expanse of agricultural land shaped like a triangle. The vertices of the triangle are roughly located at Bellevue on the north, Stanton Crossing (where Highway 20 crosses the river) on the southwest, and Picabo, Idaho on the southeast. This area is locally known as the "Bellevue Triangle."

Early settlers of Bellevue Triangle land diverted water from the Big Wood River through canals and flood irrigated land within the Bellevue Triangle. Much of the canal water is delivered from the Big Wood River southeasterly through the Bellevue Triangle.

In recent decades, farmers converted flood irrigation systems to pressurized pipes and to sprinkler applications of water to crops.

The Big Wood River flows south to Stanton Crossing, turns west at approximately Stanton Crossing, and discharges into Magic Reservoir. Magic Reservoir can store 191,500 acre feet of water, primarily for irrigation. While some of the water diverted for irrigation in the Wood River Valley returns as ground water inflow to the Big Wood River, this decision only addresses the relationship between ground water underlying the Bellevue Triangle and hydraulically connected surface water flows in Silver Creek and the Little Wood River.

2.1.2 Camas Creek

Camas Creek flows into Magic Reservoir from the west. The hydrologic relationship of ground water pumping in the Camas Creek Basin to other surface water sources in the Wood River Basin is not included as part of this Management Plan component.

2.1.3 Silver Creek and Tributary Spring Creeks

Silver Creek and its tributary spring creeks derive their water from springs emitting from the shallow aquifer underlying the Bellevue Triangle. Emergent spring flows gather in various open channels that ultimately flow into Silver Creek.

A portion of the water diverted from the Big Wood River and applied for flood irrigation in the Bellevue Triangle historically enhanced the flows of Silver Creek. Changes to pressurized sprinkler systems in recent years increased efficiencies of water application to agricultural fields, reducing the amount of incidental recharge to ground water. Nonetheless, Big Wood River water delivered through surface water canals continues to percolate into the ground water underlying the Bellevue Triangle.

Silver Creek meanders through the Bellevue Triangle, generally in an easterly direction. Near Picabo, Silver Creek flows out of the Bellevue Triangle in a southeasterly direction for 10-15 miles into the desert of the northern Eastern Snake Plain. As it flows into the desert, Silver Creek approaches the stream channel of the Little Wood River.

The Little Wood River headwaters are located north of Carey, Idaho. From Carey, the Little Wood River carves a streambed in a southwesterly direction along the boundary between the Eastern Snake Plain and the uplifted surrounding geography to the northwest.

As the Little Wood River and Silver Creek channels approach each other, Silver Creek turns southwesterly and parallels the Little Wood River for approximately three miles. The two stream channels converge 2.5 miles southeast of where Silver Creek crosses State Highway 93. The Little Wood River continues to flow in a southwesterly direction after its confluence with Silver Creek.

2.1.4 Little Wood River

Water users in the Carey, Idaho area divert all or most of the flow of the Little Wood River except during high water events. The Little Wood River channel is often dry downstream from Carey, Idaho. As a result, Silver Creek sustains flows in the Little Wood River continuously from its confluence downstream to where the Milner Gooding Canal contributes additional surface water to the Little Wood River from the Snake River (See map on page 7, IDWR 2015, Appendix C). The Little Wood River flows southwesterly through the town of Richfield. The Little Wood River then turns westerly and subsequently flows through the towns of Shoshone and Gooding.

2.2 WATER DEVELOPMENT AND WATER RIGHTS

2.2.1 Surface Water Development

Initial development of irrigation water rights in the Wood River Basin started in the 1870's and 1880's. Many of the earliest water rights bear priority dates of this vintage. Early priority water rights authorizing diversion and beneficial use from Silver Creek and the Little Wood River bear priority dates of 1877 to 1883. In a normal or average water year, water rights bearing a priority date of 1883 and earlier are deliverable in the Little Wood River for the entire irrigation season.

In a normal or average water year, water rights bearing a priority date of 1884 are deliverable until mid-to-late July. In average and above average water years, water from Magic Reservoir on the Big Wood River is delivered and injected into the Little Wood River by the Big Wood Canal Company. Much of this Magic Reservoir storage water is rediverted from the Little Wood River near Richfield and delivered south to the Dietrich Tract.

In the early 1930's, the U.S. Bureau of Reclamation ("the BOR") completed the Milner Gooding Canal, which delivers Snake River natural flow and storage water for irrigation of farmland located in the Lower Little Wood River Basin and the Lower Big Wood River Basin. The Milner Gooding Canal crosses the Little Wood River northeast of Shoshone, Idaho through a siphon under the Little Wood River bed. At the canal siphon crossing of the Little Wood River, a portion of the Snake River water flowing in the Milner Gooding Canal can be discharged directly into the Little Wood River through a bifurcation at the head of the siphon to enhance water supplies in the Little Wood River. That water is not available to water users in the Little Wood River above Station 54.

Many BWLWWUA water rights include conditions stating that use of the rights is combined with water from BWCC and/or AFRD2. Additionally, some water rights include the following condition, referred as the "AFRD2 Exchange Condition" or "Exchange Condition":

Delivery of this right is subject to the water exchange provisions contained in Bureau of Reclamation contract no. 14-06-W-73, executed October 14, 1954, between the United States of America and American Falls Reservoir District No. 2, as supplemented by Bureau of Reclamation contract no. 14-06-100-6031, executed June 1, 1962, between and among the United States of America, American Falls Reservoir District No. 2, and the Big Wood Canal Company.

2.2.2 Ground Water Development in the Wood River Valley

Ground water development for irrigation in the Bellevue Triangle began around 1930 and was completed according to IDWR procedures. Some of the earliest wells were constructed in an artesian aquifer located in the southern part of the Bellevue Triangle. Significant development of the artesian aquifer for irrigation began in the late 1940s. The artesian pressures are created by a confining layer of clay above the ground water.

Ground water in wells completed in the artesian aquifer would rise in the well column above the level where the ground water was encountered and would sometimes rise high enough to free flow above the level of the ground.

With the advent of modern drilling equipment, rural electrification, and efficient pumping systems, diversion of ground water increased until the early 1990's when regulatory action by IDWR restricted further ground water development.

For further detail, see Appendix C, "Hydrology, hydrogeology, and hydrologic data, Big Wood & Little Wood Water Users Association delivery calls, CM-DC-2015-001 and CM-DC-2015-002." (2015).

For a detailed description of current aquifer conditions refer to the IDWR report "Summary of Ground Water Conditions in the Big Wood River Ground Water Management Area" (Wylie, 2019). Summary conclusions excerpted from this report state:

In the Wood River Valley portion of the GWMA, the water-table has declined at rate of about 0.17 ft/yr since 1968 (Table 2). However, since formation of the GWMA in 1991 the water-table appears to be either reasonably stable or recovering at a rate of about 0.18 ft/yr (Table 4).

3.0 MANAGEMENT PLAN

3.1 OVERVIEW

The SVGWD and GGWD have worked cooperatively to draft this Management Plan. It is the hope of those drafting the Management Plan that the cities of the Wood River Valley, Sun Valley Company and Camas Prairie water users will join in this effort to have a holistic plan in place by December 1, 2021. The following objectives and actions primarily identify the SVGWD components and the cooperative efforts with GGWD for a Management Plan.

This Management Plan maintains the restriction on new consumptive water uses and implements additional measures to manage the effects of ground water withdrawals on the aquifers within the BWRGWMA and on hydrologically connected sources of water. This Management Plan describes the actions to be taken by the SVGWD and GGWD to manage the effects of ground water pumping impacts in the BWRGWMA. It is anticipated that these actions will provide adequate mitigation in above average, average, and below average years. Additional steps detailed below shall be taken to provide additional water to senior surface water users in extreme dry years.

SVGWD and GGWD will have safe harbor from delivery calls or curtailment upon implementation and compliance with this Management Plan. Plan implementation is anticipated to require 3 years with actions and obligations designed to maximize the benefit to all water users in the Big Wood River basin.

3.2 OBJECTIVES

This Management Plan, once implemented and adaptively managed, will:

- Replace the existing IDWR *Management Policy for the Big Wood River Ground Water Management Area, June 28, 1991*.
- Establish safe harbor from curtailment to groundwater users that divert groundwater within the BWRGWMA and/or Water Districts 37/37B, and who participate in and abide by the terms of this plan.
- Manage the effects of groundwater pumping on aquifers and those senior surface water rights that are located on hydrologically connected sources to the aquifers. Management strategies will also enhance stream flows and help to alleviate increased water temperature and decreased water quality in hydrologically connected water sources.
- Manage the use of groundwater and surface water efficiently and effectively to ensure that storage levels in aquifers are sustained and can both, support the delivery of water to senior surface water and groundwater rightsholders, and support healthy riparian ecosystems in the Big Wood River (both above and below Magic Reservoir), Silver Creek, the Little Wood River and Camas Creek.
- Protect existing surface and groundwater rights and water uses within the BWRGWMA, Water District 37, and Water District 37B.
- Minimize the impacts of water shortages on water users, the economy, and the environment.
- Identify, plan, and implement actions to stabilize or enhance groundwater levels in the Wood River Valley aquifer to minimize present and future impacts to holders of both surface water and groundwater rights.

- Strategically augment the hydrologic dataset for the Big Wood River Basin through the monitoring of groundwater levels, stream flows, and annual diversion volumes from both groundwater and surface water sources.
- Organize the water users in the BWRGWMA so they can manage water supply issues locally, including implementation of certain management strategies identified in this Management Plan.
- Increase reliability and enforcement of water use, measurement, and reporting within the BWRGWMA and Water Districts 37 and 37B.
- Ensure compliance with all elements and conditions of all water rights and ensure enforcement when instances of non-compliance arise.
- Continue moratorium on new appropriations of water from both ground water and surface water sources within the BWRGWMA, while maintaining similar limited exceptions, as described in the 1991 Policy, and described in more detail in this plan.
- Require that developments and HOAs use wells that are administered by the water master for any irrigation, including the half acre that is contained within a normal domestic right.

3.3 MANAGEMENT AND IMPLEMENTATION STRATEGIES

To achieve the objectives of this Management Plan, the following long-term management and implementation strategies or practices will commence in 2022. Some practices are baseline actions implemented annually, while the magnitude of other actions change in response to water supply conditions. Some strategies shall be phased in over several years to achieve Management Plan objectives. The following are summary strategies for development of the draft Management Plan.

3.3.1 Forecasting

Water supply forecasting is vitally important to SVGWD water users. Forecasts beginning as early as January need to be developed to allow ground water users to plan for and make necessary purchases for the upcoming irrigation season. Early forecasts will likely have larger margins of error than updated forecasts later in the season, but the importance of early forecasting cannot be over emphasized as the GWMP is implemented. All available resources need to be consulted including the new models in development¹, Surface Water Supply Index (SWSI) and the Northwest River Forecast Center.

Based on currently available information, if the best available water supply forecast indicates the equivalent of a year in which the SWSI will be -1.7 or better, the above ongoing practices are expected to satisfy the SVGWD mitigation obligation for the year.

The forecast methodology should predict and quantify the type of water year through a progressive methodology beginning by at least January 1 of each year with the intent to provide ground water users with the ability to plan water use and water mitigation decisions for the ensuing irrigation season with the best science available. The forecast should predict delivery of priority surface water rights in regulated areas of Water District 37 (Big Wood above Magic, Big Wood below Magic, and Silver Creek/Little Wood River) by comparing the forecasted water supply conditions to analog years in which Water District 37 delivery records are available. Selected

¹ A new forecasting model specific to the Big Wood River and Silver Creek is currently being developed by Dr. Kendra Kaiser, Boise State University in conjunction with the Technical Working Group.

historical analog years can be used to estimate water supply shortages. The methodology may be updated to adjust the forecasted supply by July 1 each year to respond to changes in water supply conditions and modify water management practices accordingly.

3.3.2 Fallowing

The SVGWD and GGWD intends to fallow 1,500 acres in 2022 and increase the fallowed land to 2,000 acres within the district boundaries by the end of a 3-year implementation of the overall Management Plan. The Districts are still working with IDWR to identify the acres that would be fallowed during each year of the 3-year implementation period.

The surface water rights from the fallowed lands are expected to be used for recharge within the Triangle to achieve the shaping of available water supply described below and will be protected from abandonment or forfeiture under the terms of the Management Plan. The ground water rights from the fallowed lands are not expected to be diverted and must also be protected from abandonment or forfeiture under the terms of the Management Plan.

This component is expected to remain relatively constant in average and better water years with SWSI² of -1.7 or better.³ In years with SWSI values less than -1.7 additional actions may be required as described below. The SWSI value proposed here may be modified as additional data and analysis become available but is a reasonable starting place to begin implementation of the Management Plan.

3.3.3 Recharge

Using decreed early season irrigation water rights for early season recharge has long been a portion of SVGWD's plan to improve aquifer conditions and late season stream flows by simulating conditions that existed before converting most of the irrigated area to pivot and other sprinkler systems. The early season water rights proposed for use are generally junior to the late season Big Wood River irrigation rights above the dry bed but are senior to the Magic Reservoir storage right and Big Wood Canal Company's large natural flow water rights. The recharge proposal is not an ESPA proposal designed to place water in the ground water reservoir for extended periods of time, but instead a proposal to shape some of the early runoff to appear in Silver Creek, Willow Creek, and the lower Big Wood River later in the irrigation season. Analysis with WRV 1.1 suggests water available to divert in the April-June period will show up in the surface streams in the June-August period when additional stream flow can be used to meet current diversion demands. The strategy is to recharge every year with the water available under the early season irrigation water rights. Initially, those rights that currently show the D45 as their point of diversion will be used, if canal capacity and recharge pit capacity become available, early season rights with other points of diversion may be moved to the D45 through the appropriate administrative procedure.

A preliminary analysis of the amount of water that could be recharged in years 2013 to 2016 is: 23,712 AF; 30,453 AF; 19,102 AF and 28,037 AF respectively. These amounts do not include 20% seepage loss that would be recharged through the D45 Canal transporting the water to

² All references to SWSI are for the Big Wood River Hailey gage. There are discussions with NRCS about developing a SWSI for Silver Creek but as of the writing of this plan, that has not been done.

³ The SWSI for 2013 was -1.7 based on the 2021 April – September forecast. Mr. Philip Blankenau's May 17, 2021 Memorandum to Gary Spackman analyzed METRIC data for 2013 in the Little Wood and Silver Creek Area. Mr. Blankenau's report states "The Little Wood and Silver Creek area does not appear to be water short in 2013."

planned recharge pit locations. Even though the primary benefit of recharge will be shaping the available early water supply to later in the irrigation season, there is about a 20% residual benefit that extends into the next 2 years and will help improve the water supply in water short years.

The WRV 1.1 model projected gains to Silver Creek using the available water supply quantities above are shown in Figure 2. The gain to Silver Creek is shown on the left axis in cubic feet per second (cfs) and the quantity of recharge is shown on the right axis in acre-feet. Similar analysis could be completed to show the benefits to Willow Creek and the Heart Rock Ranch to Stanton Crossing reach of the Big Wood River.

Implementation of strategic recharge activities will utilize available high flow water and in-priority surface water rights. Recharge water rights will come from one of two sources; 1) All in-priority surface water rights from fallowed lands, 2) Early season water rights that have been designated for use as re-charge rights.

The SVGWD and GGWD, in consultation with the IDWR and TWG will complete a recharge plan by November 1, 2022. The recommended plan will include possible location, conveyance structures, and sizing of recharge facilities, and other proposals that may convert deliverable priority surface water rights to recharge under this plan and through administrative procedures when necessary. High flow water, when available, may be diverted to recharge projects as a temporary water right approval pursuant to Idaho Code § 42-202A(5)(b).

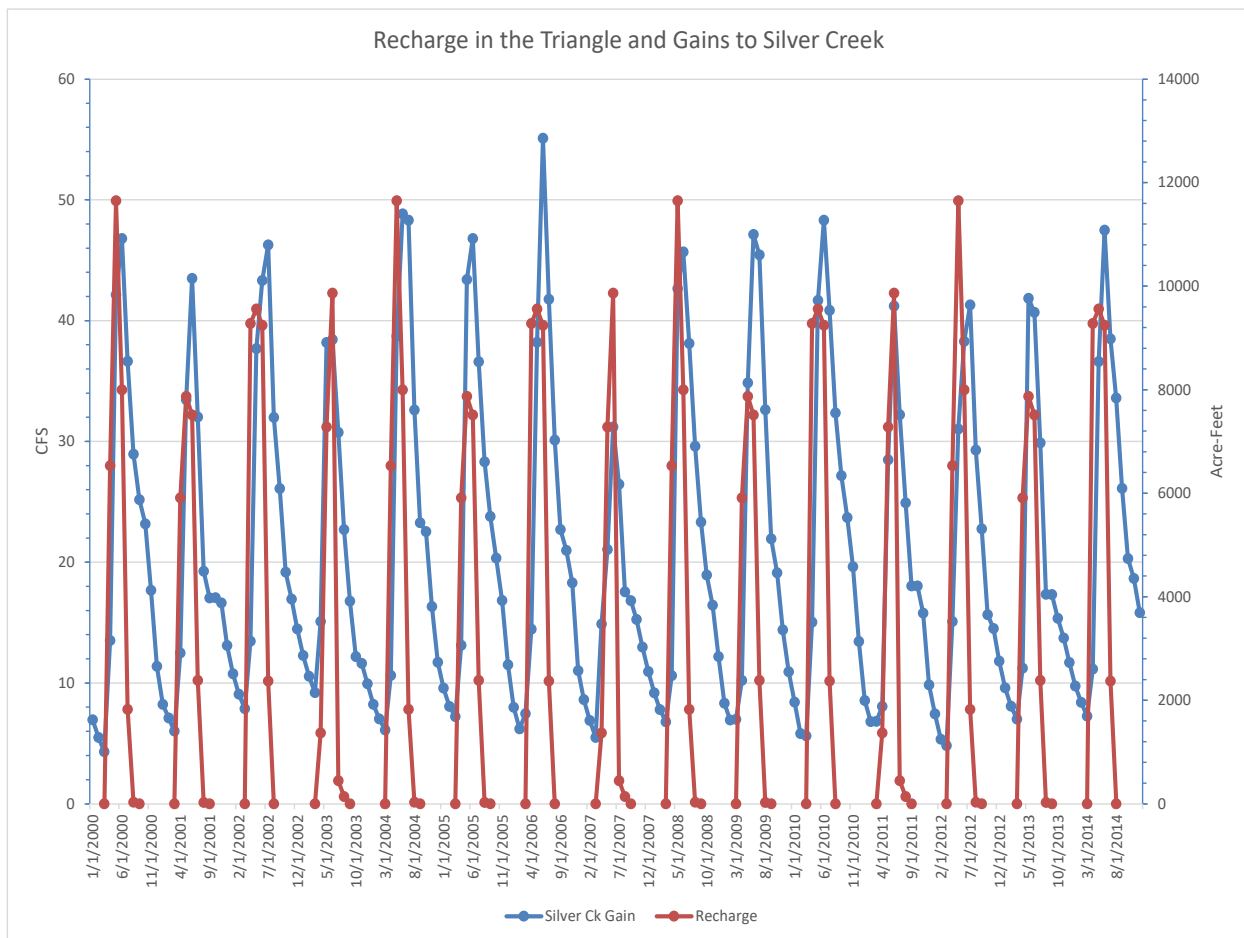


Figure 2: Recharge in the Bellevue Triangle and Gains to Silver Creek Streamflow

3.3.4 Cloud Seeding

An opportunity for enhanced cloud seeding in the Big Wood River basin is currently being explored. SVGWD and GGWD support the opportunity for enhanced cloud seeding in addition to the existing cloud seeding program in the Big Wood River basin. More information is expected to be presented to the Ground Water Committee soon.

3.3.5 Storage Water

SVGWD and GGWD will seek to acquire a long-term contract for the rental of Snake River storage water that can be used through the Milner-Gooding Canal to augment the water supply, primarily on the Little Wood River. The storage water will be under a multiyear contract but is only expected to be used in dry years. Since these multiyear contracts may have last-to-fill provisions the water will be retained for dry year use instead of allowing the storage water to be used every year.

In water years with SWSI less than -1.7 resulting in lower water supplies, this Snake River storage water can be made available to help satisfy the water needs primarily on the Little Wood River. Based on storage use in 2021, a rental of 1,500 AF is proposed.

3.3.6 Additional Dry Year Mitigation

The actions described above are initially designed to meet the mitigation requirements of years in which the SWSI is -1.7 or better. Additionally, when the full benefit of those actions are recognized and measured on the ground it is anticipated that those measures will be adequate for years with SWSI values less than -1.7. However, in the event additional actions are needed the ground water users will be provided with a variety of options to reduce ground water depletion.

Water years forecast to have a water supply less than that equivalent to a SWSI of -1.7 may require additional actions by members of the SVGWD and GGWD. One action will be making storage water available as described above, but additional actions may also be needed.

Additional actions may include fallowing or other methods to reduce the depletion of ground water being pumped. These actions could include end gun removal, reducing water application rates to shorten the crop water demand and reduce depletion but maintain the life of the plants being irrigated in addition to outright fallowing to provide water to downstream seniors in amounts equivalent to analogous years prior to ground water pumping. The need for early forecasting is particularly important in years expected to have less water than in a year with a SWSI of -1.7. Seed purchases may occur as early as January and growers will want to avoid those purchases if the seed can't be used because additional acres will need to be fallowed.

Currently, the WRV 1.1 model⁴ is the best tool to evaluate the number of additional acres that will need to be fallowed to produce a water supply equivalent to analogous years. In exceptionally water short years, acres will be identified as early as reasonably possible so the impact of fallowing those acres can be analyzed to be certain sufficient water will be available for senior water right holders.

Given the WRV model is the best tool for evaluation, a primary component of this Management Plan is that the model will be updated by IDWR on a regular basis. The model will incorporate

⁴ IDWR has indicated they will soon schedule meetings of the Wood River Valley MTAC Committee to begin discussing an updated version of the WRV 1.1. The currently available measured ground water diversions provide an opportunity for further improvement to the model.

current, measured conditions and new knowledge about water resources to support adaptive management decisions and management planning.

3.3.7 Mid-Season Check In

A July check in may be appropriate to be certain senior water users are being protected under the actions implemented for years with a SWSI less than -1.7. If it appears the mitigation implemented by GGWD and SVGWD is not adequate for the year additional actions can be implemented. One action could be to stop irrigating acres currently being watered. Acres could be selected to minimize the economic loss to irrigators in the SVGWD. Another option could be to determine if the shortage could be corrected by pumping ground water into Silver Creek as occurred in 2021. The ground water rights from the already fallowed acres are proposed as the source of ground water to be pumped into Silver Creek in those exceptional years when a midseason adjustment is needed. All options shall be explored to minimize the economic loss of GGWD and SVGWD members while providing the water needed to provide analogous year water supply.

3.3.8 Moratorium on New Water Rights

The Management Plan encourages IDWR to maintain the moratorium on new water rights that could result in a depletion of the Big Wood River basin water supply. The Districts also encourage the county and municipalities to require new development within their respective management area and area of impact to have a water right for irrigation or will need to acquire a right to mitigate for irrigation or any other consumptive purpose. The Districts also encourage the county and municipalities to require subdivisions to use a common well for irrigation that is measured and administered by the Water District. IDWR should use its authorities to encourage and where possible mandate the County and Cities take these actions.

3.3.9 Infrastructure Upgrades and Funding

The Management Plan would establish a fund to support water infrastructure and delivery improvements. The GGWD and the Cities would provide resources to assist in funding of water delivery system projects that result in improved efficiencies and water savings. The development of details and specific funding obligations would be a part of the revised drafting of the Management Plan.

3.3.10 Monitoring

The BWRGWMA advisory committee, Water District 37 watermaster, TWG, and IDWR shall coordinate to develop a broader plan for improved monitoring, data collection and reporting for other diversions in Water Districts 37 and 37B by January 2023 and implement plan by 2025.

The BWRGWMA advisory committee, Water District 37, IDWR, TWG and other water users or water interest groups need to explore the use of telemetry, or other technologies, to streamline monitoring and reporting obligations to reduce the burden on the Basin 37 watermaster, as well as foster partnership through increased transparency and accountability. Additional monitoring location need to be identified and installed. The groups will present a final plan by January 1, 2023, and complete implementation of the plan by the start of the 2025 irrigation season.

3.3.11 Water Right Accounting in Water District 37

The Management Plan supports IDWR efforts to develop a water right accounting program for Water District 37. This includes implementation of IDWR's computerized accounting system in

the Wood River Valley and Camas Creek. IDWR has proposed implementing the computerized accounting by 2024 and the ground water districts support that effort. Water District 37 water right accounting program would be similar to programs developed in other basins and water districts (01, 11, 34, 63, and 65). Accounting will be prioritized for the Big Wood River including Magic Reservoir and the Little Wood-Silver Creek systems to:

- Allocate available natural flow and determine water right priority cuts by computing river reach gains/losses;
- Track natural flow and storage delivery, groundwater injections/re-diversions;
- Adjust priority cuts based on actual use/demand.

3.3.12 Adaptive Management

The Management Plan will develop a systematic process for improving management strategies and practices by learning from the outcomes of implemented management strategies. The components of an adaptive management system would include monitoring, evaluations, collaboration with Advisory Group, and expert input from the TWG.

As the water use management strategies outlined in this Management Plan are implemented, they will be evaluated to determine if the metrics or benchmarks established by this Management Plan are met. If not, then additional water management and mitigation actions as outlined in this Management Plan and as recommended by the BWRGWMA Advisory Committee could be implemented by groundwater users to meet the stated metrics or benchmarks.

4.0 OUTCOME MEASURES

This section describes key performance measures in meeting the Management Plan strategies and actions. Details will be further described in subsequent drafts and completion of the Management Plan.

4.1 OVERVIEW DISCUSSION

The outcome from the efforts by SVGWD, GGWD (and Camas area ground water users) will be to maintain analogous year water supplies for surface water users. Successful implementation of the Management Plan elements will result in Big Wood River, Silver Creek and Little Wood River natural flow water users and the accrual of storage in Magic Reservoir to have water quantities available consistent with the quantities of water available in years with similar water supply and runoff conditions prior to the development of ground water pumping.

The methods of accounting for these measures will be developed once the Management Plan elements have been finally defined. Analogous year analysis has been used in the past by IDWR and implementation of the methods to be applied in this case will be developed when the plan elements are known.

The Management Plan supports further research into the development of a network of sentinel ground wells in the WRV to monitor aquifer conditions through time. Given the high variability of aquifer groundwater levels within each water year an expanded study would be required to identify potential sentinel wells and how the network could best be employed as a monitoring and information strategy. If advance study found the sentinel well network to be of value, the data collected from this network could be included in a post water season annual report.

4.2 ANNUAL REPORTING

The Management Plan envisions the compilation of an annual report that detail management actions and outcome measures. This deliverable document would quantify the actions and measured results from each of the Management Plan elements enacted over the season.

APPENDIX A – DEFINITIONS AND RELEVANT LEGAL PROVISIONS

Definitions

Acre-Foot (AF): A volume of water sufficient to cover one (1) acre of land one (1) foot deep and is equal to forty-three thousand five hundred sixty (43,560) cubic feet.

Big Wood River Ground Water Management Area: That part of the Wood River Basin designated the Big Wood River Ground Water Management Area in the Order in the Matter of Designating the Big Wood River Ground Water Management Area dated June 28, 1991 and shown on the map in Appendix B of this plan.

BWRGWMA: Big Wood River Ground Water Management Area.

Cubic Foot per Second (cfs): A rate of flow approximately equal to four hundred forty-eight and eight-tenths (448.8) gallons per minute and also equals fifty (50) Idaho miner's inches.

Director: The Director of the Idaho Department of Water Resources.

Ground Water District (GWD): A district established pursuant to Idaho Code Title 42, Chapter 52.

Ground Water Management Area: Any groundwater basin or designated part thereof as designated by the Director pursuant to Section 42-233(b), Idaho Code.

Ground Water: Water under the surface of the ground whatever may be the geological structure in which it is standing or moving as provided in Section 42-230(a), Idaho Code.

IDWR: The Idaho Department of Water Resources.

IWRB: The Idaho Water Resources Board.

Surface Water: Rivers, streams, lakes and springs when flowing in their natural channels as provided in Sections 42-101 and 42-103, Idaho Code.

Water District: An instrumentality of the state of Idaho created by the Director as provided in Section 42-604, Idaho Code, for the purpose of performing the essential governmental function of distribution of water among appropriators under Idaho law.

Watermaster: A person elected and appointed as provided in Section 42-605, and Section 42-801, Idaho Code, to distribute water within a water district.

Water Right: The legal right to divert and use or to protect in place the public waters of the state of Idaho where such right is evidenced by a decree, a permit or license issued by the Department, a beneficial or constitutional use right or a right based on federal law.

Relevant Legal Provisions

Idaho Code § 42-226 declares all ground water within the state to be the property of the state and confirms the state's power to supervise the appropriation and allocation of ground water within its boundaries.

Idaho Code § 42-231 states:

[I]t shall be the duty of the [Director] to conduct investigations, surveys and studies relative to the extent, nature and location of the ground water resources of this state It shall likewise be the duty of the [Director] to control the appropriation and use of the ground water of this state . . . and to do all things reasonably necessary or appropriate to protect the people of the state from depletion of ground water resources contrary to the public policy expressed in this act.

Idaho Code § 42-233b authorizes the Director to create a ground water management area if he determines an area "may be approaching the conditions of a critical ground water area."

Idaho Code § 42-233b further provides:

When a ground water management area is designated by the director of the department of water resources, or at any time thereafter during the existence of the designation, the director may approve a ground water management plan for the area. The ground water management plan shall provide for managing the effects of ground water withdrawals on the aquifer from which withdrawals are made and on any other hydraulically connected sources of water.

Water right holders participating in an approved ground water management plan shall not be subject to administration on a time priority basis so long as they are in compliance with the ground water management plan.

Idaho Code § 42-223(4) provides that a water right shall not be lost or forfeited if the reason for nonuse of the water is to comply with the provisions of a ground water management plan.

Idaho Code § 42-1805(7) authorizes the Director to suspend the issuance or further action on applications to appropriate water as necessary to protect existing water rights. Further, Rule 55 of the Department's Water Appropriation Rules (IDAPA 37.03.08) states that the Director may establish moratoriums, as necessary, to protect existing water rights.

APPENDIX B – IDWR ORDER DESIGNATING THE BIG WOOD RIVER GROUND WATER MANAGEMENT AREA

APPENDIX C – IDWR MEMO: HYDROLOGY, HYDROGEOLOGY, HYDROLOGIC DATA

Hydrology, hydrogeology, and hydrologic data, Big Wood & Little Wood Water Users Association delivery calls, CM-DC-2015-001 and CM-DC-2015-002. IDWR, 2015.