

# KGA Member: Semitropic Water Storage District - Highlights of Draft Document

## Sustainability Goal

The sustainability goal for the District is to balance the average annual inflow and outflows of water in the District and implement measures as necessary to avoid undesirable results, including preventing the lowering of average groundwater levels, beyond 2040. This goal is expected to improve and maintain groundwater levels, and avoid significant and unreasonable negative change in groundwater storage, water quality degradation, and land subsidence. To reach the sustainability goal by 2040, the District will implement projects and management actions as described herein over time that increase supply and/or reduce demand. Once fully implemented, such projects and management actions are expected to reduce the groundwater pumping in the District as necessary to ensure operation within the basin sustainable yield.

## Checkbook

Table 2-15. SWSD Net Water Budget for Current Conditions

	Worst Case Acre-feet / year	Best Case Acre-feet / year
District Demand	405,000	320,000
District Supply	182,800	294,500
District Deficit	222,200	25,500
Average Deficit	123,900	

## Management Actions / Projects

### - Management Action 1: Landowner Water Budgets

Table 5-2. Example Water Budget for Contract Lands

Contract Lands Water Supply Sources	Average Supply (acre-feet/acre)
Contract Surface Water (SWP)	2.25
District Supplemental Supplies	0.27
Banked Supplies	TBD
Native Supply	0.25 0.50 0.75
Incremental Pumping Allowance	1.43 1.18 0.93
Total Available Supply in 2020	4.20

Table 5-3. Example Water Budget for Groundwater Service Area GPSC Lands

Groundwater Service Area GPSC Water Supply Source	Average Supply (acre-feet/acre)		
Contract Surface Water (SWP)	0		
District Supplemental Supplies	0.27		
Banked Supplies	TBD		
Native Supply	0.25	0.50	0.75
Incremental Pumping Allowance	3.68	3.43	3.18
Total Available Supply in 2020	4.20		

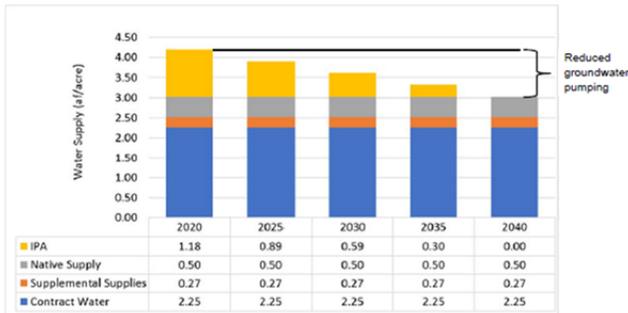


Figure 5-1. Example Water Budget for Contract Lands Through the Implementation Period

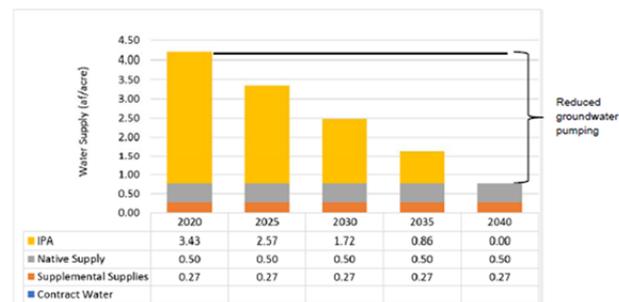


Figure 5-2. Example Water Budget for Groundwater Service Area GPSC Lands Through the Implementation Period.

### - Management Action 2: Tiered Pricing Structure

- To reinforce the adherence to the established water budgets as structured in Management Action 1, the District will create a volumetric rate structure such that if a landowner exceeds its annual water budget as determined by evapotranspiration then the landowner would be charged fee in accordance with Water code Section 10730.2. It is the expectation that the fee would be charged on a volumetric basis and would be tiered based on the quantity of groundwater consumed in excess of the established annual water budget.

### - Management Action 3: District Fallowing Program

- Fallowing program to be developed by District to support land fallowing as a District action and by individual landowners or groups of landowners. The program will be the total reduction in groundwater extractions required to comply with SGMA and specified in the landowner water budget process will be undertaken. This represents an estimated reduction in groundwater pumping of 123,900 af annually by 2040 or the fallowing of approximately 39,000 acres of currently irrigated lands. This is the worse-case scenario under which the District does not implement any water supply augmentation programs or projects to offset some portion of the required land fallowing. The District will initiate environmental and regulatory compliance efforts for other projects and management action that enhance the District's supplemental water supplies

- **Plan B: potential projects that would reduce need to fallow.**

Table 5-1  
Proposed list of Projects and Management Actions for Semitropic GSA

MA Number	MA Name	Summary Description	Recent Sustainability Indicators Affected		Challenges for Implementation	Public Hearing Process	Permitting and Regulatory Process Requirements	Status	Timetable / Circumstances for initiation	Timetable for Completion	Timetable for Assured or Expanded Benefits	Expected Benefits			Sources of Water, if Applicable	Legal Authority Required	Estimated Costs			
			Groundwater Levels and Storage	Groundwater Quality								Land Subsidence	Primary	Secondary			Estimated Costs	Ongoing Costs (per year)	Potential Funding Sources	
1	Landowner Water Budgets	Establish individual water budget for landowners by landowner classes	*	*	*	Establish water budgets by landowner	Semitropic GSA Board Meetings & Website	CEQA	Under development	2020	2020	2020	Est. 40,000 af total (3,000 af/yr to 2040)			District / DSMIA authorities			\$100,000	District
2	Tiered Pricing for Groundwater Pumping	Develop pricing structure to incentivize groundwater users to manage groundwater extractions to MA1 water Budgets	*	*	*	Implementation of MA 1	Semitropic GSA Board Meetings & Website	218 Process	Not yet started	2020	2021	Through 2040	Consistent with MA1			District / DSMIA authorities	\$50,000	\$25,000		District
3	District Fallowing Program	support land fallowing as a District action and by individual landowners or groups of landowners.	*	*	*	Implementation of MA 1	Semitropic GSA and District Board CEQA compliant 2020	CEQA	Not yet started	2020	2021	Through 2040	Consistent with MA1			District authorities	\$300,000			District
4	Enhanced Groundwater Recharge	Development of surface and subsurface recharge projects underlying developed agriculture lands to increase groundwater recharge capacity.	*	*	*	Upon adoption of Semitropic GSP	Semitropic GSA Board Meetings & Website	Site specific (CEQA)	Ongoing	2020	2040	During years of higher than average water deliveries to District	Up to 25,000 af average annual	*	*	GWP supplies and other local and imported sources	District authorities	TBD	\$25,000	District
5	Brackish Water Desalination	Development of a brackish water treatment facility to treat locally sourced brackish water for District use.	*	*	*	Upon completion of environmental and regulatory requirements	Semitropic GSA Board Meetings & Website	CEQA	Initiated planning	2022	2026	Upon project completion	1,800 af / year			Local brackish water	District authorities		up to \$500 af	District
6	In-District Water Markets and Transfers	District will allow for the development of markets for in-district transfers	*	*	*	Upon adoption of Semitropic GSP	Semitropic GSA Board Meetings & Website	TBD	Not yet started	2022	2024	Upon project completion	TBD	*	*	GWP supplies and other local and imported sources	District / DSMIA authorities	TBD	\$25,000	District
7	Poso Creek MAR	Development of floodwater capture and recharge program from Poso Creek flood flows	*	*	*	Upon completion of feasibility and permitting requirements	Semitropic GSA Board Meetings & Website	CEQA	Undergoing pre-feasibility analysis	2020	2028	First year following project completion	1,200 af average annual			Poso Creek	District authorities	TBD	TBD	District
8	Tulare Lake Project	Development of conveyance facilities to divert Kings River flood flows for direct use and recharge in the SWGD	*	*	*	Upon completion of water rights determination	Semitropic GSA Board Meetings & Website	CEQA / State Board / Regulatory	Under development	2018	2036	First year following project completion	10,000 af average annual	*	*	King River flood flows	District authorities	TBD	TBD	District
9	Water Market Acquisitions	Increase participation in state-wide water markets for spot market and long-term water transfers	*	*	*	Upon adoption of Semitropic GSP	Semitropic GSA Board Meetings & Website	CEQA / DWR	Ongoing	2020	2020	Immediately	4,000 af average annual			Other imported water supplies	District authorities	TBD	TBD	District
10	Stored Water Recovery Unit	Development of water storage to expand in-line service areas	*	*	*	Upon approval by SWGD BOD and identification of funding	Semitropic GSA Board Meetings & Website	CEQA (Compliance)	Initiated	2025	TBD	During years of higher than average water deliveries to District	Increases capacity & flexibility of conveyance for recharge	*		District authorities	\$12,000,000	TBD		District
11	Pond-Poso Spreading Grounds, Phase II	Development of spreading facilities to increase groundwater recharge capacity	*	*	*	Upon adoption of Semitropic GSP	Semitropic GSA Board Meetings & Website	CEQA	Initiated	2020	2024	During years with high Poso Creek flows	Increases groundwater recharge capacity	*		District authorities	TBD	TBD		District
12	Pond-Poso Entrance Ponds	Development of spreading facilities to increase groundwater recharge capacity	*	*	*	Upon approval by SWGD BOD and identification of funding	Semitropic GSA Board Meetings & Website	CEQA	Initiated	2024	2024	During years with high Poso Creek flows	Increases capacity & flexibility of conveyance for recharge	*		District authorities	TBD	TBD		District
13	Multi-District Conveyance (CA to Frank-Kern Canal)	Development of a conveyance system to deliver surface water for groundwater recharge and irrigation	*	*	*	Upon approval by SWGD BOD and identification of funding	Semitropic GSA Board Meetings & Website	None	Ongoing			During years of higher than average water deliveries to District	Increases capacity & flexibility of conveyance for recharge	*		District authorities	\$70,000,000	TBD		District
15	Schutter Spreading Grounds	Development of spreading facilities to increase groundwater recharge capacity	*	*	*	Upon approval by SWGD BOD and identification of funding	Semitropic GSA Board Meetings & Website	CEQA	Not yet started	2030	2036	During years of higher than average water deliveries to District	Increases groundwater recharge capacity	*		District authorities	TBD	TBD		District
16	Leonard Avenue System	Development of an intake system to provide east to west surface water conveyance to for supply in groundwater dependent areas	*	*	*	Upon adoption of Semitropic GSP	Semitropic GSA Board Meetings & Website	CEQA	Initiated	2019	2022	Upon project completion	Increases capacity & flexibility of conveyance for recharge	*		District authorities	TBD	TBD		District
17	Ortiz Intake	Connection of an intake to provide surface water conveyance for agricultural irrigation	*	*	*	Upon adoption of Semitropic GSP	Semitropic GSA Board Meetings & Website	None	Ongoing	2018	2021	All years	Increases capacity & flexibility of conveyance for recharge	*		District authorities	TBD	TBD		District
18	Cox Canal	Develop canal for the conveyance of surface water for groundwater recharge	*	*	*	Upon adoption of Semitropic GSP	Semitropic GSA Board Meetings & Website	None	Ongoing	2018	2021	All years	Increases capacity & flexibility of conveyance for recharge	*		District authorities	TBD	TBD		District
19	Stored Water Recovery Unit-XYZ		*	*	*	Upon adoption of Semitropic GSP	Semitropic GSA Board Meetings & Website	None	Ongoing	2019	2022	All years	Increases capacity & flexibility of conveyance for recharge	*		District authorities	TBD	TBD		District

**Min Thresholds / Measurable Objectives**

- For Semitropic Management Areas: if 51% of the monitoring sites within a management area exceed a minimum threshold then it would be considered a minimum threshold watch area. Objective of the plan is to achieve sustainability at our above the stated Measurable Objective

Table 3-1. Summary of Minimum Thresholds and Measurable Objectives

Sustainability Indicator	Zone	Monitoring Site/Parameter	Minimum Threshold		Measurable Objective		Interim Milestones					Margin of Operational Flexibility	Unit
			Value	Unit	Value	Unit	2020	2025	2030	2035	Unit		
Chronic Lowering of Groundwater Levels	Buttonwillow Improvement District (Management Area 2)	S-02	-200	ft msl	-127	ft msl						73	ft
		S-04	-144.1	ft msl	-76	ft msl						68.1	ft
		S-05	-241.6	ft msl	-161	ft msl						80.6	ft
		948L02	-179.6	ft msl	-101	ft msl						78.6	ft
		Proposed-003	-179.6	ft msl	-101	ft msl						78.6	ft
	Groundwater Dependent Ag. (Management Area 3)	Proposed-004	-267.6	ft msl	-185	ft msl						82.6	ft
		S-11	-257.9	ft msl	-195	ft msl						62.9	ft
		S-12	-260.5	ft msl	-194	ft msl						66.5	ft
	Pond Poso Improvement District (Management Area 1)	Proposed-002	-292.3	ft msl	-219	ft msl						73.3	ft
		25S/23E-07B02	-377.55	ft msl	-270	ft msl						107.55	ft
		S-06	-306	ft msl	-209	ft msl						97	ft
		S-09A	-226.7	ft msl	-146	ft msl						80.7	ft
		S-13A	-371.2	ft msl	-269	ft msl						102.2	ft
	S-14A	-334.5	ft msl	-233	ft msl						101.5	ft	
	S-14B	-334.5	ft msl	-233	ft msl						101.5	ft	
	S-15A1	-345.3	ft msl	-244	ft msl						101.3	ft	
	Proposed-001	-217.3	ft msl	-148	ft msl						69.3	ft	
Reduction of Groundwater Storage			Groundwater Elevations as Proxy										
Degraded Water Quality			N/A										
Land Subsidence			Groundwater Elevations as Proxy										
Seawater Intrusion			N/A										
Depletion of Interconnected Surface Water			N/A										