

White Wolf Subbasin Groundwater Sustainability Agency Regular Board Meeting of the Board of Directors

Agenda October 6, 2022 at 9:00 a.m.

In Person: Wheeler Ridge-Maricopa Water Storage District Headquarters
12109 Highway 166
Bakersfield, CA 93313

Or Virtual Option:

Go To Meeting: <https://meet.goto.com/868922565>
Call by Phone: (872) 240-3311 Access Code: 868-922-565

- 1. Call to order**
- 2. Discuss and Consider Adoption of Resolution to Allow Remote Teleconference Meetings Pursuant to AB 361 for Next 30 Days**
- 3. Closed Session – Anticipated litigation (Government Code Section 54956.9(d)(2))—1 item.**
- 4. Report Out of Closed Session**
- 5. Recognition of Guests**
- 6. Approval of Minutes of the Regular Board Meeting of September 6, 2022**
- 7. Discuss and Consider Resolution to Adopt a Monthly Meeting Schedule (Angelica)**
- 8. Updates on Actions Discussed or Authorized on September 6, 2022 (EKI)**
 - a. Update on groundwater levels through September 2022
 - b. SGMA Implementation Round 2 Grant Solicitation Update
 - i. Schedule
 - ii. Potential Projects
 - iii. Letters of Support
- 9. Discuss and Consider Resolution Authorizing Filing Application for SGMA Implementation Round 2 Grant (EKI/Angelica)**
- 10. Well Permit Consistency Determinations (Technical Committee)**
 - a. Discuss and Consider Certification for Pending Well Permit Applications
- 11. Options for Demand Reduction Programs (EKI/Technical Committee)**

In compliance with the Americans with Disabilities Act, if you need disability-related modifications or accommodations, including auxiliary aids or services, please call Angelica Martin (661) 663-4262.

White Wolf Subbasin Groundwater Sustainability Agency Regular Board Meeting of the Board of Directors

Agenda October 6, 2022 at 9:00 a.m.

- a. Projects and/or Management Actions (P/MAs) identified in the Groundwater Sustainability Plan (GSP)
- b. Case Studies
- c. Consider Establishment of a Committee for P/MAs Planning
 - i. Discuss Policies to Support Recharge Projects

12. Correspondence

13. Public Comment

At this time, the public may address the Board on any item not appearing on the agenda that is within the subject matter jurisdiction of the Board. Comments will be limited to three minutes.

14. Consider and provide direction on future agenda items

15. Adjourn

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WHITE WOLF GROUNDWATER SUSTAINABILITY AGENCY

RESOLUTION 2022-06

**RESOLUTION INITIALLY AUTHORIZING REMOTE
TELECONFERENCE MEETINGS UNDER AB361**

WHEREAS, meetings of the Board of Directors (“Board”) of White Wolf Groundwater Sustainability Agency (“Agency”) and its committees are open and public, as required by the Ralph M. Brown Act (Cal. Gov. Code 54950 – 54963), so that any member of the public may attend, participate, and watch the Agency’s legislative bodies conduct their business;

WHEREAS, Government Code section 54953(e), as amended by Assembly Bill 361 (2021) (“AB361”), signed by the Governor on September 16, 2021, provides for remote teleconferencing participation in meetings by members of a legislative body, without compliance with the requirements of Government Code section 54953(b)(3), subject to the existence of certain conditions; and

WHEREAS, the Agency wishes to invoke the provisions of AB361 to authorize teleconference meetings subject to the modified standard of Government Code section 54953(e);

NOW, THEREFORE, BE IT RESOLVED that:

Section 1. Findings. The Board hereby finds as follows:

- (a) As required by Government Code section 54953(e)(1), a proclaimed state of emergency exists under the California Emergency Services Act, as declared by the Governor on March 4, 2020.
- (b) State or local officials have imposed or recommended measures to promote social distancing.

Section 2. Procedures for Teleconference Meetings. The Agency and its committees shall hold teleconference meetings pursuant to the requirements of Government Code section 54953(e).

Section 3. Effective Date. This resolution shall take effect immediately upon its adoption.

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Section 4. Renewal. Pursuant to Government Code section 54953(e)(3), the Agency will reconsider the state of emergency every 30 days.

PASSED AND ADOPTED by the Board of Directors of White Wolf Groundwater Sustainability Agency on October 6, 2022, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAINED:

ATTEST:

Secretary of the Board

**White Wolf Subbasin Groundwater Sustainability Agency
Wheeler Ridge-Maricopoa Water Storage District
12109 Highway 166, Mettler, CA 93313**

MINUTES OF THE REGULAR BOARD OF DIRECTORS MEETING

Date of Meeting: Tuesday, September 6, 2022

Location: Remote and In-Person

Meeting Commenced at 1:07 p.m.

DIRECTORS PRESENT: Tito Martinez, George Cappello, Jeff Giumarra, Jeff Mettler, Allen Lyda, and Jon Reiter

ALTERNATES: None

DIRECTORS ABSENT: None

PUBLIC AND STAFF: Robbin Smith from Wonderful Citrus, and Anona Dutton, Christina Lucero, and Kelly Thaker, from EKI, Robert Velasquez with TRC, Josh Polich from Anthony Vineyards, Tom Suggs with WRMWSD, and Legal Counsel Alan Doud, were present.

The meeting was initiated with the introduction of Resolution 2022-05, Allowing Remote Teleconference Meetings Under AB361. On motion by Director Giumarra, seconded by Director Mettler, the resolution was unanimously approved. The motion was carried upon roll call vote for approval.

President Martinez did a recognition of guests and advised the board would initiate closed session and asked the public attending in person to please exit the room and those on line, he explained would be put on a “waiting room” and let back in once open session commenced.

Closed session commenced at 1:11 p.m.

There was nothing to report out of closed session. Open session began at 2:08

The draft meeting minutes of the Regular Board Meeting of June 7, 2022 was presented by Ms. Martin. On motion by Director Cappello and seconded by Director Mettler, the minutes were unanimously approved. The motion was carried upon roll call vote for approval.

Ms. Martin presented the financial report for the 2nd Quarter of 2022. There were no questions. On motion by Director Giumarra, and seconded by Director Mettler, the financials were unanimously approved. The motion was carried upon roll call vote for approval.

Ms. Martin also presented item 7b of the agenda. The Capital Call for \$66,667 per District is to cover anticipated consulting and legal expenses for fiscal year July 2022-June 2023. After a brief discussion, Director Mettler motioned to approve the Capital Call, seconded by Director Giumarra, the action was unanimously approved. The motion was carried upon roll call vote for approval.

Christina Lucero from EKI gave a presentation starting with an update on Groundwater Sustainability Plan (GSP) implementation tasks. She explained water levels declining in the basin as well as MT exceedance and process to manage it, including monthly well readings instead of bi-annual. She went on to talk about the Executive Order N-7-22, and how to implement in the basin. She went over the analysis of well applications received by the GSA and how these wells could potentially impact the sustainability of the basin. She presented the forms, both Kern County’s as a well as WWGSA’s Supplemental Form, that

need to be submitted together with all well applications. After some discussions regarding the forms, Director Giumarra motioned to approve both forms, seconded by Director Mettler, the action was not unanimous. Director Reiter voted in favor of the Counties form but voted against the WWGSA's Supplemental Form. After a roll call vote, the action was passed.

Christina continued to talk about SGMA Implementation Round 2 Grant Application expected to open in October.

Regarding the certification of pending well permit applications, it was agreed that the board would first do further landowner outreach before making any decisions. A workshop was recommended to provide the stakeholder updates in the hydrology of the basin.

It was also brought up by Ms. Martin that the technical committee believed it was necessary to have more frequent Board meetings. The Board agreed to have monthly meetings; the first Tuesday of every month, at 1:00 p.m., same location. On motion by Director Lyda, seconded by Director Mettler, the action was unanimously approved. The motion was carried upon roll call vote for approval.

It was agreed Ms. Martin would reach out to schedule the Stakeholder Workshop, expected to be the last week of September.

The was no correspondence to report.

There were no public comments.

Ms. Martin advised next meeting would be on October 4, possibly in a different time.

The White Wolf GSA was adjourned at 2:54 p.m.

Angelica Martin, Secretary, White Wolf Subbasin GSA

Approved by: White Wolf Subbasin GSA Board of Directors Dated: October 6, 2022

**BEFORE THE BOARD OF THE
WHITE WOLF SUBBASIN GROUNDWATER SUSTAINABILITY AGENCY**

**IN THE MATTER OF ADOPTING)
A REGULAR MEETING SCHEDULE)**

Resolution No.: 2022-07

WHEREAS, the White Wolf Subbasin Groundwater Sustainability Agency (“Agency”) is a joint powers agency formed, pursuant to Government Code §§ 6500 *et seq.* and Water Code §§ 10720 *et seq.* by the Arvin-Edison Water Storage District, Wheeler Ridge-Maricopa Water Storage District, Tejon-Castac Water District, and the County of Kern; and

WHEREAS, pursuant to Government Code § 54954 (a), the Agency’s Board of Directors is required to establish the time and place for holding regular meeting of the Agency.

**NOW, THEREFORE BE IT RESOLVED BY THIS BOARD OF DIRECTORS
THAT:**

1. The following shall be the schedule for the Agency’s regular meetings:
 - a. The next regular meeting will be on November 1, 2022, and all regular meetings thereafter will occur on the First Tuesday of Every Month.
 - b. Regular meetings will start at 1:00 p.m., Pacific Time.
 - c. Regular meetings will be held at the Conference Room of the Wheeler Ridge-Maricopa Water Storage District, 12109 Highway 166, Bakersfield, CA 93313.
2. Special meetings of the Agency Board may be held at a time and place duly noticed in the manner provided by law.

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All the foregoing begin on motion of Director _____ seconded by Director _____ and authorized by the following vote, to wit:

AYES:

NOES:

ABSTAIN:

ABSENT:

I HEREBY CERTIFY that the foregoing resolution is the resolution of said Agency as duly passed and adopted by said Board of Directors on the 6th day of October, 2022.

WITNESS my hand and seal of said Board of Directors the 6th day of October, 2022.

Secretary of the Board of Directors

**BEFORE THE BOARD OF THE
WHITE WOLF GROUNDWATER SUSTAINABILITY AGENCY**

IN THE MATTER OF:

RESOLUTION NO. 2022-08

Authorizing Filing Application for SGMA Implementation Grant

Resolved by the White Wolf Groundwater Sustainability Agency, that an application be made to the Department of Water Resources to obtain a grant under the 2021 Sustainable Groundwater Management (SGM) Grant Program SGMA Implementation Grant pursuant to the California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access For All Act of 2018 (Pub. Resource Code, § 80000 et seq.) and the Budget Acts of 2021 and 2022. Be it further resolved that the White Wolf Groundwater Sustainability Agency has the authority and shall enter into a funding agreement with the Department of Water Resources to receive a grant for the White Wolf Subbasin Groundwater Sustainability Projects and GSP Implementation.

The Secretary of the White Wolf Groundwater Sustainability Agency, or designee, is hereby authorized and directed to prepare the necessary data, conduct investigations, file such application, execute a funding agreement and any future amendments thereto, submit invoices, and submit any reporting requirements with the Department of Water Resources.

Passed and adopted at a meeting of the White Wolf Groundwater Sustainability Agency on the 6th day of October, 2022.

Authorized Original Signature: _____

Printed Name: _____

Title: _____

Clerk/Secretary: _____

All the foregoing being on motion of Director _____ seconded by Director _____, and authorized by the following vote, to wit:

AYES:

NOES:

ABSTAIN:

ABSENT:

CERTIFICATION

I do hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the White Wolf Groundwater Sustainability Agency held on the 6th day of October, 2022.

Clerk/Secretary: _____



White Wolf Groundwater Sustainability Agency

Arvin-Edison Water Storage District
Tejon-Castac Water District
Wheeler Ridge-Maricopa Water Storage District
Kern County

AGENDA MEMORANDUM

Date: 30 September 2022

Item: 11. Options for Demand Reduction Programs

SUMMARY

Recommendation: Establish a committee to support Projects and/or Management Actions (P/MAs) Planning, with committee structure to be determined by the Board

BACKGROUND

The White Wolf Subbasin Groundwater Sustainability Plan (GSP) identifies 24 P/MAs that the Groundwater Sustainability Agency (GSA) or GSA-member districts may initiate to meet the Basin's Sustainability Goal. As presented in recent meetings, the water levels in the Basin are rapidly declining and the GSA Board has elected to initiate policy decisions regarding P/MAs implementation.

As each P/MA has a different proponent, and as new P/MAs can be developed by either the GSA, GSA-member districts, or private landowners, it has become apparent that the basin management efforts would benefit from the formation of a "P/MA committee" that can begin researching, answering questions, and providing recommendations to the Board to guide policy decisions.

DISCUSSION

Successful P/MA implementation will require the GSA, GSA-member districts, and landowners to cooperate and innovate. A P/MA committee could support the Board in reviewing policy and other considerations related to P/MA implementation. Examples considerations include: (1) does the GSA support landowner-developed recharge projects, (2) the what, who, and how for enrolling, tracking, and crediting recharge projects, (3) determining leave behind for recharge projects, (4) how member district P/MAs may be established and enforced in the GSA structure, etc. Example committee structures include:

- **Single committee** that is a mix of GSA Board members, District staff, and volunteer landowners and/or non-profit representatives);
- **Tiered Committee** that includes an Ad-hoc Board Committee (e.g., with one Director from each member District), supported by an ad-hoc Technical Advisory Committee (e.g., District staff and volunteer landowners and/or non-profit representatives); or
- **Another option** as directed by the Board.

Attached: Excerpt *Table PMA-1 Details of Projects and Management Actions* from the White Wolf Subbasin GSP

Table PMA-1. Details of Projects and Management Actions



P/MA Number	P/MA Name	Summary Description	Relevant Sustainability Indicators Affected				Circumstances for Implementation	Public Noticing Process	Permitting and Regulatory Process Requirements	Status	Timetable / Circumstances for Initiation
			Groundwater Levels & Storage	Groundwater Quality	Land Subsidence	Depletions of Interconnected Surface Water					
Projects to Develop or Obtain New and/or Wet Year Supplies											
1	Recharge from Grapevine Development	The Grapevine Development will consist of approximately 4,778 acres at full build out and will include a combination of residential, commercial, industrial, agricultural, grazing, and open space land uses. Nickel Agreement SWP and Kern River water will be imported to supply the potable demand incurred by the Grapevine Development. Treated recycled water will be available for meeting most non-potable landscape irrigation demands.	x				To be implemented upon initiation of Grapevine construction	Public meetings	CEQA (completed); SWRCB Waste Discharge Requirements; coordination with Kern County and the State	CEQA completed	Estimated to initiate around 2026-2027
2	Oilfield Reclaimed Water from the Tejon Oil Field	Tejon Oil Field has a yield of approximately 20,000 barrels per day of produced water, or approximately 940 AFY (1.3 cubic feet per second [cfs]). In cooperation with California Resources Corporation (CRC), TCWD conducted a Phase 1 pilot study in 2015 to assess the feasibility of treating produced water to applicable water quality standards for pumping into the California Aqueduct. The treatment system initially included filtration, activated carbon and reverse osmosis, but mid-way through the pilot test, a walnut shell filter was added as a pretreatment step. The Phase 1 study results indicated that treated produced water was able to meet drinking water standards for the constituents analyzed; however, a few constituents exceeded the background quality of the California Aqueduct (e.g., bromide). A Phase 2 Pilot Treatment Plant Study is recommended to further refine the treatment process to meet all current drinking water standards and agricultural water quality objectives (e.g., for boron).	x	x			Upon completion of Pilot test, approximately by 2024	Public meetings	TBD	Not yet initiated	Upon grant funding & upon completion of Pilot test by 2024
3	Oilfield Reclaimed Water in AEWS	Reclaiming water from oil production facilities for irrigation purposes is currently an untapped water source in AEWS. After treatment and cooling, produced water could be pumped into AEWS facilities to serve irrigation demands in-lieu of groundwater pumping.	x	x			To be implemented upon agreement with partnering oil field	Public meetings	TBD	Not yet initiated	Upon agreement with oil field producers
4	Purchase Additional Surface Water Supplies	Continual pursuit of additional surface water supplies via transfers, exchanges, and/or purchases with out-of-Basin entities. Supplies would generally be available during wet years.	x				Ongoing	Regular District Board meetings		Ongoing	Ongoing
5	WRMWS "Thru Delta" Facility	WRMWS is participating in planning efforts surrounding a "Thru Delta" Facility to increase access to contracted SWP water supplies.	x	x	x		State-led effort underway	Prop 218	CEQA	State-led effort underway	Underway
6	WRMWS Desalination Facility	Desalination facilities to allow for use of additional poor quality groundwater for agricultural use, thereby easing demand on the principal aquifer.	x	x	x		Localized pumping lowering GW levels near MT	Regular District Board meetings	CEQA	Not yet initiated	TBD

Table PMA-1. Details of Projects and Management Actions



P/MA Number	P/MA Name	Timetable for Completion	Timetable for Accrual of Expected Benefits	Expected Benefits						Source(s) of Water, if applicable	Legal Authority Required	Estimated Costs		
				Primary		Secondary						One-time Costs	Ongoing Costs (per year)	Potential Funding Source(s)
				Water Supply Augmentation	Water Demand Reduction	Water Quality Improvement	Flood Control	Water Management Flexibility / Efficiency	Data Gap Filling / Monitoring					
Projects to Develop or Obtain New and/or Wet Year Supplies														
1	Recharge from Grapevine Development	Phased over at least 19 years	Immediately upon project initiation	Approximately 630 AFY of recharge at full build out						SWP and Kern River	None	NA - Costs integrated into development and funded by developer	TBD	TCWD and project developer
2	Oilfield Reclaimed Water from the Tejon Oil Field	TBD	Upon project initiation	Approximately 1,000 AFY		x				Oil field produced and treated water	Consistent with White Wolf GSA authority pursuant to CWC Section 10726.2(b)	TBD	TBD	TRC, grants
3	Oilfield Reclaimed Water in AEWS	TBD	1 year after construction	300 AFY assumed available for White Wolf Subbasin		x				Oil field produced water	Consistent with GSA authority pursuant to CWC Section 10726.2(b)	TBD	TBD	AEWS and partnering oil field
4	Purchase Additional Surface Water Supplies	Ongoing	Immediately	Increase water supplies by up to 5,000 AFY		x				Additional imported water supplies from sources like SWP, CVP, and others	Pursuant to AEWS and WRMSD's authority as a water storage district; Pursuant to TCWD's authority as a water district	NA	TBD: average costs are approximately \$500/AF	AEWS; TCWD; WRMSD
5	WRMSD "Thru Delta" Facility	2035	1 year after completion	Up to 25,000 AFY		x				State Water Project	None	NA; as this project would be bundled through SWP, costs would occur on annual bills	TBD; estimates of CalWaterFix Project were >\$600/AF	WRMSD
6	WRMSD Desalination Facility	Construction duration: 1-3 years	immediately upon completion of construction			x				poor quality (currently unused) groundwater	None	NA	Annual costs approx. \$600/AF	WRMSD; grants

Table PMA-1. Details of Projects and Management Actions



P/MA Number	P/MA Name	Summary Description	Relevant Sustainability Indicators Affected				Circumstances for Implementation	Public Noticing Process	Permitting and Regulatory Process Requirements	Status	Timetable / Circumstances for Initiation
			Groundwater Levels & Storage	Groundwater Quality	Land Subsidence	Depletions of Interconnected Surface Water					
Projects to Recapture Cross-Boundary Flows											
7	Recapture of Basin Groundwater	The GSA is considering either installation of a line of pumping wells along the WWF or increased use of existing private pumping wells along the WWF to recapture the water that would otherwise flow out of the Basin. As part of P/MA planning, the GSA will work to quantify the amount of flow across the WWF that is attributed to imported water. Pumped water would be available for distribution and/or use within existing surface water service areas.	x				Interbasin negotiations with Kern County Subbasin	Infrastructure improvement; no public noticing necessary	CEQA; If new wells installed, well permits from Kern County	Not yet initiated	2025
Projects to Expand In-Lieu Recharge											
8	WRMWS D Mettler Recharge Project	Operation and maintenance of a 60-acre groundwater recharge facility for the artificial recharge of available surface water to groundwater for later use by WRMWS D.	x				Availability of excess water supplies	Regular District Board meetings	CEQA	Ongoing	Ongoing
9	WRMWS D El Paso Creek Recharge Project	The project is an artificial recharge project that uses El Paso Creek, existing and planned pipeline, and planned recharging ponds. The project consists of two phases. Phase 1 will utilize the existing 850D Lateral pipeline to direct water into the El Paso Creek for in-stream recharge with check structures. Phase 2 will involve construction of new recharge pipeline parallel to 850D Lateral and off-stream ponds for recharge. Recharged water can be recovered using existing wells near the recovery pipeline.	x			x	To be implemented upon participant interest, grant funding, and permitting	Regular District Board meetings	CEQA; RWQCB, SWRCB Waste Discharge Requirements	Not yet initiated	
10	AEWSD In-Lieu Banking Program	Suppling surface water to landowners that previously relied only on groundwater (GWSA). New infrastructure would have to be built to facilitate the implementation of this program.	x	x			Grant funding	Infrastructure improvement; no public noticing necessary	CEQA; NEPA if federal grant funds are used; SJVAPCD dust control; PWRPA; possible Kern County encroachment permits	Not yet initiated	Upon grant funding
11	AEWSD Private & Caltrans Basin Connections	Construction of pipelines to connect several on-farm private basins and Caltrans sumps near AEWSD to utilize for groundwater recharge.	x				To be implemented upon participant interest, grant funding, and permitting	Infrastructure improvement; no public noticing necessary	Caltrans encroachment permitting; CEQA if longer pipeline connections are required; NEPA if federal grant funds are used	Not yet initiated	Upon grant funding
Projects to Increase Surface Storage Capacity / Delivery Flexibility											
12	AEWSD South Canal WRMWS D 850 Canal Intertie	Improving existing interties and/or constructing new interties between AEWSD's South Canal and WRMWS D's 850 Canal to facilitate water exchanges between the two districts.	x	x			Completion of feasibility study and design	Infrastructure improvement; no public noticing necessary	CEQA	Not yet initiated	TBD
13	AEWSD South Canal Balancing Reservoir Project	Creation of a reservoir to allow water storage and regulation of flow mismatches in the AEWSD canal system during operation or emergencies. Depending on the location, this reservoir would increase storage capacity by ~500 AF.	x				Grant funding, South County flooding response	Infrastructure improvement; no public noticing necessary	CEQA	Not yet initiated	TBD

Table PMA-1. Details of Projects and Management Actions



P/MA Number	P/MA Name	Timetable for Completion	Timetable for Accrual of Expected Benefits	Expected Benefits						Source(s) of Water, if applicable	Legal Authority Required	Estimated Costs			
				Primary		Secondary						One-time Costs	Ongoing Costs (per year)	Potential Funding Source(s)	
				Water Supply Augmentation	Water Demand Reduction	Water Quality Improvement	Flood Control	Water Management Flexibility / Efficiency	Data Gap Filling / Monitoring						
Projects to Recapture Cross-Boundary Flows															
7	Recapture of Basin Groundwater	TBD	Immediately upon completion	Recapture an average of 8000 AFY						x	Imported surface water that has infiltrated into the Basin	Consistent with White Wolf GSA authority pursuant to CWC Section 10726.2(b)	TBD	TBD	GSA, grants
Projects to Expand In-Lieu Recharge															
8	WRMWS D Mettler Recharge Project	Completed in 2019	First wet year after application	Up to 36,000 AFY of recharge							Unused imported water supplies, high flow Kern River supplies, or treated oil field produced water (P/MA #2)	None			WRMWS D
9	WRMWS D El Paso Creek Recharge Project		Upon project initiation	Dependent on operating days, approximately 32,400 AFY (17,400 AFY from Phase 1 and 15,000 AFY from Phase 2)						x	Recaptured groundwater (P/MA #4)	Consistent with White Wolf GSA authority pursuant to CWC Section 10726.2(b)			
10	AEWS D In-Lieu Banking Program	TBD	1-3 years after completion	Dependent on service area; approximate yield of 1.2 AFY/ac						x	Additional wet-year imported water supplies	None	\$1M - \$10M	\$5k	AEWS D
11	AEWS D Private & Caltrans Basin Connections	Construction duration: within 5 years	1-3 years after construction	50 - 500 AFY of recharge							Additional wet-year imported water supplies; Local stormwater	None	\$100K - \$500K	Not applicable	AEWS D, grants
Projects to Increase Surface Storage Capacity / Delivery Flexibility															
12	AEWS D South Canal WRMWS D 850 Canal Intertie	TBD	1 year after construction	Transfer/exchange potential of up to approximately 24,000 AF						x	Existing sources	None	\$15M	\$40K	AEWS D and WRMWS D
13	AEWS D South Canal Balancing Reservoir Project	TBD	1-3 years after construction	500 AF of increased storage capacity						x	Additional wet-year imported water supplies	None	\$1M - \$10M	~\$5k	AEWS D and partnering agencies

Table PMA-1. Details of Projects and Management Actions



P/MA Number	P/MA Name	Summary Description	Relevant Sustainability Indicators Affected				Circumstances for Implementation	Public Noticing Process	Permitting and Regulatory Process Requirements	Status	Timetable / Circumstances for Initiation
			Groundwater Levels & Storage	Groundwater Quality	Land Subsidence	Depletions of Interconnected Surface Water					
Water Demand Reduction Management Actions											
14	AEWSD Groundwater Subsidies for Land Conversion	The District may adopt a management action to provide subsidies to incentivize groundwater users to convert land to alternative land uses and reduce groundwater extractions. The District may consider a subsidy structure study to determine which subsidies would result in the greatest expected annual benefit in acre-feet per year.	x		x		As needed to meet milestones, if other new supplies are not developed as anticipated	District flyers, direct mail, public meetings	None	Not yet initiated	3-5 years after GSP adoption
15	WRMWSL Land Retirement and/or Conversion	Purchase and permanently fallow previously irrigated acreage to reduce overall water demand and groundwater extractions.	x		x		If other P/MAs are insufficient	Prop 218	CEQA	Not yet initiated	2035
16	AEWSD Groundwater Allocation per Acre	The District may adopt a program which provides a finite groundwater allocation on a per acre basis. The policy would identify and forecast the demands associated with prior rights, domestic, and environmental uses. The sustainable yield and ultimate groundwater allocation would take into consideration the existing water rights holders and applicable beneficial uses and users of groundwater. Once an individual groundwater allocation is determined, the District may adopt a policy which provides a gradual "ramp-down" allocation decrease over time to arrive at the actual groundwater allocation to allow growers time to adjust to the concept of an allocation and, for some growers, a reduction in groundwater use. The policy would detail the number of years and amount of reduction each year. The District may adopt a policy which describes an "adaptive management" approach, whereby the groundwater allocation may be reviewed, changed, and reestablished every 5 years or during extreme drought as necessary to achieve long term sustainability.	x		x		As needed to meet milestones, if other new supplies are not developed as anticipated	District flyers, direct mail, public meetings	GSA adoption of resolution	Not yet initiated	3-5 years after GSP adoption
17	AEWSD Groundwater Fee Increase	The District may adopt a management action to increase GWSA costs to incentivize groundwater users to reduce groundwater extractions and take surface water when available. The District may consider modifying its fee structure study to determine the best strategy for curbing groundwater overdraft without causing inequitable economic impact. The potential fee structures would affect groundwater users differently, so a composite fee structure may also be considered.	x		x		As needed to meet milestones, if other new supplies are not developed as anticipated	District flyers, direct mail, public meetings	GSA adoption of resolution	Not yet initiated	3-5 years after GSP adoption
18	AEWSD Groundwater Market and Trading	Contingent on the groundwater extraction quantification and allocation programs, AEWSD would pursue a groundwater market and trading program to provide uses and beneficial users more flexibility in utilizing a groundwater allocation. The District may adopt a policy to define groundwater trading program, acknowledging that many complexities and considerations required to successfully initiate and manage a trading program may arise. The District may adopt a policy to define a groundwater banking program, which would consider using surface water supplies when available in lieu of groundwater pumping. The District should discuss any other water bank/credit systems in existence. The District may adopt a groundwater trading structure and consider a variety of structures including: (1) Bilateral contracts or "coffee shop" markets; (2) Brokerage; (3) Bulletin boards; (4) Auctions and reverse auctions; (5) Electronic clearing-houses or "smart markets"; and (6) Other trade structures.	x		x		Contingent on P/MAs 16 and 23	District flyers, direct mail, public meetings	GSA adoption of resolution	Not yet initiated	3-5 years after GSP adoption



Table PMA-1. Details of Projects and Management Actions

P/MA Number	P/MA Name	Timetable for Completion	Timetable for Accrual of Expected Benefits	Expected Benefits						Source(s) of Water, if applicable	Legal Authority Required	Estimated Costs		
				Primary		Secondary						One-time Costs	Ongoing Costs (per year)	Potential Funding Source(s)
				Water Supply Augmentation	Water Demand Reduction	Water Quality Improvement	Flood Control	Water Management Flexibility / Efficiency	Data Gap Filling / Monitoring					
Water Demand Reduction Management Actions														
14	AEWSD Groundwater Subsidies for Land Conversion	TBD	1 year after implementation		2.75 AFY/acre of land fallowed or converted to basin, 0.5 - 1.0 AFY/acre of land converted from permanent to annual crop					NA	Consistent with White Wolf GSA authority pursuant to CWC Section 10726.2(b)	\$15K - \$30K, or around \$500 per AF	~\$10k - \$1M	AEWSD; grants
15	WRMWS Land Retirement and/or Conversion	TBD; Depending on landowner interest	1 year after completion		Up to 21,000 AFY					NA	Consistent with White Wolf GSA authority pursuant to CWC Section 10726.2(b)	Approx. \$40K per acre for land purchase (inc. interest); 30 yrs of water savings at 2.75 AFY/ac gives net cost of ~\$500 per AF	\$250/yr per acre for maintenance	WRMWS; grants
16	AEWSD Groundwater Allocation per Acre	TBD	1-3 years after implementation		Quantity TBD				x	mandatory reduction in district-wide groundwater pumping	Consistent with White Wolf GSA authority pursuant to CWC Section 10726.2(b)	\$25K - \$100K	Not applicable	AEWSD
17	AEWSD Groundwater Fee Increase	Remain indefinitely after implementation or until other programs are enacted	1-3 years after implementation		~2.75 AF/ac fallowed (temporary or permanent), ~2.75 AF/ac converted to basin, ~0.5-1.0 AF/ac permanent to annual crop						Consistent with White Wolf GSA authority pursuant to CWC Section 10726.2(b)	\$15K - \$30K	Approx. \$25k	AEWSD
18	AEWSD Groundwater Market and Trading	Remain indefinitely after implementation or until other programs are enacted	1-3 years after implementation						x	NA	Consistent with White Wolf GSA authority pursuant to CWC Section 10726.2(b)	\$25K - \$100K	Approx. \$25k	AEWSD

Table PMA-1. Details of Projects and Management Actions



P/MA Number	P/MA Name	Summary Description	Relevant Sustainability Indicators Affected				Circumstances for Implementation	Public Noticing Process	Permitting and Regulatory Process Requirements	Status	Timetable / Circumstances for Initiation
			Groundwater Levels & Storage	Groundwater Quality	Land Subsidence	Depletions of Interconnected Surface Water					
19	WRMWS D Groundwater Allocation and Market	Develop a groundwater pumping allocation methodology, including a market system for the trading and/or transferring of allocations	x		x		GSP adoption	Regular District Board Meetings	CEQA	Not yet initiated	2022
20	WRMWS D Voluntary Pumping Limitations	Set non-binding pumping limitations in conjunction with a fee for pumping above limits.	x		x		GSP adoption	Prop 218	CEQA	Not yet initiated	2030
21	WRMWS D Mandatory Pumping Limitations	Set binding pumping limitations in conjunction with a fee for pumping above limits.	x		x		If other P/MAs are insufficient	Prop 218	CEQA	Not yet initiated	2035
"Other" P/MAs											
22	Improved Stormwater Management and Flood Control in AEWS D	Potential construction of new sedimentation/detention basins, flood ditch erosion protection, Spillway Basin expansion, lengthening the South Canal's siphon under David Road or extension of the South Canal liner through designated floodplain reaches.	x	x			Grant funding	Infrastructure improvement; no public noticing necessary	CEQA; NEPA if federal grant funds are used; SMARA exemption	Not yet initiated	TBD upon available funding; excessive flooding or further damages may expedite initiation
23	AEWS D Groundwater Extraction Quantification Method	Application of a new policy to specify an approved method to quantify the individual and aggregated groundwater extractions for the required SGMA annual reporting. Some methods to consider (or a combination of them) are the following: (1) Irrigated acreage determined by aerial imagery; (2) Irrigated area hybrid determined by annual crop survey alongside aerial imagery; (3) Calibrated energy records; (4) Volumetric flow measurement; (5) Remote sensing of evapotranspiration; (6) Other.	x		x		GSP adoption	District flyers, direct mail, public meetings	GSA adoption of resolution	Not yet initiated	Shortly after GSP adoption
24	WRMWS D Acreage Assessment	Set policy to implement an acreage assessment to fund purchase of additional supplies, purchase of land for fallowing, and other investments to support SGMA compliance	x		x		GSP adoption	Prop 218	CEQA	Not yet initiated	2022



Table PMA-1. Details of Projects and Management Actions

P/MA Number	P/MA Name	Timetable for Completion	Timetable for Accrual of Expected Benefits	Expected Benefits						Source(s) of Water, if applicable	Legal Authority Required	Estimated Costs		
				Primary		Secondary						One-time Costs	Ongoing Costs (per year)	Potential Funding Source(s)
				Water Supply Augmentation	Water Demand Reduction	Water Quality Improvement	Flood Control	Water Management Flexibility / Efficiency	Data Gap Filling / Monitoring					
19	WRMWS D Groundwater Allocation and Market	Upon modification of water service contracts	1 year after completion							NA	Consistent with White Wolf GSA authority pursuant to CWC Section 10726.2(b)	approx. \$50K	Minimal	WRMWS D; grants
20	WRMWS D Voluntary Pumping Limitations	Upon modification of water service contracts	1-3 years after completion		Up to 21,000 AFY					NA	Consistent with White Wolf GSA authority pursuant to CWC Section 10726.2(b)	approx. \$100K	approx. \$100,000/yr for monitoring costs; this management action would be used to fund other P/MAs	WRMWS D; grants
21	WRMWS D Mandatory Pumping Limitations	2030	1-3 years after completion		Up to 21,000 AFY					NA	Consistent with White Wolf GSA authority pursuant to CWC Section 10726.2(b)	Minimal additional cost beyond Voluntary Pumping Limitations P/MA	Minimal additional cost beyond Voluntary Pumping Limitations P/MA	WRMWS D; grants
"Other" P/MAs														
22	Improved Stormwater Management and Flood Control in AEWSD	Construction duration: approx. 1 year	1-3 years after construction	TBD		x	x			Local stormwater	None	\$1M - \$10M	TBD	AEWSD and partnering agencies
23	AEWSD Groundwater Extraction Quantification Method	Remain indefinitely after implementation or until other programs are enacted	1 year after implementation		x					NA	Consistent with White Wolf GSA authority pursuant to CWC Section 10726.2(b)	\$25K - \$1M	~\$25k	AEWSD
24	WRMWS D Acreage Assessment	Upon modification of water service contracts	1-3 years after completion		x					NA	WRMWS D authority as a Water Storage District	approx. \$50,000	This management action would be used to fund other P/MAs	WRMWS D; grants

Abbreviations:

AEWSD = Arvin-Edison Water Storage District
 AFY = acre-feet per year
 AFY/ac = acre-feet per year per acre
 CEQA = California Environmental Quality Act
 CVP = Central Valley Project
 CWC = California Water Code
 GSA = Groundwater Sustainability Agency
 GSP = Groundwater Sustainability Plan

GWSA = Groundwater Only Service Area
 NA = Not Applicable
 NEPA = National Environmental Protection Act
 P/MA = Project/Management Action
 PWRPA = Power and Water Resources Pooling Authority
 SGMA = Sustainable Groundwater Management Act
 SMARA = Surface Mining and Reclamation Act
 SJVAPCD = San Joaquin Valley Air Pollution Control District

SWP = State Water Project
 SWRCB = State Water Resources Control Board
 TBD = to be determined
 TCWD = Tejon-Castac Water District
 WRMWS D = Wheeler Ridge-Maricopa Water Storage District
 WWF = White Wolf Fault

Notes:

(a) Summary table developed based off information provided by AEWSD, WRMWS D, and TCWD.