

# Stakeholder Forum – Winter 2025

February 4, 2025

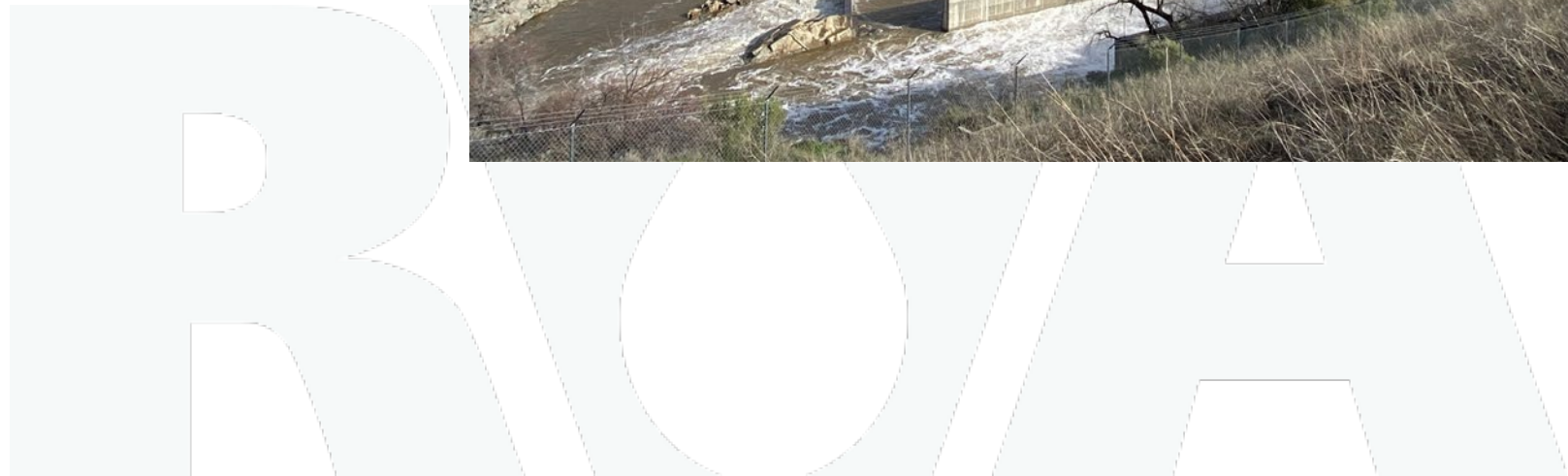


— BUREAU OF —  
**RECLAMATION**



# Welcome and Ground Rules

- **Participation.** If you have a clarifying question relevant to the section we are presenting on, please use the **Q&A feature** on your toolbar to submit your question. We will have a Question and Answer section for remaining questions towards the end of the event.
- **Remote meeting.** If you are having technical difficulties, please send a chat message to the **Meeting Host** and we will address your issue.



# Tonight's Agenda

## 1. Welcome and Introductions

- Regional Water Authority
- Roles and Responsibilities

## 2. Water Bank Background and Basics

- What is the Sacramento Regional Water Bank?

## 3. Water Bank Planning and Coordination

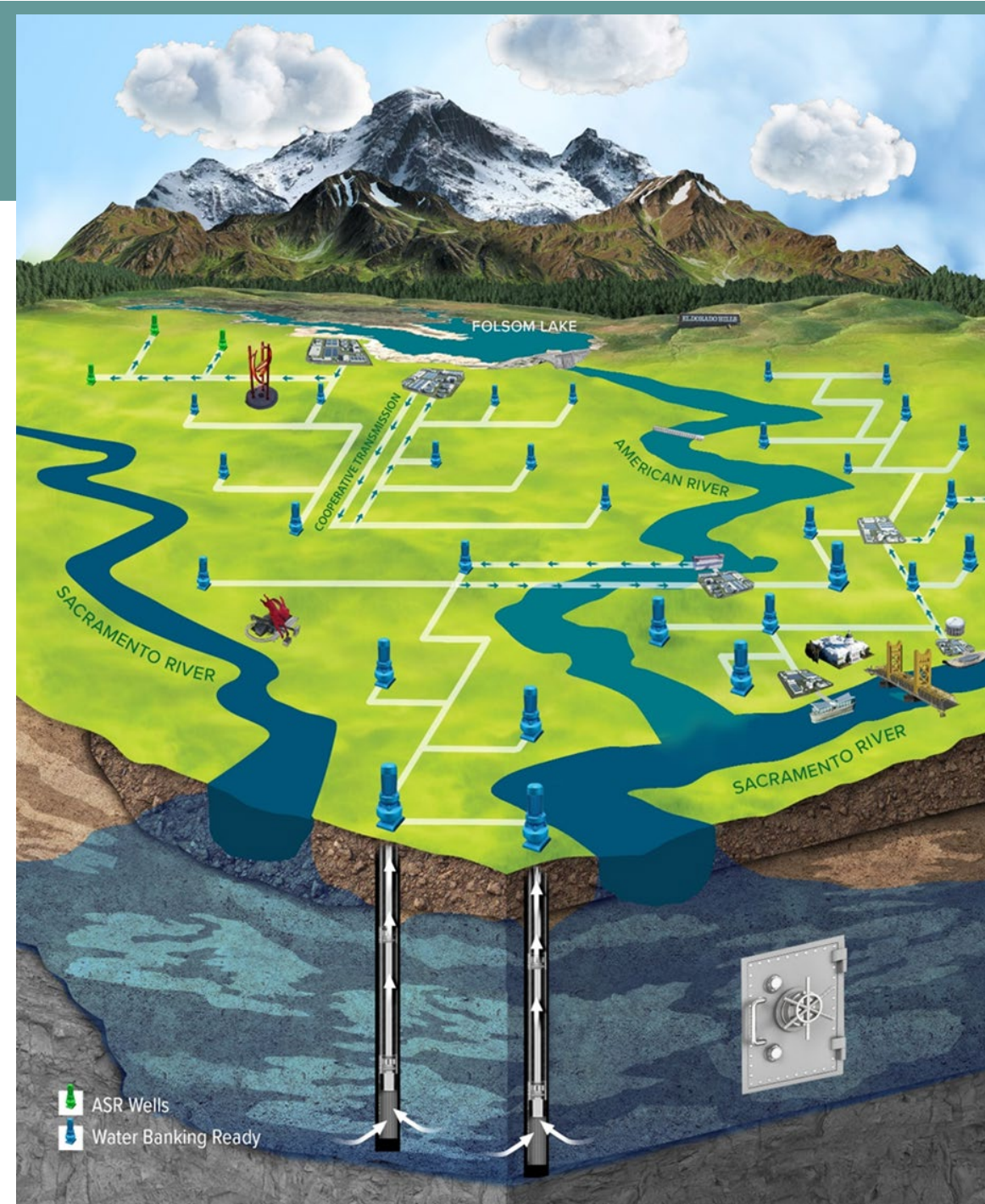
- Communications/Engagement
- Institutional/Technical
- Modeling/Environmental

## 4. Water Bank – Water Accounting System

- Overview/Fundamentals
- Components
- Consistency with Groundwater Sustainability Plans
- Implementation and Administration

## 5. Previewing What's Ahead

- Roadmap of 2025 Water Bank Activities



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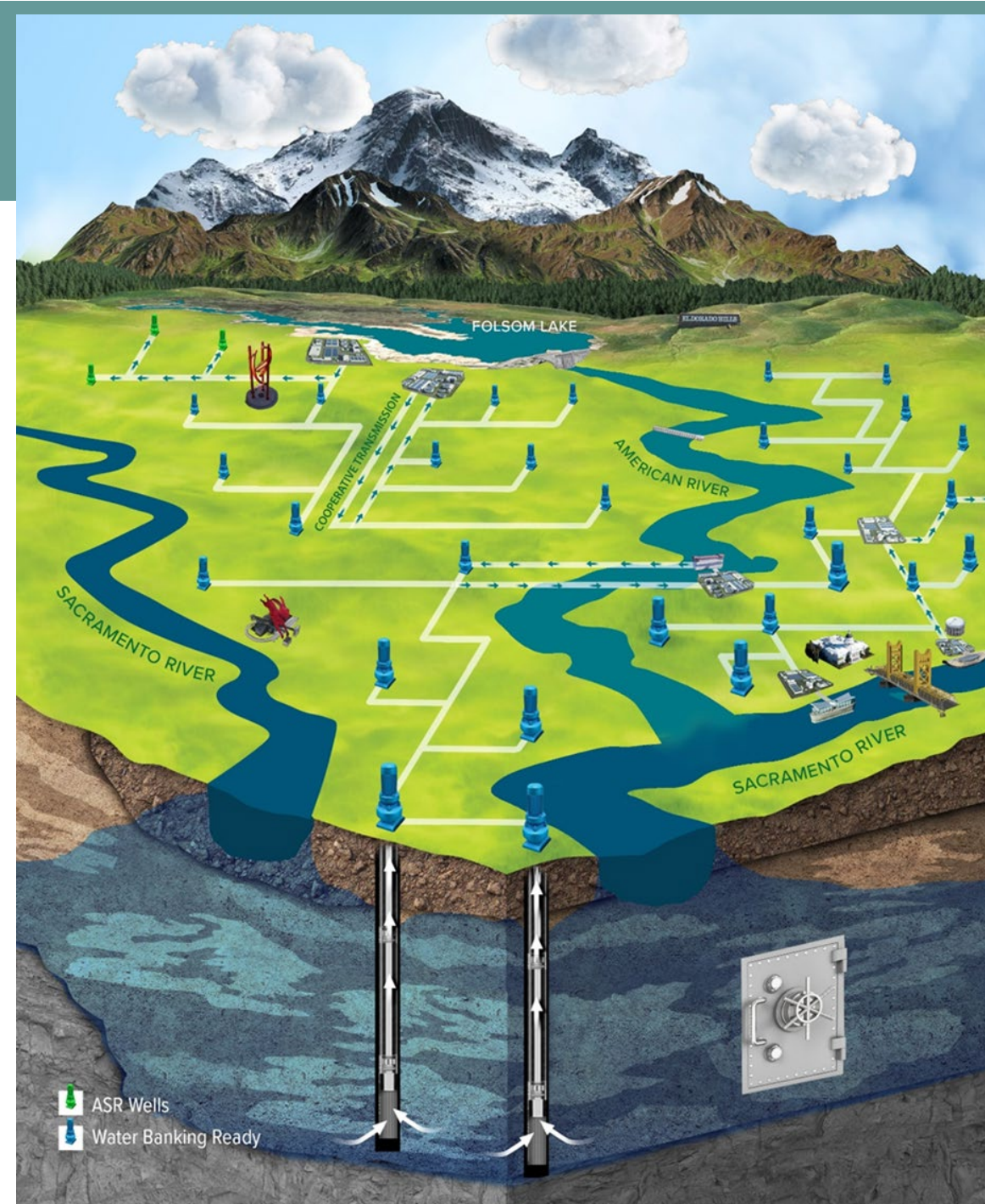
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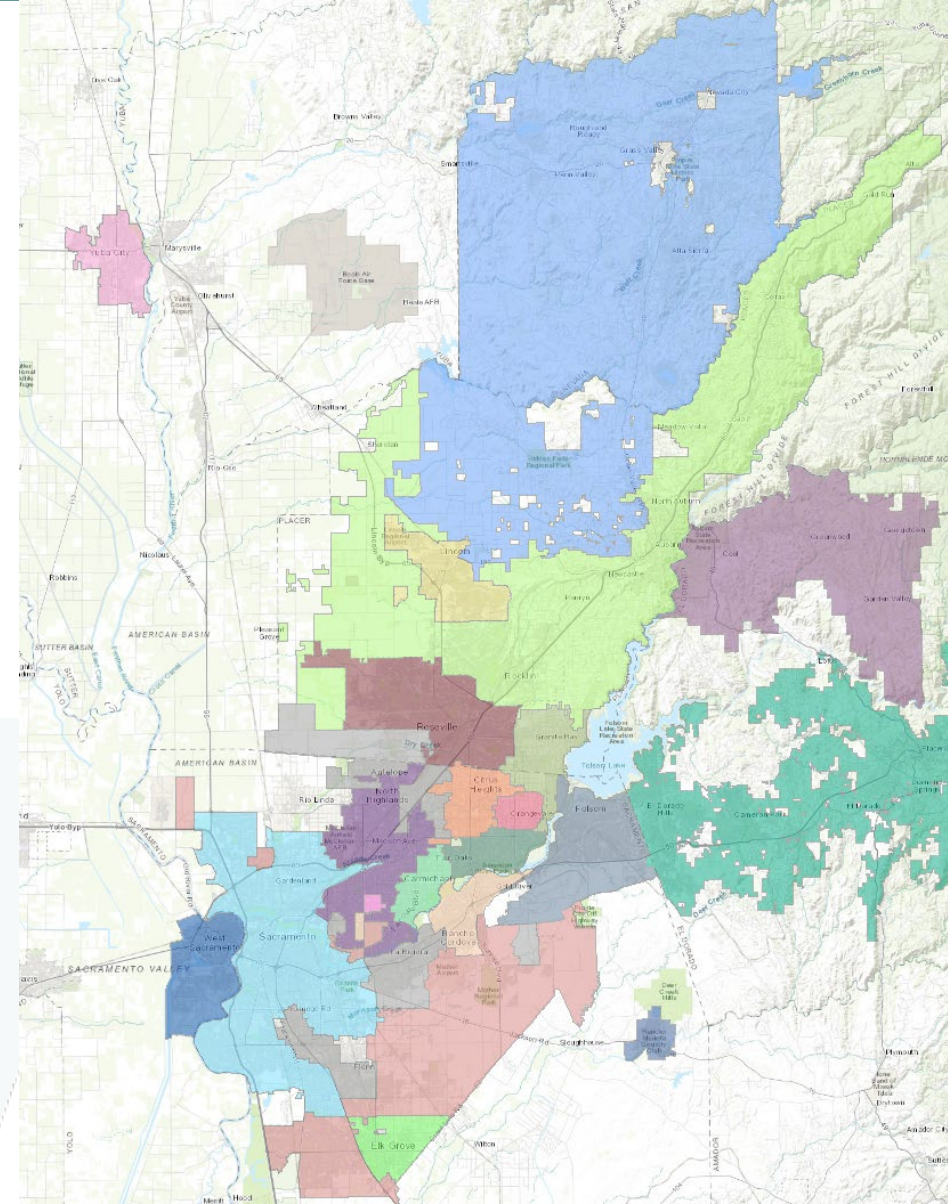
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# Introduction to the Regional Water Authority

## RWA's Mission:

*To serve, represent and align the interests of regional water providers and stakeholders for the purpose of improving water supply reliability, availability, quality and affordability.*



# Roles and Responsibilities

## Regional Water Authority

- Leading and coordinating the Water Bank development effort.

## Participating Agencies

- Agencies supporting Water Bank development by providing funding, guidance, and direction. These agencies will also be implementing the Water Bank.

## External WB Partners

- Entities external to RWA with which RWA engages on behalf of the Water Bank Participating Agencies.

## State and Federal Agencies

- Agencies with regulatory, permitting, and/or funding roles (DWR, SWB, Reclamation, etc.).

## Stakeholders

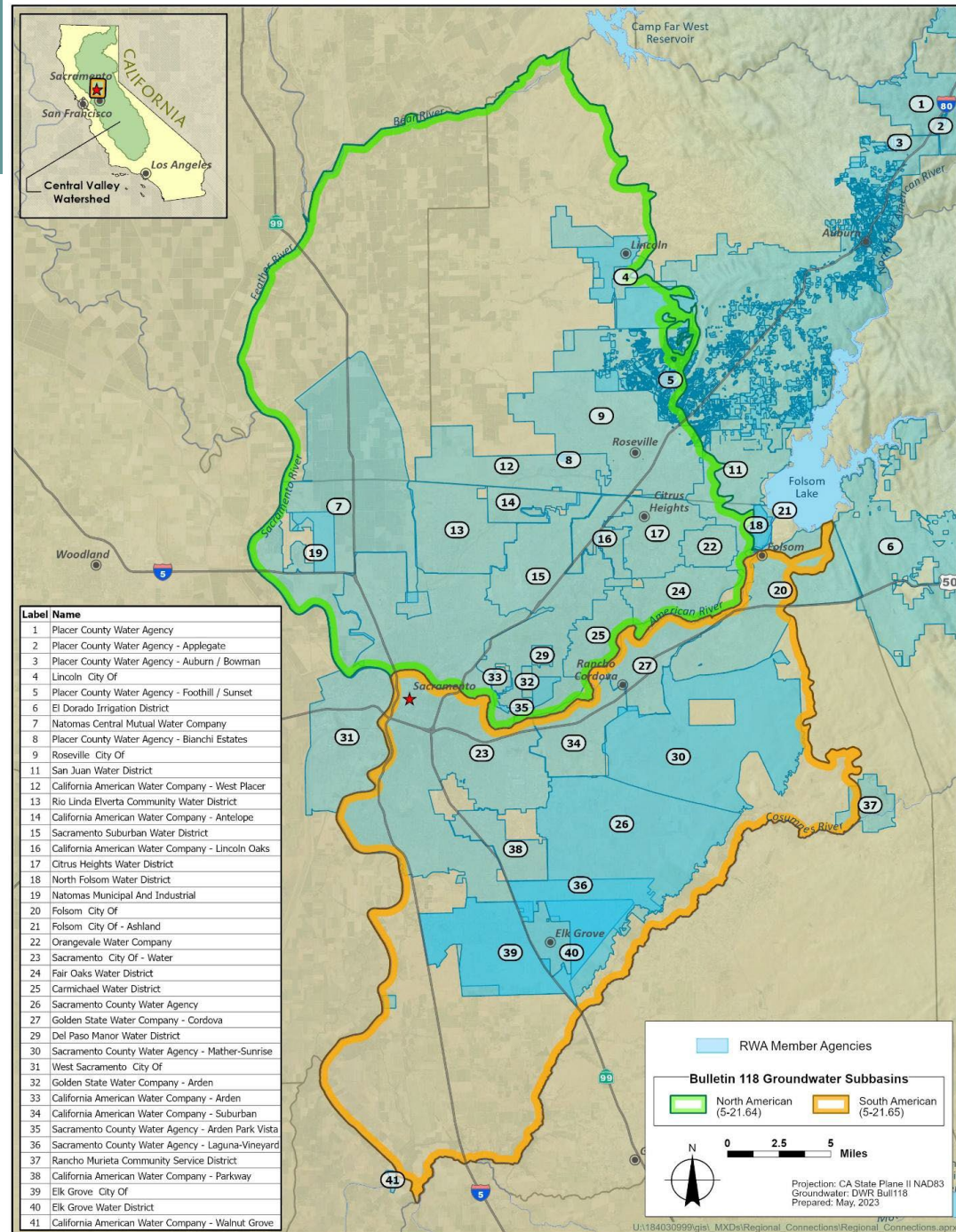
- Non-governmental organizations, other entities, and individuals with an interest in the Water Bank.

# Participating Agencies

WATER BANK STAKEHOLDER FORUM - February 2025



CITY OF  
**FOLSOM**  
DISTINCTIVE BY NATURE



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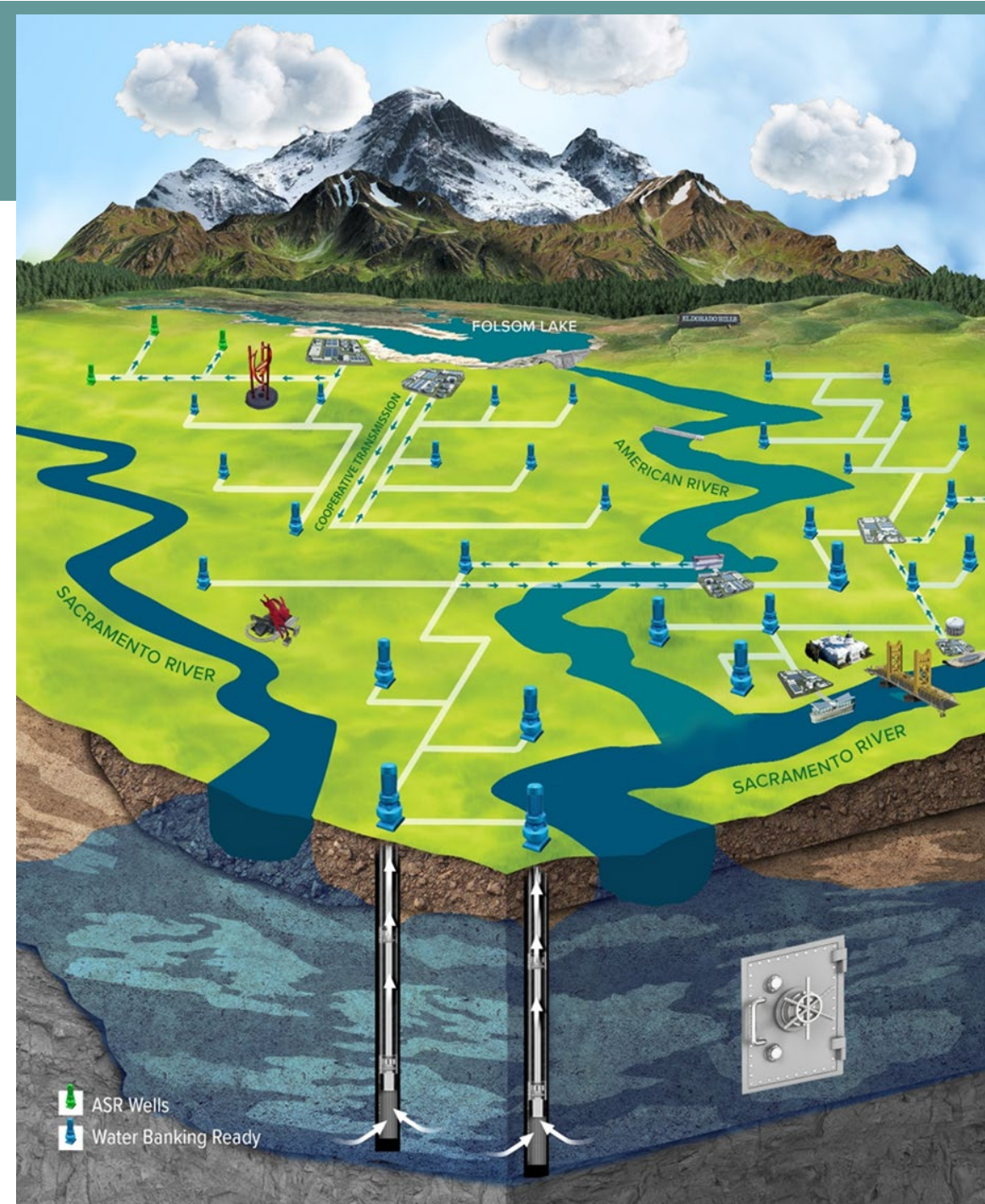
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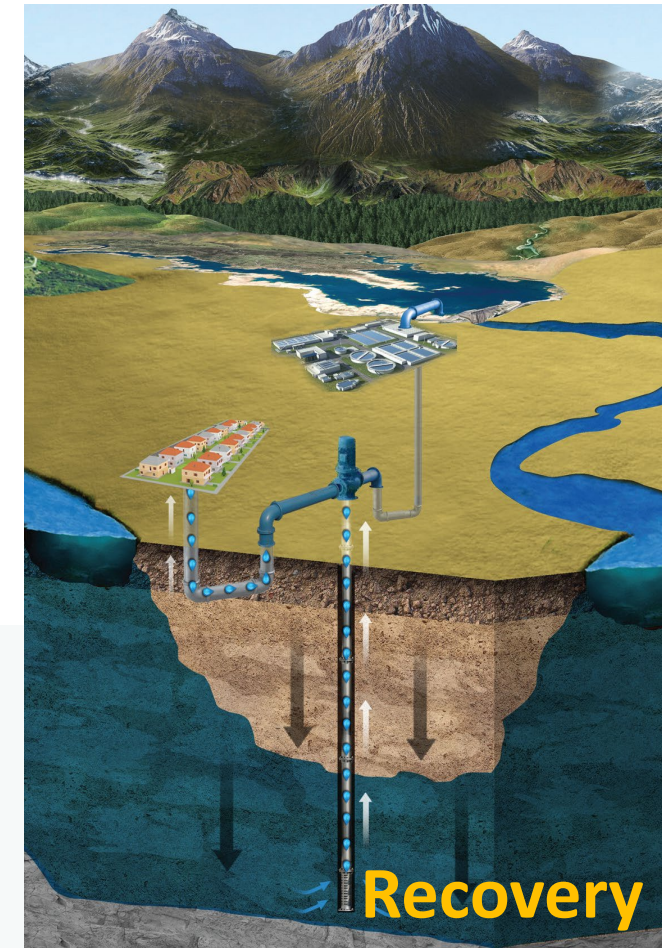
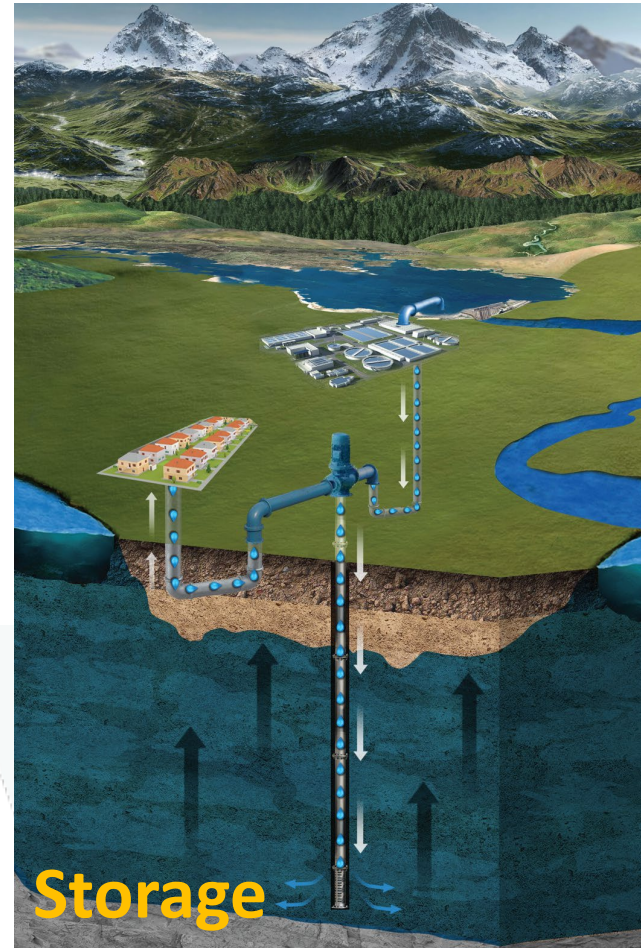
- Roadmap of 2025 Water Bank Activities





# What is a “water bank”?

- Water banks recharge and store water underground on behalf of specific parties
- Water banks require formal accounting systems to keep track of balances
  - Balances are drawn down during dry times, as water is withdrawn
  - Balances increase during wet times, as water is deposited

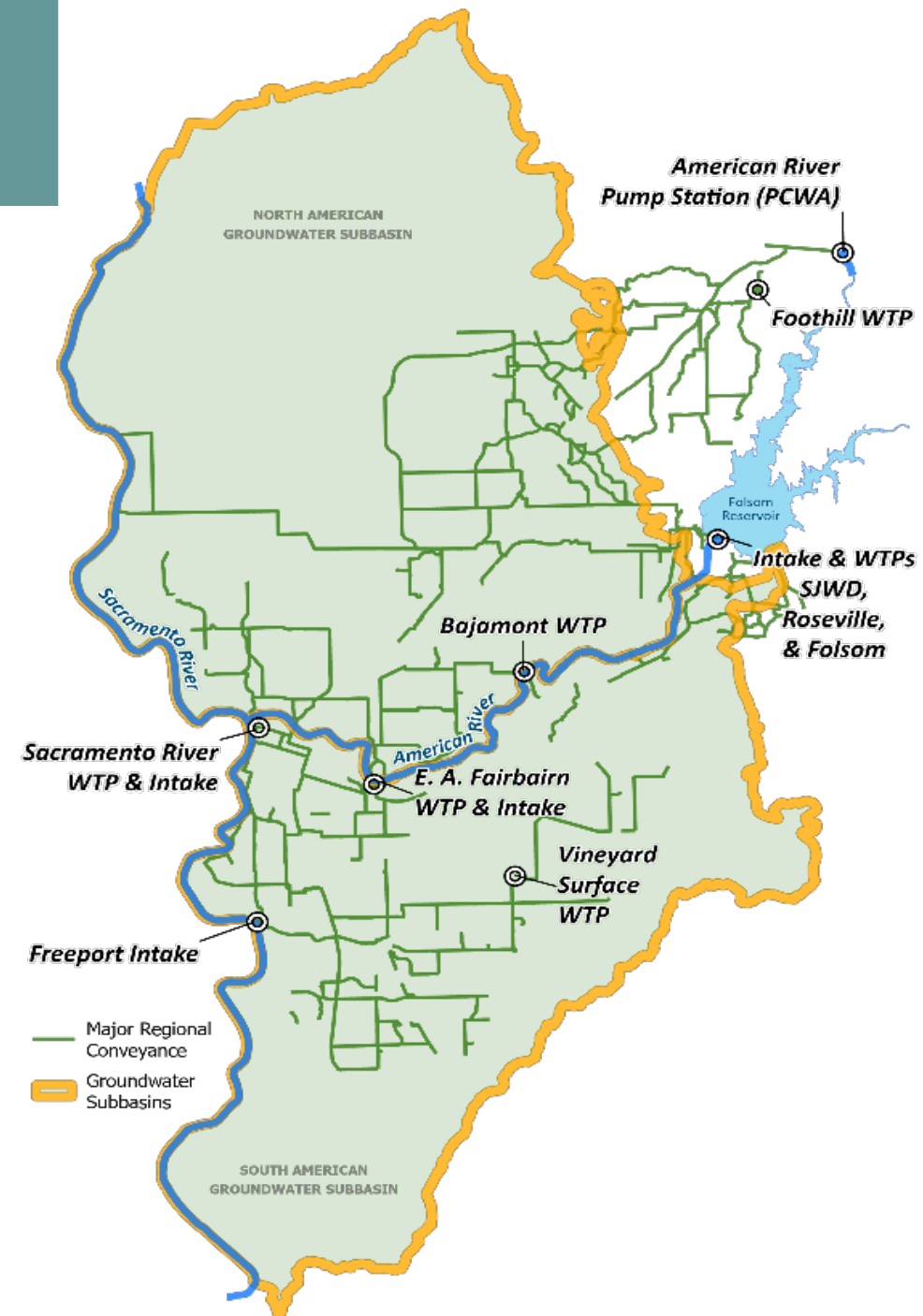


# Water Bank Project – Existing Facilities

Existing facilities would be used to:

- **Recharge/Storage:**
  - Divert surface water
  - Treat surface water for use by participating agencies and/or injection into aquifer, using aquifer storage and recovery wells
- **Recovery:** Pump previously banked groundwater for use by Participating Agencies, to serve their customers

*Note: facilities shown are subject to change*



# Water Bank Project – Project Exclusions

- New facilities are **not** being proposed, nor would any new facilities be authorized as part of this Project.
- Changes in surface water rights/ contract supplies are **not** being proposed, nor would they be authorized as part of this Project.



# Water Bank Project – Project Benefits



- **Local and Regional Water Supply Reliability**
- **Ecosystem, Fish, and Wildlife**
- **Water Quality**
- **Economic**



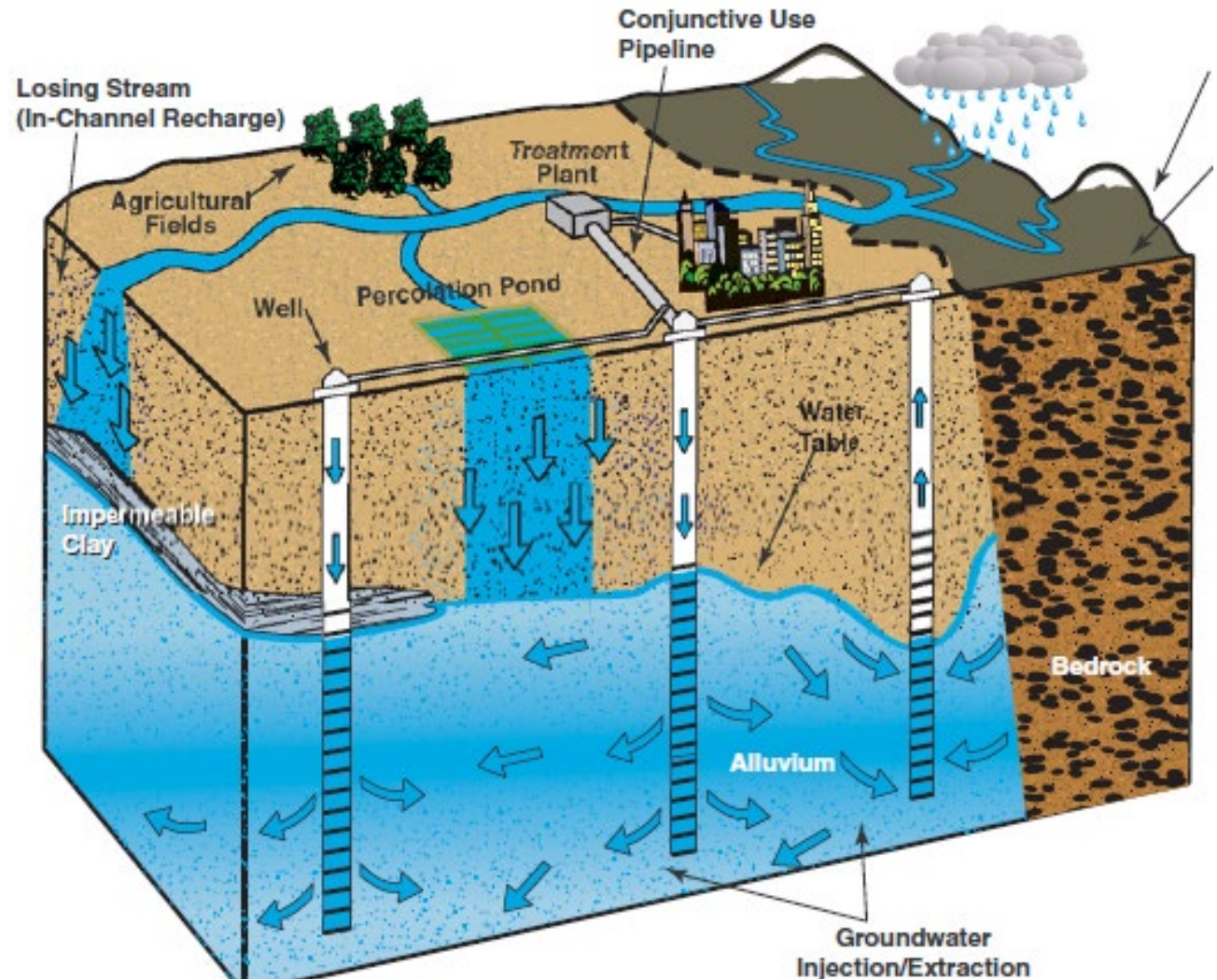
# Groundwater and Recharge Methods

## Natural Recharge

- Streams and Creeks
- Mountain Front
- Rain – Direct Percolation

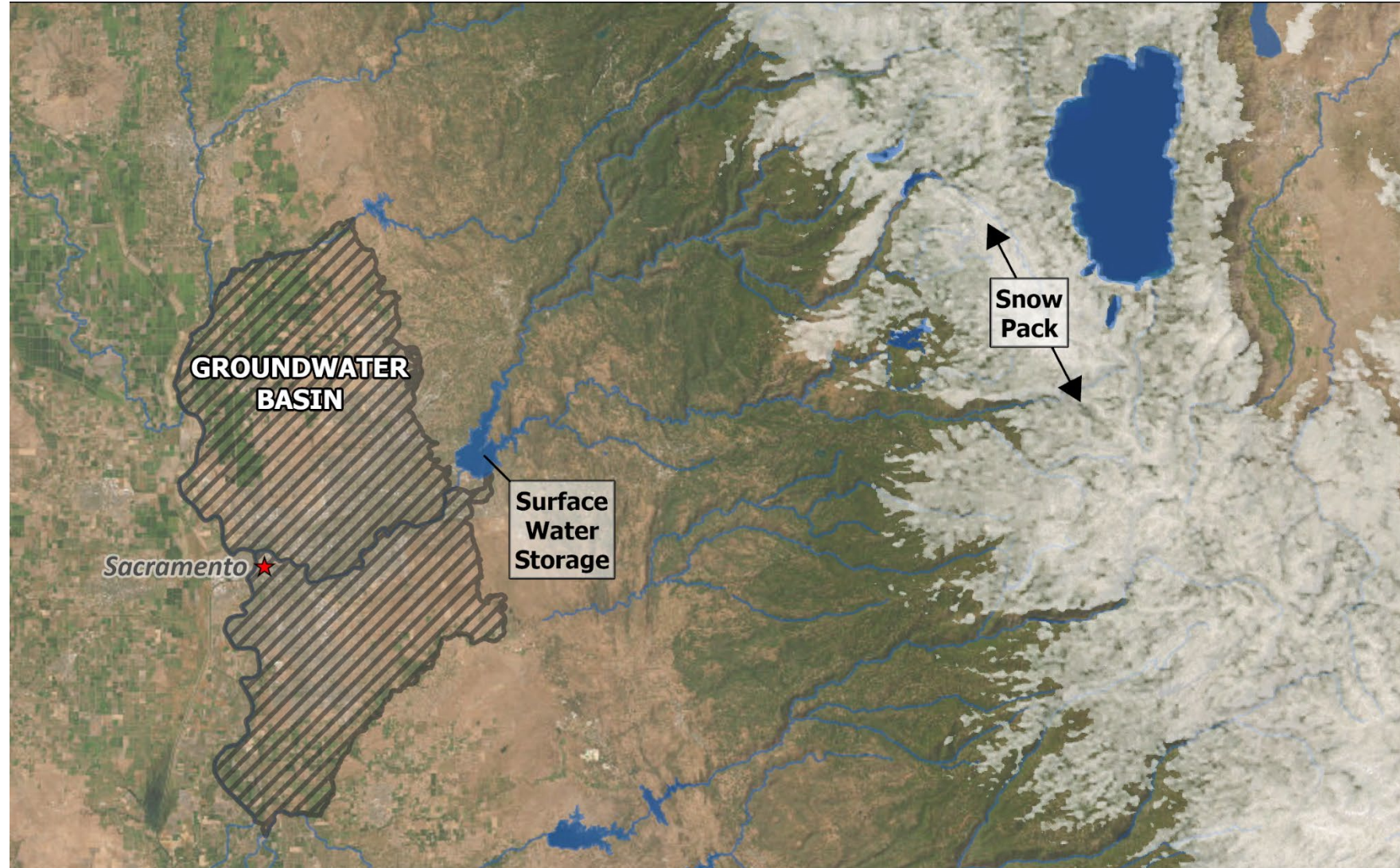
## Artificial Recharge

- **Direct Recharge**
  - Injection Wells
  - Percolation Ponds
- **In-Lieu Recharge**
  - *Storing water by utilizing surface water “in-lieu” of pumping*



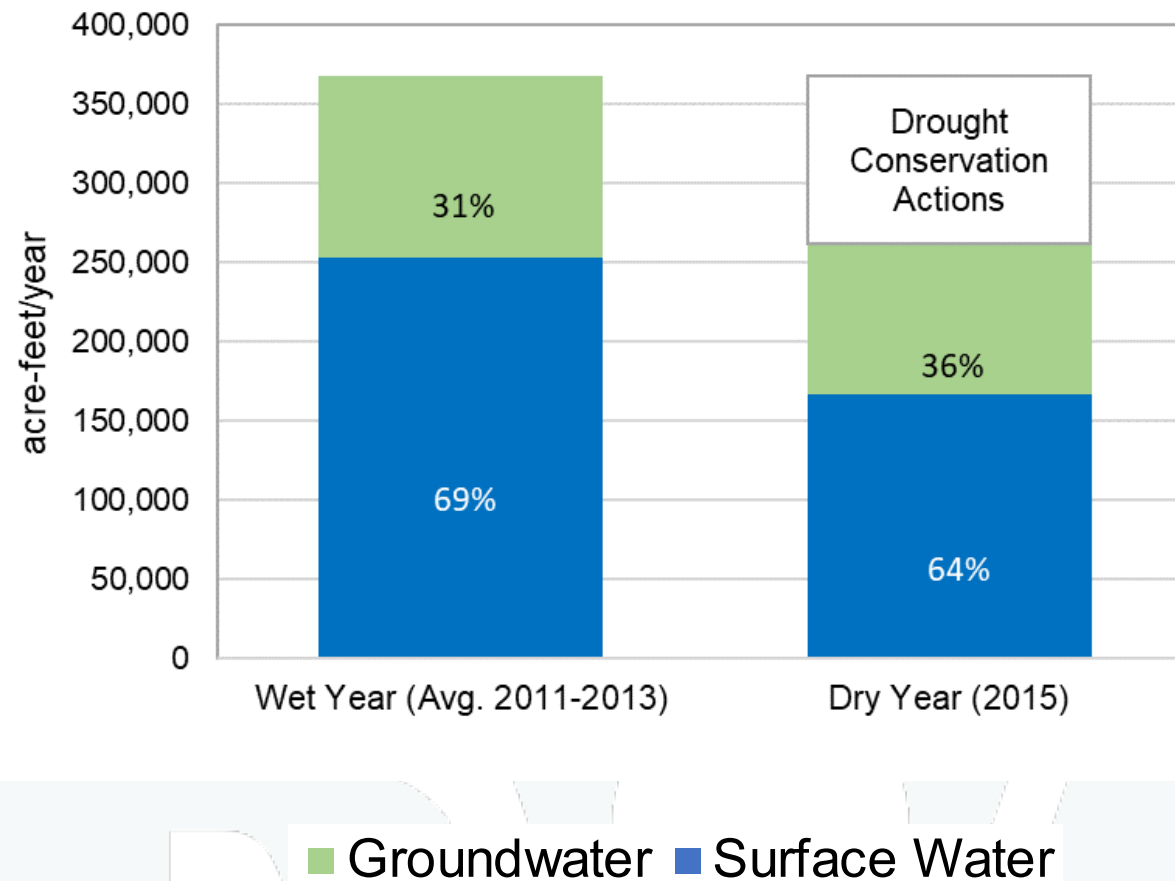
# Scale of Groundwater Storage

- Historical reliance on **snowpack**, **surface water**, and **groundwater**
- Going forward, **groundwater storage** and **recovery** needs to be a more prominent part of our vision



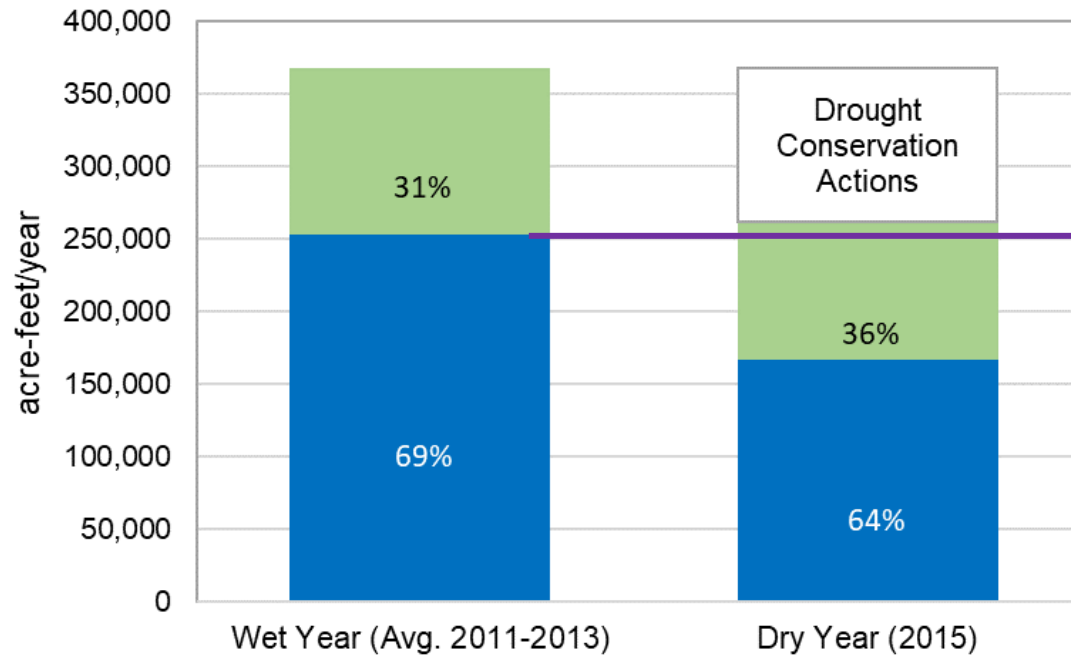
# How the Water Bank Project Works – Shifting Water Sources

## Current Conditions

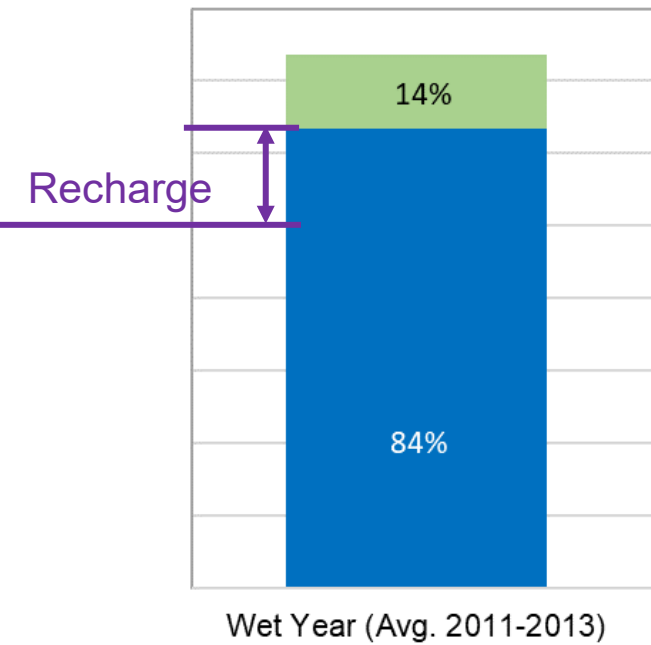


# How the Water Bank Project Works – Shifting Water Sources (cont.)

## Current Conditions



## Conditions With the Water Bank



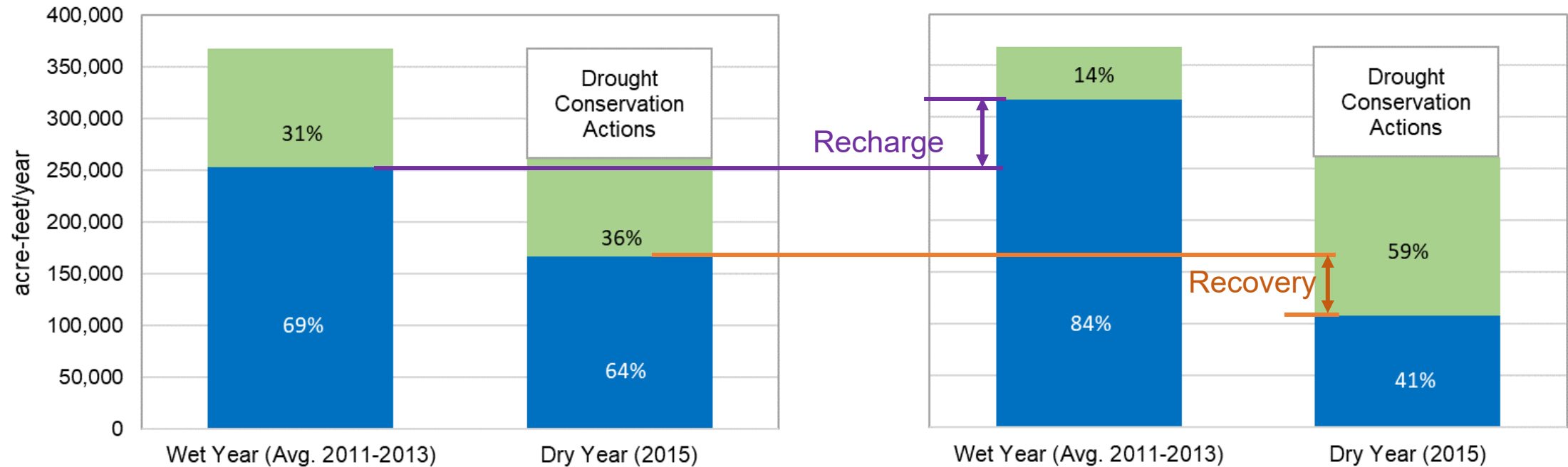
■ Groundwater ■ Surface Water



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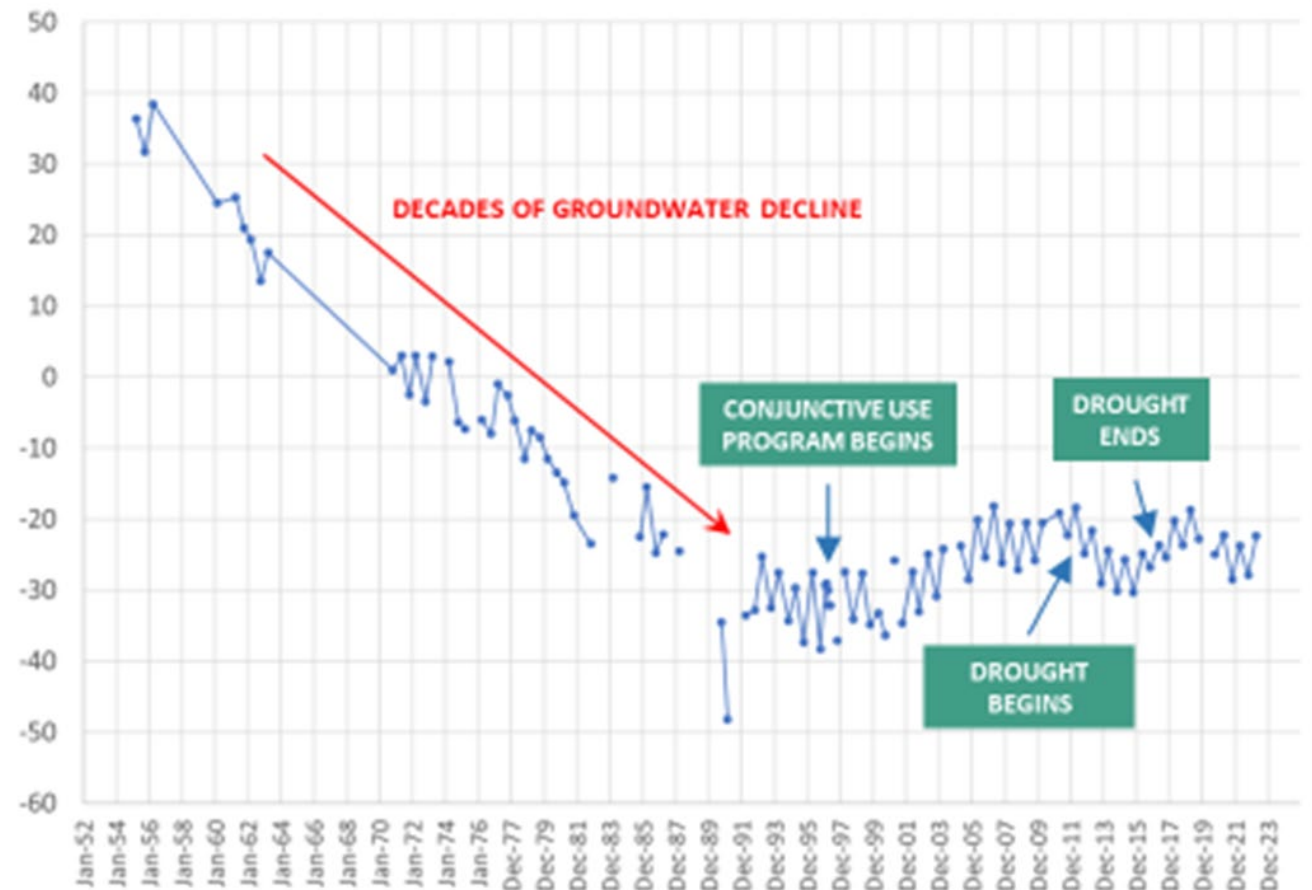
# Conjunctive Use and Previously Banked Water – A Proven Method of Groundwater Management



WATER BANK STAKEHOLDER FORUM – February 2025



LONG-TERM GROUNDWATER LEVELS, NORTHERN SACRAMENTO COUNTY  
(WELL 10N05E14Q002M)



# Federally Recognized Water Banks



— BUREAU OF —  
RECLAMATION

## Groundwater Banking Guidelines for Central Valley Project Water

Effective Date: November 12, 2014  
Updated October 4, 2019

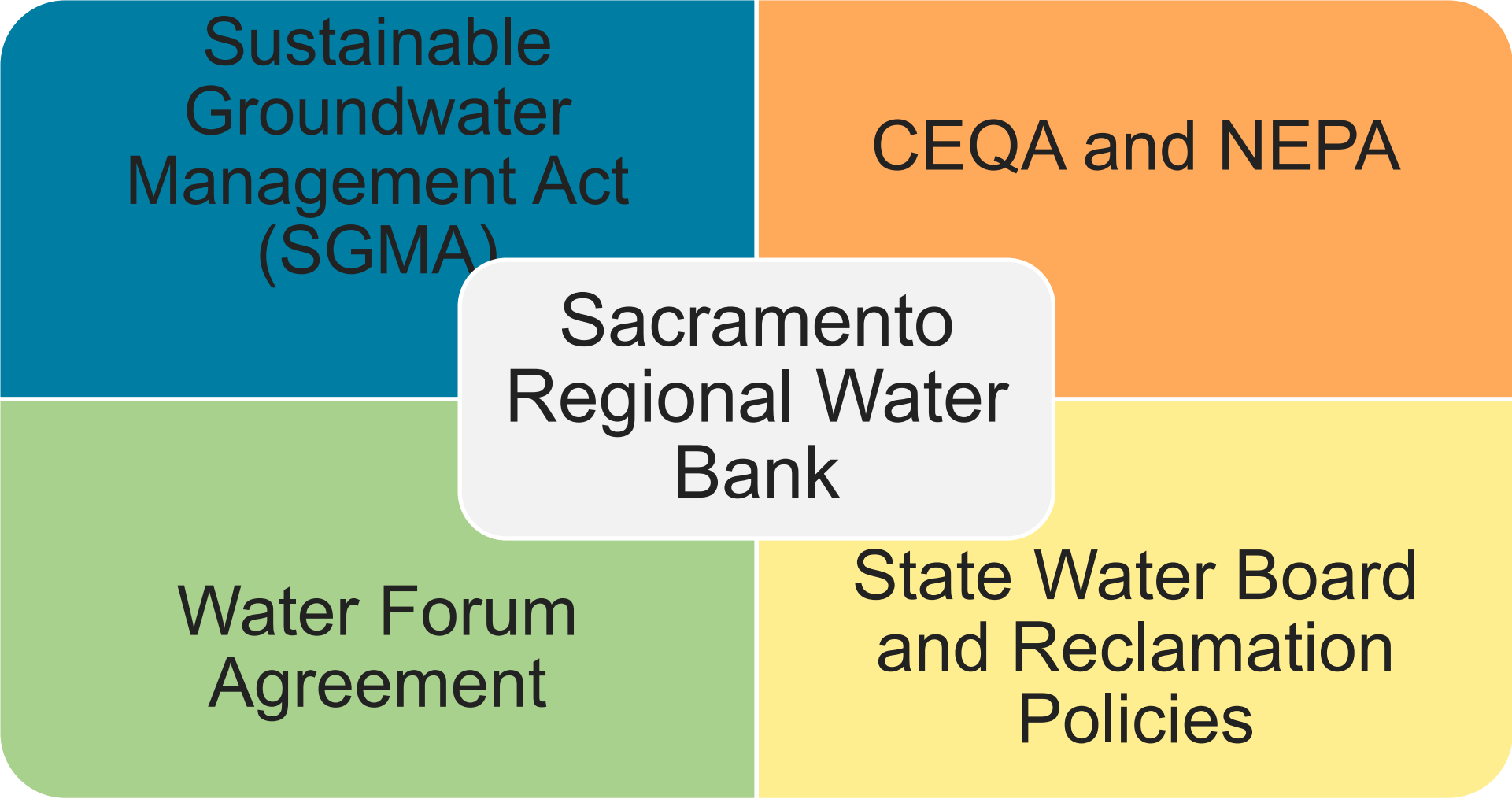
	Acknowledged Water Banks	Identifier Number
1	North Kern Water Storage District	05-WC-20-3256
2	Rosedale-Rio Bravo Water Storage District	05-WC-20-3257
3	Semitropic Water Storage District	05-WC-20-3258
4	Tulare Lake Basin Water Storage District	05-WC-20-3259
5	Cawelo Water District	05-WC-20-3260
6	Lakeside Irrigation District	05-WC-20-3261
7	Kaweah Delta Water Conservation District	05-WC-20-3266
8	Kern Water Bank Authority	18-WC-20-5263
9	Meyers Farms Family Trust	N/A
10	Pixley Water Bank Project	18-WC-20-5264
11	West Kern Water District Groundwater Bank	18-WC-20-5255



Sacramento  
Regional  
Water Bank

0 100 KM 100 Miles

# Water Bank Complies with Federal and State Requirements



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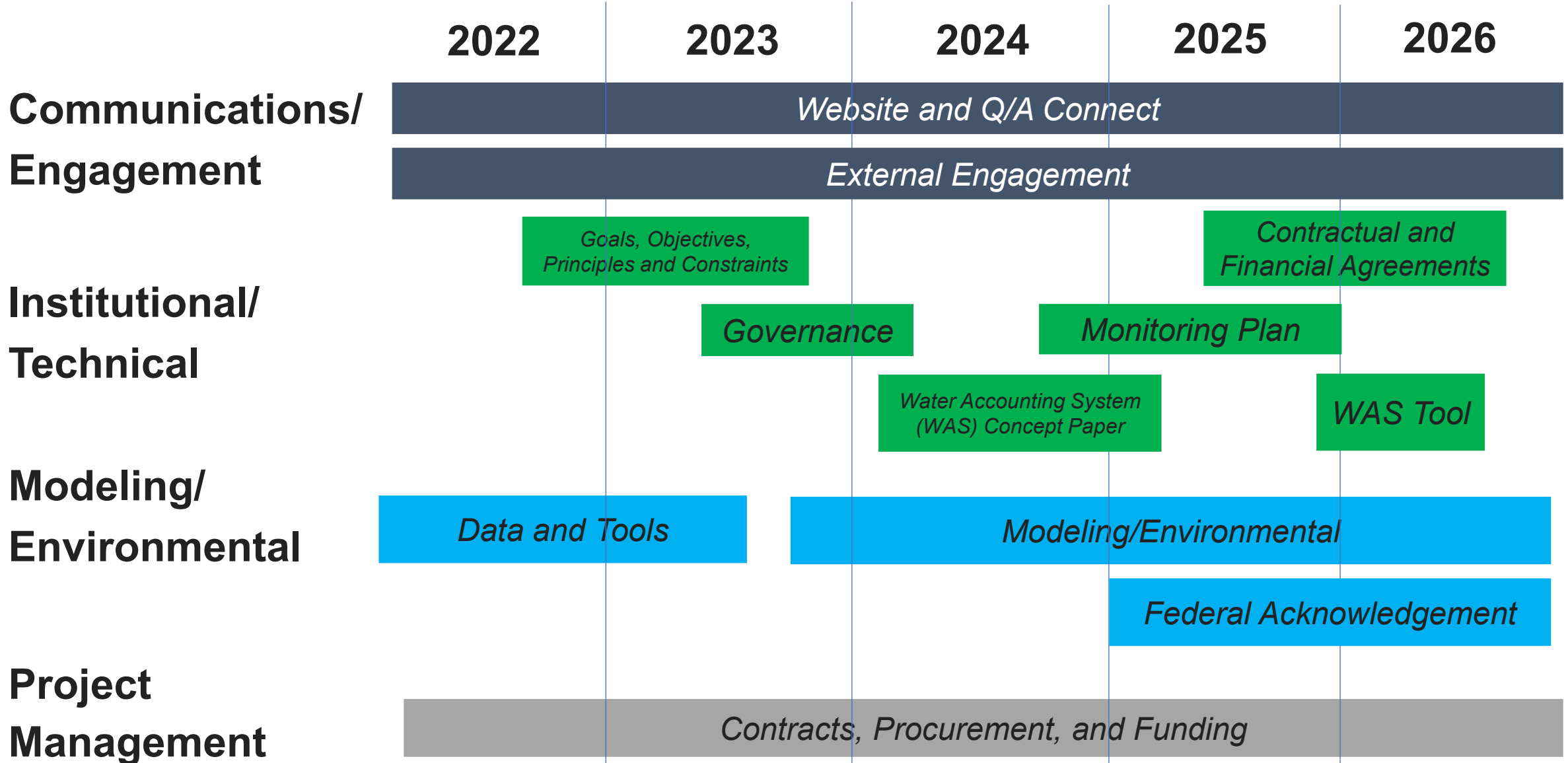


# Water Bank Project – Tasks/Activities

Subject to  
change



WATER BANK STAKEHOLDER FORUM – February 2025



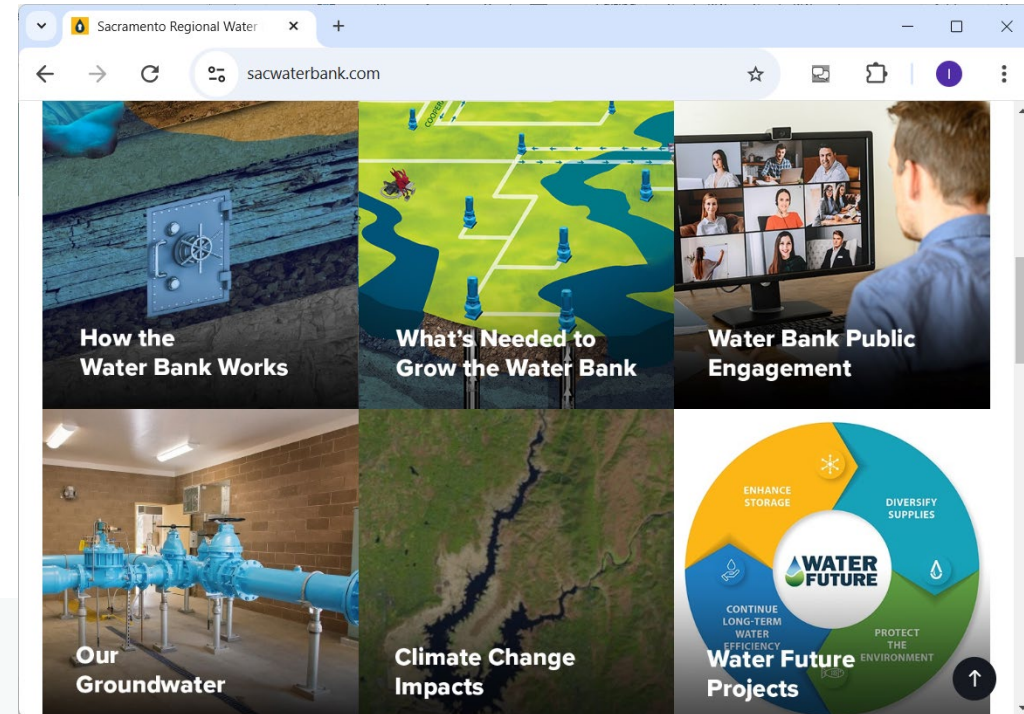
# Water Bank Project – Communications and Engagement

## Public Communications

- Up-to-date website: <https://sacwaterbank.com/>
- Question of the Week

## Agency and Stakeholder Engagement

- Stakeholder Forums 1, 2, 3, and 4
- Groundwater Sustainability Agencies
- The Sacramento Water Forum
- State and Federal: DWR, State Water Board, Reclamation



# Water Bank Project – Institutional Framework and Support

- ✓ **Goal, Objectives, Principles, and Constraints:** *sets the direction for Water Bank activities (overall strategy, alternatives formulation, analyses, environmental documentation, governance, etc.).*
- ✓ **Governance: Organizational Framework, Functions, and Associated Roles and Responsibilities:** *describes the process and considerations related to the implementation of the Sacramento Regional Water Bank.*
- ➔ **Water Accounting System:** *enables effective and transparent management and monitoring of water banking activities within the North and South American Subbasins.*
- ➔ **Monitoring and Mitigation Plan:** *outlines monitoring activities to track basin response to recharge and recovery and describes the adaptive management actions.*

## Contractual and Financial Agreements



# Water Bank Project – Environmental Review

- RWA is proposing to establish the Sacramento Regional Water Bank (Water Bank/Project).
- Discretionary approval needed by RWA, per the California Environmental Quality Act (CEQA).
- RWA determined the need to prepare an Environmental Impact Report (EIR).
- Notice of Preparation was initially issued September 25, 2023. The Project was revised, and an updated Notice of Preparation was issued on June 18, 2024. Letters requesting consultation with California Native American Tribes were also mailed.
- Public Draft EIR expected to be released late 2025 or early 2026.

# Water Bank Project – Modeling and Technical Analyses

- Evaluate Water Bank proposed operations for consistency with the goals of the adopted GSPs.
- Support resource impact analysis for the Public Draft EIR.
- Evaluate banking losses (outflow to surface water bodies and neighboring basins).
- Modeling relies on the most up-to-date data and tools:
  - CalSim 3 for assessing effects and benefits of Water Bank operations on CVP/SWP, Delta, and other 3rd parties
  - Fine Grid Integrated Water Flow Model (IWFM) for groundwater subbasins to assess compliance with the GSPs, effects on interconnected surface waters, and effects on 3rd parties in the subbasins.

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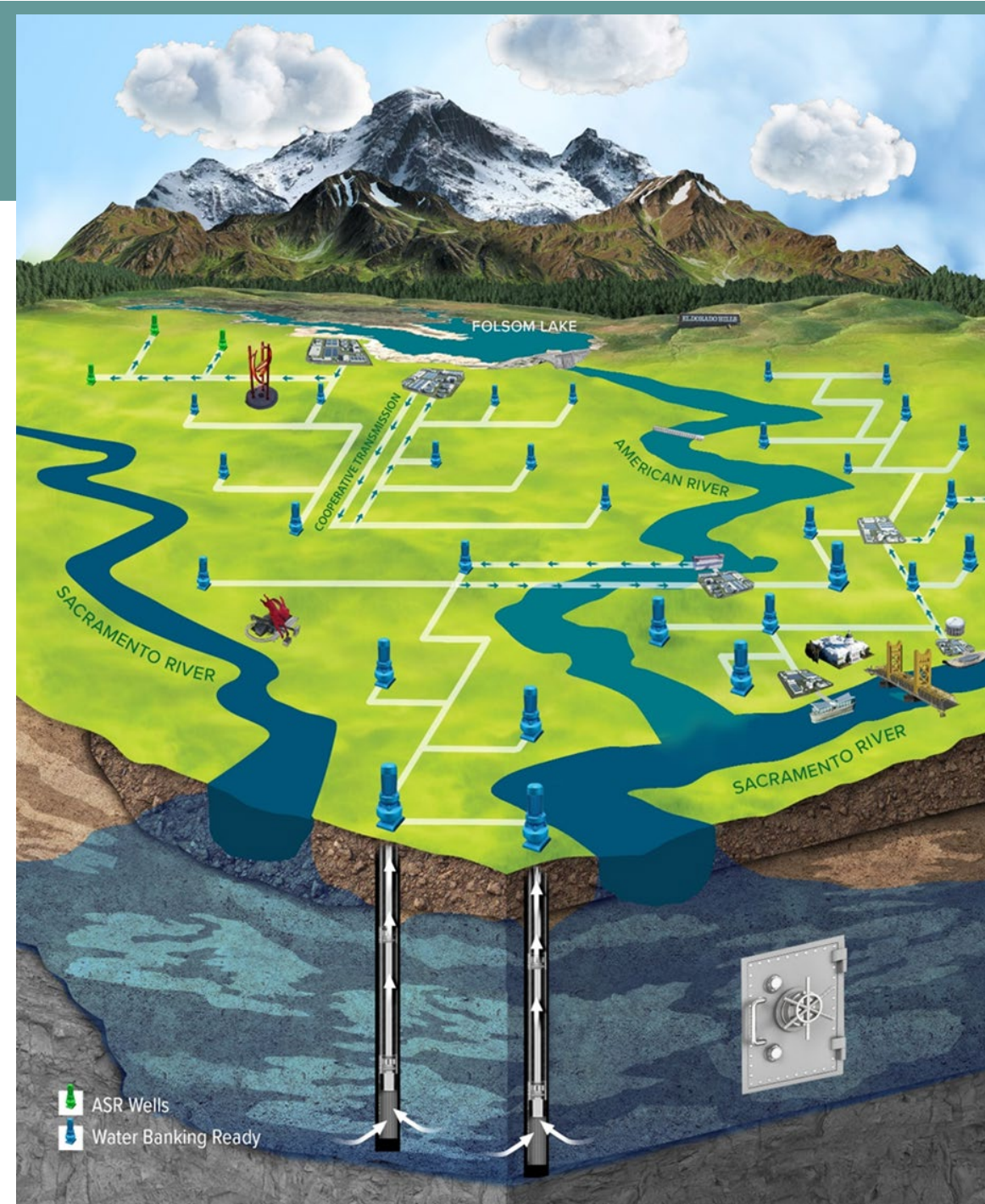
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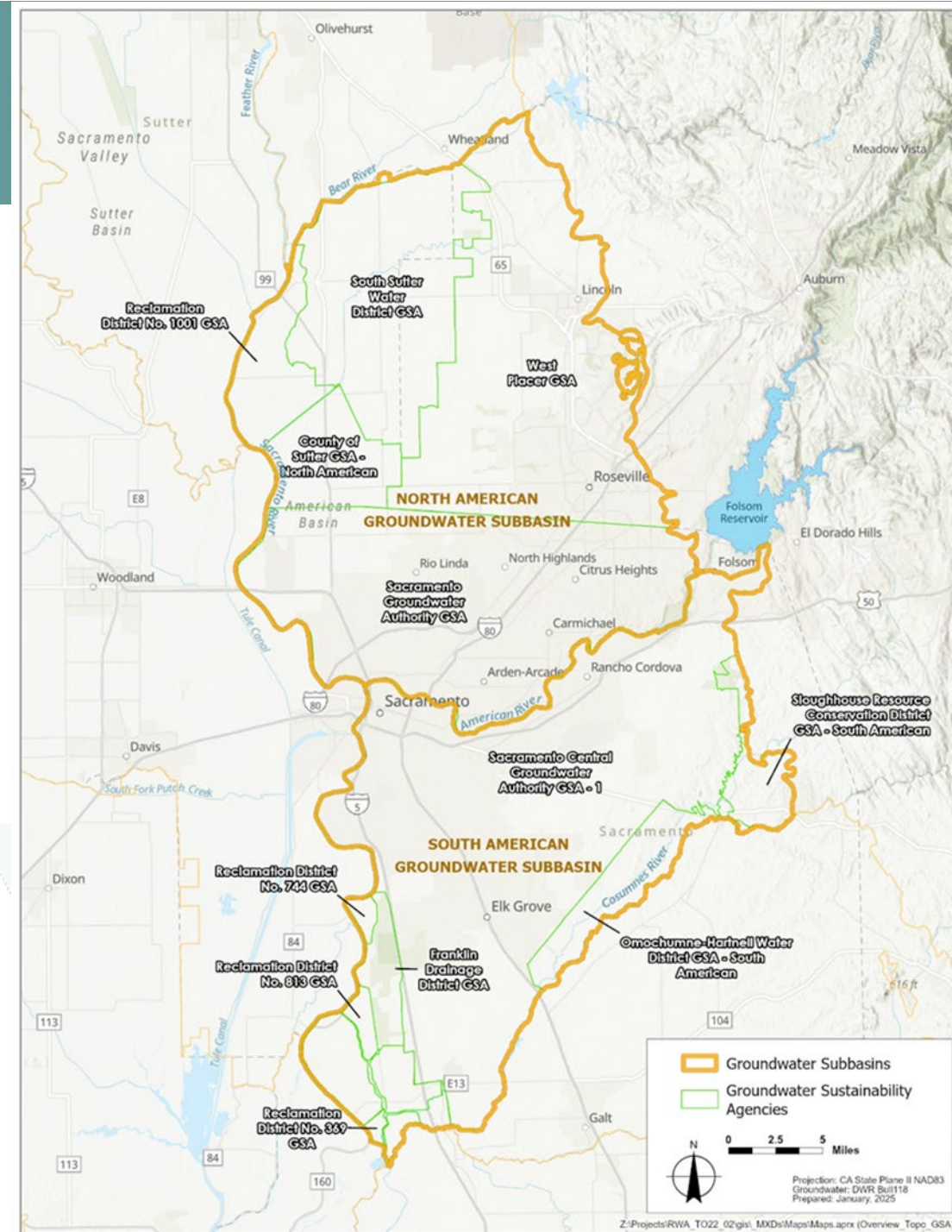
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# Water Accounting System Overview

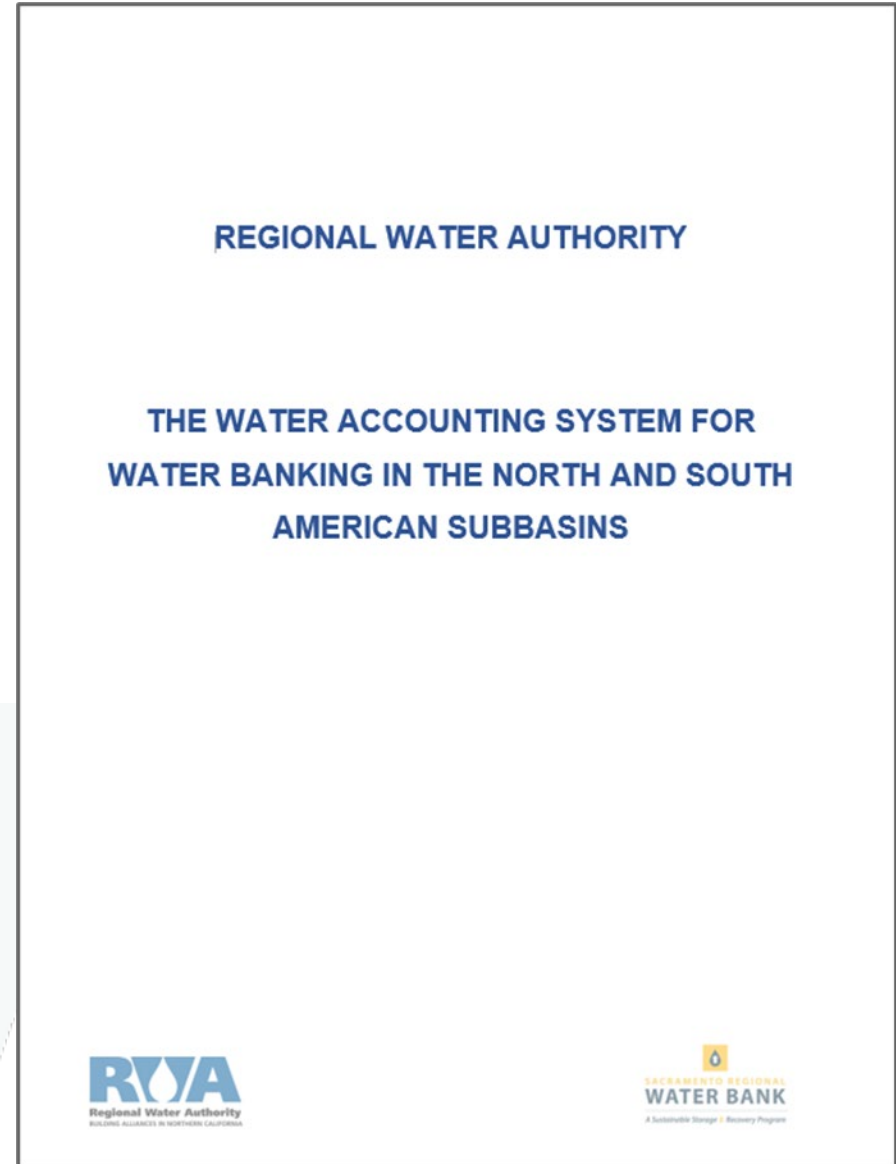
The Water Accounting System (or WAS) is designed to effectively and transparently manage and monitor water banking activities within the North and South American Subbasins. Specifically, the WAS concept paper supports:

- Effective Management
- Compliance Support
- Transparency and Accountability
- Operational Clarity



# Water Accounting System Overview (cont.)

- Defines the fundamentals (or principles) that guided its formulation
- Describes the components necessary for tracking and monitoring groundwater banking activities
- Ensures alignment with sustainability goals outlined in the GSPs and effective coordination with the GSAs
- Outlines administrative and implementation activities and responsibilities
- Describes the establishment of the Sacramento Regional Water Bank within the Water Accounting System
- Demonstrates with hypothetical examples the application of recharge and recovery accounting procedures for entities with a range of water supply portfolios



# Water Accounting System Fundamentals

- **Recharge First** — Track that recharge actions occur before recovery actions.
- **Responsible Banking** — Track that no more than the net banked water in the subbasins is recovered, accounting for leave-behind and banking losses.
- **Program-Specific Accounts** — Facilitate separate tracking of each banking program/project while preserving the ability to observe banking activities for the entire region.
- **Separate Water Budgets for Each GSP** — Implement separate tracking of recharge (deposits), recovery (withdrawals), and balances for the subbasins to facilitate reporting and basin operations with knowledge and understanding of current GSP water budgets.

# Water Accounting System Fundamentals (cont.)

- **Transparency and Consistency** — Establish a framework for consistent water accounting practices across the subbasins, which will maintain transparency of water banking operations through coordination with and reporting to the applicable GSAs.
- **Applicable Regulatory Requirements** — Tracking of banking activities consistent with
  - (1) U.S. Bureau of Reclamation Groundwater Banking Guidelines for Central Valley Project
  - (2) California Department of Water Resources Draft Technical Information for Preparing Water Transfer Proposals
  - (3) GSPs for the subbasins and/or other applicable regulations/requirements
- **No Restriction on Local Water Management** — Identifies activities recognized as banking actions, but does not restrict local water agencies from managing their water supplies and operations, including, but not limited to, groundwater substitution transfers.

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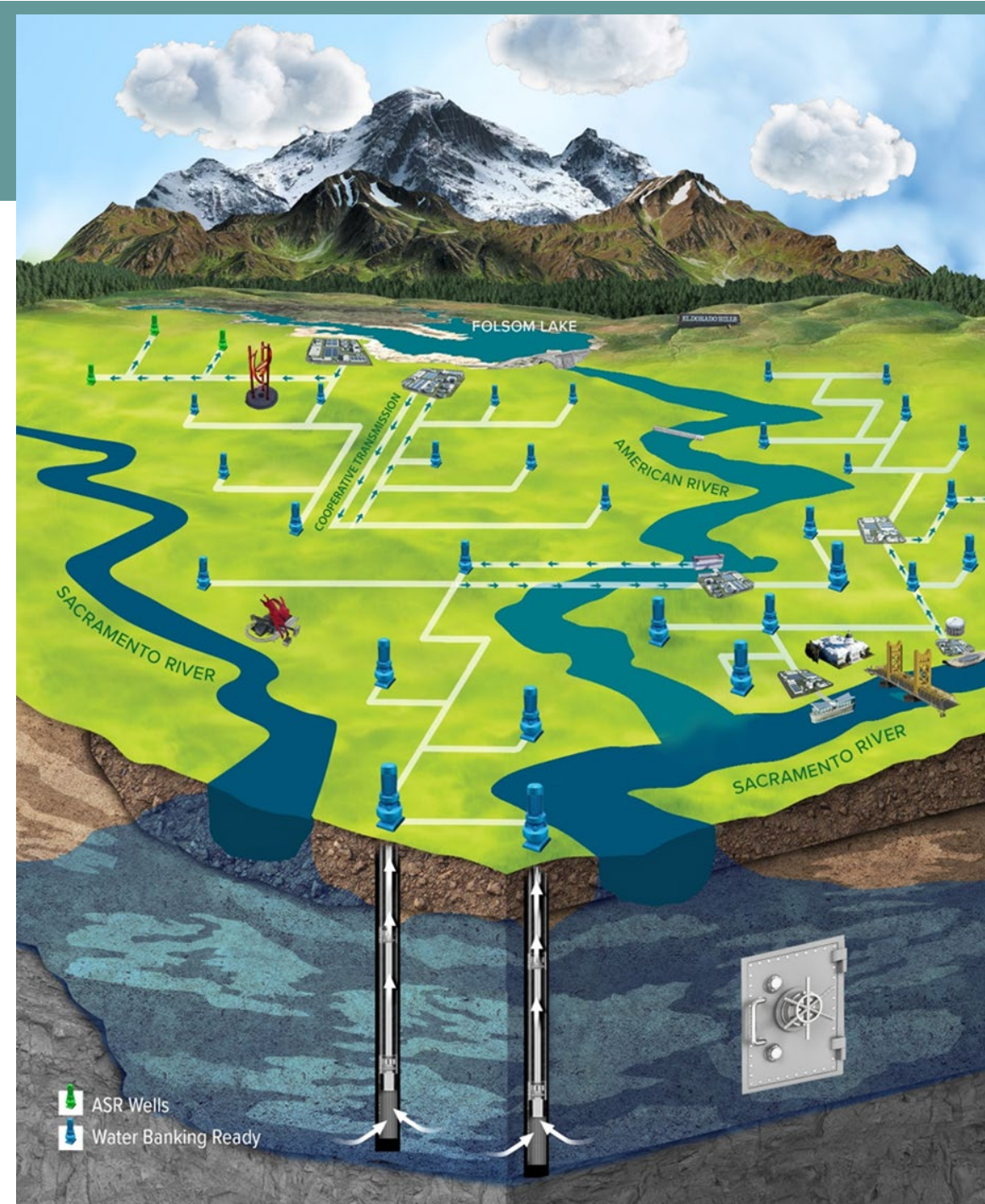
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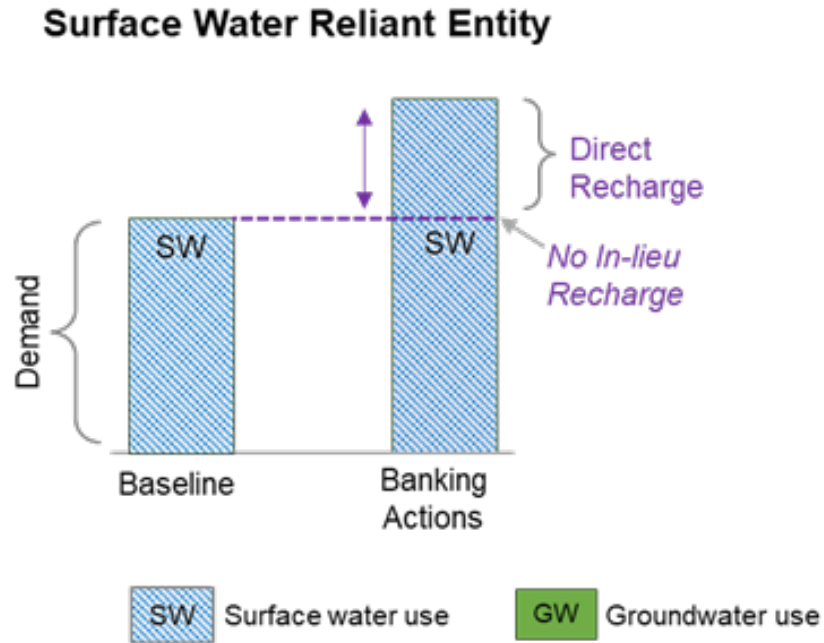




# Water Accounting System Components

- **Recharge (deposits):** Directly or indirectly into the groundwater basin.
- **Recovery (withdrawals):** Of stored (banked) water for beneficial use.
- **Banking Balances:** The remaining amount of banked water available for recovery.
- **Banking Losses:** Banked groundwater that becomes physically unrecoverable due to factors such as migration out of the basin or seepage into surface water bodies.
- **Leave-Behind:** A portion of banked groundwater intentionally left in the basin to support groundwater sustainability and enhance local water supply reliability.
- **Operational Baseline:** A benchmark of an entity's typical surface and groundwater use without banking activities. It enables accurate tracking of recharge and recovery measured as change from the baseline. It is reviewed every five years to reflect changes in water management and ensure alignment with GSP updates.
- **Groundwater Storage Rights:** Legal entitlements and permissions that entities have to store water in a groundwater bank. These rights outline the conditions under which water can be stored, the types of water eligible for storage, and the limitations on its use, including recovery and subsequent use.
- **Forgone Surface Water:** Surface water supplies intentionally left unused by an entity due to substituting its use with stored (banked) groundwater.

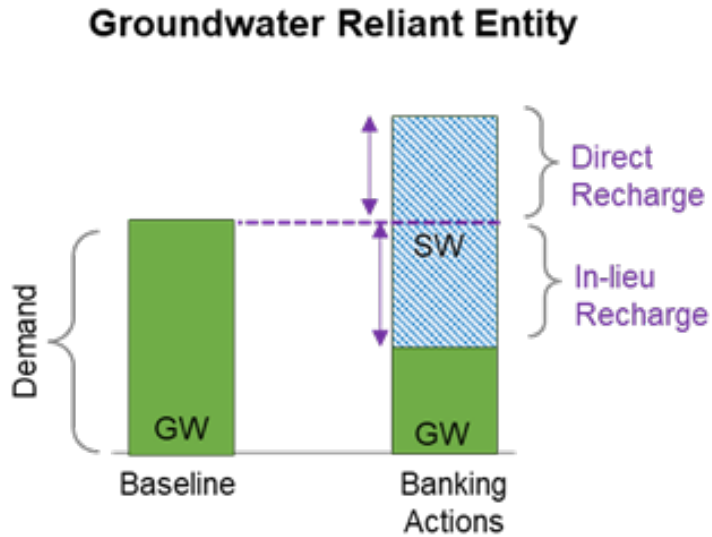
# Recharge – Surface Water User





**Direct Recharge:** Water is directly added to a groundwater basin using spreading basins, injection wells, dry wells, or similar methods.

**In-lieu Recharge:** Surface water replace groundwater pumping.

# Recharge – Groundwater User

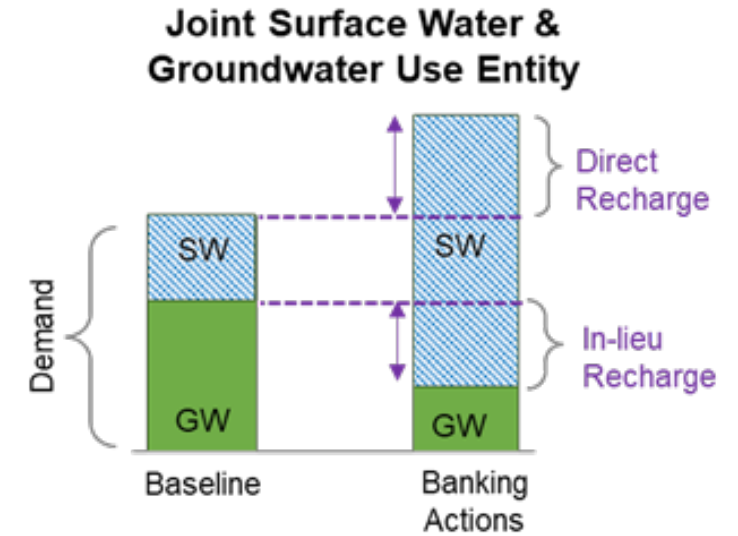




 Surface water use       Groundwater use

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# Recharge – Joint Surface Water/Groundwater User

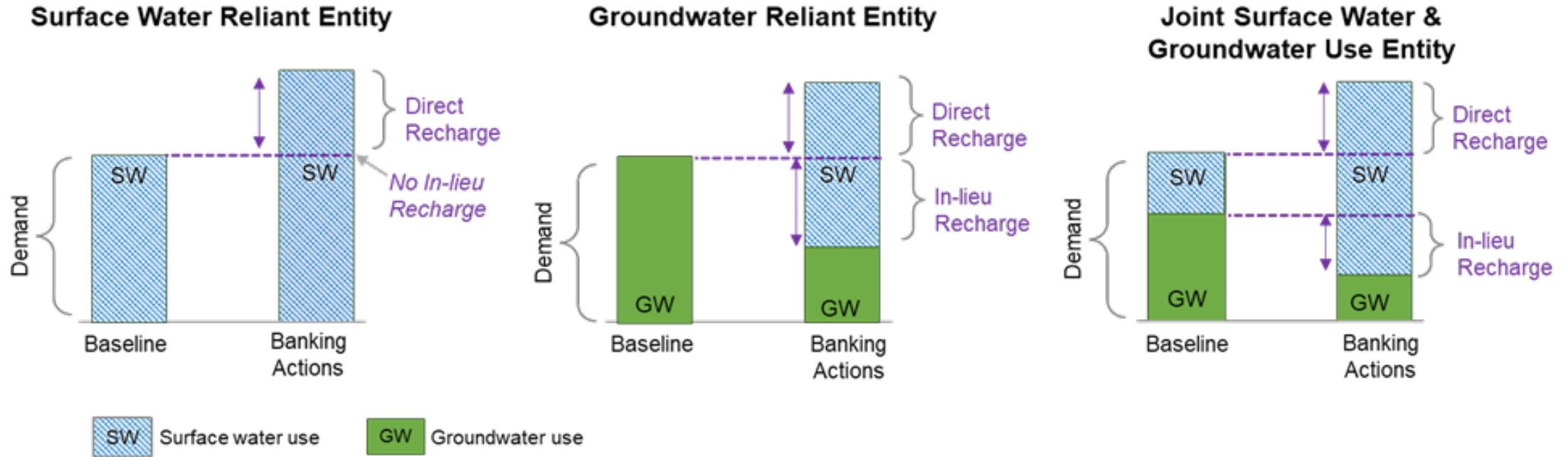


 SW Surface water use       GW Groundwater use

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# Recharge Accounting

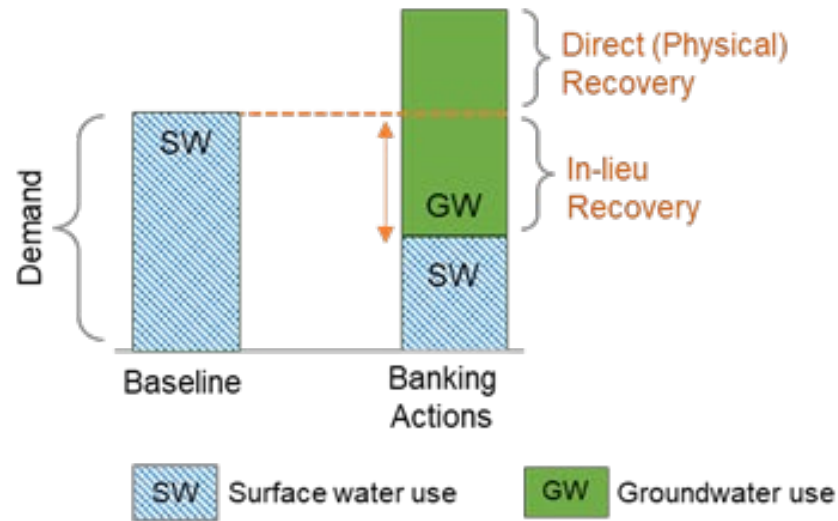


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# Recovery – Surface Water User

## Surface Water Reliant Entity

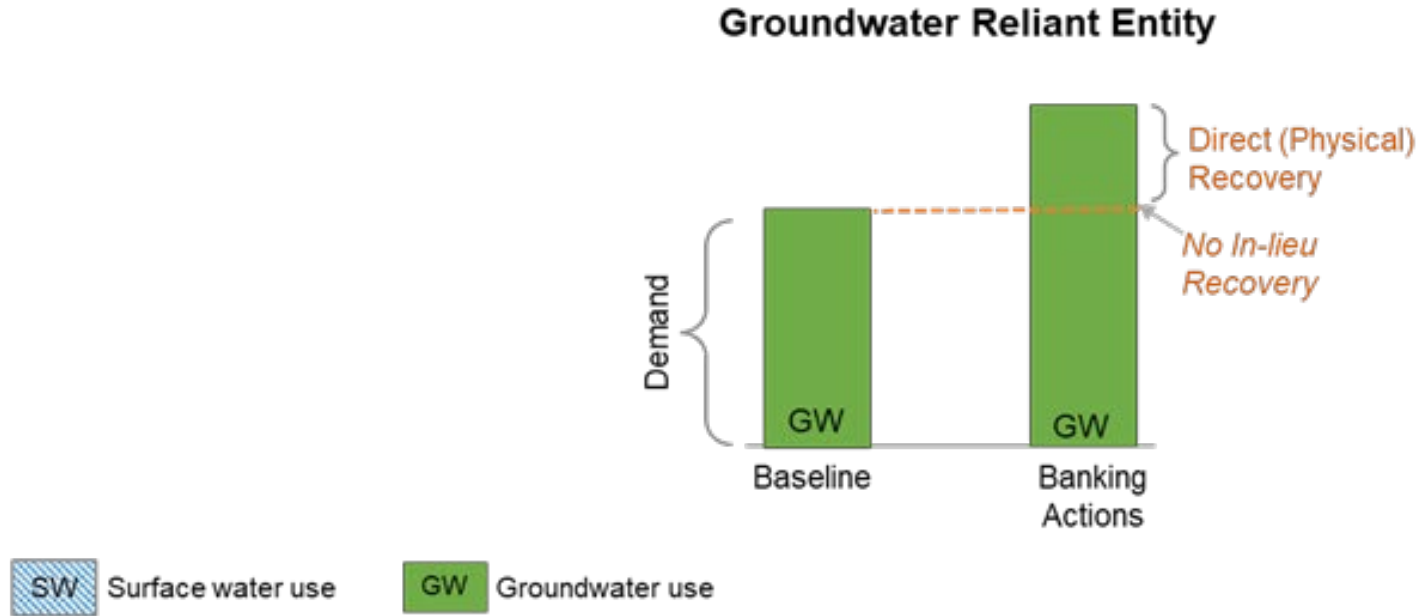


Direct (Physical) Recovery: Banked groundwater is extracted and physically conveyed to another entity.

In-lieu Recovery: Banked groundwater replaces baseline surface water use.

Illustration of In-lieu Recovery Accounting for Entities with Different Water Supply Portfolios

# Recovery – Groundwater User

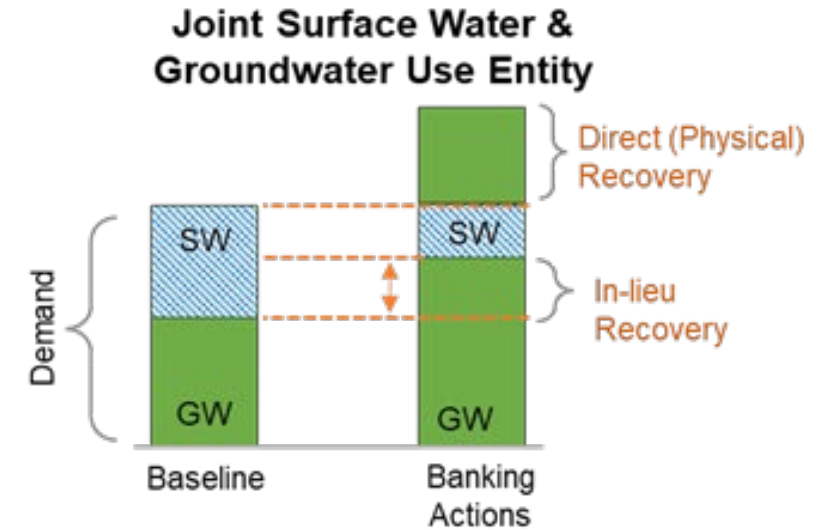


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# Recovery – Groundwater Reliant



SW Surface water use      GW Groundwater use

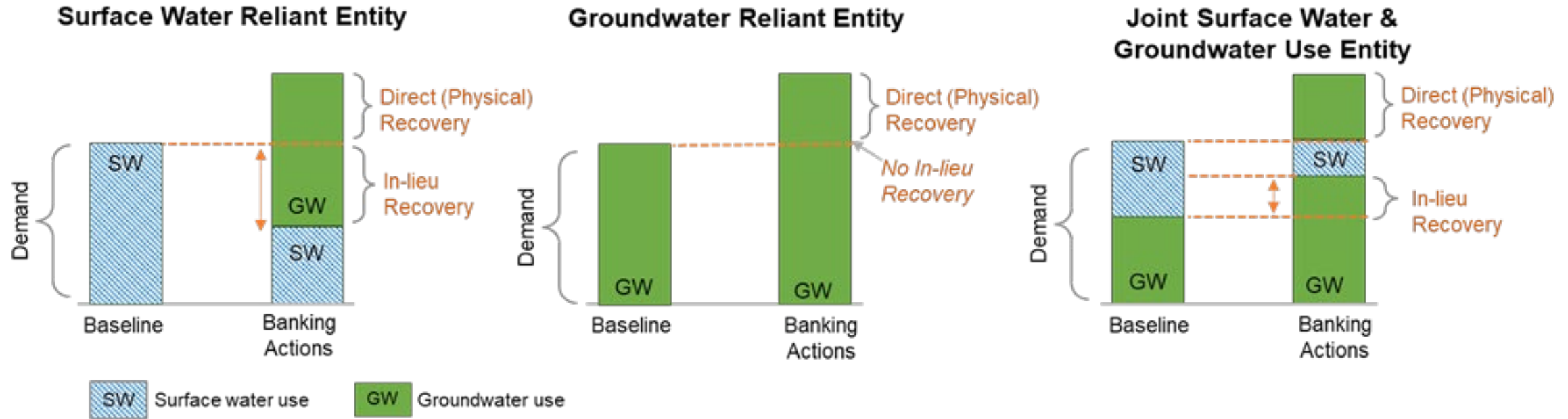
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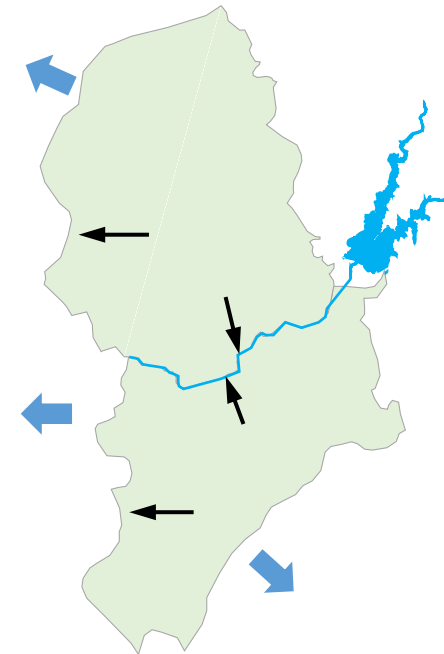
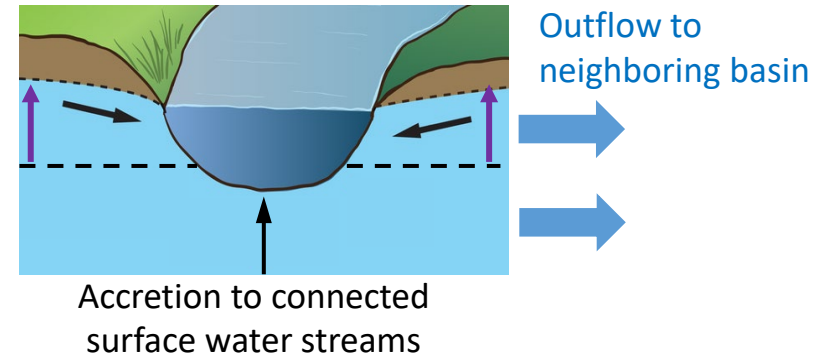
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# Banking Losses vs Leave Behind

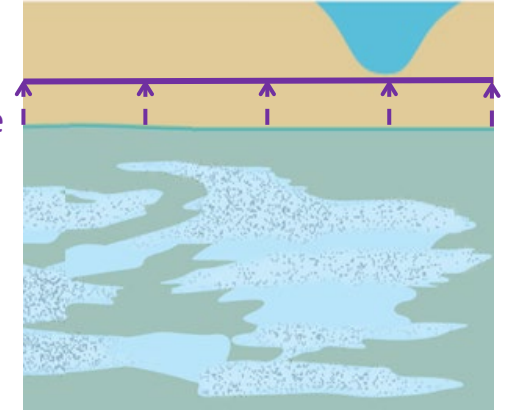
- **Banking Losses** – Banked groundwater that becomes physically unrecoverable due to factors such as migration out of the basin or seepage into surface water bodies.
- **Benefits:**
  - Accretions to streams/rivers provide ecosystem benefits and benefit downstream areas
  - Contribute to neighboring basins sustainability
- Losses will be estimated using the regional groundwater model developed for the GSPs.
- Losses will be reviewed and revised if appropriate on a 5-year cycle, in conjunction with updating GSPs.



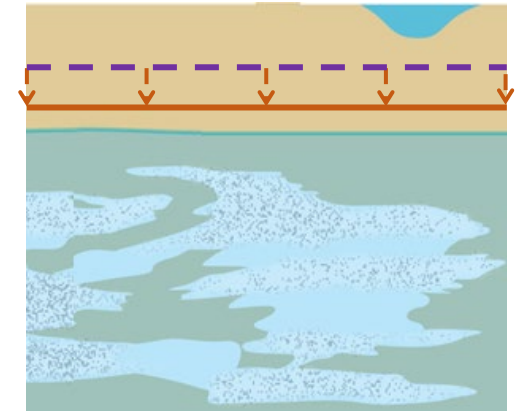
# Banking Losses vs **Leave Behind**

- **Leave Behind** – A portion of banked groundwater intentionally left in the basin to support groundwater sustainability and enhance local water supply reliability, after accounting for banking losses.
- Leave behind volume is never to be recovered as part of water banking operations.
- Leave behind is 5% for the Sac Regional Water Bank
- **Leave Behind Benefits:**
  - Bolsters groundwater in storage
  - Percent can be increased by Participating Agency(ies) to augment local groundwater conditions
  - Benefits all users of the groundwater basin

Groundwater storage increase during recharge



Portion of banked groundwater is not recovered (i.e., leave behind)



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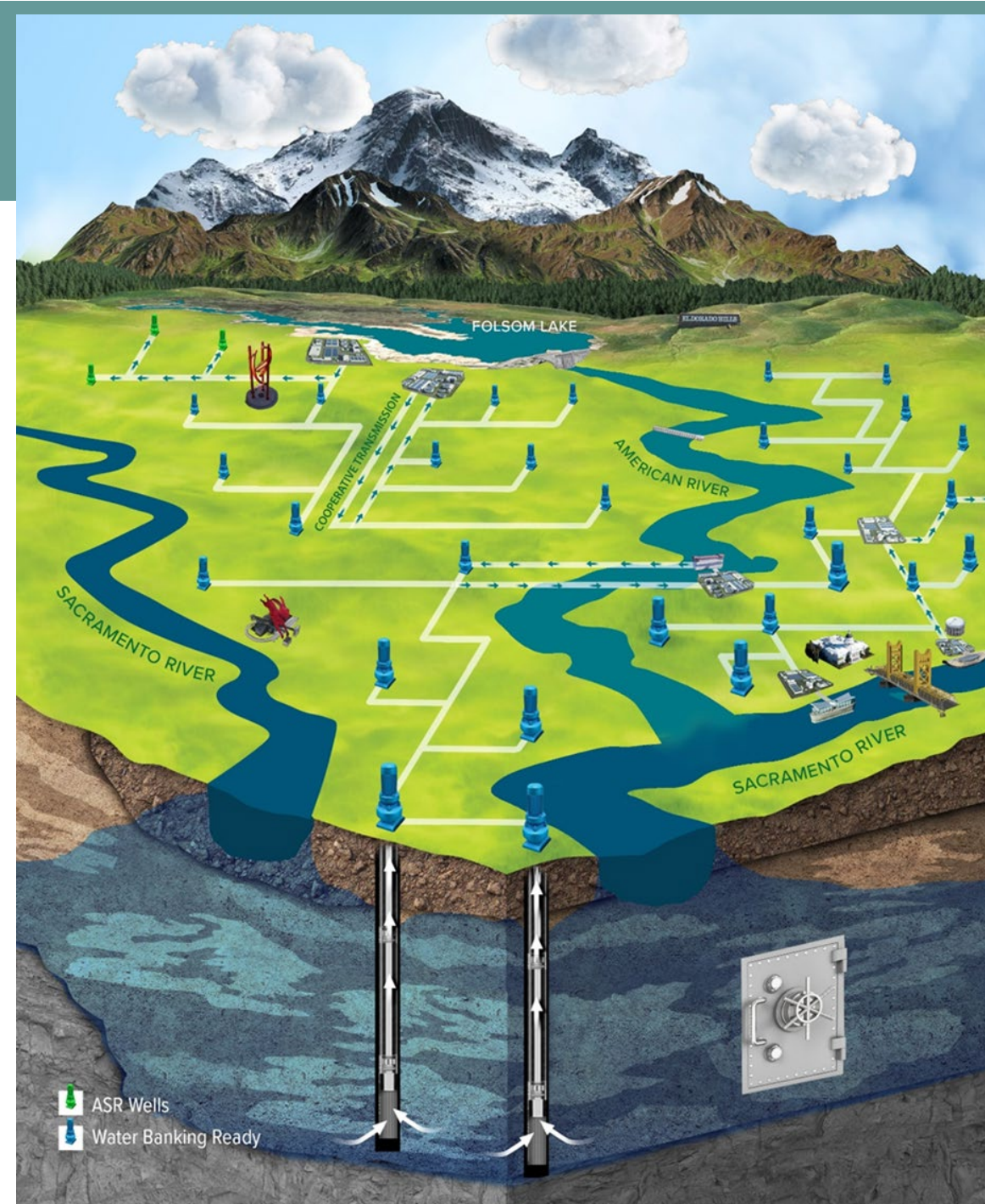
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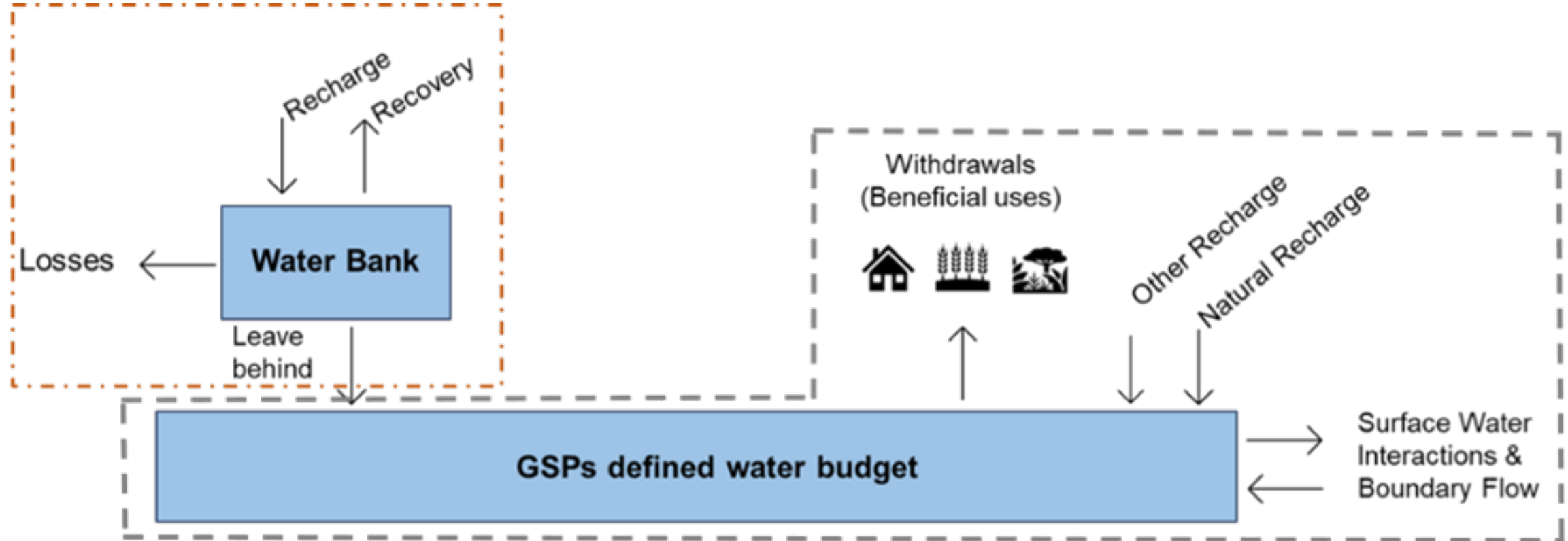
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# Consistency with Groundwater Sustainability Plans

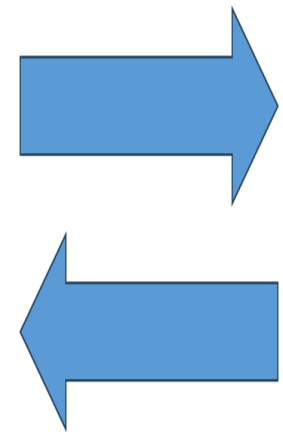
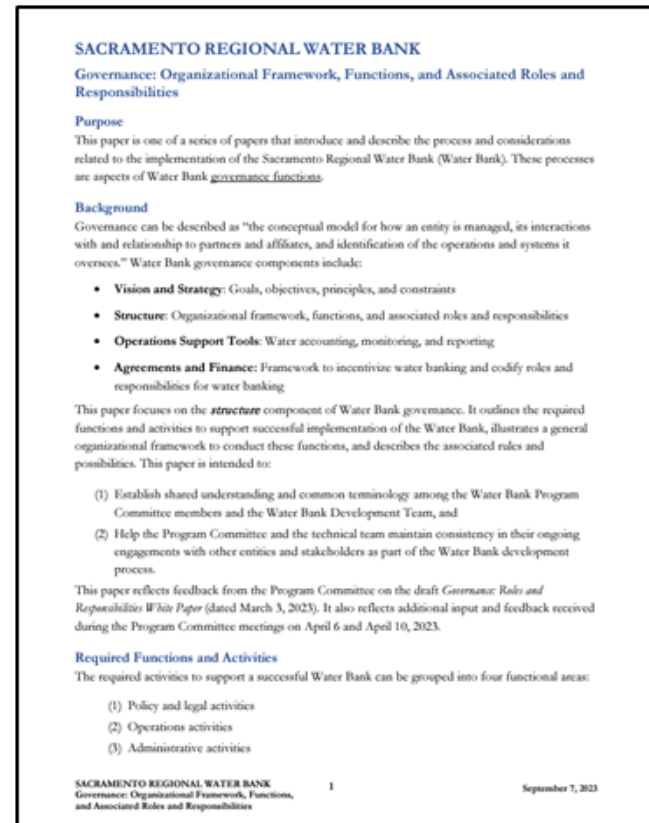
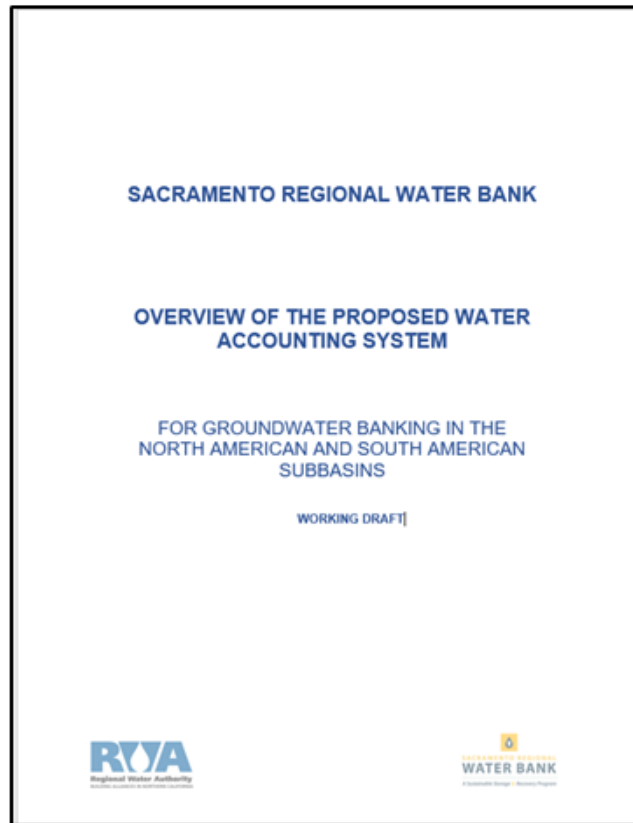
## Relationship of Water Banking Programs to Groundwater Sustainability Plans



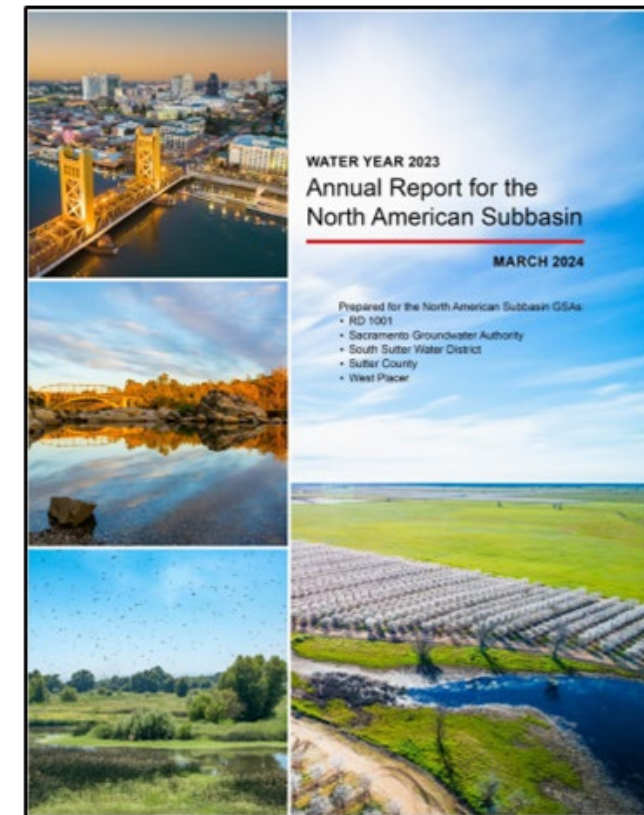
# Consistency with Groundwater Sustainability Plans

WATER BANK STAKEHOLDER FORUM – February 2025

## Water Bank Coordinating Body



## NASB & SASb GSAs



# Tonight's Agenda

## 1. Welcome and Introductions

- Regional Water Authority
- Roles and Responsibilities

## 2. Water Bank Background and Basics

- What is the Sacramento Regional Water Bank?

## 3. Water Bank Planning and Coordination

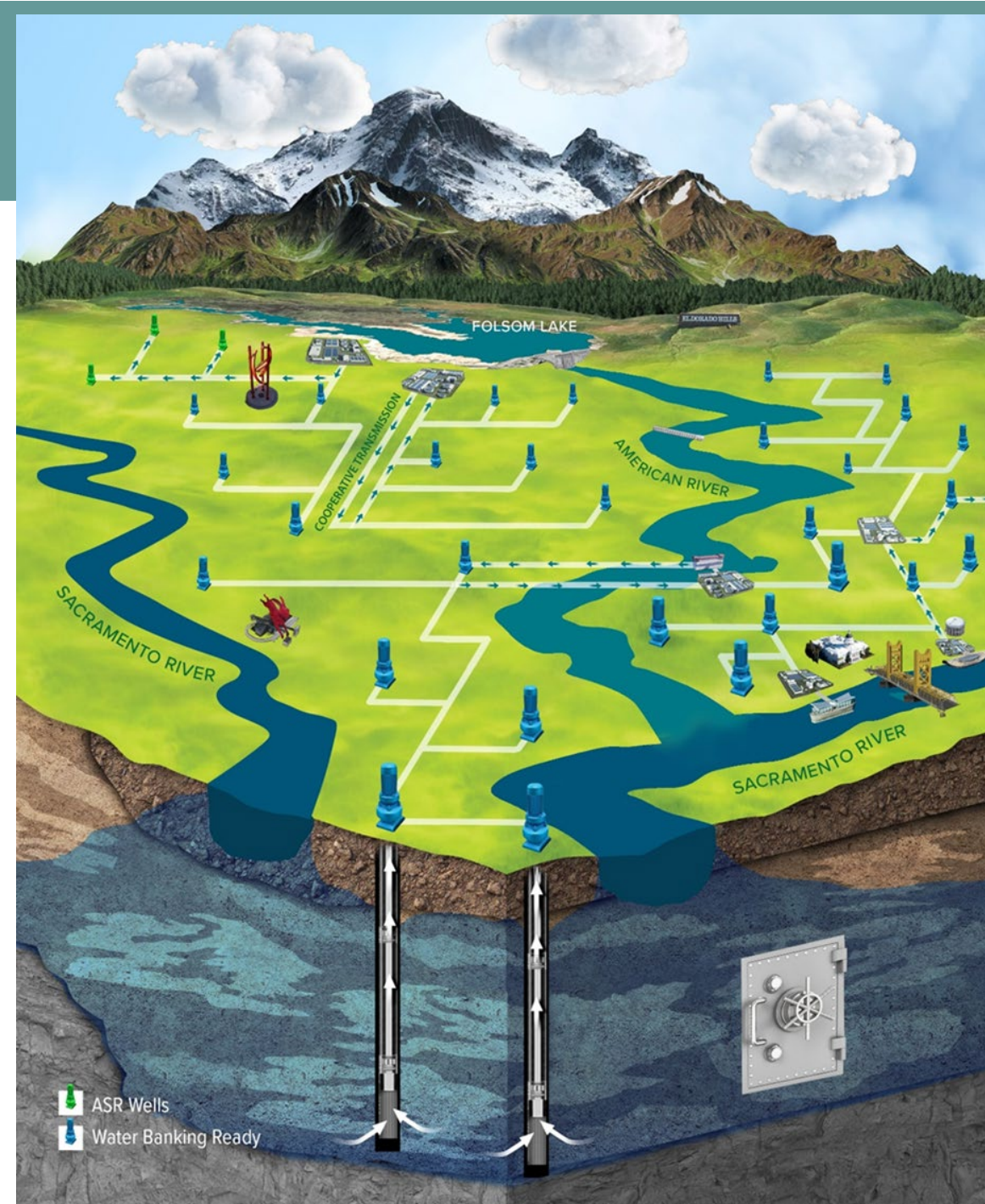
- Communications/Engagement
- Institutional/Technical
- Modeling/Environmental

## 4. Water Bank – Water Accounting System

- Overview/Fundamentals
- Components
- Consistency with Groundwater Sustainability Plans
- Implementation and Administration

## 5. Previewing What's Ahead

- Roadmap of 2025 Water Bank Activities



## Roles and Responsibilities

- RWA – Coordinate data collection, management, and maintenance.
- Participating Agencies – Conduct recharge and recovery activities.

## Data Collection and Management

- Data and records maintained within Data Management System (DMS).
- Detailed accounts during active periods of recharge and recovery.
- Use of existing data collection and reporting activities to minimize duplication of efforts and provide efficiency.

## Reporting

- Recharge and recovery balances.
- Coordinated with reporting activities of the GSAs.





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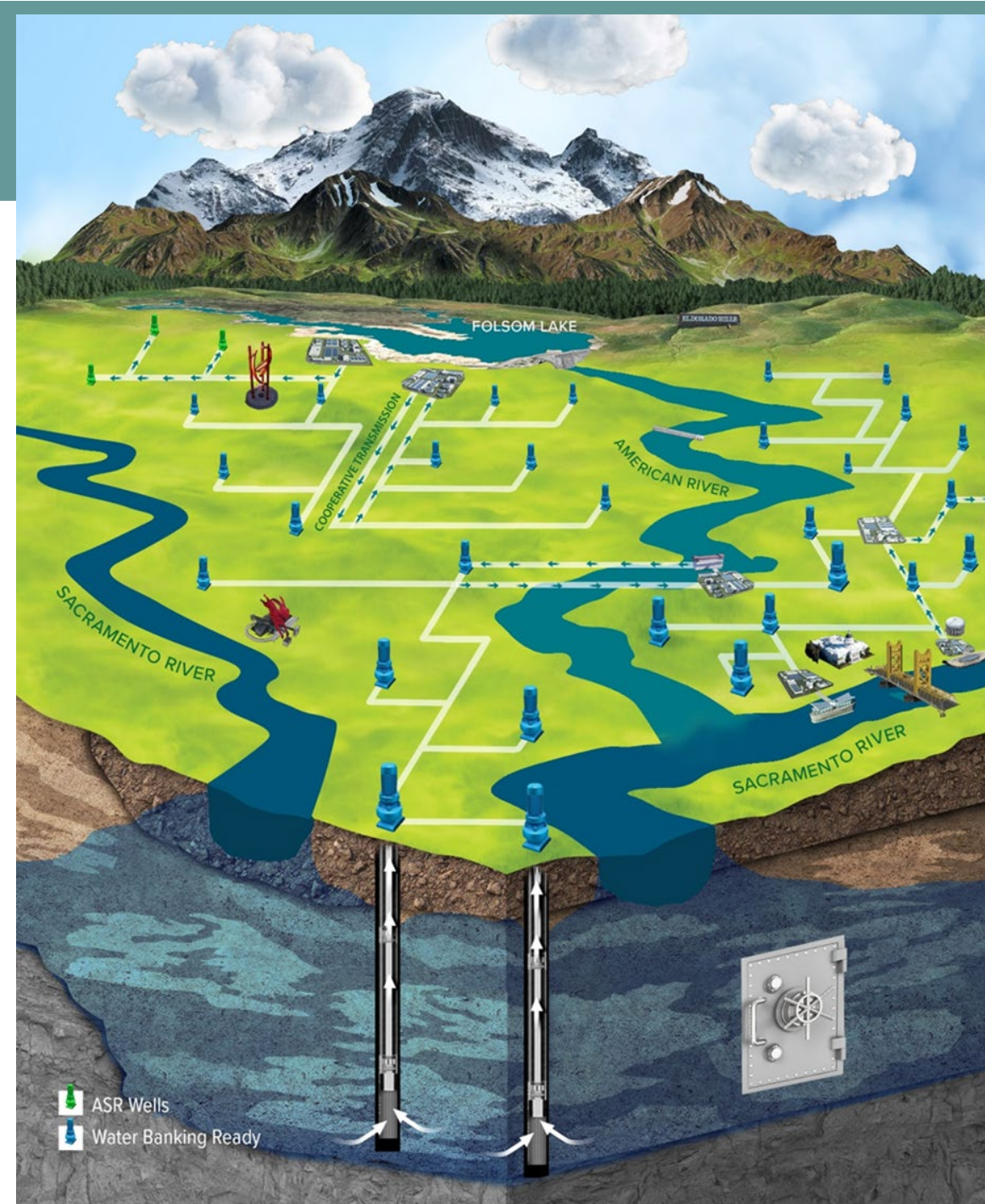
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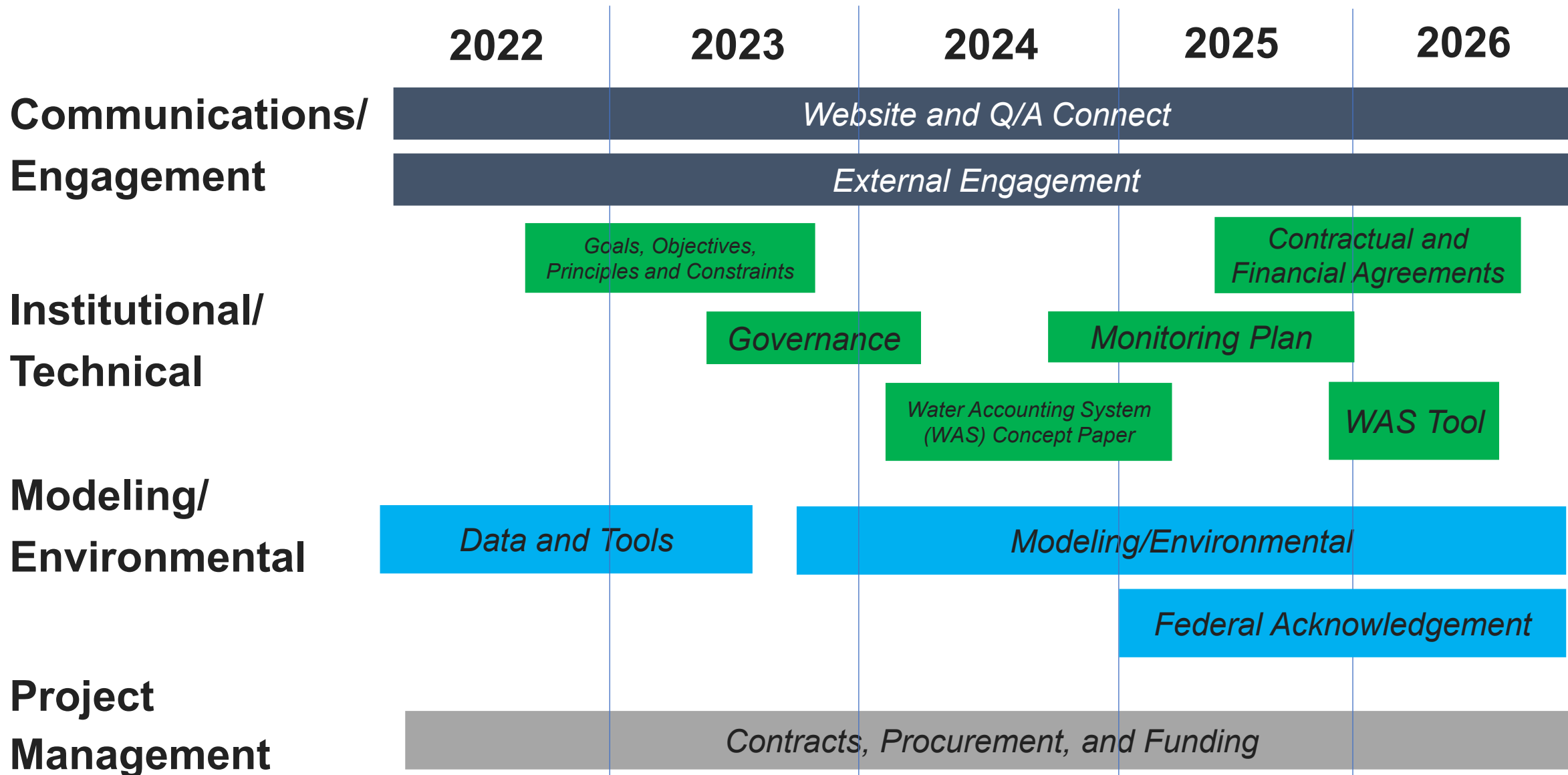


# Water Bank Project – Tasks/Activities

Subject to  
change

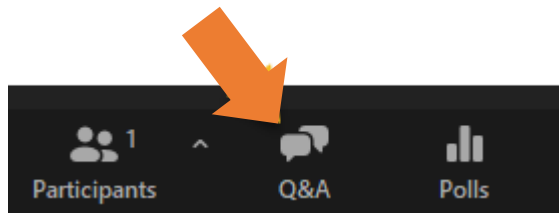


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# Questions and Answers

You can share your questions in the Q&A feature of this webinar.



*Thank you!*

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