

SACRAMENTO REGIONAL WATER BANK

Goal, Objectives, Principles, and Constraints

Purpose and Use of This Document

This is the first of a series of papers that will introduce and describe the process and considerations related to the development and implementation of the Sacramento Regional Water Bank (Water Bank).

This document defines the Water Bank goal, objectives, principles, and constraints that provide the framework to: (1) set the direction for subsequent Water Bank activities (overall strategy, alternatives formulation, analyses, environmental documentation, governance, etc.); and (2) focus development of options and the overall project description.

<i>Purpose</i>	1
<i>Background</i>	1
<i>Goal</i>	3
<i>Objectives</i>	3
<i>Principles</i>	3
<i>Constraints</i>	5

- The **GOAL** represents the desired “end state” of activities. The goal captures the intent—the “why”—of the Water Bank and serves as the foundation of the entire development and implementation process.
- **OBJECTIVES** establish the intent of the Water Bank to address related aspects of the region’s water management challenges to the maximum extent possible. Objectives provide additional details as to how the goal will be achieved and serve as a means of measuring success in achieving that goal.
- **PRINCIPLES** are overarching, foundational statements of shared values informing Water Bank development, implementation, and decision making.
- **CONSTRAINTS** are factors that shape or limit development, evaluation, and implementation of the Water Bank.

Background

Water management in the North and South American subbasins (hereafter called the American River Basin) is facing the combined climate pressures of warming air temperatures, shrinking snowpack, shorter and more intense wet seasons, more volatile precipitation, and rising sea levels affecting the Sacramento-San Joaquin Delta (Delta). These climate pressures will make it more challenging to simultaneously store and maintain water for droughts, manage flood risk, and protect freshwater ecosystems. Warming air temperature has complex adverse effects on water supply—it reduces the share of precipitation falling as snow, causes early snowpack melting and higher than usual winter runoff, raises water temperatures, and amplifies the severity of droughts and floods. Warmer, more intense droughts increase pressure to draw down groundwater resources. Over-reliance on groundwater for supply can lead to long-term declines in groundwater levels. Warmer, more intense storms add stress to managing surface reservoirs, making it harder to meet often competing objectives of storing water, safeguarding communities from harmful floods, and protecting freshwater ecosystems. Sea level rise threatens the Delta and puts more pressure on Folsom Reservoir to contribute flows to help meet Delta water quality requirements.

Conjunctive use is a coordinated water management practice with the preferential use of surface water during wet conditions and groundwater during dry conditions.

In the Sacramento region, implementation of a coordinated practice of conjunctive use by local water agencies has played a considerable role in making the region’s water supply more reliable over the past two decades. Water managers in the region have identified expansion of that conjunctive use practice (also known as “groundwater banking”) as one of several key strategies to improve drought resiliency, long-term groundwater sustainability, and climate change adaptation in the face of ever-increasing water

management challenges. Moreover, recent studies¹—in particular, the locally-led 2019 Regional Water Reliability Plan (RWRP) and the 2022 American River Basin Study produced by the U.S. Department of the Interior, Bureau of Reclamation (Reclamation) in partnership with local water agencies—identified the establishment of a regional water bank as a necessary institutional mechanism to facilitate and incentivize expansion of conjunctive use.

To enhance the long-term viability of the Sacramento region’s community, businesses, and families, water managers are focusing on adapting the regional water supply system to climate change and drought by expanding conjunctive use (i.e., augmenting the amount of water previously banked), thereby increasing the resilience of the region’s water supplies and creating a 21st-century water system. This program is known as the **Sacramento Regional Water Bank (Water Bank)**.

What is the Water Bank?

The Water Bank is a multi-agency partnership that allows participating local water agencies to expand their conjunctive use operations by leveraging surface water, recycled water, and groundwater supplies to use the expansive reservoir under the Sacramento region for storing water during wet times for use during dry times. The Water Bank will enhance the opportunities for recharging and storage of water underground on behalf of specific parties, while maintaining a formal accounting system to keep track of balances (i.e., deposits when water is recharged and withdrawals when it is recovered in the future).

The Water Bank is structured to reduce barriers to expanding conjunctive use—these barriers could be institutional (e.g., agreements, operational issues, water quality concerns), financial (e.g., cost to produce water, cost of expansion), or structural (e.g., facility limitations)—while complying with existing regulations, requirements, and goals of Groundwater Sustainability Plans (GSP) in the American River Basin.

The Water Bank builds on the ongoing regional conjunctive use program and existing infrastructure and facilities, meaning that the foundation of the Water Bank is in-place and operational. At present and using that existing infrastructure, it may be possible to recharge up to 60 thousand acre-feet (TAF) in a very wet year using municipal sources and recover up to 60 TAF in a very dry year. With near-term, new infrastructure, those recharge and recovery quantities could total up to 90 TAF in a year. The Water Bank has the potential to grow over time, making use of other sources of supply and means of recovery. Put in context, the North and South American groundwater sub-basins currently have about 1.8 million acre-feet (MAF) of unused storage that could store surface water during wet conditions for use when surface water supplies are more limited, as during a drought. In addition, there are opportunities to increase the availability of supply using recycled water.

¹ North American River Basin Regional Drought Contingency Plan (Reclamation and RWA, 2018), Regional Water Reliability Plan (RWA, 2019), American River Basin Study (Reclamation, 2022), North American Subbasin Groundwater Sustainability Plan (SGA, 2021), South American Subbasin Groundwater Sustainability Plan (SCGA, 2021).

In addition to improving long-term water supply reliability and resiliency, the Water Bank provides an opportunity to build on current conjunctive use operations that have enabled local agencies to bank water increasing the operational flexibility of Folsom Reservoir. Folsom Reservoir plays critical roles in (1) managing temperature in the lower American River to support aquatic life, (2) Delta water quality for the enhancement and protection of Delta fisheries and ecosystem, and (3) Reclamation's Central Valley Project (CVP) water supply functions statewide.

Process for Developing Water Bank Goals, Objectives, Principles, and Constraints

The Water Bank goals, objectives, principles, and constraints build on the solid foundation of decades of coordinated conjunctive-use efforts in the region and the associated planning, studies, and analyses that supported continued implementation and adaptation of those activities.

In the second half of 2022, participating local water agencies developed several iterations and refinements of the goals, objectives, principles, and constraints document. Working drafts were discussed with various stakeholders, interested parties, and other organizations throughout the development process. Feedback was solicited during the Water Bank Stakeholder Forum #2, in February 2023, and considered as part of the refinement process. In April 2023, the draft was presented to Reclamation as part of an ongoing companion study,² and the agency's input is reflected in redline revisions to the "Relationship to the CVP" principles shown herein.

The input received along the way has been instrumental in crafting the goals, objectives, principles, and constraints that are critical to moving Water Bank development forward. It is important to note that the Water Bank goals, objectives, principles, and constraints are intended to be a "living document," open to periodic revisions as Water Bank implementation continues.

Goal

The **GOAL** of the Water Bank is to expand conjunctive use, thereby increase water banking operations throughout the region to:

- (1) Improve long-term regional reliability and provide statewide water supply opportunities when possible; and
- (2) Support healthy ecosystem function on the lower American River.

Objectives

The Water Bank **OBJECTIVES** are to:

- Increase groundwater recharge during wet conditions using available surface and recycled water supplies.
- Reduce reliance on surface water during dry conditions by using previously banked groundwater.
- Contribute to water reliability of water agencies in the region with no or limited access to groundwater.
- Contribute to water reliability of water agencies in the region with no or limited access to surface water.
- Maintain the quality of surface water and groundwater.

² The Water Management Operations Pilot is a study funded by Reclamation that updates and links models to be used in upcoming Water Bank development analyses, examines potential Water Bank operations in relation to the CVP, explores potential Water Bank alternatives, and assesses the effects of climate change conditions.

- Contribute to CVP operational flexibility by reducing reliance on Folsom Reservoir during dry conditions.
- Contribute to healthy ecosystem function, including on the lower American River.
- Consider and advance mutually beneficial opportunities to partner with entities outside the region on operational collaboration and/or investment in the Water Bank.
- Generate revenue for investment in infrastructure and other projects/programs to improve regional water supply reliability, resiliency, and affordability for participating agencies.
- Generate revenue to reduce financial barriers to conjunctive use for participating agencies.

Principles

The **PRINCIPLES** provide guidance on Water Bank development, implementation and decision making. They include:

- **Regional Water Management**
 - Contribute to long-term sustainability of the region’s groundwater basins by committing a portion of recharge to basin sustainability.
 - Operate consistent with the pertinent GSPs to ensure basin sustainability.
 - Maximize beneficial use of surface water in basin.
 - Contribute to meeting current and future water resources needs in the region.
 - Maintain and improve water supply reliability in the region.
- **Environmental Stewardship**
 - Identify and avoid negative effects on environmentally sensitive areas, in compliance with the governing GSPs (such as the lower American River and Cosumnes River).
 - Provide for ecosystem benefits from Water Bank operations.
- **Public Engagement**
 - Engage transparently with stakeholders during the Water Bank development and implementation process to promote dialogue, understand their concerns, and improve the process.
 - Coordinate with other efforts and entities in the region interested in the Water Bank and water supply reliability.
 - Build community awareness and encourage participation in stewardship of water resources, recognizing water as a public trust asset.
 - Consider beneficial uses and users of groundwater, including domestic well owners, agricultural water users, and the environment.
 - Provide education on the public benefits of Water Bank operations and transfer activities.
- **Water Bank Development and Operations**
 - Operate as a single water bank that covers both the North and South American subbasins (as several local water agencies overlie both subbasins and to recognize the existing inter-connectivity of local water agencies across the subbasins).
 - Conduct recharge actions before recovery actions.
 - Conduct water banking operations consistent with relevant statutory and regulatory obligations.
 - Recover no more than the net banked water in the basin.
 - Adaptively manage the Water Bank in compliance with the Sustainable Groundwater Management Act. (Conduct regular monitoring and evaluation actions to determine if Water Bank objectives are met. Prepare for changes in future conditions, including climate change effects. Incorporate best-available data and tools, as applicable, to reflect evolving science, changing regulations, and/or the monitoring and evaluation results.)
 - Operate in compliance with the governing GSPs.

- **Relationship to the CVP**
 - Operate the Water Bank consistent with the following tenets related to the CVP:
 - The Water Bank is locally managed and operated. It is not a CVP facility.
 - ~~For any CVP water used in the Water Bank, Reclamation's control and ownership of CVP water stops at the contractors' delivery points.~~
 - ~~If CVP water is stored in the Water Bank, it is delivered CVP water under the contractor's control.~~
 - Use of CVP water in the Water Bank is consistent with the authorized beneficial uses and places of use of Reclamation's water rights, as authorized through CVP contracts.³
 - Water Bank operations ~~do not~~ would be formulated to not affect or require modifications to Reclamation's water rights.
 - ~~Although the Water Bank may provide CVP operational flexibility benefits, Water Bank operations are not considered integrated into CVP operations and are therefore not subject to inclusion in the Endangered Species Act (ESA) consultation for long-term CVP/State Water Project (SWP) operations. Water Bank operations would be formulated to not affect Reclamation's ability to meet its regulatory or contractual obligations.~~
 - The Water Bank does not impose new restrictions on the use of CVP water by local water agencies beyond those in their respective CVP contracts and applicable Reclamation policies.
 - Explore potential partnerships with Reclamation for the benefit of the CVP, while maintaining the Water Bank's independent operations and local control.
- **Banking Partner/Participant Success Factors**
 - Improve long-term water security, reliability, and resiliency in the region.
 - Create return on investment and reliable funding stream from long-term agreements.
 - Identify and meet local water agency/regional water reliability needs first.
 - Secure agreement on potential water transfer partners in terms of their water use(s) and location(s).
 - Provide opportunities for all local water agencies to participate in the Water Bank.
 - Maintain transparency of Water Bank operations and finances.
 - Maintain individual RWA member agency autonomy.
 - Seek external sources of funding and financial assistance for Water Bank development and implementation.
- **Third-Party⁴ Success Factors**
 - Implement the Water Bank with no new restrictions on use of groundwater.
 - Maintain consistency with Sustainable Groundwater Management Act implementation.
 - Safeguard groundwater quality.
 - Prevent negative effects on the lower American River area, Cosumnes River areas area, or other groundwater dependent ecosystems.
 - Prevent negative effects on or from related Folsom Reservoir operations.

³ For any CVP water stored in the Water Bank via in-lieu recharge, it is considered functionally delivered CVP water that is put to beneficial use, consistent with CVP water rights and CVP water service contracts. If banked water is later recovered for transfer, that use needs to be consistent with CVP water right place of use and authorized beneficial uses.

⁴ In this context, "third party" means an entity that does not have a direct connection with a transaction or agreement (e.g., the Water Bank) but may be affected by it.

Constraints

Constraints come in many forms—they can be physical/operational, regulatory, institutional, financial, etc. They are necessary to acknowledge and aid in efficient formulation and screening of options, as well as implementation and addressing future considerations. **CONSTRAINTS** include:

- **Physical/Operational:**
 - Consider capacities and limitations of infrastructure in both near-term and long-term operations.
 - Structure operations in recognition of known groundwater contamination plumes and consider additional treatment needs.
- **Regulatory:**
 - Maintain compliance with existing regulations and requirements, including those related to the Sustainable Groundwater Management Act, including adopted GSPs, and Groundwater Sustainability Agencies (GSA) in the region; California Environmental Quality Act and National Environmental Policy Act; and State Water Resources Control Board, Regional Water Quality Control Board, and Reclamation policies (including water banking and water transfer guidelines).
 - Maintain compliance with new and emerging regulations and requirements (such as changing water quality requirements).
 - Recognize fluoridation practices and preferences in banking operations.
 - Recognize and avoid infringing on existing uses of surface water and groundwater by private users and local water agencies.
- **Institutional:**
 - Maintain consistency with policies, agreements, contracts, and other guidelines of local water agencies.
 - Maintain consistency with related local and regional efforts (acknowledging the Water Forum Agreement⁵).
- **Financial:**
 - Secure financial resources for participating agencies to pay for infrastructure necessary to support Water Bank operations.
 - Integrate funding mechanisms with fiscal requirements of participating agencies.

⁵ More information on the Water Forum Agreement is available at: <https://www.waterforum.org/>. More information on the Water Forum Agreement is available at: <https://www.waterforum.org/>.