

# MORE STATE AND LOCAL ATTENTION TO *Financing* CAN ADVANCE *Sustainable* *Groundwater Management*

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## INTRODUCTION

California’s Sustainable Groundwater Management Act (SGMA) requires local Groundwater Sustainability Agencies (GSAs) in high- and medium-priority basins to sustainably manage groundwater by 2040.<sup>1</sup> Doing so will cost money. Because GSAs are primarily responsible for delivering progress under SGMA, they are also primarily responsible for acquiring the financing necessary to ensure this progress.

However, our research suggests that, to date, GSAs have generally not detailed their financing plans in a sample of Groundwater Sustainability Plans (GSPs or Plans)<sup>2</sup> that outline their planned projects and management actions.<sup>3</sup> California’s Department of Water Resources (DWR) is required by law to evaluate the viability of these Plans, including their financial viability.<sup>4</sup> However, our analysis suggests that DWR has not fully considered the financial viability of the Plans it has approved and that many Plans would not meet that bar if it did so.

SGMA’s central organizing principle is local responsibility for sustainable groundwater management, with state oversight.<sup>5</sup> Under this model, DWR is empowered with oversight and assistance authority and California’s State Water Resources Control Board serves as an enforcement backstop.<sup>6</sup> Among other things, SGMA requires DWR to review Plans based on their likelihood of achieving the basin’s sustainability goals by 2040 and to periodically evaluate whether implementation remains on track.<sup>7</sup>

Oversight of how Plans address financing matters because generating new revenue or repurposing existing revenue and financing often requires GSAs to navigate tricky, time-consuming, and resource-intensive

## FINANCING AND FUNDING

In this issue brief, we use the term “financing” to refer inclusively to debt- and revenue-based strategies that GSAs will need to use to achieve their goals under SGMA. We note that, in general usage, the term “funding” often refers to revenue streams and existing capital, while “financing” is a more encompassing term that refers to the strategies for paying for actions, assets, and services.

public processes.<sup>8</sup> As a result, thoughtful and proactive planning that clearly explains how a GSA's financing approach will support effective Plan implementation is essential for successful and timely SGMA compliance. Given SGMA's requirements, time is of the essence. Put another way, an otherwise carefully designed Plan could nonetheless be infeasible without a clear financing pathway.

In this issue brief, we present the results of our analysis of fifteen Plans' attention to financing, compare our analysis to DWR's assessment of these Plans, and discuss the implications. We argue that, to achieve sustainable groundwater management by 2040, financing must become a more central, explicit, and prioritized component of each GSA's planning process, and planning documents must clearly describe viable financing plans for identified projects and management actions. For Plans DWR has already approved, the Periodic Evaluation process will be an important vehicle for these improvements. To this end, (1) GSAs must provide more information in their Plans and Periodic Evaluations about how they will finance SGMA implementation, and (2) DWR must more closely assess financing when evaluating Plans and Periodic Evaluations, consistent with the agency's statutory and regulatory responsibilities. To its credit, DWR has recognized the importance of financing; the agency recently released a resource guide that begins to unpack the topic.<sup>9</sup> To complement and build upon this resource guide, (3) DWR can provide more technical resources and guidance to enable GSAs' successful financing. To support these state and local efforts, (4) the engaged public can assess SGMA-related financing efforts and seek more detailed planning where appropriate.

## **ORIENTATION TO THE CHALLENGE**

New and expanded efforts to manage groundwater require new and expanded financing. To date, GSAs have received nearly \$1 billion in state investments made possible in large part by California's budget surplus. More than half of that money has been dedicated to local agencies' planning and implementation efforts and the remainder has enabled state agencies' oversight, support, and enforcement.<sup>10</sup> However, long-term funding for SGMA implementation will likely need to be generated largely at the local level, where GSAs must navigate a complex, resource-constrained landscape.<sup>11</sup> As GSAs shift from SGMA's planning stage to project implementation, resource constraints are likely to become more significant. Recognizing this need, SGMA gives GSAs the authority to generate revenue.<sup>12</sup>

### **Financing is difficult and time-consuming**

Successfully identifying and tapping new financial resources is complex. It can be legally and politically fraught.<sup>13</sup> Different revenue sources have to comply with different procedural requirements that are especially complex in California.<sup>14</sup> Some revenue sources can only be used to fund particular things, and public opposition and legal challenge is possible.<sup>15</sup> These characteristics expose financing efforts to risk of litigation and public backlash, either of which can delay revenue generation. For example, the Pajaro Valley Water Management Agency's efforts to institute groundwater pumping fees faced decades of litigation.<sup>16</sup> Given the clear potential for financing to delay project implementation, it deserves as much attention as other Plan components like monitoring networks or the technical aspects of projects and management actions.<sup>17</sup>

## SGMA requires GSAs to identify financing plans

SGMA regulations explicitly require Plans to include financial details and require DWR to review financing information for adequacy. First, a GSA must estimate the overall costs of implementing the Plan and explain how those costs will be covered.<sup>18</sup> On a more granular level, each Plan must include a cost estimate and description of the planned financing mechanism(s) for each planned project or management action.<sup>19</sup> The regulations also require GSAs to adjust and improve their cost and revenue generation plans in their Periodic Evaluations.<sup>20</sup> When DWR evaluates a Plan for adequacy, among the key things it must consider are whether the identified projects and management actions are feasible and whether the GSA has the financial resources needed to implement these and other actions under the plan.<sup>21</sup>

The initial Plan review and Periodic Evaluation processes are meant in part to assure state oversight agencies and the public that GSAs are on a viable path toward achieving groundwater sustainability by 2040. Plans that demonstrate this viable path must (1) examine projects' costs and potential funding sources through thorough financing plans that demonstrate project relevance and feasibility, (2) demonstrate clear consideration of legal- and process-based requirements for different financing measures, including public notice, engagement, and Proposition 218 limitations, and how they plan to comply with those requirements, and (3) develop a portfolio of financing tools that is resilient to changing needs and challenges.<sup>23</sup> Examining these criteria during the planning stage will support smooth and timely financing for groundwater sustainability.

## APPROACH

To understand whether Plans appropriately address financing for SGMA implementation, we first analyzed DWR's approach to Plan review. We researched how DWR reviewed Plans for questions relating to financing by examining the agency's "Elements Guide."<sup>24</sup> This resource pulls text directly from the portion of California's Code of Regulations relevant to SGMA, using it as the basis for 166 separate evaluation criteria. Only two of these criteria—(1) "[a] description of the estimated cost for each project and management action and a description of how the agency plans to meet those costs"<sup>25</sup> and (2) "[a]n estimate of the cost of implementing the Plan and a general description of how the Agency plans to meet those costs"<sup>26</sup>—pertain to financial viability. For each Plan assessment, DWR lists the page, section, figure, or table numbers of the plan that speak to each criterion in the Elements Guide and accompanies this analysis with a determination document. However, the populated Elements Guide does not demonstrate an analytical assessment of whether DWR believes the material provided in the plan is sufficient to support the Plan's financial viability, and the determination documents for this sample of GSPs do not fully address deficiencies in financing considerations. Sparse information limits GSAs' opportunity to understand and address weaknesses in their financing

## ADEQUACY

An "adequate" Plan is one that DWR determines complies with SGMA and substantially complies with the regulations that set out requirements for Plans, including by providing sufficient supporting information and analyses to demonstrate that its implementation is likely to achieve the basin's sustainability goals.<sup>22</sup>

approach. It also limits the engaged public’s ability to evaluate the viability and impacts of SGMA implementation.

Given DWR’s lack of demonstrated analytical depth on financing concerns, we developed and refined a Rubric to assess whether Plans provided sufficient information to allow DWR to assess their financial viability (see [Table 1](#)). This Rubric identifies more granular questions about financing under SGMA to more systematically gauge a plan’s likelihood of success (see Supplemental Information, available at [law.berkeley.edu/SGMA-financing](http://law.berkeley.edu/SGMA-financing)). We grouped these questions into three categories: (1) the specificity and level of detail with which the Plan lays out its financing plans; (2) the degree to which the plan considers legal limitations and other process-based requirements relevant to revenue generation; and (3) the resilience of the Plan’s financial portfolio to changes in groundwater management needs and financial outlays. Each of these categories includes a series of questions.

We graded a sample of fifteen Plans<sup>27</sup> using this Rubric. For each question, a Plan was graded on a numerical scale of zero to three, with each number defined using a qualitative description: No (0); Minimally (1); Yes, but to a limited extent (2); Yes (3). The higher a Plan’s score according to our Rubric, the more thoroughly it evaluates a range of financing considerations and the more likely the plan is to successfully achieve groundwater sustainability by 2040.

**Table 1: Rubric used to evaluate Plans’ attention to financing. For the Rubric with grades for all sampled Plans, see the project page at [law.berkeley.edu/SGMA-financing](http://law.berkeley.edu/SGMA-financing).**

EVALUATION CRITERIA	SCORE
<i>Specificity &amp; Level of Detail</i>	
Does the Plan identify how it plans to generate revenue to fund operation and administrative costs?	
Does the Plan identify how it plans to generate revenue to fund individual projects/management actions?	
Does the Plan calculate each project’s cost?	
<i>Legal/Process-Based Considerations</i>	
Does the Plan reference Propositions 218, 26, or 13, or any other legal limitations revenue generation may encounter?	
Does the Plan identify plans for complying with legal limitations on revenue generation?	
Does the Plan allocate responsibility for acquiring funding to a particular entity?	
Does the Plan discuss the impacts that revenue generation will have to individuals, communities, and other stakeholders?	
<i>Portfolio Resilience</i>	
Does the Plan identify multiple funding sources?	
Does the Plan have a contingency or backup funding?	
Does the Plan identify plans to re-evaluate costs in the future?	
Does the Plan identify actions already underway to generate revenue?	
<b>Total</b>	

We selected a diverse sample of Plans to include basins that both are and are not designated as critically overdrafted; both medium and high priority basins; both GSPs and Alternatives; plans that DWR initially deemed complete, incomplete, or inadequate;<sup>28</sup> and geographic variety. Note that this sample was not selected to highlight weaknesses with these GSAs, to make any assertions about any other aspects of their Plans, or to make assertions about the quality of their financing plans relative to other Plans not evaluated for this issue brief. Rather, this sample allowed for a first-order evaluation of Plans' attention to financing and helped highlight concerns presented in this issue brief. A more thorough review of all Plans would be needed to draw further conclusions about characteristics that correlate with sparse financing details.

Finally, we assessed whether the results of our analysis aligned with DWR's evaluations and with potential on-the-ground outcomes. As a proxy for on-the-ground outcomes, we researched instances of legal opposition to GSAs' efforts to implement financing, including the nature of those disputes. To comparatively assess alignment with DWR's evaluations, we used statistical analysis to compare DWR's designation of Plans as approved, incomplete, or inadequate with our numerical assessment of each Plan's attention to financial considerations to determine if there was a significant relationship between them. Specifically, we used an analysis of variance (ANOVA) to compare our Rubric grades for plans designated by DWR as incomplete or inadequate with our Rubric grades for approved plans. An ANOVA is a statistical test that examines variance in the means of multiple groups by comparing variation within a group's means to variation across group means.<sup>29</sup>

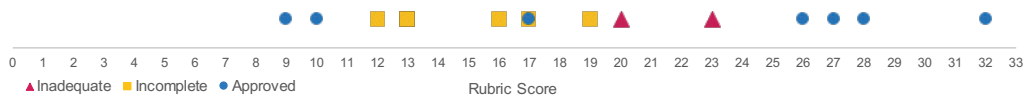
## RESULTS & DISCUSSION

Results from our sample highlight shortfalls in Plans' financing content and, by extension, how DWR evaluated Plans for this content. As responsibility for financing sustainable groundwater management increasingly shifts from state to local entities, Plans' lack of detailed attention to this issue will become increasingly problematic.

### **Most of the Plans in our sample do not sufficiently detail financing**

Most of the plans our team evaluated do not examine financing in enough depth (see [Supplemental Information](#)). For instance, none of the Plans had "4 - Yes" grades for all questions. Only four of the Plans had at least one "4 - Yes" grade in each of the Rubric's three evaluative categories; five Plans did not have a "4 - Yes" grade at all; a third did not include a clear estimate of each project's cost as statutorily required under SGMA; and more than half neglected contingency funding. Plans appear to address legal- and process-based considerations less effectively than portfolio resilience and level of detail, with evaluation of impacts that revenue generation will have to individuals, communities, and other stakeholders being a particular area of weakness.

*Figure 1: A visual representation of how the sample of fifteen selected Plans deemed “Approved”, “Incomplete”, or “Inadequate” by DWR scored according to our financing Rubric. The figure illustrates an inconsistent relationship between DWR’s approvals and our evaluation of Plans’ treatment of financing in this sample.*



**DWR’s review process does not thoroughly evaluate Plan financing information**

It is not clear whether or to what extent attention to financing influenced DWR’s initial evaluation of Plans. Under existing law, DWR is required to evaluate Plans for “[w]hether the [GSA] has the...financial resources necessary to implement the Plan”<sup>30</sup> and periodically reassess whether Plans remain compliant with this component of SGMA.<sup>31</sup> Notwithstanding this mandate, DWR has not publicly stated how it incorporated financing into its evaluation of substantial compliance,<sup>32</sup> and our analysis suggests the inclusion may have been minimal.

In our small sample, financing considerations appear to have had no statistically significant bearing on DWR’s initial evaluation of Plans as approved, incomplete, or inadequate. In fact, several of the plans DWR approved had some of the lowest scores according to our evaluation Rubric. DWR approved many Plans that lack sufficient financing information to demonstrate a reasonable likelihood of achieving sustainable groundwater management by 2040.<sup>33</sup> Only two of DWR’s 166 assessment criteria used to review Plans touched on financial feasibility,<sup>34</sup> and for a number of Plans, DWR failed to fully identify the locations where relevant content for these two criteria was included. Further, DWR’s Plan designations as approved, incomplete, or inadequate—designations that are based on the assessment criteria—did not correlate with the quality of Plans’ attention to financing considerations according to our team’s Rubric and evaluation process; the variance in Rubric grades between approved plans and plans designated as incomplete or inadequate was not statistically significant.<sup>35</sup> These results are consistent with the hypothesis that financing did not have had a material impact on DWR’s evaluation of Plans’ substantial compliance with SGMA’s mandates. While a larger sample would be needed to complete a conclusive, quantitative evaluation, our conclusions and recommendations are supported by the other data and analyses described in text.

More generally, there is room for DWR to be more proactive in its review. DWR has provided general guidance on what GSAs should include in their Plans and Periodic Evaluations;<sup>36</sup> however, it has not clearly conveyed how it intends to assess these Plans and Periodic Evaluations, especially for content on financing. A proactive approach to Plan review would clarify assessment criteria and offer technical support in advance of Periodic Evaluation submission deadlines. DWR seems to be taking a more reactive approach, instead inferring effective financing, or the lack thereof, from what Periodic Evaluations’ reveal about GSAs’ ability to meet implementation milestones. However, this reactive approach risks being too slow and non-specific for timely compliance with SGMA’s fast-approaching sustainability deadlines.

### Some GSA's financing efforts are already confronting litigation & other opposition

GSAs must comply with specific procedural requirements to impose new financing mechanisms or expand existing ones.<sup>37</sup> Even then, implementing a financial mechanism can be uncertain. Local opposition can sometimes hinder revenue generation efforts, and where GSAs fail to undertake appropriate public outreach, adhere to appropriate procedural requirements like notice and comment periods or voting requirements, or fully consider other key issues, that opposition may have strong legal merit. Further, many communities subject to SGMA's mandates are managed by GSAs with agricultural lobbies and other strong interest groups, introducing more substantial political concerns and raising the likelihood of legal challenges to revenue generation.

These concerns are not just hypothetical; GSAs are encountering opposition to their SGMA-related revenue generation efforts. This opposition can be protracted, can delay or complicate revenue generation, and can challenge GSAs' ability to finance their Plans and implement projects.

## GSAs ENCOUNTER OPPOSITION TO FINANCING EFFORTS

Local opposition emphasizes the importance of financing planning: Already, several GSAs that have taken steps to generate revenue have encountered public resistance and legal opposition.<sup>38</sup> In Madera County, revenue generation efforts have also faced public opposition. The Madera County GSA attempted to institute two SGMA-related fees in each of its three subbasins: Chowchilla, Delta-Mendota, and Madera. Although the County successfully adopted both fees for the Delta Mendota and Madera subbasins,<sup>39</sup> Chowchilla subbasin landowners successfully mounted a majority protest of one of the fees.<sup>40</sup> Additionally, a coalition of Madera growers have sued the county over the other fee in a legal battle that is still making its way through the court system but enjoined the county from collecting the fee for three years.<sup>41</sup> Similar to Chowchilla, landowners voted down a fee proposed by the Eastern Tule GSA.<sup>42</sup> Meanwhile, in the Kaweah subbasin, public backlash against proposed fees persuaded the Greater Kaweah GSA Board to cut the fees in half.<sup>43</sup> Additionally, for the past several years, Indian Wells Valley GSA has been litigating the legality of its replenishment fee.<sup>44</sup> Previously, Santa Clara Valley Water District found itself embroiled in decades of litigation over its groundwater pumping charges, litigation that predated SGMA but that nonetheless demonstrates the vulnerability of revenue generation to litigation and opposition.<sup>45</sup>

## CONCLUDING RECOMMENDATIONS

Financing for groundwater management is important and complex, and therefore requires clarity and advanced planning. GSAs can meet legislative and regulatory requirements by developing more detailed financing plans, in parallel with other technical aspects of their Plans.<sup>46</sup> Likewise, DWR can meet its statutory responsibilities by verifying Plans' financial viability.<sup>47</sup>

Increased local and state attention to financing is needed to support successful SGMA implementation. The following recommendations provide specific actions to advance this goal.

**GSAs must provide more information in their Plans and Periodic Evaluations about how they will finance SGMA implementation.** This includes more fully articulating how they plan to generate revenue to fund their projects and management actions, in compliance with regulatory requirements.<sup>48</sup> GSAs can further advance the viability of their financing plans by evaluating legal- and process-based considerations and incorporating measures that promote financial resilience—measures like contingency funding and processes for reevaluating costs in the future. GSAs can also consider incorporating financing into their annual reports. Specifically, they can provide annual budgets, expected revenues, revenue sources, and expected expenses, and can allocate expenses to GSA support, outreach, monitoring, reporting, well mitigation, and project implementation. To this end, GSAs can use the Rubric our team developed for this analysis to guide a thorough, thoughtful, and transparent incorporation of financing plans.

**DWR must more closely assess financing when evaluating Plans and Periodic Evaluations.** DWR can support this closer assessment consistent with its statutory and regulatory obligations to review plans for the likelihood that they will achieve the basin's sustainability goals and evaluate substantial compliance with key regulatory requirements pertaining to the Plan's financial viability.<sup>49</sup> Using these authorities, DWR's evaluations should critically assess whether Plans offer a viable path toward groundwater sustainability by 2040, focusing on the match between Plans' planned activities and financing.

**DWR can provide more technical resources and guidance to enable GSAs' successful financing.** In addition to its oversight authority, DWR can offer additional technical support to GSAs, in alignment with SGMA.<sup>50</sup> For example, DWR can catalogue GSAs' various financing methods and document successes and hurdles these methods encounter. This catalogue can make special note of financing methods for novel and multi-benefit approaches to groundwater management to help advance their broader consideration. DWR can also create additional guidance documents that address the specific financing needs that GSAs surface. Many GSAs, especially those with less experience establishing new revenue streams, can benefit from additional technical resources and guidance may prove key.

**The engaged public can assess financing efforts and demand more detail.** Given groundwater's importance to the state of California, everyone has an interest in SGMA's successful implementation and its distributional impacts. Various financing approaches distribute burdens of SGMA implementation differently. In order to understand these burdens, advocate for their equitable distribution, and support effective SGMA



implementation, the engaged public can demand that GSAs provide more detail about their financing plans. Our [Rubric](#) can serve as a tool to support these efforts.

We recognize that implementing these recommendations will require GSAs and DWR to invest more up-front effort. However, such investment is required by law and is necessary to ensure effective and timely implementation of SGMA. This issue brief, the accompanying Rubric, and this research's Supplemental Information can all serve as resources for this effort.

## SUPPLEMENTAL MATERIAL

This report and its Supplemental Information can be found at [law.berkeley.edu/SGMA-financing](http://law.berkeley.edu/SGMA-financing).

## SUGGESTED CITATION

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## REFERENCES

- 1 Cal. Water Code §§ 10720.7(a) and 10727.2(b)(1); Cal. Code Regs. tit. 23, §§ 351(ag) and 355.4. *The deadline is 2040 for basins designated as critically overdrafted and 2042 for other high- and medium-priority basins. This issue brief uses “2040” as shorthand to reference what is in fact a more nuanced timeline.*
- 2 *This issue brief uses “Plans” inclusively to reference both GSPs (Cal. Water Code §§ 10721(k) and 10727–10728.6) and Alternatives (Cal. Water Code § 10733.6), as defined by SGMA.*
- 3 Cal. Code Regs. tit. 23, § 354.44.
- 4 See Cal. Water Code §§ 10733 and 10733.8.
- 5 See Owen, D. (2018). Cooperative Subfederalism. *UC Irvine Law Review*, 9(1), 177–228; see supra note 3.
- 6 Cal. Water Code §§ 10722.2, 10722.4(d), 10733.2, 10733.8, and 10735.2; Cal. Water Code §§ 5202, 5204, 10735.2, 10735.4–10736, and 10736.6; see “Sustainable Groundwater Management Act: What is State Intervention?” *State Water Resources Control Board*, URL: <https://www.waterboards.ca.gov/sgma/intervention.html> (last visited March 10, 2025).
- 7 *Requirements for what must be included in Plans are detailed in Cal. Code Regs. tit. 23, §§ 354–354.44. These requirements specify that “[e]ach Plan shall include a description of the projects and management actions...[including] [a] description of the estimated cost for each project and management action and a description of how the Agency plans to meet those costs.” [Cal. Code Regs. tit. 23, § 354.44(b)(8)] Cal. Code Regs. tit. 23, § 355–355.10 guides DWR’s GSP and Alternative initial and periodic evaluation process, including the criteria for which it must evaluate plans. Among other things, DWR must review GSPs and Alternatives for whether the basin will be sustainable managed within 20 years. [Cal. Code Regs. tit. 23, § 355.4] DWR must also evaluate plans and alternatives for whether the information is sufficiently detailed and the analyses sufficiently thorough and reasonable to effectively evaluate the plan for its likelihood of achieving sustainability. [Cal. Code Regs. tit. 23, § 355.4(b)]*
- 8 See Kiparsky, M., Milman, A., Owen, D., & Fisher, A. T. (2017). The Importance of Institutional Design for Distributed Local-Level Governance of Groundwater: The Case of California’s Sustainable Groundwater Management Act. *Water*, 9(10), Article 10. <https://doi.org/10.3390/w9100755>.
- 9 Najmus, S., Dumas, L., Wilcox, L., Faghih, J., Koorn, S., & Murray, M. (2024, March). *Funding SGMA Implementation*. California Department of Water Resources: Sustainable Groundwater Management Program. [https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Sustainable-Groundwater-Management/Best-Management-Practices-and-Guidance-Documents/Files/240321\\_SGMO\\_FundingGuide\\_FINAL.pdf](https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Sustainable-Groundwater-Management/Best-Management-Practices-and-Guidance-Documents/Files/240321_SGMO_FundingGuide_FINAL.pdf)
- 10 California Department of Water Resources. (2024, September 16). *Improving the Lives of Californians: DWR Marks 10 Years of the Sustainable Groundwater Management Act and Progress Made to Protect Water Supplies* [Press release]. <https://water.ca.gov/News/News-Releases/2024/Sep-24/SGMA-10-Year-Anniversary;OverviewoftheSustainableGroundwaterManagementAct> (p. 10). (2024). Legislative Analyst’s Office. <https://lao.ca.gov/handouts/resources/2024/SGMA-Overview-022124.pdf>; “Sustainable Groundwater Management Grant Program,” *California Department of Water Resources*, URL: <https://water.ca.gov/Work-With-Us/Grants-And-Loans/Sustainable-Groundwater> (last visited March 10, 2025); California Department of Water Resources. (2022, March 11). *Through Challenges of Drought, Locally Led Solutions for Groundwater Sustainability Are Advancing* [Press release]. <https://water.ca.gov/News/Blog/2022/March-22/Through-Challenges-of-Drought-Locally-Led-Solutions-for-Groundwater-Sustainability-Are-Advancing>; see supra note 9.
- 11 Supra note 9; see Sandoval, S., Nocco, M., & Kearns, F. (n.d.). *Reflecting on SGMA after ten years* (No. 62) [Broadcast]. <https://www.watertalkpodcast.com/episodes/episode-62> (When asked about SGMA’s biggest challenges, California DWR Deputy Director for Sustainable Water Management Paul Gosselin, at 25:48, responded “one is funding for local agencies...A lot of these agencies haven’t had experience with fee structures and in California, there’s a set process under what’s called Proposition 218. You know, it gives challenges to local people...”).
- 12 Cal. Water Code §§ 10730–31.
- 13 See Hanak, E., Gray, B., Lund, J., Mitchell, D., Chappelle, C., Fahlund, A., Jessoe, K., Medellín-Azuara, J., Misczynski, D., Nachbaur, J., & Suddeth, R. (2014). *Paying for Water in California* (p. 81). Public Policy Institute of California. [https://www.ppic.org/wp-content/uploads/content/pubs/report/R\\_314EHR.pdf](https://www.ppic.org/wp-content/uploads/content/pubs/report/R_314EHR.pdf).

- 14 See Right to Vote on Taxes Act (Proposition 218), 1996 (codified at Cal. Const. arts. XIII C and XIII D); see Proposition 13, 1978 (codified at Cal. Const. art. XIII A); see Proposition 26, 2010 (codified at Cal. Const. arts. XIII A and XIII C); see “ACWA: The Challenges of Implementing the Sustainable Groundwater Management Act Ten Years In,” *Maven’s Notebook News & Features*, URL: <https://mavensnotebook.com/2024/07/10/acwa-the-challenges-of-implementing-the-sustainable-groundwater-management-act-ten-years-in/> (last visited March 10, 2025); see supra note 14.
- 15 See supra note 14.
- 16 *The Pajaro Valley’s efforts to institute groundwater pumping fees confronted decades of litigation.* See Griffith v. Pajaro Valley Water Management Agency (2013) 220 Cal.App.4th 586; see Pajaro Valley Water Management Agency v. Amrhein (2007) 150 Cal.App.4th 1364, 1370–1375, 59 Cal.Rptr.3d 484; see Scurich v. Pajaro Valley Water Management Agency, 2004 WL 1191948 (May 27, 2004, Ho25776) [nonpub. opn.]; see Eiskamp v. Pajaro Valley Water Management Agency (2012) 203 Cal.App.4th 97, 100–101, 137 Cal.Rptr.3d 266.
- 17 See Cal. Code Regs. tit. 23, §§ 354.32–354.40 and 354.42–354.44.
- 18 Cal. Code Regs. tit. 23, § 354.6(e).
- 19 Cal. Code Regs. tit. 23, § 354.44(b)(8).
- 20 *A GSA must submit updated evaluations of its Plan interim milestones every 5 years to assess “how the Plan is performing and whether modifications are necessary.”* [Cal. Code Regs. tit. 23, § 356.4]; California Department of Water Resources (2023, October). *Groundwater Sustainability Plan Implementation: A Guide to Annual Reports, Periodic Evaluations, & Plan Amendments*. California Department of Water Resources. <https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Sustainable-Groundwater-Management/Best-Management-Practices-and-Guidance-Documents/Files/GSP-Implementation-Guidance-Report.pdf>.
- 21 Cal. Code Regs. tit. 23, §§ 355.4(b)(5) and (b)(9).
- 22 Cal. Code Regs. tit. 23, § 355.4(b); see “Groundwater Sustainability Plans,” *California Department of Water Resources*, URL: <https://water.ca.gov/Programs/Groundwater-Management/SGMA-Groundwater-Management/Groundwater-Sustainability-Plans> (last visited March 10, 2025).
- 23 See supra note 23, California Department of Water Resources, pages 22 and 28.
- 24 “SGMA Portal Resources. Printable Elements Guide Excel Template,” *California Department of Water Resources*, available at URL: <https://sgma.water.ca.gov/portal/resources> (last visited March 10, 2025).
- 25 Cal. Code Regs. tit. 23, § 354.44(b)(8).
- 26 Cal. Code Regs. tit. 23, § 354.6(e).
- 27 *The fifteen selected plans were Butte Valley, Central Kings, Chowchilla, Colusa, Cosumnes, Eastern San Joaquin, Madera, Merced, North San Benito, Orange County, Pajaro Valley, Santa Clara, Sierra Valley, South American Subbasin, and Westside.*
- 28 *Of the twelve GSPs, six were initially deemed incomplete and two were inadequate. As of March 2025, one plan remains inadequate and five plans have reviews in progress.*
- 29 Smalheiser, N. R. (2017). Chapter 11—ANOVA. In N. R. Smalheiser (Ed.), *Data Literacy* (pp. 149–155). Academic Press. <https://doi.org/10.1016/B978-0-12-811306-6.00011-7>.
- 30 Cal. Code Regs. tit. 23, § 355.4(b)(9).
- 31 Cal. Code Regs. tit. 23, § 355.6(b)(9).
- 32 Cal. Code Regs. Tit. 23 § 355.4(b).
- 33 See, for example, North San Benito & Cosumnes GSPs and Rubric evaluation: [law.berkeley.edu/SGMA-financing](http://law.berkeley.edu/SGMA-financing).
- 34 See supra notes 26 and 27 and accompanying text; see supra note 25, document rows 24 and 281.
- 35 *ANOVA results found an f-ratio value of 1.71 and a p-value of .21 at a confidence interval of .05. The f-ratio value is a measure that compares the means across groups to the means within groups. The larger the f-ratio value, the more probably the difference is meaningful and not a product of change. The p-value is the probability of getting an f-ratio value of equal or greater value by pure chance. The smaller the p-value, the more statistically significant the difference between the groups’ means.*
- 36 See supra note 23, California Department of Water Resources (2023).
- 37 Supra note 14.

- 38 See Henry, L. (2022, December 21). Some San Joaquin Valley farmers are rebelling against groundwater measures. *SVJ Water*. <https://sjvwater.org/some-san-joaquin-valley-farmers-are-rebelling-against-groundwater-measures/>; Barringer, F. (2022, December 13). A simmering revolt against groundwater cutbacks in California: New agencies find making sustainability plans is hard, but easier than persuading growers to accept them. *Stanford & the West*. <https://andthewest.stanford.edu/2022/a-simmering-revolt-against-groundwater-cutbacks-in-california/>.
- 39 “County GSA and GSP Fees,” *Madera County Water and Resources*, URL: <https://www.maderacountywater.com/county-gsa-fee-structure/> (last visited March 13, 2025); *Resolution No. 2022-086*. (2022, June 21). Madera County. <https://www.maderacountywater.com/wp-content/uploads/2022/08/RES-NO.-2022-086.pdf>; *Resolution No. 2022-087*. (2022, June 21). Madera County. <https://www.maderacountywater.com/wp-content/uploads/2022/08/RES-NO.-2022-086.pdf>.
- 40 See, e.g., “Madera County Groundwater Sustainability Agencies (GSAs) After Proposition 218 Fee FAQs,” *Madera County*, URL: <https://www.maderacountywater.com/wp-content/uploads/2022/07/GSA-218-Fee-Post-Adoption-FAQs-final.pdf> (last visited March 13, 2025).
- 41 *Valley Groundwater Coalition v. County of Madera* (Madera Co. Superior Ct. Case No. MCVo87677); <https://sjvwater.org/madera-county-groundwater-agency-can-collect-fees-and-legal-action-will-continue-judge-rules/>; see supra note 39, Barringer (2022); Henry, L. (2024, June 10). Madera farmers and groundwater agency in limbo waiting for court decision on fees. *SVJ Water*. <https://sjvwater.org/madera-farmers-and-groundwater-agency-in-limbo-waiting-for-court-decision-on-fees/>; Henry, L. (2024, December 14). Hearing on battle over fees to fund groundwater measures in Madera County postponed. *SVJ Water*. <https://sjvwater.org/hearing-on-battle-over-fees-to-fund-groundwater-measures-in-madera-county-postponed/>; Henry, L. (2025, February 28). Madera County groundwater agency can collect fees and legal action will continue, judge rules. *SVJ Water*. <https://sjvwater.org/madera-county-groundwater-agency-can-collect-fees-and-legal-action-will-continue-judge-rules/>.
- 42 Henry, L. (2022, July 6). Farmers who helped sink the Friant-Kern Canal reject a fee to pay off their share of the fix. *SVJ Water*. <https://sjvwater.org/farmers-who-helped-sink-the-friant-kern-canal-reject-a-fee-to-pay-off-their-share-of-the-fix/>.
- 43 See supra note 39, Henry (2022); see “GKGS Rules and Regulations Revision Process,” *Delta View Water Association*, URL: <https://www.deltaviewwaterassociation.org/news/dvwa-sent-the-gkgsa-board-a-letter-asking-them-to-reconsider-pumping-fees-and-return-the-precipitation-credit-to-the-water-dashboard> (last visited January 5, 2025); see also “March 2022 E-Newsletter,” *Delta View Water Association*, URL: <https://myemail.constantcontact.com/DVWA-March-2022-E-Newsletter.html?oid=1134774969697&aid=xTIFXfrRHD4> (last visited March 13, 2025).
- 44 *Mojave Pistachios, LLC v. Superior Court*, 99 Cal. App. 5th 605 (Feb. 8, 2024).
- 45 *Great Oaks Water Co. v. Santa Clara Valley Water Dist.*, 2018 Cal. App. Unpub. LEXIS 7595 (Nov. 8, 2018).
- 46 See Cal. Water Code §§ 10727.2(b)(1) & (b)(2), 10730–10731, 10733, & 10733.8; see Cal. Code Regs. tit. 23, §§ 354.44(b)(8) & 354.6(e).
- 47 See Cal. Water Code §§ 10722.2, 10722.4(d), 10733.2, 10733.8, and 10735.2.
- 48 Cal. Code Regs. tit. 23, §§ 354.44(b)(8) & 354.6(e).
- 49 Cal. Water Code § 10733(a); Cal. Code Regs. tit. 23, §§ 350, 350.4(e), 350.4(c), 354.6(e), and 354.44(b)(8).
- 50 Cal. Water Code § 10729(b).



Image credit: Water for Ag-MAR is diverted by the Omochumne-Hartnell Water District from the Cosumnes River to a vineyard in Sacramento County, CA, February 8, 2024, [2024-02-08-SN-0074-Sloughouse-Recharge-DRONE-jpg](#), by Sara Nevis / California Department of Water Resources.