

October 2014

Sustainable Groundwater Management Act (AB 1739, SB 1168, and SB 1319)

Introduction

On September 16, 2014, Governor Jerry Brown approved three companion groundwater management bills, Assembly Bill (AB) 1739¹ and Senate Bills (SB) 1168² and 1319³ (collectively referred to as the Sustainable Groundwater Management Act of 2014 [SGMA]). SB 1168 will require groundwater basins in California, pursuant to the Department of Water Resources (DWR) criteria, to be managed under a Groundwater Sustainability Plan (GSP), while AB 1739 and SB 1319 will provide State oversight (DWR) authorization to ensure the GSPs conform to the requirements of SB 1168 and provide review of those GSPs every five years.

The Problem with California Groundwater Management

Groundwater in certain locations in California is being withdrawn at a faster rate than it is being replenished through rain, snowmelt, and irrigation runoff. This groundwater storage deficiency is further exacerbated by a third year of serious drought. Groundwater accounts for more than one-third of the water used by Californians in an average year and more than one-half of the water used by Californians in a drought year when other sources are unavailable. The Central Valley of California, where the majority of the agriculture in California is produced, has been affected the greatest by the drought. Farmers and landowners in many areas have been entitled to pump as much groundwater as they require from beneath their property and have been in an expensive race to drill deeper wells to continue providing water to irrigate crops (KQED, 2014).

Similar to what occurred in the Owens Valley in the 1950's, excessive groundwater withdrawal can cause subsidence of the ground surface, which in turn decreases the soil permeability, aquifer storage capacity, and reduces the infiltration rates to recharge the aquifers. Additional problems related to excessive groundwater withdrawal are failed wells, deteriorating water quality, and environmental damage. Therefore, GSPs are necessary to prevent the loss of productive aquifers and to ensure that reliable sources of water will be available in the future for drinking and irrigation purposes.

¹ http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140AB1739

² http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB1168

³ http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB1319

However, unlike other western states, California had no State standards for groundwater management. Instead, responsibility rested with a combination of local and regional agencies where oversight was often lacking and/or the necessary authority to enforce groundwater management was not available. While some local agencies in California have sustainable plans for managing groundwater, no Statewide standards existed; thus the need to implement the SGMA (KQED, 2014).

Local Management – SB 1168

SB 1168 requires all groundwater basins designated by the DWR California Statewide Groundwater Elevation Monitoring (CASGEM) Program as either high or medium priority, which are subject to critical conditions of overdraft, be managed under a GSP or coordinated GSPs by January 31, 2020. High and medium priority basins that are not subject to critical conditions of overdraft must be managed pursuant to a GSP by January 31, 2022 (Somach Simmons & Dunn [SSD], 2014). The SGMA does not apply to adjudicated groundwater basins that are managed by the courts, or to basins deemed by DWR to be low or very low priority. Present AB 3030 groundwater management plans, in medium and high priority basins, must be replaced or augmented to comply with the requirements of SB 1168 (Brownstein Hyatt Farber Schreck [BHFS], 2014). High and medium priority basins account for approximately 25 percent (%) of groundwater basins in California and 96% of the groundwater usage (Table 1). Figures 1a and 1b show the locations of medium and high priority basins Statewide and in Southern California, respectively.

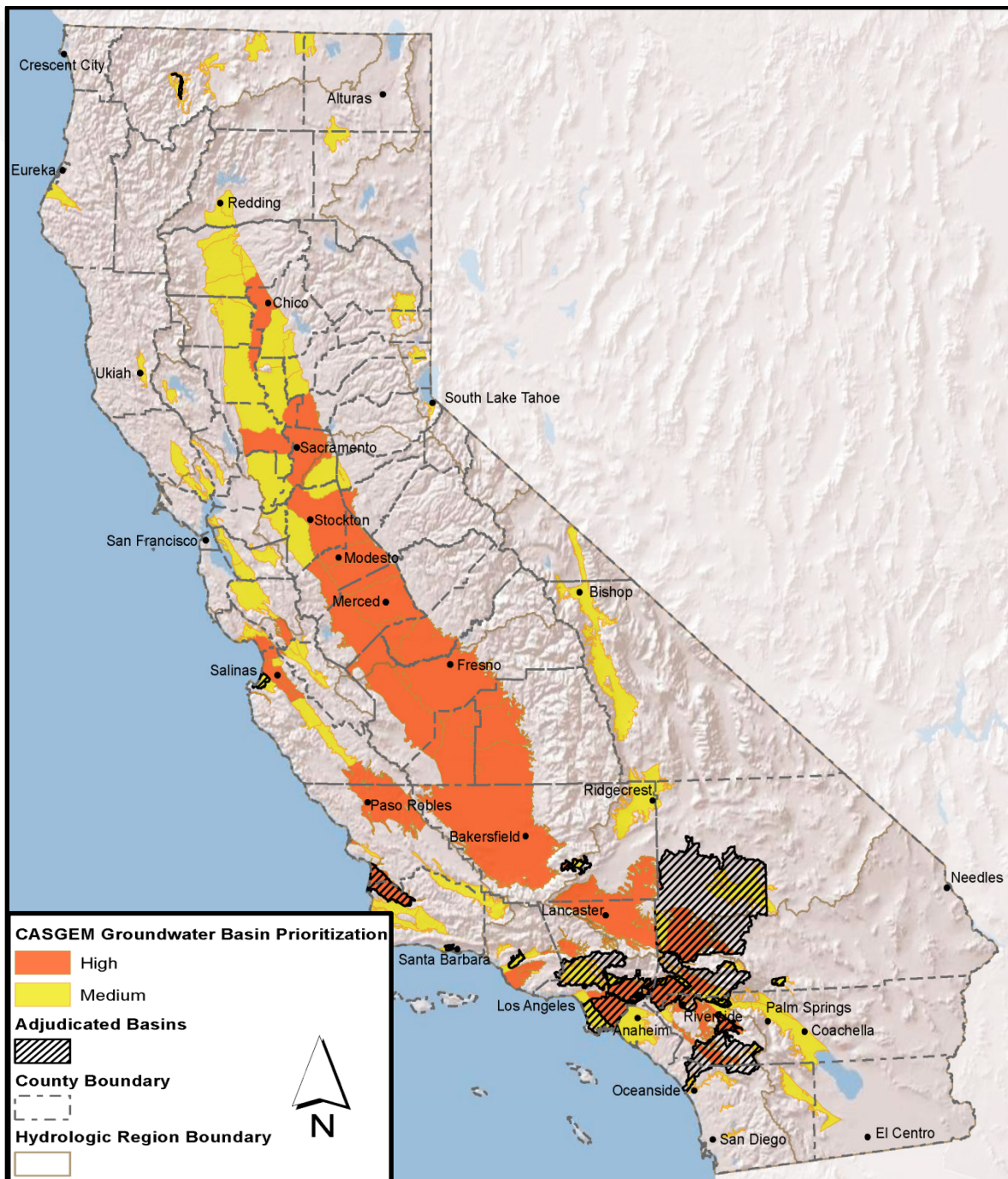
Table 1. Statewide Summary of CASGEM Groundwater Basin Prioritization (CASGEM, 2014)

Basin Priority Ranking	Basin Count	Percent of Total	
		Groundwater Use	Overlying Population
High	43	69%	47%
Medium	84	27%	41%
Low	27	3%	1%
Very Low	361	1%	11%
Totals:	515	100%	100%

Note: Estimated percentages are based on total groundwater use and population overlying all groundwater basin areas Statewide.

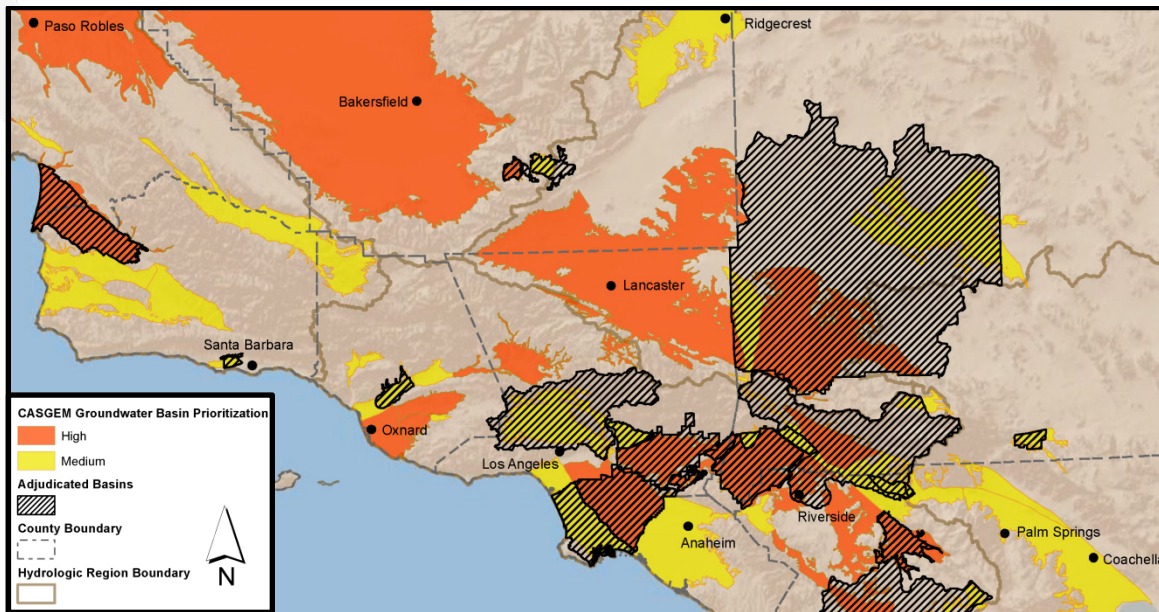
SB 1168 allows a local water agency to elect to be a groundwater sustainability agency (GSA). A combination of local agencies may form a GSA using a joint powers agreement or memorandum of agreement. If there is an area overlying a groundwater basin that is not within the management area of a GSA, the county where the unmanaged area lies will assume the role of GSA for that area, unless the county opts out (SSD, 2014).

Figure 1a. Medium and High Prioritized Groundwater Basins in California (CASGEM, 2014)



Note: Modified from source: http://www.acwa.com/sites/default/files/post/groundwater/2014/04/casgem-map_state-9-26-00263133xa1c15.pdf.

Figure 1b. Medium and High Prioritized Groundwater Basins in Southern California (CASGEM, 2014)



Note: Modified from source: <http://www.acwa.com/sites/default/files/post/groundwater/2014/04/casgem-map-southern-california-9-26-00263132xa1c15.pdf>.

A GSA that adopts a GSP consistent with the requirements in SB 1168 would have broad groundwater management powers. Specifically, SB 1168 authorizes GSAs to require or regulate the following (SSD, 2014):

- Groundwater well registration;
- Measurement of groundwater extractions;
- Filing of annual extraction reports and assess fees;
- Well spacing requirements;
- Revisions of basin boundaries, including establishing new sub-basins;
- Limiting groundwater extractions; and
- Establish extraction allocations.

GSAs are not, however, authorized to issue or deny well-drilling permits, unless authorized to do so by the encompassing county (BHFS, 2014).

Groundwater Sustainability Plan Requirements

SB 1168 requires GSPs to include specific information regarding measurable objectives to achieve the “*sustainability goal*” in the basin within 20 years of implementation. The sustainability goal is defined as the implementation of one or more GSPs that achieve sustainable groundwater management by ensuring the applicable basin is operated within the

“sustainable yield”. Sustainable yield is defined as the maximum quantity of groundwater that can be withdrawn over a period of years without causing an *“undesirable result”*. An undesirable result would be caused by one or more of the following groundwater conditions occurring throughout the basin (SSD, 2014):

1. Chronic lowering of groundwater levels.
2. Significant and unreasonable reduction of groundwater storage.
3. Significant and unreasonable seawater intrusion.
4. Significant and unreasonable degraded water quality.
5. Significant and unreasonable land subsidence that substantially interferes with surface land uses.
6. Depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water.

Each GSP must include requisite monitoring and management for the basin over a 20-year planning horizon, and GSPs must articulate measurable objectives to be achieved every five years. The DWR will review the GSPs and will have the power to request changes to a submitted plan (BHFS, 2014).

The GSP must include the following (Association of California Water Agencies [ACWA], 2014a):

- A description of the physical setting and characteristics of the aquifer system;
- Historical data on groundwater levels, groundwater quality, subsidence, groundwater-surface water interaction;
- A discussion of historical and projected water demands and supplies;
- A map that details the area of the basin and boundaries;
- A map identifying existing and potential recharge areas that substantially contribute to the recharge of the basin;
- Measurable objectives, as well as interim milestones in increments of five years, to achieve the sustainability goal in the basin within 20 years;
- A planning and implementing horizon;
- The monitoring and management of groundwater levels, water quality, groundwater quality degradation, and inelastic land surface subsidence;
- A summary of the type of monitoring;
- The monitoring protocols; and
- A description of the consideration of other applicable local government plans and how the GSP may affect those plans.

State Oversight – AB 1739 and SB 1319

AB 1739 tasks the DWR with reviewing the GSPs to ensure they conform to the requirements set forth in SB 1168. Additionally, AB 1739 and the SGMA require the DWR to complete the following tasks (ACWA, 2014b):

- Designate basins as high, medium, low, or very low priority by January 31, 2015;
- Adopt regulations for basin boundary adjustments by January 1, 2016;
- Adopt regulations for evaluating adequacy of GSPs and GSA coordination agreements by June 1, 2016;
- Publish a report estimating water available for groundwater replenishment by December 31, 2016; and
- Publish groundwater sustainability best management practices by January 1, 2017.

AB 1739 would also require the DWR to review GSPs every five years (SSD, 2014).

AB 1739 and SB 1319 work together to establish new regulatory authorities for the State Water Resources Control Board (SWRCB). These bills will allow the SWRCB to designate groundwater basins as probationary basins under certain circumstances. Once designated as a probationary basin, the SWRCB may adopt an interim plan for regulation of groundwater withdrawals (SSD, 2014). If the local GSA does not respond within 180 days, the SWRCB is authorized to create an interim plan that will remain in place until a local GSA is able to reassume responsibility with a compliant GSP (ACWA, 2014b). The SWRCB will designate a probationary type basin if one of the following occurs (SSD, 2014):

Type 1: After June 30, 2017, no local agency has elected to be a GSA for the basin.

Type 2: After January 31, 2020, a high or medium priority basin in a critical condition of overdraft has not adopted a GSP for the entire basin.

Type 3: After January 31, 2020, for any high or medium priority basin in a critical condition of overdraft, the DWR and the SWRCB determine that a GSP is inadequate or a groundwater sustainability program is not being implemented in a manner that is likely to achieve the sustainability goal.

Type 4: After January 31, 2022, a high or medium priority basin that is not subject to critical conditions of overdraft has not adopted a GSP for the entire basin.

Type 5: After January 31, 2022, for any high or medium priority basin that is not subject to critical conditions of overdraft, the DWR and the SWRCB determine that a GSP is inadequate and the SWRCB determines a basin is in a condition of long-term overdraft.

Type 6: After January 31, 2025, the DWR and the SWRCB determine that a GSP is inadequate and the SWRCB determines that the basin is in a condition where groundwater extractions result in significant depletions of interconnected surface waters.

If the SWRCB establishes an interim plan for a probationary basin, the interim plan must identify and/or include the following (SSD, 2014):

- Actions necessary to correct conditions of long-term overdraft;
- Actions necessary to correct conditions where extractions result in significant depletions of interconnected surface waters;
- A time schedule for the actions to be taken;
- Descriptions of the necessary monitoring;
- Restrictions on groundwater extraction;
- A physical solution; and
- Principles for the administration of rights to surface water connected to the basin.

Conclusion

While there will be considerable effort required to create GSAs and GSPs Statewide, both strategically and financially, the ultimate goal of having sustainable groundwater resources is essential and is the only way to allow California to grow and prosper in the years to come.

The following are the key implementation dates as set forth in the SGMA:

Key Date	Action	Responsible Agency		
		DWR	GSA	SWRCB
1/1/15	Establish basin priorities	x		
1/1/16	Develop emergency regulations for basin boundary revisions	x		
6/1/16	Develop emergency regulations for evaluating GSPs	x		
12/31/16	Estimate of water available for groundwater replenishment	x		
1/1/17	Develop best management practices for sustainable management	x		
1/1/17	Submit alternative to GSP		x	
6/30/17	GSAs formed		x	
6/30/17	SWRCB can put basins on Type 1 probation			x
7/1/17	Outside management areas must report extractions		x	
1/1/18	Develop interim GSPs for basins on Type 1 probation			x
1/31/20	High and medium priority basins with critical overdraft managed		x	
1/31/20	Basins placed on Type 2 or 3 probation			x

Key Date	Action	Responsible Agency		
		DWR	GSA	SWRCB
7/31/20	Develop interim GSPs for basins on Type 2 probation			x
1/31/21	Develop interim GSPs for basins on Type 3 probation			x
1/31/22	Basins placed on Type 4 or 5 probation/develop interim GSPs			x
1/31/22	Evaluated all GSPs submitted by 1/31/2020	x		
1/31/22	All high and medium priority groundwater basins managed		x	
1/31/24	Evaluated all GSPs submitted by 1/31/2022	x		
1/31/25	Basins placed on Type 6 probation/develop interim GSPs			x
1/31/40	Basins managed by 1/31/2020 achieve sustainability		x	
1/31/42	Basins managed by 1/31/2022 achieve sustainability		x	
1/31/45	Basins managed by 2020 with one extension achieve sustainability		x	
1/31/47	Basins managed by 2022 with one extension achieve sustainability		x	
1/31/50	Basins managed by 2020 with two extensions achieve sustainability		x	
1/31/52	Basins managed by 2022 with two extensions achieve sustainability		x	

Aquilologic can provide assistance with all levels of planning and implementation of an applicable GSP. For further information or any questions regarding the SGMA, contact:

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