Project & Management Actions

Cosumnes Subbasin Groundwater Sustainability Plan

2022-2042

Feb. 15, 2021

Overview

- Legal Requirements
  - Stop groundwater depletion in our subbasin
  - Spread costs of solutions across users
  - Adopt plan that State will accept
- Priorities
  - Minimize fallowing of farmland
  - Minimize costs
  - Emphasize carrot (voluntary) rather than stick (mandatory)
- Goal
  - Craft a diverse portfolio of solutions across the Subbasin that will meet the 20,000 AFY target

Where will existing projects get us?

- Projects that have general consensus about feasibility/desirability
  - Galt WWTP – 1,400 AFY
- Projects from other subbasins that benefit us
  - OHWD Cosumnes River Recharge – 250 AFY
  - OHWD Flow Augmentation – 600 AFY
  - Harvest Water – 2,000 AFY
- Total Impact
  - (target) 20,000 AFY – (existing projects) 4,250 AF = **(shortfall) 15,750 AFY**

Missing Piece in Portfolio – How will we fulfill the shortfall?

We are recommending a creative, innovative solution that will:

- Increase water supply/reduce usage to cover deficit
- Subsidize plan costs so that constituents burden is minimized (minimal pumpage and parcel fees)

Projects and Management Actions will include projects that reduce demand, augment supply, and create revenue (to minimize the burden on the entire subbasin).

Suite of Projects

Demand Reduction

- Fallowing
- Conservation - new

Supply Augmentation

- Galt WWTP
- Harvest Water
- OHWD Flow Augmentation
- OHWD Cosumnes River Recharge

- Flood-MAR with SAFCA
- Other (TBD)

Revenue Generation

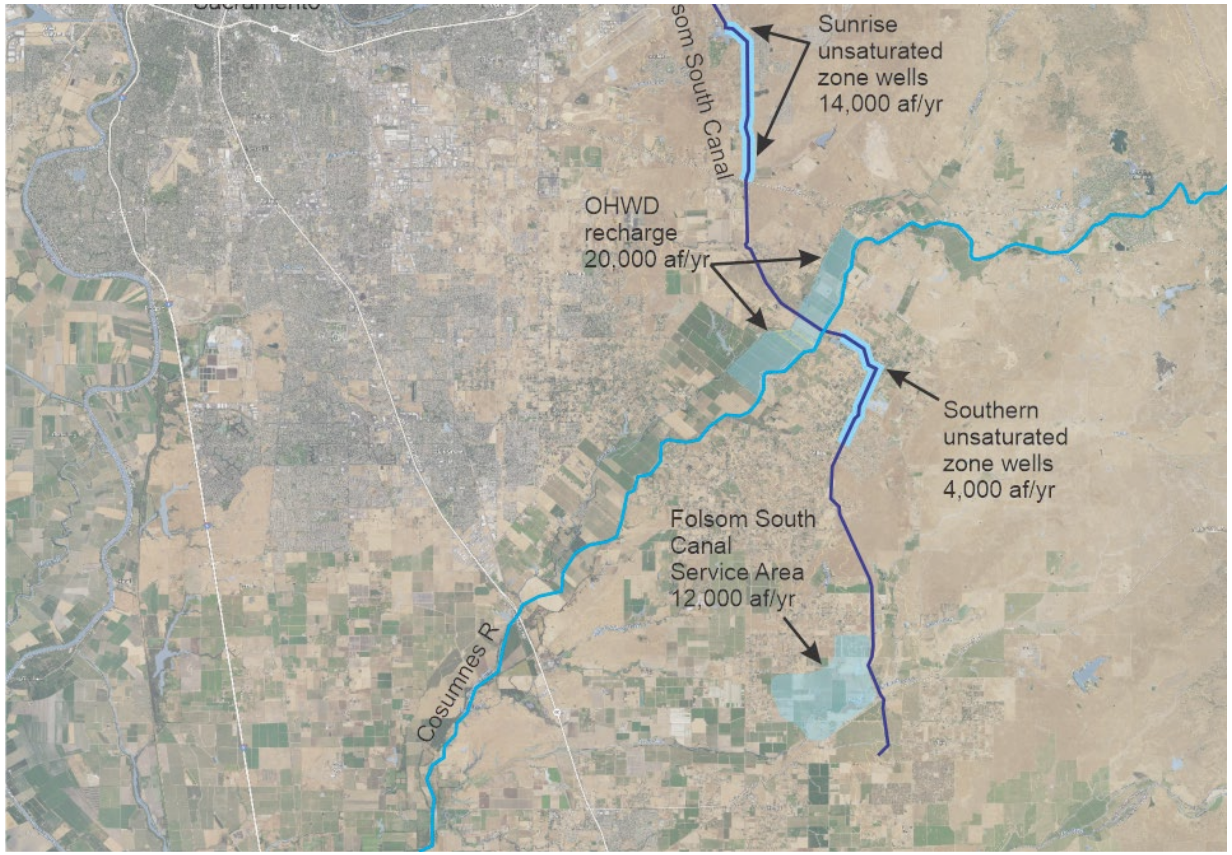
- Groundwater Banking
  - "Renting" out space in our subbasin for a water purveyor for later use

- GW Banking and Selling
  - "Add" water to our bank at low prices (fallowing and/or recharge)
  - "Sell" water at high price to an urban water purveyor for dry year augmentation

  This revenue will help lower the overall costs to our constituents.

SAFCA Flood-MAR Program

- Create more reservoir storage space for flood control upstream of Folsom.
- Hold excess winter flood water in Folsom Reservoir (Bureau of Reclamation water): ~125,000 AF in 4 out of 10 years
- Divert stored water down FSC for storage in So American and Cosumnes Basins
- Reserve 25-35% of stored water for use by Bureau of Reclamation
- 65-75% (TBD) of stored water available for GW deficit reduction and American/Cosumnes Rivers flow augmentation



Managed aquifer recharge locations

Why would SAFCA be interested in partnering with us?

To implement regional Flood-MAR program, SAFCA needs revenue to help pay for program

- Cosumnes Subbasin could leverage our assets to meet this need
  - Natural: Groundwater and storage capacity
  - Constructed: Folsom Dam, Folsom South Canal, connection to the Mokelumne Canal (less infrastructure needed to be built)
  - These resources can be used to sell water to cities at a premium
- Urban Water Purveyors need supplemental dry year water supplies
  - Existing conveyance infrastructure allows us to deliver water to many Bay Area cities
  - Sale of this water would generate revenue to support SAFCA program

Combined Portfolio of Solutions: Startup Years (2022-2024)

PMA	Activity
Fallowing/Conservation	Secure agreements with landowners
Galt WWTP	Develop project
GW Banking	Develop a relationship with water purveyor
SAFCA Flood-MAR	Pursue partnership with SAFCA, secure recharge agreements with landowners, construct infrastructure to serve recharge land
Other PMAs	To be developed
S. Am. Subbasin Projects	Develop monitoring protocols and facilities to assess Cosumnes benefits
Grant funding	Secure funds for metering, monitoring, and recharge infrastructure

Combined Portfolio of Solutions: Early Years (2024-2027)

PMA	Activity
Fallowing/Conservation	Fallow-2000 AFY; Conservation-1700 AFY (assume 8000 acres opt-in, 8% conservation rate.
Galt WWTP	Continue developing project
GW Banking	Enter into GW banking agreement with urban water purveyor to **store** water for dry year augmentation, use revenue to pay for infrastructure for extraction, other PMAs, and reserve
SAFCA Flood-MAR	Develop agreements with Flood MAR partners, secure state and federal funding, construct infrastructure
Other PMAs	Begin implementation of feasible projects
S. Am. Subbasin Projects	Quantify groundwater benefit to Cosumnes basin

Combined Portfolio of Solutions: Later Years (2027-2042)

PMA	Activity
Fallowing/Conservation	Fallow 5000 AFY; conservation 1700 AFY
Galt WWTP	Implement project
GW Banking + Sale	Amend agreement with water purveyor to **sell** fallowed water for dry year augmentation, use revenue to pay for other PMAs and build up reserve
SAFCA Flood-MAR	Receive winter water from American River for GW recharge, use revenue from GW sale to cover program operation and maintenance costs
Other PMAs	Implement other PMAs as feasible
S. Am. Subbasin Projects	Continue monitoring groundwater impacts on Cosumnes basin

Proposed Plan Early Years: Annual Water budget, Costs & Funding Sources 2024-2027

PMA	Annual volume	Cost	Revenue
Fallowing Conservation	2,000 1,700	$300,000	
SAFCA Flood-MAR: Payment to farmers for recharge		$400,000	
GW Banking infrastructure		$1,000,000	
Harvest Water	2,000	~~$50,000~~	
~~OHWD Cos Riv Flow Augmentation~~	~~600~~	~~$100,000~~	
OHWD Cosumnes River Recharge	250	~~$50,000~~	
Administration		$500,000	
Reserve / Other		$50,000	
Total	5950	$2.25M	
Fees (parcel and pumpage)			$850,000
GW Banking			$1.4M
Total	5950		$2.25 M

Estimated pumpage fee: $10.00 acre

Proposed Plan Later Years: Annual Water budget, Costs & Funding Sources 2027-42

PMA	Annual vol (AF)	Cost	Revenue
Fallowing Conservation	5000 1700	$750,000	
Galt WWTP	1,400	$50,000	
SAFCA Flood-MAR: (including payment to farmers for recharge)	12,000	$1,980,000	
GW Banking		$600,000	
Harvest Water	2,000	~~$50,000~~	
OHWD Cos Riv Flow Augmentation	600	$100,000	
OHWD American River Recharge	4,000	$660,000	
Administration		$500,000	
Reserve / Other PMAs	2000	$460,000	
Total	28,700	$5.1M	
Sale of water	-6,000		$3.9M
Fees (parcel and pumpage)			$1.2M
Total	22,700		$5.1M

Estimated pumpage fee increases to $20.00/acre

Requirements for Selling Water

No water sold until:

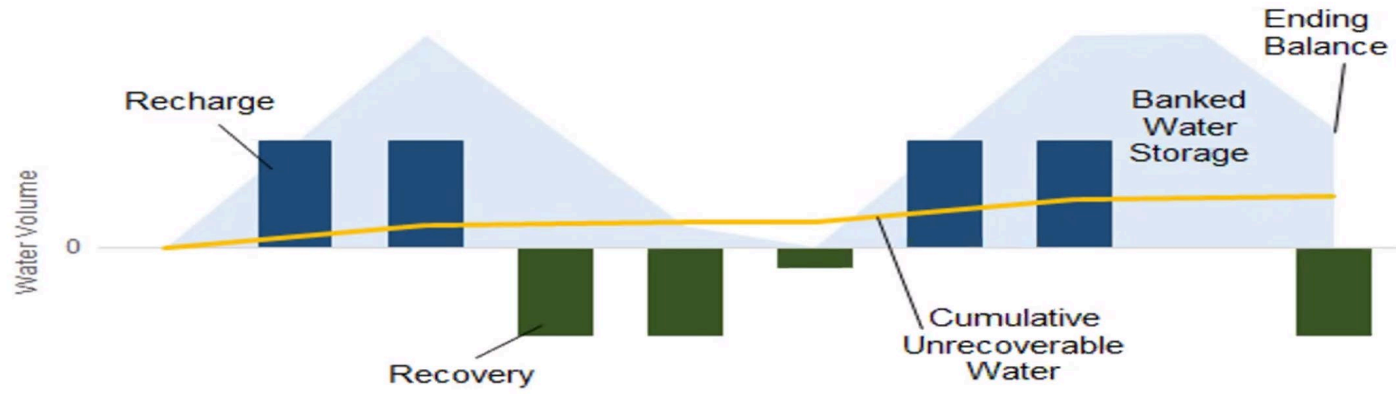
- Agreements are in place to assure American River winter flood water will be delivered to Cosumnes Subbasin
- Volumes of winter flood water will exceed the amount of fallowed or conserved water sold: NO NET WATER LOSS

Agreements would be made with:

- SAFCA
- Bureau of Reclamation
- Others as necessary to create the SAFCA Flood-MAR program

Principles RWA Water Bank Uses to Ensure Sustainability

Precise operations are to be determined through modeling, but principals help ensure basin sustainability



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Plan B – Back Up Plan

- If SAFCA program does not materialize or fails to provide an average of 16,000 AFY
- Use adaptive management strategy to address shortfall. How??
  - Increase fallowing
  - Increase conservation (mandatory or voluntary)
  - Acquire winter water from other sources
  - Injection and recovery

If we are not successful, the Water Board could intervene

- We could be put on probation
- WB can require meters
- WB can charge us for performing additional studies

https://mavensnotebook.com/2020/01/23/sgma-implementation-groundwater-sustainability-evaluation-and-state-water-board-intervention/

Questions? – Thoughts?