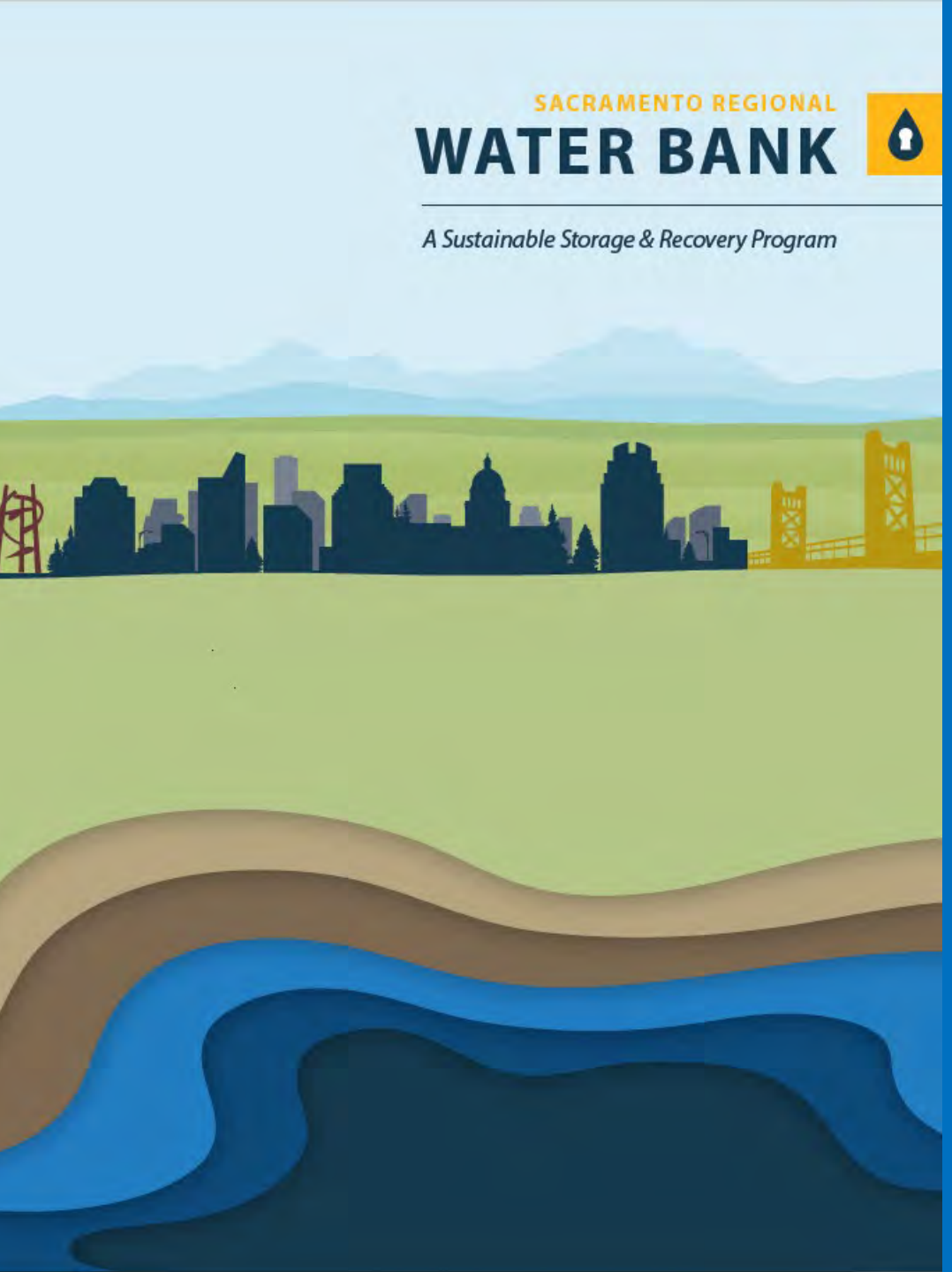

Sacramento Regional Water Bank

Regional Water Authority – Board Meeting

Trevor Joseph, PG, CHG

September 14, 2023

RWA
Regional Water Authority
BUILDING ALLIANCES IN NORTHERN CALIFORNIA

Today's Agenda

Regional Water Authority
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1. Progress and Road Map
2. Communications and Outreach
3. Goal, Objectives, Principles, & Constraints
4. Governance & Coordination
5. Technical Analysis & Environmental Documentation
6. Action Items and Next Steps

Stages of Water Bank Development

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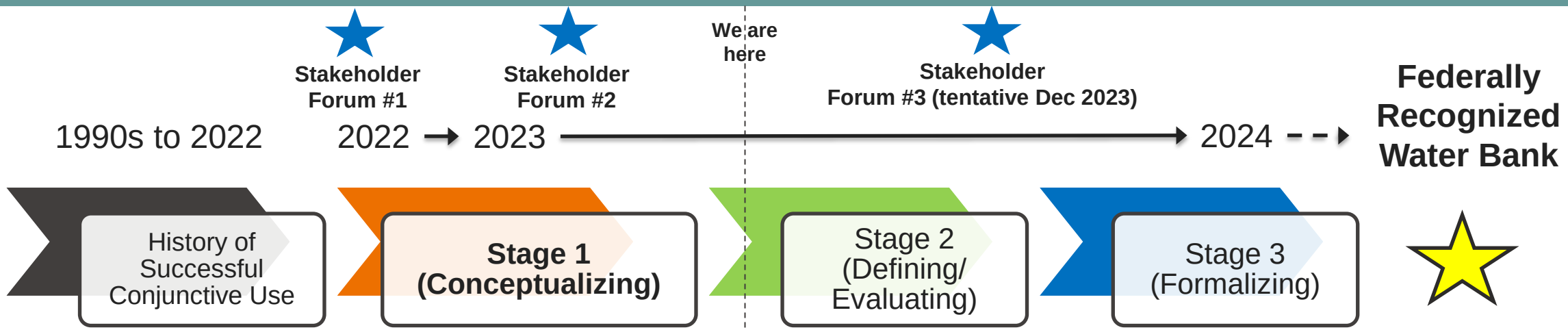

Major Milestones

- Regional Infrastructure
  - Cooperative Transmission Pipeline
  - Aquifer Storage & Recovery
  - Interties
  - Conveyance
  - Wells
- Planning & Programs
  - Groundwater Substitution Transfers
  - Integrated Regional Water Management.
  - Regional Water Reliability Plan
  - Groundwater Sustainability Plan

Major Activities

- Communication and Outreach
- Coordination - Federal / State / External Entities
- Project Scoping / Description
- Improving Technical Tools
- Governance & Institutional
- Preliminary & Refined Alternatives
- CEQA/NEPA

Water Bank – Project Benefits and Outcomes

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Federal Acknowledgement Enables (1) any CVP contract supply to be banked outside the service area of that contractor, and (1) recovery of that supply by CVP and non-CVP contractors	**Environmental Compliance** Through CEQA and NEPA documents, evaluates (1) expansion of existing conjunctive use, and (2) Reclamation acknowledgement of Water Bank	**Water Accounting System** Accommodates multiple accounts that support all participating agencies and GSAs
External Partners Through pilot opportunities, establishes relationships and develops institutional knowledge with external partners Supports securing long-term agreements that provide consistent and reliable benefits to the region	**Surface Water/ Groundwater Interaction** Advances science and understanding of both accretion and depletions associated with water banking operations	**Financial Agreements** Develops framework to encourage broad, active, and beneficial implementation of conjunctive use by all participating agencies

Federally Recognized Water Banks

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BUREAU OF RECLAMATION

Groundwater Banking Guidelines for Central Valley Project Water

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

	Acknowledged Water Banks	Identifer 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

Communication and Engagement

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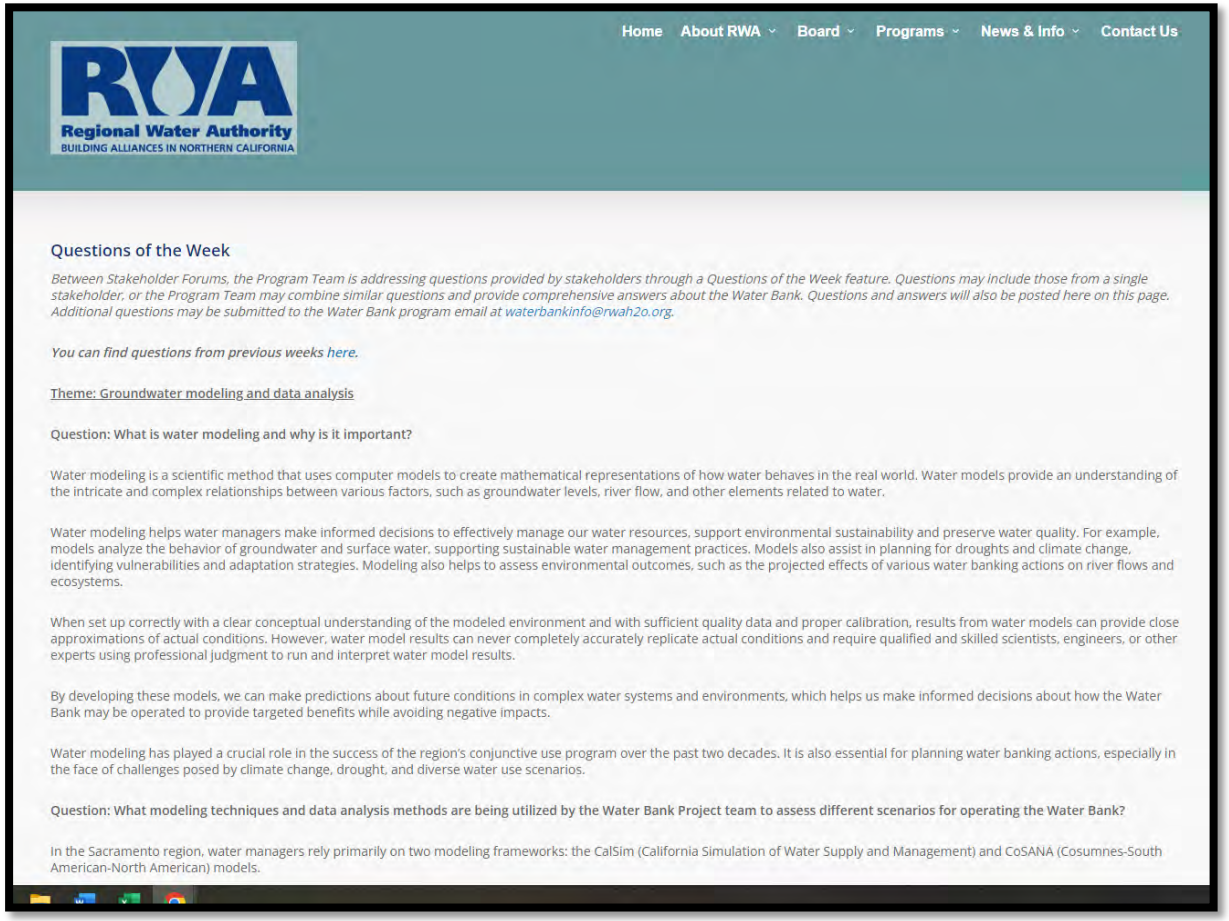

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Questions of the Week

Between Stakeholder Forums, the Program Team is addressing questions provided by stakeholders through a Questions of the Week feature. Questions may include those from a single stakeholder, or the Program Team may combine similar questions and provide comprehensive answers about the Water Bank. Questions and answers will also be posted here on this page. Additional questions may be submitted to the Water Bank program email at waterbankinfo@rwah2o.org.

You can find questions from previous weeks here.

Theme: Groundwater modeling and data analysis

Question: What is water modeling and why is it important?

Water modeling is a scientific method that uses computer models to create mathematical representations of how water behaves in the real world. Water models provide an understanding of the intricate and complex relationships between various factors, such as groundwater levels, river flow, and other elements related to water.

Water modeling helps water managers make informed decisions to effectively manage our water resources, support environmental sustainability and preserve water quality. For example, models analyze the behavior of groundwater and surface water, supporting sustainable water management practices. Models also assist in planning for droughts and climate change, identifying vulnerabilities and adaptation strategies. Modeling also helps to assess environmental outcomes, such as the projected effects of various water banking actions on river flows and ecosystems.

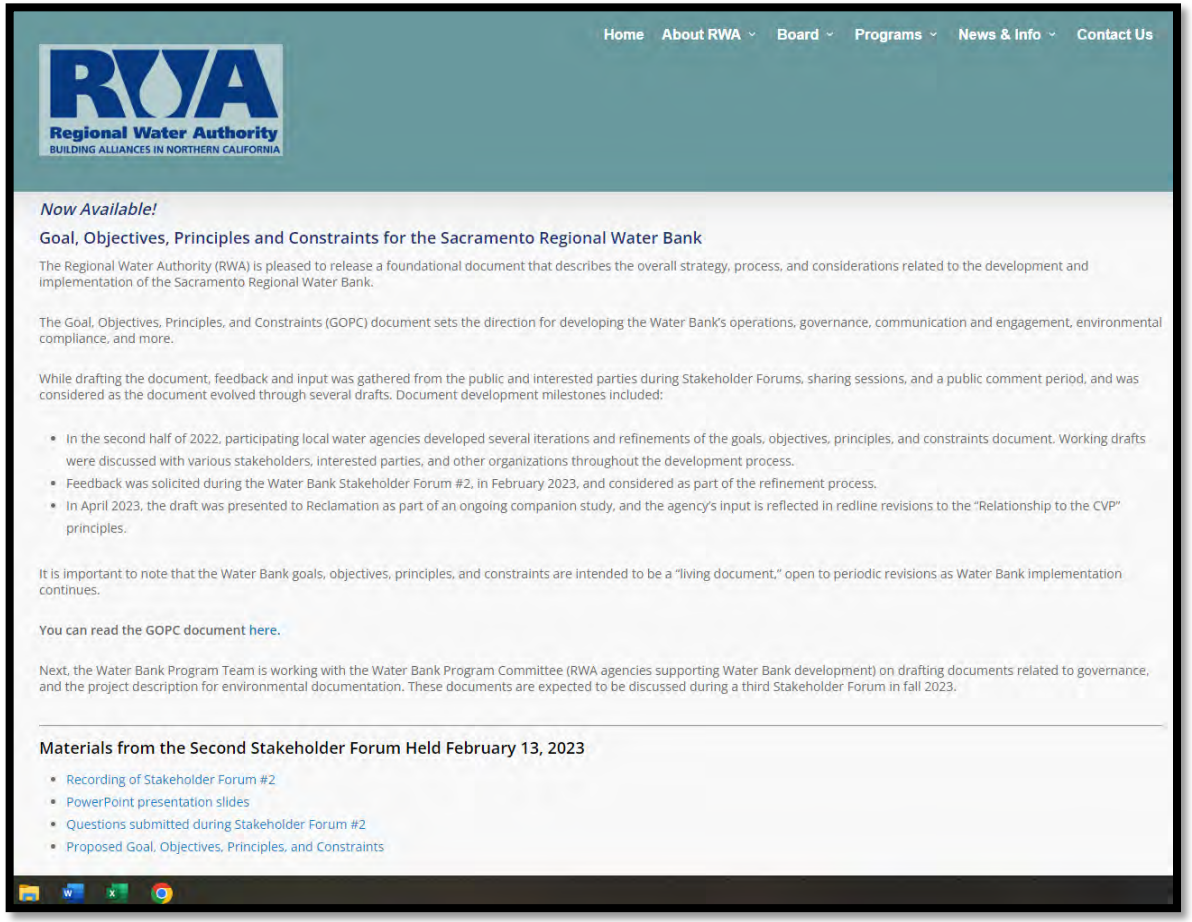
When set up correctly with a clear conceptual understanding of the modeled environment and with sufficient quality data and proper calibration, results from water models can provide close approximations of actual conditions. However, water model results can never completely accurately replicate actual conditions and require qualified and skilled scientists, engineers, or other experts using professional judgment to run and interpret water model results.

By developing these models, we can make predictions about future conditions in complex water systems and environments, which helps us make informed decisions about how the Water Bank may be operated to provide targeted benefits while avoiding negative impacts.

Water modeling has played a crucial role in the success of the region's conjunctive use program over the past two decades. It is also essential for planning water banking actions, especially in the face of challenges posed by climate change, drought, and diverse water use scenarios.

Question: What modeling techniques and data analysis methods are being utilized by the Water Bank Project team to assess different scenarios for operating the Water Bank?

In the Sacramento region, water managers rely primarily on two modeling frameworks: the CalSim (California Simulation of Water Supply and Management) and CoSANA (Cosumnes-South American-North American) models.



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Now Available!

Goal, Objectives, Principles and Constraints for the Sacramento Regional Water Bank

The Regional Water Authority (RWA) is pleased to release a foundational document that describes the overall strategy, process, and considerations related to the development and implementation of the Sacramento Regional Water Bank.

The Goal, Objectives, Principles, and Constraints (GOPC) document sets the direction for developing the Water Bank's operations, governance, communication and engagement, environmental compliance, and more.

While drafting the document, feedback and input was gathered from the public and interested parties during Stakeholder Forums, sharing sessions, and a public comment period, and was considered as the document evolved through several drafts. Document development milestones included:

- 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, and the agency's input is reflected in redline revisions to the "Relationship to the CVP" principles.

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.

You can read the GOPC document here.

Next, the Water Bank Program Team is working with the Water Bank Program Committee (RWA agencies supporting Water Bank development) on drafting documents related to governance, and the project description for environmental documentation. These documents are expected to be discussed during a third Stakeholder Forum in fall 2023.

Materials from the Second Stakeholder Forum Held February 13, 2023

- Recording of Stakeholder Forum #2
- PowerPoint presentation slides
- Questions submitted during Stakeholder Forum #2
- Proposed Goal, Objectives, Principles, and Constraints

Communication/Outreach - Qs of the Week

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Sacramento Regional Water Bank contact information:
waterbankinfo@rwah2o.org

Sacramento Regional Water Bank website:
https://rwah2o.org/sacramento-regional-water-bank/

Week 1: STAKEHOLDER ENGAGEMENT

- What is RWA's plan to encourage and capture ongoing stakeholder input?
- I'm new to the Water Bank, how do I catch up and learn about what has been developed and/or discussed?
- How do we effectively engage with RWA in the implementation of the Water Bank beyond Q/A sessions?

Week 2: CONJUNCTIVE USE AND GROUNDWATER FUNDAMENTALS

- What does conjunctive use mean?
- Is it possible to anticipate drought years? How will the Water Bank and conjunctive use work through droughts that last longer than anticipated?
- Geologically, can groundwater basins where groundwater levels have been drawn down receive recharge water at the same capacity as was naturally there?

Week 3: Sacramento Regional Water Bank Roadmap and Schedule

- When will the Water Bank be operational?
- What is the status of the Water Bank's development?
- Will there be "practice" Water Bank runs provided in the proposed plan?

Week 4: Participants in the Sacramento Regional Water Bank and the Role of the Regional Water Authority

- Who are the participants in the Water Bank?
- Who are the decision-makers for the Water Bank?
- What role will RWA have in administering the Bank?

Week 5: The Role of the Environment and How Groundwater is Monitored

- The Regional Water Authority (RWA) goal or mission does not mention the environment. Are environmental concerns considered a stakeholder?
- How will the volume of water in storage and extracted be measured and tracked over time?

Week 6: How Water Banking Works

- How are deposits and withdrawals made with the Water Bank?
- Are agencies beyond the City of Roseville planning direct groundwater recharge using wells?

Week 5: The Role of the Environment and How Groundwater is Monitored

- The Regional Water Authority (RWA) goal or mission does not mention the environment. Are environmental concerns considered a stakeholder?
- How will the volume of water in storage and extracted be measured and tracked over time?

Week 6: How Water Banking Work

- How are deposits and withdrawals made with the Water Bank?
- Are agencies beyond the City of Roseville planning direct groundwater recharge using wells?

Week 7: Water Quality

- How do water providers know if water is safe to drink in the Water Bank area?
- How do water providers monitor known and potential groundwater contamination in the Water Bank area?
- Are there aesthetic differences between surface water and groundwater?

Week 8: Federal Recognition

- What are the benefits of securing federal recognition for the Sacramento Regional Water Bank?
- Are there requirements for securing federal recognition?

Week 9: Interaction with the Sustainable Groundwater Management Act (SGMA)

- What is the Sustainable Groundwater Management Act (SGMA)?
- How does the Water Bank relate to SGMA?
- Does SGMA stop the Water Bank from moving forward?

Communication and Engagement (cont.)

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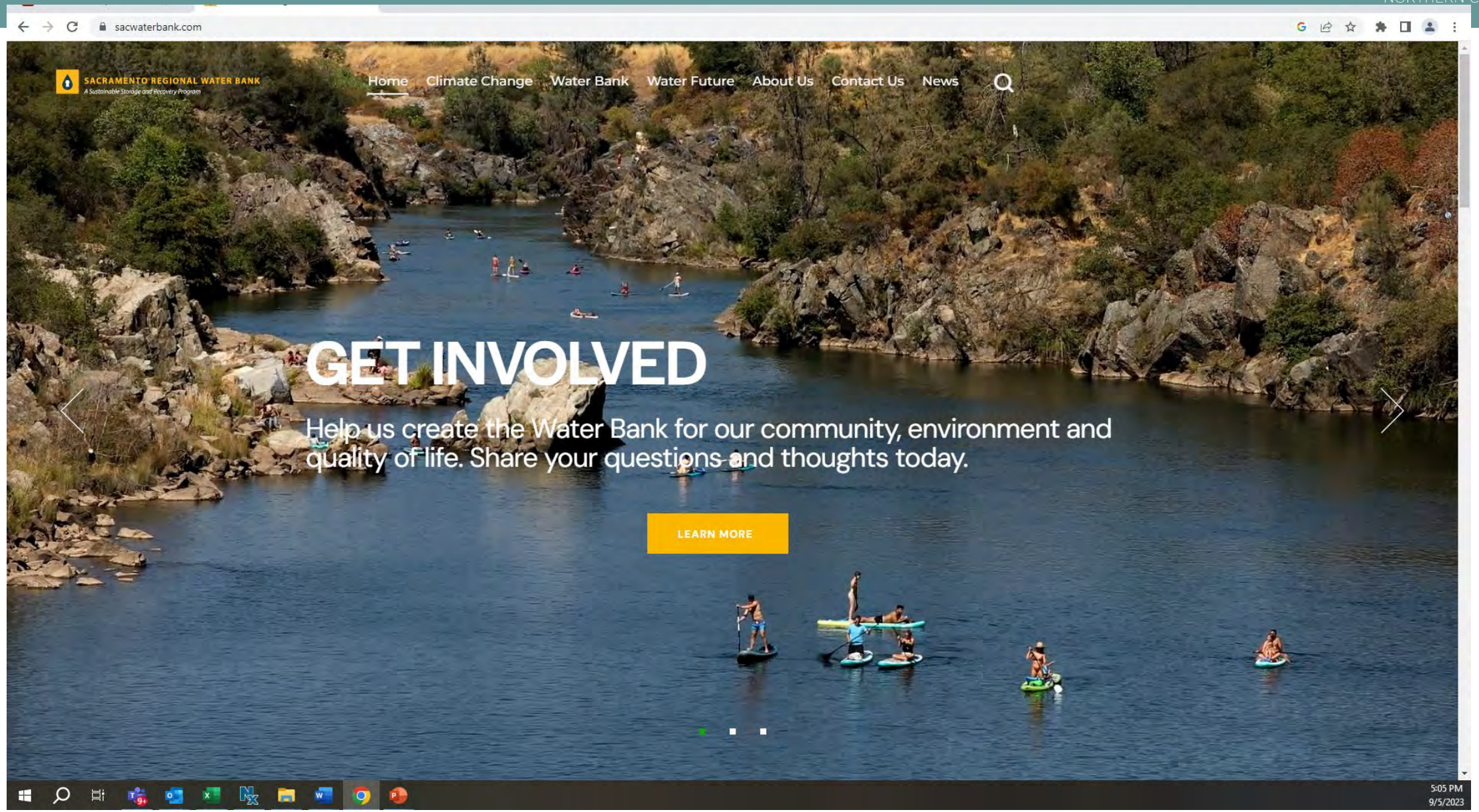

Communication and Engagement (cont.)

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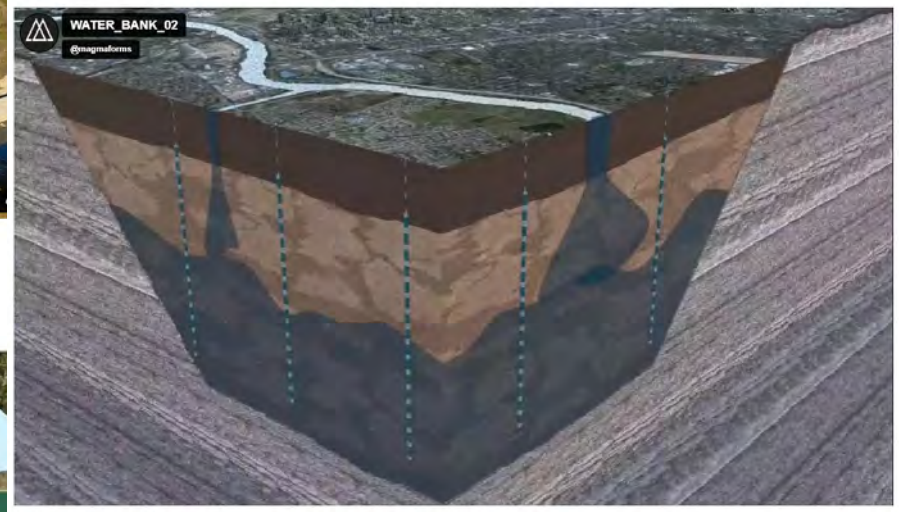
WATER_BANK_01

Video 1: Our Water Supplies and the Impact of Climate Change

Video 2: The Reservoir Under Our Feet



WATER_BANK_02

BANK_02

WATER_BANK_04

Video 3: How the Water Bank Works

Video 4: Growing a Water Bank in the Sacramento Region

WATER_BANK_02

Water Bank Progress

- Planning Components
  - ☑ Goals, Objectives, Principles, & Constraints
  - ☑ Roles & Responsibilities
  - ☑ Organizational Structure

    (ex. formal, ad-hoc)
  - Water Accounting, Monitoring, & Reporting
  - Water Modeling
  - ☐ Contractual, Financial, & Legal
- Project Description
- Environmental Documentation

Governance – Functional Organization Structure for Water Bank Implementation & Operations

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SACRAMENTO REGIONAL WATER BANK

Governance: Organizational Framework, Functions, and Associated Roles and Responsibilities

Purpose

This paper is one of a series of papers that will introduce and describe the process and considerations related to the implementation of the Sacramento Regional Water Bank (Water Bank). These processes are aspects of Water Bank governance functions.

Background

Governance can be described as "the conceptual model for how an entity is managed, its interactions with and relationship to partners and affiliates, and identification of the operations and systems it oversees." Water Bank governance components include:

- **Vision and Strategy**: Goals, objectives, principles, and constraints
- **Structure**: Organizational framework, functions, and associated roles and responsibilities
- **Operations Support Tools**: Water accounting, monitoring, and reporting
- **Agreements and Finance:** Framework to incentivize water banking

This paper introduces the ***structure*** component of Water Bank governance. It outlines the required functions and activities to support successful implementation of the Water Bank, illustrates a general organizational framework to conduct these functions, and describes the associated rules and possibilities. This paper is intended to:

(1) establish shared understanding and common terminology among the Water Bank Program Committee members and the Water Bank Development Team, and

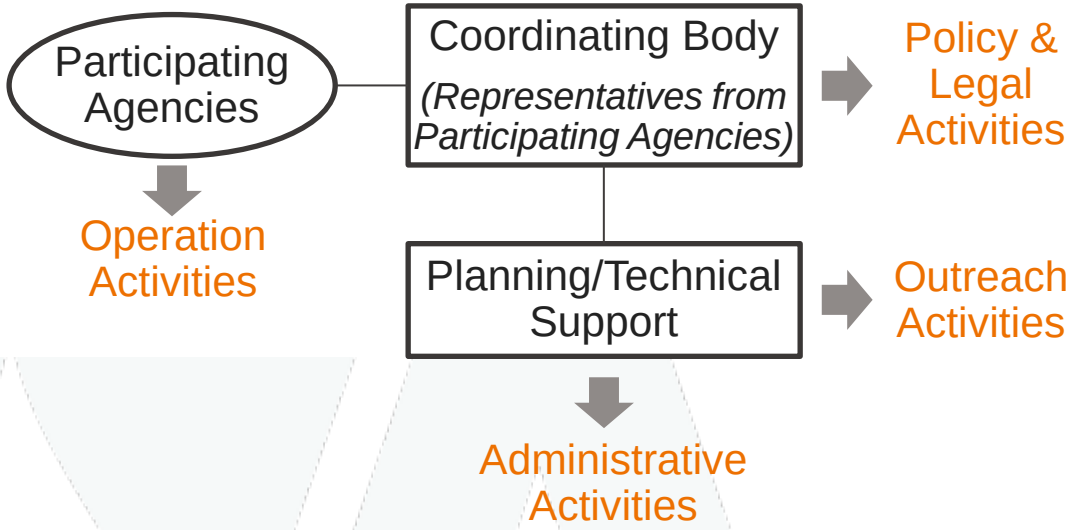
(2) help the Program Committee and the technical team maintain consistency in their ongoing engagements with other entities and stakeholders as part of the Water Bank development process.

This paper reflects the feedback from the Program Committee on the draft *Governance: Roles and Responsibilities White Paper* (dated March 3, 2023). It also reflects additional input and feedback received during the Program Committee meetings on April 6 and April 10, 2023.

Required Functions and Activities

The required activities to support a successful Water Bank can be grouped into four functional areas: (1) policy and legal activities, (2) operations activities, (3) administrative activities, and (4) outreach activities. Definitions of these required activities is informed by the *Groundwater Banking Guidelines for the Central Valley Project* (U.S. Department of the Interior, Bureau of Reclamation (Reclamation) 2019)(https://www.usbr.gov/mp/waterbanking/index.html), and the *Water Transfers White Paper* (California Department of Water Resources (DWR) and Reclamation 2019) (https://water.ca.gov/Programs/State-Water-Project/Management/Water-Transfers).

Proposed Functional Organization Structure



Water Bank - Goal, Objectives Principles, and Constraints

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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.
- 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.

Constraints
Physical/Operational
Regulatory
Institutional
Financial

Principles	
Regional Water Management	Relationship to the CVP
Environmental Stewardship	Banking Partner/ Participant Success Factors
Public Engagement	Public Perception Success Factors
Water Bank Development an d Operations	Third-Party Success Factors

Operating Multiple Accounts in the SRWB

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Sacramento Regional Water Bank

"A sustainable storage and recovery system"

American Basin (CVP account)

"A federally recognized water bank"

Sierra Nevada (non CVP account)

"Expansion of the regions conjunctive use and water banking investments"

Harvest Water

"Reliable recycled water for regional sustainability"

Future Water Accounts

(i.e. Agriculture, owner operated, etc)

Operations of Multiple Accounts

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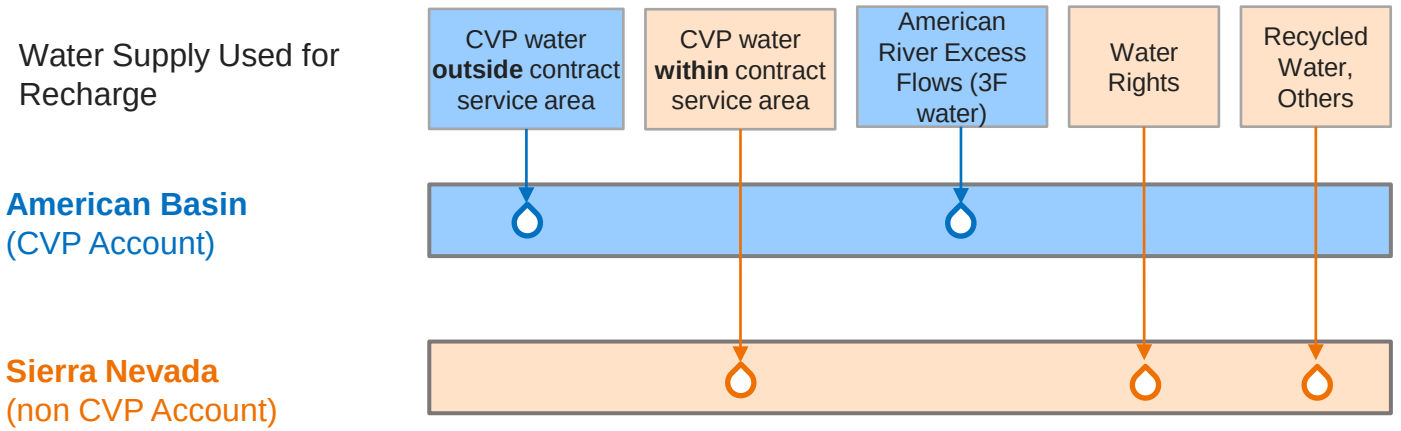
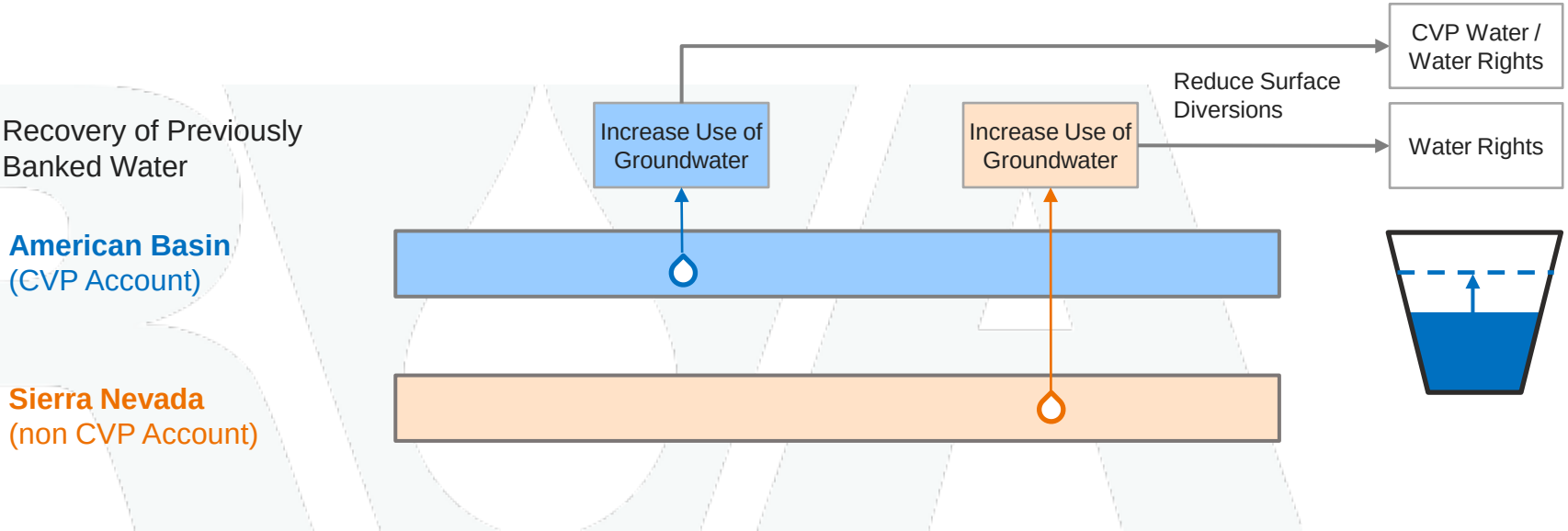
Recharge Operations

- Type of supplies and location of their use determine how the banked water is credited
- Clear and transparent accounting is needed to properly track balances of banked water



Recovery Operations

- Recovery of previously banked water is similar across both banks
- Proper tracking of balances is critical



Project Description

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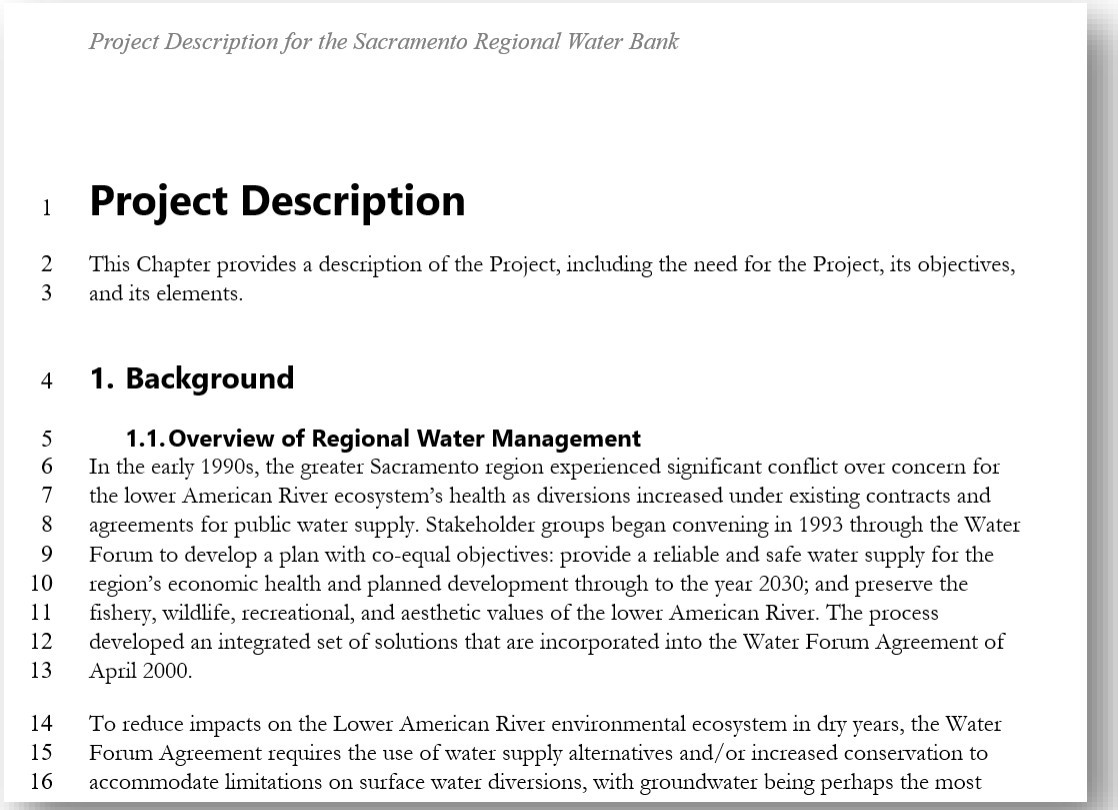
- PD shared on July 25
- Ad Hoc PC Meeting on August 15:
  - Discuss policy level input on the PD and pinpoint substantive changes
  - Provide direction to the Technical Team on resolution of all items related to PD.
- PC discussed remaining policy items on September 7
- Draft Final PD will be provided to PD - tbd
- Technical team to finalize the PD for use in the CEQA scoping process.



Project Description for the Sacramento Regional Water Bank

Project Description

This Chapter provides a description of the Project, including the need for the Project, its objectives, and its elements.

1. Background

1.1. Overview of Regional Water Management

In the early 1990s, the greater Sacramento region experienced significant conflict over concern for the lower American River ecosystem's health as diversions increased under existing contracts and agreements for public water supply. Stakeholder groups began convening in 1993 through the Water Forum to develop a plan with co-equal objectives: provide a reliable and safe water supply for the region's economic health and planned development through to the year 2030; and preserve the fishery, wildlife, recreational, and aesthetic values of the lower American River. The process developed an integrated set of solutions that are incorporated into the Water Forum Agreement of April 2000.

To reduce impacts on the Lower American River environmental ecosystem in dry years, the Water Forum Agreement requires the use of water supply alternatives and/or increased conservation to accommodate limitations on surface water diversions, with groundwater being perhaps the most

Environmental Compliance - Scoping

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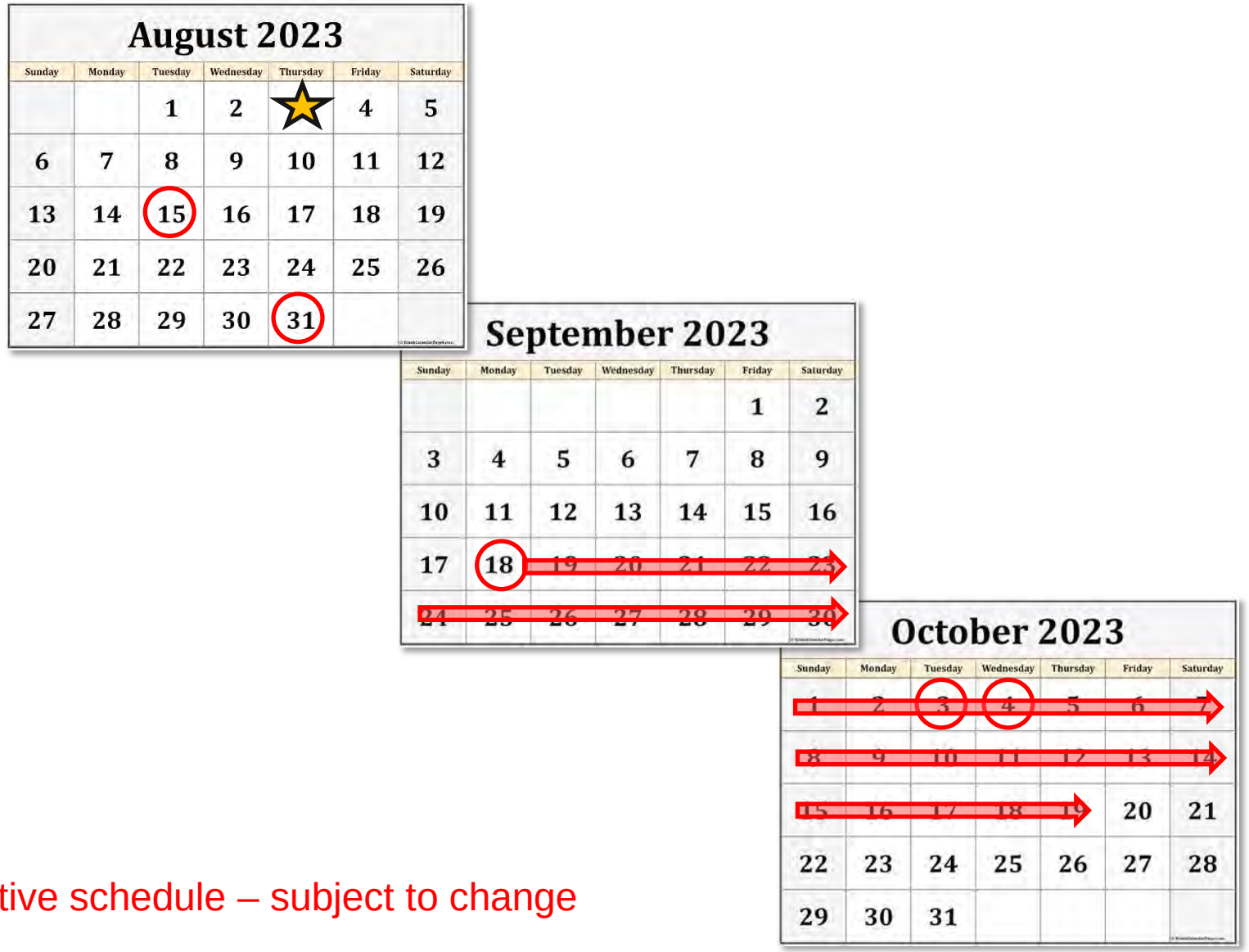
Key input from PC Members:

- ✓ Review/provide comments on Project Description by August 15th
- ✓ Provide input on NOP distribution list and Agency & Tribal Outreach by August 31st
- ✓ Support Public Scoping process



Tentative schedule – subject to change

Valley Water Pilot Transfer

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- The region has successfully demonstrated its capacity to (1) recharge and bank supplies, and (2) implement groundwater substitution transfers (similar to recovery operations of banked water)
- Valley Water is interested in better understanding some of the key institutional requirements for Federally-recognized water bank operations:
  - *Recharge operations:* securing Reclamation approval to transfer CVP SOD allocation to ARD CVP contractor
  - *Recovery operations*: securing Reclamation approval to transfer ARD CVP allocation to SOD CVP Contractor
- In discussions with interested ARD CVP contractors with ability to take additional CVP allocation for recharge,
  - Roseville agreed to participate in the Pilot transfer (available capacity to recharge via ASR wells).
  - SCWA has limited capacity (trying to maximize use of its available surface waters in this wet year).

Valley Water Pilot Transfer (cont.)

- Valley Water would request Reclamation to transfer 1,000 AF of its CVP allocation to Roseville for banking using Roseville's ASR wells.
- In a future year, a second pilot transfer would seek to return equivalent volume to Valley Water from ARD CVP contractor(s) – to be determined.
- Next steps:
  - Engage with Reclamation to develop a proposal for the 2023 Pilot.
  - Outline the schedule, costs, and roles and responsibilities of RWA, Roseville, Valley Water, and Reclamation.
  - Develop draft memorandum of understanding (MOU) or agreement (MOA) for the 2023 Pilot involving Valley Water and Roseville.
  - Develop message points for the 2023 Pilot to support communications and engagement activities for use by RWA and the Program Committee agencies.

Surface and Groundwater Modeling & Process

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CalSim (California Simulation of Water Supply and Management)

- Developed by the California Department of Water Resources (DWR)
- Focuses on statewide surface water resources
- Used to evaluate potential effects of drought, climate change, population growth, and other factors on water resources

CoSANA (Cosumnes-South American-North American)

- Developed by local Groundwater Sustainability Agencies (GSAs)
- Focuses on unique groundwater conditions in the Sacramento region (Consumnes, South American & North American subbasins)
- Used to evaluate different strategies and factors such as Ag & urban water demands, water supplies, water quality, pumping rates, land use, and climate change

Step 1: CalSim analysis and data gather to generate input data

- Surface waterflow & Diversion
- Surface Water Use by Agency
- Groundwater use by Agency

Step 2: CoSANA analysis of groundwater response and SGMA compliance

- Analysis of groundwater storage and elevations
- Outflow to/from neighboring subbasins
- Effects on interconnected surface water (depletions & accretions)

Step 3: CalSim analysis with refined data to evaluate surface water flows

- Net depletions/ accretions from interconnected surface water incorporated in CalSim
- CalSim run with revised depletions to evaluate surface water flows

Next Steps

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Governance Components:

- ☑ Goals, Objectives, Principles, & Constraints
- ☑ Roles & Responsibilities
- ☑ Organizational Structure
- ↻ Water Accounting System (WAS) Concept Paper, Monitoring, & Reporting
- ☐ Contractual, Financial, & Legal

Project Description/Scoping:

- ☑ Proposed Project Preview
- ☑ Water Bank Project Benefits & Outcomes
- ↻ Project Description

CEQA/NEPA:

- ↻ Compliance Process
- ↻ NOP
- ☐ NOI/Scoping
- ☐ Document Preparation
- ☐ Noticing/ Consultation & Coordination
- ☐ Other Requirements

Water Bank Development:

- ↻ Budgets
- ↻ Grants & Funding
- ↻ Contractors

Communication & Engagement:

- ↻ Stakeholder Forums
- ↻ Water Bank website and content