Assembly Water, Parks, and Wildlife Committee
and
Assembly Local Government Committee
Assemblymembers Bauer-Kahan and Aguiar-Curry, Chairs

AGENDA

9:00 AM, February 15, 2022
State Capitol, Room 4202

JOINT INFORMATIONAL HEARING

What's up down below? An update on Sustainable Groundwater Management Act (SGMA) implementation

I. Opening Remarks

Assemblymember Rebecca Bauer-Kahan, Chair, Assembly Water, Parks, and Wildlife Committee

Assemblymember Cecilia Aguiar-Curry, Chair, Assembly Local Government Committee

II. Sustainable Groundwater Management Act (SGMA) 101

Fran Pavley, former State Senator

Roger Dickinson, former Assemblymember

III. SGMA implementation status/the good and bad in groundwater sustainability plans (GSP)

Paul Gosselin, Deputy Director, Sustainable Groundwater Management Program, Department of Water Resources

James Nachbaur, Director, Office of Research, Planning and Performance, State Water Resources Control Board

Natalie Stork, Senior Engineering Geologist, Office of Research, Planning and Performance, State Water Resources Control Board

Ellen Hanak, Public Policy Institute of California

IV. SGMA on-the-ground: Local agency perspective on governance and implementation

Sierra Ryan, Water Resources Manager, Santa Cruz County

Valerie Kincaid, Partner, Parris, Kincaid and Wasiewski LLP, representing Kern Groundwater Authority

David Morrison, Director of Planning, Building, and Environmental Services, Napa County

V. Public Comment

COMMITTEES ON WATER, PARKS, AND WILDLIFE
AND
LOCAL GOVERNMENT

BAUER-KAHAN, AGUIAR-CURRY, Chairs

JOINT INFORMATIONAL HEARING

Tuesday, February 15, 2022
9:00 am – State Capitol, Room 4202

What's up down below? An update on Sustainable Groundwater Management Act (SGMA) implementation

What is groundwater?

Groundwater is water found beneath the land surface in pores and fractures in materials such as rock, gravel, or sand. Underground areas where groundwater flows naturally out of rock materials or where groundwater can be removed by pumping are referred to as aquifers.

According to the Department of Water Resources (DWR), groundwater provides nearly 40% of California's water supply in an average year and 60% in drought years. For much of California's history, there was no statewide mandate for the management of groundwater. This led to significant over-pumping (or "overdraft") of groundwater in many regions of the state that resulted in land subsidence that compromised infrastructure, dewatered rivers and streams, led to seawater intrusion in coastal areas, and dried out domestic and agricultural groundwater wells, among other adverse impacts.

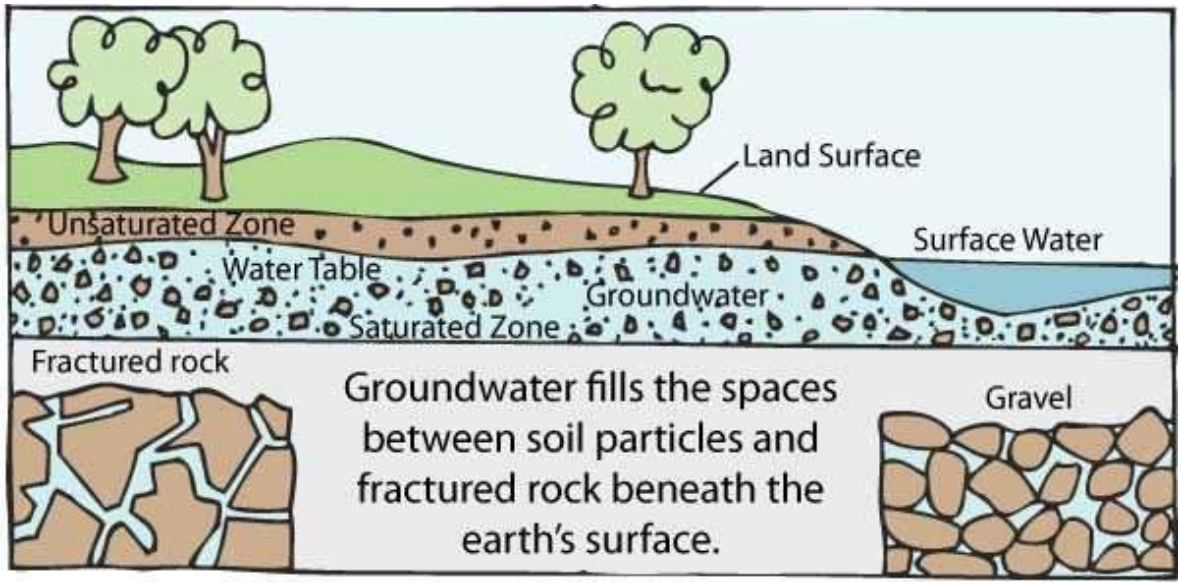


Figure 1. Groundwater illustration. Source: Groundwater Foundation, accessed at groundwater.org on February 7, 2022.

The Sustainable Groundwater Management Act (SGMA)

In the midst of the 2012-16 drought, California's most severe on record, the Legislature passed SGMA to reverse the adverse impacts caused by groundwater overdraft and to protect this important resource for future use by California's economy, communities, and ecosystems. An over-arching principle of SGMA is local control; the stated legislative intent is "to manage groundwater basins through the actions of local government agencies to the greatest extent feasible, while minimizing state intervention to only when necessary to ensure that local agencies manage groundwater in a sustainable manner" [Water Code, Section 10720.1(i)]. Thus, SGMA requires local agencies in groundwater basins designated as medium- or high-priority by the Department of Water Resources (DWR) to form a groundwater sustainability agency (GSA) and develop a groundwater sustainability plan (GSP) to achieve sustainable groundwater management within a 20-year time frame (see attached "Statewide Map of Current SGMA Basin Prioritization"). SGMA permits multiple GSAs and GSPs in a basin so long as the GSAs enter into a "coordination agreement" so that GSPs are consistent and the basin is jointly managed.

GSAs achieve "sustainable management" by avoiding any of six "undesirable results:" 1) chronic lowering of groundwater levels; 2) reduction of groundwater storage; 3) seawater intrusion; 4) degraded water quality; 5) land subsidence; and 6) depletions of interconnected surface waters. "Undesirable results" must also be "significant and unreasonable" in order to violate the standard of sustainable management.

"Medium" and "high" priority basins must comply with SGMA's requirements to form a GSA and develop a GSP. The twenty-one groundwater basins designated as being in a condition of critical overdraft were required to develop GSPs and submit them to DWR for review by January 31, 2020. The remaining medium- and high-priority groundwater basins had until January 31, 2022 to submit GSPs to DWR for review. Basins that were already actively managing their groundwater resources at the time of SGMA's passage were permitted to submit an "alternative" plan to DWR for review to ensure the plan met the objectives of SGMA. Basins desiring to submit an alternative had to do so by January 1, 2017. Ten basins submitted alternatives and nine have been approved. Twenty-nine basins that were already "adjudicated" or in the process of being "adjudicated" are not required to form a GSA or develop a GSP. ("Adjudicated" basins are those where a court has issued a decree to determine the rights of water users and designated a water manager for the basin to resolve legal disputes over water rights.)

DWR reviews the GSPs and determines whether a GSP is "approved," "incomplete," or "inadequate." Approved basins may implement their plans, subject to periodic state review; "incomplete" basins have six months to correct deficiencies identified by DWR; and "inadequate" basins are referred to the State Water Resources Control Board for possible designation as a "probationary" basin subject to state management (or "state intervention").

Groundwater basins and prioritization

Out of the 515 groundwater basins identified by DWR in Bulletin 118, 94 basins must comply with SGMA. DWR's categorization of each basin as "high," "medium," "low," or "very low" priority is based

on specified criteria including population, rate of population growth, and number of wells (see Water Code Section 10933). SGMA also required DWR to identify critically overdrafted basins. This evaluation was completed in 2016 and determined that 21 basins are also critically overdrafted (see attached "California's Critically Overdrafted Groundwater Basins" map).

DWR's most current basin prioritization was completed in September 2019 resulting in the following (see attached "Statewide Map of Current SGMA Basin Prioritization"):

- 46 basins as high priority (20 of these are also critically overdrafted basins)
- 48 basins as medium priority
- 11 basins as low priority
- 410 basins as very low priority (1 of these is also a critically overdrafted basin)

Current status of SGMA implementation

The GSP submittal deadline for critically overdrafted basins was January 31, 2020, and DWR issued applicable determinations before January 31, 2022. For high- and medium-priority basins, the GSP submittal deadline for these basins was January 31, 2022. DWR has up to two years to review these GSPs and issue a determination.

Table 1 – Current SGMA implementation status by basin prioritization

Basin categorization	***Total # basins***	***Basins w/ approved GSPs***	***Basins w/ incomplete GSPs***	***Basins w/ GSPs under review***	***Adjudicated or pending adjudication***	***Alternative submittal approved***
Critically overdrafted*	21	5	12	1**	2	1
High and Medium	74	3	0	59	1	8
Low	11	n/a	n/a	1	n/a	n/a
Very low	409	n/a	n/a	4	n/a	n/a

*See Table 2, Critically Overdrafted Basins – Summary of Groundwater Sustainability Plan Status, for more detail.
** Madera subbasin is still "review in progress" because the seven GSAs in the subbasin did not initially enter a coordination agreement; this was done in October 2020 and DWR will issue a determination by October 2022.

Challenges/Issues

DWR has identified a number of deficiencies in the GSPs submitted for critically overdrafted basins and has determined that a dozen of them are "incomplete" and must be corrected. Some of the common deficiencies common are discussed below.

Governance: Basins with multiple GSPs and/or GSAs must coordinate management pursuant to a coordination agreement that covers the entire basin and ensures that GSAs, at a minimum, use the same data and methodology, have a coordinated water budget, define a sustainable yield for the basin, and have consistent definitions of undesirable results in the basin. DWR has found that many basins

with multiple GSAs and GSPs are not meeting these requirements. One example is the San Joaquin Valley – Delta-Mendota Subbasin, where six separate GSPs were prepared by 23 GSAs pursuant to the required coordination agreement. DWR, in its GSP Assessment Staff Report for the Subbasin wrote:

> The Plan makes general statements that the collection and presentation of data are coordinated throughout the Subbasin, but the Plan lacks detail and confirmation that the six GSPs not only consider the other GSPs within and adjacent to the Subbasin but have addressed the regulatory aspects of SGMA in a manner that substantially complies with the GSP Regulations. A statement that the GSPs are coordinated without accompanying explanation is not sufficient coordination. Department staff find that the Plan for the Subbasin does not utilize same data and methodologies to support the various water budget, change in storage, and sustainable yield approaches; therefore, it is unclear how the GSAs will reach, let alone track, sustainability throughout the Subbasin in a coordinated manner.

Domestic Wells: In California, groundwater is a primary source of drinking water. The problem of groundwater basin overdraft, which can cause shallow wells to run dry, is particularly acute during droughts as surface water supplies are limited. This especially affects domestic wells and small community wells, which tend to be shallower than those used for irrigation or large urban water systems. During the 2012–16 drought, 2,600 well-dependent households reported water shortages across the state; almost 80 percent of these were in the San Joaquin Valley. Some GSPs set water level thresholds to protect domestic wells from going dry, some other plans acknowledge that their thresholds might cause some wells to go dry, and they already have a mitigation program in place or propose considering mitigation in the future, and plans in other basins either do not discuss the potential impacts their thresholds have on domestic wells or do not consider these impacts to merit action.

Land subsidence: Overdrafting groundwater can cause the ground to sink thereby adversely impacting surface land uses such as infrastructure and buildings. In its review of several GSPs, DWR notes that many GSPs' approach to monitoring and avoiding land subsidence is inadequate. Issues related to land subsidence noted by DWR include: use of disparate information to set thresholds for land subsidence, insufficient information to support a threshold for monitoring land subsidence, and/or insufficient information to determine effects of land subsidence.

Water quality: As groundwater is pumped out of aquifers, any contaminants that remain can become more concentrated. This may result in the degradation of the quality of groundwater quality so that it no longer meets water quality standards. For many (incomplete) basins, DWR finds that the GSPs do not adequately examine existing water quality, do not adequately explain why specified thresholds were chosen, and/or do not provide sufficient evidence to justify approaches identified to avoid degradation of groundwater quality.

Depletions of interconnected surface waters: In many cases, groundwater pumping can have impacts on rivers and streams on the land surface. This is because oftentimes, surface and groundwater are hydrologically connected (pre-settlement, this was the case for virtually all streams and rivers in California). Because of the potential impact groundwater pumping can have on surface water rights or fish and wildlife, this is an important undesirable result under SGMA. In its review of the GSPs for several critically overdrafted basins, DWR finds that GSPs do not set criteria to monitor and avoid depletions of interconnected surface waters or stipulate that it is not an issue in the basin with little to no evidence to support such an assertion.

What is next in SGMA implementation?

Basins with adequate GSPs will continue implementing their GSPs. Basins that are "incomplete" have six months to correct deficiencies identified by DWR (generally, until late July 2022) and must resubmit a corrected GSP to DWR for further review. Once DWR completes its review of resubmitted GSPs (SGMA does not specify a time frame for this additional review, though DWR informs the committee this will likely be complete by Fall 2022), DWR will issue a final determination. "Adequate" basins will be able to move forward with implementation; "inadequate" basins will be referred to the State Water Resources Control Board for potential designation as a "probationary" basin that could involve the State Water Board taking over management of the basin on an interim basis.

DWR has begun review of the recently submitted GSPs for the remaining "high" and "medium" basins; this review must be completed by January 31, 2024.

Table 2 – Critically Overdrafted Basins – Summary of Groundwater Sustainability Plan Status

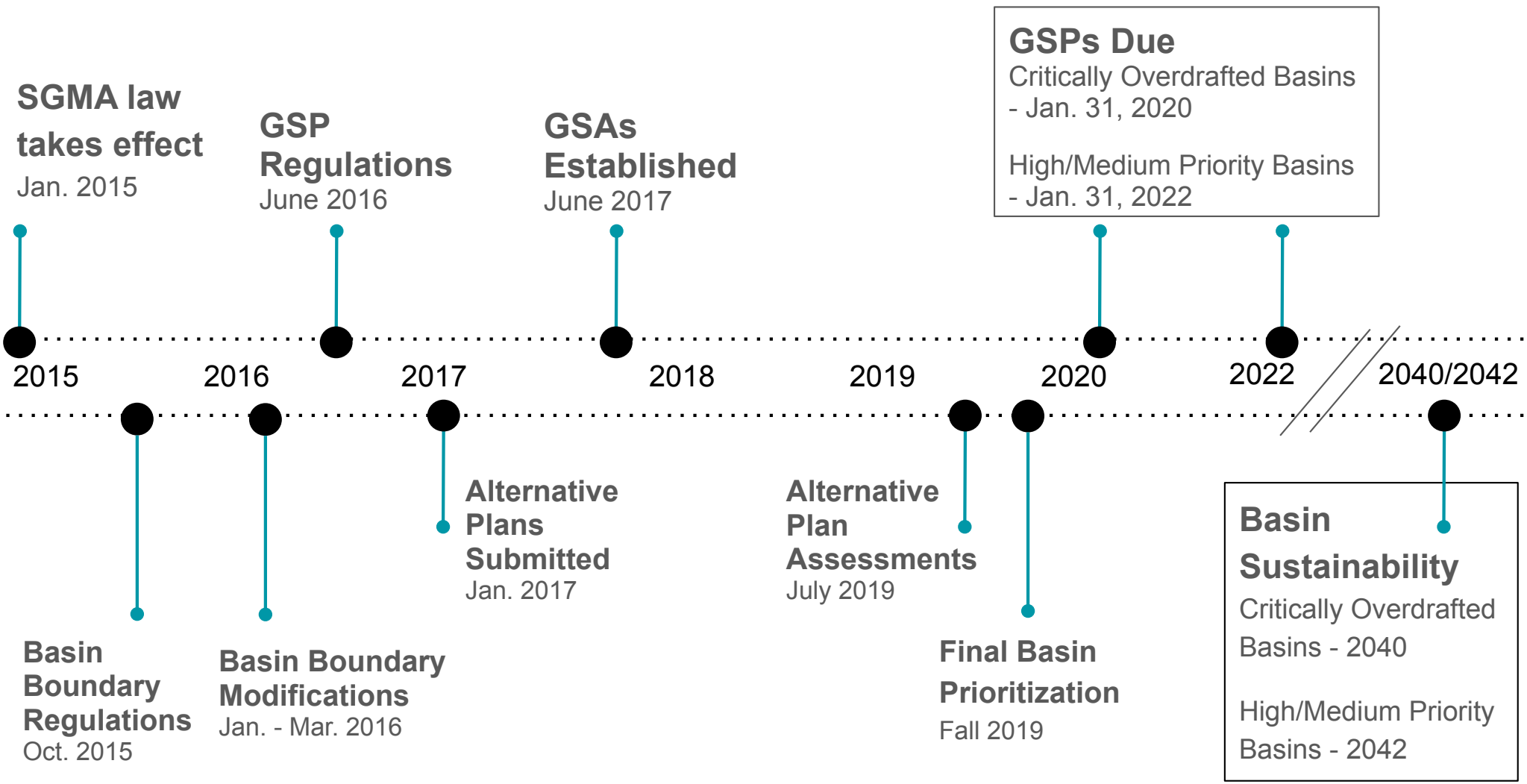
Plans for these basins were due to the Department of Water Resources (DWR) by January 31, 2020

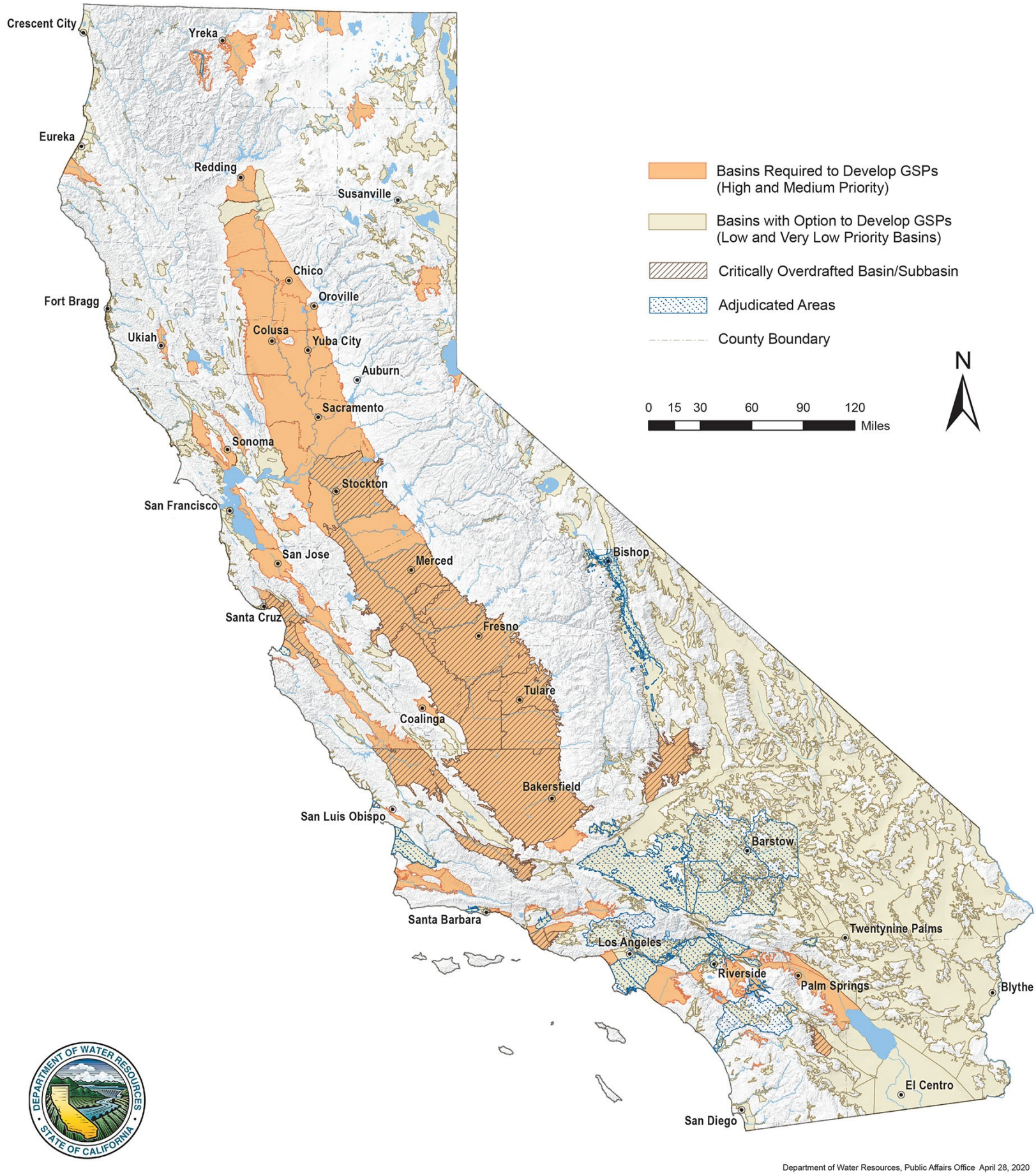
Basin Name	Basin Number	# of Plans Submitted	# of Administering Groundwater Sustainability Agencies	DWR Determination	Summary of Issues Not Adequately Addressed in Plan Resulting in Incomplete Determination, if applicable
Santa Cruz Mid-County	3-001	1	1	Approved	n/a
Corralitos - Pajaro Valley	3-002.01	n/a	n/a	Approved Alternative to Groundwater Sustainability Plan	n/a
Salinas Valley - 180/400 Foot Aquifer	3-004.01	1	3	Approved	n/a
Salinas Valley - Paso Robles Area	3-004.06	1	4	*Incomplete*	Lowering of groundwater levels; groundwater storage reduction
Los Osos Valley - Los Osos Area	3-008.01	n/a	n/a	Adjudicated - No Groundwater Sustainability Plan Required	n/a
Cuyama Valley	3-013	1	1	*Incomplete*	Lowering of groundwater levels; groundwater storage reduction
Santa Clara River Valley – Oxnard	4-004.02	1	1	Approved	n/a
Pleasant Valley	4-006	1	1	Approved	n/a
San Joaquin Valley - Eastern San Joaquin	5-022.01	1	16	*Incomplete*	Lowering of groundwater levels; interconnectedness of surface water and groundwater

Basin Name	Basin Number	# of Plans Submitted	# of Administering Groundwater Sustainability Agencies	DWR Determination	Summary of Issues Not Adequately Addressed in Plan Resulting in Incomplete Determination, if applicable
San Joaquin Valley – Merced	5-022.04	1	3	*Incomplete*	Lowering of groundwater levels; land subsidence; interconnectedness of surface water and groundwater
San Joaquin Valley - Chowchilla	5-022.05	1	4	*Incomplete*	Lowering of groundwater levels; land subsidence; groundwater quality
San Joaquin Valley - Madera	5-022.06	4	7	*Review in Progress*	n/a
San Joaquin Valley - Delta-Mendota	5-022.07	6	23	*Incomplete*	Lack of adequate coordination and alignment of the plans, groundwater sustainability agencies and 17 management areas. Lowering of groundwater levels; land subsidence; groundwater storage reduction; degraded water quality; interconnected surface water
San Joaquin Valley – Kings	5-022.08	7	7	*Incomplete*	Lowering of groundwater levels; land subsidence; interconnected surface water; water quality
San Joaquin Valley - Westside	5-022.09	1	1	*Incomplete*	Lowering of groundwater levels; land subsidence; groundwater quality
San Joaquin Valley - Kaweah	5-022.11	3	3	*Incomplete*	Lowering of groundwater levels; land subsidence; interconnected surface water
San Joaquin Valley - Tulare Lake	5-022.12	1	5	*Incomplete*	Lowering of groundwater levels; land subsidence; groundwater storage reduction; degraded water quality
San Joaquin Valley - Tule	5-022.13	6	6	*Incomplete*	Lowering of groundwater levels; groundwater storage reduction; degraded water quality; land subsidence; interconnected surface water

Basin Name	Basin Number	# of Plans Submitted	# of Administering Groundwater Sustainability Agencies	DWR Determination	Summary of Issues Not Adequately Addressed in Plan Resulting in Incomplete Determination, if applicable
San Joaquin Valley - Kern County	5-022.14	5	11	*Incomplete*	Lack of adequate coordination and alignment of the plans, groundwater sustainability agencies, and over 20 management or sub-management areas. Plans do not adequately address a subbasin-wide approach to monitoring groundwater overdraft and the sustainable yield, and to closely monitor the lowering of groundwater levels and land subsidence
Indian Wells Valley	6-054	1	1	Approved	n/a
Borrego Valley – Borrego Springs	7-024.01	n/a	n/a	*Adjudication – Review in Progress*	n/a

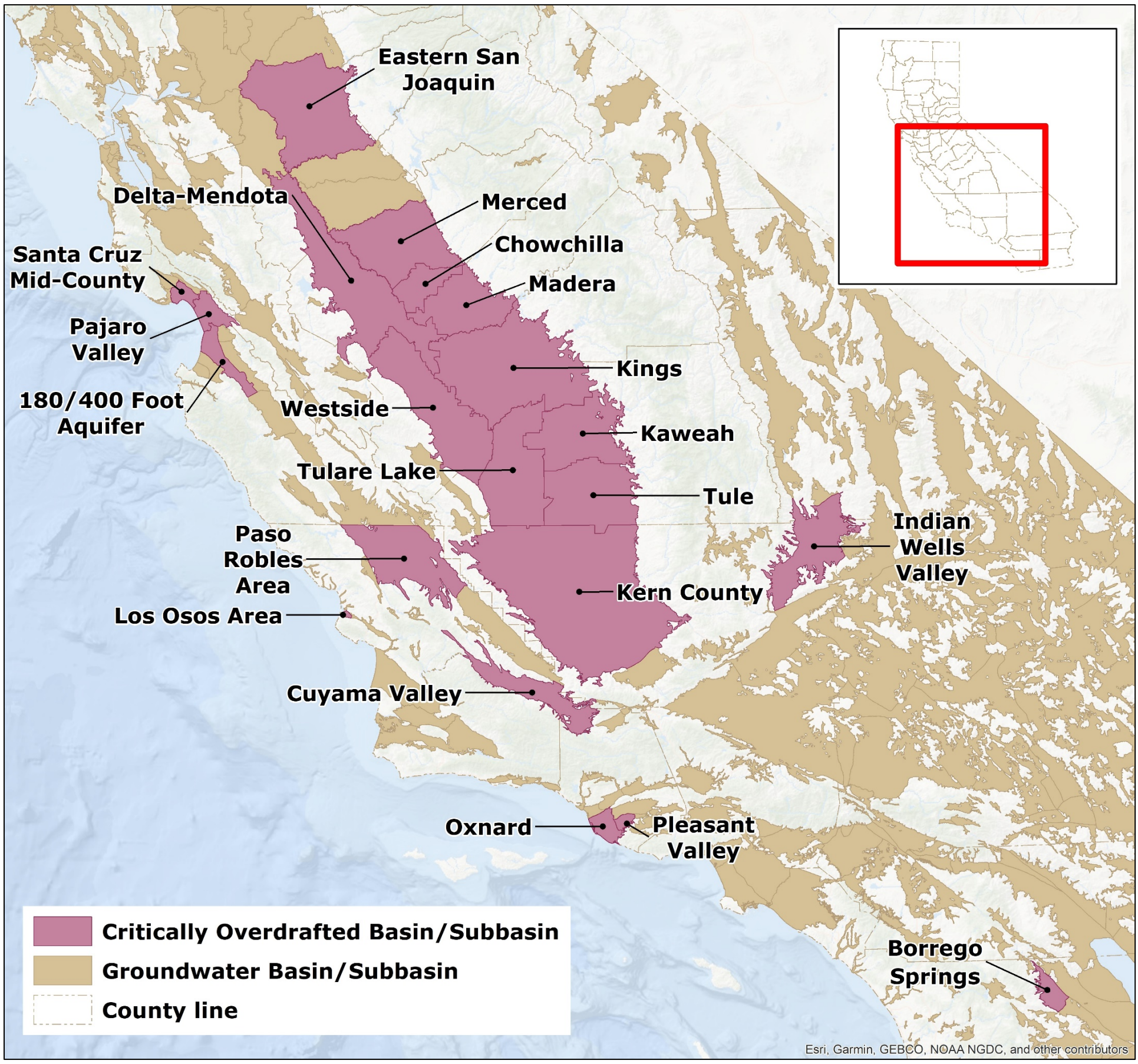
SGMA Milestones





Department of Water Resources, Public Affairs Office April 28, 2020

California's Critically Overdrafted Groundwater Basins



Map created from B118 Groundwater Basin Boundaries Published 02/11/2019. This map published 01/2020.

Basin/ Subbasin Number	Basin/Subbasin Name		
3-001	Santa Cruz Mid-County	5-022.06	San Joaquin Valley - Madera
3-002.01	Corralitos - Pajaro Valley*	5-022.07	San Joaquin Valley - Delta-Mendota
3-004.01	Salinas Valley - 180/400 Foot Aquifer	5-022.08	San Joaquin Valley - Kings
3-004.06	Salinas Valley - Paso Robles Area	5-022.09	San Joaquin Valley - Westside
3-008.01	Los Osos Valley - Los Osos Area**	5-022.11	San Joaquin Valley - Kaweah
3-013	Cuyama Valley	5-022.12	San Joaquin Valley - Tulare Lake
4-004.02	Santa Clara River Valley - Oxnard	5-022.13	San Joaquin Valley - Tule
4-006	Pleasant Valley	5-022.14	San Joaquin Valley - Kern County
5-022.01	San Joaquin Valley - Eastern San Joaquin	6-054	Indian Wells Valley
5-022.04	San Joaquin Valley - Merced	7-024.01	Borrego Valley - Borrego Springs
5-022.05	San Joaquin Valley - Chowchilla		

* Approved Alternative to Groundwater Sustainability Plan
** Adjudicated, No Groundwater Sustainability Plan Required

CALIFORNIA DEPARTMENT OF
WATER RESOURCES