NORTH KERN WATER STORAGE DISTRICT
GROUNDWATER SUSTAINABLITY AGENCY

OUTREACH AND ENGAGEMENT MEETING – OCTOBER 31, 2024

33380 Cawelo Avenue, Bakersfield, CA 93308 (661) 393-2696 www.northkernwsd.com

Directors
Kevin Andrew – President
Joel Ackerknecht – Vice President
Robert Holtermann – Secretary-Treasurer
Winn Glende
Kristen Camarena

Management Staff
David Hampton – General Manager
Ram Venkatesan – Deputy General Manager
Marinelle Duarosan – Controller/Office Manager
Heather Williams – O & M Superintendent

NORTH KERN WATER STORAGE DISTRICT GSA

OUTREACH AND ENGAGEMENT MEETING – OCTOBER 31, 2024

Today's Topics

1) State Water Resources Control Board Probationary Hearing

2) Kern Subbasin 2024 GSP Outreach and Updates

3) North Kern Water Storage District GSA Specific Updates

4) Remaining Schedule Through Scheduled Hearing, Feb 20, 2025

NORTH KERN WATER STORAGE DISTRICT GSA

OUTREACH AND ENGAGEMENT MEETING – OCTOBER 31, 2024

SGMA & GSP Background

- State Legislature passed Sustainable Groundwater Management Act in 2014
- Groundwater Sustainability Agencies were required to be formed in 2017
- January 28, 2022 – DWR issued Incomplete Determination of the 2020 GSPs submitted for the Kern County Subbasin (5 plans)
- March 2, 2023 – DWR reviewed revised 2020 GSPs (referred to as the 2022 GSPs) and issued an Inadequate Determination (6 plans), triggering shift to State Water Resources Control Board jurisdiction
- Based on proposed probation hearing schedules, the Kern Subbasin pulled together and developed a highly coordinated GSP for the Subbasin, with 6 additional “blue” page GSPs (same as Subbasin plan but with GSA specific supplemental info) submitted May 28, 2024

NORTH KERN WATER STORAGE DISTRICT GSA

OUTREACH AND ENGAGEMENT MEETING – OCTOBER 31, 2024

SGMA & GSP Background

- July 25, 2024 – SWRCB Staff released their Kern County Subbasin Probation Hearing Draft Staff Report and Notice for Hearing scheduled February 20, 2025
  - Report was primarily based on the 2022 GSPs
  - Noted they did a preliminary “red flag” review of the 2024 GSPs
  - Stated they believe significant deficiencies of the 2022 GSPs remain relevant
- Kern Subbasin provided notice that essentially a new GSP was going be submitted for their review and requested they focus on the new 2024 GSPs
- Responsive comment letters have been submitted to the SWRCB pointing out sections of the new 2024 plans that address their concerns
- Subbasin Technical Working Group (TWG), GSA managers, and coordination committee have been working and meeting with Staff to address concerns, will continue into December

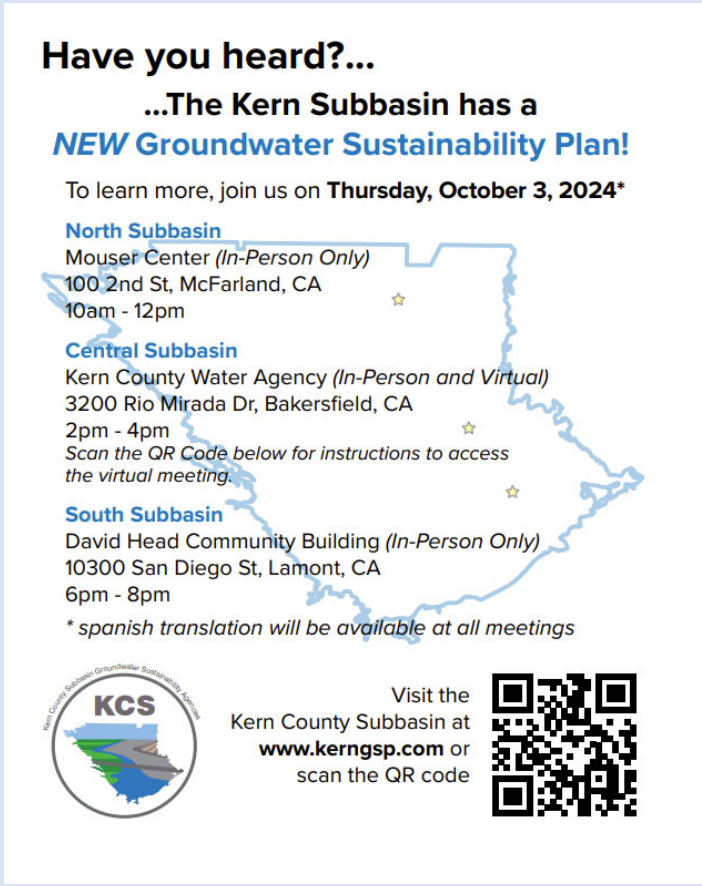
NORTH KERN WATER STORAGE DISTRICT GSA

OUTREACH AND ENGAGEMENT MEETING – OCTOBER 31, 2024

The Kern Subbasin 2024 GSPs, Outreach, & Updates

- The SWRCB provided 2 workshops to explain their draft Staff Report – August 26, 2024 (virtual) and August 29, 2024 (in-person)
- SWRCB Members toured the Kern Subbasin on August 28, September 26, and September 27
- The Kern Subbasin provided 3 public outreach workshops on October 3, 2024
- The presentation, 2024 GSPs, and other related materials are available at:

www.kerngsp.com



NORTH KERN WATER STORAGE DISTRICT GSA

OUTREACH AND ENGAGEMENT MEETING – OCTOBER 31, 2024

The Kern Subbasin 2024 GSPs, Outreach, & Updates

- 2024 GSP Highlights
  - Coordinated development by experts and principals from 7 of the top groundwater consulting firms in the State
  - Significantly improved coordination across the Subbasin, which is the largest in the State
  - Consistent data and technically sound methodologies across the Subbasin
  - Revised Sustainable Management Criteria, including undesirable results, to be more protective
  - Coordinated Projects and Management Actions to achieve the Sustainability Goal
  - Funding an operational well mitigation program

NORTH KERN WATER STORAGE DISTRICT GSA

OUTREACH AND ENGAGEMENT MEETING – OCTOBER 31, 2024

The Kern Subbasin 2024 GSPs, Outreach, & Updates

- The 2024 GSPs addressed DWR's noted deficiencies
  - #1- "The GSPs do not establish undesirable results that are consistent for the entire Subbasin."
  - #2- "The Subbasin's chronic lowering of groundwater levels sustainable management criteria do not satisfy the requirements of SGMA and the GSP regulations."
  - #3- "The Subbasin's land subsidence sustainable management criteria do not satisfy the requirements of SGMA."

Response to DWR Deficiency #1

"The GSPs do not establish undesirable results that are consistent for the entire Subbasin."

- ✓ **Consistent definitions and criteria for undesirable results for each applicable Sustainability Indicator.**
- ✓ **Comprehensive well inventory.**
- ✓ **Critical infrastructure definition and mapping.**
- ✓ **GSAs are notified when there is a reported MT exceedance.**

Response to DWR Deficiency #2

"The Subbasin's chronic lowering of groundwater levels sustainable management criteria do not satisfy the requirements of SGMA and the GSP regulations."

- ✓**Consistent methodology to establish groundwater level sustainable management criteria.**
- ✓**Well impacts analysis and "depletion of supply" calculation to estimate potential impacts to drinking water users.**
- ✓**Two key policies established:**
  - ✓**Subbasin-wide MT Exceedance Policy**
  - ✓**Subbasin-wide Well Mitigation Program**

Subbasin MT exceedance policy

- Triggers immediate GSA action in the event of a single MT exceedance

Step 1: Identification of Initial Exceedance and Investigation of Area

- Investigate area to determine if exceedance is isolated or systemic to a larger area
- Assess cause of exceedance (e.g., drought, activities within or outside of GSA authorities, operations in adjacent GSAs or basins)
- Provide copy of exceedance report to Subbasin GSAs

Step 2: Confer with Subbasin GSAs

- GSAs will consider implementing projects, management actions, or other response actions to prevent continued exceedance

Subbasin Well Mitigation program

- Dewatered drinking water and small community wells will be addressed through a contract with **Self-Help Enterprises (SHE)**
- Water Quality will be addressed in partnership with **Kern Water Collaborative**
- Mitigation Programs currently under development, expected to be in-place by January 2025

Response to DWR Deficiency #3

"The Subbasin's land subsidence sustainable management criteria do not satisfy the requirements of SGMA."

- ✓ **Consistent methodology to establish land subsidence sustainable management criteria both along Critical Infrastructure and across the Subbasin.**
- ✓ **Updated data and methodologies to differentiate between various causes of subsidence.**
- ✓ **Change in slope analysis to estimate subsidence impacts on critical infrastructure.**
- ✓ **Coordinated with key beneficial users of Regional Critical Infrastructure:**
  - ✓ **Friant Water Authority for the Friant-Kern Canal**
  - ✓ **California Aqueduct Subsidence Program (CASP) for the California Aqueduct**

Other plan updates

- ✓Identified six key water quality constituents
- ✓Consistent methodology to establish water quality sustainable management criteria
- ✓Assessed potential interconnected surface waters and groundwater dependent ecosystems
- ✓Subbasin-wide representative monitoring networks for groundwater levels, groundwater quality, and land subsidence
- ✓Subbasin projects and management actions focused on mitigation, coordination with regulatory programs, data gap filling, and white lands demand management
- ✓Benefits anticipated from GSA-specific projects and management actions will overcome groundwater storage deficit and result in sustainable conditions by 2040

NORTH KERN WATER STORAGE DISTRICT GSA

OUTREACH AND ENGAGEMENT MEETING – OCTOBER 31, 2024

The Kern Subbasin 2024 GSPs, Outreach, & Updates

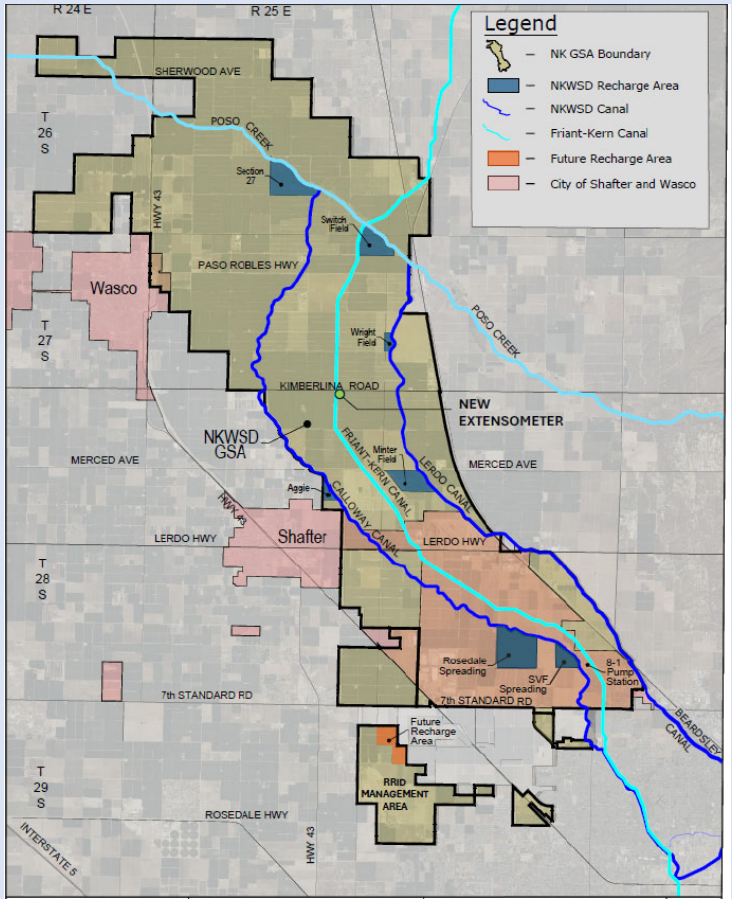
- Continuing to further update the GSP to address SWRCB Staff on-going concerns
  - Include the required Stakeholder Communication and Engagement Plan
  - Incorporate well mitigation plan when completed
  - Update the water budget section with more GSA specific information
  - Including additional information on groundwater banking programs
- Continue to work with Staff to better understand their concerns and to help them understand our key plan elements
  - Monitoring Network and Water Level SMCs, Subsidence, Well Mitigation, Banking, Interconnected Surface Water, Water Quality SMCs

NORTH KERN WATER STORAGE DISTRICT GSA

OUTREACH AND ENGAGEMENT MEETING – OCTOBER 31, 2024

NORTH KERN WATER STORAGE DISTRICT GSA

- Water District established in 1935
- GSA area is about 65,000 acres
  - 56,000 irrigated acres (170,000 AF/Y demand)
  - 2,100 urban acres (2,000 AF/Y demand)
- Currently over 1,800 acres of recharge basins (Additional 300 acres in development)
- In 2023 direct recharge of 220,000 AF in the NKWSD GSA
  - Supports conjunctive use program
  - Supports 3rd-party banking
  - Supports groundwater levels in the region, Shafter and Wasco
- Surface Water Supplies – Kern River, high flow CVP and SWP



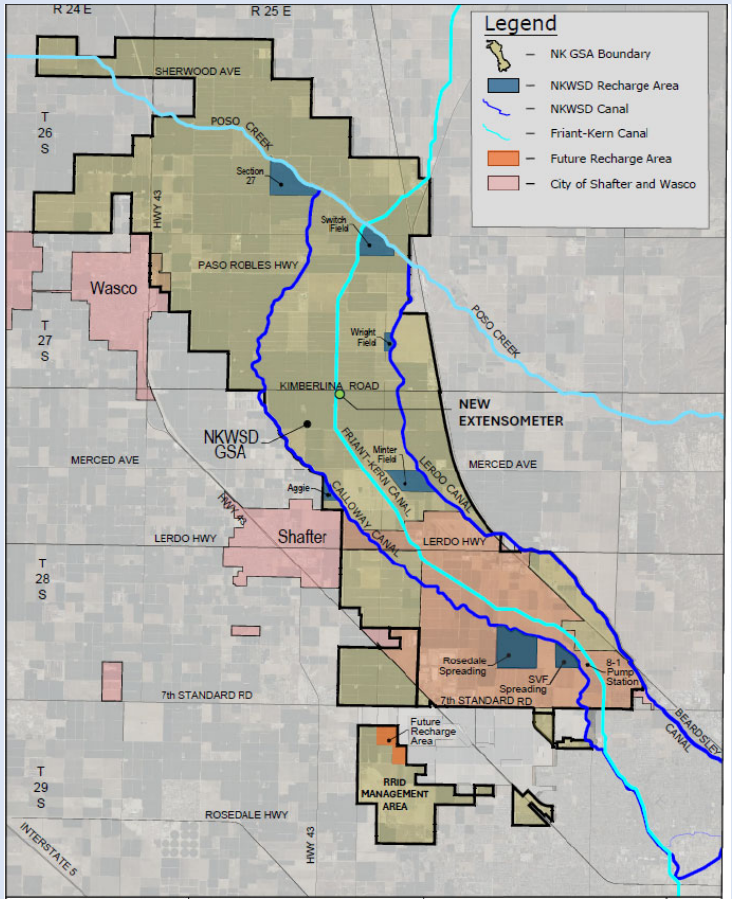
NORTH KERN WATER STORAGE DISTRICT GSA

OUTREACH AND ENGAGEMENT MEETING – OCTOBER 31, 2024

NORTH KERN WATER STORAGE DISTRICT GSA

- 1952 – Acquired Pre-1914 Appropriative Kern River Rights that historically served lands in the District since the late 1800s
- Total annual surface supplies average over 200,000 AF/Y
- All Kern water agencies work well together – share facilities, helping each other to manage water efficiently
- 21 GSA specific PMAs
- Participating in 8 coordinated Kern Subbasin PMAs
- 6 PMAs are implemented or have been initiated
- Conversion of agriculture to urban is key demand reduction component (to reduce over 9,000 AF/Y)

- Subbasin wide coordination with the 22 Kern GSAs submitting 2024 GSPs that address DWR's deficiencies



NORTH KERN WATER STORAGE DISTRICT GSA

OUTREACH AND ENGAGEMENT MEETING – OCTOBER 31, 2024

NORTH KERN WATER STORAGE DISTRICT GSA

DRAFT WATER SUPPLY BUDGET

- Water supply and demand information from subbasin groundwater modeling
- Historical Period 1995 thru 2014 = ave. surplus of 49,385 AF/year
- Historical Period 2015 thru 2023 – ave. surplus of 19,840 AF/year
- Kern Subbasin in overdraft by about 370,000 AF/year
- Owe banked water to others

River Natural Flow, First Point of Measurement, Water Year % of Current	San Joaquin Valley Water Year Hydrologic Classification Index	WY	Developed Lands, Acres[1]					Ag Demand for Irrigated Lands (AF)			Urban Demand (AF)
			Irrigated Lands	Urban Lands	Recharge Basins	Fallow Lands	Total for Developed Lands (Irrigated + Urban+ Recharge+ Fallow)[2]	Crop Evapotranspiration (ETc)	Effective Precipitation (ETpr)	Applied Water Demand (ETaw)	Municipal Water Supply[4]
190%	W	1995	60,768	1,526	1,607	640	64,542	183,584	39,603	143,981	1,523
136%	W	1996	61,046	1,526	1,607	569	64,749	187,273	20,297	166,976	1,605
175%	W	1997	57,755	1,643	1,607	3,587	64,592	161,225	23,675	137,550	1,688
237%	W	1998	54,591	1,596	1,607	6,724	64,518	162,645	48,598	114,047	1,770
70%	AN	1999	58,247	1,610	1,607	3,066	64,531	144,914	23,223	121,690	1,852
67%	AN	2000	57,315	2,222	1,607	3,646	64,790	158,795	18,746	140,049	1,935
53%	D	2001	56,387	2,291	1,607	4,454	64,740	171,827	21,382	150,445	1,949
51%	D	2002	56,778	2,428	1,607	3,934	64,747	169,125	13,987	155,138	1,963
83%	BN	2003	54,706	2,560	1,607	5,700	64,574	156,374	16,931	139,443	1,978
57%	D	2004	54,731	2,721	1,607	5,783	64,842	173,530	14,549	158,982	1,992
157%	W	2005	53,356	2,800	1,607	6,674	64,437	154,137	32,002	122,135	2,006
153%	W	2006	56,278	2,767	1,607	3,762	64,415	159,021	29,535	129,486	2,001
39%	C	2007	56,770	2,783	1,607	3,342	64,502	159,448	12,852	146,596	1,995
71%	C	2008	56,451	2,781	1,607	3,465	64,305	160,912	11,416	149,496	1,990
64%	BN	2009	56,269	2,813	1,607	3,804	64,493	158,965	13,060	145,905	1,985
113%	AN	2010	54,963	2,791	1,607	5,019	64,380	172,661	26,549	146,113	1,980
203%	W	2011	54,692	2,797	1,607	5,162	64,257	174,178	37,058	137,120	1,975
53%	D	2012	56,084	2,797	1,607	3,977	64,464	202,793	21,578	181,216	1,969
30%	C	2013	57,134	3,007	1,607	3,051	64,799	175,220	13,857	161,363	1,964
25%	C	2014	55,688	3,010	1,607	4,485	64,790	172,477	9,885	162,592	1,958
18%	C	2015	55,150	3,066	1,607	5,103	64,926	158,420	15,289	143,131	1,952
51%	D	2016	51,439	3,218	1,607	8,534	64,799	163,861	24,177	139,684	1,947
275%	W	2017	52,539	3,134	1,607	7,544	64,824	196,672	31,140	165,533	1,941
60%	BN	2018	47,683	3,242	1,607	12,278	64,810	165,798	13,811	151,987	1,936
177%	W	2019	49,965	3,308	1,607	9,912	64,793	165,502	29,129	136,373	2,029
55%	D	2020	48,815	3,729	1,786	10,485	64,814	141,335	25,081	116,254	1,917
22%	C	2021	49,537	3,934	1,786	9,534	64,791	166,039	12,671	153,368	2,095
29%	C	2022	51,749	4,045	1,786	7,211	64,791	168,590	16,687	151,902	1,949
320%	W	2023	50,502	4,047	1,786	8,476	64,811	177,426	41,515	135,911	0
Average (1995-2014)			56,500	2,423	1,607	4,042	64,573	167,955	22,439	145,516	1,904
Average (2015-2023)			50,820	3,525	1,687	8,786	64,818	167,071	23,278	143,794	1,752

River Natural Flow, First Point of Measurement, Water Year % of Current	San Joaquin Valley Water Year Hydrologic Classification Index	WY	Total Surface Water Supply	Effective Precipitation (ETpr)	Native Yield for Total Developed Area[1]	Total Demand[2]	Historical Net GW Deficit (Demand - Supply)[3]
190%	W	1995	323,944	39,603	15,616	185,106	-194,056
136%	W	1996	300,091	20,297	15,666	188,878	-147,176
175%	W	1997	290,174	23,675	15,628	162,913	-166,564
237%	W	1998	364,651	48,598	15,610	164,415	-264,444
70%	AN	1999	225,142	23,223	15,613	146,766	-117,212
67%	AN	2000	139,633	18,746	15,676	160,730	-13,325
53%	D	2001	77,980	21,382	15,664	173,776	58,751
51%	D	2002	62,829	13,987	15,665	171,088	78,607
83%	BN	2003	109,735	16,931	15,623	158,351	16,062
57%	D	2004	104,139	14,549	15,688	175,522	41,146
157%	W	2005	277,287	32,002	15,590	156,143	-168,737
153%	W	2006	334,508	29,535	15,585	161,021	-218,606
39%	C	2007	158,565	12,852	15,606	161,444	-25,579
71%	C	2008	76,211	11,416	15,558	162,902	59,717
64%	BN	2009	73,712	13,060	15,604	160,950	58,574
113%	AN	2010	197,725	26,549	15,577	174,642	-65,208
203%	W	2011	348,264	37,058	15,547	176,152	-224,716
53%	D	2012	130,922	21,578	15,597	204,762	36,666
30%	C	2013	24,725	13,857	15,678	177,183	122,924
25%	C	2014	3,396	9,885	15,676	174,435	145,478
18%	C	2015	8,813	15,289	15,709	160,372	120,562
51%	D	2016	59,445	24,177	15,678	165,808	66,508
275%	W	2017	369,785	31,140	15,684	198,614	-217,995
60%	BN	2018	142,288	13,811	15,680	167,734	-4,046
177%	W	2019	308,772	29,129	15,676	167,531	-186,046
55%	D	2020	84,168	25,081	15,681	143,252	18,322
22%	C	2021	13,519	12,671	15,676	168,134	126,268
29%	C	2022	30,762	16,687	15,676	170,539	107,414
320%	W	2023	329,774	41,515	15,681	177,426	-209,544
Average (1995-2014)			171,412	22,699	15,642	169,538	-49,385
Average (2015-2023)			132,506	21,301	15,656	173,012	-19,840

NORTH KERN WATER STORAGE DISTRICT GSA

OUTREACH AND ENGAGEMENT MEETING – OCTOBER 31, 2024

NORTH KERN WATER STORAGE DISTRICT GSA

- North Kern has a history of sustainable groundwater management and a positive water budget
- North Kern is continuously implementing programs and projects to improve water resources and management – Committed to Projects & Management Actions (PMAs) to improve water supplies and reduce demand even though there is a positive water budget balance
- Subsidence along the Friant-Kern Canal is an issue and North Kern is committed to working with the Friant Contractors and other Kern Subbasin agencies to mitigate for future subsidence and participate in the Subsidence Attribution Study to determine which agency and their groundwater management activities are contributing to the subsidence
- North Kern is committed to participating in the Kern Subbasin wide well mitigation program – worst case scenario projects 2 drinking water wells in NK would have to be mitigated if groundwater levels reach MT's, also committed to participating in attribution study to determine what agency and their groundwater activities are impacting wells
- Committed to supporting local DACs Shafter and Wasco and continued coordination with the Subbasin

NORTH KERN WATER STORAGE DISTRICT GSA

OUTREACH AND ENGAGEMENT MEETING – OCTOBER 31, 2024

Remaining Schedule

- Continue to work and meet with SWRCB Staff to discuss GSP issues
  - Series of meetings scheduled with Staff
  - TWG, Managers and Coordination Committee Members meet at least weekly for GSP development
- Late November, early to mid December – GSAs formally adopt GSPs
- December 20, 2024 – Submit final adopted GSPs to SWRCB (no later than 20th)
- January 30, 2025 – Estimated Final SWRCB Staff Report
  - Prepare to address issues cited in Final Staff Report at Hearing
- February 20, 2025 – SWRCB Probationary Hearing for Kern Subbasin

Questions?